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Growing Taste for Reef Fish Sends Their Numbers Sinking



David Longstreath/Associated Press

Reef fish swimming among the coral in Kimbe Bay, Papua New Guinea, in 2007.

By JENNIFER PINKOWSKI
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KOTA KINABALU, Malaysia — It is a slow night at the Port View Restaurant here, and still the place seems packed. Several banquet tables are crowded with a dozen people apiece. Each table seems as if it could collapse from the weight of plates.

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Vincent Thian

A fisherman examining reef fish caught in Malaysia in 2006.

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Falling to the forks are steaming spring prawns, spotted lobster, coral trout and especially giant grouper, which minutes before had been listlessly swimming in one of the many murky tanks at the Port View, one of the most popular restaurants in this tourist town on the northeast tip of Borneo, in Malaysia's Sabah province.

The fierce appetite for live reef fish across Southeast Asia — and increasingly in mainland China — is devastating populations in the Coral Triangle, a protected marine region home to the world's richest ocean diversity, according to a recent report in the scientific journal Conservation Biology. Spawning of reef fish in this area, which supports 75 percent of all known coral species in the world, has declined 79 percent over the past 5 to 20 years, depending on location, according to the report.

Overfishing in general, and particularly of spawning

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David Thian

A catch of reef fish from Malaysia in 2006.

aggregations that occur when certain species of reef fish gather in one place in great numbers to reproduce, may be the culprit, says Yvonne Sadovy, a biologist at the University of Hong Kong who wrote the report along with scientists from Australia, Hong Kong, Palau and the United States.

She said the report's conclusions were based on the first global database on the occurrence, history and management of spawning aggregations. It includes data from 29 countries or territories. Some of the information is based on interviews with more than 300 commercial and subsistence fishers in Asia and the western Pacific between 2002 and 2006.

"The Coral Triangle has relatively few spawning aggregations reported in the communities we went to," Dr. Sadovy said in an e-mail message. "We think that this might be due to the more heavily fished (overall) condition of reef fisheries in many parts of the Coral Triangle, where there is uncontrolled fishing and high demand for live groupers for the international live fish trade." About one-third of the species mentioned in the report are sold in Asian markets.

Since the 1980s, Hong Kong has been the epicenter of the live fish trade. That trade has greatly expanded in the last decade to an \$810 million business, according to the Worldwide Fund for Nature, which monitors the market. Rising wealth in mainland China may be a contributing factor to the increase in the trade with the demand for exotic fish especially high in Shanghai and Beijing. Destinations popular with Chinese tourists are seeing an increase, too. While Kota Kinabalu — known here simply as K.K. — has long been a draw for Chinese vacationers, "eating tourism" is booming lately. That's because live reef fish cost 60 percent less here than in Hong Kong, said Angela Lim, the fund's communications director here for the Live Reef Trade Initiative.

Even locals unaffiliated with the tourist trade are aware of the surge. Across the street from the Port View, Malays at the famous Night Market speak with awe about the Chinese tourists who spend "a thousand ringgits a week just eating fish." That's about \$280.

Grouper is by far the most popular — and therefore endangered — of the reef fish, with 26 percent of the world's 161 species threatened or near threatened, according to the International Union for Conservation of Nature 2008 Red List, an annual tally of endangered species around the globe.

With life spans of up to 40 years, groupers can grow to eight feet in the wild. After sexual maturity, female groupers can change into males to compensate for population imbalances, becoming "secondary males" in a process called protogyny. But groupers take five years to mature, and most are taken out of the water long before. They are grown to market size in seaside tanks and on dinner plates before they can reproduce.

Geoffrey Muldoon, director of the fund's live fish trade initiative, said the live trade was largely responsible for "the removal of juvenile or undersize and sexually immature fish." The fund works to manage the Coral Triangle with the six countries that share its seas — Malaysia, Indonesia, Papua New Guinea, the Philippines, Solomon Islands and East Timor. It is no easy task in a region where "fish bombing" with dynamite or cyanide is routine, and where the enforcement of existing protected zones is often anemic.

The organization is aiding the creation of the region's first commercial fishing trade organization to establish standards for sustainable practices. Initial talks between government and industry representatives are being planned. Dr. Sadovy suggested that spawning aggregations be considered protected events rather than simply times when fish are easy to catch, as has been done with [salmon](#) in Bristol Bay, Alaska. Other species

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have similar protections.

“Colonies of seabirds were once exploited heavily and are now protected,” said Dr. Sadovy, who is also director of the Society for the Conservation of Reef Fish Aggregations, an international group. “Special feeding or breeding places are now routinely protected on land for many species, because of the recognition that animals are vulnerable at this time or that their aggregated state is very important for their biology.”

She added, “From a very practical perspective, loss of the aggregations ultimately means loss of the associated fishery, so it makes good practical sense to change our attitude.”

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