The Aquarium Trade in Hawai`i

A PFC White Paper

The Pacific Fisheries Coalition (PFC), with support from the PEW Charitable Trusts, the Harold K. L. Castle Foundation, and the Marisla Foundation represents a unique collaboration between conservationists and fishermen who find common ground in their desire to promote the conservation and responsible use of living marine resources in Hawai`i and the Central and Western Pacific.

This white paper was drafted by Kim Moffie, marine policy analyst, Hawai`i Audubon Society, with the assistance of the Division of Aquatic Resources. October 2002

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Most marine ornamental fish originating from U.S. waters come from Hawai`i, which is known for its rare endemic species of fish of high value. Recent studies have shown that aquarium collectors have had a significant negative impact on the fish species taken in the fishery, damaging our fragile coral reef ecosystems. Among other impacts, the collection of fish for the aquarium trade causes significant declines of fish populations in their natural habitat.

The aquarium fish industry has been largely unregulated in Hawai`i, despite the potential environmental impact caused by the fishery. One of the major problems the Division of Aquatic Resources faces with successfully managing the aquarium fishery is the lack of accurate and detailed information on the number of animals being collected. One alternative is to initiate an inspection program of outgoing shipments of ornamentals from both Keahole Airport in Kona and the Honolulu International Airport for the purpose of providing accurate information on the types and numbers of organisms that are being removed from Hawai`i's reefs.

History of the Aquarium Fish Industry in Hawai`i

- Commercial collection of fish and invertebrates for the marine trade was established in 1953 - the Division of Aquatic Resources received legislative authority to regulate the use of fine mesh aquarium nets and issue permits.
- The annual harvest of aquarium fishes rose from 90,000 in 1973 to 422,823 in 1999, a 470% increase, and it is likely that these reported numbers are grossly underestimated.
  In comparison, Florida's annual harvest averages 295,183; Australia's less that 200,000.
- Between 1995 and 1998, commercial permits increased by 39%, from 167 to 274.
- In the past 15 years there have been numerous conflicts between marine ornamental collectors and subsistence fishermen, commercial fishermen, environmentalists, and the marine tourism industry.
- In response to declines in reef fishes dues to aquarium collectors, the Hawai`i legislature passed Act 306 in 1998, which called for the development of a West Hawai`i Regional Fishery Management Area plan that designated 30% of the coastline as "Fish Replenishment Areas" where collection of marine aquarium fish is prohibited (H.R.S. ß 188F-4).

Status of the Aquarium Fish Industry

- A total of 103 species of fish are collected for the aquarium fish trade; 90% of the harvest is focused only on seven species including Yellow Tang, Kole, Achilles Tang, Orangespine Unicornfish, Longnose Butterflyfish, and Moorish Idols.
- The Yellow Tang (Zebrasoma flavescens) makes up 70-90% of the fish caught in the aquarium fish industry.
- Over 90% of the fish caught in Hawai`i are shipped to the mainland U.S.
- The industry is driven by the demand for marine aquarium fishes created by hobbyist aquarium owners; limits are caused by biological factors determining the number of fish.
  - Almost all of the ornamental fish are harvested before they get large enough to reproduce.

Regulations on the Aquarium Fish Industry

- The industry has been largely unregulated over the last 16 years despite dramatic increases in both the number of issued permits and collected fishes.
- Currently, there is a lack of regulation regarding size, number, and season for the take of most invertebrates and fish sought for the aquarium trade.
- Both commercial and non-commercial collectors are required to obtain an aquarium fish catch permit from the Division of Aquatic Resources, but DAR does not have the authority to limit the number of permits under H.R.S. ß 188-31.
- Commercial collectors must obtain a commercial fishing permit to sell their catch, and are required to make monthly catch reports to DAR.
- Harvest levels are substantially underestimated in collection reports, and some collectors don't even file reports - 59.5% of collectors did not file reports in a recent period, and another 19% were filed but indicated "no catch". Only 13% of the permit holders filed all required reports, and the DAR has no way to assess their accuracy.
- The possession or use of explosives, electrofishing devices, and poisonous substances such as cyanide in State waters is prohibited by H.R.S. ß 188-23.
- A number of invertebrate species are also harvested, including anthozoans, bryozoans, sponges, and seaweeds; however, the taking and selling of coral or rocks with marine life attached is prohibited under H.R.S. ß 188-68, except if permitted for, educational or propagation purposes.

Environmental Impacts of the Aquarium Fish Industry

- Collection of fish for the aquarium trade causes significant declines in fish populations.
- Aquarium fish collectors are highly selective and often capture large quantities of species of high value, making the potential for over-exploitation high.
- 80% of the catch of marine ornamentals are herbivorous fish. A reduction in the abundance of herbivores can cause algal overgrowth of coral, creating long-term impacts on coral reef health.
- According to fish collectors, competition is strong and many areas are being over harvested.
- Destructive fishing practices, such as the use of cyanide, that may be employed to collect marine aquarium fish destroy reef habitat.
- The mortality rate of fish caught by chemicals is several times as high as those caught by net.
- Currently, there are no conclusive studies documenting the magnitude of impacts on natural populations, despite repeated calls for such studies to help develop sustainability in the aquarium trade industry.

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