



Executive Summary

Over the past three years, the Marine Aquarium Council (MAC) has worked with stakeholders and industry operators to develop certification programs at 21 project sites that cover over 400,000 hectares of waters, 50,000 hectares of reefs; and 1,000 hectares of no-take zones. Certified product is being sold every day through key importers in the United States and the United Kingdom, France and the Netherlands. More than 600 individual collectors and their families, across multiple countries, have been positively impacted. Indeed, communities within these source countries better understand their roles and responsibilities in using resource management, sustainable collection methods, and fundamental business skills to protect their coastal resources, while providing for their families in a sustainable manner. Fish species that were on the decline in project sites three years ago are beginning to repopulate. Thought processes are changing in rural village communities and conservation value is being achieved on a daily basis. Completing the work we have started – and positioning that work to achieve even greater results – is important on many levels.

MAC has consistently achieved conservation and economic value at collection sites across the Philippines, Indonesia, Fiji, and other Pacific Islands. To bring this model to scale requires market traction; as such, MAC is working to improve its standards and certification system to make it more worthwhile and beneficial for importers and exporters to achieve and maintain. To more adequately engage hobbyists, an Approved Retailer Program is being designed to improve the scheme's ability to reach more consumers worldwide, and a product portfolio is being developed containing species identified as highly desirable of hobbyists to be sold under the MAC label as a means of building the MAC brand. For government and other stakeholders, efforts are being redesigned to maximize conservation and economic value on both sides of the value chain through a streamlined approach. From a metrics standpoint, information systems are being refocused to channel streamlined industry data to guide key strategies which will increase the market share of certified product that flow from source countries to hobbyists in North America and Europe. When combined together, these initiatives will vastly improve MAC's ability to help foster a transformation of the trade that promotes not only the sustainability of marine aquarium organisms, but of their natural habitats as well.

A new MAC management team, led by a reinvigorated MAC Board of Directors, has begun to revamp its business model and the MAC certification scheme after re-engaging with key stakeholders, including hobbyists, donors, government officials, and industry leaders, to better position MAC certification for success in the marketplace. The process started at the top with a refinement of the organization's core mission, moved through a review of key objectives and priorities, and ultimately brought MAC to a redesign of all products, processes, and protocols. These sweeping changes were driven by the realization that MAC's overarching mission to transform the market for marine ornamentals is something desperately needed within the industry to reduce the use of destructive fishing and handling practices. As a result, the new MAC will be well-positioned to design and implement activities that support sustainability in a consumer-driven manner.

Description of Activities

(1) Implementing MAC Certification (including core capacity building activities)

Activities and Successes

With the formation of a new MAC management team, working in close collaboration with the MAC Board of Directors, it became apparent that a streamlined change in organization for the company was necessary to provide efficiency, transparency, and results-based management. To steer this process, a strategic planning meeting was conducted in mid-2007 by the MAC management team with project partners and all regional teams across all geographic regions, resulting in the following:

- Improvements were made to MAC's organizational structure to simplify accounting, significantly reduce general and administrative costs, and provide for greater flexibility in the design and management of project and partner-related activities.
- Existing monitoring and evaluation systems, designed and implemented by the previous management team, were redesigned to ensure that strategic decisions and goals could be supported by reliable evidence and project metrics.
- A new "Friends of MAC" Program was designed to replace the original financial business model of industry funding through the application of a product premium placed on each certified organism sold at market. The new program will offer prospective sponsors the option of various levels of support towards both specific endeavors and organizational support, ensuring that outside donations continue to co-finance MAC activities.

In late 2007, MAC held a Board of Directors meeting in Washington, DC, led by Board Chair Steve Broad (Executive Director, TRAFFIC), VP for Conservation Scott Hajost (Executive Director, IUCN-US), and VP for Industry Chris Buerner (Owner, Quality Marine US). Attendees also included Board Members Svein Fosså and Alex Ploeg, along with the MAC Interim Executive Director and CFO. During the Board meeting, a number of key decisions were agreed to, most of which are discussed in this report, including changes to the certification system, development of a product portfolio, and a clear vote of confidence in the new MAC management team. The Interim Executive Director was appointed as Executive Director for 2008, and a formal search for a more permanent candidate was halted. Furthermore, a Board Development Committee was established to assist with fundraising efforts.

Challenges and Lessons Learned

While a number of challenges lie ahead for MAC, including generating the necessary revenue to achieve market penetration with certified product, we believe that we have repositioned the organization for success in its ongoing and future activities. In the past year alone, besides support from the Packard Foundation, MAC has received significant resources from the International Finance Corporation (IFC), the MacArthur Foundation, Conservation International (CI), USAID, the New Zealand Agency for International Development, COREMAP, and the ISEAL Alliance.

On the issue of Cyanide Detection Testing (CDT), the Board agreed that the new MAC position should be to support CDT, so long as an internationally credible and viable test could be agreed upon by the industry and the marine conservation community that did not conflict with animal welfare issues. Instead of developing this test outright, as a number of stakeholders have previously suggested, MAC will instead work with the existing efforts of NOAA, USAID, COREMAP, and others to decide

exactly what constitutes an effective test. Once such tests are available, the MAC Certification System would include their use as a tool for evaluating operations in the field.

From a conservation standpoint, much has already been achieved with respect to establishing collection area management plans (CAMPs) for local fishing communities in Southeast Asia and the Pacific Islands. The next step is to translate this into a desired certified product in the marketplace. Management has already begun to work aggressively to address the need for trade data, and have made improvements through the implementation of a streamlined, focused approach. In-depth analyses will now be conducted to determine strategies that reduce leakage, maximize the flow of certified product, and increase market share by funneling certified product through working supply and demand chains. In this way, transformation of the trade can be achieved through the introduction of, and industry participation in, voluntary certification systems, standards, and methodologies.

(2) Ensuring a significant part of industry in key source/export and market/import countries is able to be certified.

BUILDING CAPACITY OF COMMUNITY STAKEHOLDERS TO DEVELOP AND IMPLEMENT CERTIFIED ECOSYSTEM MANAGEMENT PLANS

Activities and Successes

MAC has built a number of replicable capacity building programs in Southeast Asia and the Pacific Islands which yield consistent conservation and economic results. During the past year, project teams in the Philippines, Indonesia, and the Pacific Islands have continued to engage local stakeholders in developing and implementing CAMPs in fishing communities as follows:

- Capacity building efforts to bolster CAMPs were largely concentrated on five sites in Indonesia, with oversight work occurring at another five locations in Fiji and two in the Solomon Islands;
- Work also took place at twelve sites in the Philippines under separate projects sponsored by both the IFC and CI;
- Direct and indirect conservation and economic benefit have been achieved at project sites which satisfy the MAC Ecosystem and Fishery Management (EFM) standard; and
- The number of MAC certified organisms channeled to importers in North America and Europe has steadily increased.

From a management plan perspective, project teams have accomplished the following:

- Successfully mainstreamed and integrated CAMPs into broader resource management plans already enacted by the community, creating a sense of ownership at the local level, facilitating buy-in and support within the community to ensure sustainability of activities, even after project teams phase out.
- Recognized the need to involve a range of community stakeholders, such as local governmental representatives, early in the implementation process.
- Conducted the interventions required to ensure that marine ornamental fish collectors and traders gain sufficient knowledge to participate in a sustainable trade that also enhances their livelihoods.
- Continued to focus on mentoring activities to develop necessary skills among the fishers, encourage behavioral changes, and ensure that what was taught in training is consistently applied.

- Focused work on designing sustainable financing mechanisms and developing partnerships between fisher groups and local microfinance institutions to develop cost recovery and savings & loans mechanisms within fisher groups, in partnership with both the Conservation and Community Investment Forum and Pt. Starling Indonesia.

From a scientific perspective, a number of accomplishments have been reached:

- Activities have been streamlined to gather and analyze baseline data on a regular basis at all project sites, with best practices taught to key members of each community for long-term planning purposes.
- Annual total allowable catch (TAC) limits have been set at all project sites for 2008 to ensure that scientific activities yield direct and positive results to guide this delicate market transformation process, while continuing to yield direct conservation benefits with repopulating of fish stocks and maintaining the health of these delicate ecosystems.
- Incorporated the establishment of marine protected areas (MPAs) and no-take zones within the CAMP process to lay the foundation for the long-term preservation of coral reef habitats by providing the necessary space for regeneration and repopulation, in partnership with local NGOs, including Reef Check Indonesia and Reef Check Philippines.

During the third quarter of 2007, MAC and the Indonesian government began focusing attention on the trade of the Banggai Cardinalfish (*Pterapogon kauderni*), for which a proposal to be listed on CITES¹ was denied. Following the completion of an on-site study in the Banggai islands, it was discovered that stakeholders worldwide are interested in supporting the development of a comprehensive management plan for the region that would be implemented by local NGOs, integrating activities with other broad endeavors taking place within the country. By potentially targeting efforts in Indonesia on this specific, high-profile area and species over the course of the next year, project management believes that the functionality and future success of our revised systems and products can be successfully demonstrated, which will also yield additional levels of funding to support future operations in-country. Proposals are being designed in conjunction with the International Development Research Centre (IDRC) and the Indonesian government to develop comprehensive management plans for marine conservation and restoration of this important global resource.

Overall, the project teams are doing something truly remarkable: changing the mentality in fishing villages on many fronts and sustaining these changes. MAC and its partners have taught them how to think about fishing and their coastal resources in a long-term manner, instead of just day by day. These successes will continue through the life of the project and others to follow so as to demonstrate transformation of the trade in the long-term.

Challenges and Lessons Learned

Over the past eight years, MAC has accumulated vast experience in working with coastal communities and their local government representatives to:

- Help recognize that the communities themselves must assume responsibility for the sustainable use of their resources;
- Collaboratively create and implement resource management plans; and
- Increase the capacity of the communities to effectively manage and monitor their resource use.

¹ Convention on International Trade in Endangered Species of Wild Fauna and Flora.

In the past, resource limitations (e.g., lack of skills of government staff, lack of human resources, and, to some extent, limited financial resources) have often been used as excuses for not being able to more effectively manage fisheries resources, particularly marine ornamental fisheries. MAC project teams have attempted to infuse the necessary resources into these communities as a jumpstart measure, to better understand how to install and sustain resource management planning capabilities, in the hopes of reducing the hurdles for other communities to learn and benefit from this initiative in the future.

Because organized management of resources is new to these communities, and new skills are only now being understood and practiced, it takes time for local government and community stakeholders to internalize skills and implement them as ongoing habits. MAC has begun to develop approaches that are simple to understand, easy and cost-effective to apply, and achievable through methods that can be sustained long after project teams phase out their activities. Interventions must be carefully mainstreamed into local governmental unit (LGU) programs at the earliest possible stage of project implementation to ensure synergy and long range purpose and mission. This challenge is apparent in MAC efforts to implement data management systems capable of collecting and processing catch and shipment data, then analyzing the data against TAC limits by species to ensure reliable catch management. Collector groups and suppliers must be trained on the importance of this practice, with future data collection, entry, and analysis responsibilities eventually shifting from project teams to the local government staff. Through these efforts, MAC project staff will be able to work together with collector communities to better understand the quantitative impacts of sustainable resource management.

The development of a product portfolio, consisting of the species of strongest demand from hobbyists (which includes the Banggai Cardinalfish), will also assist the project teams in focusing data collection and evaluation efforts where they are most necessary as a means to achieve market transformation. To help ensure that reliable, accurate, and useful data can be gathered, a new component of each MAC standard will be added that focuses on data gathering and reporting. Simple figures, such as average total monthly certified products bought or sold, plus average data on the trade of the top ten to twenty species through certified supply and demand chains should be reasonable requests, and will provide management with the baseline information necessary to help increase market share of certified product – while simultaneously decreasing the market share of non-certified product.

From a reef restoration perspective, one of the difficulties in establishing no-take zones is overall MPA enforcement, which remains a challenge for community managers. Equally challenging is the requirement that technical knowledge and skills be passed on to the local MPA managers so that the biophysical conditions of the reefs and sanctuaries can be monitored on a regular basis. Helping local community partners understand the connection of establishing no-take zones and the sustainability of their trade leads to their support in the establishment, enforcement, and protection of marine protected areas. Furthermore, regular monitoring of the biophysical conditions of the reefs is also needed, to assess impact and promote such restoration to the community, to reinforce commitments to sustainable resource management. MPA management, including enforcement and monitoring, of course, entails a number of costs to the village in terms of time, equipment, and materials. Such costs cannot be borne by the community alone; thus, it is important to continue the integration of MPA management activities into the local coastal management program of the municipalities. Only in this way will a system be put into place to ensure the long-term sustainability of programs that will continuously yield considerable conservation benefits.

From a business training perspective, the relationships between fishers, traders, and exporters limit the extent to which community activities can be shifted to formal lending programs and partnerships

instead of day-to-day management with moderate peaks and low valleys. Exporters must thus be made aware of proposed microfinance mechanisms and their rationale to provide synergies in efforts related to financial assistance. Participation of the local government as partners has become increasingly more important as well. LGUs have become more willing and able providers of counterpart funds for critical activities that will support the business interventions of the project. Constant building and nurturing of relationships is a key to achieving these milestones.

In addition, methods to ensure the long-term sustainability of MAC project interventions, in terms of changes in behavior at the collector community level, must be investigated and introduced, including the strategic analysis and potential implementation of a fair pricing scheme for collectors, who oftentimes only receive pennies from a fish that is sold in North America to a hobbyist for \$10 to \$15. Linkages must be made between buyers and sellers in supply countries, while demand-side awareness is built in parallel. Once market share and stakeholder interest increases, we can begin to develop, test, and implement pricing mechanisms that push economic incentives up the chain to the poverty-stricken regions where the organisms are first collected. We must lay the groundwork for this process by collecting key data elements and trends (e.g., statistical analysis of consumer willingness to pay for conservation value), so as to ensure that any fair trade scheme is combined with a number of sustainable concepts, including species seasonality, weather patterns, and TAC limits. In this way, pricing models can be practically designed and implemented that directly support the work necessary for sustainable fisheries management under a revised and comprehensive MAC EFM standard.

BUILDING CAPACITY OF MARINE ORNAMENTALS COLLECTORS TO BECOME CERTIFIED

Activities and Successes

Over the past eight years, we have assisted over 750 collectors in becoming certified, as well as providing opportunities for collectors, suppliers, and exporters in the Philippines, Indonesia, Fiji, and the Solomon Islands to learn new skills and knowledge and gain better access to information concerning sustainable management of their resources.

In Indonesia, the local and national government departments of Fisheries and Marine Affairs are willing to continue to provide training and mentoring for the collectors in their areas. The government has already provided some funding for resource surveys, development of CAMPs, training activities, including the purchase of netting in Pulau Seribu, Buleleng, Mentawai, and Sulawesi (Pangkep and Buton). Furthermore, the Pulau Seribu government facilitated a field trip for the Pulau Seribu collectors to visit the Buleleng district in Bali, so that their collectors could learn from the experiences of certified collectors from Buleleng.

In the Philippines, there is strong interest from collectors and traders in designing a functional organization to help regulate the fishing activities of its members and manage the collection area. To encourage such development, MAC staff has conducted organizational development activities and identifies and mentors local COs to work in partnership with LGU COs. Combined, such activities empower the community, making them independent and ready to operate beyond phase-out.

Netting and basic collecting tools, such as masks, snorkels, and fins, remain the supplies that are most needed by collectors, and should be provided as part of the training supplies. Many collectors who were trained by MAC had their first experience in using basic snorkeling equipment during our training program. For the past 20 years, they had only used homemade tools and equipment. With

even basic snorkeling gear, the collectors are now able to fish efficiently and significantly reduce damage to the coral reefs where they collect.

However, the fundamental challenge that persists is that old habits die hard. Sustaining such changes in behavior requires a steady, supportive environment initiated by comprehensive training and mentoring, then fortified by peer-to-peer assistance and organizational development and governance. Encouraging collectors and industry players to take an active role in the training programs as trainers is far more effective and efficient than implementing the trainings using only project staff. The use of the train-the-trainers method at the beginning of the project has yielded fruitful results, with many collectors now able to train others in best practices. However, encouraging trainees to adopt best practices as an ongoing habit remains a major challenge that could be addressed through economic incentives created by increased demand for certified product.

Challenges and Lessons Learned

In terms of the effectiveness of the existing MAC Collection, Fishing, and Holding (CFH) standard, the new MAC management team found it difficult to measure results and achievements for a number of reasons, including challenges in establishing strong systems of internal control and enforcement. Management instead believes that collection, fishing, and holding techniques would better fall under the umbrella of an expanded EFM standard that results in an overall marine resource management plan. This concept was supported by both key stakeholders and the MAC Board. In this way, more flexibility could be given to the community when designing training programs for collectors, and permit and licensing systems could potentially dovetail with enforcement efforts by LGU officials, where applicable and/or necessary. MAC management is currently working with the MAC Board to merge EFM and CFH into a comprehensive standard by the end of 2008. This effort will result in the creation of a “MAC Certified Sustainably Harvested” product label to be tagged to organisms caught and sold from each certified collection area. In early 2009, a number of key experts will steer the revision process as members of the MAC Certification Committee. Once approved, a refined standard that encompasses both management and fishing, collection, and holding can be utilized as a means of simplifying the process, providing for better integration with existing systems and structures at the local community level.

BUILDING CAPACITY OF MARINE AQUARIUM ORGANISM EXPORTERS, IMPORTERS, AND RETAILERS

Activities and Successes

Since late 2004, project teams have focused the majority of efforts on developing the availability and consistent flow of supply from collection areas in the Philippines and Indonesia through the implementation of EFM certification at collection sites and CFH certification with collectors and traders. By combining CFH and EFM together, a single labeled product can be provided to the industry for sale to consumers worldwide.

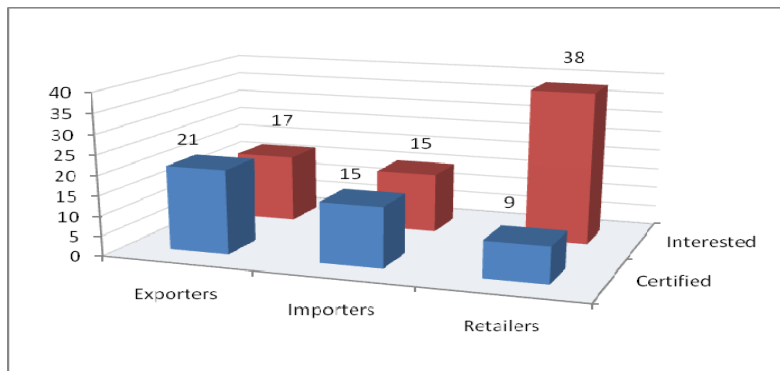
To achieve this end, the flow of certified product from these sites is channeled through HHT-certified chains of exporters (nineteen in Southeast Asia and one each in Europe and the Pacific), importers (nine in Europe, five in North America, and one in Asia) and retailers (four in North America, three in Europe, and two in Asia) to ensure the proper handling of certified organisms and an unbroken chain of custody “from reef to retail.”

To date, there are 21 certified exporters, over 90% of which are located in the Philippines and Indonesia. Key exporters include Aquarium Fish Ltd in Fiji (Tony Nahacky, proprietor) and Cebu Mactan Quality Marine in the Philippines (Peter Boserio, proprietor). These two operators currently provide 95% of the certified product that reaches consumers in North America and Europe. In Fiji, certified organisms that come from Aquarium Fish Ltd are of very high quality and therefore generate benefits for the overall certification scheme, particularly with those on the demand side of the trade.

On the importer side, there are 15 certified operators, over 60% of which are located in Europe. Key operators include Quality Marine in Los Angeles, CA (Chris Buerner, proprietor) and Tropical Marine Centre Ltd in the United Kingdom (Paul West, Managing Director, and Derek Thomson, Livestock Manager). Each of these operations handle 10-15% of all aquarium organisms shipped into their respective countries and represent leaders in the proper handling, husbandry, and transport of fish, invertebrates, and corals. They both utilize state of the art marine fish and invertebrate holding facilities that lead the industry in acclimatization, filtration, animal husbandry, and overall system stability. Approximately 10% of all sales of organisms through Quality Marine represent certified product – 95% come directly from Fiji, while the other 5% arrive from Cebu in the Philippines. Tropical Marine Centre boasts the added capacity of a certified marine hatchery, and they produce and sell MAC certified cultured clownfish, the most highly traded species in the hobby, under provisional certification via the Mariculture and Aquaculture Management (MAM) standard.

Finally, there are currently 9 certified retailers, four located in North America, three in Europe, and two in Asia. This low number of retailers, scattered sparsely throughout the world, hinders the ability for certified product to reach the market. In the past, efforts have been made to build interest in retailer certification, but the high cost of the process has been a major deterrent to date. Unless changes are made to gain traction, sustainability through voluntary certification will be difficult to achieve.

Status of Certified and Interested Industry Operators, March 2008



During the current period, related regional activities were focused on participation in quarterly industry and trade group meetings with exporters in both the Philippines and Indonesia. In addition, project successes and challenges to date were discussed with key exporters in late November 2007. On the industry side in North America, the MAC North America Coordinator attended the Backer’s Christmas Pet Industry Trade Show in Chicago, IL on October 14, 2007. He met with Chris Buerner (Quality Marine), Bill Backus (A&M Aquatics), Rick Preuss (Preuss Pets) and Walt Smith (Walt Smith International), all of whom operate certified facilities, and discussed the flow of certified product into North America. During the MAC Board workshop and meeting on December 6-7, 2007, the MAC Executive Director and CFO met with Board VP for Industry, Chris Buerner, operator of *Quality*

Marine USA. Discussions ensued throughout the two days about improving the flow of certified product through exporters, importers, and retailers.

On the industry side in Europe, the MAC Executive Director and Communications Director visited the London facility of certified UK exporter/importer/producer *Tropical Marine Centre*, Europe's leading supplier of quality marine fish and invertebrates to the ornamental trade since 1970. Meetings were held with Paul West, TMC Managing Director; Derek Thomson, TMC Livestock Manager; and Keith Davenport, Chief Executive of the Ornamental Aquatic Trade Association (OATA). All parties have been strong supporters of MAC since inception, as evidenced by their continued commitment to certification and the sustainable trade of marine ornamentals. Discussions ensued on how best to position MAC for success in the marketplace under the new regime.

Challenges and Lessons Learned

Most of the work with exporters, importers, and retailers occurred early on in the development of the certification system, and represent operators who were supportive of the formation of MAC as an organization in 1998 and were original signors of the MAC Statement of Commitment, pledging to become certified in three years upon signing. Many of them actively support MAC's mission and objectives, and most are already leaders in their respective industries in terms of providing sustainably harvested and handled organisms. Others participated to learn how to improve operations or believed certification would result in higher profit margins from the premium price these products would command in the marketplace.

Yet, the MAC certification system clearly faces challenges in getting certified products from collection sites in the Philippines, Indonesia, and Fiji to hobbyists in North America and Europe with the MAC label retained, i.e., without having leakage through non-certified chains. The reasons for this are numerous:

- Certified exporters, importers, and retailers generally represent the best in the business; as such, they have developed short supply chains over decades of relationship building to yield the highest quality and desired variety of organisms. Some have developed exclusive relationships which can then be marketed as unique products to consumers. As such, they will not risk the reputation of their business on product that, although certified, may or may not match the consistent level of quality of the same organism harvested from a different region of the world that took so long for them to search out and develop – for example, Australia, Sri Lanka, the Maldives, Hawai`i, or the Pacific Islands.
- Collectors and exporters operating in the Philippines and Indonesia are constantly battling financial crises. Whether it be from the devaluation of local currencies and the US dollar, rising freight costs, or perilous weather, profit margins are shrinking. If they have a buyer, at the right price, who is ready to make a purchase, they will sell any and all organisms, regardless of whether the product flows within or outside of a certified chain. Doing so results in leakage of certified product, a detriment in that the product does not go to consumers labeled as MAC certified.
- Due to the limited number of certified retailers (e.g., four in North America), certified importers are oftentimes forced to sell product to uncertified stores, breaking the chain of custody and thereby removing the MAC label from the organism.
- One of the original selling points of the scheme to operators, that certified product would sell at a higher profit margin, was based on the assumption that hobbyists would pay more for organisms that were of a higher quality than non-certified ones. Instead of selling the conservation value of the system or the benefit certification brings to poverty-stricken communities, communication

strategies were built solely around a perceived higher quality of certified organisms. This perceived quality did not materialize to date, mainly because the low pilot volumes of certified product have largely come from channels where destructive fishing practices were highly prevalent, versus robust, “low-hanging fruit” sources of high-end organisms that already pass through short supply lines, such as key MAC certified supply lines developed through the Pacific islands in past years through funding from the European Commission.

MAC has thus worked upstream and against the grain in specific regions where cyanide and dynamite fishing have been historically used in excess and fish are harvested without regard to catch limits, to deal with the daily economic challenges facing these fishing villages. Should these practices continue, either for ease of catch or ability to harvest excessive numbers of organisms, future generations would be required to find and rely entirely on alternative means to sustain their livelihoods.

As such, and in accordance with the review timeline set forth by the ISEAL Alliance, MAC has undertaken the process of formally revising its certification system and underlying standards, to help MAC certification become a more widely-accepted industry practice and result in the sustainable conservation and restoration of coral reefs and marine ecosystems worldwide. Based on feedback from a number of key stakeholders, supporters, and constructive critics, a number of major changes will be made system-wide by the end of 2008 for review and approval so that rollout can begin in early 2009.

Overall, the revised MAC standards will be restructured into key checklists of compliance requirements that are assigned risk levels as a means to prioritize key activities, streamline implementation, resolve interpretation issues, and clearly define evaluation tools and methodologies, particularly with exporters and importers. This same checklist structure will become the basis for the certification and audit process. These revisions will result in a more effective, efficient, and transparent system that can be self-managed by the operator, in preparation for the certification process.

Along with merging the EFM and CFH standards together into a comprehensive fisheries management plan that results in a MAC Certified Sustainably Harvested label tagged to organisms, another key change will be to streamline the documentation requirements of the existing MAC Handling, Husbandry, and Transport (HHT) standard for exporters and importers, resulting in a “MAC Certified Sustainably Handled” label tagged to operators. However, the major hurdle to success lies in the limited number of certified retail stores that currently sell to hobbyists. In order to provide hobbyists better access to certified organisms, an expansion of retailers selling sustainably harvested and handled organisms is urgently required.

While activities to date have involved getting retailers certified under HHT (an expensive and time-consuming process for an industry that is mostly comprised of “mom and pop” stores), future activities will focus on replacing this system in early 2009 with a formal Approved Retailer Program, which will acknowledge stores using key best practices and enable them to sell certified organisms. Both retailers and hobbyists will benefit from this market opening and our associated marketing campaigns (described in the next section), and we expect there to be greater access to and awareness of certified product soon thereafter. In addition, the cost of participating will be much cheaper to retailers and can also serve as co-financing for future projects.

The MAC Board, management team, hobbyists, and stakeholders believe these changes are paramount to the future success of the program. We plan to focus on making these key changes by early 2009,

resulting in a significant increase in the volume of certified product reaching retailers for 2009 and beyond.

(3) *Ensuring a significant consumer demand for certified marine aquarium organisms.*

Activities and Successes

MAC must ensure that certified organisms are available for purchase and hobbyists are well informed of their options so that they can help support sustainable fishing and handling practices with each organism purchased for their tanks. In this way, the project can promote healthy fish, healthy reefs, and, ultimately, a healthy hobby. Otherwise, the certification scheme will never be viable long term. A key goal for transforming supply side activities in regions like the Philippines and Indonesia is to generate enough demand worldwide for sustainably harvested products that industry transformation becomes forced upwards through the chain, instead of trickling down from the supply side, which requires too many resources and takes extraordinary amounts of time.

In line with this concept, we have worked to raise awareness and generate demand for certified organisms in prime hobbyist regions, such as North America and Europe. To date, outreach and awareness-building activities have relied heavily on educational efforts focused around articles and advertisements, participation in industry conferences and trade shows, and the use of the web for information dissemination.

During the project period, the MAC Executive Director and North America Coordinator attended the 19th Marine Aquarium Conference of North America (MACNA XIX) in Pittsburgh, PA from September 14-16. This event, the largest hobbyist gathering in North America, is sponsored by the Marine Aquarium Society of North America (MASNA) and brings together experts in the field with aquarium product vendors, speakers, and hundreds of aquarium enthusiasts. MAC has maintained a booth at these events for the past eight years to build consumer awareness in North America. During the conference, the MAC team was able to meet with a number of significant stakeholders and hobbyists, including individuals such as Jeremy Linneman, Special Projects Director for the Ocean Foundation; Steven Pro, Pittsburgh, PA professional aquarist and MASNA board member; Eric Borneman, coral reef ecologist and author of reef aquarium books; Roy Torres, NOAA special agent; Dr. Bruce Carlson, Vice President, Education, Exhibits, and Conservation for the Atlanta Aquarium; and Dr. Gerald Allen, renowned ichthyologist. Discussions ensued with how best to position MAC in the marketplace going forward, what key elements should remain intact, and what changes should be made to improve awareness among consumers.

In addition to advertisements in *Tropical Fish Hobbyist*, a number of articles were published during the grant period describing various aspects of project activities in the Philippines and Indonesia within such magazines as *Pets International*, *Pet Product News International*, *Koralle* (German), *Coral*, *SPC Live Reef Fish Information*, *Tropical Fish Hobbyist*, and *Coralli* (Italian). Numerous articles published by independent authors made mention of MAC as an important initiative that was worthy of support. Article content covered a wide variety of topics, including net collection methods, coral collection, sustainable fishing methods, and Banggai cardinalfish data survey analyses. These advertisements and articles reached more than 400,000 hobbyists and trade personnel through the circulation of these important periodicals.

Challenges and Lessons Learned

During the past six months, the MAC management team, in close collaboration with the Board of Directors, has come to the realization that MAC could no longer attempt to force the idea of certification on industry. Instead, MAC clearly needs retailers and hobbyists to become the driving force of change, creating pressure on the demand side of the chain, encouraging industry operators to adopt best practices and incorporate the sale of MAC certified products into their businesses. To this end, MAC plans to engage hobbyists and their clubs through collaborative educational programs, special events, promotions, and marketing campaigns. This includes presentations regarding MAC, its programs, and the state of the marine ornamental trade worldwide. Most hobbyists support a sustainable trade, but need access to certified product in the varieties most desired. While there is still some question as to what level consumers are willing to pay for conservation value, most individuals we spoke with have a keen interest in keeping their hobby sustainable. Changes in the price of certified organisms, from a perceived conservation value, could be used to provide economic incentives at the collectors' level, as previously discussed.

However, two key barriers exist that must be overcome to achieve these goals. First, as previously discussed, more hobbyists need access to certified organisms. Project management believes that development and implementation of the MAC Approved Retailer Program, which will replace the costly, time-consuming HHT certification previously required, should allow for hobbyists everywhere to gain access to certified organisms from reputable stores. We plan to tie the rollout of the Approved Retailer Program into a rekindled strategic marketing plan that focuses on the conservation value of MAC certified products. In addition, MAC will begin to look into the requirements for e-tailer certification, a fast-growing segment of the market.

At the same time the availability of certified organisms is expanded through the Approved Retailer Program, project activities must also start to focus on providing certified organisms that are most desired by aquarium enthusiasts. In the past, areas of high cyanide use were entered into, and whatever organisms were found were brought to market. This region-centered approach resulted in a large number of certified products that did not carry much demand in the marketplace. As such, MAC will begin to focus on a targeted product portfolio approach to ensure the regular availability of sustainably wild-caught clownfish, cardinal fish, damselfish, angelfish, surgeonfish, and mandarin fish from existing sites in Indonesia, the Philippines, and Fiji. These fish are the most highly demanded organisms in the market and are the most likely to be traded through the existing certified chains. Once these existing lines of product are streamlined, work could potentially move to other source areas of highly-prized species, such as Australia, Sri Lanka, the Maldives, Vanuatu, and Hawai'i.

By building demand of certified product from all regions of the globe, destructive fishing practices in the Philippines and Indonesia can be tackled through the steady, targeted development of the MAC certified product line. The project teams believe that its reinvigorated marketing strategy, deployed during 2008, the International Year of the Reef, and into 2009, will help steer MAC to achieve its goals and objectives, as set forth at inception and clarified during its recent restructure.