



Presidency Message:

So How Do We Compare: An overview of the WMAS

By: Adam Blundell M.S

The Wasatch Marine Aquarium Society is a non-profit aquarium club. It is made up of local hobbyists who want to share a passion for marine life and aquarium keeping. While you may all be familiar with who we are and what we do, what you may not know is how this compares to the rest.



While the Marine Aquarium Society of North America lists nearly 150 local aquarium clubs in North America, you'll be pleased to know that the Wasatch Marine Aquarium Society is ahead of the rest. In fact at our last club meeting guest speaker John Walch commented to the club his pleasure in visiting the WMAS. He stated that it was nice to visit our club because we are well informed and understanding of cutting edge issues. That sentiment has been said by other visitors as well.

Typical clubs request speakers to give presentations on a beginner level; but the WMAS always requests advanced level information.

Club meetings are monthly, all 12 months of the year, this is semi-common. Many clubs meet quarterly or take the summer off during a time when the hobby is generally slow. We, however, have a large base of members warranting the monthly meetings. That large base is certainly one of the largest in the country. The WMAS boasts around 200 memberships sold per year. This is a very recent achievement for our club. The mid 1990's kept us around 40 memberships and 20 people at a meeting. Around year 2000 we sold about 100 memberships and had 50 people on average attendance. Since then we've climbed to 200 memberships and 80-100 people at club meetings. Some clubs do get 500 members and even 200 people at a meeting. These are typically less active clubs, or clubs with less frequent meetings. However by and large, most clubs (including some very prominent and active clubs) are comprised of around 40 memberships and less than 30 people attending regular meetings.

WMAS meetings are a mix of guest speakers, local presenters, workshops, and fund raisers. This is a common mix for most clubs. The number and quality of guest speakers is tops at the WMAS. The past 5 years have been financially very successful allowing for the hosting of speakers. Relations with speakers and hospitality have generated a long list of top choice speakers. Local presenters have been very well received. In fact those meetings are often times viewed better than guest speakers by many of the club members. Workshops and fund raisers have been on the decline. This may not be a bad thing. Simply put it is easy for 10 people to get together and build things... it is difficult to do this with 100 people.

Fund raising has taken a new direction. Sponsorships from local stores and successful coral propagation fund raisers have made the club financially successful. Not over flowing with cash, but successful enough to lessen the need for funds. Therefore fund raising meetings have been less frequent allowing for more presentations.

The average number of guest speakers in a year varies from club to club. Some clubs are geographically located in areas with many speakers in close proximity. Other clubs are located in more isolated areas. I think 3 or 4 speakers are typical. The WMAS hosts around 6 speakers in a year. Nearly all of them are flown in from out of state. This is the biggest cost incurred by the club.

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*****Special Thanks to the folks above for putting the time and effort into each article. Your hard work made this issue possible.*****

!!Please email me if you have article suggestions or if you would like to contribute: sukie80@gmail.com!!



What are we known for? Well in the hobbyist community we are known for a few things. The number one thing we are known for is an active large club. Many speakers and hobbyists know and tell others about the large turnout and active participation of club members. We are also known for great hospitality. When visitors are here we usually take good care of them: nice hotels, skiing, Sea Base, nice restaurants, internet access, shuttling around, spending time with presidency members. We are also known for isolation. There aren't any other clubs near by, no large aquariums to see, no large attractions, limited vacation activities. In other words we're the opposite of Los Angeles or Philadelphia.

What are we not known for? National reefing. What I mean by this is that we don't have a strong presence on the national scene. Not many of our club members attend national conferences (until recently), we don't have many people in our club who visit other clubs, and not many of our club members are friends with other hobbyists in other areas. A lot of this has to do with our location. Our club members simply don't have the opportunity to mix with other clubs.

Riddle Me this. . . .

By: Adam Blundell



Solve This Riddle- Who lives on an island but last came to us from Tennessee? Who studies corals in a place surrounded by corals, but can't own a reef tank? Whom do you call with questions of gizmos and gadgets? Who is our March Guest Speaker?

That's right, Dana Riddle!

Get ready for another great night with Dana Riddle. Dana will be visiting our club once again. This time Dana will present on all the toys and tools of aquarist research and science. Dana has been at this for a very long time. He is widely known for his publications and scientific studies of our hobby. From cutting edge research to captive reef setup and maintenance, you'll want to be at this meeting. Join us as we welcome Dana Riddle back to Salt Lake City.

Raising Anemonefish - Part 1

By Amie

Commonly, Anemonefish, are known as clownfish, probably the most common fish in the reef tank. They seem to be the staple of almost everyone's tank and they certainly are one of the most favorite fish among children. If you are one of the lucky few whose anemonefish are spawning in your tank then maybe you have considered collecting the hatched larvae and raising them to full size. If you don't collect them, then the babies simply become fish food for the rest of the tank and this can be heart wrenching. So the question becomes, are you ready to dive into raising clownfish babies?

If you think you want to try and raise anemonefish, the first thing you should do is get the book "Clownfish" by Joyce D. Wilkerson. This book has become the bible for most people that raise clownfish. Next, you need to become comfortable with raising live food, namely rotifers and baby brineshrimp (nauplii). It is a good idea to raise rotifers and nauplii for several months before collecting any fish larvae in order to get accustomed to and feel comfortable with the needs of the live food and to insure that you will not have any problems providing food to the small fish larvae.



Raising Rotifers

Rotifers are small, almost microscopic zooplankton that feed on microalgae and are an ideal size for feeding to larval fish. Rotifers are so small that when you look into a tank full of rotifers, they will look like tiny dust specs floating in the water.

You will need the following supplies to raise rotifers:

- A growing container. A 10-gallon tank works well.
- Air pump with tubing and something that can adjust the air flow.
- Lighting, A shop light or fluorescent light is sufficient.
- Fresh salt water with salinity of 1.014
- Ammonia Alert Badge. This isn't absolutely necessary – but extremely helpful. The center of the badge will stay yellow if the water is safe. As the ammonia level increases, the center will turn darker blue.
- Phytoplankton or phytoplankton paste. Nannochloropsis is the recommended phytoplankton because of its size. Every article I've read gives the instructions to feed rotifers live phytoplankton, but I have found that they can also be raised on phyto paste. This eliminates the sensitive process of raising phytoplankton.
- Live rotifers. This can be obtained from another member in the WMAS group that is already raising rotifers, a local fish store, or an online store like reedmariculture.com.
- Rotifer Sieve. The mesh on the sieve must be 56 microns or smaller. This can be obtained at florida-aqua-farms.com.



(Clockwise from top) Rotifers, 53 micron sieve, nannochloropsis paste, airline hose, rigid airline tubing, air flow adjuster, air pump, ammonia alert badge.



Add rotifers, phyto paste and airline hose.

Setting Up the Rotifer Tank:

Step 1: Start with a clean 10-gallon container

Step 2: Add approximately 2 gallons of new salt water at a salinity of 1.014. More water can be added later as your rotifers multiply.

Step 3: Add the rotifer culture.

Step 4: Add enough phyto paste to make the water slightly green.

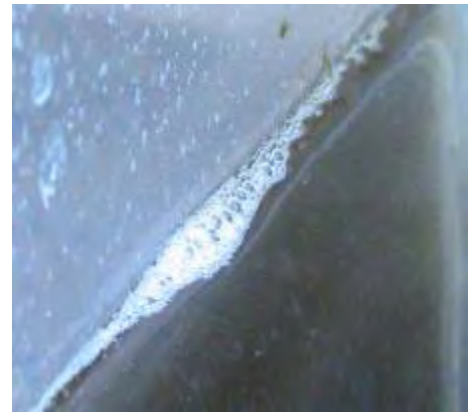
Step 5: Place the airline hose in the water and set the 'bubble rate' so that the surface of the water is slightly agitated but not boiling. You are simply supplying air to the rotifers, not stirring them up.

Maintaining the Rotifer Tank:

Setting up the rotifers is the easy part, maintaining them is a little bit trickier. If you watch them carefully and don't neglect them, you can keep a healthy culture of rotifers for years. Here are a few simple tips to keeping a healthy culture alive.

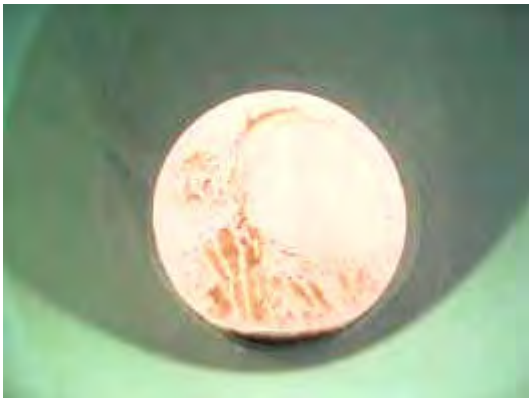
1. *Keep the Ammonia Level down.* If you over feed them, the ammonia will increase, especially if you are feeding them Phyto Paste. So, it's important to keep an eye on the ammonia level. If it gets too high, you will need to add an ammonia detoxifier or do an emergency water change.
2. *Don't let the rotifers get overcrowded.* In ideal conditions, rotifers can more than double their numbers in a 24 hour period. It does not take long for them to run out of space. If this happens, they will quickly die and you will lose your entire rotifer culture. To prevent this, continue to add more water to the tank, or filter out about ½ of the rotifers (using your rotifer sieve) on a regular basis and feed them to your reef tank (if you don't have larvae to feed).

3. *Do monthly water changes.* The water in the rotifer tank can get pretty disgusting, so it's important to keep it under control. This can be done by scraping the sides of the tank with an old credit card and then letting the water settle for 10-20 minutes. Next, siphon all the junk off the bottom of the tank and then add fresh new salt water.
4. *Maintain 1.014 salinity,* topping off when necessary. Since the tank is not filled completely to the top, it helps to place a mark on the tank to indicate where the water level. When the water drops below this line, top off with dechlorinated water.
5. *Watch for bubbles.* If you start to notice tiny bubbles form on the surface of the water next to the glass, or if bubbles from the airline do not dissipate quickly, this is an indication that the rotifers are getting ready to crash. If the tank is in really bad shape at this point, it may be worth the time to siphon out some rotifers, empty the tank completely, and start all over again with a clean tank and new salt water.
6. *Keep them feed.* Let their water go clear to insure that they are eating the food you are providing them, but then add new phyto paste again.



Small bubbles forming along the edge of the water is a sign of an upcoming crash

Harvesting Rotifers:



Looking at the bottom of the sieve: The rotifers look like a red 'sludge'.

In order to remove rotifers from your 10-gallon culture, simply pull the rotifer sieve through the water and lift it out. If you have red 'sludge' at the bottom of your sieve, then you have live rotifers.

Before placing the rotifers into the larval tank, rinse the rotifers off with fresh RO water to ensure that no bacteria is transferred to the babies.

Now that you know how to grow your own rotifers, next month I will show you how to decapsulate brineshrimp eggs and grow them. And then it's on to raising anemonefish.

Reefballs and Fine Dining – Recap of February's Meeting

By: Amy Newbold

For February's meeting, we invited John Walch to come and talk about the Reef Ball Foundation. He answered the question: "what are reef balls and why should aquarists care?" We read and hear news of our natural reefs dying. It's often bleak subject matter, but that's where the Reef Ball Foundation comes in to give us hope. The foundation itself is a non-profit organization that helps restore the world's ocean ecosystems and protects our natural reefs.

Here are some interesting facts that John talked about:

- Over 4,000 marine fish collectors are in Indonesia alone
- \$30 million annual revenue for these emerging countries
- Destructive harvesting and over-fishing are commonly associated with the commercial marine ornamental trade
- Governments may impose bans but that's not a good resolution



John said, "Restoration and preservation of the reef eco-systems is best accomplished through community based stewardship." Basically instead of taking corals from the reefs, teach the people to farm the corals. This is where the reef ball comes in. What is a reef ball? A reef ball is a pH balanced fabricated cement ball that acts in lieu of natural rock found in coral reefs. They provide habitats for fish and keep predators out. The ball also provides a great surface for coral larva to rest on. More importantly, the foundation takes corals that are in peril, 'frags' them and places them on the reef balls.

John Walch and Todd Barber pioneered the idea of fabricating reef modules combined with fragmenting imperiled corals over 10 years ago and have worked on projects to restore reefs across the globe.

This recap article does not do justice to the meeting. If you weren't able to attend the meeting, please purchase a DVD from Rhine Lenhart. Pictures are courtesy of reefball.org.



February's Tank Of The Month: Gahlenfr

By: Amy Newbold

Tank of the Month for February is Gahlen Fridley's 90 gallon glass tank that measures 36x24x24. Gahlen has been in the salt water hobby for over a year now. When he was researching the hobby, he happened upon Melev's reef. Melev's site had a link to the Dallas/Fort Worth Marine Aquarium Society. He knew if Texas had a reef hobbyist club, Utah should too.



The tank's lighting system consists of eight (8) 24W T5s. Four of the T5s are actinic and the other four are daylight 10000k. He also has a 150W Metal Halide. The T5 actinic come on at 7:00am and go off at 9:00pm. The T5 daylights come on at 8:00am and go off at 8:00pm. The metal halide only comes on at 1:00pm to 6:00pm.

The filtration consists of a 3" sand bed in the main tank and 2" in the refugium. Circulation consists of a Sea Swirl. The return pump is a Mag 12. Other pumps in the tank are a Seio 820 and a Maxijet 600. His refugium houses a Euro-Reef skimmer, algae, and live rock. It also runs on reverse daylight.

Gahlen is pretty on the ball when it comes to maintenance. He does 10% water changes bi-weekly and cleans out his skimmer weekly.



Gahlen does not put any additives in his tank manually. He did have a problem with keeping the calcium up but since he added a calcium reactor everything has been in perfect balance.

Currently, the tank consists of mostly LPS with touches of SPS and softies here and there. I nicknamed his tank, "Frogspawn explosion". If you notice in the pictures, Galen has large, beautiful colonies of frogspawn of every different color and size.

- Corals:**
 Frogspawn
 Varies types of Zoos
 Kenya Tree
 Zuzzy Mushrooms
 Goniopora
 Toadstool Leather
 Pom-pom Zenia
 Montipora
 Torch
 And others . . .

Gahlen feeds his crew a mixture of frozen and flake foods in the morning and at night. The frozen mixture consists of gulf and brine shrimp, cyclopeeze, and coral foods cubes. He also feeds freeze dried phyto and live baby brine shrimp for the corals that need direct feeding.



- Inverts**
 (2)Tiger cucumbers
 Fire shrimp
 Skunk Shrimp
 Peppermint Shrimp
 Scarlet crabs
 Cerith Snails
 Hermits
 Anemone
 Clams (Crocea & Derasa)
 Feather Dusters
 Purple Serpent Star

I asked Gahlen why he thinks his tank has been so successful, and he attributes it to keeping it simple. He keeps on top of his maintenance and does not dose any chemicals. Also when he needed any help, he could rely on his good friend Mark Peterson.



If you know someone who should be Tank of the Month or if you want to be Tank of the Month – please contact Shawn Winterbottom (summertop).



- Fish:**
 Pair of Banggai
 Cardinals
 Royal Gramma
 Anthias
 Bicolor Blenny
 Flame Angel
 Trio of Chomis

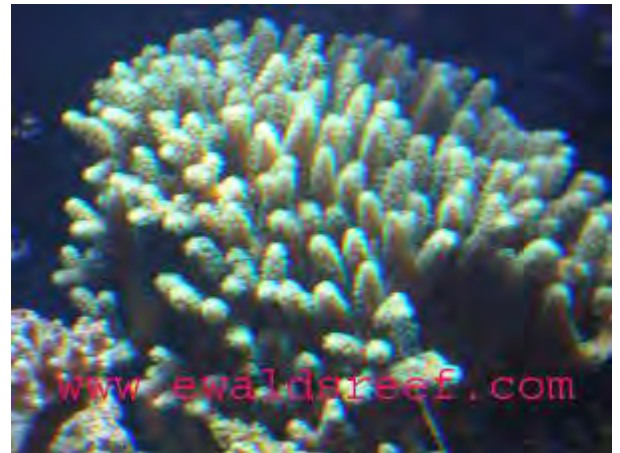
Coral of the month Seriatopora

By: Bruce Ewald



This coral is also known as birdsnest or needle coral. It is found in the Red Sea, Indo Pacific, Samoa, and some central Pacific locations. Two common types of Seriatopora in our tanks are Seriatopora Hystrix and Seriatopora Caliendum. Hystrix is the most common. This is the type has very sharp looking tips and can sometimes have very thin branches.

Caliendum looks very much like Pocillopora Damicornis. It has more rounded ends.



Seriatopora requires intense lighting. I highly recommend metal halides and higher placement of coral. In addition, good circulation is a must. The recommended temp is between 77 to 80 degrees Fahrenheit. I found in my personal experience, it can be very sensitive to changes in alkalinity and temperature. I recommend this coral to an experienced aquarist with a well-established tank. Besides being somewhat difficult, in the right conditions, this coral can be a fast grower and can become a good sized colony from a frag in a very short amount of time compared to other SPS.

This is one of the most eye catching SPS corals around. I can say this from experience. I have had many comments from people looking at my aquarium. There are a number of varieties available in the aquarium trade. There are pinks, purples, and Greens all with brilliant colors. Beware of buying this coral as a wild colony. They often have a hard time acclimating to tank conditions.

Fish of the Month: Jumping Jawfish!

By: Mike Savage



While it is true they may jump if startled before they have a secure burrow dug; they are model citizens once established.

In my experience they can take a while to get established. When first introduced they will hide in the rocks until dark. Then they will typically dig in a few places until they have a hole in a location they like which can take up to a week.

What do they like? Well for starters they like to be able to see all around their lairs. They like a deep sand bed (3" to 4" will do but more is better) of mixed particle sizes and pieces of shell & rubble rock about 3/8" to 1/2" in size. They use these larger pieces to shore up the walls of their hole and to cover their hole at night. That's right; they close the door at night to keep out predators! They also like peaceful tank mates though most reef safe fish I have kept seem to ignore them. This includes Blennies, Dragonets, Firefish, Pygmy Angels, Tangs, Dottybacks, Gobies, and Clownfish. In fact the only fish I have seen them have problems with was a Blue-devil Damsel that would take over the den of my Pearly Jawfish forcing him to move across the tank and dig a new home.

I have read that they can be shy feeders. Not mine. I have kept both Yellow-headed Pearly Jawfish (*Opistognathus aurifrons*) and Blue-spot Jawfish (*Opistognathus rosenblatti*) and they weren't shy about feeding at all. They would

dart out of their hole and grab some food then dart back. Sometimes venturing two feet or more from their home. Mine readily accepted flake food but they really need meaty foods to stay healthy and keep their colors bright.

Jawfish are always on the watch and constantly aware of their surroundings. They bob up and down in their hole looking for a meal while trying not to become one. When startled they dart into their hole with lightning speed but are peeking out again just as fast seeming to ask "did I miss anything while I was gone!"

Yellow-headed and Blue-spot jawfish will grow to about 4" and shouldn't be trusted with very small shrimp such as Sexy Shrimp. I have had no problems keeping them with small Hermit crabs, Peppermint shrimp and larger cleaner shrimp. On many occasions I have seen Jawfish remove a hermit crab or snail from their den by picking up the intruder in their mouth and moving them a foot or more away from their den.

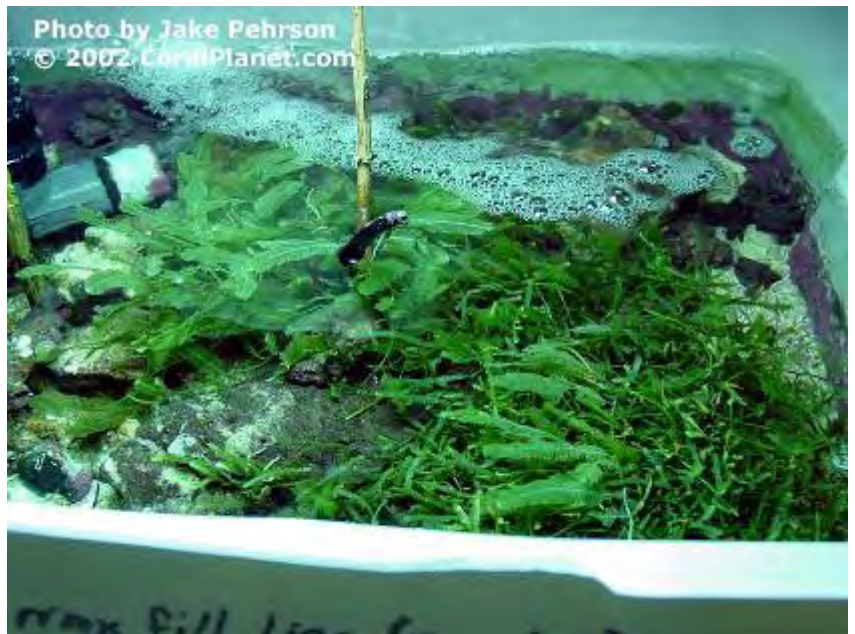
If you have a covered tank with a deep sand bed and fairly peaceful fish in your reef, then they don't come much better than this. Jawfish have personality, pretty coloring, and are people watchers too!

Algae of the Month: CAULERPA

By Mark Peterson

Caulerpa is a fascinating algae. Growing endlessly as one continuous cell of runners, roots and leaves, it exudes a stringy, whitish liquid from the end of broken strands. The old end of each growing strand may sometimes slowly dissolve as new growth occurs 1-3 feet away. Each variety of Caulerpa, of which there are more than 100, has its own unique shape and growth characteristics.

Among the hardiest species are Grape, Sawblade, Blade, and Feather Caulerpa. Scientific names for these are *C. racemosa*, *C. Serrulata*, *C. Prolifera* and *C. Mexicana*. Another feather variety is *C. Taxifolia*, the infamous variety which has created problems in the Mediterranean Sea and was which is being methodically eradicated from the coastal waters of Southern California as it almost grew totally out of control. (see www.pbs.org/wgbh/nova/algae/)



Way back when I set up my first reef aquarium, I added a few sprigs of Feather Caulerpa. Over the next 6 months, I harvested almost 40 pounds of the stuff, trading it to an LFS for fishes, etc. Thus began my love of this most lovely and versatile macroalgae.

It's tendency to melt away within a day, in response to lack of nutrients, has never dimmed its appeal in my eyes. Preventing a meltdown, by simply feeding more fish food and adding iron, seems to be the answer to the problem. Periodic harvesting of ¼ to ½ of the total growth also helps to ensure a thriving field of green.

Wow. Check out this pic of colorful algae, showing some growth of *Caulerpa racemosa* off the coast of Western Australia. (Image courtesy of www.algaebase.org)

Signatures Lines of Notes

By: Amy Newbold

Well looking at the month, most of the signature comprise of what folks posted on the board. So I thought instead of signatures, we would put crazy, wacky sayings that other folks caught and thought were funny.

"If you are "white and wimpy" like Adam you may need some tools." - **Jake Pehrson**



"if you need someone to be mean and turn folks away - I'll do it" – **Sukie**

"just looking for a chance to abuse my power" - **Jamison Hensley**

"Don't you know fish club meeting is more important than heat for your home?" - **Will Spencer**

"I have 30gal cube. Finally I'm cool!" - **Genevieve Winegar**

don't routinely clean out my airhole" - **Jon Finch**

"What happens in Vegas.... Sounds good to me. " - **Jamison Hensley**

"You couldn't swing a dead cat in Sweden without hitting a beautiful woman." - **Shane Heil**

"Clean - Yes. Quiet - Doubtful. Jake and I decided last year that we wouldn't miss out on the pirates again!" - **Shane Heil**

"GOOD THING MY WIFE DOESNT READ THIS OR I'D BE WITH THE MAROON... IN THE DOG HOUSE..." – **acuramech**

"did I just make up a word?" - **Jon Finch**

"Here's my WMAS ToDo list: Lose 30 lbs so I will look hot at the summer BBQ!" – **Suzy**

"I got it all!!" - **Sukie**

"Adam! Change that signature, you fathead!" -**Suzy**



"I

