



## Fresh fish, same old problems

**Like so many places in the Coral Triangle, Palawan is struggling to find ways to make the valuable live reef food fish trade more sustainable**

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IN A DIMLY LIT WAREHOUSE IN ROXAS, a tiny town on the Philippine island of Palawan, five men are rushing to pack fish into polystyrene boxes. The sound of a small plane passing over sparks a last scramble to cram in the remaining fish and load them onto an open-sided truck waiting in the heat outside. As a second plane whines overhead we pile into our tiny rental car and chase the speeding truck out of town, finally bumping along a tiny lane until we find the two planes.

At the end of the grassy airstrip, the truck is

parked next to a twin-engine Piper, with a similar truck parked alongside the second plane. The planes have flown down from Manila to collect their precious cargo of fish. Time is now of the essence and the flurry of activity is renewed. The men scramble to fill every inch of the plane with precious fish – even forsaking the boxes to save space. The fish must be transported quickly to Manila and processed for their final destination – most likely an aquarium tank in a Hong Kong or mainland China restaurant. The fish are alive and

each that dies along the way loses 80% of its value. Within 20 minutes, the two planes are taking off, struggling under the weight of fish and seawater, just barely clearing the tops of the palm trees at the end of the runway.

This trade lies in a legal grey area in the Philippines. While an official collects a municipal export fee at the airstrip, the situation feels much more like a drug deal in a Hollywood movie than a step along an international supply chain bringing fish to a dinner table. The truth is, the

trade is helping to destroy coral reef ecosystems throughout the Pacific.

Some fish, especially grouper species, are considered a delicacy in southern Chinese cuisine. They are prized for their white, flakey flesh and delicate taste. Some species, such as red coral grouper, are further prized for their bright colouration – a sign of good luck and prosperity. Many Chinese seafood restaurants keep live fish in tanks up to the moment they are ordered. In Beijing, prices can reach US\$220 per kilogram.

Groupers are a top predator on reefs. They can live to be 14 years old, reproducing only after reaching the age of two or three when they come together in large numbers to spawn. This makes them particularly vulnerable and a whole population of breeding adults can easily be wiped out in a single visit by a fishing boat. Removing top predators is known to upset the ecological balance on the reef, weakening its resilience to further shocks such as climate change and oceanic acidification.

Overfishing is just one of the problems with the live grouper trade. The fish's high value – a poor fisherman in Malaysia can double his weekly income with one adult grouper – means that fishermen will go to great lengths to find them. As adult groupers become rare, fishermen resort to more desperate measures. They search for the elusive fish with an air compressor and hookah, subjecting themselves to the bends during long, deep dives. They often squirt the fish with a solution of sodium cyanide to stun it, making it easy to grab. If the fish retreats to the safety of the corals, cyanide is squirted into the crevices and the rocks are broken open to extract the stunned fish. The exposed corals may eventually die and the broken rocks kill decades of coral growth. Adult fish caught this way have a higher possibility of death, hence a greater urgency to sell immediately. The juvenile fish, too small for a meal, will be kept in sea cages and fed until they are an ideal size for sale. Often they are fed with 'trash fish' or fish caught with explosives – another fishing method that devastates reefs.

Attempts have been made to regulate and improve this trade since the late 1990s. Now, the trade is so big that it is a major focus of WWF and a major challenge to the international treaty that protects the Coral Triangle – an area at the heart of the Indo-Pacific that spans six countries from the Philippines to the Solomon Islands and is the global centre of marine biodiversity. So far, all initiatives have failed and Dr Geoff Muldoon of the WWF Coral Triangle Programme says that the trade is still unsustainable.

The Philippines remains a major source of red coral grouper despite having banned the export of all live food fish in 1998 unless it was cultured. That's in part down to Palawan. Though renowned for its exceptional biodiversity and natural environment, it also enjoys a special administrative status, directly under the Office of the President. Consequently it has its own laws: here wild fish are still exportable from certain areas of the island. Hence the grey area of legality and the drug deal feel on that airstrip in Roxas.

The municipality of Coron, at the northern end of Palawan, was an early centre of the live reef fish trade, but grouper populations crashed in the early 2000s and the trade moved to other areas. The municipality of Taytay, 170 kilometres north of the capital city of Puerto Princesa, is the current epicentre. Here more than 1,000 fishermen in the area operate an estimated 2,000 fish cages with all fishermen, cage keepers and traders licensed. The local government have also protected several areas where the fish gather to reproduce but WWF, as part of a government-appointed study group, says that they should increase this to 30% of the total reef area. Another problem is that the cages are all built to hold

juvenile fish, and taking juveniles off the reef means that later there are no adults to reproduce. Taytay is therefore being overfished yet this is still regarded as one of the best examples of management in the entire Coral Triangle.

The newly elected governor of Palawan, Jose Alvarez, has convened several meetings to discuss options for the live reef fish trade and how it impacts the challenge of maintaining coral reefs. Just north of Taytay, the mayor of El Nido banned the trade in order to protect reefs and attract more tourists. While banning the trade is one of the governor's options, both the mayor of Taytay, Romy Salvame, and WWF are against it.

### MARKET-READY (BELOW LEFT)

Juvenile fish are kept in sea cages and fed until they reach a marketable size. Submerged in the ocean, they appear to retain their colour better than if they are kept in an artificial environment.

### PACKING FOR THE TRIP (BELOW RIGHT)

Groupers being treated for shipment. They are often chilled or anesthetised before being sealed in an oxygen-filled plastic bag.





**FLYING FISH (TOP)**  
Loading up at Roxas, Palawan. Each bag contains three or four fish packed in double plastic bags filled with pure oxygen. Every inch of space on the plane is used.

**FRESH AS CAN BE (ABOVE)**  
A Chinese restaurant shows off its wares, with red coral grouper conspicuous among the selection.

WWF's Mavic Matillano worries that a total ban could not be fully enforced, potentially forcing the trade underground. Meanwhile, the mayor sees how the trade has brought prosperity to his municipality, allowing his constituents to

buy metal roofs for their houses. Raul Maximo, an officer with the Palawan Council for Sustainable Development, used to teach at the local university in Taytay and says that many of his students were children of live reef fishers. Mayor Salvame thinks that the trade is sustainable because those children will likely use their education to do something unrelated to fishing and the trade will only last one or two generations.

However, the former Conservation Director of WWF in Hong Kong, Dr Andy Cornish, is worried that as long as they keep giving licenses to anyone who moves to Taytay from other parts of the Philippines, overfishing will continue.

The holy grail of a sustainable live reef fish

trade is full-cycle aquaculture where young fish are bred and live their whole lives in tanks. For some species this is already a reality, but for the highly prized red coral groupers it has proven difficult to get them to live beyond the first three or four weeks. Palawan Aquaculture Corporation in Coron says that they have overcome the obstacles and are on their second generation of 'farmed' fish and plan to start marketing them later in 2014. The company's Head Aquaculturist, Elsie Tech, says that the owner of Palawan Aquaculture is hoping other people start farming red groupers soon too.

The Chinese market is so massive that it can easily absorb other players. But right now they are facing the challenge of getting the fish to produce the deep red colour preferred in Chinese restaurants. Cultured fish are paler than wild ones, so Palawan Aquaculture is experimenting with dyes and other techniques to make them look more appealing to restaurant clientele.

Unfortunately, WWF's experience of getting live reef fish traders to voluntarily adopt better practices has not gone well. Consumers in China and Hong Kong are not yet ready to pay a premium for sustainable seafood and traders in the Coral Triangle won't change their practices until the market demands and pays for it. The recent Chinese government crackdown on extravagant dining by government officials may benefit groupers but this remains to be seen. The crackdown was about reducing waste and making officials seem more in touch with the popular mood, but it does hint at a willingness to respond to outside perceptions – a greater awareness of sustainability might be on the horizon.

Until groupers are farm-bred and cultured on a large scale, they will still be harvested, at one stage or other, from the wild. According to Dr Muldoon, only more protected areas and greater demand for sustainable seafood in China and Hong Kong can make it a sustainable trade. Dr Allen To of WWF-Hong Kong believes that consumers are becoming aware of sustainability issues but this has not yet translated into action. Until that happens shipments of fish will continue to fly out of Roxas on a regular basis, each time taking a little piece of the future of the local coral reefs with them. **AA**

**Further details**

WWF Philippines: [www.wwf.org.ph/wwf3/programs/conservation/fisheries](http://www.wwf.org.ph/wwf3/programs/conservation/fisheries)  
WWF Hong Kong: [www.wwf.org.hk/en/whatwedo/footprint/seafood/ctni](http://www.wwf.org.hk/en/whatwedo/footprint/seafood/ctni)

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