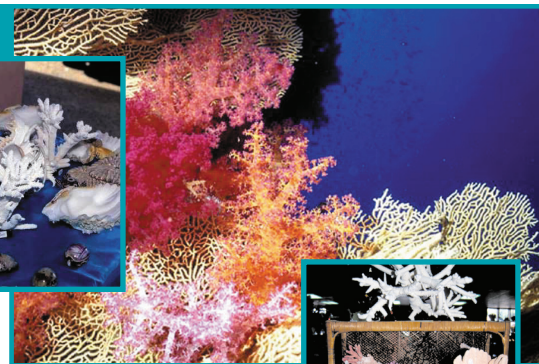
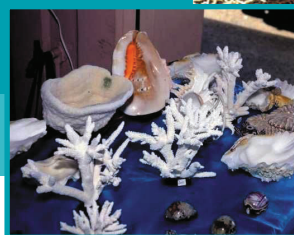


CORAL REEF MINING, HARVESTING AND TRADE:

Undermining the future value of coral reefs?

Coral reefs are invaluable resources to local communities around the world, serving as sources of food, jobs and livelihoods, and as coastal protection. Without effective management and enforcement, the trade of coral reef species and products jeopardizes the potential of coral reefs to sustain local communities and future generations. Coral reef species are removed from the reef and traded in numerous domestic and international markets for use as curios, limestone, traditional medicines, live marine ornamentals, coral and “live rock” (e.g. coral rubble with attached living organisms) for aquaria, and construction materials. While these practices provide economic benefits, if done irresponsibly they are destructive and undermine the important long-term benefits provided by reefs, such as shoreline protection, fisheries and ecotourism. Coral mining can include blasting of massive areas of reef with dynamite or large scale removal of coral manually in patches throughout a reef. Many countries have banned coral mining, such as Sri Lanka and Indonesia, but due to lack of enforcement, the practice continues. Selective harvesting, when practiced under an effectively enforced management plan, can be done sustainably with minimal impact on the reef as in Hawaii and Australia.



WHY ARE CORALS MINED AND HARVESTED?

- **Mining for Construction.** In East Africa, South Asia, Southeast Asia, and the Pacific, corals are mined for limestone and construction materials. Sometimes coral pieces are removed for use as bricks or road-fill. Sand and limestone from coral reefs are also made into cement for new buildings. According to a 1995 study, 20,000 cubic meters of coral per year were collected in the Maldives solely for construction materials (Brown, 1995).
- **Mining for Calcium.** Dead coral is harvested for calcium supplements.
- **Harvesting for Souvenirs/Jewelry.** Coral species are used in the dried ornamental trade business, collected and traded for souvenirs and jewelry. Coral curios and jewelry are often sold to tourists and exporters.
- **Harvesting for Marine Aquaria.** Live coral is collected for the marine aquarium industry and public aquaria.
- **Harvesting for Medical Use.** Researchers have been using coral for bone graft clinical trials and imports of coral for medical purposes increased 500% from 1991 to 1992 (Fenical, 1996).

HOW DO CORAL MINING AND INDISCRIMINATE HARVESTING AFFECT CORAL REEFS?

- **Reef destruction and sedimentation.** Mining blasts and removes the reef, destroying it and causing other indirect impacts, such as sand erosion, land retreat, and sedimentation. These can all greatly affect coastal towns, villages and the tourism industry because the coral protects coastlines and builds beaches.
- **Slow recovery.** The skeletal framework of reefs, which is removed through mining or removal of reef rock, is built up over hundreds to thousands of years and will take as long to grow back.
- **Loss of fish habitat.** Removal of coral and “live rock” from reefs removes critical habitat for fish and other animals.
- **Economic losses.** Coral mining creates a significant long-term loss to society, including a loss in fisheries value, coastal protection, and tourism. When considering these factors, the cost of destroying or mismanaging one square kilometer (0.62 square miles) of reef results in losses between US \$137,000 and US \$1.2 million over a 25 year period (Richmond, 1994).



CORAL REEF MINING, HARVESTING AND TRADE: *continued*

INTERNATIONAL CORAL TRADE: THE BIG EXPORTERS AND IMPORTERS

Exporters:

- In 1997, according to CITES data (of permitted exports), the major exporters of live coral were Indonesia (71%), Fiji (12%), and Solomon Islands (6%). The major exporters of live rock were Fiji (89% by weight) and Indonesia (74% by piece).
- Major exporters of worked precious coral for curios and jewelry include Hong Kong, Korea and Taiwan.

Importers:

- According to CITES, the United States is the largest importer of live coral and reef rock, bringing in more than 80% of the live-coral trade (more than 400,000 pieces a year) and more than half of the marine aquarium fish sold worldwide.
- Other major importers of coral products are Germany, France, the Netherlands, the United Kingdom, Japan and Canada.

HOW MUCH IS BEING HARVESTED FOR INTERNATIONAL TRADE?

- According to the CITES database, in 1996, permitted coral exports produced 2.5 million pieces of live coral, 739 tons (670,000 kg) of raw coral, and 31,000 colonies of black coral.
- About 3,000 tons (2,721,600 kg) of coral enter international trade each year for use in aquariums, according to the Ornamental Aquatic Trade Association.
- CITES reported 19,262 tons (17,474,486 kg) of black corals were imported into 70 nations from 1982-1997.

CURRENT POLICIES ON INTERNATIONAL TRADE OF CORAL

There is strong international concern that some coral reef species are threatened or may become threatened through trade. The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) is the main instrument to monitor and regulate the international trade of wildlife. Reef species listed under CITES include 2,000 species of hard corals, black coral, giant clams, queen conch, seahorses and sea turtles. Its mandate is to protect species from over-exploitation from international trade.

CITES protects corals with two levels of protection:

- Appendix I includes species threatened with extinction. Trade in specimens of these species is permitted only in exceptional circumstances.
- Appendix II includes species that may be impacted if trade is not controlled. Species in Appendix II are supposed to be regulated with permits for importers and exporters. Countries must not only assess and monitor the exports, but also manage the resource so that the collection and trade is not a detriment to its role in the ecosystem. However, many countries lack the capacity and resources to fulfill CITES obligations. All coral species are covered by CITES Appendix II.

WAYS TO PREVENT UNSUSTAINABLE CORAL MINING, HARVESTING AND TRADE?

1. **Improve regulation of coral and reef trade** that requires demonstration of sustainable use and collection, for both domestic and international trade.
2. **Fulfill monitoring and management obligations under CITES** for products traded internationally, as well as a phase-out of U.S. imports of wild coral reef species.
3. **Establish "no-take" Marine Protected Areas** as ecological reserves.
4. **Establish management plans** that limit harvesting to a sustainable level.
5. **Prevent blasting** of coral reefs through legal action and enforcement.
6. **Promote certification schemes** which give sustainably harvested coral products a market advantage, such as the Marine Aquarium Council (MAC).
7. **Educate consumers** of coral and coral reef products of the consequences of their choices.
8. **Educate local communities** on sustainable fishing methods and alternative livelihoods.

INTERNATIONAL AGREEMENTS AND PARTNERSHIPS

The following agreements and partnerships work to stop coral mining and unsustainable trade:

- International Coral Reef Initiative • The Convention on Biological Diversity • International Queen Conch Initiative
- North American Wildlife Enforcement Group • World Customs Organization • ICPO-Interpol
- Asia-Pacific Economic Cooperation • South Pacific Regional Environment Program

For more information contact:

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