

SEA TURTLES-

1990s

HAWAIIAN

G.H. BALAZS

1990s FILE NEWSPAPER CLIPPINGS ETC.

**PIKELOT ISLAND**

# Turtles on menu to honor Makali'i

Hunt is part sport,  
part survival

By **Bob Krauss**  
ADVERTISER STAFF WRITER

**PIKELOT, Micronesia** — Two giant turtles mated in the clear blue ocean on this glorious morning, their heads and flippers splashing in awkward exuberance.

Sooty terns and boobies wheeled overhead. PikeLOT, an uninhabited grove of coconut palms floating on the ocean, lay a few hundred yards away.

Sea turtles have been going to tiny PikeLOT to lay their eggs as long as anybody can remember.

But today the turtles were not alone. Six crewmen from the FSS Independence edged close, in their inflatable boat, to capture the turtles. The Independence is a Micronesian coast guard boat escorting the Hawaii voyaging canoe Makali'i.

Four men slipped into the water.

I have to admit that I felt sorry for the turtles. They should be entitled to a little privacy. Yet turtle hunting is a traditional sport in these atolls, and a means of survival.

The men grappled with the turtles, then climbed back into the boat. "They lost it," said the boatswain on the boat deck. I can't say that I was dismayed.

The turtles are enormous, 200 pounds or more. The previous night, the inflatable boat had gone in with a half-dozen men to camp on the beach and to capture turtles that crawled up to lay eggs.

PikeLOT is the size of Sand Island, a speck of sand and coral in a vast ocean. It's the classic movie version of a

See **PIKELOT, A12**



# Pikelot: Turtles to provide feast

FROM PAGE ONE

castaway's island, palm trees circled by a pristine beach.

The only building is a Catholic church, with a tin roof and no walls except on the altar side. Turtle hunters pray there after safe arrival. There is no water except for the contents of coconuts.

The crew had caught five turtles. Smoke rose from the beach where Robert Malewalig, the cook, barbecued a turtle while Independence circled the island.

Four live turtles came back in the boat to be winched onto the stern, where they were covered with nets like cargo. They are for the big celebration at Satawal, where we're heading.

The expedition left Pukurwat Atoll yesterday morning. Makali'i and its escort, Zip Pur, sailed direct for Satawal with master navigator Mau Pailug. Independence took this side trip to Pikelot.

During our three-day stay, the turtles will provide food for the natives of Satawal, one of the poorest

of the atolls.

Makali'i left the Big Island on Feb. 10. Its crew of 45 is taking Pailug home to Satawal in gratitude for Mau's teaching Hawaiians to sail by the stars and ocean swells 25 years ago.

Satawal is 2,800 miles southwest of Hawaii.

Hospitality for Makali'i during stopovers has been so abundant that few of the food supplies on the canoe have been used. Clay Bertelmann, the expedition leader, said he'll give food to the Satawalese.

There have been feasts and celebrations all along the way.

Makali'i crew member Kainani Kahaaunaele of Hilo, who composes songs and is a professional musician, said the singing and dancing on the atolls is wonderful.

"There's no hesitation from the youngest to the oldest," she said. "The harmony is so sweet. You can see happiness in their faces. My hypothesis is that they can spend more time singing because they don't have many distractions."

At Pukurwat Atoll, the men spent one morning making costumes of yellow coconut fronds and husking drinking coconuts for the feast. They performed stick dances that they said originated with an old man who learned them from spirits during the German colonial era after the turn of the century.

"I love the way people come together on the atolls; people of all ages singing the same song, harmonizing together," said Kainalu Bertelmann, 19, the youngest crew member on Makali'i.

Bertelmann, of Waimea on the Big Island, is the son of Shorty Bertelmann, navigator of Makali'i along with Mau.

Kainalu, already an experienced voyager, went to sea on board Makali'i in 1995 sailing from Tahiti to Nukuhiva to Hawaii at age 15.

"It's hard to explain how I feel right now," he said. "Ever since I was growing up, Mau has been saying, 'Come to my island.' I never thought I would. I can't believe it's actually happening."



# Waking the Hanauma turtles a quiet dawn ritual for divers

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.



OUR  
HONOLULU  
Bob Krauss

"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 play-

ing 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

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Advertiser photo by T. Umada

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

to see turtles with tumors they think may be caused by chemicals in the water.

However, The People Who Wake the Turtles are optimistic about the future of Hanauma Bay. They credit park manager Alan Hong, and support of him by the City Council, for actions that have greatly improved 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.



# Mother-of-all-sea-turtles laments human treachery

**L**A TE one stormy night, I lay in bed wide awake, unable to sleep. Wind shrieked through the cracks in my lanai doors and waves crashed upon the shore. I tossed. I turned. Exasperated, I finally got up, dressed and went for a walk on the beach.

At the water's edge, a passing squall drove stinging rain into my face. Shivering, I pulled up the hood of my jacket and trudged on, head down, arms crossed in front of me, feet sinking deep into the soft, wet sand.

Moments later, a huge wave broke at my ankles, soaking the bottom of my jeans. I was sidestepping up the steep incline of the beach to avoid getting doused by the next wave when I noticed a dark mass on the white sand just ahead of me.

I squinted into the black night and saw that the mass was a huge female green sea turtle, more than 4 feet long and weighing at least 400 pounds. Enthralled, I watched as she reached forward with her flippers, dug them into the sand, then with tremendous effort, shoved her enormous body up the beach. She lurched forward again, then again.

When she was high on the beach, I heard a moan. I stood paralyzed. Can turtles moan? Then I heard what sounded like a sob.

Slowly, I tiptoed toward the majestic creature, knelt in the sand and looked into her face. The sight of tears dripping from her large, dark eyes instantly brought tears to my eyes. We stared at each other for a long moment, then I started to creep away to give this endangered animal some privacy. "Traitor!" I heard her rasp as I began to back off.

"What?" I said, astonished.

"You tricked us," she hissed.

"Tricked you?"

"You humans tricked us. You set us up for a slaughter."

"I don't know what you mean."

"One hundred years ago, when I was just a hatchling, we were taught by our elders to stay away from humans at all times. We turtles learned early that if humans saw you, they would shoot a spear into you, then drag you to the beach to die a horrible, agonizing death."

The turtle rose up on her flippers and faced me, tears flowing freely from her eyes. "But 20 years ago you stopped the torture and killing. You began to feed us and pet us. We stopped fleeing. Some of us even came to like your gangly, poor-swimming species."



## OCEAN WATCH

By  
Susan  
Scott

"Oh, we like you, too," I said earnestly.

"HAH" she spat.

"I watched two of my children slaughtered by men at Puako last week in what the turtles thought was a safe place. Just days before that, one of my young nieces was butchered in Maui. And two weeks ago, two of my sons were murdered by men in Kauai."

She turned her head away from me. "We trusted you," she sobbed. "And you betrayed us."

"No," I said.

"You have it all wrong. Almost all of us here love you and want to help you. It's just a few bad humans who break our laws."

"It doesn't matter to us. Trust is trust; death is death. And for us, death may mean extinction. We also have this terrible tumor problem, you know..."

"Yes, I know," I whispered, feeling wretched. But then I brightened. "This is the Year of the Sea Turtle," I told her. "Things are bound to get better."

"Show me." The massive turtle dug her left flippers in the sand and began her turn toward the sea.

"Please... wait..." I begged.

"We can't wait. That's why I came to you: Tell other members of your species that without more help, we will cease to exist."

Silently, this mother-of-all-turtles slipped back into the dark water and disappeared.

I plodded back to my bed where I fell into a troubled and restless sleep. In the morning, I awoke with tears in my eyes.

My turtle encounter was a fantasy but the recent slaughter of Hawaii's sea turtles on several islands is all too real.

You can help stem the tide of this troubling trend by spreading the word that all sea turtles are protected by state and federal laws. Call the National Marine Fisheries Service or the Department of Land and Natural Resources if you can help identify any suspects in these cowardly crimes that hurt us all.

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.



# Children are sea turtles' best hope in Palau waters

**W**E may be having troubles with our turtles here in Hawaii, but at least we have turtles to worry about. I just returned from a trip to Palau where sea turtles are as rare as hens' teeth.

During two weeks of continuous diving, snorkeling and kayaking in this Western Pacific archipelago, famous for its marine life, I saw only two turtles.

"I hate to say it, but sea turtles don't have a prayer around here," a turtle worker there told me.

"If it's seen, it's taken. People have hunted turtles and collected eggs here for so long, they can't imagine giving it up."

Rather than admitting defeat, however, wildlife workers in Palau are pleading the turtles' case to the most influential group in the islands: Palau's children. Environmentalists, with the help of local businesses, are teaching turtle conservation in the schools.

One bright result of this teaching was on display at a local bank during my visit to the capital city of Koror. A Youth Art Show Program titled, "Let Our Sea Turtle Family Live!" showed posters made by the city's eighth-graders.

The Palau Conservation Society, United Artists of Belau and Pacific Savings Bank sponsored the event in which visitors were asked to vote for their 10 favorites.

It was a tough call, especially with some students standing near their works of art making shy lobbying attempts. In the end, my favorite poster pictured a female turtle laying eggs on a beach. The caption said, "Sea turtles know what to do. Do you?"

All the posters clearly showed that the kids have the message. I said this to one of the turtle workers who helped organize the show.



Hawksbill



Green Turtle



## OCEAN WATCH

By  
Susan  
Scott

"Yes, the kids know," he agreed. "What we're hoping is that these children will convince their parents to change their behavior."

"But even if they can't, you've reached the next generation," I said. He shook his head.

"Reached them for what? If the turtle hunting doesn't stop soon, there won't be any turtles left for these kids to conserve."

The turtles that lay eggs on Palau beaches and swim in Palau's waters are mostly hawksbills, a species smaller than our familiar green sea turtle.

Hawksbill turtles have the misfortune of bearing lovely shells, which people have used for aeons to make jewelry and other decorative items.

In many countries of the Pacific, including Palau, people also eat hawksbill meat, even though it is sometimes poisonous.

Researchers aren't sure why some turtles are poisonous and others are not, but the individual turtle's diet is likely a factor.

Hawksbill turtles eat a variety of crustaceans, sponges, jellyfish, snails and seaweeds.

The sharp beak, from which hawksbills get their name, allows this species to probe nooks and crannies of coral reefs in search of some of these foods.

In the old days, when people were scarce and technology was primitive, sea turtles could maintain their numbers in spite of hunting and egg taking. But with the huge increase in the number of hunters plus widespread use of nylon nets and motor boats, sea turtles are rapidly falling behind.

The South Pacific Regional Environmental Program, an environmental organization formed to help Pacific Island countries, has declared 1995 the Year of the Sea Turtle. I don't know about the results in other countries, but in Palau, this urgent message is coming through loud and clear, at least to the children.

Let's hope they teach their parents well.

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.

# HAWAII

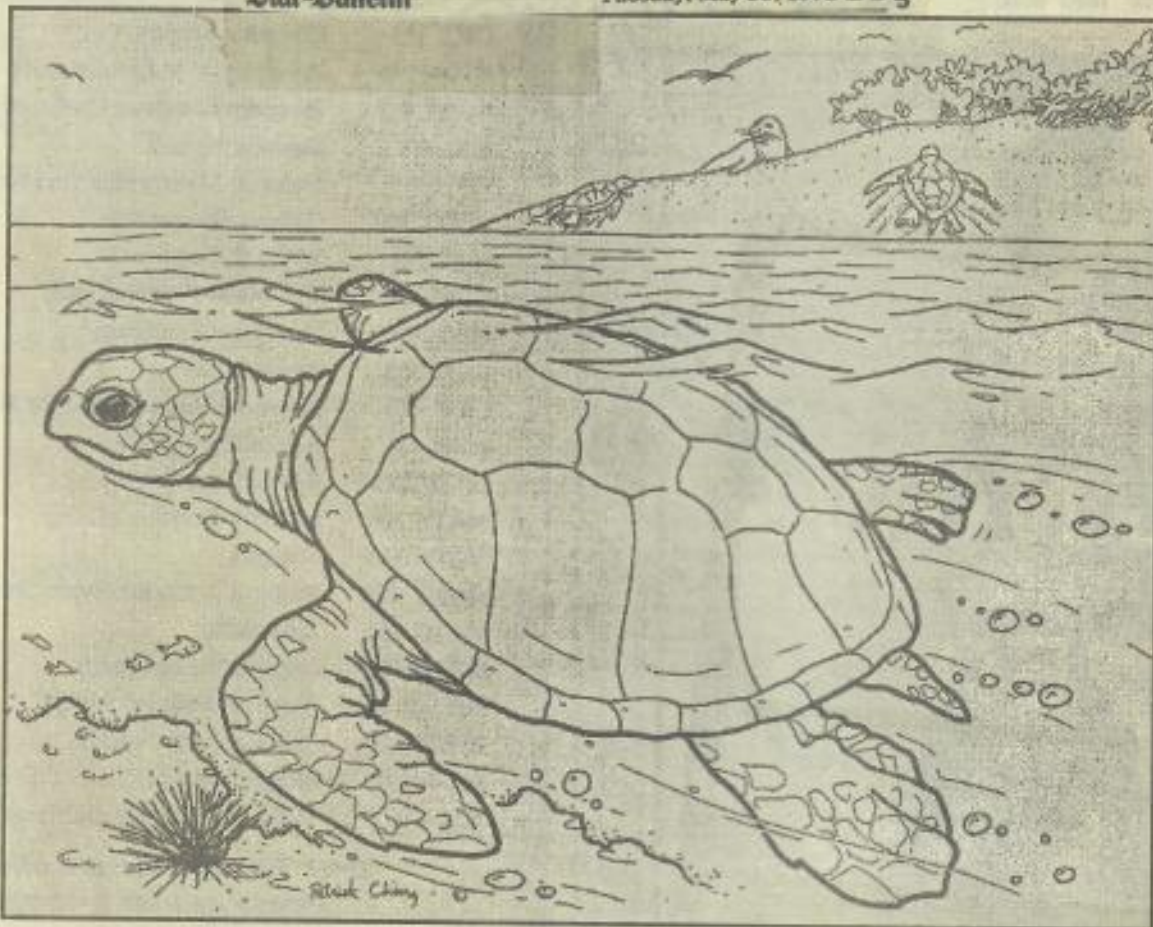
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# Color the Pacific Green sea turtle (honu)

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The picture shown is approximately half the size of the actual coloring book by author-illustrator Patrick Ching, who writes, "The green sea turtle did not get its name from the color of its shell, which is more brown than green, but instead was named for the color of its flesh and body fluids, which are green as a result of its diet of algae."

## Endangered animals fill book

Star-Bulletin

**P**ATRICK Ching, whose colorful depictions of Hawaii's flora and fauna have graced the Hawaiian Telephone directory cover, now has come up with a new book that allows children to color their world.

Featured in the "Endangered Animals of Hawai'i Coloring Book" are 15 native animals that are on, or are candidates for, the United States government's endangered or threatened species list.

These include the 'io (Hawaiian hawk), 'ilio-holo-i-ka-uaua (Hawaiian monk seal), 'akohekohe (crested honeycreeper), kohola (humpback whale), 'a'o (Newell's shearwater), 'alae 'ula (Hawaiian gallinule), 'o'opu hi'u kole (freshwater goby), 'ope'ape'a (Hawaiian hoary bat), honu (Pacific green sea turtle), Laysan duck, 'i'iwi (Hawaiian honeycreeper), pupu kani oe (Hawai-



**Endangered Animals of Hawai'i Coloring Book:** By Patrick Ching (Bess Press), \$4.95

ian land snail), pinao li'i (Hawaiian damselfly), 'alala (Hawaiian crow), and nene (Hawaiian goose).

As in his previous coloring books,

"Native Animals of Hawai'i," "Exotic Animals in Hawai'i" and "Beautiful Birds of Hawai'i," Ching combines his detailed drawings with informative text.

For instance, we learn that mother monk seals do not feed for the five weeks she is nursing a pup. We also learn that the native Hawaiian hoary bat, which dwells on the Big Island and Kauai, spends most of its days hanging upside down in trees.

And, though a young Picasso might decide to color the brown bat blue, in many cases youngsters have not had a chance to see these creatures in the wild, so a color key on the back cover is a guide to nature's palette.

The coloring book is available at local book outlets for \$4.95. It can also be ordered from the publisher for \$9.95 postage paid. Write to Bess Press, P.O. Box 22388, Honolulu, HI 96823.



## REPORTER'S CORNER



**TIMOTHY HURLEY**

**O**h, those poor Hawaiian sea turtles.

Every time you turn around it seems someone's pointing a finger at those benevolent doe-eyed reptiles, implicating them as unwitting accomplices in a shark attack.

Kihai's Don Bloom, the victim in the June 13 shark encounter off Wailea, was the latest to make the connection in a

letter to The Maui News last week. He suggested that the shark that bit him in murky water had mistaken him for a sea turtle.

It's a cry heard over and over. In recent years the Hawaiian sea turtle has taken a lot of heat — from all quarters.

Many have suggested that the gradually increasing population of sea turtles is to blame, or at least partially responsible, for the reportedly higher numbers of tiger sharks that roam our waters.

Those who raise the issue point out that the sea turtle — a mainstay on the tiger shark diet — has been legally protected by federal and state laws in Hawaii since the mid-'70s. During that time, the tiger shark population has seemingly mushroomed as well.

And the theory goes that since there are more sea turtles swimming in and around our islands, the tigers are increasingly going after them — and sometimes mistaking humans for the turtles.

Think about it from a shark's point of view: From the murky depths you spot what looks like a tasty turtle skimming the water's surface. OK, so maybe a closer examination would have revealed a fiberglass bodyboard with dangling arms and legs. But, hey, when you're hungry . . .

It's all that kind of talk that really ranks George Balazs, zoologist and leader of marine turtle research for the National Marine Fisheries Service in Honolulu.

Perhaps Hawaii's top turtle expert, Balazs says there is no evidence to suggest that a growing turtle population is the cause of increased shark sightings and attacks.

While there are indeed more turtles in our waters,

*THE MAUI NEWS 27 JUNE 1995*

there aren't as many out there as people think, he says. Sea turtles are simply high-profile animals and so they get the blame.

Balazs, who is also known for compiling and maintaining a list of Hawaii shark attacks, says it is true that the turtle is on the tiger shark diet. But he believes its importance on the shark's daily menu has been overestimated. Also eaten by tiger sharks are fish, crabs, lobsters, birds, other sharks, rays, squid, octopus, crabs, snails, jellyfish and even garbage.

The reason turtles are overrated as shark food, he says, is because they are found in the stomach of sharks more often. That's due to the fact they can't be broken down by stomach acids as well. Many other things a tiger shark eats digest faster.

As for the mistaken identity theory, Balazs says he doesn't buy it.

"If you're in California, the shark thinks you're a seal. If you're in Hawaii, the sharks think you're a turtle," he says. "Which one is it?"

There is no credible data to support the mistaken identity theory, Balazs insists.

"Taking things at the surface is a natural part of the tiger shark's known feeding strategy," he says.

"Jean-Michel Cousteau said some sharks are more fussy than others about what they eat. Tiger sharks are

known to eat almost anything and everything, and are more likely to attack anything on the surface: whether it's a piece of wood, a surfboard, a boat or a bird."

A number of recent attacks in Hawaii on surfers have taken place during daylight hours in reasonably clean, clear water. It's hard to imagine that the sharks involved in those incidents mistook their victims for anything other than a potentially edible object at the surface, he says.

Balazs points to an incident in East Maui waters a couple of years ago. The passengers on a charter fishing boat witnessed — and even took photos — of a 2,000-pound bull that had fallen off a cliff into the ocean and was being mercilessly attacked by sharks.

"Did the sharks mistake that bull for a sea turtle? Perhaps, but only if they had been staring at inkblots for too long!"

Balazs says surfers and swimmers should still consider the sea turtle a friend.

"If turtles weren't out there making themselves available as a food item, the tiger shark population would simply turn to something else to eat.

"And that something else could be surfers or swimmers."

*Staff writer Timothy Hurley covers the environment for The Maui News. June 27, 1995*



## Trapped sea turtle gets helping hand

KAHULUI — A green sea turtle caught in some fishing line off Kanaha Beach this morning got a helping hand — perhaps just in time to avoid becoming breakfast for a couple of reef sharks.

The rescuer was Keith Keau, a state Department of Land and Natural Resources conservation enforcement officer, who got the call after 7 a.m. The report described the turtle as being circled by two large sharks.

When Keau arrived on the scene by the Hale Nanea clubhouse, he didn't see any sharks. So he jumped in the water, swam out to the helpless turtle and cut it loose.

"He was more than happy to leave," Keau said. "He left in a hurry."

Only when Keau returned to shore did he see the sharks. They were a pair of reef sharks 4 to 6 feet in size.

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MAUI NEWS

## Opinion

The Maui News  
Friday, June 30, 1995  
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## Letters

### Helmets save lives

Thank you for your article (June 14) about the bicycle officer who survived a collision with a car. It is a testimony to the effectiveness of safety helmets, which the Keiki Injury Prevention Coalition recommends be required for all bicyclists 18 and under.

The word "accident" is often used to describe an event in which someone dies or is hospitalized. "Accident" conveys the meaning that the event could not have been prevented or controlled. That could not be further from the truth.

By using terms like incidents, crashes and events instead of accident, you will help make the public more aware of the role we all play in injury prevention. For example, motorcyclists and bicyclists who wear safety helmets are 85 percent more likely to survive a crash without head injury than those without a helmet. That's why it is helpful when you report whether a rider was wearing a helmet or not.

Child safety seats reduce the risk of a child's death by over 70 percent when used correctly. This is another aspect of traffic safety you can keep us aware of by describing when danger is successfully avoided through the safe and wise actions of people you report on.

Please continue to keep us all informed by including the important details of safety equipment usage in articles about traffic incidents. Many lives have been saved through education, awareness and the use of safety gear.

Susan LaFontaine  
Co-Chair, Keiki Injury  
Prevention Coalition

### Look beyond seaweed

Is there too much seaweed in the

West Maui coastal waters? As someone who has dived in the West Maui waters on a regular basis for almost 30 years, I would say no. There was an explosive growth a few years back of a particularly obnoxious kind of limu, but it seems to have disappeared. Today there is far less of the edible types of limu, and in most places more of the inedible kind, but I see no reason for alarm.

There are those who seem to have as their goal the complete elimination of limu. That would be devastating. Limu provides a critical habitat for small marine life, an essential link in the food chain, and a giant filter for coastal waters.

I don't wish to denigrate the efforts of those who have shown concern about the seaweed problem, but I think we need to focus some of this attention and effort on other problems. There has been a dramatic deterioration in the quality of our coastal waters. Entire marine species have disappeared, and many others that once were common are now rare. Large areas have died and now only the animals that live off death can be seen there.

We need to study the impact suntan lotion has on marine life, stop the dumping of treated swimming pool water into the ocean, reduce the silt and chemical runoff from agriculture and more closely monitor boating activities.

If we allow things to continue as they have, the death and destruction will spread and intensify. The foundation and nourishment of Hawaiian culture is the environment of these islands. Destroy that environment and you kill Hawaii.

Tom Hansen  
Lahaina



Teruya, M. and S. Uchida.

1988. Nesting of *Eretmochelys imbricata* in Okinawa Island and rearing of hatchlings.

J. Jpn. Assn. Zool. Gardens and Aquariums

30(1):34.

ジンベエザメ科1種の17種であった。この結果より大水槽において展示効果の高い大型外洋性のサメ類で適応度の高いものはメジロザメ科のメジロザメ属とジンベエザメであり、遊泳力は高くないが比較的大型の種としてテンジクザメ科の2種が適応力が強いことがわかった。又飼育困難なCグループ17種ではツノザメ科が7種で最も多く、適応度のやや悪いBグループは5科8種であった。B、Cグループの各種についても飼育努力を重ねAに近づけることも、今後の課題であると考え。



20. 沖縄本島におけるタイマイの産卵上陸確認と稚仔の育成について：○照屋秀司・内田詮三（沖縄記念公園水族館）

1987年8月に沖縄本島の属島である水納島海岸に産卵されたタイマイ *Eretmochelys imbricata* の卵、136個を採集、又同年9月、本島名護市安和海岸で採捕された孵化直後の稚仔56匹を搬入した。これ迄本種の我国における産卵上陸地の北限は当館の調査により本島南部西方に位置する久米島であることが確認されている（内田詮三他、1984）。

今回の卵並びに稚仔の採取により、本種の産卵上陸地として、沖縄本島北部 26°36' N, 127°56' E, 及び水納島 26°38' N, 127°44' E が新たに確認されたことになる。

本島名護市安和海岸で孵化した稚仔タイマイは、平均甲長3.8cm、平均体重13.3gで5ヶ月後には、平均甲長9.5cm (max10.9~min8.5)、平均体重128g (max169.0~min96.0) に成長した。これは、昭和58年に黒島で産卵、孵化したタイマイを当館で飼育した個体が、5.5ヶ月で平均甲長12.6cm、平均体重382.0gになったのと比較すると成長が遅かった。また、生存率は、1ヶ月後、96.4% (死亡数2匹)、2ヶ月後、94.6% (同1匹)、3ヶ月後89.3% (同3匹) で、その後の死亡はなかった。これは、昭和57年に人工孵化させたアカウミガメの4ヶ月後の生存率85.7%よりも高かった。

今回、このような高い生存率を残すことが出来たのは、各個体を区分けすることによってお互いの噛みあいに行動を防ぎ、また飼育管理を容易にしたことがいい結果をもたらしたものである。

21. アカウミガメの albino の飼育と成長：○内田 至・呉羽和男（姫路市立水族館）

静岡県御前崎町の海岸に産卵した卵を、同地の人工孵化場に移設し、44日目に孵出したアカウミガメの20.3% (14匹) に albino が出現した。それらの中の3匹につ

重22.98~26.53, pH 7.1年経過後より縦2m用いた。

絶対成長は普通のア田、1967) と大差がないにおいて甲長122.4mm、が出現した。屈折点よ成長式は  $W=0.00065$  直甲長<sup>mm</sup>とする。下L3.07で上部より急勾

飼育期間中に皮膚が現した。然し最後の原因であることが確合いが顕著になったの期(孵化3ヶ月後)に眼疾患が見られた。

その他、頭部鱗板の配列と形状に、アなる現象が3匹に共魚・貝・エビ・野菜えた。

22. 波の大水槽の概

・葛西啓史・土井

波の大水槽は、貯を含めると、その水プ5基(他に1基子給水する閉鎖循環ろ装置として、幅4mで波高0.5m、波長水槽前面の厚さ210mmカメラを内蔵したロから観覧者をテレビこのロボットの設による清掃は、実施

飼育魚類は、昭和2,500kgであった。ミ、アサリで、こkg、1回当り39kg向にある以外は、

本水槽には、こたが、そのほとんこで捕食状況を観最も多く捕食されザメ属sp、アカエ

Teruya and Uchida note --

(The authors are with the Okinawa Memorial Park Aquarium)

In August 1987, 136 eggs of the hawksbill turtle, Eretmochelys imbricata, were collected on the shore of Mizunajima, an island near the main island of Okinawa. In September of the same year we received 56 just hatched juveniles which had been collected on the shore at Awa in Nago City on the main island. A study by staff of our aquarium (the Aquarium of the Okinawa Memorial Park) confirmed that up to that time the northern limit of places for hauling out and spawning for this species in Japan was Kumejima, which is located west of the southern part of this island (Uchida, S. et al., 1984).

The collection of these eggs and juveniles provided new records of the hauling out and spawning of this species at 26°36'N, 127°56'E in the northern part of the main island of Okinawa, and at Mizunajima, 26°38'N, 127°44'E.

The juvenile hawksbill turtles which hatched at Awa beach in Nago City averaged 3.8 cm in carapace length and 13.3 g in body weight. After 5 months, the average carapace length was 9.5 cm (max 10.9 - min 8.5) and the average weight was 128 g (max 169.0 - min 96.0). This growth was slow as compared with hawksbill turtles which hatched at Kuroshima in 1983 and were reared at our aquarium. Their average carapace length after 5.5 months was 12.6 cm and their average weight was 382.0 g. The survival rate after 1 month was 96.4% (2 dead), after 2 months 94.6% (1 dead), after 3 months 89.3% (3 dead) and thereafter there was no mortality. This figure is higher than the survival rate of ~~85.7%~~ 85.7% after 4 months for loggerhead turtles that were artificially hatched in 1982.

Our success in achieving such a high survival rate is considered to be the result of keeping each individual separate and thus preventing them from biting each other and making it easier to manage their rearing.

\* \* \*



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'U

ber, 1995



Island-wide Calendar

LAND

Hawai'i Island's Uncommon News Mag



Of the three native Hawaiian sea turtles, the green turtle, or honu, is the most common. Join us in the celebration of the "Year of the Turtle" at Punalu'u. Related story on page 17.  
Photo by George Balazs

## Honu: A Cautious Recovery

by Christine Cortese

The soft black sand at Punalu'u cradles a gentle bay where boats slip safely into the turbulent southern seas of the Big Island, where families gather for picnics and to let the keikis play in tide pools, where swimmers enter the peaceful bay to play with the sea turtles. The occasional tour bus passes through quickly, mainly to visit the bathrooms: they've come a long way from Kona, and Kilauea is still on the far horizon. The visitors line up on a manicured rise above the bay and get their eyeful: black

sand, blue water, palms, gnarled fingers of black lava veiled in wave spray. A camera snap and they are on their way, Punalu'u a brief memory, somewhere in-between.

Punalu'u is distant no matter where you are, an ancient and archetypal place, survivor of tidal waves that swept other Ka'u beaches into history. Named *Puna* for an underwater spring in the bay, and *lu'u* for the diving required to fill one's drinking gourds from this spring, it is the stuff of legends:

"There was a time when stormy weather prevented the

men from diving for water," writes Mary Kawena Pukui in *Native Planters in Old Hawaii*. "There were two supernatural turtles who had come out of the ocean to Punalu'u: Honu-po'o-kea (Turtle-with-white-head), the mother; and Honu-'ea (Turtle-with-reddish-brown-shell), the father. The mother gave birth to an object resembling a piece of kauila wood, which she buried in the sand to be hatched out by the sun. Then they dug into the earth and made a spring, then returned to the sea. When it was

Continued on page 17



## Honu...

Continued from page 1

time for her egg to hatch, Honu-po'o-kea returned. When the thing she had laid did hatch, it was a turtle the color of polished kauila wood. Mother and daughter lived in the spring until the baby turtle grew up.

The young turtle was named Kauila. The spring came to be named Ka-wai-hu-o-kauila, (the-rising-water-of-Kauila.) The turtle girl was able to assume human form and play with the young folk, but would become a turtle again when

she went back into the spring. When bubbles came up in the spring, people knew the turtle girl was asleep in her home. Children used to catch fish and shrimps in the spring, and Kauila watched lest the little ones fall in. The people loved Kauila for this and because her spring gave them drinking water. They never used her water for any other purpose."

No-one knows how long the turtles have been coming to Punalu'u, but they have lent their spirit to the place since ancient times: Honu, the green sea turtle that grazes in limu pastures; the small, reef-dwelling, sponge-nipping Hawksbill turtle; the soft-shelled, enormous Leatherback, that stays well out to sea where it can feed on plentiful jellyfish.

before. We've tracked them by satellite (4 Hawaiian turtles that journeyed from French Frigate Shoals to Kaneohe Bay in 23-26 days and 3 Samoan turtles that peregrinated to various reefs



Photo by George Balazs

around Fiji in 34-45 days), weighed them, looked in their mouths to see what they had been eating, examined their tumors...

Tumors? One disturbing revelation of the study is the prevalence of disfiguring, debilitating tumors, some the size of softballs, called fibropapillomas, that cluster around the eyes (where they obstruct vision) and/or around the flippers (where they disrupt mobility and therefore feeding patterns). Both handicaps may eventually result in death. Theories abound in the face of uncertainty: perhaps the tumors derive from agricultural runoff or other pollution, either direct or indirect (through immune-system suppression); maybe they're outgrowths of a virus unrelated to human activities, or resulting from a flatworm parasite. There are presently no answers to these questions.

Fiji has gone so far as to enact a commemorative change in legislation, and that consisting only of one year's ban on the commercial take of sea turtles (although, it is noted, an extension is possible).

Here in Hawai'i, we'll have a turtle party at Punalu'u on November 25th, a local-style celebration with food, drink, and music; and Kauila will get her own statue.

It's morning at Punalu'u and surf's up. A hawksbill turtle, small and rare, bobs calmly in a rocky cove. Deeper in the bay, several green sea turtles are swimming just beneath the surface, clearly visible. Now that the predators are gone (large sharks have never been documented at Punalu'u), the turtles are back all along the Ka'u coastline, especially in Punalu'u bay. They feed casually in broad daylight, relaxed around and even curious about humans, as though they have either a very short memory or perhaps a telepathic understanding of the prevailing human trends. Like the trend to position turtles as an ecological tourist attraction, raising the question of who will jump on the profit bandwagon and how; and what then for Punalu'u? Those interested in turtle conservation simply hope for vanloads of awakened eco-tourists who perform as *de facto* federal agents, alert to signs of turtle poaching. Although these eco cops are less than likely to venture where the poachers go.



The green sea turtle is the most common of the three, despite twin disadvantages of tasting good and growing slowly. Though both humans and sharks find the turtle tasty, the shark, with its own species survival concerns, poses less of a threat than the explosive demands of the burgeoning human population in Hawaii. Prior to 1974 there were no restrictions at all on the take of sea turtles: harvested beyond their reproductive capacity, breeding habitats bulldozed into oblivion, Honu was pushed beyond the limits of survivability.

In response to this crisis, the National Marine Fisheries Service, the U.S. Fish and Wildlife Service and the Hawaii State Dept. of Land and Natural Resources formed the Turtle Recovery Team in 1985. They've been busy.

"Following decades of intensive exploitation, the Hawaiian green turtle (honu), *Chelonia mydas*, is presently showing some promising signs of population recovery 16 years after becoming protected under the U.S. Endangered Species Act," writes George Balazs, zoologist and leader of Marine Turtle Research with the National Marine Fisheries Service in Honolulu.

Thanks to the Turtle Recovery Program, we know a lot more about turtles now than we did

In a 1994 paper for the Fourteenth Annual Symposium on Sea Turtle Biology and Conservation, George Balazs writes: "Only two of the 183 turtles examined and tagged at Punalu'u have had tumors indicative of fibropapillomatosis... All other turtles captured at Punalu'u have been judged healthy. The prevalence of tumors on turtles is exceedingly high at some study sites in Hawaii, such as Kaneohe Bay on Oahu." Why?

It is questions such as these, as well as the continuing delicacy of turtle population regrowth, that prompted the South Pacific Regional Environment Program (SPREP) of the National Marine Fisheries Service to designate 1995 as "Year of the Sea Turtle." An ambitious program with its own acronym (YOST), it has been largely successful in drawing attention to sea turtles from a great many people who might otherwise have never considered them. Media coverage from London to Washington to Sydney and throughout the Pacific Island nations has spawned children's art competitions, posters, bumper stickers, commemorative postage stamps, school programs, magazine articles, radio and television shows, even a rap music video. However, only

It has taken us 30 minutes of torturous driving through smoking piles of soft ocher soil to reach the shore at Ka Lae; we are yellow from head to foot. There are no other people, no cars, no habitation, no trees, as far as we can see in any direction, and we can see a long way across the Kama'oa plain. The first thing we do on our way to the water is stumble across a charred honu shell, still warm from the coals that cooked it. Like inadvertent bumbler onto a crime scene, we freeze: there's the body, the evidence. But evidence of what?

Evidence of an illegal act, of which the cumulative weight equals extinction. Evidence of defiant self-interest, the bane of cooperative effort. And, startling in the utter emptiness, evidence of the pervasive effects of human overpopulation, through which this single element of an ancient way of life now becomes a crime conducted in secret.

*Christine Cortese is a writer, astrologer and student of nature in Kahuku, Ka'u, Hawaii.*



## A Celebration of the "Year of the Turtle"

Turtle lovers from the Big Island, Oahu, and Maui will dedicate a bronze and lava stone monument in honor of Hawaii's sea turtles and the legend of Kaula at Punalu'u Beach on the Big Island. The monument will be unveiled in a public ceremony starting at 10 AM on Saturday, November 25 at Punalu'u Beach Park.

Following the dedication, community volunteers from the Ka'u district of the Big Island will mark the day with a celebration titled "He La Honu — Turtle Day '95". Festivities will continue until 3 PM with complimentary food from the Ka'u community, Hawaiian musical and hula entertainment, and a variety of arts, crafts and educational booths.

The "He La Honu" dedication will be emceed by two students from Ka'u High School,

honu or green sea turtle. Zarrella is also a Board member of the Honu Project, a Hawaii-based sea turtle conservation organization that helped coordinate and fund the monument's creation.

"We're especially pleased that this superb monument to Hawaii's sea turtles could be unveiled in 1995, which has been declared the Year of the Sea Turtle by Hawaii's legislature as well as by most of the nations of the South Pacific," said Laura Sasaki, one of the Honu Project's Directors. The Year of the Sea Turtle has been marked throughout the Pacific with the creation of educational videos, posters and the implementation of new laws protecting sea turtles and their habitats.

Punalu'u Beach, a beautiful cove of black sand, is renowned as a place where the green sea turtles are tame, friendly, and



Dale Zarrella with the sculpture to be installed at Punalu'u this month.  
Photo courtesy of the Honu Project



who have been working on the Punalu'u monument project for several years. Also present to do book signings will be Casey McGuire-Turcotte, another Ka'u High School student who wrote and published a book about how the honu got its shell.

According to Hawaiian legend, the mystical turtle Kauila would turn herself from a turtle into a young girl so she could play with the children along Punalu'u Bay and keep watch over them. The people of Ka'u loved Kauila as the guardian of their children. The legend of Kauila was later immortalized in a famous painting by Big Island artist Herb Kane.

The monument's central piece is a bronze relief disk four feet in diameter depicting Kauila riding on the back of a giant sea turtle. A separate bronze plate tells the story of Kauila and the turtles of Punalu'u. The bronze disk for the monument was created by Maui-based artist Dale Zarrella — a skilled painter and sculptor whose favorite motif is the

plentiful. The turtles of Punalu'u often swim in close quarters with snorklers and children playing or boogie-boarding in the water, much to the children's delight. Punalu'u beach is also a nesting site for the highly endangered hawksbill turtle, and signs at the beach ask motorists to keep their vehicles off of potential nesting areas. Scientists from the National Marine Fisheries Service, along with students from the UH Hilo's Marine Option Program, periodically capture and tag green sea turtles at Punalu'u for research purposes.

The monument to Kauila at Punalu'u was created as a joint effort of Ka'u community volunteers, Ka'u High School, the University of Hawaii at Hilo's Marine Option Program, the National Marine Fisheries Service, and the Honu Project; the celebration is being organized by Geri Cuddihy in Ka'u.

*For more information, please contact Roz Rapozo with the Honu Project in Honolulu at 236-4544.*



# Cowfish can wipe out all of the fish in an aquarium



## OCEAN WATCH

By Susan Scott

▲▲▲ 11/20/95

**L**AST week, after a long, hot day at the computer, I grabbed my mask and snorkel and hurried to the beach. Usually, a November snorkel on the North Shore isn't an option, but on this fall day the water was amazingly flat and calm.

I swam to my favorite places, admiring the ocean community I know so well. Moray eels were beginning to come out for their evening hunt; the pair of barber pole shrimp living under a big coral head were still there; my little damselfish were making their usual dashes for cover.

Refreshed, I headed back to the beach. I started to stand up in about 2 feet of water when a flash of color caught my eye. There in front of my face paddled the most beautiful cowfish I have ever seen.

Oh, he was stunning. Iridescent blue spots and lines seemed to light up his tan, armored plates. This little fish, no longer than 5

inches, stood his ground in front of my mask like a Chihuahua guarding his yard.

I looked around for the object of such courage. It involved sex, of course. She was hovering about 2 feet behind him, a smaller, pale version of this male cowfish who thought he was a bull.

Cowfish belong to the boxfish family, thusly named because their bodies are encased in rigid boxy armor. Boxfish can move only their fins, eyes and mouths.

Other boxfish have smooth bodily projections: two on the head, one on the back and two at the rear, sticking out like pointy tail pipes.

I was once taken to task by a reviewer for writing that cowfish likely got their name from these "horns" on their head.

"Wrong," the reviewer scoffed. "Cows don't have horns."

I smiled. This person obviously didn't know I grew up in Wisconsin, the capital of cows. Cows certainly do have horns. We just don't see them much in this country because of selective breeding.

Ranchers like cows with small or nonexistent horns, because horns on livestock only cause trouble.

Cowfish have horns all over the place. I have never read a theory about the function of these projections, but along with those big eyes and chunky bodies, they make a pretty bovine-looking fish.

Male and female cowfish are similar in size and color. Like many animal species, however, male cowfish are slightly larger and have brighter colors than females. It is only courting males that flash those brilliant streaks of blue.

Off southern Japan, cowfish spawn at dusk at the height of a high-pitched humming made by the male. Although Japan hosts the same species as Hawaii, I've read no reports of such songs sung here.

Cowfish graze on algae and also eat sponges, worms and other invertebrates. These fish make charming aquarium pets but beware: When upset or excited, they can secrete a toxin from their skin. This toxin doesn't harm humans but can wipe out all the fish in an aquarium, including the cowfish itself.

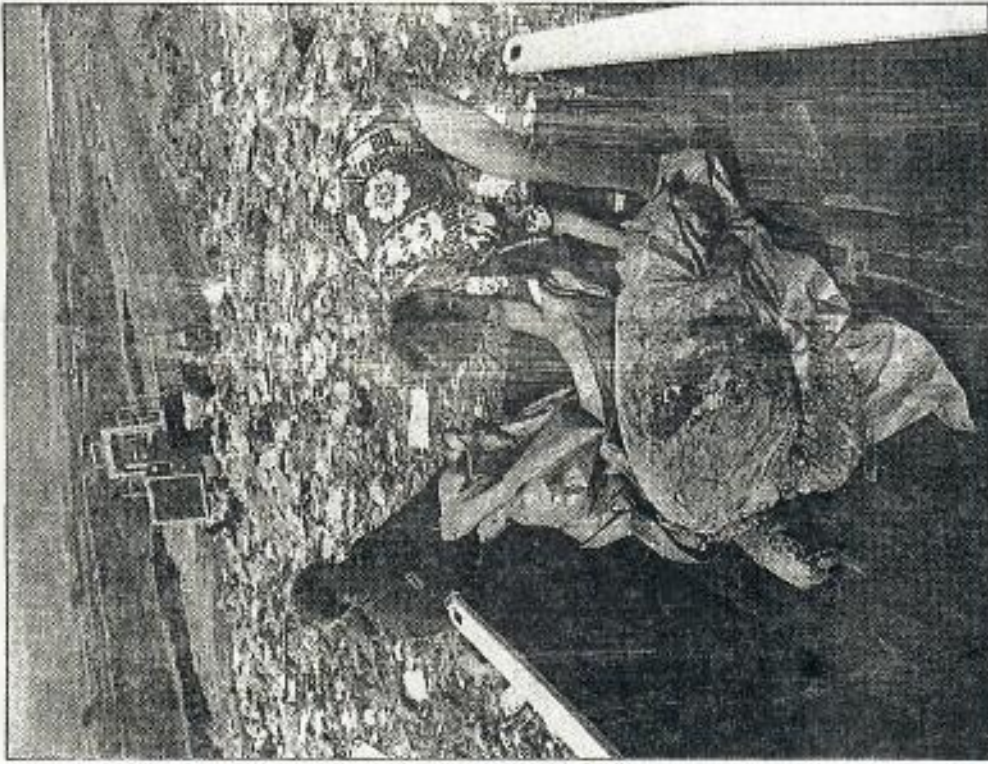
## Cowfish



Cowfish are found more on sandy and rubble bottoms than on coral reefs.

Susan Scott is a marine science writer and author of three books about Hawaii's environment. Her Ocean Watch column appears Mondays.



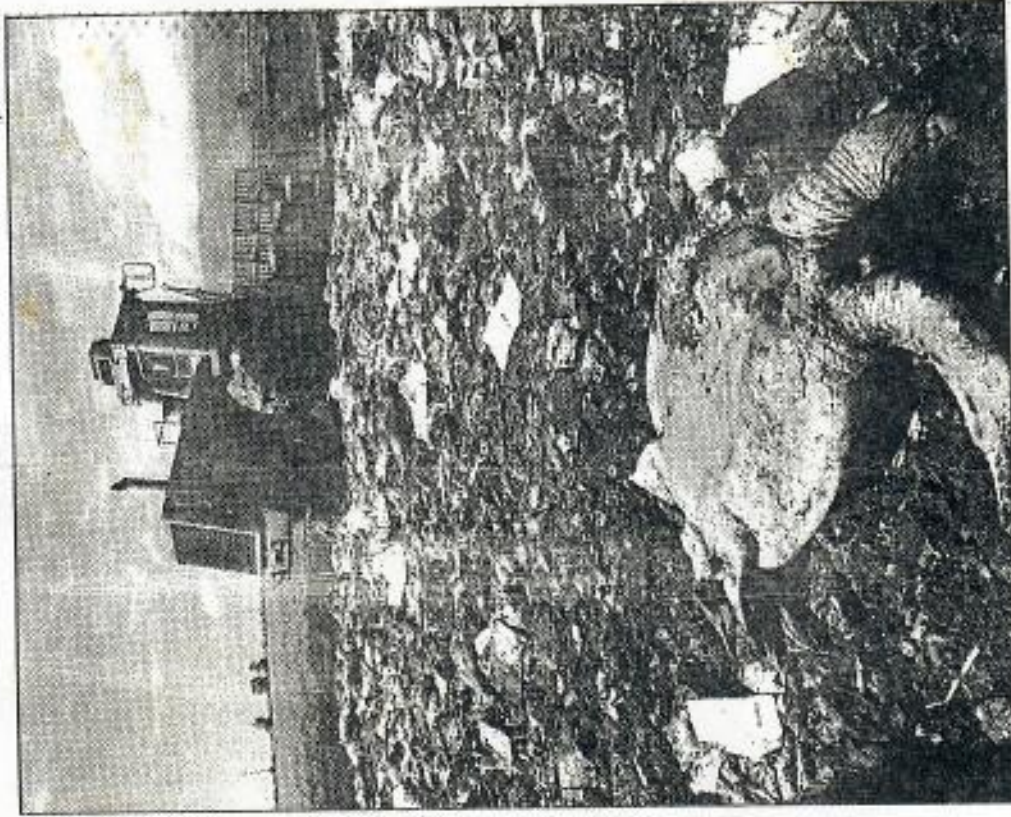


Nov. 1, 1985

The Maui News / MATTHEW THAYER photo

## Turtle disposal

A dead, tumor-riddled turtle weighing more than 150 pounds was found floating in the shore break off Waihee and was dragged ashore by fishermen Tuesday morning. After inspection by state Aquatic Biologist Skippy Hau, the turtle was taken to the Central Maui Sanitary Landfill, where its shell was crushed by a bulldozer to deter human scavengers. This picture was taken as Hau (right) and landfill equipment operator Thomas Hashimoto pulled the turtle out of Hau's truck.



A tumor-plagued turtle weighing more than 150 pounds was found floating dead in the shore break off Waihee and dragged ashore by fishermen Tuesday. After inspection by a state biologist, the turtle was taken to the Central Maui Sanitary Landfill, where its shell was crushed to discourage scavengers.

Maui News - 11-03-85





THIS IS ALL YOU WANT? SANTA CAN THINK OF LOTS OF THINGS YOU'D LIKE TO HAVE!

A10 HONOLULU ADVERTISER 11/30/95

# Whale sanctuary needed?

Yes: It will improve health of marine life

By Allen Tom

A national marine sanctuary that protects the Humpback whale and its habitat will lead to a healthier marine environment for all species, including humans.

The September issue of National Geographic bestows upon Hawaii the dubious distinction as "the endangered species capital of the United States." One-third of the 526 plants and 88 birds listed as endangered live in Hawaii, even though our Islands represent just two-tenths of 1 percent of the U.S. land area.

Whereas the loss of species has occurred primarily on land, we now see signs of similar problems in our marine environment. Fishermen tell of declining stocks. Algal blooms choke our beaches and smother our coral reefs. It's not uncommon to find turtles with tumorous growths. And Hawaiian monk seals remain one of the world's most endangered

A public hearing on the proposed sanctuary will be held at 7 tonight at Tokai University in Honolulu, 2241 Kapiolani Blvd.

marine mammals.

What does a Humpback whale sanctuary have to do with turtles, algal blooms and monk seals? National marine sanctuaries protect the marine environment from a habitat point of view.

In Hawaii, that means that the occurrence of an algal bloom within the Humpback whale's habitat concerns those charged with its protection. The sanctuary has already worked with the Department of Health to start a volunteer water quality monitoring project off West Maui.

Sanctuary research and education will improve our understanding of the marine environment that whales

and many other species call home, where so many of us earn our living and where Hawaii's culture is anchored.

A sanctuary will not solve all of our problems. But it is a positive step toward improving the health of our marine environment to the benefit of all creatures that live there. I encourage all citizens to become involved in making this sanctuary work for Hawaii.

Let us not pass on the legacy of "endangered species capital of the United States" to our children: To quote National Geographic again: "What's left of Hawaii is simply too precious to waste."

Tom is with the Hawaiian Islands Humpback Whale National Marine Sanctuary. For information on the sanctuary or upcoming hearings, please call (808) 879-2818 on Maui or toll-free at 1-800-831-4888 on the Neighbor Islands.



# □ No: State already has a good ocean plan

By Rick Gaffney

The federal government has stepped into our waters with the Hawaiian Islands Humpback Whale National Marine Sanctuary, which seems to imply that we are incapable of appropriately managing our marine resources.

Hawaii already has an excellent marine resources management plan, ready to implement, that establishes a resource conservation and management regime created by Hawaii's ocean users and the relevant government agencies to meet our real needs. It is called the Hawaii Ocean Resources Management Plan.

The congressionally mandated federal sanctuary came as a slap in the face to the ocean recreation industry in Hawaii that has worked hard to develop conservation measures and regulatory schemes to protect the resources the industry depends upon.

The local whale-watching industry is a good example.

Using revenues generated by whale-watching trips, donations and merchandise sales, the industry



Gaffney

for public donations, sell sanctuary logo merchandise that competes with yours, become involved with public education and intercede with the research regulatory regime already being managed by the National Marine Fisheries Service.

We don't need additional federal intervention in our waters. What we need is to empower state government and the people of Hawaii to take the steps necessary to conserve and manage Hawaii's marine resources. That was the premise behind the creation and enactment of the state plan and that is what it can do, given the chance.

The Hawaii Ocean Resources Man-

agement Plan is a product of extensive public deliberations and it includes input by a broad cross section of Hawaii's ocean experts.

agement Plan is a product of extensive public deliberations and it includes input by a broad cross section of Hawaii's ocean experts.

Moreover, the Hawaii Ocean Resources Management Plan offers a viable alternative to the Hawaiian Island Humpback Whale National Marine Sanctuary that doesn't require handing over control of more of our lives to an agency of the federal government. Nor does it abdicate responsibility for our ocean resources to the feds, a responsibility that we need to manage from right here at home.

There is a real, viable and immediate alternative to Big Brother moving into Island waters with an unwanted, unneeded and unnecessary sanctuary, and that alternative is the Hawaii Ocean Resources Management Plan.

□

Gaffney is a Kona-based ocean recreation consultant who has been involved with the Humpback whale sanctuary and its proposed predecessors since 1977.



# Surfers rescue sick turtle in Kahana

KAHANA - Surfers at "S-Turns" Thursday brought a wounded green sea turtle to shore, the believed victim of a collision with a waverider.

But George Balazs, an expert on sea turtles, believes the animal was hit by a spear or an outboard engine prop and was already wounded when surfers found it.

"We seriously question that that type of injury caused it," said Balazs, the leader of the Marine Turtle Research Program with the National Marine Fisheries Service in Honolulu.

Surfers put the small turtle on a board and lifted it out of the water. Calls to police were referred to Brooks Tamaye and Skippy Hau of the state Department of Land & Natural Resources' Division of Aquatic Resources. They took the animal, and then shipped it to Honolulu on Friday morning.

The turtle is now under the care of a Kailua veterinarian contracted by NMFS. Hunting green sea turtles in Hawaii is prohibited, and the animals are afforded special protection under the Endangered Species Act, along with humpback whales and Hawaiian monk seals.

Balazs, who has been studying turtles for 23 years, said that turtles usually keep clear of surfers, but when collisions occur, the surfboard is usually the only thing damaged. Their shells have tremendous weight and hardness, Balazs said.

He and the veterinarian's staff believe a heavy and sharp object cut the turtle, because the wound is so clean. A surfboard skeg would probably nick or bounce off the shell.

Balazs said the wound is not life-threatening, but the turtle has a far greater problem - tumors in its mouth that are obstructing its breathing.

"The outlook for the turtle is not very bright, not because of the wound . . . the bigger problem is the tumor disease it has," he commented.

Once the wound is cared for, the veterinarian will remove the glottal tumors. Tumors that are surgically removed often return, he said.

The turtle that was injured Thursday may have been weak and spending all of its time on the surface. Balazs said he is surprised the animal didn't beach itself.

Surfers took this wounded green sea turtle to safety at "S-Turns" last week Thursday. It has since been sent to the National Marine Fisheries Service for treatment.  
Photo by Cynthia Bernabe.





AN OLD-FASHIONED KITCHEN GARDEN—ROSEMARY VEREY'S JOY

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## GARDENERS WE LOVE & WHY

*A Home Younger Than Springtime—  
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*When Rainbows Smile in the Sky—  
April's Enchantments*

*An Artist's Rabbit's-Eye View of Nature  
Cooking From Farm and Field*



## READER TO READER



Five sisters celebrate an at-long-last reunion.

We cared for one another. We passed our time in the waiting room sharing private jokes, laughing, swapping stories. After that we planned nothing more extravagant than garage sales, taking in an art festival, and lounging at the pool. It was enough simply to live side by side.

"Do we look alike? We're all sisters!" we told nurses, pharmacists, and waitresses. Everyone agreed we looked nothing at all alike, which seemed funnier each time we heard it.

We sat around playing the "traits" game, deciding who had gotten Mom's eyes or Dad's attention to detail. We passed afternoons remembering when and who did what, sipping raspberry tea on the side porch, and relishing the lack of responsibility. At the end of each day, we climbed the stairs to the private slumber parties of sister roommates. The week was our dream come true: to be in the same place at the same time, with enough peace and quiet to get to know one another again.

Sandy Clark  
Monument, Colorado

### Thelma's Toast

*A friend in a strange land*

Just one week after we graduated from college and two days after we were married, my husband, Jeff, and I packed up and headed west to New Mexico, where he would begin a new job. As we drove, the earth grew redder and the sky bluer, and I, who had lived in the same house all my life and never been west of Philadelphia, felt increasingly displaced.

The afternoon we arrived, I was sitting bewildered amid a confusion of boxes when a horn tooted out front. A tiny woman with a tanned face, white curls, and a squash-blossom necklace waved and smiled at me from her turquoise Volkswagen. "I'm Thelma," she called. "Let's safari."

So began a summer of almost daily adventures—and a 30-year friendship.

Thelma had worked for Jeff's research group, but before that she owned the legendary Sagebrush Inn in Taos, and during World War II she was a captain in the Wacs, and before that she had been a barnstormer in the early days of airplanes. She had just retired at age sixty-five and was eager to share her special world with a young Yankee newcomer. Thelma knew every person and place of interest in northern New Mexico. Wherever we went, she introduced me to painters, writers, potters, flamenco dancers, chefs, gold and uranium miners, weavers, silversmiths, and poets—Hispanic, Native American, Anglo. We hiked the mesas looking for Anasazi caves and petroglyphs. We found fossils in the Jemez Mountains; we swam in the hot springs and picnicked in the tumbledown jail of a ghost town.

Thelma introduced me to sopaipillas, chiles rellenos, chalupas, and other wonderful specialties at the dozens of restaurants in the Santa Fe mountains. Before we feasted, we always clinked our margarita glasses together, and Thelma recited her trademark toast, words that bring back to me the spirit of that summer, Thelma's unquenchable delight in new discoveries and shared joys—"We never had it so good!"

Sue Kelsey Tester  
Hingham, Massachusetts



Jenni Veber, of Wilmington, Delaware, writes us: "When it comes to digging for treasures in junk shops, I'm a true connoisseur. I've found all sorts of things—from a sleigh bed to oak sideboards and Tiffany-style lamps. One day I plunged into a box filled with someone's pictures and postcards dating from the early part of the century. Amid photographs of laughing babies appeared this proud young scout, who captured my imagination immediately. Who was he? I wondered. What did he grow up to become?"



### Hawaiian Vigil

*A helping hand to hatchlings*

When our organic farm on the most southern slope of Mauna Loa in Hawaii becomes an overload for me, I have found a wonderful renewal of spirit in volunteering my time in the service of the ancient Honu'ea—the Hawaiian hawksbill turtle. I pack up my sleeping bag and leave the beauty of this farm, with its ripe fruit to be picked, chickens and ducks to be fed, and three teenagers to be carpoled, and head for the turtle-monitoring program run out of Hawaii Volcanoes National Park.

On my four-night vigils, cares soon fall away as we focus on the work before us: marking nesting holes, helping mother turtles dig if they have wounded flippers, tagging them once they have laid their eggs, counting hatchlings as they emerge. There is nothing more endearing than watching a tiny, fragile hatchling struggling to the sea and saying a silent prayer that somehow she will make it far out to sea and through the next 25 years—before she matures and returns to this very beach to nest.

It is a very large and awesome feeling to participate in this powerful ritual. In countless millenniums before us, the turtles have done quite well on their own. But now that man has become so formidable, the turtles really need our protection. Kamehame is the beach where I volunteer, one of five still used for nesting on the Big Island. One other beach exists on Molokai—and that's all that is left for the hawksbill here in Hawaii.

I return to the farm reconnected to the bigger picture of life, somehow not so hassled by schedules, more able to take things in stride. I keep with me the memory and energy of the turtles moving through the sea, following the rhythms of life that have brought them this far through the passages of time—a passage that has now become my own.

Pearl J. Maxner  
Na'alehu, Hawaii



# Snappy kids book offers many tidbits on turtles



## OCEAN WATCH

By Susan Scott

▲▲▲

I received a treasure in the mail recently, a book called "Sea Turtles — No Na Honu Kai." This little gem, published by the National Marine Sanctuary Program, the Center for Marine Conservation, and the U.S. Fish and Wildlife Service, is written in English and Hawaiian.

Facing each page of the dual text is a sea turtle scene designed to be colored. Or not. I didn't color one page of mine and still enjoyed each and every drawing.

The book, written and illustrated by Francine Jacobs and Mary Beath, is making its way around the world. So far, it has been adapted in Dutch, Spanish, Chinese, Samoan, and now, Hawaiian.

The book deserves such widespread fame; it's well-written, well-drawn, culturally sensitive, interesting and educational.

Here are a few tidbits:

tearing food.

■ Although most land turtles can pull their bodies into their shells when threatened by predators, sea turtles cannot. These marine creatures have adapted other methods of escape, such as bursts of fast swimming and hiding under rocks and ledges.

■ Sea turtles are descendants of dinosaurs. Sea turtle ancestors were giant land turtles that entered the oceans when dinosaurs still roamed the Earth. Although the dinosaurs and giant turtles are long gone, sea turtles have somehow survived.

■ Green sea turtles are brown. They get their name from their green fat, colored by the green seaweed they eat. Greens, known as honu in Hawaii, are the only sea turtles that live entirely on plants.

■ The leatherback turtle's favorite food is the Portuguese man-of-war. These black turtles with leathery shells can weigh up to 2,000 pounds.

■ The Atlantic ridely, one of the world's seven sea turtle species, nests only on one beach on the northeast coast of Mexico.

■ The flatback turtle lays eggs only on the north coast of Australia.



■ Unlike their crocodile and snake relatives, sea turtles have no teeth. This doesn't mean, however, that their mouths are soft or weak. Sea turtles have strong, sharp beaks, efficient for catching or

In this illustration from "Sea Turtles — No Na Honu Kai", a leatherback pursues its favorite meal, a Portuguese man-of-war.



## Star-Bulletin

A-2 □ Monday, March 11, 1996

There is lots more in this little book, which offers an added bonus of being free. There aren't enough copies, however, for each student to have their own.

Sanctuary workers suggest that interested teachers call their nearest Hawaiian Islands Humpback Whale National Marine Sanctuary office for one copy. (Oahu: 541-3184; Maui: 879-2818; Kauai: 335-0555).

The book pages are easy to reproduce on a copy machine for individual lessons on sea turtle biology and ecology.

Why is the whale sanctuary sponsoring a book on sea turtles? Says sanctuary liaison Allen Tom, "One of our mission goals is to educate people about the humpback whale and its habitat.

"The sea turtle needs the same healthy environment as the humpback whale."

The many employees and volunteers who worked hard on this book should be proud of their success in reaching this goal.

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

# Letters

## Seaweed must be controlled

Mahalo to Brian Perry for the seaweed article (Aug. 20). I feel Brian did an excellent job showing the problem, the frustration and the private money being dumped into the bottomless pit of algae cleanup. The closing prognosis as stated by Wendy Wiltse, "I think we're going to be stuck with this algae cleanup problem for some time in the future," is not a prognosis with which I'm willing to settle.

If we've got the money to create the problem, then we must come up with the money to correct the problem. Our system of government allows our society to pay for its needs by special use taxes. Our roads, schools and numerous other services are provided in that way.

If we insist on dumping nitrates into the ocean by means of fertilizers and sewage injection pumps, then it's time we placed a special use tax on the chemicals and levy a tax on each gallon of sewage. When we quit using outhouses, not everyone felt they could afford indoor plumbing. When we start dumping pollutants into the ocean, we need to belly up to the bar and pay the tab.

I also find it interesting that an alarming number of our sea turtles now have tumors growing on them. Are we so naive to think that our algae problem is not related to the sea turtle tumors? I doubt that algae creates tumors, but the nitrates altering our ocean environment are undoubtedly affecting a broad base of our delicate system.

The county seems to think in terms of dollars and cents (not sense). What will happen to our local economy when tourists start electing to go to other paradise islands that have clear water and don't have the stench drifting across their dining tables?

Ron Lando-Brown  
Lahaina



## Quake off Kau coast wakes up residents

VOLCANO, Hawaii — An earthquake of magnitude 4.5 off the Kau coast provided a wake-up call for Big Island residents today.

The quake occurred at 12:11 a.m. and was centered 32 miles southeast of Pahala at a depth of 27 miles, said seismologist Paul Oku-

bo of the Hawaiian Volcano Observatory.

No damages were reported but people from as far as Kona and Hamakua reported feeling the quake, said Hawaii County Civil Defense Administrator Harry Kim.

The temblor was caused by Lōihi, Hawaii's newest volcano still being formed below sea level off the Kau coast, Okubo said.

## Chemical munitions destroyed on Johnston

The Army on Wednesday destroyed two World War I French 75mm chemical munitions on Johnston Atoll.

The action was taken after tests determined the rounds were explosively unstable. The shells were discovered while the Army was re-

## BRIEFS

moving and repacking concrete-encased chemical training sets dating to the 1950s. The shells were believed to have originated in France in the early 1900s. They were transported to a U.S. chemical storage area in Germany in the late 1960s.

### Free meals available to children at parks

Free meals will be available

June 24 to Aug. 6 to children under 19 in some summer programs by the Department of Parks and Recreation.

Meals will be provided at: Palolo Recreation Center, Bereania Community Center, Fern Community Park, Kalakaua District Park, Kalihi Uka Community Park, Kalihi Valley District Park, Lanakila District Park, Wahiawa Recreation Center, Waipahu Rec-

reation Center, Whitmore Community Park, Kahaluu Community Park, Maili Community Park, Makaha Community Park, Nanakuli Recreation Center, Pihiaa Community Park, Waianae District Park, Hauula Community Park, Kahuku Gym, Waialua District Park, Waimanalo Beach Park, Waimanalo District Park.

Reported by Star-Bulletin staff



## MUSIC

# Producer puts kids first

BY JOHN BERGER  
Special to the Star-Bulletin

## REVIEW

For the Sake of the Children By various artists (Keiki), CD

**H**OKU Award-winning record producer Ken Makuakane viewed proceedings at the '96 Legislature and concluded something had to be done. Politicians seemed to put a higher priority on preserving the budget-busting entitlements of special interest groups and campaign contributors than on providing adequate funding for schools, social services, or honoring legal and moral commitments to Hawaiians.

"For the Sake of the Children," a 13-song anthology, is Makuakane's response. Proceeds will help bridge the gap between what is needed by Kaneohe area public schools and what the Legislature provided.

Ku'uipo Kumukahi's original, "Anuenue," and Loyal Garner's recording of "I'll Weave A Lei of Stars" are particularly pretty. The harmonies of Na Leo Pili-mehana power a remake of Basia's "Time and Tide."

Previously released contributions include the Ka'au Crater Boys' Hoku-winning "Opihi Man," Del Beazley's "Akebono, Waimanalo Warrior," and the Robi Kahakalau-Bu La'ia duet, "Pi'i Mai Ka Nalu."

No Makuakane-produced project would be complete without at least one Makuakane composition. 'Elua Kane, the Hawaiian Style Band, Kapena, Tropical Knights, Jeff Rasmussen and Makuakane's own Pandanus



A Hanohano Rooms souvenir.

Club also participated.

Since this is a local-oriented fund-raiser and finances are so "Thumbs Up, Hawai'i!", grim listeners will have to excuse cost-cutting expedients such as synthetic instruments and the absence of song lyrics, translations, artists' bios, and the other information that would normally be expected.

Kokua the keiki. Call No Na Keiki O Kane'ohe at 247-7224 for a copy of the album.

Honu By Brian Robertshaw (Waialua Publishing), CD

**COMPOSER/KEYBOARDIST** Brian Robertshaw has been the low-profile leader of the band in the Sheraton Waikiki's Hanohano Room for years.

He recorded this seven-song disc as part of the adoption of the honu (Pacific green sea turtle) as the beachfront hotel's logo/mascot.

Original instrumentals titled "Endangered Species" and "Honu" are buttressed by instrumental arrangements of popular movie themes.

Robertshaw is a one-man synthetic orchestra, but his Hanohano Room co-stars Jennifer Barber and John Valentine add their voices to an alternate arrangement of "Endangered Species."

The disc makes an attractive souvenir of a visit to the Hanohano Room.



Scott Williams' one-man effort.

Kapila By Scott Williams (RMS Records), CD and cassette

**T**HIS is Scott Williams' one-man follow-up to his impressive if under-appreciated self-titled debut album. He sang all the parts and played the instruments; he was also arranger, mixer, engineer and producer.

Given the preference for remakes displayed by Hawaii's island music radio stations, it's no surprise to find several selections from the pop charts. Williams succeeds in offering fresh perspectives.

"At the Bottom" offers a mature perspective on the ups and downs of a failed relationship and "So Haole" captures another facet of his repertoire.

Various characters (portrayed using different English dialects) convey the message that "haoles" (or malihini of any race) don't have to "akk local" to be accepted. Having respect for island culture is the main thing. This song should be getting rotation on island music radio stations.

Williams is also a slack-key player and student of the Hawaiian language; one selection is an almost note-for-note cover of old-style grassroots Hawaiian music.

There's no question that this ex-mainlander is more interested in perpetuating native Hawaiian music than many local-born recording artists.

John Berger has covered the local music scene since 1976.



**INSIDE**

## Destinations

Looking for adventure and unique attractions?  
Visit your next door neighbor. See Page 13

# LAHAINA

SERVING THE WEST MAUI COMMUNITY FOR MORE THAN 16 YEARS

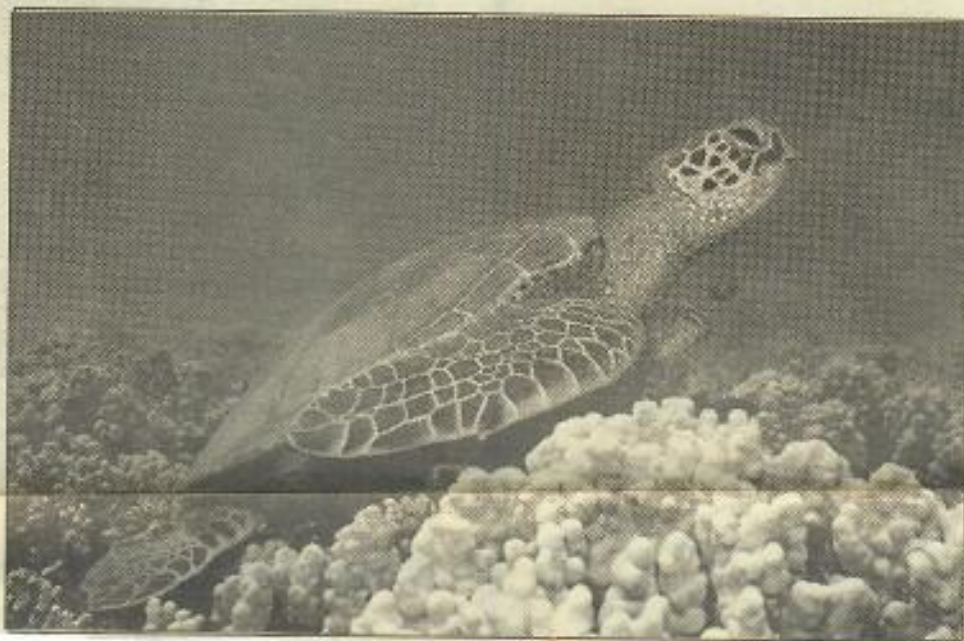
## Epidemic levels of tumors found in green turtles

**Last year, tumors  
found on 96 percent  
of dead Maui turtles**

BY KELLY ARBOR  
STAFF WRITER

Off of Kaanapali Beach, a windsurfer hauled in a dead green sea turtle covered with large tumors. The next morning, May 2, the carcass of a decaying turtle without flippers floated into Lahaina Harbor near the breakwater.

Someone from the Aquatic Resources Division of the state Department of Land and Natural Resources came out that morning to get the two carcasses. For Skippy Hau, aquatic resources specialist, and Brooks Tamaya, the division's information specialist, the dead turtles were not unusual.

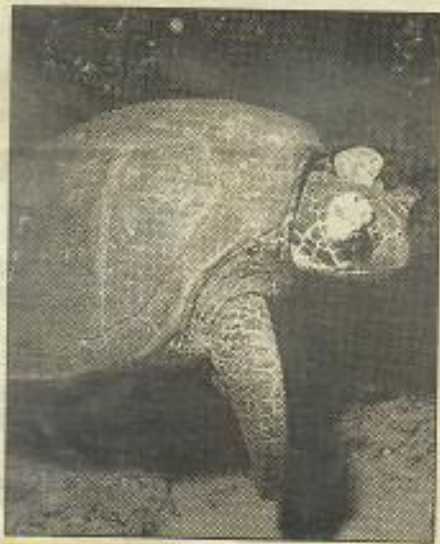




The turtle at Kaanapali weighed about 150 pounds, and was considered too heavy to air ship to Honolulu for a necropsy, said Tamaya. The one at the harbor appeared to have been shark-bitten and was dead too long to yield much useful scientific information.

The two turtles were disposed of at the Central Maui Landfill.

Biologist George Balazs is Hawaii's leading expert on marine turtles. At the Honolulu laboratory of the National Marine Fisheries Service, Balazs



This green turtle, seen near Mala Wharf, has large tumors that make swimming difficult. Photo by Ron Hanson.

## This healthy green turtle was seen near Mala Wharf. Unfortunately, a large number of Maui's turtles are now afflicted with fibropapilloma tumors. Photo by Ron Hanson.

spends almost all of his working hours studying the epidemic of fibropapilloma tumors in green turtles, which are on the list of threatened species.

"In the last 10 to 12 years, it has gone from a rarity to an every day fact of life," Balazs said of the tumors, now considered the greatest threat to the species' survival in Hawaii.

Maui is higher than the rest of the state in the number of afflicted turtles, he said. Last year, 96 percent of the stranded or dead turtles recovered on Maui had the tumors, while Oahu showed 64 percent with tumors.

Scientists in Florida have also seen an alarming increase in the number of green turtles with the same disease.

A herpes virus is the causative agent, but scientists don't yet know how the disease is spread among the sociable green turtles. The tumors are closer to "a wart gone wild" than to a malignant cancer, he said, but they are often deadly just the same.

The tumors frequently occur near the eyes and throat, and as they grow in size they impair the turtle's vision and ability to eat and to breathe. The turtle begins "wasting away," Balazs said, and the disease affects internal organs as well.

Biologists are still concerned about other threats to turtles — litter, for instance, still poses a problem. Last year, an otherwise healthy turtle in Wailea drowned after it got tangled in a canvas bag. And despite laws protecting all of Hawaii's sea turtles,

the green turtle is sometimes taken for food.

But the tumors are now the population's major threat. The increase incidence tumors has led to intensive study of the problem, including a look at environmental factors that may contribute to the degradation of the turtles' habitat.

*See TURTLE on page 3*

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**25**  
cents



# NEWS

Vol. 17 No. 17 May 9 - May 16, 1996



## TURTLES, from page 1

"We are truly getting more tumors on Maui," Balazs said. "It's a reflection of what's happening in the waters. It doesn't sound good, does it?"

Skippy Hau said he's noted an increased number of stranded turtles from West Maui in the last few years.

From 1993 to 1995, Balazs has had reports of 85 strandings from Maui, about one every two weeks. ("Strandings" include both dying and dead turtles). The first four months of 1996, 17 turtles have washed up on Maui — about one a week.

Scientists aren't the only ones who have seen an increase in the number of turtles with tumors.

Ron Hanson, a boat captain and scuba instruc-

Kauai. Once they are a few years old, they make the long swim to the main islands.

Tumors have never been seen in the young turtles, before they leave the French Frigate Shoals. They occur most often once the turtle is 20 to 25 inches long, at about 15 years of age, Balazs said.

The turtles don't reproduce until they reach 25 to 30 years of age, he said.

The population will be considered recovered when 5,000 nesting females are reported each year. Currently, there are about 600 females counted each year in the French Frigate Shoals, he said.

Trying to connect the incidence of the tumors with environmental factors hasn't yielded any

### GREEN TURTLE STRANDINGS 1992 -1995

	Hawaii	Maui	Molokai	Oahu	Kauai	TOTAL
<b>1993</b>						
# of stranded turtles	15	33	0	148	13	209
% with tumors	50%	67%	0	64%	30%	61.8%
<b>1994</b>						
# of stranded turtles	15	24	0	158	9	206
% with tumors	42%	55%	0	61%	14%	56.2%
<b>1995</b>						
# of stranded turtles	13	28	1	141	4	184
% with tumors	11%	96%	0	64%	33%	65.2%

tor, has been taking students to different dive spots around Maui for the last six years.

"When I first started diving on Maui, I didn't see any tumors," he said. "Then it began showing up in Lahaina. After a few years, I began seeing them in Kaunapali. Now they are all over the place."

Hanson has noticed a decrease in underwater visibility, also. "It used to be, on a good day, you could see 60 to 80 feet. Now it's more like 40 feet."

Near Mala Wharf, "over half of the turtles have tumors." Mala's waters have been "considerably dirtier than normal" from increased run-off, Hanson noted.

On Lanai, with exceptionally clear underwater visibility, all the turtles are healthy, he said.

Balazs said the tumors predominantly affect younger turtles, before they have reached sexual maturity. Also, after analyzing 11 years worth of data from 1,100 necropsied turtles, he's found that about 57 percent of those affected by tumors are females. Scientists don't know why the females are more vulnerable, he said.

Nearly all of Hawaii's green turtles start their lives in the French Frigate Shoals, 400 miles northwest of

direct links, he said. They appear mostly in areas near urban development, but there are also many tumored turtles off the largely undeveloped south shore of Molokai, the turtle researcher said.

In 1992, Balazs looked at pesticides and trace heavy metals in the tissues of green turtles. The contaminants were "barely discernible" in both the tumored turtles and a control group of healthy turtles, he said.

Some researchers have tried removing the fibropapillomas, using cryosurgery to freeze the tumors. But the ones near the eyelids, which are the most damaging to the turtles, tend to persist.

The National Marine Fisheries Service laboratory is entering new partnerships with other researchers, Balazs said, to expand investigation of the disease.

Marine biologist Hannah Bernard, education director of the Hawaii Wildlife Fund, said she's alarmed at high rate of tumored turtles.

The new organization will be investigating ways of supporting the research on the turtle, she said. "We really need more information on why these turtles would have an epidemic life-threatening disease," she said. ■





Staff members from the medical examiner's office remove a body found floating off the Kahe Point Power Plant near Hawaiian Electric Beach Park this morning.

BY KEN SAKAMOTO, Star-Bulletin

# Man's nude body found floating off Kahe Point

BY DEBRA BARAYUGA  
Star-Bulletin

A fisherman and his nephew found the body floating in the water off a popular fishing spot across Farrington Highway from the Kahe Point

power plant early today.

The nude body was recovered by police and the medical examiner and is scheduled for an autopsy Tuesday.

A Waianae patrolman tentatively identified the victim as a 47-year-old man who frequents the Waianae area and is known to police.

The case has tentatively been classified as an unattended death.

According to police homicide detective Mark Weise, the body sustained scrapes, possibly from being bounced around in the water.

Police could not initially say whether foul play is suspected.

The body appeared to have been in the water for less than a day, Weise said.

An officer who walked the length of the beach recovered a pair of blue slacks that might have belonged to the victim.

A pair of shorts floating in the water was also recovered.

Two men were fishing when they spotted what appeared to be a seal or a turtle bobbing 30 feet offshore at about 7:15 a.m.



# Award rewards commitment to turtles, zoo

THE MAUI NEWS — Thursday, May 19, 1994 —

WASHINGTON — A former sea turtle fisherman turned botanist was honored here Wednesday for his contribution to saving the endangered sea turtle and creating the Maui Zoological and Botanical Gardens.

Rene Sylva of Paia is one of 15 winners from across the United States selected to receive the 40th annual Chevron-Times Mirror Magazines Conservation Award recognizing natural resource conservation efforts.



**Rene Sylva received the Chevron-Times Mirror Magazines Conservation Award.**

The awards are given in three categories: citizen volunteers, professionals and nonprofit organizations. Sylva was honored at a banquet and received \$2,000 and a bronze plaque acknowledging his achievements in the professional division.

A Native Hawaiian commercial sea turtle fisherman, Sylva abandoned his livelihood because of the decline he saw in the turtle population, according to a news release. He destroyed his nets, gave away all his turtle shells and was the only fisherman to testify for a ban on continued turtle fishing. Sylva and others lobbied successfully to include Hawaii's sea turtles on the Endangered Species List.

After quitting his fishing career, Sylva became a groundskeeper at the zoo when it opened in 1976 and persuaded his boss the zoo should have a botanical garden, the news release says. Using his own resources, he took it upon himself to collect, grow and care for more than 200 native Hawaiian species to create the Maui Zoological and Botanical Gardens.

"Rene Sylva represents the very best example of commitment to the principles upon which the awards program was built and we, at Chevron, are very pleased and proud to recognize his achievements," said James Sullivan, vice chairman of the Chevron Corp.

The conservation awards program was created by the late Ed Zern, a nationally recognized sportsman, humorist, author and former columnist for Field & Stream, a Times Mirror magazine.



## Another sea turtle found dead

It's happened again. The killing continues. On May 13 another sea turtle was found dead at Kiholo Bay, the victim of drowning in a gillnet. Just three weeks earlier, on April 24, the butchered remains of two small turtles were discovered along the shoreline at this same location. And, in February, the cut-up parts of a turtle were found discarded into Kiholo's shallow waters.

Big Island residents can assist in preventing crimes like these from happening. If you see suspicious activity, or have information about the recent killing of turtles at Kiholo Bay, please call Federal Agents in Honolulu at 541-2727, State Conservation Officers at 933-4291 (in Hilo) and 323-3141 (in Kona), or dial 0 and ask the operator for Enterprise 5469.

George H. Balazs  
Honolulu



# Letters

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## Stop slaughter

**Editor:**

On April 24, the recently butchered remains of two small sea turtles were found at Kiholo Bay. Another slaughtered turtle was reported there just three months ago.

If anyone has information that can help apprehend the person(s) responsible for these crimes, please call State Conservation Officers at 323-3141 (Kona), 933-4291 (Hilo), or Federal Agents in Honolulu at 541-2727.

Something urgently needs to be done to stop these acts of violence against Hawaii's wildlife.

**George H. Balazs**  
Honolulu



Hawaii Tribune - Herald; Monday, May 9, 1964—9

## **Turtles slaughtered**

On Sunday, April 24, the recently butchered remains of two small sea turtles were found at Kiholo Bay in North Kona. Another slaughtered turtle was reported at this same location just three months ago. If you have any information that can help apprehend the person(s) responsible for these crimes, please call state conservation officers at 933-4291 (Hilo), 323-3141 (Kona), or Federal agents in Honolulu at 541-2727.

**George H. Balazs**  
Honolulu



THE SECOND

TURTLE TAGGERS/

B-1 The Kauai Tin. ., June 8, 1994

Front

Section  
B

*Volunteer project to  
yield needed data*



By SHELLY ZECK

**POIPU** — Over the next six months, Poipu beach-goers may notice some divers nearshore busily catching and lifting green sea turtles onto a small boat. This group is not a band of poachers or radical conservationists — they're "turtle taggers."

The National Fish and Wildlife Service, with volunteer help from the local Kauai Chapter of The Ocean Recreation Council of Hawaii (TORCH), began an aggressive green sea turtle tagging campaign and long-term study of the species in Kauai waters early last month.

The first two Poipu tagging expeditions in May yielded 17 green sea turtles. Each trip lasted approximately three to four hours with the six member crew diving and hand capturing turtles.

Two-man teams take turns diving into the known habitat of the green sea turtle at Sheraton Caverns in Poipu. Once they locate a turtle, they grab onto the turtle's front flippers and guide it to the surface.

Ron Miratello, president of the Kauai TORCH chapter and owner of Aquatic Adventures, said bringing a giant sea turtle to the surface is no easy task, even for a seasoned diver like himself.

"They're big and very powerful," he said. "It's not easy bringing one of these guys to the surface, especially when the turtle is non-cooperative."

Once at the surface, the air-breathing reptile is lifted onto the boat where small, numbered tags are placed through the tough flipper skin close to the main body. Each turtle is measured, weighed and visually examined for tumors, leaches and other medical problems.

The tag number and information are recorded into a log. The log becomes a point of reference for the biologists who will be recapturing tagged turtles and comparing growth rates, capture locations and medical conditions over a period of time.

George Balazs, zoologist and leader for the Marine Turtle Research division of the Fish and Wildlife Service in Hawaii, said the procedure for capturing and tagging is not as "tough" on the turtles as it sounds.

"Tagging a turtle is like getting your ears pierced," he said. "Just like humans, the piercing stings a little, but goes away."

Although the capturing and handling of sea turtles may look "rough" to onlookers (the heavy, awkward reptiles are difficult to get aboard), Balazs said the whole ordeal is not traumatizing and the turtles seem to forget the whole experience.

"We've had turtles swim right back up to the divers following the tagging," Balazs said. "The tagging does not make them aggressive towards humans."

Future expeditions in Kauai waters will include taking a small blood sample from the turtles, said Balazs. The blood will be sent to a laboratory, where other green sea turtle blood samples from around the world are being collected, to compare DNA fingerprints. This type of information, gathered and compared over time, will help the scientists learn more about the migration patterns by disseminating various gene pools of the species.

"There is a strong working hypothesis that most all green sea turtles in the Hawaiian Islands are hatched at and migrate from French Frigate Shoals," he said. "We want to know if other turtles from further out in the Pacific are migrating to the Hawaiian Islands or French Frigate Shoals and taking up residency."

He said the DNA finger printing by blood test will either prove or disprove the theory. He suggests that some of the turtles may travel as far as 2,000 miles from the Marshall Islands to reach Hawaiian waters for feeding and possibly breeding, but he





*George Balazs*



*Ron Miratello*

***"They're big and very powerful. It's not easy bringing one of these guys to the surface, especially when the turtle is non-cooperative."***

*Ron Miratello*

said without concrete data on this species it's hard to say for sure.

Don Heacock, Kauai's state marine biologist, said the long-term turtle tagging project here will provide needed basic information.

"We're in bad need of baseline data," said Heacock, who studies and manages the gamut of marine species around Kauai. "With TORCH's cooperation, this partnership of gathering information on turtles is really a first for Kauai. We've been able to tag more turtles in one month than I've been able to tag in 13 years."

TORCH members and Heacock, under the direct supervision of Balazs, are scheduled to participate in monthly tagging expeditions in the Poipu area. The green sea turtle is listed on the national registry of "threatened species" and handling and tagging of the animals requires a special permit, held by Balazs, from the federal government.

Balazs, who has been working with green sea turtles for more than 21 years, said he hopes to tag as many turtles as possible at the onset of this project that is expected to last at least 10 years. The sooner turtles are tagged and initial information col-

lected, he said, the sooner recapturing and information comparison can begin.

"We're trying to gather comprehensive data on growth rates, food sources, movements, health status, habitat requirements and population trends," said Balazs. Although a lot of information on green sea turtle populations worldwide already exists, he said this project is the first of its kind to study Kauai's population in depth.

"The TORCH involvement is what's making this project happen," he said. "Because of the limitations on (U.S. Fish and Wildlife) resources, we've never had a repetitive study site on Kauai until now."

Prior to the initial tagging expeditions, a visual survey of off-shore waters was conducted by Heacock, compliments of Ohana Helicopters.

Heacock said 237 turtles were spotted from the air, flying 1,000 feet offshore.

"We saw the turtles in all places known for turtle populations and other locations, such as one on the North Shore, brought more turtles than we originally thought," he said.

Sheraton Caverns was selected as the initial survey site for the tagging project, Heacock said, because the





*GETTING ON BOARD is tricky, for a turtle. The air-breathing reptile must be lifted by all hands on deck. But they're tough, and don't seem to mind the handling.*

*SEA Grant Extension Service/Kauai Times photo*









**ON BOARD**, turtles are tagged, weighed and measured, then released. State zoologist Balazs says the tagging process is much like getting your ears pierced. The size of some of the turtles requires two men to handle the them.

site is easily accessible from Port Allen.

The migratory, foraging and breeding information collected at the Sheraton Caverns, Balazs said, will increase the biologist's ability to manage the species and its required habitat areas. He said that he hopes the project on Kauai will help biologists preserve a species that is often the highlight of a snorkel trip.

"The experience of snorkeling or scuba diving and seeing turtles in

their natural habitat is one of the greater joys of a Hawaiian vacation," said Balazs.

Naturally, after that type of encounter — coming face to face with a gentle 500-pound animal with a diameter of 1 to 3 feet — the person may want to learn more about the species, he said.

"Then we can come back with the scientific side, from the data we've collected, and answer all their ques-

*SEA Grant Extension Service/Kauai Times photo*

tions about the species: what they eat, where they live, how they breed, where they migrate from, etc.," he said. "This makes the dive an extremely well-rounded experience for the people that enjoy seeing the turtles. It's very comparable to the humpback whale/visitor industry connection."

The turtle tagger's next expedition is tentatively scheduled for this weekend at Sheraton Caverns.



February 94

# North Shore- Hale'iwa Harbor

by Capt. Greg Matney

Could this mystery animal photographed with Ka'ena Point in the background be the ill-fated leatherback last seen off Mokapu Pt.?



This 500-plus-lb leatherback (mauled by sharks) held a lot of mahimahi for Hale'iwa anglers. After a two and a half week absence, the leatherback was found again near Mokapu Point



■ You can lead your boat to aku, but you can't make them bite. There were aku piles everywhere off the North Shore of O'ahu, but the fish just didn't seem to want to cooperate. All of the fishermen were talking about the large piles of medium to large skipjack tuna that they found but could not catch. The standard tricks of going down to extremely light tackle, as small as 12-lb test, didn't seem to be working. We heard the same question over and over, "Why?" If any of us knew the answer, we'd be driving a Cadillac. So, we relied on our resident billfish populations for most of our action and income, and the FADs became our main focal points.

On the way to the buoys, you'll often have a "rat attack" 3 to 4 miles out of the harbor. A "rat attack" is a barrage of strikes from a small pack of striped marlin. These marlin have been ranging from 35 to 100 lbs and are very hard to hook. They seem to have a good time knocking down any lines that are set up. Sometimes, this action will go on for an hour or so. Pretty soon a fisherman can start feeling like a pin boy at Leeward Bowl—set 'em up, and they knock 'em down. You could lose a lot of money in rubber bands like that.

But there is still that occasional nice, big blue marlin that gets caught. That's the fish that always makes you load up the ice, top off the fuel tanks and go right back out. Capt. Rusty Spencer of *KUULOA KAI* Charters caught one of those "gotta get back out there" marlin during the last week of 1993. Here's Rusty to tell you about it.



Capt. Rusty Spencer stands with his 300-lb "longnose shark."



## Spencer for Hire

"It was one of those usual days. I got up at around 6 that morning and picked up my charter clients, two fellows from Australia named Vince and Tim. They were nice guys and had some experience fishing, so it seemed like the day was going to go well. We stopped by the ice house, picked up 200 lbs of ice and went to the boat. After loading our gear, ice, bait and lunches, we headed for the II-buoy. The weatherman was calling for 15- to 20-mph trade winds, but the wind seemed to reach 20 mph right off the bat.

"I got to the buoy and did my regular routine—reeling in all of the big lures after the first pass [if nothing takes off], then starting to jig for a live bait. The action was really slow; we weren't even hooking any of the small 'ahi that had been there lately. We eventually caught two small aku, bridled them and ran them back. We didn't have any takers on our baits, and they eventually died. We ended up just dragging around the dead aku for 'slap bait,' hoping for anything to happen.

"My passengers were still jigging when one of the dead aku took off. Tim looked at me and said it was a shark that had the bait, so I said, 'Just keep jigging,' figuring I'd let the shark have the bait. The line kept going out, then stopping. Going and stopping like a shark will do. After my 14/0 [reel] was half-empty, I decided it was time to get the line back, so I headed the *KUULOLOA KAI* straight up the line, directly at the fish. The swells were pushing us off a little, so by the time I got about 40 yards from our shark, we were parallel to it. Then our shark broke water. That was the first shark I'd ever seen with two sharp fins and a long bill!

"The whole scene changed from that point. It went from 'Oh, darn, it's just a shark,' to 'Put that bang stick away. Grab those gloves, Tim. You yank and, Vince, you crank.' I got the boat turned around, and the battle was on. We were able to keep the fish on the surface, so the fight only lasted a half-hour. When it came to the transom, we were able to sink a fixed gaff on the first shot to hold it; then a meat hook went in."

## Leatherback Turtle Update

In the December 1993 issue of *HFN*, I wrote about a very large leatherback turtle that had been wounded by sharks. I told how the *KANA NUI*, *DIAMOND S* and *GRACE K* had harvested almost a ton of mahimahi from around the turtle. I also mentioned that the wounded animal was very, very large, looking like a floating Volkswagen and drifting from the North Shore toward the Kane'ohe side of O'ahu.

Approximately two and a half weeks later, the turtle was found again by fishermen. By all accounts it was the same wounded animal. Russ Miya from the **National Marine Fisheries Service** called the *HFN* office to report that a fisherman named Scott had called their office from a cellular boat phone and

had described the same turtle. Scott and his crew were fishing near Mokapu Point when they found it. They managed to pick up a few mahimahi from around it, but it didn't have as much fish with it as it had on the North Shore.

That's where any good news ended. While Scott and his crew were hanging around the turtle, they actually saw a Galapagos shark attack the wounded leatherback and decapitate it. The shark finally put the turtle out of its misery. Initial shark attacks had taken off the turtle's left front flipper and shoulder. The poor creature was left to drift with the current and surely would have died from starvation, if nothing else. As cruel as it seems, nature always seems to take care of its own.

If you have seen this turtle while out fishing, please contact Russ with the NMFS Turtle Research Division at **943-1276**. **continued...**



## HAWAII FISHING NEWS

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**THE VOICE OF HAWAII'S FISHERMAN**

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# Holoholo Style

For Holoholo letters, with photos, received during the month of February, this month's prize is the 6" Mold Craft squid (clear with pink center) featured in this month's Offshore Tips article on catching aku and shibi on page 4

...our way of saying thanks for sharing your catch!

... Mana pa'a, Chuck  
Send to: P.O. Box 25413, Honolulu, Hawaii 96825



Hey Chuck,

Hoi Hoi Ho! That's what we say on the Hau'oli Ola on days like this. It was a wet, rainy day off the Puna Coast when we saw a marlin on the surface. It turned out to be two marlin and we got hit with a double catch.



Aloha Chuck and Friends,

This is a photo of my brother Lennit Bell. This nice size marlin was caught aboard the SAMMY LU II owned by the Unger Boys of Kona.



Howzit Chuck,

This 10-lb auaaua that my daughter Ashley is holding was caught by my son Lyndon who is standing in the back. He caught this fighter at Kakaako Waterfront Park while just fooling around. He used a Penn 850SS reel on a 7-foot Daiwa pole and half of a hahalaia for bait. What a surprise when we heard the ratchet screaming and saw the pole doubled over.

This was Lyndon's first big fish and he brought it in like a pro.

Mahaio,  
Rocky Uyehara



# Massive fish net washes

## Coral, suspected remains of rare turtle tangled in discarded mess

By BROOK LOOPE  
Staff Writer

WAIEHU — "These nets kill just as well when they're not hooked up to a boat," said Greg Kaufman, president of the Pacific Whale Foundation, as he untangled debris from a massive jumble of nets that washed up Friday on the beach fronting the eighth fairway at the Waiehu Golf Course.

Members of the groundskeeping crew found the nets early Friday morning and, concerned they might get washed back out to sea, Richard Okada called the Pacific Whale Foundation.

"This right here is a \$10,000 fine," Kaufman said, holding up a fist-sized piece of

colorful coral he claims may have taken 10 years to grow to that size. State and federal laws protect most of the marine life caught in the mass of nets, he said.

The most tragic find in the tangle of plastic was the skeleton of what Kaufman thinks is a leatherback turtle, one of the most endangered turtle species in the world. He estimated the turtle could have been nearly 50 years old and had probably been dead for about a year.

"Leatherback turtles have been around longer than the dinosaurs," Kaufman said, pulling another bone from the nets.

When nets get tangled as they are being hauled in, fishermen often cut the knotted parts off. According to Kaufman, these

masses of nets and ropes stay suspended 10 to 12 feet below the surface, collecting other pieces of net and rope as well as garbage such as beer crates, fishing baskets and lobster pots.

Small fish like to congregate beneath these floating masses, attracting larger fish. The food source entices animals such as sea turtles and seals, which often get entangled in the nets and die.

Since they are protected by both federal and state law, killing a leatherback turtle can mean a \$20,000 fine and up to a year in jail. The 1990 Marpole Act levels severe penalties for dumping in ocean waters and was created to limit the amount of marine pollution by plastics.

Identifying the culprit can be next to impossible when the tangle of driftnets, cargo nets, fishing nets, ropes and household garbage has been floating for years.

According to Kaufman, a discussion is

THE MAUI NEWS — Sunday, June 26, 1994 — A3

## ashore in Waiehu

taking place about developing "signature" ropes for each boat to make it easier to trace ownership.

But that won't address another aspect of the problem.

"This stuff just doesn't degrade," said Kaufman, hacking at some netting with a pocket knife.

In the 1940s, companies changed from using nets and ropes made of natural fibers to those made of plastics. Many plastics have been floating around the ocean for 30 to 40 years.

Anne Rillero, also with the Pacific Whale Foundation, says trash on the beaches is a problem all over Hawaii. At their last annual beach cleanup, volunteers with the Pacific Whale Foundation recovered 6 tons of trash from the Kahoolawe shore, a common place for nets to be found.

The one found in Waiehu, which Kaufman

estimates would stretch for nearly two miles if untangled, is small when compared with some the Pacific Whale Foundation has seen near Kahoolawe.

"Who knows what's out there," Kaufman said, indicating the reef extending out from the beach. "This is just the one that made it in."

Responsibility for the removal of the net remains unclear. Rillero and Kaufman plan to contact both the Department of Land and Natural Resources and the Department of Health as well as some other community organizations to help with the massive removal effort.

They urged the public to help keep beaches clean of debris by making sure they take all garbage, especially plastics, with them when they leave and refrain from dumping trash, including fishing nets and line, over the sides of boats.



## Tangle of driftnet washes ashore

Greg Kaulman of the Pacific Whale Foundation examines the skeleton of a turtle found tangled in a mass of nets and ropes that washed ashore Friday near the Waiehu Golf Course. See PAGE A3, for more on the net.



6/26/94  
THE MAUI NEWS  
The Maui News  
EUGENE TANNER photo



# LETTERS TO THE EDITOR

A-6 Kauai Times, June 22, 1994

## Green sea turtle plan is working

Many thanks to Shelly Zeck for her excellent article (6/8/94) describing our newly initiated Hawaiian honu (green sea turtle) tagging project off Poipu. Readers of the *Kauai Times* will now have a much better understanding of the importance of this difficult but rewarding work on behalf of an animal struggling to recover from past decades of over-exploitation.

As mentioned in the article, the study will require several years to complete due to the special biological characteristics of green sea turtles (i.e. vegetarian diet, slow grow, delayed sexual maturity, lengthy reproductive migrations).

The outstanding involvement of The Ocean Recreation Council of Hawaii (Kauai's TORCH chapter) and the State of Hawaii's Division of Aquatic Resources guarantee the ultimate success of this long-term project.

The Honolulu Laboratory of the National Marine Fisheries Service is the lead agency for this research.

The article incorrectly identified me as being affiliated with another federal agency.

Three 1-day expeditions have now been accomplished during the past two months off Kauai's south shore.

This has resulted in the tagging of 26 Hawaiian Honu.

Unfortunately, several of these animals were afflicted with fibropapillomatosis, a debilitating and often fatal disease of sea turtles. The cause of this illness is currently unknown, but work is underway to provide answers.

During this initial work on Kauai, we are especially grateful to Mr. Rick Daley of Adventures West for the use of his boat, time and talents generously contributed to make the work successful and safe.

**George Balazs**

*Zoologist and Leader,  
Marine Turtle  
Research Program  
Honolulu Laboratory  
National Marine  
Fisheries Service*



# EDITORIALS

The Honolulu Advertiser

Thursday, July 7, 1994

## Marine Patrol

### One officer is not enough!

Something's wrong when only one Marine Patrol officer is patrolling the entire south shore of Oahu on the Fourth of July.

There can't be much disagreement on that.

Now, the question is whether that incredible short-staffing is:

- Because the Marine Patrol has too few officers, or
- Because the few they have were not scheduled properly on a three-day holiday weekend, some of the busiest water sports days of the year. If you only have a small staff — and we agree when the Marine Patrol emphatically says it does — then you schedule that staff with a priority on the busiest times.

That's not to say that twice — or 10 times — as many officers would necessarily have saved the life of a swimmer who died after being struck by the propeller of a speed boat. It's a big ocean. Violations of

the rules on power boats off Waikiki have few witnesses and leave no traces.

Authorities are still trying to learn just where the accident occurred. Even stringent enforcement might not have protected the swimmer.

Total safety cannot be assured on the open ocean — any more than there can always be a cop on land at hand when one is needed.

But the waters off Waikiki are heavily used by local residents — as well, of course, as by millions of tourists who may be in greater danger because of inexperience and unfamiliarity.

Everyone would have a greater sense of security to know that Marine Patrol staffing is at least reasonably adequate to the task and that they are being scheduled when they can do the most good.





Photo by Bob Fewell

## Turtles go free

Don Dickens, general manager of the Mauna Lani Bay Hotel, and Los Angeles Rams center Bern Brostek, right, celebrated the Fourth of July by giving independence to two of 10 Hawaiian green sea turtles. The hotel provides a temporary home for the young sea turtles. Every July 4, selected turtles are released into the ocean.





## Untangling Our Marine Resources at Kiholo Bay

■ Picturesque Kiholo Bay in North Kona on the Big Island has been known for decades as a special place favored by Hawaiian sea turtles. Young turtles are attracted to this site to feed on *limu* and to sleep underwater along the sheltered shoreline.

Kiholo is also recognized as an important nursery grounds for fish. Unfortunately, the abundance of fish appears to be much less now than it was 21 years ago when I first started visiting and snorkeling at Kiholo. It is my belief that the reason for this decline is the increased use of gill nets, which commonly block off portions of the bay when set from point to point. Too many fish, especially little fish, have been gilled and killed too often over the years.

## READER'S PAGE

### Mail Buoy



Gill nets and sea turtles don't mix at Kiholo Bay. The entanglement, forced submergence and drowning of turtles in gill nets at Kiholo is now a regular occurrence. Some of the young turtles recently found dead at Kiholo appear to have been intentionally killed. Over the past three months, four turtles are known to have died by human hands at Kiholo. Three of them were butchered, and their remains were left on shore or discarded into shallow water.

Hawaii's fishermen can be of assistance to our paid professional law enforcement officials who are attempting to apprehend violators and prevent crimes like the ones happening at Kiholo. If you see suspicious activity, or have information about the killing of turtles at Kiholo Bay or elsewhere in Hawaii, please call federal agents in Honolulu at 541-2727, or state DOCARE officers at 323-3141 (in Kona); 933-4291 (in Hilo); 243-5414 (on Maui); 241-3521 (on Kauai); 567-6618 (on Molokai); 565-6688 (on Lanai); or dial 0 from any neighbor island and ask the operator for "Enterprise 5469."

The long-term conservation of fish, turtles and other marine resources at small but important sites like Kiholo Bay will ultimately depend in part upon the exclusion or severe limitation of gill nets. Designating Kiholo as a Fishery Management Area would be a reasonable first step to the process. Hopefully some far-sighted individuals and/or organizations on the Big Island will pursue this worthy goal.

... **George Balazs**



## Big Isle draws astronomers for heavenly event

**A**CCORDING to Michael A'Hearn of the Hubble Telescope project, Hawaii will have a great view of "the scientific event of the century." Between July 16 and 22, astronomers from all over the world will congregate on the Big Isle in anticipation of witnessing a luckless comet's collision with Jupiter. The Kona Village Resort has already lined up world-renowned astronomical artist Jon Lomberg to present "JupiterWatch," a star-gazing and educational program for guests. Lomberg has astronomical displays in major museums and has been commissioned by NASA for posters and displays. He also won an Emmy award as art director for science documentaries on PBS and did the illustrations for Carl Sagan's "Cosmos." Lomberg will conduct his informal "JupiterWatch" at the Kona Village on July 7, 14, 18, 19, 20 and 28...



### HAWAII

By Dave Donnelly

**OPEN** mouth, insert foot department: After reading a story on the air about a man who killed himself playing "Russian Roulette," Linda Coble ad libbed, "It blows my mind how anyone could be that dumb" ... You often hear of people in Toyotas with a "Buy American" bumper sticker, but now the shoe's on the other foot. I found myself behind a Nippon Catering truck. It was a GMC from General Motors ... Charlita Mahoe, exec director of Nana-kuli Housing Services and mother of year-old twins, used the occasion of their one-year luau to announce her candidacy for the state House seat to be vacated by Rep. Henry Peters. In addition to Hawaiian food, the dessert of choice was ScooZee's "Tita I Mis Su" (Tiramisu, get it?) ...

BACK in town and getting ready to do

his standard four renditions of the national anthem on the Fourth of July is Guido Salmaggi. The renditions range from the Perry & Price show at 7:05 a.m. to the MacFarland Regatta at 8:30 a.m. at the Outrigger Canoe Club, to 6 p.m. at the Hyatt Regency's Great Hall, and ending at Pearl Harbor's annual July 4 celebration and fireworks display at 9 p.m. ...

### Local boy makes good

**BORN** and raised on Oahu, Scott Allan is launching a singing career with the release of a new album called "Eruption." His mentor is none other than Mark Kamins, who discovered Madonna and produced records for her, Debbie Gibson, Tommy Page and David Byrne of Talking Heads to name but a few. Joining him in producing young Allan's record is David Sussman, who has worked with a huge list of Grammy winning performers. Besides his record work, Allan also acts. He had a part in "Scenes From A Mall" with Woody Allen and Bette Midler. "On the set," Scott recalls, "she always referred to us as the Aiea kids." We'll keep an eye out and see if "Eruption" erupts on the record charts ...

THERE'LL be an after-race party for



Scott Allan



Sen. Dan Akaka

canoe paddlers this Fourth of July at Malia's Grill in Waikiki, sponsored by Danceworks' Simeon Den. Den, who paddled for Hui Nalu Canoe Club throughout the '80s, will be serving complimentary pupus and live Hawaiian entertainment to those attending the Walter MacFarland Regatta ... Meanwhile, Duke's Canoe Club is holding "Concerts on the Beach" from 4 to 6 p.m. with Mana'o Company performing tomorrow and Brother Noland on Sunday. Noland also performs Monday from 2 to 5 p.m. ... Otis Thorpe of the world champion Houston Rockets will appear tomorrow at

Merle Harmon's Fan Fair in Pearlridge Center Phase I. He'll sign autographs for isle fans from 3 to 5 p.m. ...

### Independence Day

**MONDAY** isn't just the Fourth of July, Independence Day for all of us. It's also the fifth annual Turtle Independence Day at the Mauna Lani Resort. Once again maturing Hawaiian green turtles will be guided on the road to freedom, this time by a couple of widely known localites, Sen. Dan Akaka, a familiar face on Turtle Independence Day, and Bern Brostek, the Iolani grad now a starter for the L.A. Rams, will be among the releasers this year ... And finally, Marian Turney of Child & Family Service said getting the 10-member Roger Compton family — Oahu's Family of the Year — to ride in Monday's Kailua Fourth of July Parade was a snap. But it took Mike McKenna of Mike McKenna's Windward Ford to come up with a Ford F-150 truck big enough to carry them all ...

Dave Donnelly has been writing on happenings in Hawaii for the Star-Bulletin since 1968. His columns run Monday through Friday.



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## Saving the whales

**T**HERE are apparently more humpback whales visiting Hawaiian waters now than there were 20 years ago, which would seem to indicate that the efforts to protect the endangered species are working. Whales are also being sighted in more places in Hawaii. They used to be seen mainly around Maui, Molokai, Lanai and Kahoolawe. Recently there have been more sightings off Oahu, the Kona district of the Big Island, and in waters between Kauai and Niihau.

For this reason, federal officials are proposing to expand the Hawaiian Islands Humpback Whale National Marine Sanctuary, which now primarily covers waters off Maui, Molokai and Lanai, to include most of the state. This makes sense. If the whales are in many areas, they should be protected there, not just around Maui.

Paul Forestell, research director for the Pacific Whale Foundation, participated in two aerial studies of whales in Hawaiian waters since 1990. He thinks the number of humpbacks here has more than tripled in the last 20 years, from 800 in 1976 to 2,500 today. That's heartening news for whale fans.

One of the ways to help the whale population continue to grow is to increase the size of the whale sanctuary. Of course this would mean more restrictions on fishermen, commercial whale watchers, canoe paddlers and other water people. But reasonable restrictions seem necessary to protect the whales. As more and more people realize, they are an important commercial asset to Hawaii as well as a unique expression of nature's magnificence.



# Waikiki's green turtle population is growing

**I**N 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 monitor-



## OCEAN WATCH

By Susan Scott

2/22/93 A2

HONOLULU STAR BULLETIN

ing.

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 238-4544 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.



# State launches hunt for killers of turtles

Associated Press

State conservation officers are seeking information about the recent killing of green sea turtles in the Hilo and Puna districts of the Big Island.

"We are concerned that people are killing green sea turtles, and we want to find out who is doing it," said Lenny Terlep, Hawaii District chief of the Department of Land and Natural Resources' Division of Conservation and Resources Enforcement.

He said the most recent incident was Jan. 31 when conservation enforcement officers

found a turtle hooked on a flagline off the Puna coast. The officers removed the hook and released the dying turtle.

Terlep said it is not known if the turtle was accidentally or intentionally hooked.

Two turtles were found slaughtered on a Keaukaha Beach in the Hilo area on Jan. 22, he said, and another turtle was found swimming in the Wailuku River with an arrow through its neck last August.

Green sea turtles are listed as a "threatened" species and persons found guilty of killing or harming them are subject to a possible \$10,000 fine.



Dear Chuck,

I read your last issue of the HFN "Mail Buoy" about the illegal taking of fish and other marine life, that was written by a concerned Capt. Pro Calma. In a nutshell, anyone seeing a violation (for example, lay netting 'oama, or spearing a turtle) can call the Honolulu Police Department and report it. Police can enforce the laws of the Hawaii Revised Statutes along with the laws and regulations of the Department of Land and Natural Resources. So, violators out there should take note of the laws and rules.

Come on, everyone. Let's take care and preserve our resources so that they will be around for generations to enjoy!

Sincerely,  
An Officer of Hawai'i's Finest



## Letters

# Drugs, trees, tourism, sharks

### More turtles mean more sharks

There is, in mathematics, a system of differential equations called the predator-prey equations. (See, for example, chapter 12 of "Differential Equations, Dynamical Systems, and Linear Algebra," by Morris Hirsch and Steven Smale.)

These equations determine a mathematical model for the variation in time of the population of a predator-prey pair (for example tiger sharks and sea turtles). The model predicts that the population of both predator and prey will vary periodically in time.

It is unclear how accurate the model is when applied to the populations of tiger sharks and sea turtles. There is little precise information available about the population of either species.

But windsurfers in Kailua believe that there has been a recent (over the past five or 10 years) increase in the sea turtle population and I have read in various places that the population of tiger sharks is increasing.

The frightening thing is that the model predicts that the tiger shark population will continue to increase until the sea turtle population stabilizes and even will continue to increase for a while as the sea turtle population decreases.

If the prey-predator model is applicable here we may be in for a further increase in the tiger shark population and a consequent increase in the frequency of shark attacks on surfers.

HUGH M. HILDEN  
Professor  
Mathematics Department  
University of Hawaii



## POLICE/FIRE

### Police bust four men cooking green sea turtle

WAILUKU — Four homeless men were arrested at a Kahului beach last night after they were found cooking a green sea turtle, Maui police said.

State conservation officers, acting on a tip, arrested the men and charged them with possession of a threatened species at about 6:15 p.m. Police said the men found the green sea turtle near the Maui Electric power plant, where warm waters attract the turtles.

Robert M. Madden, 29; Calvin W. Lawson, 34; Thomas R. Kelly, 35; and Jamy McCoy, 32, were to appear today in Wailuku District Court. Each was being held in lieu of \$200 bail, police said.

### Fight between neighbors leads to stabbing, arrests

Police arrested three Wahiawa men and a 17-year-old youth last night for questioning after a man was stabbed in the chest and a woman punched in the face during a melee on Ihiihi Avenue in Whitmore Village.

The fight between neighbors erupted from a dispute between a 30-year-old man and the stabbing victim, 21, about 8:20 p.m.

During the melee, a 33-year-old man allegedly held the victim while the 30-year-old man stabbed

him. The victim was taken to Queen's Hospital, where he was listed today in guarded condition.

A 57-year-old woman suffered a broken nose when she was punched in the face. Two teenagers, 18 and 17, were arrested for the alleged assault.

### In other news . . .

■ A 23-year-old man suffered critical head and chest injuries about 8:35 p.m. yesterday when his pickup truck struck a utility pole and then a chain link fence and ironwood tree on Haleiwa Road, south of Naliumu Road.

■ A 59-year-old visitor from Salt Lake City drowned while he swam off Wailua Beach on Kauai Saturday morning, police said.

The man was swimming off the beach after 11 a.m. and was seen floating 150 yards from shore at 11:30 a.m.

■ Two men filed second-degree assault complaints against each other after both were injured in a fight about 2:45 a.m. today that started out between two women at Smith and Pauahi streets.

■ The Honolulu Fire Department's Hazardous Material Unit responded to an ammonia leak about 1:30 a.m. today at Meadow Gold Dairies' ice cream plant at Keeaumoku and Young streets. The leak was stopped with no injuries.

*Reported by Star-Bulletin staff*



## Fuel spill near Rose Atoll is worse than estimated

**R**EMEMBER the long-line fishing boat brimming with diesel fuel that recently wrecked near Rose Atoll? Well, Honolulu biologists who have been keeping an eye on this wildlife refuge are discovering far more damage from the spilled fuel than they originally estimated.

American-owned Rose Atoll near American Samoa is a special place. The smallest atoll in the world, Rose is almost completely square. And although it was named for the wife of some explorer, the place is indeed pink, the color of the coralline algae making up most of the surrounding reef.

In fact, almost everything at Rose Atoll is pink. I haven't been there but Beth Flint, wildlife biologist for the U.S. Fish and Wildlife Service, has. She told me that even the octopuses there have a pink tinge.

But Rose has more to it than being picturesque. It's also one of the few near-pristine wildlife refuges in the South Pacific.

Two tiny islands lie within the atoll, Rose Island and Sand Island. Sand Island is low-lying without much vegetation but Rose Island still has rare native trees growing on it.

These trees, called *Pisonia*, are tropical trees that thrive in guano-rich soil. Tree-nesting seabirds such as red-footed boobies, black noddies and two kinds of frigate birds, love these trees which provide nesting branches.

Researchers believe *Pisonia* were once prevalent on Laysan but today, only one living tree remains in the Hawaiian chain, that on Lisianski. Since these are two-sexed trees, meaning you need a male and a female to reproduce, the Lisianski tree may be the last of its kind in Hawaii.

**A**NYWAY, the *Pisonia* trees are one of the reasons Rose Atoll is so precious. Another is the number of sea turtles nesting there. Researchers have recently placed satellite tags on three turtles from Rose to monitor where these South Pacific turtles go during their foraging time.

Researchers also have spent considerable time and money recently eradicating rats on the islands. Without the alien rats, biologists hope ground-nesters such as shearwaters and petrels will return.

All those who knew of the fine virtues of Rose Atoll held their breath when news of the wreck reached Honolulu. But at first glance, things didn't look too bad. The boat, after all, was only leaking diesel fuel, a petroleum prod-



### OCEAN WATCH

By Susan Scott

uct that floats and evaporates quickly.

As it turned out, the saga was not yet over. The original accident happened in mid-November but in early December, just before a salvage company pulled the boat off the reef, the wreck broke open, spilling its oil contents.

**T**HE plants and animals of the reef took it on the chin. In about a quarter of the atoll's reef area (about the size of 24 football fields), 75 percent of giant clams, an endangered species, were killed. In that area, the pink coralline algae was killed and bleached.

Also killed were marine snails which grazed on an olive-green type of seaweed. Now the slimy stuff is creeping over the formerly pink reef tops.

Dead sea urchins, oil-soaked sand, abandonment by reef fish, long-line fishing gear in the lagoon . . . on and on it goes. Much damage has been done and will likely continue. When biologists pick up rocks there, they still see a sheen and smell oil.

It will be a cold day in Hawaii before we see the end of oil spills at sea but the U.S. Coast Guard is working toward decreasing the incidents. In an evolving role as environmental educators, the Coast Guard is trying to foresee risks and minimize damage.

The Guard's primary goal in this area today is to prevent spills. In Hawaii, officials do this by publishing and distributing informational brochures and visiting facilities that handle petroleum products.

But accidents still happen and when they do, it's the Coast Guard that moves in to direct the clean-up, a tough job when the accident is 180 miles from Pago Pago, as is Rose Atoll.

In this case, the long-liner's owners are responsible for all costs, including those to repair damage to the area.

So how do you repair such widespread damage to a wildlife refuge? "With great difficulty," says Beth Flint. "Maybe the best way is to stand back and let nature do it."

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.



## Month in prison for turtle killing

A federal magistrate yesterday sentenced a Big Island man to a month in prison for capturing and later killing a green sea turtle, which is protected under the Endangered Species Act.

Anthony Barro, 35, of Naalehu had pleaded guilty to pulling the turtle from water near the Big Island's Punaluu Beach Park in March 1992.

A witness reported that Barro and a co-defendant, Clyde Agres Jr., carried the turtle to a pavilion at the park. Another co-defendant, John Quintal, admitting taking it away from the park in a pickup truck.

Although the turtle was never found, Barro admitted in court that he later killed it.



# Mail Buoy

*(Reprinted from page 13, October 1993 HFN)*

Dear Chuck,

I heard a rumor that the governor will be advocating fishing on Moloka'i be restricted to that island's residents only! Can this be true?

If we on O'ahu and elsewhere won't be allowed to fish on Moloka'i, then maybe those people there shouldn't come here to go to school, or shop, or see our doctors, etc. Besides, don't my taxes help subsidize many of the government services provided to the people of Moloka'i? Can the state really accept my tax money and then prohibit me from fishing on certain islands in the state?

If it's a matter of Hawaiian sovereignty, then maybe it's a different story. I suppose it is only fair that we allow the native Hawaiians (who by the way enjoy all the privileges of being an American citizen!) be granted a certain prerogative. But where do you draw the line?

Please look into this matter and keep the fishing public abreast of what's happening.

Thanks,  
XXX

11/15/93

Dear Chuck,

I haven't heard the rumor that "XXX" talked about in the "Mail Buoy" regarding restricting fishing on Moloka'i [October 1993]. But if the rumor is true, I say it's about time.

Unlike XXX on O'ahu, many of Moloka'i's residents rely on fish to feed their families. There are no full-time commercial fishermen running boats out of Moloka'i, only a few part-time operators with one- or two-man crews. But despite the small number of local commercial fishermen, catches in recent years have gotten smaller and smaller for everyone. That's because off-island sport fishermen and commercial operators are wiping out our fish population.

Hanauma Bay is a fish preserve, and Waikiki now has a periodic moratorium on fishing. The state banned fishing in these areas for tourists. If we can save the fish on O'ahu for tourists, why not save the fish on Moloka'i for people whose children might not eat when the fish are gone?

*A Concerned Moloka'i Taxpayer*



# Take Only What You Need

by Walter Ritte Reprinted from the Moloka'i Dispatch. Jan 94

■ The governor's **Moloka'i Subsistence Task Force** received good input at their November 23, 1993, community meeting. There were lively discussions regarding the **Mo'omomi Stewardship Plan**. At the end there was support for the plan with the hope that the entire island of Moloka'i would come under such a management plan in the future.

An agreement will be worked out and signed to allow homesteaders management of the shoreline and the waters from Nihoa to 'Ilio Point with Mo'omomi Bay a sanctuary for kids to use and Kawa'aloa Bay a sanctuary for fish breeding.

"This will be a five-year demonstration project," said Mac Poepoe. "If we don't take care of our food, who's going to take care of us. . . we already lost our lands."

No commercial sale of 'opihi from Moloka'i was also a lively discussion. Some felt the winter weather of the North Shore was enough to save the 'opihi,

but some commercial 'opihi pickers say bigger and faster boats can get in and out whenever the weather breaks and that the 'opihi are being wiped out. After much discussion, there was unanimous support to ban the sale of 'opihi and crab ('ala'eke, kuhonu, 'a'ama) from the island of Moloka'i.

There was also support for more education of all ages regarding the ocean and land resources, allowing Hawaiians to eat turtle again, fixing the fishponds, building a fish hatchery, opening up access and trails (especially on West Moloka'i), opening community pastures, planting of Hawaiian medicinal plants on state lands, saving our streams, enforcement of our own rules, more research on limu, erosion, disease, etc.

It seems Moloka'i is ready to sacrifice a little today in order to ensure that future generations have their rightful share.

. . . Walter

## Moloka'i Subsistence Rights Controversial Conservation

It's interesting that all input—including letters and phone calls—have come from individuals who wish to remain anonymous.

We've learned that Gov. Waihee has contracted three U. H. professors (I.e. Jon Matsuoka, Luciano Minerbi and Davianne McGregor) to meet with a task force of 12 people on Moloka'i to evaluate a request for subsistence fishing rights, sanctuaries and new laws to exclude nonresidents of Moloka'i from the resources. We also learned that the study involves both fishing and hunting rights, and involves waters surrounding Moloka'i out to 2 miles.

As we receive more information on this very important subject, we will keep *HFN* readers informed in future issues.

Any comments or information should be addressed to **HFN Mail Buoy, P.O. Box 25413, Honolulu, Hawai'i 96825.**

. . . Chuck

## Waikiki-Diamond Head Shoreline Fisheries Management Area Opens

■ The **Department of Land and Natural Resources** reminds all fishermen that the fisheries management area, between the 'Ewa wall of the Waikiki War Memorial Natatorium and the Diamond Head Lighthouse will open on January 1, 1994, to pole-and-line fishing, thrownetting, hand-harvesting, and daytime spearfishing, subject to established fishing rules (e.g. seasons, bag and size limits, etc.).

Spearfishing is limited to daylight hours (6 a.m. to 6 p.m.), and fishing with traps or lay (gill) nets is strictly prohibited. The area will be open to fishing until December 31, 1994, then will be closed to fishing during 1995 (odd-numbered year) and open again in 1996 (even-numbered year).

. . . DLNR



## COUNTY / IN BRIEF

### Homeless men caught cooking green sea turtle

WAILUKU — Four homeless men were locked up at the Wailuku police station this morning after being caught with a green sea turtle in a cooking pot Sunday night.

Robert Madden, 29, Calvin Lawson, 34, Thomas Kelly, 35, and Jarry McCoy, 32, are each charged with possession of a threatened species and were being held on \$200 bail each.

According to police reports, the four were caught by a state Department of Land and Natural Resources officer in the Hale Nanea area near Kahului Harbor at 6:15 p.m. as they were preparing to make a meal of the butchered turtle. The men claim the animal was already dead when they found it.

Green sea turtles are an endangered species and it is illegal to possess them, alive or dead.

Hale Nanea is an area that attracts turtles to the warm water discharged from the Maui Electric Co. generating plant. It is also an area where a number of homeless people live in makeshift camps.

### Waihee home destroyed by fire

WAIHEE — A late-night fire Saturday destroyed a three-bedroom home near Waihee.

According to fire Battalion Chief Henry Lindo, the fire at the wooden home on Kahakili Highway was reported at 11:37 p.m. Saturday. Firefighters arrived less than 10 minutes later and had the blaze under control shortly after midnight.



**PATRICIA NEILS**  
To receive \$25,000

The home is owned by Moke Maliikapu and was being rented by Daniel Puar, Lindo said. He did not know how many people lived in the house. There were no injuries.

### Molokai teacher winner of grant

HOOLEHUA, Molokai — Molokai High School teacher Patricia Neils, an adjunct Maui Community College instructor, has won a \$25,000 grant from the Henry Luce Foundation to support a symposium on American Missions and Social Change in China.

She is helping to organize the event, which will take place in Portland, Ore., in July.

Neils earned her master's degree and doctorate from the University of Hawaii. She is the author of "China



## Arson suspected in cane fire

PAIA — An unscheduled cane fire in Paia Wednesday afternoon is believed to have been sparked by an arsonist.

Fire Battalion Chief Clayton Carvalho said the fire above Tavares Bay was spotted by a helicopter pilot who realized no Hawaiian Commercial & Sugar Co. workers were on the scene.

The fire broke out at 4:35 p.m. and burned 10 acres before being extinguished by Maui firefighters and

HC&S personnel and equipment about 1½ hours later.

Carvalho said the fire began in the middle of the field and a truck was observed leaving the area at about the time the fire broke out, leading officials to believe it was deliberately set.

There were no injuries and no structures threatened. Damage to the field is estimated at \$20,000, Carvalho said.

## Four sentenced for cooking turtle

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night by state Department of Land and Natural Resources officers as they were preparing to make a meal of a butchered green sea turtle in the Hale Nanea area near Kahului Harbor. The defendants claim they found the animal already dead.

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THE MAUI New 1/13/94 A5



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■ The Honolulu Fire Department's Hazardous Materials



Maui News  
01-10-94

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# COUNTY

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MAUI NEWS - Jan. 13, 1994

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THE MAUI New 1/13/94 A5



### **Punishment was painless**

As a 60-year resident of Hawaii and a long-time member of The Nature Conservancy of Hawaii, I am outraged at the so-called punishment the four men received for cooking a green sea turtle at Hale Nanea in Kahului.

What they really got as punishment was a neat deal. They got a clean safe place to sleep, good hot food to eat, a shower and clean clothes for two days. That's all! They claimed the turtle was already dead. Oh, sure!

I can imagine that the enforcement officers of the Department of Land and Natural Resources are just as outraged as I am.

Bear in mind, a hot meal is served at Hale Nanea to the homeless almost daily. They also

could have walked to the Kahului Salvation Army for a free lunch, shower and laundry. Free lunches are served almost daily there. They didn't have to cook the turtle for food.

So, has a precedent been established? From now on, if someone is found with a dead green sea turtle, all they have to say is they found it dead and they're homeless. Nothing will be done in the way of real punishment.

I am disgusted with this whole incident.

**Clare Merrill  
Kahului**

*MAUI NEWS  
1/20/94*



## Save The Hawaiian Green Turtle

There are three species of turtles native to Hawaii, green, hawksbill and leatherback. Of these three, the green turtle or "Honu" is the most common. Artist Dale Zarrella has a vision that stretches far past canvas, bronze or wood. This vision starts with educating people that the green turtle is an endangered species. The green turtle, along with many other sea creatures, are endangered and without immediate measures to save them, they will be gone forever. Although sharks are their only natural predator, it is clear that man poses the greatest threat. Abandoned fish nets and other fishing gear kill thousand of turtles.

In the Puna district of the Big Island lies an old Hawaiian fish pond and for the past



18 years it has served as a sanctuary for turtles seriously hurt in the wild. Dale is the director

and caretaker of this which is one of Hawaii's few turtle research projects. Currently the pond holds 3 green turtles; 2 males and a female. Watching these turtles interact with each other for hours on end, Dale sees they each have distinctive personalities. One very outgoing, another very timid and the third is a real ham in front of a camera.

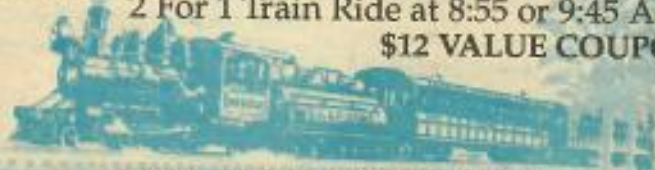
Although Dale gets great enjoyment from creating on canvas and sculpture the beauty of the green turtle, he also feels a great passion and dedication to preserving in nature that which he creates in his art. The idea of bringing these turtles to the pond was to provide them with a place to heal and live without fear of predator. Caring for these turtles provides Dale with the opportunity to study their character and habits first hand. This unique privilege transforms directly into the canvas, wood and bronze.

For more information on the Hawaiian green turtle or the art of Dale Zarrella, call 874-0448.

### THE SUGAR CANE TRAIN

2 For 1 Train Ride at 8:55 or 9:45 A.M.

\$12 VALUE COUPON



"Maui's Only Old Time Train Ride"

661-0089



# Dale Zarrella

MAUI  
ARTIST



Dale Zarrella, fine art sculptor and painter, is a naturally talented artist who has made the island of Maui his home and inspiration for his incredible lilo's work.

His Makena studio overlooks the ocean, Molokini and Haleakala where the natural elements weave into his work with a gradual variation of colors and textures. The constantly unfolding scenes of sunrises, sunsets, and dramatic coastal life inspire direct communication, drawing him into the picture he wishes to create. Dale often breaks away from his meticulous work to swim directly with his subjects. The experience of observation and contact is evident in the respect and deep feeling he communicates in his work.

Beginning his career in art as a sculptor, Dale is continuing to strive with each creation for his personal best. His acclaimed limited edition bronze sculpture series, including the turtle hatchlings, attests

to this exacting dedication. He releases new limited edition bronzes every year for serious collectors wishing to acquire a matched number series.

When Dale expanded his talents to include painting on canvas, he found his sculptural experience of seeing and working in the 3-dimensional realm helped him to develop depth and contours which make his images come alive. He opens the door to the secret world of sea creatures and their fragile environment, communicating a personal dedication to honoring and preserving their habitat.

As Big Island Director of one of Hawaii's few turtle breeding and research projects, Dale is directly involved with the protection and preservation of these magnificent creatures. His donations of

unique sculptures and artwork support Earthtrust's conservation efforts as well as others. Dale is a contributing artist in the Whales Alive Symposium at the Four Seasons Hotel and is currently preparing for their second annual exhibit in February.

Original paintings, wood and stone sculptures, limited edition lithographs and bronze sculptures, posters, and greeting cards are available on Maui at the Dolphin Gallery - Grand Hyatt Wailea; Kalama Gallery - Kihei; Foundation Gallery, Madeline Michaels Gallery, Village Galleries - Lahaina; Paia Sculpture Gallery and the Hana Coast Gallery.

For a visit to Dale's private studio or more information please contact:

**ZARRELLA PUBLICATIONS**  
phone & fax: (808) 874-0448

P. O. Box 1858  
Kihei, Maui, HI 96753



Photos from left: Zarrella assisting one of many turtles snared in fishing line, "Makena Sunset" 30" x 40" - metal dye prints available, limited edition bronze sculptures



**NEWSWATCH****Gridder Noga fails to appear at trial**

A bench warrant was issued yesterday for former University of Hawaii football player Al Noga.

Noga, a defensive tackle with the Washington Redskins, failed to appear at his trial for assaulting a Pearlridge Center security guard last February. He faces misdemeanor charges for third-degree assault.

Noga was allegedly asked to leave the center by the security guard, then got into an altercation in which punches were exchanged.

Police said both Noga and the guard suffered minor injuries.

Noga's attorney said his client is in Samoa and did not know about the trial.

**Letting minors buy liquor is costly**

Selling liquor to minors was costly for four Honolulu businesses but a fifth got off easy because Honolulu Liquor Commission members thought the minor did a good job of altering his identification card.

The commission voted to issue a letter of reprimand to Studebaker's nightclub at 500 Ala Moana for serving a 20-year-old serviceman on Nov. 5.

The serviceman was charged by police with altering his ID card.

"We'd have a hard time detecting this," said commissioner Robert Miyasato, after looking at the changed out-of-state card.

Deputy Corporation Counsel David Coburn said Studebaker's has no previous charge of selling to minors.

The commission fined:

- The owners of Club Rose at 939 Keeaumoku St. \$2,000 for serving a 20-year-old Marine on Nov. 12, the club's second violation last year. The Marine told the commission he used another man's identification.

- The owner of the Pink Cadillac at 478 Eua Road \$2,000 for serving two 19-year-old Tokai University students who showed altered copies of their passports as identification on Nov. 13.

- NY Hil Mini Mart \$1,000 for selling beer without checking the ID of an 18-year-old New Zealander Nov. 3.

- The Blue Carnation bar at 1135 11th Ave. \$2,900 for six charges, which included two counts of allowing customers to fondle hostesses Sept. 18.

**Recovery of turtle carcass planned**

KOLOA, Kauai — A state aquatic biologist is expected today to recover the carcass of a green sea turtle found with a cut on its shell off Koloa Landing yesterday.

Teri Kolder, an instructor with Dive Kauai, a Kapaa dive company, and two students found the female turtle wedged between two boulders 100 yards offshore.

The shell, measuring 3 feet in diameter, had a "propeller cut" on it, Kolder said.

"I tried to wake it up, but I couldn't and left it there," she said.

Don Heacock, with the Division of Aquatic Resources with the state Department of Land and Natural Resources on Kauai, is expected to retrieve the turtle today.

It is the first report of dead green sea turtle this year. The species is protected by federal law.

*From staff and wire reports*



# More than jail to fear from eating turtles

To The Forum:

A mere slap-on-the-wrist, compared to what Mother Nature could have imposed as punishment. That's how one might view the two-day jail sentence recently handed down in Wailuku District Court on Maui to four homeless men from the mainland caught cooking a sea turtle.

The pitiful turtle they were foolish enough to cut up and eat was riddled with disease. Ulcerated tumors protruded from its eyes, neck, and shoulders. In addition, photos taken at the time indicate the animal was severely emaciated. This condition in sea turtles is often accompanied by infections of internal parasites, along with potentially nasty microorganisms.

No sick animal taken from the wild should ever be eaten. This applies to ones freshly killed, as well as those already dead for an unknown time, as the men in this case claimed in court. The possibility of severe illness from eating diseased wildlife is simply not worth the risk, even if the law isn't broken. Ironically, wholesome and hot meals are served free each day within walking distance of where the men were arrested with the turtle.

Just a few months ago a man was sentenced in federal court to a month in prison for intentionally killing a large turtle on the Big Island. Turtles were abusively over-exploited in Hawai'i for decades prior to becoming fully protected in the late 1970's. The average turtle takes about 25 years to become sexually mature (200 - 300 lbs). At certain locations in Hawai'i there are now some encouraging signs of population recovery. Most everyone would like to see this trend continue to ensure the longterm survival of these magnificent creatures. Turtles contribute to the overall diversity and enrichment of the Hawaiian marine environment. Also, like humpback whales, they are fun to watch. They are playing an increasing part of the ecotourism experience that results in an economic benefit to Hawai'i.

The rebuilding of a robust turtle population—one that will not easily fall into decline once again—is dependent upon keeping human-related mortality to a minimum. State and federal conservation enforcement officers should be supported, and praised for their fine efforts.

George H. Balazs  
Honolulu

THE GARDEN ISLAND (KAUAI) 2/19/94 194



# Marine concerns need higher priority, says biologist

By DAN BREEDEN  
West Hawaii Today

The way National Marine Fisheries Service biologists tell it, endangered species like the green sea turtle and humpback whale are caught between a rock and a hard place.

Encroaching from one side are the land developers that are destroying the creature's dwindling habitat; on the other are overzealous groups that are putting pressure on the animals through their efforts to study, count, or otherwise protect the whales and turtles.

Gene Nitta, a fisheries biologist with the Pacific area office of the NMFS, said Monday that environmental concerns often take a back seat when developers are designing resorts that will ultimately effect marine habitats.

"Marine resources really need to be considered before development begins," said Nitta.

As he addressed about 30 people with the Ocean Recreation Council of Hawaii in Kona Monday night, Nitta said the endangered species are having their habitat slowly destroyed and no one is sure of the overall or long-term effects.

TORCH members are particularly concerned about potential development of the Kohanaiki Marina.

"Cumulative impacts are something that are really difficult to get a handle on," said Nitta.

He said that each development project is studied separately, rather than looking at what all the projects in an area will do to the marine life.

"At what point it gets to the point where it's irreversible is difficult to determine," he said. "Our main concern is loss of habitat (for endangered marine life). Once we lose the habitat, we lose the

species." Nitta said endangered species, such as the green sea turtle, are virtually ignored when developers design projects. A possible example is the Hyatt Regency Waikoloa's proximity to sea turtle habitat.

"Right next door, at Anaeohoomalu, there is a large population of turtles," said Nitta. "It's hard for us to see the impact that is going to have."

Another area where the impact of potential development is difficult to discern is in the Kohanaiiki (Pine Trees)

See ENDANGERED  
Page 4A



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JUN 7 1989

## ...endangered species

From Page 1A

area. Nitta said the area is used as a resting place for humpback whales and their calves, but because the proposed marina won't directly endanger the animals, the NMFS can't rule against the project.

"We have a inkling of what might happen, but we can't make a strong statement about it," Nitta said. "We can't say to the Army Corp of Engineers, 'don't take away this habitat.'"

But people involved in ocean recreation, many of whom are TORCH members, are also putting pressure on local marine life.

"Hotels aren't the only ones who are going to be competing for the space," said Nitta.

Nitta said local boaters, scuba divers, and fishermen may be inadvertently pushing marine life out as their use of the ocean increases.

"We need to be a little careful about using humpback whales or green sea turtles as the pet cause to support your cause," Nitta said to TORCH members. "We want to sort of let the turtles be."

Though they have a vested interest in preserving marine life, Nitta said he sent letters to all the local dive operations asking them not to encourage people to approach or chase sea turtles. He said some dive shops had shown people riding turtles in their advertisements and bro-

chures.

"Since I didn't get a response I figured everyone was either ignoring it, or feeling guilty," Nitta said. He added that people can drown turtles by riding them and preventing them from surfacing for air.

TORCH has been vocal in its opposition to the building of the Kohanaiki Marina. The marina would destroy some of the prime diving places that commercial diving operations use.

The other side of the story is that marina space is at a premium, with a waiting list of about 250 people in line for open slots. Many believe that this local demand for facilities must be balanced against the destruction of marine habitat.

"I'm sure everyone probably wants to have a slip," Nitta said of local boaters.

"If they've got a boat, they want to have it in the water."

The best compromise may be to expand the present facilities at Honokohau Harbor, rather than build new harbors, according to Nitta.

"The impact to the environment is much less," Nitta said of the option to expand existing facilities. "Putting in new facilities up and down the coast here is something that's going to put a lot of pressure on the environment."

"You'd better start looking at whether to develop or not to develop," Nitta advised the TORCH members. "It's where you live."



• SUNDAY, March 6, 1994  
The Honolulu Advertiser

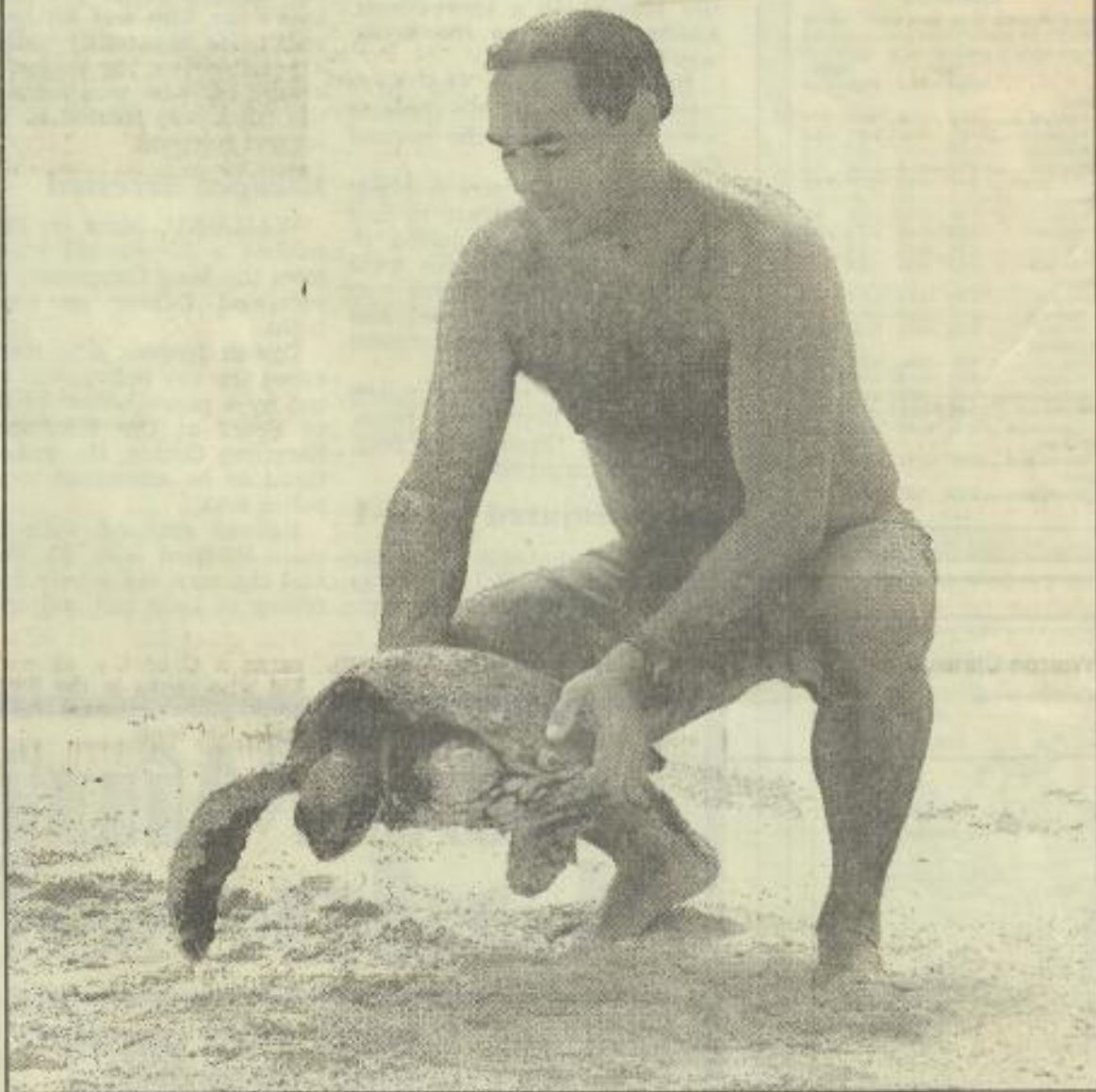


Photo by Warren Bolster

## The tangled web

Martin Smith of Waipahu holds a crippled green sea turtle that turned up off Ala Moana Beach yesterday. The turtle was missing its left front flipper and fishing line was wrapped around its remaining front flipper. "You see a lot of turtles out there tangled in line," said Smith, who spotted the turtle with buddy Ricky Amano as they were paddling in from surfing. "People should be more cautious about how they use their nets and lines." Smith and Amano took the turtle to the aquarium, where officials arranged to have it transferred to the University of Hawaii's marine mammal facility at Kewalo Basin.



Honolulu Advertiser  
3/18/94 AM

# Discharge not factor in algae

Advertiser Staff

Researchers into the algae blooms off West Maui have determined there is no major plume or continuous layer of wastewater in the nearshore waters off the Lahaina Wastewater Reclamation Facility.

But they did find evidence that there may be small amounts of wastewater seeping into the waters from the ocean floor.

That sets up the need for further work as the U.S. Environmental Protection Agency, the state Department of Health and Maui County try to find an answer to the persistent series of algae blooms that discolor the water.

Investigators put a fluorescent red dye into the wastewater plant's wells and then went into the ocean to see if they could see evidence of the dye. They found small amounts rising from seeps on the sea floor, but no single large-scale source of wastewater.

"The results of this study serve only to eliminate the worst case scenario, in which a large wastewater plume is present in waters adjacent to the injection wells," said Bruce Anderson, the state Department of Health's deputy director for environmental health.



"Further study is needed to show conclusively where wastewater from wells at the Lahaina facility is reaching the ocean, and in what amounts," Anderson said.

The wastewater plant's injection wells and fertilizer from agricultural fields are the top suspects as possible nutrients that support algal blooms. The dye study is one of several aimed at identifying nutrients entering the nearshore waters off West Maui. The studies are funded through the EPA and the National Oceanic and Atmospheric Administration.

The algae involved in the blooms, *Hypnea* and *Cladophora*, continue to be found in the waters off Maui, although the severe blooms of 1989 and 1991 have not been repeated since.

While the research is going on, private and government efforts are seeking to reduce the flow of nutrients into the water. Maui County hopes to use the effluent from its Lahaina plant for irrigating golf courses and the landscape, instead of pumping it into injection wells.

"While other studies are being conducted, we will be moving to reduce nutrients from entering the ocean from all sources. We can do this through actively promoting wastewater reclamation and the best agricultural management practices," said Harry Seraydarian, director of the EPA's water management division.



Star-Bulletin

LETTERS

## Kauai ocean sound project would pose threat to turtles

Greater attention to sea turtles is justified when considering whether to allow the Kauai-based undersea sound-pollution project to be turned on. The project proposes to broadcast at an intense but low frequency emission of 70 Hz for an initial two-year test period.

Threatened and endangered green and hawksbill turtles are native to Kauai's coastal waters. Also, adult green turtles living around all of our populated islands must periodically travel past Kauai when migrating to and from French Frigate Shoals to breed in the Northwestern Hawaiian Islands.

How sea turtles navigate when migrating is a mystery, but hearing may play some important part in the process. In 1969, Navy scientist Sam Ridgway published one of the few papers on hearing in the green turtle. The article appeared in the Proceedings of the National Academy of Sciences.

The final paragraph of Ridgway's paper states: "We conclude from these observations that the giant (green) sea turtle has a serviceable ear, with a reasonable degree of sensitivity within a restricted range. Its ear is clearly a low-frequency receptor, with a useful span of perhaps 60 to 1000 Hz. Both on land and in the sea this ear no doubt enables the animal to perceive many important signals."

**GEORGE H. BALAZS**  
IUCN/SSC Marine  
Turtle Specialist Group



# Nets, bleach destroying living reefs off Waikiki

**T**ED Bush, born and raised in Hawaii, owns and manages a semisubmersible tour boat, Nautilus. This boat, with its panoramic underwater windows, is a cross between a submarine and a glass-bottom boat, enabling passengers to view the reef off Point Panic, near Kewalo Basin.

Ted has called me several times for advice because fishermen have been throwing nets and pouring bleach in the place he takes visitors.

"Waikiki has beautiful reefs just starting to recover from Iniki," he said. "I don't want to stop anyone from making a living from fishing. But when someone kills hundreds of fish, plus the reef itself, just to take a few — well, it's a crime."

It is indeed a crime. We have laws against bleaching and leaving gill nets in place. I suggested Ted call the enforcement hot line of the state Department of Land and Natural Resources.

He did. They said they couldn't do anything about bleaching unless they caught the person in the act. Reasonable perhaps, but it certainly limits the state agency from enforcing this law.

And the nets? Ted told me that people in the area sometimes abandon nets which then randomly kill fish until someone else removes them. In the meantime, other nets left for the legal limit of 12 hours or less are devastating reef life in the area even more, hurting Ted's business.

Bush and his workers estimated that at one time, there were 1,500 fish on the reef they visited. Now they are all gone.

"I'm a former net fisherman myself and I cringe when I remember the waste," Bush said. "We need to stop this netting and make some sanctuary areas in Waikiki."

I couldn't say it better myself. In fact, many of us have been saying exactly that for some time now, and as hard as it is to keep our chins up, we need to keep on saying it until it happens.

It's an outrage to us taxpayers that the Hawaii Visitors Bureau is spending millions of dollars to boost our flagging tourism industry at the same time the City Council is plotting ways to keep taxis out of Hanauma Bay and the state boating division is restricting new commercial tours to Molokini.

I realize that restrictions and regulations are needed in those places because of overuse. But they're overused for a good reason: people love to go there.

Why do we only react negatively to something clearly so popular? We should be encouraging visitors to come see our living reefs, not



## OCEAN WATCH

By Susan Scott

HSB

beating them away.

It boils my blood when I hear members of the Friends of Hanauma Bay, a grass-roots environmental group I have always supported, cheering the fact that people are going to be turned away at the gates of Hanauma Bay. I hate it when people like Bush must fight so hard and bear such frustration to show visitors a healthy reef.

And I feel depressed when Maui tour operators and TORCH applaud new restrictions at Molokini without a word about creating alternatives.

How about some more restrictions and regulations in the fishing industry while we're at it?

Sure, this is harder. It requires change and causes emotional arguments about freedom and lifestyles. But the fact is, our fishing industry is sagging right alongside our tourism industry and sanctuaries would help both.

Fisheries certainly need some help. At a U.N. conference last August, undeniable evidence showed that overfishing and destruction of marine habitats have caused alarming drops in marine fish populations worldwide.

In a recent New York Times article, Australian marine biologist Mary Harwood said, "Unless some form of strict management action is taken, stocks will be driven down toward levels from which they will not be able to recover."

The dramatic depletions of cod from the Atlantic has resulted in the layoffs of more than 30,000 Canadian fishermen. In the Pacific, pollock stocks have collapsed. Nine of the world's 17 major fisheries are in serious decline; four are completely depleted.

Should we sit by and let Hawaii's fisheries get added to the list?

We must start protecting our waters near shore soon. If we don't, we could have the distinction of wiping out two of our state's biggest industries at the same time.

Let's give both fishing and tourism a needed boost by asking our legislators to make Waikiki waters off-limits to fishing.

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

A2 1/3/94



Star Bull 10/4/94

# Molokai-to-Oahu canoe race brings one family together

**T**HOSE who have paddled the Kaiwi Channel between Molokai and Oahu know there are two hurdles to overcome when attempting the crossing: the challenge from the sea and the challenge from within.

The Kalamas are hoping to conquer both at the 43rd annual event this Sunday. Their goal goes beyond finishing what is considered the world championship of outrigger canoe racing — their goal is to finish together as a true *ohana*, a true family.

The crew is a realization of a dream that Jerome Kalama Sr. had 13 years ago, a dream that didn't die when "Uncle Jerome" passed away on Molokai in 1981. He envisioned a family division in the Molokai Hoe; on Sunday, nine of Kalama's relatives will start their own sort of voyage of rediscovery off Hale-O-Lono.

"It's amazing what has happened in the last year since we decided to do this," said Cy Kalama, a nephew of the late Jerome Kalama. "We've been having so much fun with the cousins that we feel like we've already won. And the race hasn't started yet."

"At a time when there is such a breakdown of the family in society, we have found a way to bring the family together. It's so neat being in the canoe

come her family upon their arrival at Duice Kahanamoku Beach.

Their extended family helped raise funds through T-shirt sales, and a family friend donated the escort boat.

"I think this is just a fantastic way to bring our family, actually any family, together," said Cy's wife, Lee. "Everyone goes off in their own directions these days, never having time for each other or to see each other."

"In many ways, this race is a symbol for all the displaced Hawaiians. Some of our family has had to move to the mainland and can't afford to move back home. But they can paddle a canoe and they can come home again in that way."

"This was my dad's dream and it's exciting for me," said 39-year-old Jerome Kalama Jr. "I just wish we had done this 10 years ago when our bodies were still young."

Several other family members will be competing for other clubs, including Kamao, whose Kailua Canoe Club crew is expected to be among the leaders Sunday.

"They were torn between the family and their clubs," said Cy Kalama, "but we told them to go with their hearts. They'll be with us in spirit."

"This is not about being first. We don't expect to be. We're hoping to



**KEEPING SCORE**  
By Cindy Latis

as one. Everyone talks about the family history, about our grandfather, about each other. It's just awesome and inspiring."

The nine paddlers range in age from 22 to 51, with the range in Molokai race experience equally as wide. Brothers Chris, Sterling and Harold Kalama have returned from California to paddle the 41 miles for the first time; Cy, who lives in Kailua, isn't sure if this is his 13th or 14th crossing.

Jerome Kalama's son, Jerome Jr., lives on Molokai and will practice with his family for the first time on Friday. Also racing are another generation of cousins: Hima, Kali, Jerome II and Paul.

The family involvement doesn't stop there. Various relatives will drive the escort boat, act as masseuses and videotape the race for posterity.

Cy Kalama's mother, kumu hula Lani Kalama, has prepared a chant to wel-

inspire other families to do this."

The Kalamas also hope to encourage the use of the traditional koa canoes in the race. There were only two koa canoes used in the women's Molokai race nine days ago.

"That beautiful tree that was made into a canoe has a spirit," said Cy Kalama. "If it could speak, it would say, 'I want to be on the ocean, having fun.'"

"That's what we're hearing when the family goes out for a practice together. We're having fun."

The Kalamas *ohana* will be wearing T-shirts with a turtle and shark design, representing their family *aumakua* (gods), during the race. In what Cy Kalama considers a good omen, his crew has seen numerous turtles and some shark fins during their practices.

"We went out about 90 minutes into the channel the other day," he said. "We saw a number of fins but no one had a sense of fear, not even our novices."

"There was a sense of security that our ancestors were checking out the crew to see if we met with their approval."

There's no doubt that the Kalamas do. Here's to a safe crossing for them and the other 81 crews.

Cindy Latis is a Star-Bulliedia sportswriter. Her column appears weekly.



# Group quiet on ahu repairs to keep ceremony private

BY LINDA HOSEK  
Star-Bulletin

The Ohana Council is ready to rebuild the ahu destroyed at Makapuu Beach, but will not announce the time to keep the ceremony private, said Dennis "Bumpy" Kanahale, council leader.

"We're looking at anytime," Kanahale said yesterday.

Kanahale said the council, a native Hawaiian sovereignty group, also was considering building an ahu in Waikiki, Ewa of the aquarium.

He said his nephews had seen a white turtle in the ocean at that site, signifying that native Hawaiian ancestors were happy there.

Kanahale said the destruction of the ahu at Makapuu made him think that the council should put ahu in several places. An ahu is an altar atop a pile of rocks to honor Hawaiian gods and ancestors.

The state Department of Hawaiian Home Lands has authorized the reconstruction of the ahu at Makapuu, said Ruth Tsujimura, acting state attorney general.

She declined to comment on how the state would respond to building an ahu in Waikiki. "If the issue comes up, we would look into it," she said.

Kanahale said the council has the right to build an ahu at Waikiki.

He also said the council would

pursue federal criminal charges against those who destroyed the Makapuu ahu.

Tsujimura said government workers inadvertently flattened the ahu when they were installing pilings around the Makapuu parking lot.

She said the state investigation is continuing, but added Kanahale "should pursue whatever legal avenues are available to him."



# Hanauma Bay pump station



Anthony Cheng photo

**PACIFIC PERSPECTIVE:** Shaning Cierras touches up his mural, which spans the outside of the sewage pumping station at Hanauma Bay Nature Park. The muralist says he's almost finished with the two-month project.

Hawaiian themes and even sumo wrestling, have been featured in galleries from Princeville to Kapaa.

Then came Hurricane Iniki in 1992. "The hurricane basically ruined my business," he said. So he packed up and returned home.

Now a Kaimuki resident, he generally charges around \$500 and up for each painting. He said the mural at Hanauma, however, was free.

The artist hopes to continue his volunteer work in the Hawaii Kai area. He has already approached Hanauma Bay park manager Alan Hong

and lifeguard Ryan Fernandez about doing a mural on the comfort station next to Queen's Beach.

A one time regular at Sandy Beach, Cierras said he feels obligated to "do something to help keep the park clean."

"It would mean a lot to me. I kind of grew up there, and I want to help beautify the park. Plus, maybe it will keep kids from doing graffiti there. I

passed by the other day and the place was all marked up. (The kids) might have more respect for the place if there was a Hawaiian theme."

If Cierras gets the go-ahead from the city, his mural would be the park's second large painting. A group of surfers, organized by Fernandez in August, helped paint a mural on the park's other comfort station.



# Muralist's touch brightens

## Cierras hopes to pay colorful visit to Sandy Beach in the future

By **BILL MOSSMAN**  
News Editor

HAWAII KAI — Shaning Cierras may not yet be a household name, but the artist's work in Hawaii Kai is beginning to make area residents take notice.

Earlier this year, Cierras did some art work — sort of as an

afterthought — on the volunteer desk at Hanauma Bay Nature Park. His painting was so well received that park officials asked him to paint a mural on the lower level of the sewage pumping station.

He agreed to do the work three months ago, and the mural is now nearly completed. Stretching about 30 feet around

the pumping station, it features turtles and a variety of fishes, including the uhu, palani and butterfly. The art work showcases many of Cierras' talents: his rich use of colors, as well as his fine eye for detail.

"I've always enjoyed drawing," he said. "I really love doing marine life art. I dive a lot, and I really love the water — anything I can do to preserve the water and its shores."

The kudos for his work come to him wherever he goes. A couple of weeks ago, Cierras was at Sandy Beach Park when he met lifeguard Keith Brown for the first time.

"So you're the guy that's doing the painting at the bay?" the lifeguard asked him.

"Yeah," the artist replied modestly.

"That thing's unbelievable," Brown said. "You do some good work."

"Thanks," responded Cierras in his faint, yet clearly appreciative voice.

Youngsters will generally approach the artist and ask questions about the painting while they and their parents are waiting to rent snorkels and fins on the beach.

"Lots of kids ask about the fish I paint," he said. "I tell them those are the types of fish that can be found in the bay. Park officials thought it was a good idea to paint something that would educate the public."

Cierras said he's doodled ever since he was a kid. Born in Honolulu, he moved to Kauai back in the early 1980s to start his art career. His business career prospered early. His paintings, which include



Anthony Cheng photo

**PAINT AT THE PUMP:** Turtles and fish frolic under their creator, artist Shaning Cierras, who's taking a break Oct. 6 from painting the Hanauma Bay pumping station.





### Untangling Our Marine Resources at Kiholo Bay

■ Picturesque Kiholo Bay in North Kona on the Big Island has been known for decades as a special place favored by Hawaiian sea turtles. Young turtles are attracted to this site to feed on *limu* and to sleep underwater along the sheltered shoreline.

Kiholo is also recognized as an important nursery grounds for fish. Unfortunately, the abundance of fish appears to be much less now than it was 21 years ago when I first started visiting and snorkeling at Kiholo. It is my belief that the reason for this decline is the increased use of gill nets, which commonly block off portions of the bay when set from point to point. Too many fish, especially little fish, have been gilled and killed too often over the years.

Gill nets and sea turtles don't mix at Kiholo Bay. The entanglement, forced submergence and drowning of turtles in gill nets at Kiholo is now a regular occurrence. Some of the young turtles recently found dead at Kiholo appear to have been intentionally killed. Over the past three months, four turtles are known to have died by human hands at Kiholo. Three of them were butchered, and their remains were left on shore or discarded into shallow water.

Hawai'i's fishermen can be of assistance to our paid professional law enforcement officials who are attempting to apprehend violators and prevent crimes like the ones happening at Kiholo. If you see suspicious activity, or have information about the killing of turtles at Kiholo Bay or elsewhere in Hawai'i, please call federal agents in Honolulu at **541-2727**, or state DOCARE officers at **323-3141** (in Kona); **933-4291** (in Hilo); **243-5414** (on Maui); **241-3521** (on Kaua'i); **567-6618** (on Moloka'i); **565-6688** (on Lana'i); or dial 0 from any neighbor island and ask the operator for "Enterprise 5469."

The long-term conservation of fish, turtles and other marine resources at small but important sites like Kiholo Bay will ultimately depend in part upon the exclusion or severe limitation of gill nets. Designating Kiholo as a Fishery Management Area would be a reasonable first step to the process. Hopefully some far-sighted individuals and/or organizations on the Big Island will pursue this worthy goal.

... George Balazs

### READER'S PAGE

## Mail Buoy





# SHARKS

Even though there hasn't been a shark attack in more than a year, Hawaii researchers are busy gathering data to try and figure out how to keep sharks and humans apart.

## Tagging the sharks

Previous shark radio tracking was hampered when transmitters became dislodged from the sharks. Researchers now insert transmitters inside the sharks. Here's how it is done:



The shark is caught on a fishing line and pulled up next to the boat. The shark is allowed time to calm down and then turned onto its back. While on its back, the shark goes into a trance.



An incision is made in the shark's abdomen. A radio transmitter is inserted into the shark's abdominal cavity and then researchers stitch the shark up, let it go and follow it.

Scientists still don't have enough information to explain why the predators attack humans

Public's view changing A-10

BY GREG AMBROSE  
Star-Bulletin

As Hawaii heads into the winter surf season, wave riders' thoughts turn to sharks.

Shark attacks have halted after a deadly two-year surge of attacks, but surfers still worry as they spot sharks cruising.

There's no doubt that sharks are still out there.

Researchers set 20 hooks off Sand Island a few months ago and caught six large tiger sharks.

"I'm beginning to realize that there is active avoidance going on," said University of Hawaii shark researcher Kim Holland.

"If these tiger sharks were biting everything that moves, there are so many tiger sharks and so many people in the water, the number of attacks would be huge."

Ocean enthusiasts still need to be cautious, because even though researchers are working hard to understand shark behavior, they still don't know why sharks attack humans.

A spate of shark attacks began in November 1991 when swimmer Martha Morrell became the first person to be killed by a shark in Hawaii in 33 years. By the time things calmed down, sharks had killed one surfer, were suspected of killing another, and had attacked a

SEE SHARKS, PAGE A-10



# SHARKS: More data needed on the predator

FROM PAGE A-1

dozen surfers on all islands. The state and independent fishermen hooked nearly 100 large tiger sharks to calm a fearful public.

Since a surfer was attacked in June 1993, there hasn't been a nibble. The state disbanded its Shark Task Force, calls to the state hot line 536-SHARK have dried up, and free-lance fishing for tiger sharks has dropped.

Federal shark expert John Naughton theorizes that the stomach contents of sharks studied in the past 30 years explain the outbreak of attacks. Decades ago, sea turtles were present in the stomachs of only 20 percent of the sharks caught.

That has increased to 50 percent in recent years.

Turtle numbers have exploded since they were declared a federally protected species, and one theory has large tigers changing their feeding strategy to take advantage of this more-abundant prey.

Surfers and turtles share the same territory near shore, and at dusk and dawn and when the ocean is turbid, the theory goes, sharks hunting for turtles see something moving and, bam, hit the surfer.

Other shark researchers point out that clumps of attacks and the absence of attacks average out. "The head of the international shark attack file said spikes of activity over a relatively short period of time are common around the world," said Randy Honebrink, state shark education expert. "Fortunately, there hasn't been anything this year."

UH shark researchers Holland, Chris Lowe and Brad Wetherbee work together and on different projects to answer the most fascinating questions about tiger sharks in Hawaii: where do they hunt, and what do they eat?

Holland has refined his technique

of tracking tiger sharks with radio transmitters and is picking up the pace during the smoother winter weather conditions in the final phase of his two-year study.

The research crew used to harpoon a radio transmitter to a large tiger shark and follow it until they lost the signal. But the transmitter would become dislodged, making long-term tracking difficult.

**Surfers and turtles share the same territory near shore, and at dusk and dawn and when the ocean is turbid, the theory goes, sharks hunting for turtles see something moving and, bam, hit the surfer.**

Holland now hooks a shark, hauls it close to his boat and turns it on its back. The shark goes into a trance. Holland makes a small incision on its belly wall, inserts a transmitter into its body cavity and sews it back up.

Now the researchers can follow the sharks for longer periods and see what their long-term behavior is. They tracked one for two days, and tracked another, lost it for three months then picked it up again 10 miles away.

After tracking seven tigers, Holland said, "We're finding out some interesting trends. Sooner or later, they all go straight offshore into the deep blue water. Some go almost immediately after tagging, others patrol along the reef for 10 hours before going offshore."

But bobbing around on the ocean listening for his tagged sharks is labor-intensive work. Holland is eager to begin phase two, using long-term archival tags that gather information on the shark and divulge it to permanent listening stations to be placed off the south shore of Oahu.

The UH Sea Grant Extension Service is deciding whether to fund the listening post program, as Holland's current project runs out in late sum-

mer next year.

"In a year's time we'll have three times as much data on these animals," he said.

That's welcome news to Waikiki Aquarium researcher Gerald Crow, who is studying the reproductive habits of tiger sharks to add to the woefully deficient store of data. "All the information we have now is hearsay. Until we put it all together it's a cloudy picture."

At the UH research center on Coconut Island, Lowe just finished a scientific paper on the dietary habits of tiger sharks that abounds with theories that he hopes Holland's radio telemetry studies will confirm.

Using data gathered over 30 years, Lowe found that tiger sharks eat just about anything. "They feed opportunistically, anything they come across and can swallow. They are big-time scavengers that feed on whole items. They are gulpers, not biters."

He also found that tigers of different ages eat different things, just like humans. The bigger they are, the more diverse their prey. Up to about 7 feet, they eat birds, fishes, crustaceans and squids. As they grow bigger, they can start to feed on turtles, marine mammals and other sharks.

"Based on what they eat, we can speculate on their behavior. As bigger sharks expand their diet they become more skilled as hunters, and eat faster animals. They expand their range, travel farther, encounter a wider variety of prey."

Another theory they wanted to test was whether the shark-control and research programs between 1959 and 1976 had any effect on preventing shark attacks.

The state spent \$300,000 of taxpayers' money to catch 4,668 sharks, 554 of them tigers. But the rate of attacks remained the same before, during and after the control fishing.

"Without data, you're just wasting your time, other than people feeling good about catching a big shark," Wetherbee said.

"We educate people so that so that when a shark comes to mind, they think it's an awesome, inspiring sight, rather than horrible monster."

11/5/95 HONOLULU STAR-BULLETIN A10



# Opinion

## Letter to the editor

### Biologist praises Cierras for Hanauma's turtle art

Editor:

Mahalo and congratulations to marine artist Shaning Cierras for his impressive new mural at Hanauma Bay!

The sea turtles featured in this work of art are especially attractive and lifelike. Sea turtles are

playing an increasing role in Hawaiian ecotourism. Like humpback whales, they enrich our environment and contribute to Hawaii's economic well-being.

Thank you, Shaning, for sharing your talents with all of us — residents and tourists alike.

**GEORGE BALAZS**

*Sea turtle biologist*

*National Marine Fisheries Service*

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Honolulu STAR-BULLETIN

# Fish nets left out too long should be reported to state

12/27/94 A2

**QUESTION:** Can you find a number for game wardens or the state agency that is supposed to enforce fishing regulations? This is kapu mullet season but I see fishermen with nets that they leave overnight. I can't find a number for the people who are supposed to enforce the laws.

**ANSWER:** Call 587-0077, the Division of Conservation and Resources Enforcement in the state Department of Land and Natural Resources. (It's in the third column on page 14 of the white pages Hawaii government section in the front of the telephone book.)

In Hawaii waters, mullet may not be taken in December, January or February, according to Ronald Kama, Oahu branch chief in the enforcement division. Other fish may be taken but regulations specify that a net may be left in one place for only four hours out of a 24-hour period. If a net is left in place for four hours, it must be checked or tended every two hours, Kama said.

Kama said enforcement officers have seized nets and given citations for illegal fishing. Violations are a petty misdemeanor. He encourages citizens to report illegal fishing. Details on the location, day, time, and description of activity are needed. "Much of our enforcement is through someone calling. When a report is made we know there is a problem," he said.

The enforcement office has workers on duty from 8 a.m. to 4 p.m. Monday through Friday, and from 6 a.m. to midnight on Saturday and Sunday. Messages may be left on the telephone recorder during other hours.

**Q:** I saw a city vehicle with the license plate covered with clear plastic. I thought this was illegal.

**A:** State law says license plates on vehicles must be entirely unobscured and be kept reasonably clean. A clear plastic covering is permitted, according to officers in the police traffic division. But problems can develop with clear plastic if it turns yellow or the reflection of light on the plastic makes the numbers unreadable.

**Q:** Now that Christmas is over, I'm taking down my greeting cards and will throw them away, unless you know of some school or person who might want them.

**A:** Helen Daniels, known as the Christmas card lady, would love to have your cards. She makes scrapbooks to cheer isle children who



## KOKUA LINE

By  
Hildegaard  
Verploegen

are in hospitals here during the Christmas season. Daniels delivered scrapbooks to 62 children in various hospitals here last week. She says it takes about 400 cards to make one book. She has use for Christmas cards only. The address to send your box of used cards is: Helen Daniels, 1321 Kahili St., Kailua, Oahu 96734.

Readers frequently ask if teachers or anyone else want used birthday, anniversary or other cards. Kokua Line has no names for those cards from other occasions. If any readers want such cards, mail your name and address to the Kokua Line address at the end of this column.

## Mahalo

"On Dec. 18, about 11:30 a.m. I fell down while riding my bicycle on Papipi Road. Leland Hindle and David Penegra helped me in my pain. Also another man prayed for me in Hawaiian. The bus driver, Arnold, of Ewa Beach route 49, stopped after a woman saw me and told her there was a man there beside the road on the ground.

"Arnold called an ambulance and also stopped by the hospital later to see how I was doing. I have a broken bone in my right arm. Leland and David came to see me at home Dec. 21. Mahalo to all of you who were concerned to give your help when someone else needed help. Thank you very much." — Tadashi.

## Auwe!!!

"Auwe to the woman in the white Camry who backed her car into ours as she tried to get her premium parking space at the Mililani Walmart Dec. 9. She left us with two choices: back up and get sideswiped by oncoming traffic, or be hit by her. I guess she decided that the stall was more important than the car or our family's safety. May her future shopping be filled with crowded parking lots and unavailable stalls.

Need help with problems? Call Kokua Line at 525-6666 or write to P.O. Box 3080, Honolulu 96802.



# Letters

THE MAUI NEWS  
11-10-94

## Turtles need protection

Emergency measures need to be taken to prevent auto collisions with critically endangered hawksbill turtles trying to lay their eggs on the shores of Maalaea Bay. Just last year a nesting female was hit and crushed to death while trying to cross North Kihei Road in the dead of night. Now, in recent days, one or two more of these rare animals have had close calls on the same stretch of highway.

The immediate solution to this problem is to erect a low (2-foot) fence along the makai roadway where the danger exists. The turtles have no business crossing the road, and under no circumstances should be allowed to do so. If eggs are laid in a nest on the mauka side, the small hatching turtles that later emerge will be run over, or severely disoriented, when they try to crawl to sea.

Action urgently needs to be taken to reduce or eliminate this roadway hazard before last year's tragedy is repeated.

*Maui News*

11-10-94

George H. Balazs  
Honolulu  
Deputy Chairman  
Marine Turtle Specialist Group



NOV 11, 1994

SOUTH MAUI TIMES

# Turtles appearing on South Maui shoreline

By Jerome Kellner

Saltwater reptiles are making news in South Maui, good and bad news.

The dead green sea turtle brought into Maalaea Harbor recently was almost undoubtedly a victim of the disease afflicting that species in Hawaii and world wide. The small turtle was picked up by the R.V. Whale One on its morning snorkel cruise out of Maalaea and brought back into the harbor, where biologist Skippy Hau recovered and cataloged the carcass.

A week later came the third report of a sighting of the rare hawksbill turtle in the Maalaea mudflats area,

where a number of the exotic sea reptiles have been spotted in recent years.

Last year a large egg-bearing hawksbill was hit by a car and killed on North Kihei Road. Only a couple of dozen hawksbills — once prized for its shell, which was made into jewelry — are thought to inhabit Hawaii waters.

The green sea turtle has made a good recovery in Hawaii, but in the past decade the population here has been afflicted with life-threatening tumors, called fibropapillomas. The one brought into Maalaea harbor had evidence of extensive tumors, which is symptomatic of the disease, suspected

to be caused by a virus, Hau said.

"Unfortunately we pick up a lot of (dead) turtles," said Hau, an aquatic biologist with the Department of Land and Natural Resources.

He noted that this specimen had a lot of tumors and evidence of algae growth on it.

A number of Maalaea charters boats have made stopping in "Turtle Town" outside Maalaea Harbor part of their daily cruise. An area directly outside the harbor is a favorite site of turtles, and at least a half dozen are generally viewable at any given time.

Tim Clark, a research associate of the Pacific Whale Foundation who has studied turtles, said in Kaneohe Bay on Oahu, about 50 percent of the green sea turtle population is afflicted with the tumors. The tumors can interfere with feeding and seeing, and the disease is undoubtedly cutting into the turtles' reproductive capability, he said.

The green sea turtle is the most common of the three native Hawaiian sea turtles, and like its cousins the hawksbill and the leatherback, is fully protected under state law and the federal Endangered Species Act.

The greens can weigh up to 400 pounds, and are primarily vegetarians, eating limu located on coral reefs and on rocks close to shore.

Besides the fibropapilloma affliction, green sea turtles frequently end up as tiger sharks' meals, as they travel long distances in the ocean and their shells are relatively soft in comparison to other turtles.

Once there were tens of millions of green sea turtles around the world, but their numbers were decimated by hunting. They have been further reduced by being captured in drift nets and other fishing gear; by eating plas-

tic debris and by degradation of their nesting beaches by pollution and development. Now there may be fewer than 200,000 mature females.

In Hawaii, the green sea turtle is a threatened species. Only 100 to 350 females nest each year, principally at French Frigate Shoals in the Northwestern Hawaiian Islands, according to the National Marine Fisheries Service.

The shells of adult green sea turtle are dark brown with olive or gold flecks; they received their name from the color of their body fat.

Six of the seven species of sea turtles are listed as endangered or threatened under the federal Endangered species Act. An endangered species is in immediate danger of extinction; a threatened species is one that is likely to become endangered in the near future.

The hawksbill is definitely an endangered species, world wide.

The good news is that they are here in South Maui at all. Two years ago evidence was found that a female hawksbill had used a beach near the Maalaea mudflats as a nesting site. Then there was last year's incident in which an egg-bearing hawksbill was struck and killed on North Kihei Road, followed by at least four sightings during the past month.

The hawksbill nesting season continues through November, so motorists in that area should look out for turtles on the road at night. Kathy Smith, manager of the Kealia Pond National Wildlife Refuge, wants anyone who has seen a hawksbill turtle to call her at 875-1582.

Anyone who sees turtles being captured, harmed or killed should call the State Conservation & Resources Enforcement Maui office at 243-5414.



# Biologists working to rid turtles of deadly tumors

**S**EVERAL readers have asked for news about those nasty, life-threatening tumors seen growing on many of Hawaii's green sea turtles. I hadn't heard anything in a while so I wrote National Marine Fisheries Service turtle biologist George Balazs for current information.

"No major breakthroughs as yet," Balazs wrote back, "but I feel we're much closer now than two years ago." Enclosed was a thick packet of literature on recent turtle tumor research.

Turtle tumors are not a new phenomenon. The first reported tumor on a green turtle was in 1938 on a New York Aquarium turtle captured near Key West, Fla. That same year, researchers found several other tumored turtles in Florida. A local fisherman reported Hawaii's first case on a green sea turtle in Kaneohe Bay in 1958.

In the last two decades, however, turtle tumor incidence has increased dramatically. Now, 50 percent to 90 percent of Kaneohe Bay's turtles bear tumors. Areas previously hosting healthy turtles, such as the waters off Molokai, are showing more and more turtles with tumors. Strandings of emaciated, weak and dead turtles have been increasing throughout the islands.

In Florida's Indian River Lagoon area, the first case was seen in 1962. Now, about 50 percent of the green sea turtles there are affected.

Heightened awareness of the tumor problem has led to increasing reports of tumors in other sea turtle species. People have seen similar lesions in loggerheads in Florida and Australia, olive ridleys in Costa Rica and flatbacks in Australia.

Given the miracles of modern technology, it seems it should be easy to find the cause of these tumors. Not so. The list of possibilities is daunting. Mites, leeches and other organisms have been found on the surface of some tumors. Do they cause the tumors or are they simply taking advantage of the turtle's weakened condition?

Organic and toxic contaminants in water cause tumors in fish and other aquatic creatures. Is this a factor in turtles?

Sick turtles show signs of physiological stress and faulty immune systems. Does the stress make the turtle susceptible to illness? Or does the illness damage the immune system? Perhaps stress symptoms are the result of humans capturing and examining



## OCEAN WATCH

By Susan Scott

2/27/95

A2

Honolulu STAR-Bulletin  
the animals?

Then there's the ultraviolet radiation theory. Not to mention trying to catch, study, treat and monitor animals ranging widely throughout the world's oceans that don't reproduce for at least 20 years and normally live for decades.

The point is, this is a complex biological problem with no simple answers.

But that doesn't mean there's no hope. As revealed by the stack of research papers on my desk, people do care and are working diligently on learning the causes and creating solutions.

All the studies I read conclude that more research needs to be done. But there are clues: Researchers have the impression that turtle tumors are caused by an infectious agent, such as a bacteria or virus.

Attempts at isolating such a germ from the tumors has been negative. Viruses causing fibropapillomas in other species are extremely difficult to see by microscope and have not been grown in cultures.

Besides searching for the cause, workers are also looking at painless, cost-effective ways of removing debilitating tumors to help already-infected turtles.

As researchers work on the technical end of this problem, we citizens can work on the civic end:

- Report sick, beached turtles to the NMFS office at 943-1221.

- Report people who catch, ride or harass sea turtles.

- Don't buy or sell sea turtle products.

- Let your federal and state representatives know that you want tax money spent on this research.

- 1995 has been declared the Year of the Sea Turtle in the Pacific by turtle conservationists. Join in upcoming activities to teach others about the needs of sea turtles.

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



# Vigilant citizens can help stop abuses of wildlife

**A** Waianae coast reader phoned recently: "From our house, my wife and I can see dive boats harassing humpback whales. We call the National Marine Fisheries Service enforcement number but all we get is a recording. What should we do?"

■ Last week, a Hawaii Audubon Society worker told me: "Since volunteers have been watching Manana Island with binoculars (for the albatross decoy project), we're seeing dozens of people landing on the beach under huge signs that say NO LANDING. Monk seals on that beach are getting chased away. What can we do?"

■ One day at the Kaena Point Nature Preserve, a friend of mine explained to a stranger that she should leash her dog because seabirds are nesting there. He was told to mind his own business. The dog continued to run free. What should he do?

For those of us who care about Hawaii's wildlife, witnessing an abuse can be frustrating. Should we report incidents? Does anyone do anything about it? Is there a way through the maze of government agencies and phone numbers?

The answers are yes, yes and yes. This doesn't mean problems don't exist in wildlife enforcement systems: Government funds are shrinking, positions are being deleted and education money is scarce.

But these fiscal realities make citizen involvement all the more crucial. More than ever, individuals and private organizations need to help protect and preserve Hawaii's wildlife.

Reporting incidents helps. Whether anyone is cited, officials at least have an idea of how prevalent a problem is.

Fisheries service officer Scott Yamashita says that whale violations have decreased in Maui waters lately, likely because of education programs. And reports of whale incidents around Oahu have been going up. "I don't know if this is because there are more whales here or because there's an increased level of awareness on Oahu," he said. "In either case, the way government funding is going, we have to get the word out."

Even though both state and federal funding for wildlife enforcement is decreasing, that doesn't mean no one is doing anything. Enforcement programs still exist.

The fisheries service enforcement branch is down to three positions for the entire state, but when I called them recently about

Hawaii Star-Bulletin



## OCEAN WATCH

By Susan Scott

2/20/95 A:2

a beached monk seal, someone came within the hour and posted the area.

The state's Department of Land and Natural Resources has an enforcement hotline to call for state infractions such as beaching kayaks on Manana Island (a state sanctuary).

When I called this number, the person who answered seemed genuinely interested in hearing about this problem. Although it's impossible to rush out to Manana and fine each violator, the enforcement officer and I discussed educating kayak clubs and stores selling kayaks and small boats. It seems like a good start.

Now, who to call? I dread looking up anything in the government listings of the phone book. For instance, after some exasperating page turning, I finally found the state Marine Patrol under the Department of Public Safety. But the listed number had been disconnected and no alternative number was given. YAAAAA!

But I have a trick. It only works during business hours on weekdays, but then it works well. Look up just one wildlife enforcement agency, then ask whoever answers other numbers you can call. I usually get several useful numbers or agency names this way.

Don't give up. Get all the information you can, then report abuses, even if it takes several calls. If possible, inform people of the rules when you see an infraction. Spread the word.

The following are some agency numbers to call for wildlife violations. If you get a recording, leave the message. Even if no one calls back, someone is listening.

Oahu Sheriff Dispatch (24 hours): 538-5600.

State Marine Patrol: 587-2000; Waianae branch: 696-0916.

Fisheries Service law enforcement: 541-2727.

State enforcement hotline: 587-0077.

Wildlife Service: 541-2681.

U.S. Coast Guard: 541-2500.

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.



# Hawaii is left fishing for answers

■ Technology, attitudes and too many anglers have hurt our once-productive waters

By CRAIG IHA  
SPECIAL TO THE STAR-BULLETIN

During the 1930s, Al Souza used to walk down to the ocean near what is now the Honolulu Reef Runway.

"I would walk mostly barefoot, or sometimes with slippers if I had them," Souza said. Once there, he would crouch along the waist-deep channels that cut through the mangrove thickets, throw net in hand, watching. He'd scan the still waters for the grey backs of cruising mullet, awa (milkfish), and other fishes.

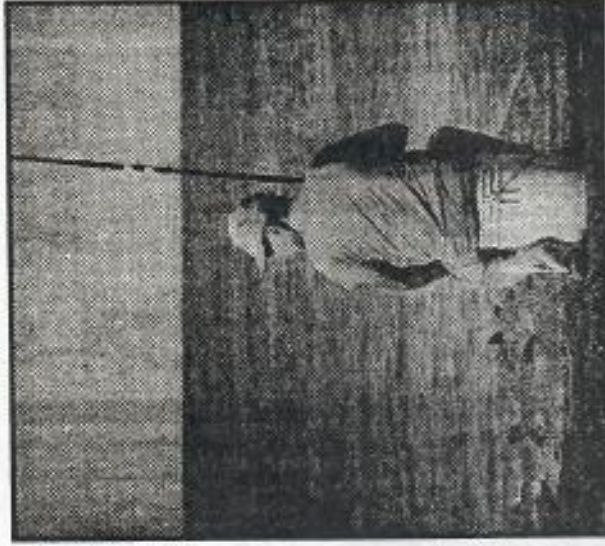
On some days, Souza would eventually make his way down to the area around Kam Reef in Hickam Air Force

Base. 50 years ago, this stretch of coastline was covered with mangroves, fishponds, and reefs. Today, however, the mangroves have been largely covered by the sprawling airport, and the silent reef flats shaken by the roar of foreign-bound jumbo jets.

A subsistence and recreational fisherman for more than 50 years, Souza has witnessed a number of changes that have adversely affected his sport. The cumulative result of years of development, population growth and technological advancement is that shorefishing for him, as well as for many others, has made fishing a near-futile exercise.

The Hawaii Fisheries Plan for 1990-1995, prepared for the State's Division of Aquatic Resources, determined that "with few exceptions, the fishery resources of the state are fully, or over,

SEE FISHING, PAGE III-41



BY DEAN SENSUI, FROM THE STAR-BULLETIN FILE  
Sid Antonio of Makaha waits for some fishing action at Pokai Bay in 1985.



## FISHING: Hurt by technology, the people factor

FROM PAGE III-36

exploited." This includes not only the nearshore fisheries, but also the offshore commercial fisheries that rely on catches of tuna and swordfish. In addition, bottomfishes such as onaga and ehu are at dangerously low population levels.

The report cites a number of sources, such as commercial fish catch reports. While the total catches of some fishes have remained fairly constant, the reports indicate that Catches per Unit Excursions have gone down. CPUE is the ratio of catches to the number of fishing trips made. This means that fishermen are putting in more effort to catch the same amount of fish than required 20 years ago. Since more efficient fishing methods are now being used, the statistics point to a decline in fish populations.

Eric Onizuka, program coordinator for the Division of Aquatic Resources, attributes the decline of Hawaii's fisheries to a number of factors. One is the widespread use of nets to harvest shorefish. Gillnetting results in the capture of unwanted animals. Turtles, for example, are often found entangled in gillnets.

Developments in satellite navigation have made it easier for boats to pinpoint productive fishing areas. Depth finders have made it easier for fishermen to determine the best bottom structure for the type of fish they are trying to catch. Ono (wahoo), for example, are found along ledges that drop off into deeper water, such as the "40 fathom ledge" where

an effect on Hawaii's fisheries. The El Niño effect for example, is a recurring warm water current in the Pacific that has wreaked havoc on the world's climates for the past couple of decades. In addition, pollution caused by agricultural runoff and sedimentation caused by erosion and shoreline development have killed many of Hawaii's nearshore reefs.

One of the overreaching causes for the depletion of Hawaii's fisheries is simply the number of people who use the resources. The U.S. Fish and Wildlife Service, for example, estimated that in 1985, as many as 202,000 people were engaged in some form of fishing here in Hawaii. The overall effect is that more fishermen are competing for fewer fish while using more efficient methods, and in the case of shorefishing, over a smaller area. Credence to the saying that Hawaii has "more fishermen than fish."

The state has made a number of efforts during the past several decades to protect the future of Hawaii's fisheries. Some of the most exploitative fish harvesting methods are now restricted by law. Gillnetting, for example, is restricted so that a net cannot be left in the water for more than four hours over any 24-hour period.

Restrictions have been placed on the taking of certain marine life. Moi, mullet and lobster are now illegal to harvest during the months when they are spawning. Among the recent efforts that the state has made to preserve its nearshore fisheries is the creation of Marine Life Conservation Districts (MLCDs). The first, said probably the most famous, MLCD is Hanalei Bay on Oahu's southeastern shore. Established in 1987, Hanalei Bay has since been followed by nine others on Maui, Lanai and the Big Island.

The taking of marine life in MLCDs is usually severely restricted, and in some cases is banned, such as in Hanalei Bay. The result is an increase in fish popula-

tions, not only within the district's boundaries, but in surrounding areas as well. Hanalei Bay and Mo'okini Island are two examples of MLCDs that have exploding populations of fish.

The creation of MLCDs, as well as the implementation of restrictive laws, requires public support. "If the public doesn't support the MLCD, then it'll be very difficult to enforce," Onizuka said.

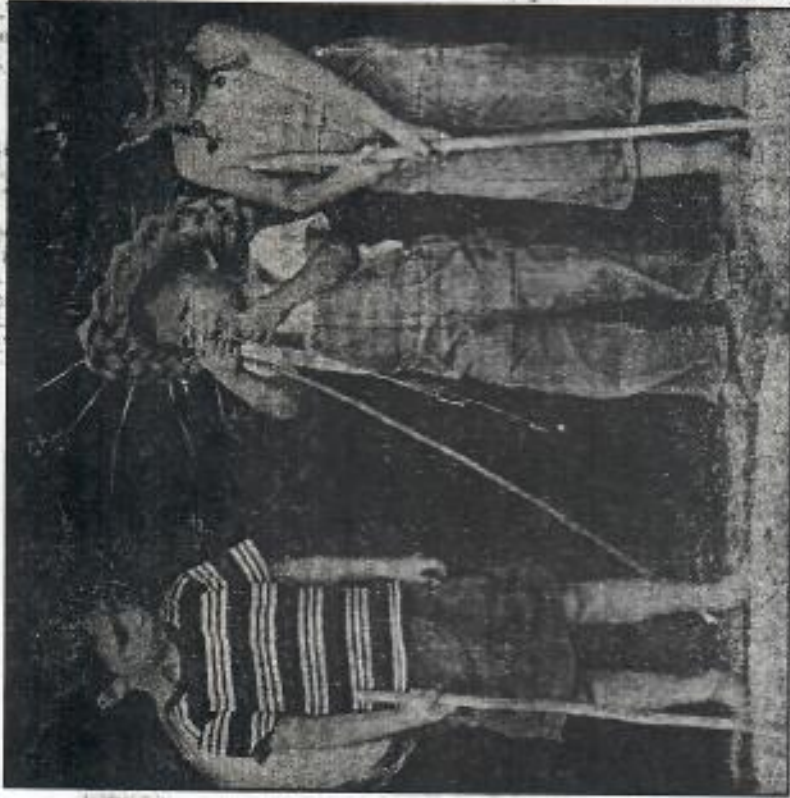
The public's attitude toward fishing is therefore important to conservation efforts. Al Souza recalled one experience with other fishermen that is often repeated throughout the state.

"We used to hook mullet from plywood stands out at Kaneohe Bay," Souza said, referring to a traditional style of pole and line fishing. In this method, anglers usually sit on raised structures, and use hand poles up to 30 feet long. The standard bait is white bread molded around one or two hooks, and while catches are sometimes plentiful, fishermen never take home more than what their families can eat, Souza said.

"One day I saw the biggest school of mullet ever," he said. "All you could see for about a hundred yards out were grey backs [of mullet]. On the shore I could see some guys with several boats and acuba gear watching the school too."

After a while, Souza watched as the men launched their motorized boats and surrounded the school with a large net. "We watched and saw those guys catch about six pakini (weatubas) full of mullet," he said, "and that was one of the last times I ever fished at that place."

"Some people have the mentality that they're going to catch all the fish they can to give to their relatives and friends," Randy Honebrink, Education Coordinator for the Division of Aquatic Resources, said. "We're trying to get people to return to a more traditional (Hawaiian) way of fishing that stresses conservation."



BY WAYNE FETTERS/CPAAR, FROM THE STAR-BULLETIN FILE

These kids look their fishing seriously in November 1963. They are, from left, Timothy Wayne Brillonda, Brenda Annette Alouai and Gregory Godfrey Alouai. Will the children of the future have a place to fish or will Hawaii's waters be fished out?

troublers often fish. Depth finders can also locate fish underwater, and are a significant factor in increased catches. Environmental changes have also had



# Boat overturns during green sea turtle rescue

KAHANA, Maui — A small rowboat overturned yesterday morning as Maui fishermen tried to rescue a green sea turtle caught in their gill net.

State conservation enforcement chief Keith Keau said the 7 a.m. incident occurred about 100 yards off Kahana, where the men had laid a net.

When the turtle became caught in the net, two of the men went out in a small boat and tried to haul the turtle and net into the boat,

Keau said. The boat capsized.

A Maui fire/rescue team went out to assist the fishermen, the net was cut in half, and the turtle finally was dragged ashore to be untangled, he said.

The turtle was estimated to weigh between 200 and 300 pounds. It was uninjured although it was suffering from tumors on its right flippers.

"It's probably halfway back to French Frigate Shoals by now," Keau said.

## Tangled green sea turtle gets helping hand

KAHANA — Maui firefighters helped free a green sea turtle tangled in a gill net Monday morning in waters off Kahana.

Two fishermen reported they were picking up their fishing net left overnight when their dinghy swamped and they discovered a large turtle was caught in the net.

Fire Capt. Alan Pascua said by the time Lahaina firefighters responded to the 6:50 a.m. call for help, the fishermen were on shore trying to rescue the turtle. They helped cut the net in half in the water and then dragged the turtle ashore.

The turtle, which weighed an estimated 200 to 300 pounds, was calm and allowed its rescuers to un-

tangle the net before it was set free again.

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HONOLULU STAR-BULLETIN  
28 MARCH 95 A4

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# HAWAII

Thursday, April 13, 1995

Star-Bulletin • ◆

A16

## Authorities seek killers of two protected turtles

Associated Press

**HILO** — State enforcement officers are looking for the people who butchered two protected Pacific green sea turtles on the Big Island this past weekend.

A similar killing also occurred over the weekend on Maui and authorities are worried that a pattern could be developing.

"I hope that's not the trend," said Lenny Terlep, chief of the Big Island conservation enforcement office.

"I don't want people to think it's open season on turtles," he said.

The Big Island turtles were found at Wailea Bay and officers say they were killed sometime between midnight and 5 a.m. Sunday.

The bay is a Marine Life Conservation District.

Diving or killing an animal in a conservation district is punishable by a year in jail and a \$1,000 fine.

Federal penalties could also apply because the green sea turtle is a threatened species, Terlep said.

A witness who was camping told authorities he saw diving lights coming from the ocean about 2 a.m.

Later, he went to his truck and saw a four-wheel-drive Chevy truck that wasn't there before and heard two men who were "loud and boisterous."

**Killing an animal in a Marine Life Conservation District, is punishable by a year in jail and a \$1,000 fine.**

The witness found the slaughtered turtles at 5 a.m. on a trail leading to the beach.

Terlep said the witness was "very upset."

"(The perpetrators) just slaughtered them," Terlep said.

"They butchered them. And they didn't even

try to cover up what they did."

Only the head and flippers were left behind, he said.

In the Maui incident, enforcement officers arrested two divers suspected of killing the turtle shortly after they dragged the animal ashore.

Anyone with information about the Wailea Bay turtle killings is asked to call state conservation officials.



# Protected turtle taken in Honolua

## Two others found slaughtered on the Big Island

### The Maui News and The Associated Press

HONOLUA — Two West Maui men are facing penalties for spearing fish and removing a protected Pacific green sea turtle at the Honolua Marine Life Conservation District last weekend, and state conservation officers are looking for the people who butchered two turtles on the Big Island.

Authorities are concerned that a pattern may be developing.

"I hope that's not the trend," said Lenny Terlep, chief of the Big Island conservation enforcement office.

"I don't want people to think it's open season on turtles."

In the Maui incident, Roward Chun, 24, of Lahaina, and Simeon Pali III, 20, of Napili, were allegedly spotted diving at 1 a.m. Saturday by Department of Land and Natural Resources officers.

The pair were arrested for prohibited acts in a marine life conservation district and for prohibited acts against an endangered and threatened species. They were later released.

The turtle was placed back into the ocean. The fish — which consisted of more than six different species — were dead and were kept as evi-

dence, according to Keith Keau, head of enforcement on Maui.

Diving or killing an animal in a conservation district is punishable by a year in jail and a \$1,000 fine. A court date for the two men has not been set.

The Big Island turtles were found at Wailea Bay and officers say they were killed sometime between midnight and 5 a.m. Sunday.

The bay is a marine life conservation district. In addition to the state penalties, federal penalties could also apply because the green sea turtle is a threatened species, Terlep said.

A witness who was camping told authorities he saw diving lights coming from the ocean at about 2 a.m.

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Only the head and flippers were left behind, he said.

Terlep said he has asked the National Marine Fisheries to monitor whether instances of turtles being hunted are increasing.



# Police Beat

## Rare sea turtles butchered

By Hugh Clark

Advertiser Big Island Bureau

HILO, Hawaii — Two rare Hawaiian green sea turtles were found killed this week in the Puako area of South Kohala, part of a state Marine Life Conservation District.

State enforcement officials have identified one man and are searching for at least one other they believe captured

and killed the turtles at Beach 67 parking lot between midnight last Sunday and 5 a.m. Monday.

The meat and shells of the two 50 pound-plus turtles were taken, but the heads, flippers and entrails were left behind.

State Land Department officials asked for the public's help in identifying suspects. Call 885-0670 in Waimea, 933-4291 in Hilo or 323-3141 in Kona.



# Mother-of-all-sea-turtles laments human treachery

**L**ATE one stormy night, I lay in bed wide awake, unable to sleep. Wind shrieked through the cracks in my lanai doors and waves crashed upon the shore. I tossed. I turned. Exasperated, I finally got up, dressed and went for a walk on the beach.

At the water's edge, a passing squall drove stinging rain into my face. Shivering, I pulled up the hood of my jacket and trudged on, head down, arms crossed in front of me, feet sinking deep into the soft, wet sand.

Moments later, a huge wave broke at my ankles, soaking the bottom of my jeans. I was sidestepping up the steep incline of the beach to avoid getting doused by the next wave when I noticed a dark mass on the white sand just ahead of me.

I squinted into the black night and saw that the mass was a huge female green sea turtle, more than 4 feet long and weighing at least 400 pounds. Enthralled, I watched as she reached forward with her flippers, dug them into the sand, then with tremendous effort, shoved her enormous body up the beach. She lurched forward again, then again.

When she was high on the beach, I heard a moan. I stood paralyzed. Can turtles moan? Then I heard what sounded like a sob.

Slowly, I tiptoed toward the majestic creature, knelt in the sand and looked into her face. The sight of tears dripping from her large, dark eyes instantly brought tears to my eyes. We stared at each other for a long moment, then I started to creep away to give this endangered animal some privacy. "Traitor!" I heard her rasp as I began to back off.

"What?" I said, astonished.

"You tricked us," she hissed.

"Tricked you?"

"You humans tricked us. You set us up for a slaughter."

"I don't know what you mean."

"One hundred years ago, when I was just a hatchling, we were taught by our elders to stay away from humans at all times. We turtles learned early that if humans saw you, they would shoot a spear into you, then drag you to the beach to die a horrible, agonizing death."

The turtle rose up on her flippers and faced me, tears flowing freely from her eyes. "But 20 years ago you stopped the torture and killing. You began to feed us and pet us. We stopped fleeing. Some of us even came to like your gangly, poor-swimming species."



## OCEAN WATCH

By  
Susan  
Scott

"Oh, we like you, too," I said earnestly.

"HAH!" she spat.

"I watched two of my children slaughtered by men at Puako last week in what the turtles thought was a safe place. Just days before that, one of my young nieces was butchered in Maui. And two weeks ago, two of my sons were murdered by men in Kauai."

She turned her head away from me. "We trusted you," she sobbed. "And you betrayed us."

"No," I said.

"You have it all wrong. Almost all of us here love you and want to help you. It's just a few bad humans who break our laws."

"It doesn't matter to us. Trust is trust; death is death. And for us, death may mean extinction. We also have this terrible tumor problem, you know . . ."

"Yes, I know," I whispered, feeling wretched. But then I brightened. "This is the Year of the Sea Turtle," I told her. "Things are bound to get better."

"Show me." The massive turtle dug her left flippers in the sand and began her turn toward the sea.

"Please . . . wait . . ." I begged.

"We can't wait. That's why I came to you. Tell other members of your species that without more help, we will cease to exist."

Silently, this mother-of-all-turtles slipped back into the dark water and disappeared.

I plodded back to my bed where I fell into a troubled and restless sleep. In the morning, I awoke with tears in my eyes.

My turtle encounter was a fantasy but the recent slaughter of Hawaii's sea turtles on several islands is all too real.

You can help stem the tide of this troubling trend by spreading the word that all sea turtles are protected by state and federal laws. Call the National Marine Fisheries Service or the Department of Land and Natural Resources if you can help identify any suspects in these cowardly crimes that hurt us all.

*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.*



# Protected turtle taken in Honolua

## Two others found slaughtered on the Big Island

The Maui News and The Associated Press

HONOLUA — Two West Maui men are facing penalties for spearing fish and removing a protected Pacific green sea turtle at the Honolua Marine Life Conservation District last weekend, and state conservation officers are looking for the people who butchered two turtles on the Big Island.

Authorities are concerned that a pattern may be developing.

"I hope that's not the trend," said Lenny Terlep, chief of the Big Island conservation enforcement office.

"I don't want people to think it's open season on turtles."

In the Maui incident, Roward Chun, 24, of Lahaina, and Simeon Pali III, 20, of Napili, were allegedly spotted diving at 1 a.m. Saturday by Department of Land and Natural Resources officers.

The pair were arrested for prohibited acts in a marine life conservation district and for prohibited acts against an endangered and threatened species. They were later released.

The turtle was placed back into the ocean. The fish — which consisted of more than six different species — were dead and were kept as evi-

dence, according to Keith Keau, head of enforcement on Maui.

Diving or killing an animal in a conservation district is punishable by a year in jail and a \$1,000 fine. A court date for the two men has not been set.

The Big Island turtles were found at Wailea Bay and officers say they were killed sometime between midnight and 5 a.m. Sunday.

The bay is a marine life conservation district. In addition to the state penalties, federal penalties could also apply because the green sea turtle is a threatened species, Terlep said.

A witness who was camping told authorities he saw diving lights coming from the ocean at about 2 a.m.

Later, he went to his truck and saw a four-wheel-drive Chevy truck that wasn't there before and heard two men who were "loud and boisterous."

The witness found the slaughtered turtles at 5 a.m. on a trail leading to the beach.

Terlep said the witness was "very upset."

"(The perpetrators) just slaughtered them," Terlep said. "They butchered them and they didn't even try to cover up what they did."

Only the head and flippers were left behind, he said.

Terlep said he has asked the National Marine Fisheries to monitor whether instances of turtles being hunted are increasing.



# Dale Zarrella: Art to save turtles

LAHAINA

Kihei resident Dale Zarrella has an affinity for many things Hawaiian, especially for the honu, known as the Hawaiian green sea turtle.

When the native of Connecticut came to Maui in 1984 he indulged in his interest in the marine environment. While studying the endless number of species, he found himself drawn to the gentle honu. His fascination for the green turtle inspired him to become a member of the board of directors of The World Turtle Trust, dedicated to the preservation of turtles and their habitats around the world. Zarrella says the trust works in coordination with The National Marine Fisheries and George Balaz, the foremost turtle researcher in the Pacific.

"The breeding program is necessary," states Zarrella, "because under normal circumstances only one in every 10 thousand hatchlings reaches maturity. These odds are rising due to man's introduction of toxins into the turtles' coastal habitat. These may be the cause of fatal tumors in the creatures and potential threat to their existence." This week members of the non-profit Turtle Trust will be tagging turtles on the Big Island for ongoing studies.

Zarrella also channels his concern for the honu in his artistry. He is currently working on a 4-foot-long bronze monument to be dedicated at Punaluu, a turtle nesting site on the Big Island of Hawaii. The monument symbolizes the Hawaiian mythological sea turtle, the protector of children at sea, who transforms into a girl by day and becomes a turtle again at night. The project is being funded by The World Turtle Trust, the National Marine Fisheries and professors and students in the Marine Options Program at University of Hawaii, Hilo.

His passion for marine beings is captured in other media, which are being exhibited at the Sea Side Fine Art Gallery, owned and directed by another Kihei resident, Stephanie Ansley. Zarrella's Maui-inspired creations include artwork on canvas, precious woods, stone, and bronze that grace galleries and private collections from New York to Hollywood, Tokyo to Europe.

"Dale Zarrella has evolved from a successful sculptor to an acclaimed artist in many media," states Ansley. "Dale has found not only a home on the islands and an outlet for his talent, but a way to combine art, science and education." Ansley adds that Zarrella has released two children's books, three lithographs, multiple images in cards and posters, as well as limited editions of bronze sculptures.

Zarrella is the featured artist April 21st, presenting a wood crafting demonstration from 7 - 10 p.m. at Sea Side Fine Art, 706 Front St. For more info call Stephanie Ansley at 667-7767.





# Four arrested for poaching protected green sea turtles

□ Penalty includes up one-year in jail, or a fine of \$1,000

By Crystal Kua  
Tribune-Herald

State enforcement officers Wednesday night arrested two men and two boys in last weekend's killing of two protected Pacific green sea turtles at Wailea Bay.

Liebert Ignacio, 20, of Hawaiian Paradise Park and Eddie Poai, 19, of Hilo were each charged with two counts of killing a threatened species, said Lenny Terlep, the Big Island's chief conservation enforcement officer.

The charge is a misdemeanor punishable by up to a year in jail or \$1,000 fine.

Ignacio and Poai were released without having to post bail, pending further investigation.

Also arrested were a 15-year-old Hawaiian Paradise Park boy and a 14-year-old Hilo boy. They were released into the custody of their parents.

Terlep said they also face possible federal charges because the National Marine

Fisheries Service is also looking into the matter.

The turtles were killed within the Wailea Bay Marine Life Conservation District in the area known as Beach 67.

A witness camping at the beach saw diving lights in the water and heard loud talking at about 2 a.m.

The witness then found the remains of the two turtles about three hours later along the trail leading to the beach.

The turtles weighed 40 to 50 pounds a piece but only the head and flippers were left behind.

The four who were arrested were camping at Beach 67 at the time, Terlep said.

An anonymous phone call at 4 p.m. Wednesday led officers to the suspects. "We picked them up at their home," Terlep said.

"They took the shells and the meat and divided it amongst themselves," Terlep said.

Terlep said his officers recovered the two turtle shells, turtle meat, the net used to capture the turtles, and the vehicle used in the incident.

Terlep said the parents of these youngsters realized the seriousness of the offense.

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# Cases are heard in Kapa'a.

By GEORGIA MOSSMAN  
Staff Writer

The following cases were resolved in District Courts around the island during the months of November and December by Judges Cliff Nakea and Gerald Matunaga and Per Diem Judges Joseph Kobayashi and Frank Rothschild.

Information on the results of the court hearings is not available until all the records are completed to the defendant's appearance in court was several months prior to this report, and the actual incident may have happened months before the court appearance.

Most cases involve misdemeanor offenses. Some of the original charges have been reduced through plea bargaining. Theft in the 4th degree usually refers to shoplifting.

When a deferred acceptance of a guilty (DAG) plea is granted, to first-time offenders only, if the person remains arrest-free for a specified length of time, the charge will be erased from his or her criminal record.

Charges dismissed without prejudice could be reinstated later. In cases where there are felony charges, the matter could be taken up later by the grand jury.

Darryl Ineri and Nicholas Querezo of Kapa'a were charged with taking two green sea turtles at Ahukini, in violation of the endangered species act. Through plea bargaining, Ineri agreed to plead guilty to one count if the charges against Querezo were dismissed, then he was fined \$500.

On an assault charge, David Metzger, 30, of Kilauea was placed on probation for one year. He was also given a 6-month jail sentence with four months suspended; he must donate 100 hours to community service; he must make \$676 restitution for damages; and he must stay away from the victim.

On an harassment charge, Avelardo Cacabelos, Jr., 23, of Puhi, was placed on probation for six months, given a 30-day jail sentence which was suspended; and he must successfully complete an Alternatives to Violence course.

Charlson Manoi, 22, Lihu'e, charged with criminal property damage (CPD) 4th degree and disorderly conduct, was given 15 weekends in jail.

Jaimo Vilton, 21, of Hanama'ulu, charged with trespassing and theft 3rd degree, was placed on probation for one year; given a 30-day jail sentence with 25 days suspended; he must donate 75 hours to community service; and he must have a substance abuse evaluation.

On an harassment charge, Gerry Riopta, 27, of Lihu'e was granted a DAG plea and fined \$150.

Charged with criminal property damage 3rd degree, Stephen Sandoval, 27, of 'Ele'ele was given a one-year jail sentence, which was suspended except for 24 days and he has to make restitution for the damages.

For trespassing, Nathan Nobriga, 33, of Koloa was fined \$150.

Charged with harassment, Albert Bactad, 18, of Lihu'e was granted a DAG plea; fined \$250; and he must attend an Alternatives to Violence (ATV) course.

A trespassing charge netted Melvin Robley, 20, of Puhi a fine of \$50.



Charged with bail jumping and theft 4th degree, Nickolas Nickos, 33, was given a 40-day jail sentence.

An harassment charge netted Carolyn Moniz, 20, of Hanapepe, a \$50 fine.

For a use permit violation, Joseph Moura of Kapa'a was fined \$150.

When Russell Reynolds of Lawa'i showed the judge proof of new insurance, he was fined \$500 for having driven without insurance.

On an harassment charge, Editha Perez, 44, of Kapa'a was fined \$50.

For writing a bad check, Sharolyn Cardenas, 33, of Kapa'a was fined \$300.

For CPD 4th degree, Jonathan Pila, 24, of Wailua was fined \$150.

Wesley Kawagishi, 40, of Anahola, charged with possession of a small amount of marijuana was granted a DAG plea; fined \$200; and he has to have a substance abuse evaluation.

For theft 3rd degree, Ann Bowers, 24, of Kapa'a was granted a DAG plea and she must donate 50 hours to community service.

Michael L. Scott, 32, of Princeville, charged with CPD 3rd and terroristic threatening, was placed on probation for one year; he must donate 140 hours to community service; pay \$455 restitution for damages; have a substance abuse evaluation; and stay away from the victim for a year.

For disorderly conduct, Simon Jude Texeira, 34, of Kealia was fined \$100 and given a 10-day jail sentence, which was suspended.

For gambling, Patrick Nakaula, 19, of Kapa'a was fined \$50.

On an harassment charge, Joseph Hosino, 44, of Kilauea was given a 30-day jail sentence.

On two counts of harassment, Lloyd Palmeira, 22, of Kapa'a was placed on probation for six months; given five weekends in jail; fined \$250; he must make \$1,320 restitution; and he must successfully complete an ATV course.

For criminal property damage 4th degree, Raymond Rapozo, Jr., 35, of Kapa'a was fined \$200; he must make \$300 restitution; and he must continue treatment.

Soren Stiehl, 27, of Anahola was given a seven weekend jail sentence on an harassment charge.

For assault, disorderly conduct and trespassing, Thomas P. McCarthy, 39, of Kapa'a was sent to jail

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□ Penalty includes up one-year in jail, or a fine of \$1,000

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Tribune-Herald

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The charge is a misdemeanor punishable by up to a year in jail or \$1,000 fine.

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Also arrested were a 15-year-old Hawaiian Paradise Park boy and a 14-year-old Hilo boy. They were released into the custody of their parents.

Terlep said they also face possible federal charges because the National Marine

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Terlep said his officers recovered the two turtle shells, turtle meat, the net used to capture the turtles, and the vehicle used in the incident.

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## 4 arrested in turtle deaths

HILO (AP) — Two men have been charged with killing a threatened species for the slaughter of two protected Pacific green sea turtles at Wailea Bay.

Two teen-age boys were also arrested in connection with the April 9 slaughter. The boys were released to their parents.

Liebert Ignacio, 20, of Hawaiian Paradise Park, and Eddie Poai, 19, of Hilo, were charged after they were arrested Wednesday night by state enforcement officers, said Lenny Terlep, chief of the Big Island conservation enforcement office.

The men could also face federal charges, because the green sea turtle is a threatened species. An anonymous telephone call led the officers to the suspects and the recovery of two turtle shells and turtle meat, Terlep said.

The four had been camping in the area when the heads and flippers of the butchered turtles, believed to have weighed 40 to 50 pounds apiece, were discovered by a fellow camper, he said.

WEST HAWAII TODAY 4/16/95



# Honoring mothers' labor in human, animal worlds

Hawaii Star-Bulletin



## OCEAN WATCH

By Susan Scott

▲▲▲

ON a Labor Day long ago, during a picnic, my mother went into labor and subsequently gave birth to my brother. This was such a huge event in my 11-year-old mind that the Labor Day holiday was permanently marked as a celebration of motherhood.

It wasn't until much later, however, during my clinical training in nursing school, that I learned the true meaning of motherly labor. At 18, I witnessed my first human labor and delivery, so casually called L&D in the maternity wards. Wide-eyed and gaping, I was astonished at the tremendous pain the woman endured, and then promptly forgot.

Human females probably aren't the only ones that have pain during the birth process.

ONCE, years ago, after sailing to Lanai's Manele Bay, I struck up a conversation with the harbor mistress there. She had written a book in the 1970s about her experiences with whales.

"Sometimes I sit for hours on this bluff at night, just listening," she told me. "I can hear female humpbacks laboring."

"You mean in labor? As in giving birth?"

"Yes."

I raised an eyebrow. "How can you tell they're in labor?"

"I hear their agony. Sometimes it goes on all night."

"Oh."

"I can also hear their joy when the calf finally comes out."

"Mmm."

I left as politely as I could. This New Age, communing-with-whales stuff was not for me.

Later, I climbed that same bluff and sat silent for a long time, watching the ocean. Gradually, my skepticism softened. Who was I to say a whale didn't suffer the pains of labor or the joy of birth — and be vocal about it in the process?

I have never seen, or heard, a

whale give birth, but I was once lucky enough to watch a green sea turtle lay her eggs.

Now there's labor.

Female sea turtles must haul their heavy bodies up the sandy beach of their birth, dig an enormous hole, lay a hundred or so eggs, cover them with sand, then return to the ocean.

THIS might not be such hard work except that sea turtles have flippers suited to swimming, not walking. So, rather than taking steps like land turtles, sea turtles must "row" themselves up the beach.

This is exhausting work. The turtle reaches forward with her front flippers, digs into the sand, then with visible effort heaves herself forward. So tiring are these "steps," the turtles must rest after just one or two.

Digging nests with these streamlined flippers is no easy task under the best of circumstances, but for my turtle it was even worse: She had a handicap.

Only a small portion of her left rear flipper remained, likely the result of a shark bite. The turtle, however, didn't seem to know the flipper was mostly missing. She dug furiously with her stub to no avail.

After an hour or so, it was clear that the turtle would not be able to dig her egg nest deep enough without help. So, every time the turtle swung her ineffective stub, wildlife biologists and I reached into the hole and pulled out handfuls of sand.

IT worked. The tired turtle positioned herself over the hole and began dropping wet, white eggs. I was thrilled. But, oh, was she working hard. I could see it in her face and body.

"Do you think it's painful?" I whispered.

One of the male biologists shrugged. "Who knows? When they're laying, it's like they're in a kind of trance."

"Trance?" the female biologist scoffed. "She's in labor."

Labor Day is a good time to remember all mothers, human and animal, who give life through their labor. It may be the ultimate work experience.

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.

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JUNE 17, 1996

Star-Bulletin

NIGHT FINAL



BY MARK RICE, Special to the Star-Bulletin

Students from Hawaii Preparatory Academy maneuver a green sea turtle into the water after tagging the animal.

## Students vital to turtle research on Big Isle

The field hands assist scientists studying the threatened Hawaiian sea creature

BY LEILANI S. HINO  
Special to the Star-Bulletin

**K**OHALA COAST, Hawaii — During his high school years, Scott Lindsey spent many hours observing green sea turtles along Kiholo Bay.

When he graduated from Hawaii Preparatory Academy last year, he took with him an interest in environmental issues, spurred by his fieldwork.

"To actually catch turtles, to actually handle them, be there when they're measured and weighed — it's valuable hands-on experience you can't get any other way," said Lindsey, now a University of Texas computer engineering student who has returned to help with the turtle research this summer.

Since 1987, he and other students at the private school have helped scientists study the threatened Hawaiian green sea turtle, which has suffered from mysterious viruses, marine debris dumped by humans and destruction of nesting sites.

Each year, 60 students in grades eight to 12 sign up for the National Marine

Fisheries Service Cooperative Sea Turtle Research Program, said assistant headmaster Marc Rice.

"It got me into understanding the behavior of sea animals," said Lindsey. "And it definitely made me look at the ocean and wildlife management in a totally different way."

The students work under the supervision of George Balazs, zoologist with the National Marine Fisheries Service.

Balazs, leader of the Honolulu Laboratory Marine Turtle Research Program, has conducted long-term studies of green sea turtles in nearshore waters for more than two decades.

His studies chronicle growth rates, food sources, habitat use, developmental and reproductive migrations, underwater behaviors, health status and population trends of the creatures.

Kiholo Bay, on the Kohala Coast of the Big Island, is one area of focus. And the students serve as field assistants on his West Hawaii data collection expeditions.

"These young people have been instrumental in helping our agency make major advances in the knowledge of sea turtles residing in coastal waters of the

Big Island," he said. "I couldn't function without them."

The students help Balazs capture, measure and tag sea turtles at Honaunau, Kahaluu, Kiholo, Mauna Lani and Puako.

The students hand-capture turtles by snorkeling at night or by using large-mesh tangle nets carefully tended to prevent injury, Balazs said.

A recent research project involved spending 800 hours, both during the day and night, tracking 10 turtles at Kiholo Bay.

Rice said the fieldwork and hands-on experience help students understand the importance of data collection.

Beyond academic benefits, students gain on-the-job experience in teamwork and self-esteem. "When you've got 15 or 20 people going on an overnight field trip, a lot of logistics and planning go into it," Rice said.

And the students learn about themselves.

"It takes something to jump in the water when it's pitch black at night — a moment of self-evaluation, learning you can do things you never knew you could. It helps build self-esteem."



# Police Beat

## Disabled boat towed from waters off runway

The Coast Guard towed a disabled boat from waters off Honolulu Airport's reef runway late yesterday afternoon.

The 19-foot pleasure craft, carrying five people, apparently hit a sea turtle, which knocked a propeller off its engine at about 5 p.m. The Coast Guard towed it to Keehi Marina. No one was injured.



# Researchers use satellite to track sea turtles

By Craig Quintana  
Orlando Sentinel

MELBOURNE, Fla. — Suddenly set free, the green sea turtle surges toward the surf, breast-stroking her way over the beach at a foot-a-swipe pace.

The 310-pound reptile leaves several excited scientists and observers in her single-minded, sand-spraying wake.

"That's the green turtle version of hotfooting it," said L.M. "Doc" Ehrhart, a University of Central Florida researcher and scientist.

A wave breaks over the turtle's shell, and she disappears. About 50 yards off the beach, her head breaks the surface — followed by the antenna of the transmitter Ehrhart just glued to her back.

"Don't forget to phone home," said Barbara Schroeder, Ehrhart's research partner and a scientist with the Florida Department of Environmental Protection.

Sometime this week, computer users should be able to begin to follow the movements of "No. 88" and three other endangered green turtles outfitted recently with high-tech satellite tags by Ehrhart and Schroeder.

Periodically when the animals surface to breathe, the high-tech devices will report locations to orbiting satellites. That information will be shared with the world via the Internet.

In partnership with a Gainesville, Fla., environmental group, the researchers are posting results of their ongoing study on turtle migration on the World Wide Web.

Ehrhart and Schroeder want to know where Florida-nesting turtles go when they're not laying eggs — in effect, how they live most of their lives.

Scientists' knowledge of green turtles has been limited mostly to the brief encounters with female turtles they observe nesting along Florida's Atlantic coast. The result has been a look through a keyhole for researchers who require a panoramic view.

Although researchers have spent years marking green turtles with metal clips on their flippers, none of the brands has ever been recovered from a living or dead turtle anywhere else. This may not be surprising because the animals avoid people and are few in number, Ehrhart said.

The satellite tags are supposed to help fill in the blank. The devices, about the size of a Sony Walkman, transmit the turtle's position, the duration of the last dive and the water temperature.

A number of factors conspire against getting good data, including the position of the satellite in orbit, weather patterns and wave patterns, Schroeder said. The devices have about eight months of battery time.

Although technically residents of the world, many of the turtles nesting in Florida may actually be state residents throughout their lives, according to early data. More than half of the turtles tagged with similar devices in 1994 and 1995, appeared to go straight to the Florida Keys.

The researchers say they will need a few more years of satellite tracking before they can say some or most of the turtles nesting in Florida reside in the Keys.

But if the theory is borne out by this and future years of tagging, it could be important for the survival of the species. Unlike in parts of the Caribbean or Central America, where the good-tasting turtles are still harvested, the animals are protected by U.S. and state law in Florida.

"It makes protecting them easier if they are in U.S. waters," Ehrhart said.



# When wild animals need a human's caring touch



## OCEAN WATCH

By Susan Scott

I just returned from three weeks on Tern Island, the main biological research station of the Hawaiian Islands National Wildlife Refuge. During my visit there, we handled wild animals almost daily.

If we weren't banding young shearwaters or digging up trapped turtle hatchlings, we were rescuing a booby bird or feeding a starving tern. One team of researchers attached tracking gear to endangered monk seals, truly a rare animal-handling privilege.

"It's amazing how normal this animal handling seems when you live out here," refuge manager Steve Barclay commented. "Back home, it almost never happens."

I remembered this comment as we massaged soapy water into the oiled feathers of a masked booby. Even though the oil was mostly on the tail and wing tips, each of us occasionally ran our fingers over the exquisite white feathers on the bird's head and breast. "It's OK; we won't hurt you," someone would croon. Or, "You're such a pretty bird..." Stroke, stroke.

This sounded so familiar that I realized that most of us do indeed handle animals at home — our pets. They may not be wild, but they satisfy a need.

WHAT need this is exactly, I do not know. But the compulsion to pet and talk to animals seems universal among humans. It probably goes back to a time when animals kept us warm at night in our caves.

Wherever it comes from, the human urge to caress animals is not always good for the animals, especially protected species where the rule is strictly hands off. But the impulse can be overwhelming.

Once, I was motoring around Hanalei Bay with a friend in a rubber dinghy. A spinner dolphin made our day by cruising along with us. The animal bounded over and rubbed its body against the

boat's bright red tube.

The dolphin appeared to enjoy bumping up against the boat's rubber side. It was thrilling to see that sleek gray body gliding just inches from my resting hand. "Do you think it would be OK if I touched it?" I asked my friend, knowing the answer. He frowned.

"Well, it came over here," I argued. "It communicating with us."

"Don't," my friend said.

I couldn't help myself. Reaching down with just the tips of my fingers, I ever-so-gently touched that sleek back. Of course, the dolphin was gone in an instant.

The lesson was clear. Wild animals can touch you but you can't touch them back.

NOT all my protected species touches have been so foolish. Once while walking on a remote beach, I came across an enormous green sea turtle whose neck was trapped under a tree root. Apparently, this female had laid her eggs high on the beach the night before, then became entangled in the gnarly plant growth when trying to return to the water.

I gripped the edge of her shell and tugged back with all my strength but she struggled forward, digging herself in even deeper. She weighed hundreds of pounds and was entrenched. I would have to go for help.

Before I left, though, I bent to her face, dry and flaking in the sweltering heat. On impulse, I ran to the waterline, filled my canvas hat with sea water and held it to her mouth. Oh, she was thirsty. While she drank, I talked to her and stroked her head and neck.

The subsequent rescue went well. Four of us were able to dig sand and pull her body free.

The turtle was saved but she wasn't sticking around for any toasts. She hurried down the beach as if pursued by demons, then disappeared under a wave.

I'm back in the city now where it's not likely I'll be having any close encounters with dolphins or sea turtles. But I'll still handle animals. I'll pet dogs, play with cats and let cage birds sit on my finger. They may be tame but they're wild about human attention — and they may even stick around for more.

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.



home file

# Letters

## Turtles need protection

I have spent many hours a week taking issues of our island much to heart. I am now taking up another issue in which I believe very strongly. Our turtles are either endangered or near to endangerment depending on their species.

I was truly upset recently when I was snorkeling and watched a tour boat back up to me by a matter of 5 feet. Not only was I surprised, but the group of turtles that were coming to the surface for their air were scared by the boat's sound, and it just backed up right over where they had been only moments before. I stayed where I was just to see if anyone would acknowledge me or if they would just keep going, and that is exactly what they did do. I was of no importance, let alone these lively, at the moment, turtles.

As the boat was being anchored, a crewman proceeded to get on the microphone and tell the 30-40 travelers that this is "'Turtle Town' and we hope you enjoy seeing, taking pictures of, and swimming with them. They are endangered so please don't ride on them!"

Excuse me! This was certainly not what I thought the man was going to announce at all. It has been a true blessing for me to appreciate these magnificent creatures. My expectation of this "learned" man on the vessel was to warn these travelers of how endangered these precious creatures are and to take every precaution that they should not get too close to them or to harass them in any way and to really emphasize the rarity and beauty of them. To protect them most of all.

I would like the public to have a meeting, inviting all the boat owners and captains to attend and have someone who knows the needs and precautions for these beautiful creatures taught to them so that we can correct the wrong that is being done by this enjoyable activity.

J.K. Hayes  
Kihei



## HAWAII

A

Sunday, December 15, 1996 •

City Desk: 525-8090

# New gill-net rules in effect soon

By **Harvey Dickson**

Advertiser Staff Writer

New restrictions on gill netting go into effect Jan. 1, 1997, and state officials say the changes could help preserve Hawaii's dwindling stock of ocean fish.

The new regulations increase the minimum mesh size of the nets from 2 inches to 2<sup>3</sup>/<sub>4</sub> inches.

Gill nets — called that because fish that attempt to swim through holes in the mesh become stuck by their gills — often trap fish too small to be

taken legally. Because gill nets can be left in place for so long — sometimes for days — undersized fish that are caught sometimes die, and turtles that come to feed on trapped fish also become entangled and drown.

"These little walls of death float in the ocean with almost no law enforcement," said Michael Wilson, chairman of the Department of Land and Natural Resources, at an ocean-side press conference yesterday. "It's like taking a gun to virtually every fish that's in the vicinity."

Kimberly Lowe, an aquatic

biologist with the DLNR, said gill-net fishers make up approximately 10,000 of the 200,000 sport fishers in the state, but account for 80 percent of the fish taken.

Not all gill netting is harmful, Lowe said, and DLNR officials said some commercial fishers had encouraged stricter rules to preserve fish stocks. But Lowe added that "setting a gill net is an art" and when not set correctly, the nets aren't selective about the size of fish taken.

A two-hour limit for leaving gill nets unchecked was established in 1993. That regulation

gives trapped turtles and undersized fish a chance to be released while still alive.

DLNR officials promised additional steps to regulate gill-net fishing in the future, including:

- Attaching a permanent license to individual nets for better enforcement.

- Limiting the length of gill nets. Michael Lapilio, a DLNR enforcement supervisor, said some south shore nets have stretched for 3,000 feet.

- Limits on the number of people allowed to fish. For example, allowing gill-net fishers to fish on either odd or even

days, with assignments based on license numbers.

Wilson said Gov. Ben Cayetano will ask the Legislature for money to hire more marine enforcement officers. Currently, only 18 DLNR officers patrol Hawaii's marine resources. During the last 12 months, just 10 citations for improper gill netting were issued, he said.

Among all the states, Hawaii's budget for fish and wildlife needs ranks 48th, Wilson said.



# Seeing sea turtles proves conservation paying off



## OCEAN WATCH

By Susan Scott



**"L**OOK — a turtle!" I called to my visiting friend as we snorkeled our way across Hanauma Bay recently. We watched the huge reptile wing beneath us, the essence of animal elegance.

Moments later, we saw another turtle. Then another. We were thrilled. Turtles seemed to be everywhere.

It's a miracle that we encounter sea turtles in the wild today, even in a sanctuary. These ancient reptiles are constant victims of disease, poaching and habitat destruction. Yet, here they are, proving that sometimes, conservation efforts pay off.

Last May, American customs agents caught a Salvadoran woman smuggling 3,780 olive Ridley eggs, hidden inside balls of bread, into Los Angeles. She intended to sell the eggs, which many Salvadorans consider an aphrodisiac, for \$1 to \$5 each.

American officials were not amused by this destructive folk remedy for frustrated lovers. They sentenced the woman to six months in federal prison, a certain deterrent to future egg thieves.

**F**LORIDA turtle workers are working on a different turtle egg problem.

Cities and counties in southeast Florida are desperate for sand to replenish eroding beaches. Since people there already have exhausted the supplies of sand along Florida's coastal ocean floor, they are now eyeing so-called "dream sand" of the Bahamas.

This beautiful, white sand, known as aragonite, is powdery and cool to the touch.

And therein lies the problem. Incubating egg temperatures determine the sex of sea turtle hatchlings. Cooler temperatures produce males, warmer temperatures make females. So, if the Baha-

maian sand remains a few degrees cooler than native Florida sand, there's a chance all hatching sea turtles would be male.

Fortunately, ecologists are being extra cautious here in the world's second busiest nesting area for loggerhead turtles. (Oman has the world's largest loggerhead nesting beach).

Researchers have set up a site to hatch a test batch of turtle eggs in Bahamian sand. After hatching, the baby turtles will make their usual run for the sea, then University of Florida researchers will test fluid in the empty egg shells to determine the sex of the new turtles.

Only after careful study of these results will Florida officials make the dream-sand decision.

For the sake of our health, we should all hope these egg-saving measures work. Medical researchers are interested in sea turtles because the reptiles have become useful in the study of certain human illnesses, such as stroke.

**H**UMANS who have strokes often suffer brain damage from lack of oxygen.

However, sea turtles have a built-in method of coping with low levels of oxygen to the brain. Somehow, turtles slow their brain activity while underwater, enabling them to stay submerged for up to three hours.

Scientists are trying to mimic the way turtles survive with such little air, testing drugs that imitate this function.

Preliminary results suggest that a person given such a drug within 30 minutes of having a stroke will have just half the normally sustained brain damage.

Most of us Hawaii residents don't need medical excuses to entice us into protecting sea turtles and their eggs. The majority of us already love these native reptiles that grace our shores.

But this isn't true of everyone here. Recent cases of turtle poaching in Hawaii prove that we still need to be vigilant in both teaching turtle conservation to our kids, and enforcing existing laws.

It's an uphill battle with plenty of frustration. But there are rewards. You can see them grazing on the reefs.

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.

Honolulu Star-Bulletin  
16 Oct. 95 A2



# She's helping Ka'u make great strides

## McGuire-Turcotte is a pace-setter in an unlikely setting

By Stacy Kancshiro  
Advertiser Staff Writer

How is it that a school that pretty much shuns running is home to the state's top distance runner - who happens to be nicknamed for a slow-moving creature?

That's the case at Ka'u High, where junior Casey McGuire-Turcotte - nicknamed "Honu," Hawaiian for turtle - is the defending Big Island Interscholastic Federation and state cross-country champion.

"Running over here is a bad word," said Stan Dzura, Ka'u athletic director. "Running is kind of looked upon as hard work, which it is. The idea of running two miles with little appreciation ... not too many kids are enthralled with that."

Including McGuire-Turcotte at the outset. She took up cross-country last year after coaxing from a teammate, her father and Dzura. "I was the same as everyone else," she said. "Running? That's bor-

ing."

But the Trojans are changing their tune. Last year, they didn't have the required minimum five runners to qualify for team points until late in the season. But they will when they host the BIFF season opener tomorrow. Since it is the first meet at Ka'u in two years, this will be McGuire-Turcotte's debut at her home campus.

"We've been hustling for five people," she said. "I've never run on our home course, so it will be a good way to open the season. Ka'u athletics are starting to come around."

Joining her are juniors Crystal Ramo and Manda Hunter, sophomore Tabatha Dahlstedt and freshman Danielle Harnik.

McGuire-Turcotte opens the season with a chance to become the third runner to defend a girls' state crown. Radford's Tammy Cartwright did it in 1980-1981 and Kaiser's Nina Lahjell is the only three-time champion (1983-1985). "Honu" is already feeling the pressure.

"I think about it a lot," she admitted. "It's kind of scary, but I try to see it in a positive way."

Dzura calls McGuire-Turcotte the best distance runner he has seen in 25 years in athletics. He

### Prep profile

- Name: Casey McGuire-Turcotte
- School: Ka'u
- Grade: 11
- Age: 16
- Height: 5-foot-4
- Weight: 110 pounds
- Interests: swimming, hula



McGuire-Turcotte

eyes at the state meet in 1994, when she placed third in the 400-meter run. "So she basically came out (for cross-country) with a middle-distance background," Dzura said.

But she doesn't like to run the 3,200-meter race, the same distance as a girls' cross-country course.

"It's too boring," she said. But what about cross-country?

"There's different scenery," she explained.

As for her nickname, it has nothing to do with running. As a fifth grader, she wrote a story about a turtle. And as a soccer player, she was reluctant to head the ball, like a turtle burying its head in its shell, she explained.

### SCHEDULE

- All meets start at 9 a.m.
- Big Island
- At Ka'u: All Big Island schools
- Maui
- At Seabury: Blenheim, Lahaina, Hana
- At St. Anthony: Maui, Molokai, Lanai
- Oahu
- At Punahou: Kalaheo, Kilauea, Roosevelt, St. Andrew's, Kamehameha, Buchanan (Call)
- At Aloha: Kapaeha, Radford, Campbell, Kahaione, Kalaheo, Damien
- At Paia City: Farrington, Waiwaea, Castle, Kalaheo, Nanihala, St. Louis, Sacred Hearts
- At Lelehuia: Molokai, Milani, Moanalua, Waipaho, Kaimuki, Paia-Five

describes the 5-foot-4, 110-pounder as a "graceful, poetic" runner and sees no reason she can't defend her titles.

"It's something, a lot of pressure, to keep repeating," he said. "But she definitely has the talent to do so."

First-year coach Millie Cooke, a former Hawaii-Hilo runner and coach, likes McGuire-Turcotte's approach to the sport.

"She has a really good heart, integrity and good discipline," Cooke said. "She loves to run."

McGuire-Turcotte skipped cross-country as a freshman to play AYSO soccer. But she went out for track and opened



## Efforts ongoing to find cause of turtle tumors

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The National Marine Fisheries Service, the U.S. Fish and Wildlife Service and the state Department of Land and Natural Resources are charged with protecting and conducting research on Hawaiian sea turtles. The National Marine Fisheries Service has an ongoing intensive research program at many sites throughout the islands.

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National Marine Fisheries Service turtle biologist George Balazs said that in spite of recent modest increases in the Hawaiian sea turtle population, scientists are still quite concerned about the long-term effects of the disease. Very recent research indicates that a virus almost certainly is the cause of disease. It's a virus that does not affect humans, though.

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"A lot of people are very concerned about this," Balazs said. "I run across people all the time who feel a lot of pain for what is happening to these creatures. I wouldn't argue with that."

The good news is that researchers have made lots of progress in the last five years, and Balazs predicts that the next five years will bring the kind of successes that will catapult scientists close to their goal.

## Many pet owners act irresponsibly

An upstanding dog owner is snarling about some human matters.

"I am a responsible pet owner and my dog is always

## Check It Out



A weekly column that investigates your complaints and concerns. If you've got a question you can't get any answers to, or need help solving a problem, let The Maui News check it out — call 243-4339; fax 242-9987; or mail to: Check It Out, 100 Memorial Dr., West Maui, HI 96722.

on a lead," says the *Check It Out* reader. "Yet I see many dogs in my neighborhood unleashed, unlicensed and doing their 'business' all over the place. I see people disposing of their pet's waste in our neighborhood park. I have loose dogs running at my car and many times have slammed on my car brakes to avoid hitting them. It is not the animals' fault, but their irresponsible owners!"

This pet owner also wants an explanation of the licensing fee for dogs.

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Lisa Haole, animal control coordinator for the Maui Humane Society and the responsible owner of a dog herself, says that the County of Maui has a leash law for dogs whose owners are subject to fines and possible court appearances for violations. If a dog is off its property, it must be on a leash. Fines for owners vary, but could run up to \$500. In most cases, the penalties are \$25 for the first offense, \$50 for the second offense and \$50 plus a court appearance for the third.

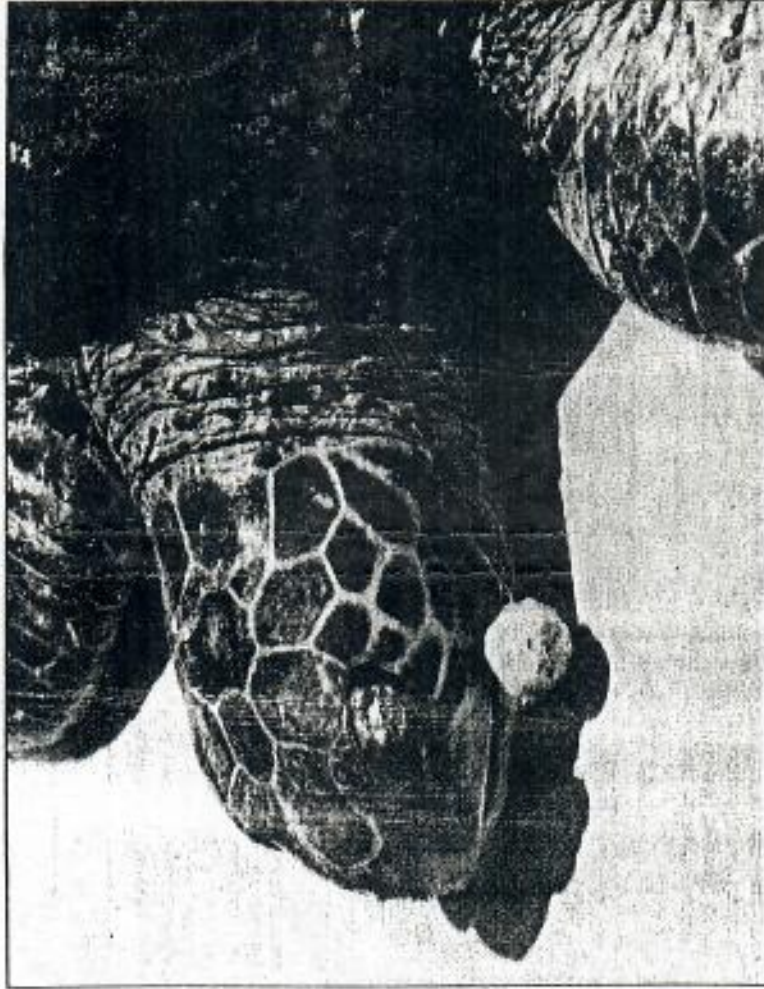
"One of the biggest reasons for the law is that dogs get hit by cars," explains Haole. "We're the ones who have to go pick them up and, if they're licensed, we have to sell the owners. It's very sad."

Haole says animal control officers patrol Maui beaches seven days a week in search of dogs running loose.

License fees differ for dogs that have been spayed or neutered (\$4.25) and those that are "intact" (\$10.25). Licenses are good for two years if purchased in January.

For example, a license purchased today would be good through all of next year. A license on a dog's collar enables the Humane Society to track down the owner in case the animal gets lost.

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The Maui News file photo

years ago. Federal and state officials have been trying to determine the cause of the problem for the past decade.

Pet owners are not sent reminders when their pet licenses are due to expire.

As for the scoop on poop, Haole says if pets defecate in a park and the owner scoops it up and puts it in a trash receptacle in a responsible way, "that's OK." But those who allow their pets to drop waste anywhere but their own yard could be cited as a "nuisance," and be subjected to fines amounting to no more than \$500.

Suffering from tumors on its eyes and mouth, among other places, this turtle died shortly after it washed on shore at Balowin Beach Park several

at the Lahaina Civic Center. Officers at the Humane Society don't require written proof that the animal was spayed or neutered ("We believe you," says Haole), but a statement of surgery from a veterinarian is required at the motor vehicles stations. Any dog over 4 months old must be licensed or the owner could be fined \$10 for the first offense, \$20 for a second violation and \$30 (plus a court appearance) for the third.

Maui News - Sept. 11, 1995



# Watch out for turtles, motorists and others advised

## Continued from Page A1

so female hawksbill turtles, and more than 170 eggs were recovered at the accident scene. The female turtle could have produced thousands of hatchlings over its lifetime.

Federal law protects the hawksbill with a fine of up to \$25,000 and a year in jail for killing one. The worldwide trade in their shells continues, however, although 18 months ago Japan stopped all trade in hawksbill shells by Japanese companies.

The unfortunate thing about the

Kealia situation is that these turtles have no business beyond the beach. But because portions of the beach dunes are missing — the apparent victims of vehicles that drive and park on the beaches — no barrier exists to prevent them from moving inland.

The nesting season of the hawksbill starts in late July and continues through November. The turtles come onshore at night to bury their eggs before heading back out to sea by morning.

Smith said the turtles follow the

moonlight and perhaps are disoriented by the flashing headlights where the road sits closest to the ocean.

The signs, standard highway yellow with a black hawksbill image, were designed by Kihai artist Bettina Jones, who donated the artwork.

The area from Maalaea to Kihai is not known as a traditional hawksbill nesting site. The discovery of nestings there has been recent: one in 1991 and the other in 1993.

One theory is that the area is a relatively new nesting site. Scientists

believe turtles return to lay their eggs at the site they were born, and these turtles could be part of a new generation.

If you see a turtle, its nest or tracks, don't disturb them. Carefully note the location and report it to the state Division of Aquatic Resources at 243-5294 or the U.S. Fish & Wildlife Service at 875-1582.

There's one other reason for slowing down in the refuge, Smith said. Two endangered Hawaiian coots were killed by fast-moving cars in a three-month period last year.





The Maui News / MATTHEW THAYER photo

A pair of "turtle crossing" signs have been posted at both ends of the Kealia Pond National Wildlife Refuge. The rare hawksbill turtles are returning to their nesting grounds and have occasionally made their way onto busy North Kihei Road. Motorists are asked to slow down in the area, especially at night, to avoid collisions with the reptiles.

## Motorists advisory: Watch out for turtles

By TIMOTHY HURLEY  
Staff Writer

MAALAEA — It's hawksbill turtle nesting season, and motorists on North Kihei Road are being urged to ease off the accelerator a bit and watch out for any of the slow-moving reptiles.

And just in case you forget, officials have installed newly designed "turtle crossing" signs along the road that bisects Kealia Pond National Wildlife Refuge.

Refuge Manager Kathy Smith said the signs are intended to remind motorists that the critically endangered species is known to cross the road there at night, putting the driving public and themselves in danger.

There were four sightings of hawksbill turtles last fall and, in at least one instance, a big female was able to cross the road in an apparent search for nesting sites before wildlife officials hauled the turtle back to the ocean.

Two years ago a large, egg-bearing hawksbill female was struck and killed while it was crossing North Kihei Road.

The incident was especially tragic because biologists estimate that Hawaii is home to only two dozen or

**See WATCH OUT**  
on the last page of this section





# "TELL YOUR STORY"



## Makai Animal Hospital



Drs. Robert Morris and Dr. Alan Zane of the Makai Animal Clinic in Kailua with a feline friend.

For Drs. Robert Morris and Alan Zane of Makai Animal Clinic in Kailua, offering patients state-of-the-art veterinary care while maintaining a family-type atmosphere has been one of the most challenging, yet rewarding aspects of veterinary practice.

"We always say we hate to get too busy," Dr. Morris says. "You need to be able to spend enough time with people but you also need to take time to keep up with education."

Because the Makai Animal Clinic is a member of AAHA, the American Animal Hospital Association, Drs. Morris and Zane say there are always plenty of opportunities for continuing veterinary education. National and regional conferences are held every year that they try to attend as well as keeping up with AAHA's reading material and video tapes on veterinary medicine's latest trends and new technology.

In addition to their general veterinary practice, both Dr. Morris and Dr. Zane have individual areas of interest. For Dr. Zane, it's pediatric veterinary medicine -- specifically puppies. He developed an interest in that area several years ago when he first started giving physical examinations to the puppies imported into Hawaii by Pet's Central.

For Dr. Morris, who obtained a masters degree in Marine Biology and was curator at several aquariums before becoming a veterinarian, it's Hawaii's endangered green sea turtles as well as monk seals. He acts as a consultant for the National Marine Fisheries department and also assists with the rehabilitation of monk seals at Sea Life Park.

In spite of all the exciting new technologic developments in veterinary medicine that have opened up a wide array of new approaches and treatments for patients, Drs. Morris and Zane believe that there is still a lot to be said for good service and a personalized approach to veterinary medicine.

"First impressions are important. Whether it's the people up front in the reception area or the techs or veterinarians," says Dr. Morris. "These days, consumers are more aware. You have to maintain good service and be able to communicate and let people know what's available. Even if for most patients, it's just a yearly visit, we try to make it a worthwhile experience." 🐾



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### **Turtle tumors troubling**

The recent photo and short article (Sept. 5) about a dead green turtle with tumors washing ashore at Kaanapali once again emphasizes the problems still confronting this special ocean animal in Hawaii.

The issues of fibropapilloma tumor disease, accidental entanglement and death in gill nets, and illegal hunting and harassment continue to plague this species. Researchers and conservation officials here and across the nation are working hard to deal with these and other problems confronting sea turtles.

Protection under the U.S. Endangered Species Act over the past 17 years has resulted in some positive signs of sea turtle recovery in Hawaii.

But the process needs to continue unimpeded by abnormal levels of disease and other types of mortality and stress. The average green turtle in Hawaiian waters requires more than two decades to grow to maturity and become large enough to migrate many hundreds of miles to reproduce (at French Frigate Shoals).

Sea turtles found dead, dying from disease, or injured from spear wounds or boat collisions are frequently flown to Honolulu for treatment or autopsy by veterinary specialists. Personnel of the State of Hawaii's Division of Aquatic Resources and the Division of Conservation and Resource Enforcement on Maui regularly respond to reports of turtles in trouble. Their outstanding efforts are worthy of praise by the community. The public should support their work wherever possible.

**George H. Balazs  
Marine Turtle Research  
NOAA/NMFS Honolulu Laboratory**

*Maui News (Letters) 09-13-95*



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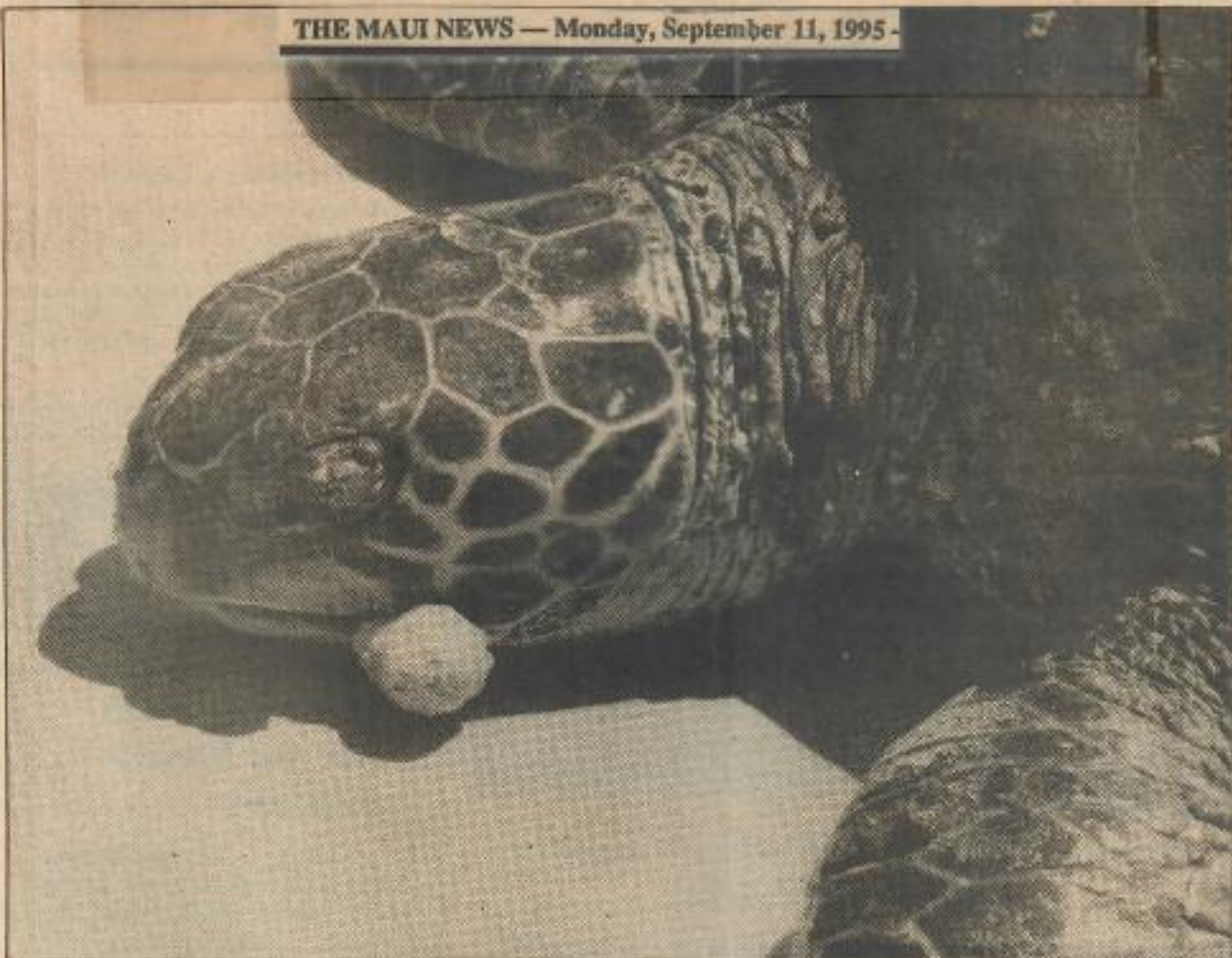
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The Maui News file photo

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- 9/19/45 A11  
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vs  
Dr  
50  
**If you spot a sea turtle  
feasting, call now . . .**

An interesting story Sept. 9 by Star-Bulletin reporter Greg Ambrose reported on the painful sting beach-goers can suffer from a new and larger type of Portuguese man-of-war now drifting into Hawaiian waters. It is worthwhile to add that many sea turtles worldwide are prominent predators of jellyfish, which they consume opportunistically without apparent discomfort or harm.

Records exist of our Hawaiian sea turtles sporadically feeding on the normal, smaller form of man-of-war. Our research program of sea turtles within the Protected Species Investigation of the National Marine Fisheries Service would like to hear from anyone seeing a turtle eating the new species now invading Hawaiian waters.

Besides having much larger floats (up to 6 inches long), the new jellyfish is cobalt blue and armed with thicker, longer and more numerous stinging tentacles. Please telephone your report to 943-1276. A recorder will take your message whenever personnel are unable to answer the phone.

**GEORGE H. BALAZS**  
Marine Turtle Research  
NOAA/NMFS Honolulu Laboratory



# Monk seal's short visit gives skeptic new hope

**O**NE evening last weekend, I got a call from an acquaintance who works for the National Marine Fisheries Service's Monk Seal Recovery Team. "I have a report of a possible injured monk seal on a beach near your house," he said. "Would you mind taking a look and letting me know if I should come?"

"Of course," I said more cheerfully than I felt. "No problem."

But I did have a problem. As I gathered my flashlight, cell-phone and car keys, I remembered the last time I discovered a monk seal on a beach near my house.

A crowd had formed. One person wanted to throw water on the resting animal. Another sent her children to stand near the seal's head for a picture. When I intervened, people got rude and the scene turned ugly. The whole experience was so frustrating that I breathed a sigh of relief when the seal slithered back to the sea.

Now I had to face a similar situation — alone and in the dark.

I parked on the street near the beach where the seal supposedly lay and squinted into the darkness. A large screen tent was standing near the beach. Music drifted from a boom box and meat sizzled on a grill. People were milling about. I groaned inwardly. A beach party was occurring right at the spot the seal was supposed to be.

Inhaling deeply, I started across the grass. I may take abuse for this, I thought, but this creature may need help.

I stopped at the dark side of the tent, then standing as tall as I could, stepped around into the light. "Excuse me," I said. "I heard there was a monk seal near here. Have you seen it?"

**T**HE party stopped immediately as everyone peered at me. I offered my best smile, braced for the worst. Then a man jumped to his feet. "You came! We've been waiting for you."

"You were?"

"Yes, yes. We're the ones who called. We've been guarding this area so no one would walk too close to the seal."

"It's here?"

"Down the beach, that way." He pointed. "You got a light? Come, I'll show you."

We walked a couple hundred feet to a spot in the sand where my light showed an indentation the size of an adult seal. Below it lay the slithering tracks of the animal returning to the ocean.

Oh, how disappointed these peo-



## OCEAN WATCH

By  
Susan  
Scott

ple were that their seal had vanished before I could see it. Back in the tent we shared drinks and swapped seal stories.

This family knew how rare these endangered animals are and felt privileged to have been involved in helping one.

They also bore good news: the seal seemed uninjured. They had seen no sores or gashes anywhere on its body.

**I**T'S easy to become disillusioned about protecting marine wildlife. Stories stick in my mind about people strangling albatross chicks, spearing tame sea turtles and harassing monk seals. I sometimes wonder why bother?

But then something like this happens and I perk right up. It was with a renewed sense of purpose that I walked back to my car the night of the disappearing monk seal. Many people do care.

Each of us can promote this type of caring by sharing our knowledge of the rare monk seals that grace our island beaches. Here are a few details to pass on:

- Monk seals are shy, solitary animals that seek warmth and rest after long stints in the ocean searching for food. When lying on a beach, monk seals are not stranded, like dolphins and whales.

- When wet, monk seals look like they have sleek, dolphin-type skin. This is not the case. Monk seals have fur, like all other seals, and molt each year. During these molts, fur falls off in pieces and looks mangy. This is normal.

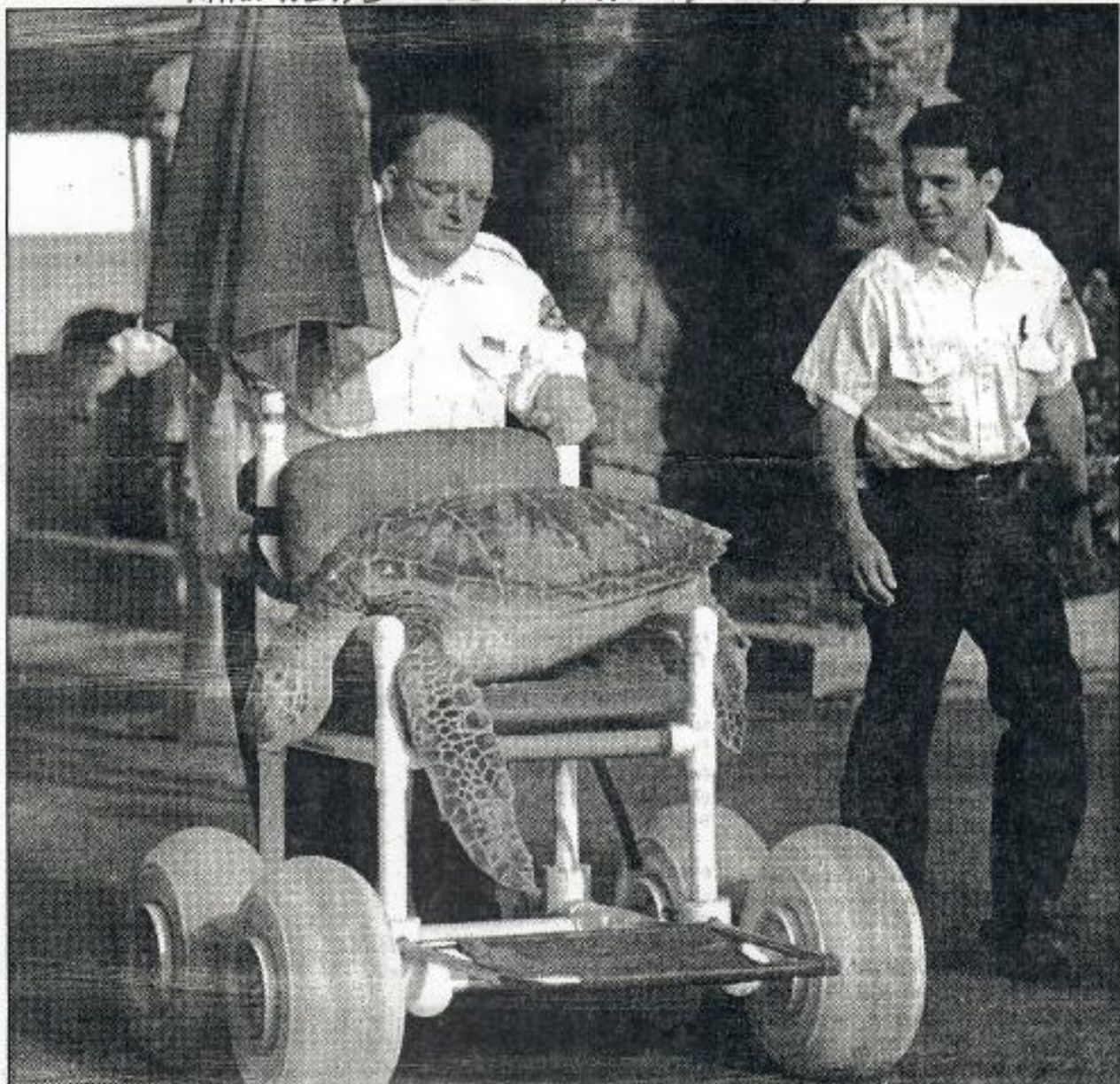
- Sometimes, monk seal eyes drip tears while the animal basks on a beach. This is also normal.

- If you see a monk seal, do NOT rush to it. If possible, don't even let it see you. Call any local wildlife agency, public or private, to report it. They will know the proper authorities to call.

Reducing government spending means less help from government officials. Increasingly, it's up to us citizens to help enforce wildlife laws.

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.





## Dead sea turtle washes ashore

Westin Maui security officers Tom Pope (left) and Ted Jaimes wheel a dead green sea turtle to a conservation officer's truck in Kaanapali. The turtle was found washed up on the beach earlier Monday morning. Department of Land and Natural Resources aquatic resources biologist Skippy Hau said today the turtle weighed under 100 pounds and apparently died from tumors growing internally and externally. A pair of tumors were visible around the turtle's eyes. Hau said it was the first report of a dead turtle on Maui's west side "in a long time." He added, "We haven't had any recent reports of turtles with tumors on that side of the island."

The Maui News / MATTHEW THAYER photos







## Accident or Negligence?

For several weeks, many scientists and fishery managers were crying foul in the wake of some of the budget cuts Congress was considering, while others were continuing their research, business as usual. One situation that has come to light involves both groups of scientists and one endangered species.

We were told that there wouldn't be any additional funding for monk seal research, and many were worried that this would be a sad end to yet another endangered species. However, after reviewing a report prepared by a scientist with the **National Marine Fisheries Service (NMFS)**, it appears that it was research and lack of supervision that caused the deaths of two of these animals, animals that the NMFS was trying to save.

According to a August 14, 1995, NMFS summary report, two 13-year-old male monk seals, being studied at the Kewalo Basin facility, died as a result of experiments being conducted by NMFS scientists. The monk seals had recently been transferred from Sea Life Park to Kewalo Research facility after being returned to the islands from San Diego.

The purpose of the experiments was to try to find a solution that could curtail the animals' "mobbing" behavior. Mobbing is a problem that exists with monk seals in the Northwest Hawaiian Islands where a number of male monk seals mob female seals, which apparently is "a primary impediment to the recovery of two monk seals populations," according to the NMFS and **Marine Mammal Commission**.

According to the report, the seals "were sedated with general anesthesia and electrical stimulation was provided with a modified rectal probe. . . . The investigators were unaware of any major complications during the procedures." However, two weeks after the experiments, one of the seals was "observed to be lethargic and inattentive during feeding and its eyes appeared puffy and swollen," according to the report. Attempts to contact a veterinarian were unsuccessful, and the next day, August 9, the seal was found floating on its back. When a veterinarian finally did arrive, he was just in time to pronounce the seal dead.

The second seal's behavior and appetite were also abnormal following the electroejaculation experiments, but the animal was then judged to be normal. But two and a half weeks later, it was observed "writhing and twisting in the tank and appeared to be unaware of its surroundings." Again a vet was summoned, just in time to pronounce the second seal dead.

It goes without saying that this is obviously a tragedy. However, for experienced scientists or the Marine Mammal Commission not to have a protocol in place to address these types of problems in their research is inexcusable. The permit that the scientists were working under should be investigated, as we believe there were several things done that just doesn't seem in the best interest of either the NMFS or the monk seals.

Were the seals given an examination as soon as they exhibited signs of having a problem? If so, wouldn't their problems have been diagnosed by a vet? Could medication have prevented the peritonitis, or infection, that killed the seals as a result of perforated rectums? Shouldn't vets have been notified sooner? And shouldn't officials be notified as soon as an accident occurs? It appears that no one was notified until a necropsy was conducted and a report was drafted. Someone better take control of these types of programs before more animals suffer and programs are discontinued as a result of someone's negligence. For the necropsy to show that there was a 3-inch perforation in one monk seal and a 1.5-inch perforation in the other and the report to say only that "the location of the rectal lesion (within an intact pelvis) suggests that it was trauma-induced from within the lumen of the rectum, perhaps by the electroejaculation procedure" smells of a cover up. What else could have caused these perforations? We hope that an investigation can get to the bottom of this situation and the guidelines are established to prevent future problems. No animal should be subjected to these types of torture, certainly not at the hands of trained scientists.

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# Hanauma Bay fish lists aren't only for tourists



## OCEAN WATCH

By Susan Scott

▲▲▲

**M**ANY of us Hawaii residents tend to ignore Hanauma Bay until we have visiting friends and relatives wanting us to take them there. I've been there a million times, but I guess I can go again. Then I arrive at the bay and am instantly humbled by the majestic beauty of the place.

This week, I can thank my friend Bill, visiting from California, for planning a trip to Hanauma Bay. While we were walking down the hill, Bill told me a good story about the place.

Nearly 20 years ago, he and his wife came to Hawaii on their honeymoon. Bill, a naturalist, decided to introduce his spouse to snorkeling. She was not a water person, and resisted. Finally, Bill talked her into a trip to Hanauma Bay.

After a great deal of fiddling with fins, snorkel and mask, he had her ready. They entered the water. She put her face down. A huge parrotfish swam up to her and swam off. Schools of other fish passed by. The woman went crazy with joy.

That one trip changed her life, Bill told me. She liked the experience so much that she bought books to learn about fish, planned snorkeling vacations, and eventually got scuba certified. Now she's a genuine water person.

Even experienced snorkelers and divers have emotional reactions to Hanauma Bay. Bill keeps a list of the marine animals he has seen. He told me he had never seen a Hawaiian green sea turtle. I smiled, and said, "Follow me."

We entered the water off the ledge just inside Witch's Brew, swam out to the middle, then followed the telephone cable in. Sure enough, we spotted two honu grazing on seaweed in 30 feet of clear water. We watched the turtles for a long time. One was a large adult, the second was smaller and

tagged. Bill was excited. He can now add Hawaiian green turtles to his list, plus several new fish.

Among these were some red fish with big eyes hiding under a ledge. I saw Bill diving down several times to get a good look and dreaded the question I knew was coming: "What are these red fish with the big eyes?"

I hate this question because I can never remember the distinguishing differences between those red-fish-with-the-big-eyes. They are one of several species of big-eyes, squirrelfish or soldierfish. Even after reading up on them, telling one from another is tough.

All three types of fish are the same in that they have big eyes, red bodies and tend to hide under ledges during the day. These characteristics are typical of nocturnal fish, which bigeyes, squirrelfish and soldierfish all are.

The red color makes them difficult to see at night and the big eyes allow for better night vision. And since they hunt crabs, shrimp and plankton at night, these fish tend to hole up during the day.

Bigeyes are a family all their own. Hawaii hosts one found only here and one found in all tropical seas. Both bigeyes are called aweo-weo in Hawaiian, a word associated with the color red. The species name (*cruentatus*) for the cosmopolitan bigeye means bloody.

Sometimes, bigeyes school in large numbers near shore. In ancient Hawaii, this meant the impending death of a chief. In late January of 1891, a large school of red fish, perhaps bigeyes, was seen in Pearl Harbor. About the same time, King Kalakaua died in San Francisco.

Squirrelfish and soldierfish belong to another family. About 17 species of these fish inhabit Hawaii's waters. Some are so similar, they confuse even the most seasoned marine biologists.

I dove down with Bill to check out his red fish but wasn't much help in what he should write on his fish list. Fortunately, he didn't care much. "Red fish with big eyes" was good enough for him.

I left Hanauma Bay vowing to come back soon whether I have visitors or not. This jewel of a place is for residents too.

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.



# Study will tail rare isle turtles

Hawksbills' satellite transmissions could reveal where they hang out

9-5-95 HONOLULU STAR-BULLETIN

BY GREG AMBROSE  
Star-Bulletin

A1

Researchers have examined the most intimate details of Hawaii's rarest sea turtles, but they want to know more.

The habits of the female hawksbill turtle when it comes ashore to lay eggs from June to September are well-studied, but scientists know nothing about what they do after that.

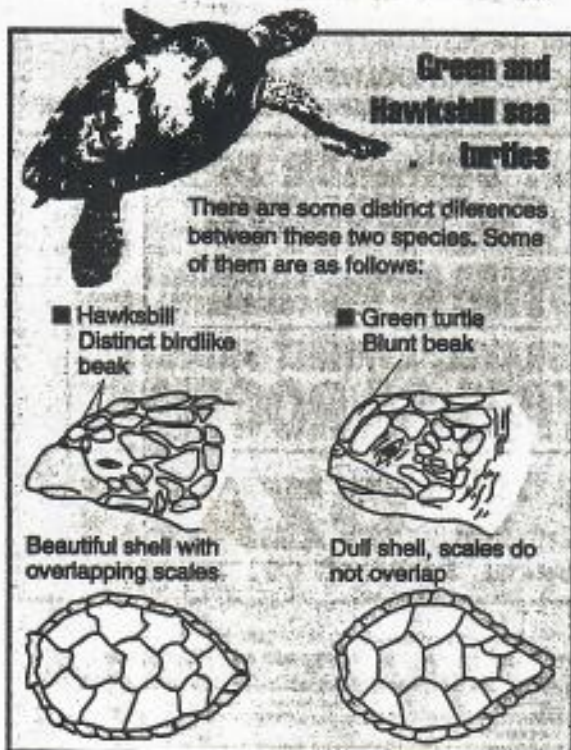
To find out, National Marine Fisheries Service turtle expert George Balazs and Volcanoes National Park biologist Larry Katahira last week attached one-pound, fist-sized transmitters to two female hawksbills with fiberglass and epoxy. Now they are waiting for a satellite to pick up the transmissions and show them where the turtles go for two to three years between nestings.

The information is essential: Hawksbills don't share the same happy story as green sea turtles, which have made a dramatic surge in numbers here under the protection of the Endangered Species Act.

Hawksbills in Hawaii are a critically endangered species, possibly just one natural or man-made disaster away from being wiped out. Federal law protects them with a \$25,000 fine and a year in jail for killing one, but that threat hasn't halted the worldwide trade in their shells.

Two attempts at tracking hawksbills in the Caribbean were thwarted by equipment problems, but

PLEASE SEE TURTLES, A-6



VINT BLACKBURN, Star-Bulletin



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# TURTLES: Researchers hope to find where they go from here

FROM A-1

"we're not discouraged," Balazs said yesterday. "We have a unique situation because we're so dog-gone isolated in the ocean.

"They could take very lengthy migrations, or we may find their migrations are much more reduced, maybe within the Hawaiian Islands. Or are they going to other Pacific Islands where they are hunted? We need to be able to protect them."

That is a difficult task even here. Only one of a thousand green sea turtle eggs makes it to adulthood. That ratio might be even worse for hawksbills.

On land, cats, mongooses and pigs gobble the eggs and hatchlings. Survivors that reach the ocean are devoured by numerous sea predators. Man is their biggest threat, running them over with boats and ensnaring them in cross nets and driftnets and abandoned plastic of every sort.

Hawaiian green sea turtles are illegally killed for their meat. The meat of the hawksbill can be poisonous. "They are a beautiful animal," said Balazs, and that is their curse. They are exploited worldwide for their shells, although 18 months ago Japan halted all trade by Japanese companies in hawksbill shells.

"It certainly helps out hawksbill populations throughout the rest of the Pacific, where Japanese traders had been buying and importing shells to Japan," Balazs said.

Hawaii is the only place in the United States that has nesting hawksbills, and because researchers are looking harder, each year they are finding more hawksbills nesting on the Big Island.

When they first started counting in 1991, they found and tagged

12 females in a few scattered spots, said Katahira. That number has grown to 27 this year, at Halape and Apua in Volcanoes National Park, and Kamehame and three other spots north of Punaluu in the Kau district.

Three other nesting sites at Punaluu are a special problem, with people camping on potential nesting sites and four-wheel drive vehicles running over the nests.

At Kealia Pond on Maui, female turtles seeking nests have been killed by cars on the shoreline highway. Park workers are so serious about protecting them that volunteers and staffers baby-sit the eggs around the clock at six beaches to ensure that the hatchlings emerge and enter the ocean.

"It's an indicator that something is wrong in the ocean or land today when you have numbers that are so low and they aren't recovering," said Katahira. "If we don't do something about it, we're going to lose them."

Balazs and Katahira worked with the Volcanoes National Park, the U.S. Fish and Wildlife Service, the National Marine Fisheries Service and the Hawaii Natural History Association to obtain \$70,000 for workers at the beach to protect the turtles, two transmitters and satellite time. "We anticipate that we will not get as many signals from hawksbills as we have from the greens, because their diving behavior generally takes them under water for longer periods. Only when the six-inch antenna sticks up on the surface do we get a signal," Balazs said.

But over the next year, they should get enough signals to find out where the turtles go after they leave the beaches. "I'm really excited," said Katahira, "it's really the forefront of hawksbill studies."



# FDA expediting approval for lab-generated skin

By Philip J. Hilts  
New York Times

WASHINGTON — Two of the most intractable problems in medicine have been the handling of extensive burns and the treatment of wounds that never heal. In both cases the natural ability of skin to regenerate is lost, and the patient is not only in constant pain but vulnerable to infection.

The treatments have been limited and drastic: cutting skin from another part of the body to graft over the wound, or using the skin of cadavers to cover a wound temporarily while it tries to heal.

But now scientists have shown that human skin grown in the laboratory can be used successfully in what might be called "skin transplants" to heal severe skin injuries, holding out hope for a new treatment for the 4 million patients a year in the United States who have "chronic" wounds.

The Food and Drug Administration, recognizing the potential importance of the new skin, recently announced that it will expedite consideration of two products.

One is Graftskin, a human skin that is a permanent replacement for natural skin; it is made by Organogenesis of Canton, Mass. The other product is Dermograft, an artificial mesh with some human cells, which can be used as a dressing to cover wounds until a graft with real skin can be done. Dermograft is made by Advanced Tissue Sciences of La Jolla, Calif.

Expedited review means that the FDA considers the products to be major advances beyond current treatments and could approve them within about 10 months.

The challenge for those who have tried to grow skin is the complicated array of cells that constitute it. Skin contains seven

different kinds of cells organized into a structure that allows continuous regeneration in three weeks.

**Scientists have shown that skin grown in a laboratory can be used in skin transplants to heal burns and other skin injuries.**

Its base layer consists of fibroblasts, whose tendrils bind together the skin's "skeleton," gel-like strands of collagen protein.

The base layer is topped by cells called keratinocytes, which rise

to the skin's surface and are eventually sloughed off.

Other cells, related to the blood and immune system, perfuse the layers of skin. The immune system and blood cells, called Langerhans cells, macrophages and lymphocytes, are found along with epithelial cells, which form the tunnels of the blood vessels. This array of blood and immune system cells causes the body to reject grafts.

The top layer of skin, or keratinocytes, gives off chemical signals, cytokines, that trigger skin growth. These may be defective in wounds that do not heal.

By 1979, scientists had successfully grown most skin cell types in laboratory dishes. But the keratinocytes had been notoriously difficult to sustain, and it was not clear how to impart the naturally occurring layered structure to artificially grown skin.

Scientists tried growing just the dermis, the layer that contains most living cells, or using skin growth factors to stimulate skin regrowth or specially treated cadaver skin to help avoid rejection.

Like others in the field, the Organogenesis team started with living skin donated from an infant's foreskin. (So far, a single donation has kept the Organogenesis labs supplied for five years; a supply to treat the world could be made from a dozen donations.) The lab separates the different cell types and keeps them growing.

The scientific group, led by Dr. Nancy L. Parenteau, who studied cell growth at nearby Massachusetts Institute of Technology, tackled the most difficult part of skin growth: coaxing the upper layers of keratinocytes to flourish.

"People stayed away from these because it was a challenge just to grow them at all," Parenteau said. She added that once they begin to grow they have rather odd habits.

"These are fastidious cells," she

said. They want to differentiate into different types, but the different types want different environments. The lowest layer wants to be packed close to other cells, the upper layers want to spread out fully like loungers on a beach.

Getting them to behave depends on getting the young, packed-in cells into an acidic environment, with little calcium and no exposure to air. While the cells are held in this immature state, the other steps can be completed.

The next step is to create the foundation of cells and proteins on which these young cells can mature. It is easy to grow fibroblast cells. And it is not too difficult to generate a mass of collagen. But getting the fibroblasts and collagen together is another matter.

In life, fibroblast cells can ensnare collagen strands and pull them together to make a firm but elastic mesh, giving skin its combination of strength and flexibility. In the laboratory, however, this bundling must be induced.

The finicky keratinocyte cells are added to the bundles, where they are free, Parenteau says, "to crawl all over one another" as they like to. And, they send signals to the rest of the skin layers to act naturally — and proliferate.

This final step takes place in the plastic dishes in which the final product will be shipped.



# Ripley's Believe It or Not!

A MAN LIVING IN Huddersfield, West Yorkshire, England LEGALLY CHANGED HIS NAME TO "THE OCCUPIER."



THE WORD "CURFEW" IS DERIVED FROM A METAL SHIELD USED IN EUROPE DURING THE MIDDLE AGES TO PUT OUT THE FIRE IN A HEARTH AT THE END OF THE DAY!

ON AVERAGE, A FEMALE GREEN SEA TURTLE WILL LAY 1000 EGGS DURING HER LIFE, BUT ONLY 374 WILL HATCH AND OF THOSE ONLY THREE WILL LIVE LONG ENOUGH TO BREED!



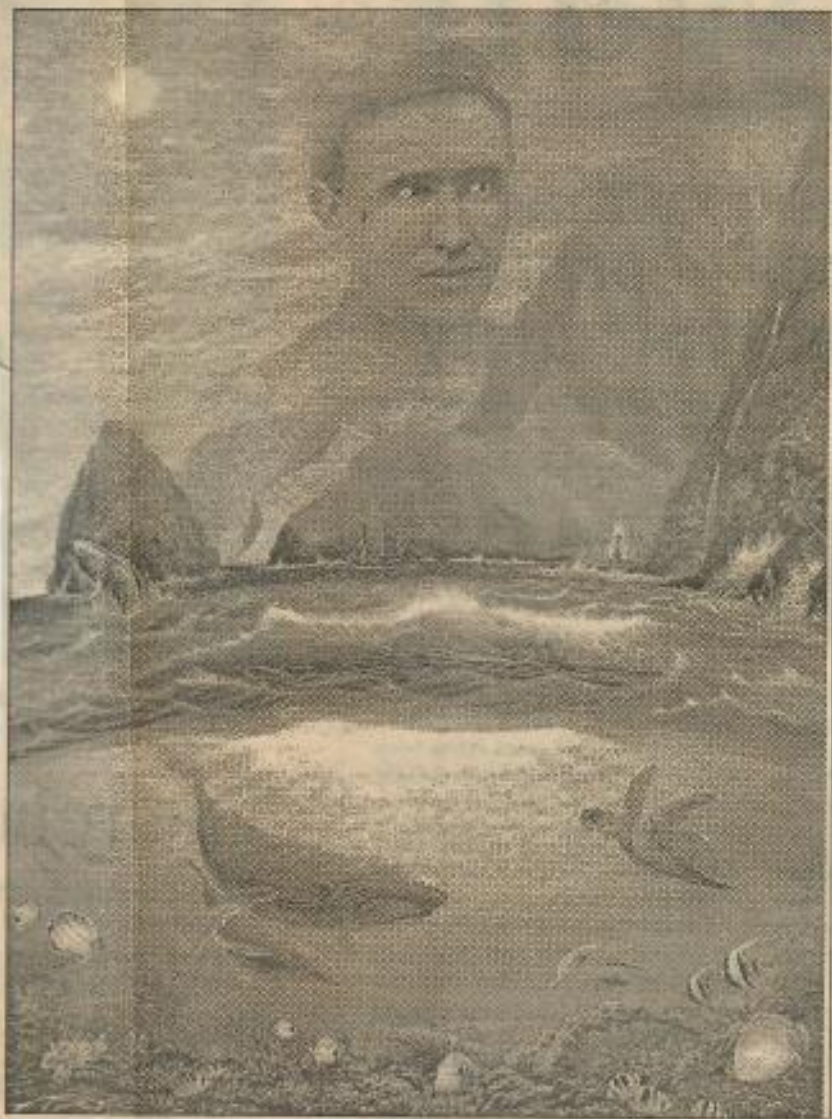
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## Hawaii

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### No greater love

This painting of Blessed Damien and the Kalawao coast was commissioned last year by a Wisconsin businessman Del Chmielewski who was inspired by the Damien story on 1993 visit to Hawaii. "I became overwhelmed by the courage and incredible sacrifices he made. He is without question one of the greatest men who ever lived," he said. Chmielewski is offering prints of the painting for sale, the profits of which go to charity. A 17 inch by 22 1/2 inch full color print costs \$69.95. Also available are greeting cards and t-shirts. For more information, call 1-800-432-7870 or write Heart Publishing, 705 South Main Street, Jefferson, WI 53549.

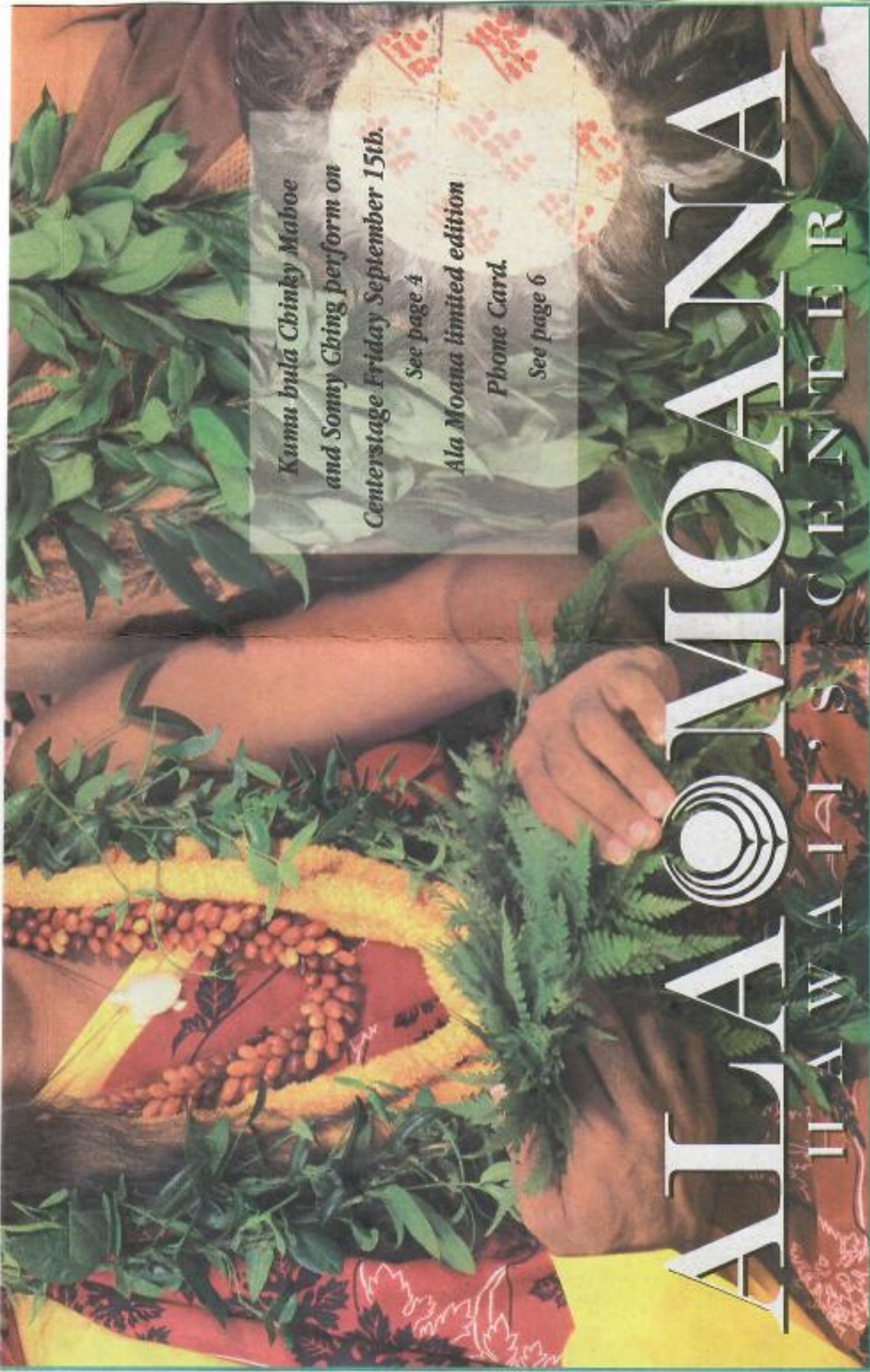


# CELEBRATING ALOHA

SEPTEMBER 1995







*Kumu bula Chinky Maboe  
and Sonny Cbing perform on  
Centerstage Friday September 15th.*

*See page 4*

*Ala Moana limited edition  
Phone Card.*

*See page 6*

# AT HAWAII'S CENTER

10/95



# Much ado for the turtle

The Honolulu Advertiser  
6/4/95  
A23



Advertiser photos by Carl Vill

Kids and their parents, above, get up close and personal with the turtles at the sixth annual Conservation Day at Sea Life Park. Three-year-old Kekoa Kolo, above left, gets free admission to the park for bringing in aluminum cans for recycling. Nicholas Tsutsumi, 4, signs his name to a picture of a brightly colored reef fish.

## Sea life is a hit for kids with cans

By Darren Pai  
Advertiser Staff Writer

**E**mil Soto-Rivera was amazed. Only one out of every thousand green sea turtle eggs laid would survive and produce an adult turtle.

"It's got to be more than that, right?" asked the Pearl City Elementary student.

But it's not. And it wasn't the only thing Soto-Rivera learned during his tour of information booths at the sixth annual Conservation

Day event held at Sea Life Park yesterday.

In addition to the U.S. Fish and Wildlife Service's display on sea turtles, 14 other environmental groups were on-hand — including the Hawaiian Islands Humpback Whale National Marine Sanctuary, Earthtrust and the University of Hawaii Sea Grant program.

Children presenting a grocery bag full of aluminum cans — crushed for recycling — were given admission free. Their parents were

given a special discounted rate.

"It's important that kids learn about the environment, because we're the ones that are going to have to protect it," Soto-Rivera said, clutching a bag full of brochures and pamphlets gathered at the various booths.

Displays ranged from the enormous (a 45-foot-long replica of a humpback whale) to the high-tech (an interactive CD-ROM providing detailed

information about more than 200 species of Hawaiian marine life).

Tom Barrett, a Kalani High School student, returned to Sea Life Park after attending last year's event.

While climbing through the inflated humpback was fun, Barrett said the educational benefits were an equally attractive draw.

"People have got to be more aware, even with all that's being said now about the environment. I still go to the beach and see a lot of pollution," he said.



# 66 Hawaii students in national contest

BY ROD OHIRA  
Star-Bulletin

Sixty-six Hawaii high school seniors are among 15,000 semifinalists competing for 7,000 national merit scholarships worth \$27 million.

Punahou and Iolani accounted for 71 percent of the semifinalists from Hawaii with 29 and 18 qualifiers, respectively. But administrators from both private schools agree the public should not use the National Merit Scholarship Program numbers as a measuring stick for quality of education.

"Newspapers abuse the National Merit statistics to make invidious comparisons between schools which have different missions," said Winston Healy Jr., Punahou's high school principal. "The implication is that any school which doesn't have 30 (qualifiers) isn't doing a good job, which is not true.

"Each school should be judged according to its own goals and people," he added. "If a school produced seven times more airline mechanics than any other school, why isn't that a story?"

"The truth of the matter is, it shouldn't be surprising that Punahou has the highest number because Punahou attracts and accepts a selected group of students."

Healy is not downplaying the accomplishments of Punahou's semifinalists.

"I'm proud of our kids and faculty," he said. "But this is a test skewed to verbal skills. It's not an intelligence test nor does it judge artistic, athletic or a lot of other different abilities."

Headmaster Val Iwashita of Iolani agreed with Healy.

"If you assume the quality of schools based on the number of national merit scholars, it's an unfair comparison," Iwashita said.

## Merit scholarship semifinalists

Star-Bulletin staff

Hawaii's National Merit Scholarship semifinalists:

- Assets School: Bradley Ito
- Baldwin High: Andre Haag
- Farrington High: Mary Brunson
- Hawaii Baptist Academy: Megan Fong
- Hawaii Preparatory Academy: Catherine Sakimura, Kelly Yamasato
- Home School (Laie): Dalen Kahispa
- Iolani School: Oren Bernstein, Adam Bracha, Twiggy Chan, Nicole Chang, Ian Chun, Rachell Gautz, Jennifer Hee, Melanie Hong, Sara Houle, Brandon Inada, Torrie Inouye, Nolan Kido, Sarah Kung, Jason Meller, Anna Moore, Peter Prose, Sandy Uyekubo, Deryck Wahl.
- Kahuku High: Moana Min-ton
- Kaiser High: Lisa Morton
- Kamehameha Schools: Alohi

Aea

- McKinley High: Paul Choy, Mason Watanabe
- Mid-Pacific Institute: Christopher Cha
- Moanalua High: Kristin Smith
- Molokai High: Ilima Gorsich
- Punahou School: Lolly Anderson, Leah Bremer, Caela Butterfield, Cariann Chan, Alexander Chang, Matthew Chang, Bryan Harada, Shelly Hirakami, Leslie Ikemoto, Lisa Ing, Jocelyn Leavitt, Kirill Levchenko, Adam Matthews, Sara McCarthy, Neal Nakahara, John Nakata, David Nakayama, William Oh, Courtney Oliva, Toby Oshiro, Brad Pyles, Heidi Sakuma, Keoni Schwartz, David Shapiro, Thomas Shih, Michael Shimabukuro, Ethan Stiles, David Strode, Rebecca Wilson
- Seabury Hall: Patrick Carter, Noel Norcross, Adrian Svesko
- University Lab School: George Balazs

"You need talented students as well as talented faculty to succeed."

The semifinalists were among 1.1 million students from over 20,000 U.S. high schools who entered the 1997 Merit Program by taking the 1995 PSAT/National Merit Scholarship Qualifying Test.

The highest scorers in each state were designated semifinalists.

Among the requirements needed to advance to the finalist level is an outstanding academic record throughout high school and SAT I scores that confirm earlier qualifying performances.





PAGE A-3

JANUARY 11, 1997

## NEWSWATCH



### **Rules set up for fishing at Big Isle's Kiholo Bay**

The state Board of Land and Natural Resources yesterday approved the creation of a fisheries management area at Kiholo Bay on the Big Island.

The area was established primarily to prevent the drowning of sea turtles by prohibiting gill nets in the bay, officials said.

Gill nets can be deadly for sea turtles and other marine species that get caught in them.

"Due to the unusually high numbers of green sea turtles that gather at Kiholo Bay, DLNR will prohibit the possession of all gill nets within the boundaries of the bay to prevent accidental deaths," DLNR aquatic resources administrator Bill Devick said.



# Hawaiians want turtles back on cultural menus

By Bunky Bakutis

Advertiser Leeward Oahu Bureau

**WAIANAE** — For 20 years, native islanders reluctantly lived with federal protection for the green sea turtle. But now, as numbers of the *honu* improve throughout the Pacific, islanders want to resume harvesting the turtle, restoring

its multi-faceted role in local culture.

"Over the past five years, I've seen turtles everywhere around Oahu," said Native Hawaiian fisherman William Aila. "It's time to take a look for establishing a protocol for bringing turtles back into our culture."

"I can remember my uncles catching turtles

and my aunties preparing them. But that has been lost over several generations."

Currently there is no comprehensive count of turtle populations. But tagging programs and nesting studies indicate dramatic rises in green sea turtle populations of

See Turtles, Page A2

Norton Chan, a biologist at the Waikiki Aquarium, shows a green sea turtle on loan from Sea Life Park. Some Native Hawaiians want to resume cultural uses of the turtles.

Cory Lum /  
The Honolulu  
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Sunday, June 7, 1998

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all ages since they were placed on the federal threatened species list in 1978.

The Endangered Species Act of 1973 bans killing certain wildlife listed either as "endangered" (those on the verge of extinction) or "threatened."

According to state aquatic biologist Bill Puleloa of Molokai, "the green sea turtle is not in imminent danger of extinction." A Molokai tagging program that began in 1981 has placed plastic identification tags on the flippers of 2,000 turtles of all sizes "with no end in sight," Puleloa said.

Tagging not only allows marine biologists to establish rough estimates of stock, but also tracks migratory patterns and growth rates of turtles.

A 25-year survey of nesting female turtles at French Frigate Shoals (about 20 acres of sand beaches northwest of Hawaii's main islands) has shown an increase from 50 to 500. Northern shoal turtles migrate to the main Hawaiian islands and are said to make up the majority of Hawaii's breeding stock. However, there are no total nesting counts at main Hawaiian islands.

George Balazs, who heads the Marine Turtle Research Program for the National Marine Fishery Service at its Honolulu laboratory, said the increase in nesting females is "extremely promising. This is the first time we've seen numbers like this since 1969. There are very few places in the world where stocks have regenerated like this."

Although increases may be highest among juvenile turtles, Balazs said adult numbers also have gone up, which "is a clear indication that survival is good." Green sea turtles are estimated to begin reproducing when they reach between 25 and 30 years of age.

## Off menus in 1974

In 1974, state officials took the first action to curb over-harvesting by banning commercial sales. However, family consumption was permitted. The action effectively took turtle off menus at restaurants such as the former Tiki Top in Kaneohe or Old Sally's in Pokai Bay.

In 1978, federal officials put green sea turtles on the "threatened" list following the documented depletion of stock from Florida to Polynesia. The ban removed the prized, lean meat from Hawaii family dinner tables or luau.

One of the main causes cited for protection was that beach-front development had adversely affected turtle nest-



# Turtles: Tradition limited fishermen to harvest for family



## Hawaiian green sea turtle

*Chelonia mydas*  
Hawaiian name: Honu

A migratory reptile that becomes sexually mature at an average of 25 years old. Although individual breeding does not occur every year, a female may produce 100 eggs up to six times per season. A record weight was recorded in Kaunakakai at 410 pounds. Mature turtles are herbivores feeding on algae and sea grasses.

Michael Bergen/The Honolulu Advertiser

ing sites.

Green turtles have had a prominent position in Hawaiian culture since Islanders first migrated here. Turtle was not only a rich source of protein, but also was used for medicine, functional tools and adornment.

According to Bishop Museum officials, use of decorative turtle shell was reserved only for *ali'i*. Polished shell was used to ring the staff of *kahili* (markers of *ali'i* presence), and Kamehameha I drank medicine from a round, two-quart turtle shell container, said Dr. Roger Rose, head of the museum collection department.

Bracelets — and more functional items such as fish hooks — were made from turtle shell. Tough upper carapace was used as a scraping tool in making cordage from plant fiber, Rose said.

From the late 1800s up until the 1970s, decorative hair combs, pendants, earrings, fishing lures and even buttons

were commonly used by all Hawaiians.

Hawaiians consider turtles a demigod, because it linked the land and sea. Honu is one of numerous animals that Hawaiians traditionally honor as *'aumakua* (a family guardian). That status does not bar others from hunting the turtle. But tradition holds hunters to taking only what an individual may need to feed his *ohana*, and in that way protect the resource.

Turtle meat was prepared in numerous ways: steaks were cut from flipper connecting muscle and either grilled or dried; also meat was chopped for stews or soups. The green fat, for which the turtle got its name, was boiled and the remaining oil used as a healing salve for burns or wounds.

## Marianas seek new policy

Recently, the U.S. commonwealth of the Northern Marianas has taken the lead in efforts to restore a limited cultural take of turtles.

Under the auspices of an educational exemption, one of five such categories in the Endangered Species Act, a report was completed in December detailing cultural use of turtles by two indigenous groups, the Chamorros and Saipan Carolinians.

The National Marine Fisheries Service and U.S. Fish and Wildlife Service has scheduled a workshop early this fall on their exemption request. Many Hawaiians are watching developments closely.

Limited turtle take also has become an increasingly hot topic among other Pacific islanders under U.S. jurisdiction, said Don Schug, a staff member for the Native and Indigenous Rights committee of the Western Pacific Regional Fishery Management Council.

"The council will want to do studies in Hawaii and American Samoa to look at the cul-

See Turtles, Page A3



# Turtles:

FROM PAGE A2

tural importance of turtles and possible legal exemptions to the law," Schug said.

Rights committee chief Isaac Harp of Maui said the 17-member panel will keep up pressure for a possible exemption, especially in the light of limited take allowed for long-line fishing vessels.

"I've talked to a lot of kupuna (Hawaiian elders) who want turtle returned as a food source before they pass away," Harp said. "And why are long-line fishermen allowed to kill so many, and we can't take any?"

One of the five exemptions to the ban is "incidental" turtles caught by long-line fleets. Boats operating northwest of the main Hawaiian Islands are allowed an annual take of 18 green turtles out of 129 total caught, according to Schug. When turtles are pulled up dead on hooks, fishermen must throw them back.

The Navy also receives a limited exemption at a bomb-target island in the Northern Marianas.

## Children 'brainwashed'

Waianae fisherman and Native rights committee member William Aila said traditional Hawaiian culture is losing an understanding of what the turtle represents.

"There are generations who have lost the knowledge of how to catch, clean and prepare turtle," Aila said. "And I resent the singular 'warm and fuzzy' representation of turtles being made in some educational efforts. Our children are being brainwashed. Turtle primarily was a respected and required part of our menu."

Turtle numbers now demand analysis of how to control the population, Aila said. But Gene Nitta of the National Marine Fisheries Service disagrees.

"By no means have turtle populations recovered enough to be taken off the threatened species list," he said. A limited-take program would only heighten enforcement and



# Recovery of species sparks



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## debate over protection

Advertiser library photo

Maui motorists are warned they may encounter green sea turtles on this coastal highway. The once-threatened species has recovered significantly since being protected by federal law in 1978.

poaching problems, which, in turn, would slow turtle recovery, Nitta said.

Declining to speculate on what size population might allow a limited take, Nitta referred to the federal recovery plan. Among a number of requirements, the plan states that area turtle stocks must average 5,000 females estimated to nest annually over six years before it qualifies to come off the protected list.

Another problem cited by federal officials is a virus, fibropapilloma, which causes life-threatening tumors to grow on turtles. The disease was

reported to affect 42 percent of turtles captured, examined and released in Kaneohe Bay between 1991 and 1995.

Molokai's Puleloa said that he first discovered a turtle with the disease in 1986. Many juvenile turtles have been found since then with tumors.

"We're looking for it now. Some (turtles with tumors) get worse and some get better. We can't make heads or tails of it," he said. "It's not contagious. We think it's something latent in the turtles that is allowed to surface as tumors because of changes in the environment," Puleloa said.

Balazs said the disease counteracts some of the recent good news.

"Possibly, it could cause a large decline," he said. "It is necessary to manage turtles in a conservative manner, as everything (such as turtle reproductive age) is so protracted."

But there's another reason why turtles have flourished again here, Balazs said.

"There's over 1,000 miles of coastline here with huge fields of benthic algae (which turtles consume). I see the carrying capacity of these fields for turtles as many times greater."



# Buffalo Keaulana tells of turtle hunt

**MAKAHA** — Trade winds first brought a strong "limu (seaweed) smell" of turtle from outside Kaena Point.

Buffalo Keaulana, then 35, looked north from his Boston Whaler, following his sense of smell. The algae-covered back of a 300-pound turtle bobbed on the ocean surface some 100 yards away. These days in the mid-1960s was when turtle could be sought openly, and Keaulana was one of several Leeward fishermen who caught them to share with other residents.

As he approached, the turtle dived and Keaulana quickly donned his diving mask to check under what reef crack the turtle would hide. Mentally marking its position, he put on fins and a scuba tank before heading down some 80 feet.

When the turtle was cornered in a dark reef cave, Keaulana blocked the entrance. As it attempted to elude him, he grabbed both sides of its shell when it tried to escape, holding tight to each edge. Spinning wildly, the turtle took off so fast, Keaulana had to press his face mask against its back lest water pressure tear it off.

"I had to hold on until he got tired," said Keaulana.

"Then, I placed my knee near the back of his shell, pushed down and steered him to the surface. Once we got to the surface, I held the turtle down under so it couldn't catch its breath. No breath and the turtle gets weaker."

His fishing partner, the late Homer Barrett, brought the boat around while Keaulana held the turtle upside-down on the ocean's surface. "Once you let the turtle turn right side up, you're in for another ride," he said.

The two men hoisted the turtle onto the boat and returned to Makaha Beach, where Keaulana lived with his family.

On the beach, he killed and cleaned the turtle.

"One upper flipper shoulder weighed about 75 pounds. That's a lot of turtle steaks. This is how I'd feed my family and friends. The meat is delicious, a delicacy," Keaulana said. "And my freezer was always full."

Keaulana is now 64 years old, and hopes to some day teach his grandchildren how to harvest turtle.

— Bunky Bokutis



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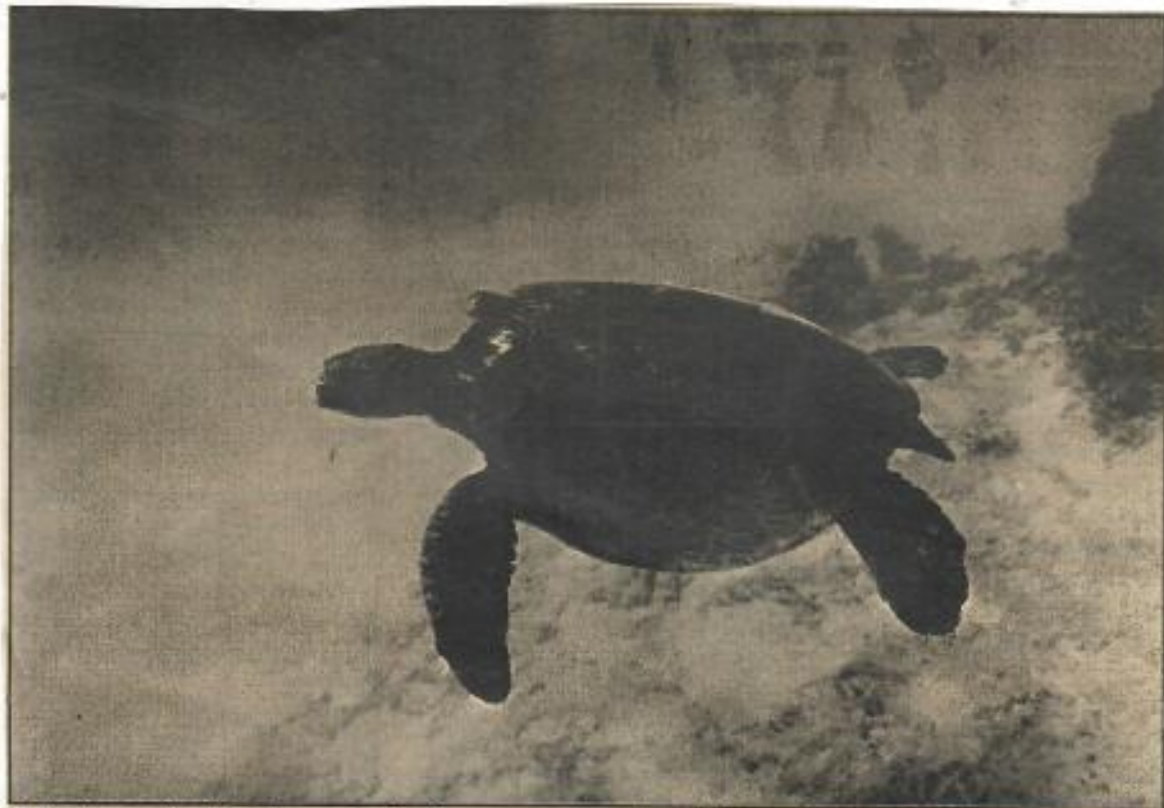
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Of the three native Hawaiian sea turtles, the green turtle, or honu, is the most common. Join us in the celebration of the "Year of the Turtle" at Punalu'u. Related story on page 17.

Photo by George Balazs

## Honu: A Cautious Recovery

by Christine Cortese

The soft black sand at Punalu'u cradles a gentle bay where boats slip safely into the turbulent southern seas of the Big Island, where families gather for picnics and to let the keikis play in tide pools, where swimmers enter the peaceful bay to play with the sea turtles. The occasional tour bus passes through quickly, mainly to visit the bathrooms: they've come a long way from Kona, and Kilauea is still on the far horizon. The visitors line up on a manicured rise above the bay and get their eyeful: black

sand, blue water, palms, gnarled fingers of black lava veiled in wave spray. A camera snap and they are on their way, Punalu'u a brief memory, somewhere in-between.

Punalu'u is distant no matter where you are, an ancient and archetypal place, survivor of tidal waves that swept other Ka'u beaches into history. Named *Puna* for an underwater spring in the bay, and *lu'u* for the diving required to fill one's drinking gourds from this spring, it is the stuff of legends:

"There was a time when stormy weather prevented the

men from diving for water," writes Mary Kawena Pukui in *Native Planters in Old Hawaii*. "There were two supernatural turtles who had come out of the ocean to Punalu'u: Honu-po'o-kea (Turtle-with-white-head), the mother; and Honu-'ea (Turtle-with-reddish-brown-shell), the father. The mother gave birth to an object resembling a piece of kauila wood, which she buried in the sand to be hatched out by the sun. Then they dug into the earth and made a spring, then returned to the sea. When it was

*Continued on page 17*



November, 1995

## Honu...

*Continued from page 1*

time for her egg to hatch, Honu-po'o-kea returned. When the thing she had laid did hatch, it was a turtle the color of polished kauila wood. Mother and daughter lived in the spring until the baby turtle grew up. The young turtle was named Kauila. The spring came to be named Ka-wai-hu-o-kauila, (the-rising-water-of-Kauila.) The turtle girl was able to assume human form and play with the young folk, but would become a turtle again when she went back into the spring. When bubbles came up in the spring, people knew the turtle girl was asleep in her home. Children used to catch fish and shrimps in the spring, and Kauila watched lest the little ones fall in. The people loved Kauila for this and because her spring gave them drinking water. They never used her water for any other purpose."

No-one knows how long the turtles have been coming to Punalu'u, but they have lent their spirit to the place since ancient times: Honu, the green sea turtle that grazes in limu pastures; the small, reef-dwelling, sponge-nipping Hawksbill turtle; the soft-shelled, enormous Leatherback, that stays well out to sea where it can feed on plentiful jellyfish.

The green sea turtle is the most common of the three, despite twin disadvantages of tasting good and growing slowly. Though both humans and sharks find the turtle tasty, the shark, with its own species survival concerns, poses less of a threat than the explosive demands of the burgeoning human population in Hawaii. Prior to 1974 there were no restrictions at all on the take of sea turtles: harvested beyond their reproductive capacity, breeding habitats bulldozed into oblivion, Honu was pushed beyond the limits of survivability.

In response to this crisis, the National Marine Fisheries Service, the U.S. Fish and Wildlife Service and the Hawaii State Dept. of Land and Natural Resources formed the Turtle Recovery Team in 1985. They've been busy.

"Following decades of intensive exploitation, the Hawaiian green turtle (honu), *Chelonia mydas*, is presently showing some promising signs of population recovery 16 years after becoming protected under the U.S. Endangered Species Act," writes George Balazs, zoologist and leader of Marine Turtle Research with the National Marine Fisheries Service in Honolulu.

Thanks to the Turtle Recovery Program, we know a lot more about turtles now than we did



before. We've tracked them by satellite (4 Hawaiian turtles that journeyed from French Frigate Shoals to Kaneohe Bay in 23-26 days and 3 Samoan turtles that peregrinated to various reefs



*Photo by George Balazs*

around Fiji in 34-45 days), weighed them, looked in their mouths to see what they had been eating, examined their tumors...

Tumors? One disturbing revelation of the study is the prevalence of disfiguring, debilitating tumors, some the size of softballs, called fibropapillomas, that cluster around the eyes (where they obstruct vision) and/or around the flippers (where they disrupt mobility and therefore feeding patterns). Both handicaps may eventually result in death. Theories abound in the face of uncertainty: perhaps the tumors derive from agricultural runoff or other pollution, either direct or indirect (through immune-system suppression); maybe they're outgrowths of a virus unrelated to human activities, or resulting from a flatworm parasite. There are presently no answers to these questions.

In a 1994 paper for the Fourteenth Annual Symposium on Sea Turtle Biology and Conservation, George Balazs writes: "Only two of the 183 turtles examined and tagged at Punalu'u have had tumors indicative of fibropapillomatosis... All other turtles captured at Punalu'u have been judged healthy. The prevalence of tumors on turtles is exceedingly high at some study sites in Hawaii, such as Kaneohe Bay on Oahu." Why?

It is questions such as these, as well as the continuing delicacy of turtle population regrowth, that prompted the South Pacific Regional Environment Program (SPREP) of the National Marine Fisheries Service to designate 1995 as "Year of the Sea Turtle." An ambitious program with its own acronym (YOST), it has been largely successful in drawing attention to sea turtles from a great many people who might otherwise have never considered them. Media coverage from London to Washington to Sydney and throughout the Pacific Island nations has spawned children's art competitions, posters, bumper stickers, commemorative postage stamps, school programs, magazine articles, radio and television shows, even a rap music video. However, only



## Ka'u Landing

Fiji has gone so far as to enact a commemorative change in legislation, and that consisting only of one year's ban on the commercial take of sea turtles (although, it is noted, an extension is possible).

Here in Hawai'i, we'll have a turtle party at Punalu'u on November 25th, a local-style celebration with food, drink, and music; and Kauila will get her own statue.

It's morning at Punalu'u and surf's up. A hawksbill turtle, small and rare, bobs calmly in a rocky cove. Deeper in the bay, several green sea turtles are swimming just beneath the surface, clearly visible. Now that the predators are gone (large sharks have never been documented at Punalu'u), the turtles are back all along the Ka'u coastline, especially in Punalu'u bay. They feed casually in broad daylight, relaxed around and even curious about humans, as though they have either a very short memory or perhaps a telepathic understanding of the prevailing human trends. Like the trend to position turtles as an ecological tourist attraction, raising the question of who will jump on the profit bandwagon and how; and what then for Punalu'u? Those interested in turtle conservation simply hope for vanloads of awakened eco-tourists who perform as *de facto* federal agents, alert to signs of turtle poaching. Although these eco cops are less than likely to venture where the poachers go.

It has taken us 30 minutes of torturous driving through smoking piles of soft ochre soil to reach the shore at Ka Lae; we are yellow from head to foot. There are no other people, no cars, no habitation, no trees, as far as we can see in any direction, and we can see a long way across the Kama'oa plain. The first thing we do on our way to the water is stumble across a charred honu shell, still warm from the coals that cooked it. Like inadvertent bumblers onto a crime scene, we freeze: there's the body, the evidence. But evidence of what?

Evidence of an illegal act, of which the cumulative weight equals extinction. Evidence of defiant self-interest, the bane of cooperative effort. And, startling in the utter emptiness, evidence of the pervasive effects of human overpopulation, through which this single element of an ancient way of life now becomes a crime conducted in secret.

*Christine Cortese is a writer, astrologer and student of nature in Kahuku, Ka'u, Hawaii.*



## A Celebration of the "Year of the Turtle"

Turtle lovers from the Big Island, Oahu, and Maui will dedicate a bronze and lava stone monument in honor of Hawaii's sea turtles and the legend of Kauila at Punalu'u Beach on the Big Island. The monument will be unveiled in a public ceremony starting at 10 AM on Saturday, November 25 at Punalu'u Beach Park.

Following the dedication, community volunteers from the Ka'u district of the Big Island will mark the day with a celebration titled "He La Honu — Turtle Day '95". Festivities will continue until 3 PM with complimentary food from the Ka'u community, Hawaiian musical and hula entertainment, and a variety of arts, crafts and educational booths.

The "He La Honu" dedication will be emceed by two students from Ka'u High School,

honu or green sea turtle. Zarrella is also a Board member of the Honu Project, a Hawaii-based sea turtle conservation organization that helped coordinate and fund the monument's creation.

"We're especially pleased that this superb monument to Hawaii's sea turtles could be unveiled in 1995, which has been declared the Year of the Sea Turtle by Hawaii's legislature as well as by most of the nations of the South Pacific," said Laura Sasaki, one of the Honu Project's Directors. The Year of the Sea Turtle has been marked throughout the Pacific with the creation of educational videos, posters and the implementation of new laws protecting sea turtles and their habitats.

Punalu'u Beach, a beautiful cove of black sand, is renowned as a place where the green sea turtles are tame, friendly, and



*Dale Zarrella with the sculpture to be installed at Punalu'u this month.  
Photo courtesy of the Honu Project*



who have been working on the Punalu'u monument project for several years. Also present to do book signings will be Casey McGuire-Turcotte, another Ka'u High School student who wrote and published a book about how the honu got its shell.

According to Hawaiian legend, the mystical turtle Kauila would turn herself from a turtle into a young girl so she could play with the children along Punalu'u Bay and keep watch over them. The people of Ka'u loved Kauila as the guardian of their children. The legend of Kauila was later immortalized in a famous painting by Big Island artist Herb Kane.

The monument's central piece is a bronze relief disk four feet in diameter depicting Kauila riding on the back of a giant sea turtle. A separate bronze plate tells the story of Kauila and the turtles of Punalu'u. The bronze disk for the monument was created by Maui-based artist Dale Zarrella — a skilled painter and sculptor whose favorite motif is the

plentiful. The turtles of Punalu'u often swim in close quarters with snorklers and children playing or boogie-boarding in the water, much to the children's delight. Punalu'u beach is also a nesting site for the highly endangered hawksbill turtle, and signs at the beach ask motorists to keep their vehicles off of potential nesting areas. Scientists from the National Marine Fisheries Service, along with students from the UH Hilo's Marine Option Program, periodically capture and tag green sea turtles at Punalu'u for research purposes.

The monument to Kauila at Punalu'u was created as a joint effort of Ka'u community volunteers, Ka'u High School, the University of Hawaii at Hilo's Marine Option Program, the National Marine Fisheries Service, and the Honu Project; the celebration is being organized by Geri Cuddihy in Ka'u.

*For more information, please contact Roz Rapozo with the Honu Project in Honolulu at 236-4544.*



# NEWS

O F T H E

*Garden*

NEWSLETTER OF THE NATIONAL TROPICAL BOTANICAL GARDEN

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## THREATENED SEA TURTLES RETURN TO LAWAI KAI

by Rick Hanna

For the first time since Hurricane Iniki, the green sea turtle (*Chelonia mydas agassizi*; honu in Hawaiian) returned this summer to Allerton Garden's Lawai Kai beach and produced 305 baby turtles. The hurricane in 1992 had severely altered the beach profile and removed all vegetation, including beach morning glory (*Ipomoea pes-caprae*), a favored turtle nesting habitat. For the past three years, we at the Garden have



*Mother turtle digs a deep hole, then lays eggs, which resemble leather Ping-Pong balls.*



*State biologist Don Heacock excavates empty nests to look for hatched shells.*



*Most of the shells show evidence of healthy hatchlings.*

looked in vain for the returning turtles. Early this year, however, the morning glory took hold again, stabilizing the beach, and in June we began seeing tracks of the big sea beasts along with tell-tale saucer-shaped depressions in the sand — evidence that the turtles were back and nesting. Throughout the summer, more turtles returned, building a total of seven nests.

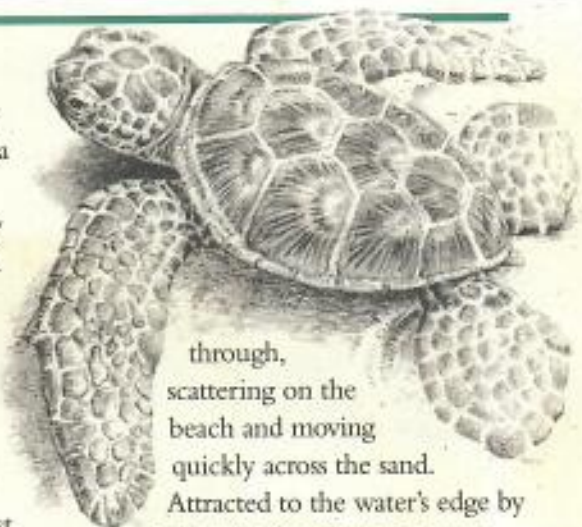
On November 15th, I accompanied Don Heacock, aquatic biologist for the State of Hawaii Department of Land and Natural Resources, to document the number of hatchlings from the nests dug during the summer months. Armed with shovels, notebooks, and cameras, we began excavating the abandoned nests with the help of two last-minute volunteers: Dr. Carl Berg, a biologist who worked with sea turtles in Florida; and Lisa Sonne, a documentary filmmaker. We uncovered 305 empty egg shells and 21 infertile eggs.

The turtle nesting season commences in June, reaches its peak in July, and declines to a low level in August. The eggs are deposited at night: the large females crawl up the beach, moving slowly across the sand,



flippers swinging forward to lift and push their heavy bodies along. After a suitable site is selected — usually near a patch of beach morning glory — the female stops and begins scooping away sand, creating a pit big enough to hold her body. With her back flippers the female then digs a 24 to 30-inch-deep narrow hole and begins laying the eggs, which have white leathery shells and look like large Ping-Pong balls. When she is finished laying, the turtle uses her flippers to cover the nest with sand and returns to the sea.

Two months later the eggs break open and tiny hatchlings, less than two inches long, emerge. The baby turtles thrash around, scraping the sides and top of the nest with their flippers, packing down the loose sand at the bottom. As they stamp more and more sand under them, the hatchlings slowly rise as a group to just below the surface. There they wait until the temperature is right — usually at night — then break



through, scattering on the beach and moving quickly across the sand. Attracted to the water's edge by light reflecting from the waves and sea surface, they begin their swim out into the open ocean.

Dr. Archie Carr, a scientist and author deeply concerned about the extinction of sea turtles, wrote, "For most of the wild things on earth the future must depend upon the conscience of mankind." Destruction and loss of nesting habitat was one of the reasons green sea turtles were listed as threatened under the Endangered Species Act in 1978. Lawai Kai is one of only two major nesting sites on the inhabited Hawaiian Islands, and NTBG has made a commitment to preserve this important resource.

Dr. Klein is arranging a homecoming for the "Green Sea Turtle Class of 1995" when they reach sexual maturity in 25 years. The event will celebrate these magnificent animals and the Garden's endeavors to ensure a future for them. RSVP.



PROUD PARENT OF

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# Baby Turtles

Rick Hamner is NTBC's librarian  
and avidly marine biologist.

