

What Do We Know About Coral Reefs, International Trade in Coral Reef Animals and the Urgent Need for Action?

Coral reefs are rare ecosystems:

- ★ Coral reefs only cover about 0.2% of the ocean's area (Spalding, et al., 2001)

Coral reefs are endangered ecosystems:

- ★ 20% of world's coral reefs effectively destroyed; 24% under imminent risk of collapse through human pressures; further 26% under longer term threat (Wilkinson, 2004)
- ★ 1997-98 bleaching event reduced live coral cover by 10% globally (Hodgson and Lieberman, 2002)

Coral reef hotspots have been identified with many restricted-range species:

- ★ *Hotspots* are areas facing significant threat of habitat loss while harboring diverse species found nowhere else (Roberts, et al., 2002, Science.)

Coral reefs in South East Asia are under severe risks: (Burke et al., 2002. WRI)

- ★ Human activities threatened 88% of reefs (region contains ~ 34% of world's reefs)
- ★ Overfishing threatens 64% of reefs
- ★ Destructive fishing practices (such as cyanide use, blast-fishing) threaten 56% of reefs

Global surveys indicate that trade is driving severe overfishing of coral reefs: (Hodgson and Lieberman, 2002. Reef Check)

- ★ Overfishing of key groups for food trade – groupers, wrasses, lobsters, parrotfish
- ★ Overfishing of key groups for ornamental trade – butterfly fish, moray eels, groupers
- ★ Overfishing of key group for curio trade - triton

The U.S. continues to be the major global importer of ornamental coral reef animals: (NOAA Testimony to Congress, June, 2002; Bruckner, 2001 and 2005)

- ★ U.S. imports 60- 80% of the live coral, over 50% of the curio coral, and 75-95% of the live rock and reef substrate in international trade each year.
- ★ U.S. imports about 8 million of the 14-30 million marine aquarium fishes in trade (50-60%)
- ★ Trade includes over 1000 different species, with about 66% originating from the Indo-Pacific.
- ★ The demand for these organisms in the U.S. may be the main driving force for an unsustainable trade and the use of destructive fishing practices, such as cyanide use.
- ★ Nine of the ten dominant coral taxa for the aquarium trade consist of large-polyp corals that are slow-growing, long-lived, and often rare.

The aquarium trade continues to increase: (NOAA Testimony to Congress, 2002; Bruckner, 2001/2005)

- ★ Trade in coral for aquaria has increased over 400% since 1988.
- ★ Trade in live rock has increased over 450% between 1993 and 2002.
- ★ The global trade is increasing annually by 10-30%.

Severe overfishing for aquarium trade occurs even in the United States: (West Hawai'i Aquarium Project Report, 2002)

- ★ Aquarium fish species have declined by 59% over last 20 years in Hawaii
- ★ Fish Replenishing Areas (35% of coast) established in January 2000
- ★ Fish Replenishment Areas are beginning to show increased fish stocks
- ★ Aquarium fishes **outside** of reserves experience significant declines – from 14% to 97%
- ★ Monitoring studies recommend that additional reserves be established

Major ecosystem impacts can result from overfishing:

- ★ Many of the fishes collected for aquaria are herbivores (consume algae), and removal can result in algal overgrowth of coral and catastrophic shifts in the ecosystem (Pauley, et al., 2002, Nature; Scheffer, et al. 2001, Nature; Wood, 2001).
- ★ Maintaining high biodiversity, and the resulting complex interactions among species (such as predators and competitors), is necessary for coral reef stability (Carr, et al., 2002, PNAS.)

Severe human health impacts, from unsafe diving practices, occur in collectors for the live reef fish food and aquarium trades: (Cross et al., 2000)

- ★ Serious health problems due to improper hookah equipment and diving practices
- ★ About 50,000 to 80,000 indigenous divers, primarily in Indonesia and Philippines
- ★ Mortality among divers is about 4% per year; 10% have obvious difficulty in walking
- ★ 18% have experienced some degree of paralysis, 20% exhibit clinical signs of spinal cord injuries, and 38% are diagnosed with aseptic necrosis of bone
- ★ Most divers indicated that they do not want their children to take up hookah diving.

Illegal components of the wild animal trade exist:

- ★ Although illegal in most countries, cyanide is often used to capture reef fish for the live food fish and the aquarium trades; the use continues to spread geographically (Barber, 2000)
- ★ Coral reef animal trade has been associated with money laundering (IMA release, 2002)
- ★ Wild animal trade has been associated with contraband and drug trade (WWF report, 2002)

Strong international concern exists that some coral reef species are threatened by trade.

- ★ Species listed under the Convention on the International Trade in Endangered Species of Wild Fauna and Flora (CITES) include 2000 species of hard (stony) corals, black coral, giant clams, Queen conch, sea turtles, Napoleon wrasse (*Cheilinus undulatus*), seahorses (*Hippocampus* spp.)
- ★ Red coral and the Banggai Cardinal fish were proposed for listing under CITES this last year due to evidence that these animals were threatened by international trade.
- ★ Discussions are underway on the status of sea cucumbers for possible CITES listing.

There is a strong need to more fully assess trade in coral reef species and the U.S. role:

- ★ Assess the nature and volume of the curio and jewelry trades
- ★ Assess the nature and volume of the trade in live invertebrates and fish for the aquarium trade
- ★ Assess the nature and volume of U.S. exports of coral reef animals and impacts on U.S. reefs
- ★ Assess the nature and magnitude of the illegal trade associated with coral reef animals

Key authorities have been identified that are currently gaps in the ability of the U.S. to effectively address trade issues and encourage sustainable management, including authorities to:

- ★ Establish an advisory council of stakeholders
- ★ Reduce unsustainable collection and take of CITES-listed species
- ★ Reduce destructive fishing practices
- ★ Reduce mortality rates of animals during transportation and handling
- ★ Reduce the number of inappropriate species in trade, and develop an ecosystem-based approach for coral reef management.