

FULL TANKS AND EMPTY REEFS

Can Hawai'i balance the demands of aquarium lovers with the need for conservation?

BY ILIMA LOOMIS

HE DRIVES THEM LIKE CATTLE ALONG a fenceline of billowing, fine-mesh net—butterflyfish, damsels, yellow tangs. Slowly pumping his fins through the current, fisherman Neil Dart glides over the reef, pushing the small school into a corner of his carefully laid net. As they dart against the silvery barrier, he scoops them up one by one with a hand net, gently transferring them to small baskets for their long journey to the strange world above.

Fifty feet overhead, Dart's compact aluminum boat, the *Hawaiian Glacier*, bobs in the Kona surge. On board, two big tanks hum with circulating sea water, hundreds of neat compartments inside waiting to be filled with the day's catch, like a watery jewelry box.

"A bad trip would be a couple of hundred fish," Dart says, sitting on a rock wall overlooking Honokōhau Harbor. "On a good day, you bring in 1,000."

An experienced boater, diver and fisherman, Dart has been a permitted aquarium collector since he was 12 years old—half his lifetime. His father, an Alaskan abalone fisherman, who moved the family to Kona when Dart was 6, was one of the island's first commercial aquarium collectors. Today, Dart has branched off the family business with his own boat and his own operation, selling his catch to distributors on O'ahu, and taking a 7 percent to 10 percent cut off fish that might sell for \$50 on the retail market.

A careful fisherman, Dart considers himself one of the good guys. He lays his

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net carefully, placing it where it won't drag over the reef and break coral. He's gentle with his catch, easing the fish to the surface one slow foot at a time, to protect them from unsafe decompression. On board, he sorts the animals for compatibility, stowing them in big tanks circulating with clean sea water. It's all part of running a quality, professional business. Back on shore, he says he files accurate catch reports and pays taxes on every fish that's caught.

"My fish is my name," Dart says.

But Dart knows well that not all collectors fishing off Kona are as careful. He's often faced critics who lump him in with the "bad apples"—fishermen who overload their tanks, let their fish scald in water fouled with their own wastes, and race back into the harbor at top speed, bruising the animals as they jostle in their tanks.

threats and name-calling that go with being an aquarium collector.

"A lot of times," he says, "I just tell people I'm a commercial fisherman."

Ten years ago, that anger was at a boiling point in Kona. Aquarium collectors were the reviled "reef rapers," scorned by ocean lovers in general and commercial-diver tour guides in particular. Dart recalls coming to the marina in the morning to find his equipment smashed by hammers, or having tour boats drag sharp fishing lines over his dive site while he was collecting.

The rage went both ways. Tina Owens, a founder of the Lost Fish Coalition, organized a community petition and began lobbying for an aquarium collection ban. Fearing retribution from fishermen, she tried using a post office box and an unlisted phone number. Still, she received threatening, late-night phone calls, and

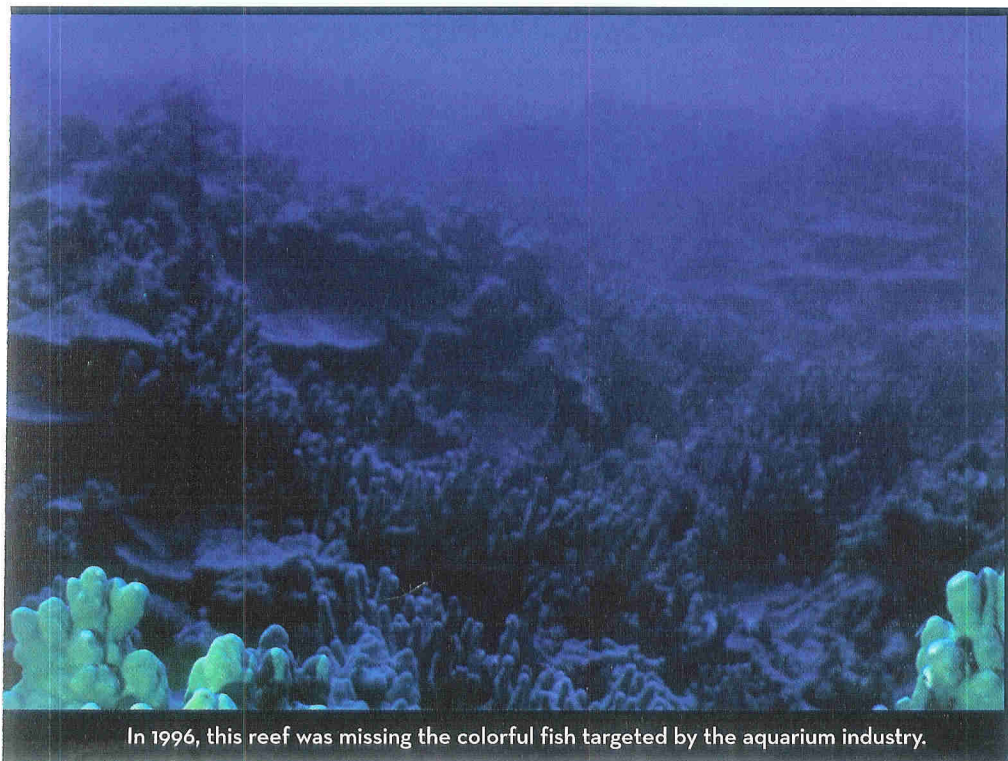
yellow tangs once schooled, her favorite dive sites had begun to look like ghost towns. "I was horrified," she says.

Subsequent research has showed that Owens was right to be alarmed. A study released in 1999 found that seven of 10 fish species surveyed off the Kona coast had been significantly depleted by aquarium collecting. Impacts ranged from a 38 percent reduction in populations of the multi-band butterflyfish, to a 75 percent decline in the fourspot butterflyfish.

But today, those trends are turning around in what appears to be one of the

"They get greedy, they take more fish than their boat can hold."

- NEIL DART



In 1996, this reef was missing the colorful fish targeted by the aquarium industry.

"They get greedy, they take more fish than their boat can hold," Dart sighs. "It just ruins it for guys like me."

While he insists that his work is legal, sustainable, humane and nothing to be ashamed of, Dart admits that sometimes he just doesn't want to face the anger,

another activist's dog was killed. "I'll admit, I was a little jumpy," she says. "But you can't just stop what you do."

A longtime diver, Owens became an ocean activist in the 1990s after noticing that Kona's reefs were looking less and less colorful. Where wrasses, angel fish and

state's rare conservation success stories.

Biologists credit a network of nine "fish replenishment areas" with a 6 percent increase in aquarium fish populations across the board, and a 16 percent increase in the 10 most commonly collected species.

The "FRAs," as they're called, were created by the Legislature in 1998, mapped out by a community panel that involved both collectors and conservationists, and put into effect Jan. 1, 2000, protecting more than 35 percent of the Kona coast.

Studies indicate they're working. Fish populations are up within the FRAs themselves, according to research. Five years after they were closed, seven of the nine no-fishing zones were found to be effective in increasing fish populations, with four of them showing "statistically significant" increases, according to a report prepared for the Legislature by Department of Land and Natural

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PHOTO: COURTESY OF TINA OWENS

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Resources (DLNR) biologists.

"Given the relatively short time period of FRA existence, this is strong evidence for the widespread effectiveness of the FRAs to enhance aquarium fish populations," the scientists wrote.

The results are especially heartening for some of Kona's most popular reef treasures. Surveys five years after the start of the FRAs found a 100 percent increase in density in fourspot butterflyfish, a 26 percent increase in the achilles tang, and an 11 percent increase in the clown tang. The yellow tang, a perennial favorite with divers—and the state's most collected fish, making up 37 percent of the total aquarium catch—has been one of the biggest winners, with a 48 percent increase in density. Since the perky, popular tangs have long lifetimes of 20 years or more, the

baby boom will pay dividends for years to come.

"It's like compound interest," says DLNR's Kona marine biologist Bill Walsh.

More surprisingly, the FRAs appear to be helping fish populations bounce back even in areas that are still open to collecting. After two years of declining yellow tang catch in the late 1990s, collectors reported increases through 2004. At the same time, the market value of yellow tangs went up 33 percent.

"The overall value of the West Hawai'i aquarium fishery in fiscal year 2004 is the highest it has ever been," researchers reported.

Not everyone thinks FRAs should get credit for the apparent rebound. Collector Neil Dart, even though he served with Owens on the committee that established

the network of protected areas, acknowledges he's had a good year, but feels the bounty is just coincidence. Fish surveys are too hard to get accurate, he says, and the FRAs still have too many weaknesses to argue definitively that the system has led to a trend of improvement.

The FRAs don't protect against other threats to the fish, he says, noting that food fishing is still allowed in the areas, and reef fish are often casualties of bycatch. He also believes that invasive predators like blue-dock groupers are moving into the areas and eating more reef fish now that aquarium fishermen, who routinely speared them or chased them away, are moving out.

"We take care of problems in the area, too," Dart says.

Owens scoffs, saying she's seen life

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PHOTO: ROBBYN PECK

Longtime diver Tina Owens was alarmed enough by the lack of fish to start the Lost Fish Coalition.

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returning to the reefs, and that Dart and other collectors just don't want to face the facts. "With fishermen, it's never their fault," she says. "It's pollution. It's runoff. It's golf courses. It's groupers. It's everybody but them."

Walsh agrees there's little doubt FRAs are bringing fish populations back.

"Some people deny it, but it's kind of like saying the earth is flat," he says.

Dart and Owens agree on one thing: the FRAs need to be stronger. Both would like to see laws that restrict the total number of collectors allowed permits in West Hawai'i waters. Under the current system, with no limit on permits, the number off Kona has been steadily growing, with collectors fleeing the overfished waters of O'ahu making up a large number of the new arrivals.

Dart worries that hordes of collectors, most without his longtime connection and investment in the area, could descend on his turf and strip the reefs bare, leaving him without a livelihood. He's especially concerned about how the Hawai'i SuperFerry, scheduled to arrive in 2007, could affect the business, fearing it could open the gates for O'ahu collectors to "come in, clean house and go home."

He proposes setting a limit on the number of permits and making them transferrable, so collectors could pass them on to their children, or sell them for money when they get out of the business. That would give permit holders a financial stake in preserving the fishery, he says.

"Today, this industry is a renewable resource," Dart says. "Two weeks from now there could be 500 people with permits. We can't let that happen."

Owens agrees, saying that keeping the total number of permits low and making them transferrable would give fishermen more ownership over the reefs, and give the state more leverage in enforcement.

"It's a valuable tool," she says. "It'll ensure the people in the business are actually professionals. Right now ... anyone with a boat and an engine can go out and call themselves a fish collector."

Hawai'i's reef fish may be little, but they can mean big money. The reported annual aquarium catch totals more than \$1 million. But the actual value of the fishery is believed to be much higher, with gross sales of more than \$3.2 million per year.

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- TINA OWENS

Underreporting catches is rampant among collectors. In 1993, reported sales of Hawaiian aquarium fish were \$820,000, while the trade group Hawai'i Tropical Fish Association publicly estimated its total sales at around \$4.9 million for the same year.

The high quality of Island fish is one reason for their value. The world's biggest exporters of tropical fish, Indonesia and the Philippines, commonly use cyanide or other harmful chemicals to stun the animals for quick collection, resulting in a high mortality rate. In contrast, Hawai'i's

hand-caught reef fish have high survival rates and are known as good investments by collectors. That's just one reason Dart doesn't mind taking the time to handle his catch with care.

"Hawaiian fish are ultimately worth more than other places because of the kind of collecting we do," he says.

As the fortunes of Kona's reefs have soared, O'ahu's have nearly gone bankrupt. Once the center of the aquarium industry in Hawai'i, 84 percent of aquarium fish caught in the Islands came from O'ahu in 1981. In 2003, O'ahu was producing only 12 percent of the aquarium fish catch. In the same time period, the monetary value of O'ahu's catch decreased by 76 percent, while the value of the Big Island's fishery shot up by 282 percent.

The aquarium industry grew up on O'ahu in the years after World War II, expanding after the arrival of jet air service in 1959 allowed fishermen to reach more Mainland markets with their delicate cargo. It saw rapid growth in the 1970s, when the number of permitted collectors on O'ahu increased from six in 1971 to 78 just four years later.

Researchers found that devastating storms combined with overfishing caused the collapse of the aquarium fishery on the

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A revitalized school of yellow tangs, the most exported aquarium fish from Hawai'i.

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island. Hurricanes 'Iwa in 1982, and 'Iniki in 1991, damaged swaths of the island's reefs, killing large numbers of fish. Surviving animals migrated to the remaining healthy patches of reefs, where they were followed by collectors, who concentrated their efforts on the smaller areas.

As there were fewer and fewer reef fish available, O'ahu collectors turned to hermit crabs, featherduster worms and other low-value invertebrates, which today make up 95 percent of the island's total aquarium catch.

Despite the apparent success of the FRAs in Kona, DLNR Director Peter Young says the state isn't planning to expand the system to other islands, even though he feels it should be a model of conservation efforts for other communities. The effectiveness of the program is based on the full buy-in and participation of the community, he says, so any changes would have to show widespread community support.

While DLNR is processing new rules for fishing on O'ahu, including stricter regulations for controversial gill nets, the rules do not deal with the aquarium fish issue, Young says. On Maui, where the aquarium industry is currently small, but has the potential for significant growth, Young says he has heard some concern from the ocean-going community about collectors. But he's also encountered resistance from fishermen, who feel Maui is "different" and wouldn't benefit from the Big Island's model.

"I'm not deterred by that," Young says, noting opponents made similar arguments when efforts started in Kona. "Even with the strong level of opposition and the initial unwillingness of people to work together, through time they worked with each other to come up with a plan."

Owens says that, in spite of the heat she took for opposing collectors in Kona, she's glad she fought for change. Now when she dives, instead of bare reefs, she sees swirls of color again—butterflyfish, humuhumunukunukuāpua'a and yellow tangs that she feels belong to her as much as they belong to collectors.

"After all," she says. "They're not aquarium fish. They're fish." PAU

Ilima Loomis is a staff reporter for The Maui News and author of Rough Riders: Hawai'i's Paniolo and Their Stories.

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