

# The Sea Star

Newsletter of the Wasatch Marine Aquarium Society

January 2004 Issue



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## Holy Cow!!.....A newsletter!?!?

It's been a long year since the last publication of the Sea Star...but good things come to those who wait. So here it is...it may not be loaded with all those articles you requested, but that's because we need your help!

We have great articles, and want to keep the newsletters coming. As such, authors are needed, and those authors are you! Don't think you are an expert? Chances are you know more than me. Only been a member three months? Do a little research and let us know what you find or share an anecdote about your new tank. This newsletter isn't just about the articles....it's about all of us

## The Progress of a Club

*By Adam Blundell*

As the president of one of the largest hobbyist aquarium clubs in the nation I have had the opportunity to see many issues facing our hobby. More directly I have had the opportunity to see many issues facing the hobbyist clubs and societies. The Wasatch Marine Aquarium Society was formed in April of 1993. During the past ten years our club has bloomed and boomed. Originally founded with a handful of people meeting in a living room, WMAS now has over 100 yearly paying family memberships. We have anything

from simple discussions on filtration and hosting Semi-Annual Coral Cutting seminar to printing flyers and featurettes on television and in newspapers. From a club that struggled to exist to a powerful school of fish nerds.

I spend some time here and there conversing with club presidents from other cities and states. It is always helpful for us to share our experiences and learn what is working (and not working) in other localities. However, each of these discussions ends with the same question "Adam, how did you do it? How did you create such a large society and get all those members?" Well I of course answer with something completely untrue like "Lots of hard work" or "I just have a gift". But everyone I speak to knows this isn't the case. The truth, in fact, is far from it.

The real reason behind our success is owed to two main areas; Active Members and Dedicated Presidency Officers. Active members are easy to create. Simply create club meetings that the members want, make them work, make them useful, eliminate everything you can spare.... and people will come. It was more poetically spoken in the wonderful movie Field of Dreams, "If you build it, they will come". So the real goal is to capture those few who are willing to make the sacrifices for the club. I for one know the importance of this because I inherited a club that was built from the ground to the sky by three previous club presidents, and numerous other people who were caught by a vision of what could be.

What did they do? Well what was done, and what should be done, are not always the same.

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In the case of the Wasatch Marine Aquarium Society what was done is what should have been done. First off getting publicity through stores, building an account, generating knowledge and helping the hobbyists. This however, was not enough. The best thing the WMAS did to boost membership, expand advertising, and save costs was undoubtedly the formation of their website [www.utahreefs.com](http://www.utahreefs.com). The cost savings of no longer sending monthly mailings was huge, and the continuation of "fish talk" throughout the month was very helpful. I believe the push towards this technology was slow and subtle, but was initiated by the formation of an email list to contact club members for reminders of club meetings and events. From there, a fantastic website (awarded 1<sup>st</sup> place by MACNA in 2002) provided opportunities never before imagined.

The website also provided a lot of freedom from the previous "constraints" with relations to local pet stores. From the beginning the club was dependent upon the support and rapport of local pet stores to advertise events and recruit members. Many local pet stores saw this relationship as a conflict of interest, feeling that clubs took business away from them. With the recent developments of online advertising the need for store support became a non-issue. Thus the tables were turned.... and now the local stores are dependent upon US to promote their stores, as the clubs now have members and friends far reaching into the reputations and supplies of stores in their areas.

The club has not progressed in terms of meetings. This does not appear to be isolated to the WMAS but for all clubs nationwide. Clubs have improved upon meeting presentations (PowerPoint as opposed to slides) and larger meeting facilities, with refreshments, banners and signs, raffles and give-a-ways, and who knows what else. But the real heart of the clubs has not changed. We still discuss lighting, filtration, nutrition, chemistry and blah blah blah. Guest speakers are often used to provide new insight and viewpoints, but are often limited to speaking with beginner hobbyists. In fact one could argue that the better a club is at achieving its goals, the fewer advanced hobbyists would be in the club. It seems that when hobbyists are able to be successful in keeping marine organisms they no longer need the club, and leave. This causes a high turnover, which is ever challenging to the organization.

My goals and hopes for the upcoming years revolve around one thing. I would like to see clubs nationwide make a general swing towards progress in generating new ideas that help with fish husbandry on the hobbyist level. I would also like to see something big, which makes an impact on the hobby, become popular and effective with our clubs. Like the way sumps have become popular, then reverse daylight, and 2 part ionic solutions. My sincerest hope is that we don't become stagnant as a collective, but rather build upon what we have.

## Stitching Soft Corals

*By Steve Lopez*

There are many ways to attach soft coral cuttings to rock. Super gluing, stitching, securing the cutting between two rocks until it attaches or even letting the cutting stay in place on a rock until it naturally takes hold are some good ways to attach coral cuttings. I have used these methods mentioned and some others.

The method I like when trying to place soft coral cuttings on the rock in the aquarium is stitching. When stitching coral cuttings I use the following: a Tupperware bowl, scissors, needle, thread or monofilament fishing line, and rubber bands.

First I tie a rubber band to a length of thread or fishing line. I then thread the fishing line or thread through the needle. Then I cut a piece off of a soft coral and place it in the Tupperware containing water from the tank. I then stitch through the coral cutting. Once the cutting is stitched through I then remove the needle. Next I tie a rubber band to the other end of the thread or fishing line. I now have the coral cutting with a stitch through it



with a rubber band tied to each end of the stitching material. I now place the coral cutting where I want it by securing the rubber bands in such a way that the coral stays put until it attaches.

No need for removing rock from the tank. This method works equally well should you choose to remove the rock you're attaching to from the tank. It enables you to attach soft corals easily using your own two hands you were born with. It's my wife's favorite method because now she doesn't have to help.



## Treating Tap/Source-water for Marine Aquarium Use

*By Robert Fenner*

*Reprinted with permission from Bob's website in SanDiego: [www.wetwebmedia.com](http://www.wetwebmedia.com) and Aquarticles*

Most municipalities disinfect their drinking water with chlorine or chloramine. These chemicals are deadly toxic to disease-causing microbes, unsightly, distasteful algae, and unfortunately, our desired aquatic life! Present practices result in a highly variable tap-product; one that should be monitored and must be dealt with, either by storage/aeration over an extended period, conscientious treatment, or very slow and/or limited water change regimens.

This article will familiarize you with the whys of these sanitizers, your options in dealing with them, and symptomatology & therapy for poisoned livestock. Hey, I'll even give you my version of "the best way" (according to the Fishman) to render tap water usable. Ho-boy!

### **Why Do We Have To Deal With This Stuff Anyway?**

Always a good question. Answer: Because it's there. Water intended for human consumption; drinking, bathing, washing, what-have-you is rendered biologically zippo (that is, nothing living in it) by semi-unselectively poisoning it with materials that are supposedly not very toxic to us.

As the story goes, there was/is a high positive correlation with the blending of free chlorine with organics, present more and more in source waters, resulting in compounds termed tri-halo-methanes (spelling mine). Tap water in the U.S.A. used to be primarily treated with chlorine as a gas, or liquid (principally as the bleaching agent, sodium hypochlorite, aka hypochlorous acid). Due to the aforementioned problem, linking colonic cancers with tri-halo-methanes, the fed. EPA saw fit to pass laws supplanting free-chlorine-liberating means of potable water sanitizing with the less noxious (as far as colonic cancers go) but more persistent chloramines. But, dear reader, please allow me a short digression:

There are still places where this magazine reaches, like Britain and Japan, where chlorine is still in vogue, and even (gasp!) Western Europe, and some commune(ities) utilize the commie-subterfuge-itself, fluorine(!). And so, let us have a slight review of the ole High School level qualitative chemistry, shall we? As you'll recall, in the most popular presentation of the primary building blocks of the universe (atoms), there is an arrangement of these elements in a Periodic Table, or Chart.

By definition, the vertical columns in the periodic chart of elements are called Families of elements. Ostensibly, all members of a given family share alike chemistries on the basis of kindred arrangements of electron-cloud configurations. The column immediately adjacent to the far-right family of noble gases, is termed the halogens (note the similarity of halo above and halogen here). Geez, anyway what I'm trying to get to here is that all members of the halogen family (halogenated be thy name?) act (poison) the same. Fluorine, Chlorine, Bromine, Iodine and Astatine. Anyhow, all these atom-types are very reactive, wanting only one more electron to fill out their outer electron cloud, but that's another story (thank goodness). They all will kill your fish, inverts, algae, live-rock, whatever you have, in sufficient concentration. On with this story.



Chlorine (Cl<sub>2</sub>) bound up with ammonia (nominally NH<sub>3</sub>) we'll call chloramine. This critter is responsible for almost as much captive mortality as hobbyist-generated-boobos! No small feat. And the reason(s) why? Let's make that a separate article, okay? Suffice it to write here that:

- 1) Chloramine is present in toxic quantities in virtually/actually all city water supplies,
- 2) It takes a good week or so to "dissipate" by "setting", "aeration", "hopeful wishing", or other such means, or
- 3) Can be neutralized by various store-bought or home-made chemical conditioners, some only-effective with concurrent contactor filtrants (e.g. carbons, zeolites) to remove resultant ammonia. But most all wanna-be advanced-aquarist-types know some version of this extended-greatest-fish-poisoning-story-ever-told.

Basically, know this, the water district types are not your best fishy buddies. For various reasonings, they fool with the water, very occasionally yielding a more and more toxic product that you must remain vigilantly suspicious of.

#### **Mode Of Action:**

Chlorine, Chloramine, Fluorine compounds et al. are hemolytic in their action, splitting up blood cells. Additionally, in sufficient concentration, the actual gill membranes will dissolve in their presence. Both these reduce respiratory capacity (no duh!)

What's A Pet-Fish Type To Do? First and foremost, be aware! How else are you going to "get by" in the world, let alone optimize your opportunities? Next, determine whether you're going the intensive versus extensive (lazy) mode. In the former, extend your senses and get a test kit for chlorine/chloramine. How 'bout an advertisement/schpeil here? Okay! Aquarium Pharmaceuticals has a nice inexpensive liquid-reagent variety, Hach and LaMotte have some nicer units for the hoi polloi, and there are even electronic types for the lottery-winning, ultra-tech-ee. The extensive/lazy approach is to MAKE FREQUENT, SMALL WATER CHANGES (boy, that's bright on the old word processor), say 10-15% at weekly/twice-monthly intervals, gambling on absorption, complexing of tap sanitizers with "what's in your system". 3) The last and generally least desirable, but necessary to discuss means, are directly chemical in nature. You know their names, the sundry new/tap water conditioners. Let's not name-names directly here, but do let us make a general classification scheme/discussion on the basis of apparent activity, and some letting-on concerning ingredients...



A) Dechlorinators: These are the tried and true (sodium) thiosulfate, aka hypo, or hyposulfite compounds. Yes, this is the same stuff you may be familiar with in terms of photographic developing chemicals for (surprise!) removing free chlorine to eliminate interaction with silver... More on this real soon.

B) Dechloraminators: Here I mean one's that "really" work, that is, that take care of both chlorine and ammonia. These typically involve poly-vinyl compounds. This is a big hint!

C) Pea Suede Oh (pseudo), read that as phony "Dechloraminators". Yes, there are products, some quite popular, that profess to "remove chloramine in "one-step". A vital clue here is their formalin/formaldehyde smell. What a scam! These products "work" by 1) poisoning your livestock such that it produces slime and other materials in response to the formalin and thus precludes chlorine/chloramine from entering their bodies, and 2) as a placebo, albeit toxic one, where no treatment was necessary.

Don't believe me? Get a test kit and do the simple experiment. How do these companies stay in business? People buy their stuff out of ignorance. Don't be ignorant.

### **Too Late, I Already Blew It:**

What can you do, if your livestock are poisoned by these sanitizers. You have to act quick, seconds, to minutes, to (rarely) hours. Depending on the source and degree of the problem, do (in order of possibility):

1) Move your livestock to a non-toxic environment. Keep your eye constantly on your charges, especially for bullying.

2) Treat the water! You twit! With items listed in 3 & 4 below.

3) A real dechloraminator, and definitely not with a phony one. More mucus production and hemolytic activity by formalin poisoning will only exacerbate pushing your critters over the edge. Watch the dosage. Do not overtreat!

4) Engage filtrants (carbons, zeolites, appropriate resins) to remove the source of the problem.

5) Flush the whole mess and start over again. Oh sorry, just kidding. Other Sources of These Noxious Chemicals:

Principally from "cleaning" ornaments and tanks with "chlorine bleaches" and household cleaners' fumes and aerosols making their way into your tanks. What you can do to avoid these despicable circumstances should be obvious, and I don't get paid by the word, but here's a gander at poisoning prophylaxis: A) Rinse the dickens out of whatever cleaning stuff you're using, air-dry, use a cheap bio-assay, break-down and buy/use a test kit, will you? 2) Be careful, don't use ammoniated or chlorine-containing and releasing compounds around your system, geez. 3) Flush the whole mess, no, not this again!

### **How To Save Your Livestock, Your Sanity, & Your Pocketbook:**

My real advice is really to just do frequent partial water changes and not sweat it, but, in reality, if you're changing a lot of water, I would suggest what I and our service company do:

Batch process your water with, I mean cheap, home-made hypo solution purchased from a chemical/lab or photo supply outlet and either pump/drain your supply water over a chemical filtrant (cited above) to remove the remaining ammonia. Sodium thiosulfate at about two pounds dissolved in a total volume of one gallon, used at one-two drops per tap gallon is about right. There are folks who sell this stuff through the magazines, if you won't get off your duff and check out your local "yellow pages".



### **And the Very Best Method!? None At All: Premixing/Storing Saltwater**

The simplest, most assured way of making sure sanitizers, metals (that can be settled/complexed), excess gasses... are removed from solution ahead of using synthetic salt mixes is to pre-mix and store them for a week or so ahead of use. This is best accomplished by way of buying and dedicating "Fish Tank Only" gear to the purpose. A new (my favorite are the Rubbermaid (tm) Brute) trash can and lid (to keep little hands and stuff out) maybe with their spiffy dolly to roll around... a pump (like a powerhead, but with a nozzle for attaching a bit of flexible tubing to ease moving the water to your system(s)... and possibly a thermostatic heater (make sure and unplug this when doing additions)... and your trusty hydrometer...

By allowing the new water to mix and circulate, many things are done... chlorine/amine are liberated, perhaps excess gas, metals... and the various soluble and not so components of your salt mix are able to complete solubilize ahead of use.

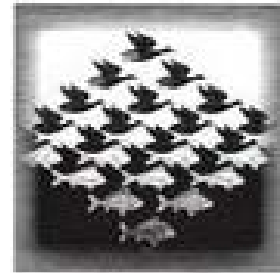
### **Let's Wrap This Thing Up Already:**

Chlorine and chloramine poisoning are significant causes of livestock loss. The sources of these sanitizers and there testing, removal and therapeutic treatment has been surveyed. If you won't invest in and use a test kit, be chary of massive water changing, or at least use "real" dechloraminators. Thanks!

## **A Few Questions for Adam**

*By Cortney Curran*

I sat down with the Adam Blundell, President and some say the heart of WMAS, to ask just a couple of easy questions...Here are his replies



### **What are the short term and long term goals of WMAS.**

The goals often change. Not drastic changes, but with a new presidency every year there are always new ideas. I think recruiting members has been the biggest goal for years, but recently has become a non-issue as we now have a prominent stance in the community. Our website and members are now able to spread the word and keep us going. Short term goals can be very short, including "what are we going to do for the next few meetings". Long term goals often revolve around guest speakers, hosting a MACNA conference, and establishing a permanent meeting location.

### **What does the presidency see as challenges of meeting these goals?**

Time commitment. It is hard to get people involved, and it is difficult to plan far ahead, when you don't know who will be gone and who will still be here. Some things take a year to plan, others take 3 years. Finances are always a concern, but we have always been very financially responsible.

### **Are there any members (in the presidency or in the club) that deserve special recognition?**

The problem with special recognition is that I always forget someone. But I guess it is always best to recognize, and hope you only forget a few. :)

**Jake Pehrson** is incredible. His dedication to every monthly meeting and to the website is a truly generous gift to our club. Without a doubt he is the best Vice President and Webmaster we have ever had. I would also say he just may be the most important person this club has ever known.

**Cortney Curran** is the sole reason for the Reef Tour 2003. His dedication to marketing and coordinating the reef tour efforts was instrumental to the event.

Other presidency members like **Mark Peterson**, **Steve Lopez**, **Kirk Talbot**, **Ryan Foote**, and **Suzu Applegarth** always come through.

Finally, every month I am blown away by the wonderful refreshments made by **Ross and Carolyn Bagshaw**.

# What is Kalkwasser? And How Do I Use It?

By Robert Metelski

Author of the book *Simplified Reefkeeping*, 3<sup>rd</sup> ed. available at [simplifiedreefkeeping.com](http://simplifiedreefkeeping.com) and reprinted by permission from *Aquarticles*

## EVAPORATION MAKE-UP WATER & KALKWASSER

Because the tank is exposed to air, and strong pumps are circulating the water throughout the filtering system (overflow pipes, drip plate, prefilter, and protein skimmer), you will get a significant amount of evaporation. In fact, the better your skimmer and the stronger your water pump (both desirable features), the more evaporation you will get. You will need to replace the evaporated water regularly. An important reminder for the new hobbyist is that the water evaporates, not the salt. Do not add salt mix with the make-up water. The result will be a higher salinity than is desirable.

Adding make-up water provides a good opportunity to replenish much-needed calcium, which gets depleted rapidly in an enclosed reef system. This vital element is used by virtually all living creatures. Some of it also gets removed by protein skimming. In my opinion the best calcium additive is “Kalkwasser,” which is calcium hydroxide. It is added on a regular basis by mixing it with the purified water being added to compensate for evaporation. These regular additions of calcium hydroxide also keep the pH elevated to the desired 8.2 to 8.4 level.

Kalkwasser is a German word. Literally, it means “lime water.” Kalkwasser is a trade name for calcium hydroxide. The terms “Kalkwasser,” “limewater,” and “calcium hydroxide” all mean the same thing in this hobby.



The water you use to replace what has evaporated will be called “make-up water.” It is extremely important to use purified tap water mixed with calcium hydroxide (a.k.a. Kalkwasser, a.k.a. limewater) for the make-up water! Do not, I repeat, do not, use regular tap water or anything else for make-up water! This is asking for trouble.

As I have stated from the beginning, nothing will ensure your success more than the quality of your water. Once you have made the investment of a water purifying system and have started the reef with purified tap water, the reef will be accustomed to that quality of water. It would be extremely foolish to try to cut corners here. This is the last place to skimp. In fact, it would be inviting disaster by possibly introducing impurities (metals, silicates, phosphates, etc.) that are harmful and troublesome (hard to remove) into the pristine environment that we have tried so hard to create.

### When to add make-up water:

Add the Kalkwasser within a day after you mix it; it gradually loses effectiveness after it is mixed. Watch the water in the sump! This is where you will see the change in water level. Once you have established the “working water level” in the sump, mark it on the side of the sump box, with magic marker. This will give a quick visual reference as to the height of water that is normally in the system. As evaporation occurs, watch this mark. When the level goes down by 3 to 5 gallons, or gets close to the top of the outlet for the pump, you need to add make-up water. Mix the water no more than one day before you add it to the tank; it starts to lose effectiveness right after it has been mixed. It will have the highest concentration of available calcium just after the sediment settles out of the solution.

On a smaller tank (even a 55-gallon), 5 gallons of high-powered make-up water must be used with caution! Kalkwasser has an extremely high pH. Pay close attention to the drip/dosing flow of water, to be certain that it is administered very slowly. For a 55-gallon tank, you should take a 48-hour period to administer 5 gallons of make-up water. Make sure you test-run your drip method, to be sure that it introduces the desired amount of make-up water over the correct period of time. Adding Kalkwasser too fast will cause pH shock, which can be fatal or, at the least, unnecessarily

stressful to the livestock. Take the recommended precautions and do not let this happen!

On larger tanks, 125 gallons and up, 5 gallons of make-up water will not have as much of an effect as it will in smaller tanks. For a 125-gallon tank, the Kalkwasser can be added at the rate of approximately 5 gallons in 8 to 12 hours. In a 200-gallon or larger tank, the 5 gallons can be added without any clamping system, allowing the airline tube to empty the 5-gallon bucket unrestricted. This will take less than 1 hour.

#### **Time of day to add:**

Another suggestion is to add the Kalkwasser mix when the tank lights go out, or (ideally) first thing in the morning. While the lights are off, the pH drops, reaching its lowest level the next day just before the lights come back on. If you add the Kalkwasser during this reef “night,” the effect of raising the pH will not be as significant as it would be during lighted hours.

There may be some questions and concerns about adding 5 gallons of Kalkwasser all at once. Yes, some critics may be correct that adding smaller amounts more frequently would be a less risky, less stressful, and more natural approach. However, I have used my method on tanks from 55 to 200 gallons, with no adverse effects, and I have not lost one creature due to pH shock. You do have to be careful on smaller tanks, but once you get familiar with this system, I’m sure you will find it to be very practical: (1) you will add make-up water less frequently, and (2) on larger tanks (125 gallons and up), you can add 5 gallons of make-up water at a time, which is a significant, convenient, easily measurable amount of water to add.

Do not mix with an airstone; this will add carbon dioxide and oxygen, which will reduce the effectiveness of the calcium hydroxide and defeat its purpose!

#### **Benefits of adding Kalkwasser:**

You may be interested in why it is so important to add Kalkwasser. Some of the benefits are:

- \* It adds calcium that is needed by most of the creatures in the reef.
- \* It encourages the growth of pink and purple coralline algae.
- \* It keeps the pH elevated. By adding Kalkwasser on a regular basis (make-up water) and doing water changes every 2 to 3 weeks, I have found my pH to be consistently between 8.2 and 8.4. Keeping the pH at this level makes it less likely that micro-algae will become a problem.
- \* The reef just seems to love Kalkwasser.
- \* There are many more scientific and chemical reactions that are beneficial. Take my word for it: adding Kalkwasser on a regular basis is one of the most beneficial procedures for maintaining a healthy reef and desirable water chemistry.





## Some Wacky Fish Laws

By Ed Katuska

Reprinted with permission from Wet Pet Gazette, Norwalk Aquarium Society, Nov/Dec 2000 and Aquarticles

Did you know...

- Animals are banned in **Arizona** from mating publicly within 1,500 feet of a tavern, school, or place of worship. (Better get those guppys home quick).
- In **California** it is a misdemeanor to shoot at any kind of game from a moving vehicle, unless your target is a whale.
- **Idaho** residents cannot fish from a giraffe's or camel's back.
- It is illegal in **Ohio** to get a fish drunk. Also in this state do not go fishing for whales on a Sunday, It's a no, no.
- Don't get caught catching crabs in **Sarasota, Florida**.
- In **Oklahoma** and **Seattle, Washington** it is illegal to carry a fishbowl or aquarium onto a public bus because the sound of the splashing water may disturb other passengers.
- It is illegal to catch a fish in **Kansas** with your bare hands.
- You may not catch a fish in **Pennsylvania** with any body part except your mouth. Also dynamite cannot be used to catch fish.
- **Tennessee** law says it is illegal to catch fish by lasso. (Too bad, it would make it so much easier to carry them back to the trailer park).
- It's illegal to fish from horseback in **Utah**.
- In **Muncie, Indiana** it's a crime to carry fishing tackle into a cemetery.
- It is illegal in **Vermont** to whistle underwater. (Not to mention pointless, stupid and down right impossible).
- **Montana** wins the prize in my opinion for stupid laws. It's illegal for married women to go fishing alone on Sundays, and illegal for unmarried women to fish alone at all. It is also against the law for a man to knit during fishing season. This one is not fish related but definitely worth a mention... It is illegal to have a sheep in the cab of your truck without a chaperone. (There go my Saturday night plans).



### Across the pond

- **Scotland**- You cannot fish at all on Sundays.
- **Liverpool, England**- It is illegal for a woman to be topless in public except as a clerk in a tropical fish store.

## Tank of the Month

By Susy Applegarth

I am the luckiest person in the Wasatch Marine Society. For the past year, I have had the privilege of being Historian, whose only real responsibility is collecting Tank of the Month. I have traveled far and wide to see the most gorgeous tanks in our state. I truly believe we have the coolest, most alluring aquariums on this planet!



Tank of the Month is our way of showcasing our member's efforts to capture the wonderful aquatic wonderland that is reef keeping. Our web-master has allowed us space to define our

[www.UtahReefs.com](http://www.UtahReefs.com)



definition of underwater gardening, allowing the worldwide web to highlight to the entire world our vision of reef saving, and growing our own captive bred ocean life. Tank of the Month allows all our members to view different ways of setting up and running a tank, inspiring others to try new things or see a functioning aspect of ideas they've heard about.

The best word I can think of to describe Tank of the Month is diverse. Our many members have strived to achieve mastery in all forms of marine aquarium keeping.

We have very large tanks and small nano-tanks and middle sized tanks. We have beautiful tanks that accent the wonderful world of small polyp stony corals, and tanks that feature the flowing motion of soft corals and most tanks with both. Some tanks feature lots of automatic, innovative, time saving devices, and some tanks are very simple in their design and set-up. One thing all our tanks have in common is beautiful, brilliant, marine artwork.

And the most important thing our tanks have in common: All belong to members of the most awesome group of fish nerds anywhere!



## Many Hands Make Light Work

*By Adam Blundell*

I often think of the importance of this statement, as it is frequently used by one of Salt Lake's greatest humanitarians Dan Herzog. Dan is a personal friend of mine from whom I have learned much. The greatest thing about Dan is that he is able to generate enthusiasm, and spread it to others, regardless of the task at hand. He makes labor intensive community service become a true act of pride and personal growth. He has a way to make people look forward to something that they never knew they could enjoy. His ability to use his boundless energy and smiles in community service is far greater than impressive. However, there is one thing Dan doesn't understand. While it is important to have many hands, you can't underestimate how important Dan is to whatever he is helping with. Regardless of how many hands are involved, I believe the reason Dan is successful is because of Dan.

Now I will present a couple of challenges to the members of the Wasatch Marine Aquarium Society. First off, make many hands. Our club has flourished over the past decade, but as we grow and expand the need for help is always increasing. Simple tasks of setting up and cleaning up for meetings have become quite an ordeal, and of course it seems to be the same 4 people mopping the floor and putting away chairs every month. Although I guess it is possible that some people just get bored listening to me and can't wait to go home.... but lets assume that isn't the case.

My second challenge is for our club members to recognize the potential leaders you have in the club and let them know how important they can be. The club is right around the corner from electing a new set of presidency members, and the club's 5th president. These presidency members are vital to the long term survival of our club. Finding dedicated members are willing to work for the club is a difficult challenge, but a very necessary one. In addition, someone who is willing to lead the group may be even more difficult to find, but I have full confidence that the club will continue in the direction it is going.

The only question now is "who is willing to take on the challenges?" - Adam