



December

2006



WMAS Scorecard

By 2006 Presidency

WHAT'S INSIDE?

- 1 WMAS Scorecard
- 3 The Perfect Reef Tank
- 4 At a Glance – *Entacmaea quadricolor*
- 6 The Perfect Frogfish
- 6 Lets Talk Turkey
- 8 Coral Spotlight – *Zoanthus sp.*
- 9 Media Review – Marine Aquarium Fishes
- 9 LFS Support WMAS
- 10 General Info

The Wasatch Marine Aquarium Society was officially founded in 1995. It began with a small group of dedicated hobbyists that wanted to share the hobby and educate others about the marvelous world of marine life. These hobbyists had a vision of what their club should be and what their club should instill in others. As the current presidency, we believe it worthwhile to revisit the mission statement of the club to see how well we're doing. Call it a scorecard ...

The Wasatch Marine Aquarium Society (WMAS) is a non-profit organization dedicated to the support of the hobby of marine aquarium keeping.

Although the club has always been not-for-profit, it wasn't until very recently that we applied for and received our federal non-profit status. The main benefit of being legally chartered as an NPO is that we no longer need to worry that we may have to pay taxes on current or past revenues. Additionally, donations to the club are now tax deductible. Yes – this includes annual membership dues.

We believe in conservation of coral reefs by promoting captive breeding and propagation of marine creatures and developing natural marine environments for our specimens.

The club has always been a proponent for the captive breeding of fish and invertebrates as well as the propagation of coral. Although the overall impact to the collection of wild specimens can be debated, there is no question that hobbyist propagation does reduce the number of animals collected from the reefs of the world. The sustained vitality of the hobby depends on advancements in propagation techniques and many of those advances are being made in the living rooms of hobbyist's right here in Utah.

WMAS members are encouraged to rear larval fish and invertebrates whenever possible. New ideas and proven techniques are freely shared and the on-line message board provides an avenue for hobbyists to buy or sell captive raised animals. The club is actively seeking better methods to frag, transport, and acclimate coral. It would be difficult to find anyone associated with the WMAS that hasn't either given or received coral fragments. In addition, there are also several members actively breeding fish and inverts.

"You are young and life is long and there is time to kill today.

And then one day you find ten years have got behind you"

Time, Pink Floyd



The main fundraising activity for the club is based on coral propagation. Colonies are purchased with the intent to provide frags to members and guests alike. Many of these are prepared ahead of time, but other corals are used to demonstrate the different methods of propagation. It is very encouraging to see someone cut and attach a coral fragment for the first time. Through these activities, there are generations of coral frags circulating through our club and into the many local fish stores. These coral propagation seminars are a great way to fund the club and educate members of the benefits of coral propagation.

Developing a natural marine environment for specimens is one aspect of the hobby where the club has been mostly 'hands off'. Fortunately, most hobbyists attempt to replicate natural reefs in their aquariums. The WMAS advocates using live rock, live sand and refugiums to simulate natural conditions for fish, invertebrates, and coral. With careful planning, the right equipment, and dedicated husbandry techniques, many marine organisms can flourish in a simulated reef setting.

We promote responsibility and education of marine hobbyists.

The WMAS is committed to educating everyone about the importance and beauty of the coral reef. A very large part of the budget is spent on guest speakers. Speakers bring experience and knowledge to the club that we often cannot get from a book or on-line source. These experts provide valuable information that can be incorporated into the hobby of our members. Not only do we learn new ways of improving our systems but we are supporting these people in continuing their research. This ultimately increases the knowledge base of our club while improving the industry as a whole.

We also have many members that share their knowledge and experiences to increase the success of hobbyists and to promote interest among the general public. The club sponsors an annual parade of homes style reef tour that provides all visitors a glimpse of the ocean. Although it is rewarding to show off the hard work required to maintain a beautiful aquarium, it is even more important to spark interest in coral reefs. People are much more likely to take action to protect our precious reefs if they have had personal contact with them. It is not realistic to have hundreds of land locked Utahans visit a wild reef, but we do provide a reef experience to hundreds during the reef tour.

The club encourages people to be conscientious when entering the aquarium hobby. Aquariums are much more than home décor and aquarium owners must consider themselves much more than decorators. Purchasing healthy, hardy and proven marine specimens helps to ensure a successful reef keeping experience and discourages the industry from importing those specimens that cannot be well maintained in captivity. This type of forward thinking positively affects the reefs in our living rooms as well as the reefs of the world.

The Wasatch Marine Aquarium Society is a healthy and thriving organization. What started as just a handful of hobbyists a decade ago has grown into one of the largest marine aquarium clubs in the United States. This is a testament of the hard work and dedication of all those involved in the management of the club since its inception. Although only those few founding members can truly determine if the club has fulfilled their vision, it is evident that the mission statement continues to govern the overall direction of the club. It will be very interesting to see what the next ten years have in store for the fish industry, for reef keepers and for the club.

Congratulations to our 2006 Tank of the Month Participants!

Jan – Gary Williams

Apr – Adam Haycock

Jul – Rodney Struhs

Oct – Marzena Blundell

Feb – Ross Bagshaw

May – Susan Matney

Aug – Dion Richins

Nov – Brian Beck

Mar – Daniel McDonald

Jun – Josh Zorn

Sep – David Poulson

Dec – Suzy Applegarth



The Perfect Reef Tank

By Suzy Applegarth

It isn't a SPS tank! In fact, it might not have any corals at all! The perfect reef tank is a planted tank. It's a biotope of the most intriguing places in the oceans: **the lagoons**.

A lagoon reef is one of the most elegant and interesting places on our planet. A reef with warm, clear salty water; grasses waving in the current; the bright sunlight creating colorful images of underwater bliss. Full of life-forms, unusual and unique, a lagoon is semi-protected from the vast turbulent ocean. There are fish that prefer the calmer waters of the lagoon habitat. Wrasses and surgeon fishes, goat and frogfishes, filefishes and puffers, multitudes of different species share the aquascape with their predatory counterparts, like the moray eel and the scorpion

fish. A lagoon is geographically separated from ocean, but the ecosystem can be divided even more. The open sand bed areas where burrowing creatures bury their homes, the patch and fringe reefs where schooling fish search for snacks, and the sargassum kelp beds are just a part of the areas designated as lagoons.

My attempt to recreate this biotope is my latest obsession. Right now, I am at the point of no return: I've spent too much money to go back now. Searching local fish stores weekly for any type of green, red or brown plant has been somewhat disappointing. Searching on-line even less fruitful. Finding the perfect low lying or background plant has been a challenge. But, I have acquired a few different macro algae, a few different sea grasses. and a few perfect sea grass fish.



Planted tank owners have a different focus regarding filtration than "regular" reef tank owners. Green stuff sucks up processed DOC (Dissolved Organic Carbon) like nothing else. I have a very low PO4 (Phosphate) level without using any adsorbers or a skimmer. I use no mechanical filtration, except an occasional sock in the sump for when my cohort reef keeper kicks up a hurricane with his trusty turkey baster! Water testing also has a different focus. Instead of attempting to keep certain elemental levels down, there is a need to add nutrients to the system, to prevent the algae from going "sexual". This is a process that some macros use to prevent the extinction of their species. The macroalgae will go dormant and die back, making spores to wait out an low nutrient famine. I have found I need to add Iron frequently, and occasionally, a nitrogen compound.

Aquascaping is also approached differently than the usual reef tank. Instead of a wall of live rock, we can create vertical and horizontal interest with plants. Marine algae and plants have different heights as well as different colors, textures and forms. Crawling, or trailing specimens can be used in the front of the tank, creating a soft, carpet-like appearance. Taller seagrasses are good for background areas, as well as foreground areas, to create interest by drawing the viewers' eye to focal points behind them. I have used a few corals in my biotope as focal points, but there are incredibly gorgeous red, purple and emerald green plants that would be great for this function.

Many species of fish are found on the lagoon reef, so our choices of moving focal points are almost endless. The limiting factor is the plants: herbivores will quickly deplete our aquascaping efforts. Bottom dwellers like gobies, blennies, dragonettes are perfectly suited for this environment, with their ever-surprised looking faces peering out from

behind a plant. A group of active cardinal fishes, swimming in and out of the grass can be very interesting. A wrasse easily is an astounding focal point inside the safety zone of sea grass. Seahorses and pipefish are incredibly interesting and unique fish, hitching on the plants and swimming in and out of the green foliage.

Least I forget inverts; there are also an abounding array of wonderful species to choose from. Shrimps, crabs, clams, corals, cucumbers all are found in these lagoon areas of the oceans. I have found that searching the tiny tanks at the local fish stores for specimens is the best bet for stumbling on something fascinating.

So, it is just my opinion, but a planted tank is definitely the Perfect Reef Tank! A tank that is different and unique, a biotope with humongous variety options, a wondrous reef that filters itself. What more could you want? Ok, I guess you could add an SPS or two!

At a Glance – *Entacmaea quadricolor*

By Nathan Laidlaw

Bubbletip anemones are one of the most common anemones in the aquarium trade. They are probably also one of the 'easier' to care for anemones.

These anemone have several characteristics that make them desirable in the home aquaria. First, they are available in a range of colors to suit almost any taste from green top with purple base, to a beautiful rose color. Second, is the bubble tips – how many of us have seen a bubbletip anemone in full splendor? Are they not truly stunning when all the tentacles have formed the bubbletip? Third, is the fact that on a semi-regular bases several types of clown fish will host with this anemone (usually this has more to do with the fish). Fourth, is their success in the aquarium trade. In fact, many people have had success with asexual reproduction, or splitting into clones in the aquarium.

The requirements for bubbletip anemones can actually, for the most part, be applied to all anemones found in the saltwater hobby. As a starting point we will talk about water quality – it should be near pristine. Can an anemone live in less than ideal water parameters? Yes they can, but it will suffer and possibly die. By providing good, clean saltwater you can increase the longevity and health of your anemone and all other tank inhabitants.

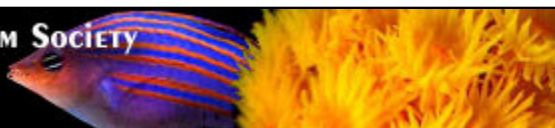
Next, lets move on to lighting. Metal halide lighting is recommended and preferred. What about VHOs or Power Compacts? People have had success with this style of lighting. But, you need to make sure you have a lot of light from this style, and you can place the anemone up higher, closer to the lights. Also, asking around for people that have this style of lighting and successfully keep an anemone, then looking at their tanks will help you determine if you have adequate lighting.

Now we will look at providing a proper environment. You should know what kind of environment an anemone comes from. Bubbletip anemones tend to like rocky areas with semi-moderate flow, and good light. *E. quadricolor* actually have a tendency to move their foot down into crevices or cracks and anchor there, then extend up towards the light.



Did you know ?

Chitin is a key component of the exoskeletons of arthropods and the shells of crabs and lobsters. It is also present in hard corals and sea anemones.



Keeping *E. quadricolor*

- *Maintain pristine water parameters*
- *Metal halide lighting is recommended*
- *Provide rocks, proper water movement*
- *Feed your anemones – even if only two times per month*
- *Cover all powerheads and overflows – these can kill anemones*
- *Make sure tank mates are compatible – maintain 12" between other anemones*
- *ENJOY*

Last, lets talk about feeding. Should you feed your anemone? Some people say no, others say yes, others say let the hosting fish (if any) take care of it. In my experience my bubbletip appears much 'happier' when I feed it on a regular basis. Many people who have experienced one of these anemones splitting have a very regular feeding schedule. My feeding schedule usually is shrimp once or twice a week, however anemones can like some foods more than others, so try a mix of shrimp, clams, silversides, krill and other raw meaty seafoods. Most people recommend chopping up the food or feeding smaller pieces. This helps avoid damage to the anemone's mouth, which can tear if it tries to engulf a piece that is too large, though I have fed mine whole table shrimp. Making sure it engulfs it from end to end.

Will your bubbletip always have the inflated tips? Probably not – they have a tendency to deflate randomly. Some of the things that have 'helped' my anemone inflate the tips are feeding regularly and frequently, providing enough light and making sure it is out of direct, strong flow areas.

Now the draw backs to anemones. They have a tendency to sting things, most especially you prized coral that is super rare (Murphy's Law). Anemones are motile, meaning they can move around the aquarium. And they tend to do so whenever they are not having their needs adequately met. They can sting other corals, fish, inverts and anemones. The sting can be mild to extremely potent to the recipient and tend to do so when they move.

Anemones have a nemesis as well. They are called powerheads and overflows. These do very bad things to anemones since they are soft bodied and lack any sort of skeleton they have a tendency to get sucked through the small holes on overflows and powerheads which tends to tear them into small pieces. Please make sure that you have all overflows and powerheads properly screened and protected if you have an anemone. Lastly, some fish like to snack on anemones. These are usually the same fish that eat your prized zoos and other soft corals. Thus said, if you have a reef tank set up, most times you should not have any problems with this. *Entacmaea quadricolor* can be a beautiful addition to a reef set up.

2006 Members Appreciation BBQ



A very special thanks to those who helped with and attended our annual Members Appreciation BBQ. The weather was perfect, the food was delicious and the entertainment was top notch. Don't miss this party next year!

The Perfect Frogfish

By Adam Blundell M.S.

Let me introduce you to *Antennarius pictus*. This frogfish is quite striking in color, but don't be fooled the color might not last. These fish are well adapted to their environments... and it shows. They change colors to match their surroundings and they are excellent ambush predators. I call them ambush predators but it may be best to call them opportunistic pigs. These fish go "fishing" like many frogfish/anglers by using a modified appendage to attract prey. Then they suck up the prey into their very large mouths.

In terms of general aquarium husbandry requirements these fish are fantastic. Well suited for a reef tank, small nano aquarium, fish only system, biotope, or species specific set up. All in all a great fish. For best success and care I would recommend keeping these fish in an easily accessible and reef



dominated system. Accessibility is important because these fish often need live foods to begin with, before being able to transition to frozen foods. I prefer to keep them in a natural reef tank because of the ability to grow and produce small shrimps as a food source. It is also recommended to use live rock as it is a natural habitat for these fish. Filtration is usually not of concern as these fish are only fed twice per week, and contribute little to the biological load. Colorful corals may entice the fish to stay colorful as a way to camouflage. Be careful of currents and pump

intakes as these fish are very poor swimmers and are unable to resist such dangers. My thanks to Scott Michael for inspiring my exploration into this fish as well as his frogfish relatives.

Lets Talk Turkey

By Shane Heil

Like so many people today, my professional life involves a fair amount of travel. For the most part, there is little time for sight seeing or personal exploring. But occasionally I find myself with a break in my schedule. This free time is normally consumed being herded with the other tourists past the cultural icons of which-ever country I find myself. But more and more often, I like to search through phone books looking for the addresses of the local fish stores. I am hopeful that in some distant country I will find a store that offers at least one wholly unique specimen not readily found locally.

Recently I was wandering through the legendary Spice Market during a visit to Istanbul, Turkey. Having purchased enough souvenirs to open a small kiosk at any mall in the US, I was more or less killing time strolling past the aisles of fresh ground spices. Although the eclectic sights and smells of a Turkish bazaar are very engaging, I began wondering just how my tank was doing back home. From here my mind quickly jumped to wondering if there were any LFS in Istanbul.

Istanbul is divided into many different retail districts. The bazaars are certainly the exception, but most retail products are located in a specific district. For example, there is a chandelier district; a small section of the city dedicated to the



sale of lighting. There is also a bicycle district, a furniture district and many, many others. Rather than spreading these businesses throughout the city and surrounding areas, similar stores are concentrated in small sections. This concept may seem foreign to most western business models, but it is not at all uncommon among cities of the east. I was eventually able to find a vendor who spoke some German (most knew a handful of English words, but these were limited to the sale of their wares) and began to inquire about fish and other pets sales. I was quite surprised when he told me I was in luck and began directing me through a few more crowded streets to the pet district of Istanbul!

The pet district was unlike anything I had ever seen - or smelled! There were many small shops selling everything from ducks to

kittens. The district consisted of a labyrinth of small indoor and outdoor shops all in varying degrees of cleanliness and order. Seeing a familiar logo, I headed towards what I thought would be a fish store. My luck continued to hold and I walked into a very crowded, very cramped example of the typical Turkish fish store.

The number of items in each shop was astounding. Every square inch of retail space was successfully utilized. Fish tanks were packed as full as any I had ever seen. Dry goods were stacked to and hanging from the ceiling! Within the mountains of livestock and products were narrow paths leading through each store. In most cases, I was forced to rub elbows and other bodily parts with customers conversing in rapid fire Turkish just to get a look inside the aquariums. Although the stores were incredibly crowded, there seemed to be an underlying feeling of organization and the shop owners were attentive and friendly.

I was hopeful to see fishes and corals that were not familiar to me. In fact, I almost expected to see a vastly different selection of specimens than that offered at home, but was disappointed in this regard. I did not happen onto any species that are not readily available here in Utah. I was however, happy to see the overall condition of the fish and soft corals was comparable to any local store that I've frequented. The same could not be said for live rock or sps corals, of which I saw very little. When I inquired about sps, I was met first with a very puzzled look and secondly with a few quick head nods – which in Turkey, means no. However, when I inquired about live rock, I was quickly led outside to a large rock pile. It certainly was rock; however it could not be referred to as live by any stretch of the imagination. The pile included many nice, large pieces. Unfortunately, the desiccated rock was thoroughly cleaned and devoid of life.

I was quite surprised to find such a large and thriving fish industry in Istanbul. My hope of finding new and exotic fish and coral species abroad were not fulfilled in Turkey. However, it was very satisfying to see how the love of things aquatic translates so readily into other cultures. Although the stores were crowded, they were not unlike most other retail areas in Istanbul. I found both the tanks and the shelves to be well stocked and the owners pleasant, if not rushed. I was not able to gage the knowledge of the store owners due to the language barrier, but judging from the equipment and condition of the animals, they are well versed in caring for their livestock.



Coral Spotlight - *Zoanthus* sp.

Info compiled by Kyle McCallum (sources include Eric Borneman & Julian Sprung)

Identification - Mat-like colonies of polyps with a fringe of blunt tentacles surrounding the oral disc, in contrasting shades of green, red, orange, pink, and blue. Zoas obtain most of their nutrition from zooxanthellae. Some do, but most do not eat meaty foods (All eat dissolved organic matter). Some eat sea urchin eggs, chopped worms, or finely chopped fish. Zoanthus are very common and fast reproducing colonies throughout various reef zones. Zoanthus species normally by buds that are attached at their base to the parent colony.

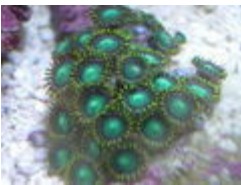


Captive Care - Zoanthus colonies are highly dependent on their zooxanthellae rather than active feeding on zooplankton for energy and should always be placed in the aquarium where they will receive bright lighting and ample water flow to help remove debris from inbetween the polyps.

Atlantic and Pacific Species

Zoanthus pacificus: Small to large clumped colonies of short-tentacled polyps that vary in color, usually found in shallow areas with high water movement. The oral disc is often a contrasting lighter color.

Zoanthus sociatus: Forms elaborate piecemeal mats of normally green to turquoise polyps. They are often found on reef flats exposed to high light intensity and intermittently strong currents. Stolon-connected polyps normally have 30 short tentacles, polyps are extended continuously day and night and feed predominately on detritus, not zooplankton.



Atlantic Species

Zoanthus pulchellus: Forms an encrusting mat so dense that polyps crowd and press against each other when expanded. Polyps are variable in color (but often brown) and have short, blunt tentacles. When unexpanded, colonies are usually hemispherical and suggest Favia like coral heads. This species is found in variable light and current conditions, with deep-water colonies occasionally fluorescent orange.

Zoanthus solanderi: Forms large, dense, fast-growing colonies primarily on reef flats and back-reef areas. They are aggressive competitors and are usually able to overgrow nearby sessile life.



Pacific Species

Zoanthus coppingeri: Small polyps are not encrusted with sediment, forms large colonies on coral rubble and on colonies of Montipora digitata, found in bright colors, including orange, red, yellow, and green. Light and current-loving colonies are found on rocky shores and reef flats.

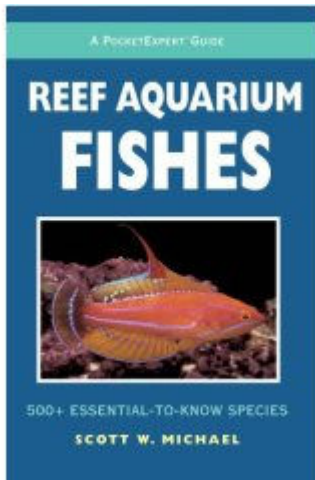
Zoanthus mantoni: Dark brown and green, grayish blue, or bright green polyps form a mat that is usually buried in silt and substrate up to the oral disc, and is often found along with Protopalythoa. The oral disc shows white, distinct patterns that can be quite pretty and that contrast with the tentacles. This is a lagoon species that prefers low current and bright light but is very tolerant of varying aquarium conditions.

Zoanthus vietnamensis: Forms extensive, sheet-like mauve or blue rubbery, thinly encrusting mats, the polyps are completely buried in the coenenchyme. Numerous short tentacles usually contrast in color with the rest of the colony, light blue or blue green oral discs are common. Found in areas of rough shallow water where it may occur with Palythoa and/or Protopalythoa.



Media Review

By Adam Blundell M.S.



“Reef Aquarium Fishes” is a new pocket book written by Scott Michael. This book was published in 2006 and is very up-to-date on common (and not so common) fishes available to the aquarium hobby. Readers will recognize this book as a Microcosm/TFH publication very similar to Michael’s “Marine Fishes” book of international acclaim.

“Reef Aquarium Fishes” showcases over 500 different fishes! Color photos and aquarium care are the foci of this book. This book does contain written information regarding items such as fish’s size, natural range, appropriate foods, proper tank set up, and compatibility. However this book does have something that separates it from the rest. This book features quick icon displays for the suitability of the fish. For example by every fish is a small icon representing a shrimp. If this icon is green the fish is generally considered “Safe with ornamental crustaceans”, yellow means generally “Occasional threat to some ornamental crustaceans”, and red means “Threat to ornamental crustaceans.” Other symbols gauge behavior of the fish towards corals, invertebrates, other fishes, and risks to the human owner. These symbols are fabulous for quick insight on how this fish may behave in your specific aquarium.

“Reef Aquarium Fishes” is certainly a must have for a reef keeper.

LFS Support WMAS

By Shane Heil

If you can understand the acronyms in the title of this article, then you can consider yourself an official Utah fish nerd!

The 2006 Presidency of the Wasatch Marine Aquarium Society would like to thank those pet stores that support the club through their general business practices and more specifically, by their generous donations. We have had an unprecedented number of guest speakers this past year thanks in large part to the support of the owners of the local fish stores. This generosity is certainly appreciated and recognized by the members of the presidency as well as the entire club population.

We consider ourselves fortunate to have so many reputable stores to patronize. We are often reminded of this fact by club members who have relocated to other areas of the country. They often report that the overall selection is lower, while the prices are higher for similar items. Although this cannot always be true, we hear it enough to increase our appreciation for what we have here in Utah.

I encourage everyone to support those shops that support the club. Let our LFS know you appreciate their being available to you and reciprocate their generosity with your business. Together we can make the reef keeping hobby more successful and more enjoyable to all our club members.

For a list of supporting local stores, visit the Local Pet Stores section of our website!

Be Our Guest

In 2006 the WMAS hosted some of the best speakers in the marine aquarium hobby

*Eric Borneman
Adam Cesnales
Scott Michael
Scott Morrell
Steven Pro
Randy Reed
Julian Sprung*



2006 Officers

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Shane Heil – e-mail: sea_and_ski@hotmail.com

Vice President

Shane Silcox

Presidency Council

Suzy Applegarth
Adam Blundell
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Jake Pehrson
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Adam Blundell
Jamison Hensley
Rhine Lenhart
Amy Newbold
Jake Pehrson
Dion Richins
Will Spencer
Brad Syphus
Shawn Winterbottom

Did you know ?

British astronomer Edmond Halley, best known for his discovery of the periodic comet named for him, devised the first practical diving bell in 1717. The wood chamber had glass windows on top and was open at the bottom. Leather tubes were hooked to air casks; as water displaced the air in the casks, the air was pushed up into the bell.

2006 Achievements

The WMAS has over 170 Paid Members
Our message board has over 1500 user accounts
The club mailing list contains over 1800 addresses.

With the help of several LFS, we have hosted 7 guest speakers this year! Among those have been some of the most prominent people in the hobby.

The WMAS was well represented at IMAC this year. Our own Adam Blundell was a speaker and we had 8 club members attend the conference in Chicago.

We had an entertaining Members Appreciation BBQ this summer. We had a great time eating and playing together. We gave out a ton of fun prizes and even had a Polynesian Dance Troupe perform for us!

The efforts of the club spearheaded by Adam Blundell won the frags.org blog contest. The grand prize was \$1000.

Our 2006 (the 12th Annual) Reef Tour was very well attended and publicized. The tour was featured on two local television news programs and we had numerous newspaper articles featuring tour locations and member aquariums. This interest was also carried over into other post-tour articles that have been included in community sections of local papers.

