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In Hawaii, the Age of Aquariums Raises Concern Collectors Clash With Islanders Over Tropical Fish

By Cheryl Lyn Dybas
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It might have been a scene in a dusty western, but for the sand and the surf. Along the shores of Hawaii's Big Island, gun smoke hovered in the breeze, the ghost of a shootout between locals staked out on a black lava beach and fishermen in a small boat just offshore. The prize? Not horses, or the booty from a bank robbery. It was fish.

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Although the incident ended without injuries or legal charges, the clash was one of the most dramatic manifestations of rising tensions in Hawaii over the collection of tropical fish for home aquariums.

"Some people who live along the Big Island's coast believe fishers are taking too many fish," said Bill Walsh, an aquatic biologist with Hawaii's Department of Land and Natural Resources (DLNR). "In this case, we're not talking about just any fish, but in-demand tropical fish."

In the past five years, conflicts between tropical reef fish collectors, scuba diving tour operators and subsistence fishermen have intensified, said Walsh. "This is especially true on the Big Island, where aquarium collecting and tour uses both are heavy, and where collecting is happening near communities in which subsistence fishing is important."

Local residents and dive tour operators allege that collectors are "fishing out" coral reef areas that once teemed with brightly colored tropical fish. "Areas that we take divers to all the time, and that once had rivers of fish swimming in and out of the corals, are now quite barren," said Lisa Choquette, owner of Dive Makai, which offers scuba tours of reefs just off Big Island. "Aquarium collectors are scooping up these fish much faster than nature can replenish

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them."

Commercial fish collection conflicts with other "uses" of reef fish, said Walsh. Some of the young fish collected for the aquarium trade, like juvenile kole, would be caught as food when they reached adulthood by subsistence fishermen. Collectors have removed from favored dive sites rare species that dive tour operators used to attract customers.

Collectors such as Dave Dart, owner of Tropical Express Diving in Kailua-Kona, counter that they "steer clear of adult fish, thereby leaving the breeders in place, and catch fish using only small nets or by hand, not like how it's done in other countries, where fishers use toxic chemicals [which stun fish and make it easy to collect large numbers of them]."

Tom White, owner of the Marine Scene, a saltwater aquarium store in Herndon, will buy tropical fish only from collectors and their wholesaler representatives "who catch and transport fish in environmentally sound ways. We want our fish to arrive in good condition, and to sustain that health when they reach a buyer's home aquarium. To do that, they have to be collected and shipped using the best possible techniques." The Marine Scene stocks tropical fish, including yellow tang, Hawaii's most popular aquarium fish, from the state's reefs.

"Hawaii is a major supplier of saltwater fish for the national and international aquarium market," said Bruce Carlson, a marine biologist and director of the Waikiki Aquarium in Honolulu. These fish have a reported annual value of nearly \$1 million. And the catch is growing.

In 1973, about 90,000 fish from Hawaii were harvested for the aquarium trade; by 1995, that number had increased to 423,000. In 1998 alone, for example, almost 200,000 yellow tang were collected from Hawaiian reefs. Other top species include kole, Achilles tang, longnose butterflyfish, moorish idol, orangespine unicornfish and Potter's angelfish.

To address concerns about marked depopulation of tropical reef fish, Hawaii's DLNR funded a study by marine biologists at the University of Hawaii at Hilo and other institutions. The research compared populations of seven fish species at Big Island sites that had regular collecting activity with populations of the same seven species at Big Island sites where collecting is prohibited. In the study, yellow tang, kole, longnose butterflyfish, Potter's angelfish, Achilles tang, moorish idol and orangespine unicornfish were counted.

Results showed significant population declines in areas where the fish were collected for the aquarium trade. At sites with regular activity, Achilles tang, for example, had been reduced by 63 percent; longnose butterflyfish by 54 percent; and yellow tang by 47 percent. "This indicates that aquarium collectors are having significant impacts on the species examined," said

scientist Brian Tissot of Washington State University in Vancouver, B.C., who coordinated the West Hawaii Aquarium Project.

Walsh and others at the DLNR are working to set aside areas along Big Island's west coast where tropical reef fish collection would be banned. In 1998, Hawaii's state legislature passed Act 306, which mandated that a "West Hawaii Regional Fishery Management Area" be established in the waters near the shore between Upolu Point and Ka Lae on the Big Island. Act 306 required the DLNR to designate a minimum of 30 percent of Big Island's west side as Fish Replenishment Areas (FRAs), where aquarium fish collecting is off-limits.

"In the FRAs," said Walsh, "we're in fact starting to see the fish come back. If we can keep fishing activity at reasonable levels in other reef areas that remain open to collecting, we might see this situation start to turn around."

Toward that end, the Marine Aquarium Council in Honolulu, a nonprofit organization representing conservation groups and the aquarium industry, has developed a certification program for aquarium fish collectors who meet high standards, according to Bruce Bunting, vice president of the World Wildlife Fund and a Marine Aquarium Council board member. "A 'Marine Aquarium Council Certified Organisms' label is placed on aquarium shop fish tanks whose inhabitants were caught and transported using responsible practices," said Bunting.

Eventually, Walsh said, there may be a better way than FRAs or certification programs. "It'd be great to figure out how to spawn and rear reef fish in captivity, so we could supply the aquarium market with 'farmed' tropical fish."

A major advance recently came with a species of bright orange fish called flame angelfish. Researchers at the Oceanic Institute on Oahu reared flame angelfish larvae at the institute's fish hatchery. Biologists developed a way of culturing microscopic organisms as food for the tiny angelfish. Carlson and others at the Waikiki Aquarium have succeeded in a similar attempt with rare Hawaiian masked angelfish.

The news comes not a moment too soon, say dive tour operators such as Choquette. "If we were talking about bald eagles, everyone would be up in arms. But tropical fish are underwater . . . 'out there' . . . where most of us don't ever see them. If they disappear, will anyone notice in time?"

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