

Information for Island Educators: MAC Certification and the Marine Aquarium Trade

The Problem

Coral reefs are among the biologically richest ecosystems on earth. They are a source of biodiversity, food, environmental protection, recreation and potential medicinal products. Throughout much of the world, communities and governments are dependent on them for subsistence, jobs, products and revenue. Tragically, as important as they are, coral reefs are also under ever increasing threat due to global warming, coastal development and other human-related activities.

One pervasive human activity with indirect effects on coral reefs, including those found in remote areas, is unmanaged fishing. Overfishing can cause shifts in fish size, abundance and species composition within reef communities. When nonselective fishing methods are used, large numbers of other species, along with the targeted species, may be swept up in nets or killed by poisons or explosives used in the collection process. The removal of key species may ultimately create ecosystem level changes.

Additionally, reefs are directly destroyed by some fishing methods, such as fishing with dynamite; fishing with chemicals such as cyanide or with traditional poisons (*Derris spp.*); muro-ami netting (pounding reefs with weighted bags to scare fish out of crevices); and trawling.

Many perceive that the marine aquarium industry is damaging to the reefs. However, it is arguably one of the least threatening of all the threats to coral reefs and most economically beneficial. Collecting and exporting marine aquarium organisms in developing countries creates jobs and income in rural coastal areas that have limited resources and economic options. Aquarium animals are the highest value-added product possible to harvest sustainably from coral reefs. Aquarium fish sell for \$248 per pound compared to food fish at \$3 per pound. In many places in the Pacific, the marine aquarium industry is also considered an “untapped” resource as well as a resource that is not in direct competition with human food needs.

To benefit economically from these resources over the long-term, collectors must harvest and handle the marine aquarium organisms in a responsible manner to ensure that the coral reef habitat is not damaged and the organisms are not overharvested. Unfortunately, many collectors, their communities and local governments often have limited resources to ensure that this can be done. In addition, buyers of marine aquarium organisms need a means to identify responsible collectors and the organisms they collect so they can support these collectors by purchasing from the organisms that were collected and handled in a responsible manner.

How MAC Certification Benefits Both People and Reefs

The Marine Aquarium Council (MAC) has developed internationally approved standards and a third-party certification system for the trade in marine aquarium organisms to ensure marine aquarium organisms and the reefs from whence they come remain healthy. MAC Certification delivers sustainable livelihoods and poverty reduction to rural villagers in developing countries by transforming an industry that has been responsible for environmental destruction into a

positive force for conservation and sustainable use. MAC Certification also harnesses market forces in developed countries to support this responsible industry.

SOME KEY ASPECTS OF MAC CERTIFICATION

- Requires community-based, multi-stakeholder collection area management plans to manage reefs where aquarium organisms are harvested
- Encourages the creation of no-take reef reserves as organism replenishment zones within the collection areas
- Provides an assessment and monitoring protocol for reefs from which marine aquarium organisms are collected
- Provides training to build the capacity of collectors and communities to develop collection area management plans
- Provides training to collectors on proper collecting and post-harvest handling techniques
- Requires the use of non-destructive fishing methods by collectors
- Requires the harvesting of only those organisms that have been ordered
- Improves the health and reduces the mortality of collected organisms
- Empowers collectors to earn a good return
- Improves the occupational health conditions of collectors
- Improves business relationships
- Helps companies market aquarium organisms collected by MAC Certified collectors from MAC Certified collection areas and handled only by MAC Certified exporters, importers and retailers

Opportunities to Follow Up and Collaborate with MAC

- Visit the MAC website at www.aquariumcouncil.org to learn more about the marine aquarium trade and the role of MAC Certification to ensure sustainable livelihoods and reef conservation
- While on the MAC website, subscribe to the free, quarterly, electronic *MAC News*
- Educate others about the social, economic and conservation benefits of a responsible marine aquarium trade
- Work with MAC and its partners to provide training and other needed resources so that collection areas, collectors, exporters and other industry companies in your locale can become MAC Certified

Information for Collectors of Marine Aquarium Organisms and Their Communities

Marine Aquarium Council

The Marine Aquarium Council (MAC) is a not-for-profit organization working to protect coral reefs worldwide. MAC has brought together the members of the marine aquarium industry and hobby, public aquariums, conservation organizations, governments and other stakeholders to develop international standards for the trade in marine aquarium organisms.

Collection areas, collectors, exporters, importers, other wholesalers and retailers of marine aquarium organisms that meet the MAC Standards are recognized as MAC Certified. Marine aquarium organisms that are collected and handled by only MAC Certified organizations are labeled and marketed as MAC Certified.

How MAC Helps Collectors and Their Communities

MAC Certification helps ensure that coral reef resources remain available for current and future generations of local users and owners. MAC Certification requires the development of a reef management plan for the collection area, prohibits destructive fishing practices, establishes maximum acceptable level of post-harvest mortality, creates incentives for keeping out other destructive uses of the ecosystem, provides for reef assessment and monitoring, and encourages the creation of no-take reserves to enhance replenishment of coral reef resources.

MAC Certified collectors harvest only in response to orders from their buyers, so fishing effort and resources are not expended on unwanted specimens that provide collectors with low or no payment. Unnecessary mortality of these unwanted organisms is reduced, contributing to sustainability and a reasonable work program for collectors.

MAC and its partners provide training to collectors on proper collecting and post-harvest handling methods, which improve the health and reduces the mortality of collected organisms.

By following the MAC Standards, those in the industry have significantly lower the costs associated with unnecessary mortality, quarantine of sick/stressed animals and handling of unordered low-valued species.

MAC Certification helps ensure collectors' health and safety by requiring appropriate dive safety training, equipment maintained in safe operating conditions and enforcement of appropriate child labor regulations.

MAC Certification requires transparency and traceability in the documentation of collection amounts, species, location and effort. This levels the playing field as prices are negotiated. It also improves harvest level and catch- per-unit-effort data needed to better manage for sustainable use.

As MAC Certification benefits become widely publicized, consumer preference for MAC Certified organisms will increase and acceptance of lower quality, uncertified organisms will

decrease. MAC Certified collectors should be able to make more income on less fish and less effort and see improved market access and bargaining power to achieve appropriate compensation for the “goods and services” they provide.

How Collectors and Their Communities Can Work with MAC

- Visit the MAC website at www.aquariumcouncil.org to learn more about MAC Certification
- While on the MAC website, fill out the form to join the MAC Network. You will receive the *MAC News* via email and be entered into our database so we can more easily contact you and work with you
- If you are interested in becoming MAC Certified, complete the Statement of Commitment form found on the MAC website and contact MAC at info@aquariumcouncil.org
- Educate your local government and other coral reef stakeholders about MAC Certification

Good News

Meanwhile: Collecting a clownfish without harm to coral

by Paul Spencer Sochaczewski
The International Herald Tribune
Tuesday, February 11, 2003

BATASAN ISLAND, Philippines Tito Sitoy takes a breath, dives a couple of meters to a coral reef and spots his prey. He scoops a finger-long maroon clownfish into his net, swims to the surface and puts it into a clear plastic jar.

The fish may travel halfway around the globe. It probably will end up in one of the estimated 2 million home aquariums in the United States.

Because Sitoy caught the clownfish without cyanide and without damaging the reef, he will earn almost three times as much as he did a few months ago.

Sitoy is at one end of what the Marine Aquarium Council, based in Hawaii, says is now a sustainable supply-demand chain. The council, a nongovernmental organization, seeks to help small-scale fishermen make more money, protect fragile and threatened coral reefs, and provide healthier fish for hobbyists.

The world's coral reefs could certainly use some effective conservation initiatives. In the Philippines, for example, about 95 percent of the coral reefs are damaged or destroyed. Specialists believe that many of the earth's remaining living coral reefs may be dead in 20 years.

There are numerous causes of coral reef destruction. Some are global, such as climate change. But fishermen themselves batter coral reefs by using homemade bombs and cyanide to stun fish and bring them to the surface where they can be collected.

Many of the 35 million tropical ornamental fish that are caught in the wild each year are captured by using cyanide.

Catching live fish this way is easy. Crush a couple of sodium cyanide tablets that are readily available and inexpensive in Asia. Put the powder into a spray bottle of water, dive around a coral reef, find a fish you fancy, and squirt the toxic liquid into its face.

The mixture temporarily stuns the fish, making it easy to catch in a net or even by hand. The poison does not normally kill or harm the fish, but it damages the living coral on the reef.

Cyanide fishing began in the 1960s in the Philippines to supply the international aquarium trade. But since the early 1980s, a much bigger business has emerged: supplying live reef fish to restaurants in Hong Kong, Singapore and, increasingly, mainland China.

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For his part, Sitoy says that he was using cyanide before the council started its certification program in his area, but isn't now.

Sitoy is an incongruous figure, wearing a black and white wool ski cap. He swims with fins made of plywood. The foot straps are crafted from old tires.

But in his own way, Sitoy is a professional. He knows that his business must be sustainable to be profitable in the long term. Sitoy was moved to tears last October when he and 26 other divers received certification cards from the council.

Sitoy stood in line with other fishermen on Batasan Island waiting to give their daily catch to Epi Saavedra, the village-appointed business manager.

Saavedra, sitting on a floating holding pen dubbed "Wall Street" by the fishermen, examined Sitoy's catch.

"Maroon clown," Saavedra said, while an assistant recorded the catch in a notebook.

"Tomato clown," Saavedra called out. "Red angelfish. Cleaner wrasse. Chelmon butterfly. Green mandarin."

A year ago, when the fish would probably have been caught with cyanide, the common tomato clown might have earned Sitoy 75 U.S. cents. Today the business manager credits Sitoy's account with \$2.50 for the crimson-colored fish. Such a sale price increase means a lot to Sitoy and his family.

Improving the Marine Aquarium Industry through MAC Certification: Insights from the first MAC Certified retailers and importers

by Sylvia Spalding, MAC Communications Coordinator

Seven North American retailers and importers are helping to pioneer an international initiative to reform the marine aquarium industry. By operating in compliance with the Marine Aquarium Council (MAC) Standard for Handling, Husbandry and Transport (HHT), they form the final links in a MAC Certified chain of custody ... *from Reef to Retail* that ensures the optimal health of marine aquarium organisms and the reefs from which they come. Only organisms harvested in MAC Certified collection areas by MAC Certified collectors and handled solely by MAC Certified exporters, importers and retailers within allowable mortality limits can be labeled and sold as "MAC Certified." This labeling allows private, public and corporate aquarists to use their purchasing power to support the MAC initiative and ensure the quality of the organisms they receive.

The first companies to become MAC Certified did so with a shared passion for enhancing quality and responsibility within the industry. Because MAC Certification covers the entire chain of custody its benefits are far reaching, improving all sectors of the industry in various ways.

For Brent Gardner, of All Wet Pets, Flushing, Michigan, MAC assurance of healthy organisms provided a competitive edge for his new business. "Instead of trying to have cheaper fish that may die or the ever-popular 'more quantity, less quality,' I went the other route," he says.

He also pursued MAC Certification because it is just good business. "With MAC Certified fish, you have a much better chance of those fish living in the hobbyist aquarium," he explains. "Contrary to what some say, if the fish stay alive retailers actually make more money in the long run. If saltwater customers have less fish dying they are more apt to stay in the hobby, and if their friends see that they can keep beautiful saltwater aquariums they will likely try to."

Mike Sergey of Living Seas Aquarium, in Park Ridge, Illinois, echoes those thoughts. "One of the biggest problems with the marine industry when you talk to novices is how hard saltwater fish are to keep. I think a lot of that is improper care for the fish and some stress. Now if there is an organization that provides organisms with minimum mortality, there is something that will counter that mindset of how hard these fish are to keep. This will be a big plus for the industry as a whole."

To ensure the optimal health of fish, MAC Certification begins at the collection area. MAC Certified collectors must use non-destructive collection methods, such as barrier and hand nets. The use of chemicals such as sodium cyanide, which can harm both targeted and non-targeted organisms including the reef itself, is strictly banned. Additionally, the collectors are trained to use appropriate collecting and post-harvest handling techniques, such as decompression, screening and holding of organisms using proper water quality and temperature.

For Rick Preuss of Preuss Animal House, Haslett, Michigan, MAC Certification lets retailers know they have worthy fish rather than fish of an unknown quality. “When I know that the fish was not caught using cyanide and was not left on a beach for days, but was properly cared for by everyone along the line, then when it comes to me, I know any problem that might come up is one I can correct within my facility,” he explains. “It is not the result of something that happened where I have no control.”

This knowledge not only helps Preuss in his husbandry operations, it also helps him in customer relations. “You can take pride knowing that you’re connected with collectors, exporters and importers with good habits to deliver fish that are worthy to be sold,” he states.

But, for Preuss, ensuring the quality of the fish being offered to customers is only part of the overall responsibility that MAC Certification instills. MAC Certification also brings much needed value to a resource that is in need of respect. “That’s the game I signed up to play, in which the resource is considered precious and not disposable—not can we move it as a unit in volume but to market fish as a valuable resource,” Preuss explains. “MAC gets you to think that way, that the fish are a resource to be protected.”

When retailers think this way about the resource, they bring more worth to the hobby and to their profession, Preuss contends. “When retailers value the animals, they will talk to customers about the care of the fish,” he says. In fact, Preuss adamantly believes that it is a retailer’s responsibility to do so—a responsibility sorely neglected by too many in the industry.

Improving responsibility within the industry is an important motivation for MAC Certification not only for retailers but also for importers. MAC Certified importers are particularly focused on the industry’s responsibility to the coral reef environment and the coastal communities that depend on them.

“We believe the MAC Standards will ensure that the government and the public will understand that this industry is a responsible, viable, sustainable fishery and is a benefit to the environment and those that it supports,” notes importer Bill Backus of A&M Aquatics, Lansing, Michigan.

MAC Certified collectors can operate only within MAC Certified collection areas, which are required to have a management plan, and they can collect only those organisms that have been ordered. This reduces the potential for overfishing. In most areas of the world where marine aquarium collecting occurs, there is no management plan in place for the resource. MAC and its partners provide communities with management plan templates and training in needed skills to develop the plan. MAC encourages communities to include no-take preserves as part of their management plan, and the MAC Certified collection areas to date include them.

“We believe in making this industry sustainable like any that uses natural resources,” says Kyle Nelson, Coast Mountain Aquatics, Richmond, British Columbia, Canada.

Because the first retailers and importers to actively pursue MAC Certification were already responsible establishments, becoming MAC Certified was relatively simple. A few needed to

only document in writing their current policy and procedures. For others, a little more work was required.

For Mark Schreffler of The Reef Shop, in Portage, Michigan, establishing policy and procedure manuals that identified the duties and responsibilities of his staff and how the animals are handled was a big plus. “The process of becoming MAC Certified forced us to look at every aspect of our business,” he notes. “Whether or not one would want to become certified, that is important and beneficial. As our business grows, it will be real easy to apply these policy and procedures through all aspects of the business.”

For Preuss, the biggest hurdle to becoming certified was developing a tracking system for his fish, but the result was well worth the effort, he says. “Now we have a program that tracks fish from point of entry to point of exit. This is very helpful information.”

In the future, MAC will be able to provide software to companies that do not already have an organism tracking system in place. Peter Scott, MAC Certification Systems Director, says the software will enable super inventory control, including the recording of mortalities.

Besides documenting his company’s operational system and tweaking its already established coding system to allow for traceability, Chris Buerner of Quality Marine had to train his employees how to track and hold MAC organisms separately from non-certified organisms. This Los Angeles facility imports about 30 shipments a week from around the world.

Segregation of certified and non-certified organisms is an important component of the MAC Certification system. It allows the certified organisms to be labeled as such so that hobbyists can easily identify them and through their purchases support a responsible industry while getting a verifiable quality product.

Buerner says Quality Marine incurs increased labor costs to segregate MAC species. But, he also notes, he has seen improvement in livestock on the MAC Certified organisms he is receiving as well as a growing interest in organisms carrying the MAC label.

“Before MAC Certification, collectors were concerned about what was best for them; wholesalers were concerned about what’s best for them; and retailers had the same concern,” Sergey notes. “No one was looking at the whole. ... Now everyone is looking beyond their little section to how each part links to the well being of the fish. They are looking at the big picture instead of only their part of the picture.”

To learn more about MAC Certification, please visit the MAC website at www.aquariumcouncil.org.