

The President's Pen:



If it was a Snake...it would Have Bitten you Right in the Face!

I find that the longer we are in this hobby the more easily we can find ourselves complacent. I myself am very guilty of this. Doing simple maintenance on a routinely schedule can even make us set in our ways. A friend of mine recently lost some beautiful, well established corals in his system. Upon first discovery, his thoughts were that it must be a water quality issue or salt for that matter. He had been dealing with some bad salts leading up to this event therefore it made sense. He worked hard to try and investigate the cause and even change more water out, adjust calcium/alkalinity parameters, etc. Wouldn't you know it....the cause of coral loss turned out to be a cracked metal halide bulb. UV radiation was the culprit here. That may sound silly but due to the configuration of lights in his canopy, it's actually hard to see the bulbs without going out of your way to view them.

The point I'm trying to make here is take nothing for granted. Sometimes the problems we are trying to solve are right there in front of our face. Sometimes it is just so obvious it's the last place you are looking. If something can be gained here it is that we should consider doing more thorough, regular checks on equipment as part of our regular regimen and don't always look in the "obvious" places for troubleshooting problems.

Happy Reefing!

Matt Little
President DFWMAS



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DFWMAS Calendar

Monthly Meeting - Wednesday February 11, 2009

Location - Stacy's Furniture
1900 South Main Street, Grapevine, Texas 76051

Time - 7:00pm to 9:00pm

The upcoming monthly meeting on March 11th will be something a little different. We will be doing a roundtable discussion if you will. The floor will be open for questions from the audience. Seasoned reefers are more than welcome to step up and offer their \$0.02 by fielding questions from those in attendance. We will have a panel of at least 6 members. If you have a question you need answered bring them to this meeting and we will do our best to answer them.



DFWMAS Mission Statement

- Strives to initiate public interest in the marine aquarium hobby.
- Educates hobbyists regarding the importance of the marine ecosystem.
- Increases knowledge in the husbandry of the closed marine aquarium system.
- Promotes captive propagation.

Fish Profile:

By Matt Little

Pseudochromis flavivertex

Minimum Tank Size: 30 gallons

Family: Pseudochromidae

Origin: Tank Bred (USA)

Care Level: Easy

Reef Compatible: Yes

Diet: Carnivore

Color: Blue & Yellow

Temperament: Semi-Aggressive

Max Size: 3"

Water Conditions: 72-78°F, 8-12 dKH, SG 1.020-1.025, pH 8.1-8.4



Description: This is a fish I have personally owned for a little over a year. I have found this species to have quite the personality. My particular specimen is somewhat reclusive and shy but by no means spends considerable amount of time hiding. He simply likes to dart in and out of the rock work and observe those around the tank. It is almost as if he likes to view tank viewers from different angles. He is certainly always aware of his surroundings. Although a 30 gallon system is recommended he has done nicely in my 20 gallon (long). He is typical of other Pseudochromis in that he is not tolerant of reef-safe Wrasses. This fish is by no means rare but not the most commonly kept in my experience. That combined with the fact they are tank bred (mine from ORA) was another attraction to give this fish a try. He definitely keeps my bristle worm populations in check. I have found this to be a very hardy species that should be provided a system with plenty of hiding spots and caves for them to retreat and explore.

Snails vs. Crabs the ultimate throw-down.....

By DaveJ/David Johnson

Over the years I have been read and responded to many requests about choosing a clean-up crew for a Marine Tanks, both Fish Only and Mixed Reefs and was asked to do a write-up for the newsletter.

In my 8 years in the hobby, I have probably kept just about every commonly available snail or crab at one time or another. When I first started, I took the advice of the LFS and purchased a mixed crew consisting of Starfish, Snails and Hermits. I was a noob, so I took that advice as the letter of the law and over the following years learned that it just didn't work for me or my critters.

Now I am an animal lover, we all are if we get into this hobby, and my first rule of thumb is not to put anything in the tank that I know will be eaten or preyed upon, unless that is its purpose or anything I don't think I have the equipment or skill to keep alive. Not only alive, but thriving as well. This ended up transitioning my view and outlook on cleanup crews.

I took a hard look at what animals I was putting into my tank for the purpose of cleanup. After many hours of reading, both online forums and publications, I came to the conclusion that I was doing my snails a serious disservice by housing Hermit Crabs in my tank. After coming to that realization I had a task in front of me, devising a cleanup crew that will not only be reef friendly, but will do the job we need them to do in the tank.

Crabs... the serial killers of the Marine Tank.

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Let's talk about what a Hermit Crab and other crabs in general add to our tanks and their function in our little closed environment. A Hermit crab is a cute little animal with a nasty disposition. They offer some great coloration, my favorites being the Scarlet Red Leg and Electric Blue Legged variety. They are also very easy to keep; they feed themselves and go about their business. They never get ick; they suffer from no known illnesses and provide some interesting visuals to a system. They pick at algae, they eat the fish poo and detritus that builds up in our systems. Basically they make a fine cleanup crew member, with one serious downside. They are opportunistic feeders and will shuck a snail out of its shell in a blink of an eye. No snail is safe around them, even large Turbos. I once saw one of my old Scarlets cut the head off a 2" Turbo snail in about 3 snips of its claws and proceed to eat it. This hermit was about the size of a nickel; no way would it use the shell as a home. It was just looking for a meal.

Other species of crabs share the same habits as Hermits. We all know about the various hitchhiker crabs like the Gorilla Crabs, Rock Crabs and those beady red eye monsters that can grow to huge sizes unknown and hidden away until fish start disappearing without a body showing up. What about the other, supposedly Reef Safe ones DaveJ?? Well, I am glad you asked. They are no better.... Period. Emerald Crabs are commonly used to rid the tank of Bubble Algae, not always successfully I might add. They also have been known to hunt down and slaughter snails for food. Once they reach a certain size, they have also been known to munch on corals, fish and anything they can get their grubby little claws on. Sally Lightfoots are also commonly sold as part of those 'packages'. Well my friends, those little crabs grow rather large and can actually swim fast enough to catch fish. They are not Reef Safe either. Arrow Crabs are often purchased because they eat things such as Bristle Worms. These nasty little animals will also eat snails, limpets, and small fish roosting in crannies for the night. Ever see Starship Troopers? Those were the space version of Arrow Crabs.....

I'm sorry to say that Crabs have a bad reputation, yet they are continually sold and utilized as Reef Safe members of our tanks. This is a major fallacy in the hobby and this article will hope to steer you in the right direction. Crab's like Hermits should be kept, not because of what they do for cleanup, but because you want to keep them in your tank. However, you should realize that you have a murderer in the mix and he will strike again and again, not only to your detriment, but to that of your snail population as well.

Now there are some crabs that are truly Reef Safe. These include the cute little bandits (Acro Crabs), Porcelain Crabs and the like. These crabs can offer some variety to our Reefs and should be welcomed with open arms.

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Snails... The quiet and peaceful janitor of the Reef

There are many different snails available for our systems. Most are relatively inexpensive and each has a unique skill designed by nature. Nearly all of them are herbivores, yet some are carnivores or omnivores and most are Reef Safe. I will discuss later which are not, including those that should not be purchased under any condition, but overall the vast majority of snails available to the hobby are well suited for our tanks.

The algae eaters are the primary workforce in our systems. They eat macro algae, micro algae, detritus, fish poo, slime and any number of things we try to keep out of our systems. The following is a list of each type and what they commonly eat. I will also attach a value from 1-5 on their algae eating ability with the lowest score going to the least amount eaten.

Trochus Snails – These snails come in a variety of flavors, from the Black Footed powerhouse to the white footed variety. They will happily mow down hair and macro algae, along with the green crud that collects on the glass. They will also feed on diatoms on the rockwork and glass, but usually only venture into the sand to get to the next rock or the glass. The white foot variety eats at a level of 1 or 2, so they don't eat much. They are attractive though and in large enough numbers will aide you in keeping algae down. The Black Footed ones are powerhouses; they rank up at a solid 4 and will mow down algae a good clip. Both varieties will reproduce in our tanks, given the right conditions and amount of food available. I have had them spawn many times in my system finding babies all over the place a few months later. The normal Trochus should live many years and some get up to 2 inches or larger. The black footed Trochus also has the ability to flip itself back over should it fall off the glass or rocks. Aside from the Atlantic Nassarius, it's one of the few that do this.

Margarita Snails – These snails are great for diatoms and micro algae and they eat quite a bit, ranking as a 4. They are pretty snails, especially the black ones but should be added with caution. They are also a temperate snail, so they are used to cooler tank temps. If you keep your tank above 78 degrees, you should avoid these snails since they will die over time.

Turbo Snails – These are the bulldozers of the Reef Tank. They get very large, some grow to 3 or 4" or larger given enough food and time in the tank. They eat quite a bit of micro algae, including hair algae. A handful of these go a long way getting a score of 4 on the eating scale. They do come



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with some caveats though, due to their size they can tip over corals and frags quite easily and even dislodge smaller rocks. They have a habit of turning over and if you do not rescue them or can't reach them, they will die if they don't get a hold of something. This can cause problems in the tank since a large snail like that rotting in the corner can pollute a tank and cause ammonia levels to rise and trust me when I say this... pulling a rotting Turbo out of your tank is no picnic. The smell is awful!!!! I'd rather change a diaper than deal with a big smell, mushy dead Turbo. If size is a problem, consider the zebra turbo, it eats less, but comes in a more compact design.

Astraea Snails – These are the most commonly used snails in our tanks next to the Turbos. They are cheap and readily available at just about every online or LFS supplier. They also are some of the biggest dead-beats around, eating at a score of 1. There are a number of varieties available and some of the prettiest shells around. There is a pacific version out there sold at times that has a rainbow colored shell. Unfortunately those are cool water snails and don't last long in our tanks. The tropical varieties are pretty hardy though and can live for many many years getting upwards of 2" or so.

Ceriths – These great little snails are very common as well and affordable. They come in two common types, the Caribbean which is shorter and stout and the Mexican which have a long spiral shell. These snails are a cleanup crew staple, eating detritus, food, fish poo and algae as well. These are great omnivores, though they are not the true scavengers that Nassarius are. They are a great compliment to them though and replace a hermit crab quite nicely. The other nice thing about these snails is that they lay eggs and reproduce in our systems quite readily. They live for a good amount of time too, years in some cases but stay small. It takes a goodly number of these in a system due to their size, but they are worth their weight in gold.

Nassarius Snails – These are the foundation of any cleanup crew, provided you have sand in your system. These sand dwellers bury themselves in the sand until food is available, either feeding of the tank or something dying off. Until they rise out of the sand bed like zombies out of a grave, you can spot them by their snouts sticking up out of the sand testing the water for the smell of death and decay. These come in two main varieties, the Atlantic and Tongan versions. The Atlantic versions are small, about ¼" in size and the Tongan variety can get upwards of an inch or so. Their activities are they same, but their temperament is quite different. Nassarius (Atlantic) will have the courtesy to wait until something is dead before they start to feed. The Tongan go in like a pack of Hyenas or Vultures and won't wait until something is dead before they start to consume them. These snails often get a bad rap because of this habit, but I assure you, they are Reef Safe and will not go after a healthy animal. If your clam gets overrun by them, the clam was on its way out, they did not attack it. This could cause some problems because not everything in distress dies on its own, so choose accordingly. The Atlantic species gets a 2 score on the eating scale, while the Tongan gets a 4. I've fed them krill before and 3 or 4 of them make

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quick work on them. In addition to cleaning up the dead and dying, they will also help turnover your sand bed, so they are absolute additions to any DSB.

Nerite Snails – These are also very useful critters, one of the few snails that will consume Cyno and film algae's, including diatoms. They are attractive snails, some having rainbow coloration to their shells. They tend to congregate at the water line, being a tidal dweller, so keep an eye on them as they have been known to climb out of the tank or into overflows with alarming regularity. They get an eating score of 3 due to their size, but a 5 on the variety of what they eat. In my opinion, these are essential additions to our tanks due to the wide variety of things they eat.

Conchs – Conchs are often forgotten about in our cleanup crews, yet they are some of my favorites. They come in many forms and sizes, my preference being the Florida Fighting Conchs which max out at 4 or 5". They are rarely available at that size, usually finding them in the 1-2" range. They grow slowly but steadily and make interesting additions to the tank. Their big eye stalks and method of moving around (Skipping over the sand using their foot) is entertaining. They require a sand bed however to bury themselves in. The sand bed should be a DSB or at least 2 – 3" deep. Often times they will bury in the sand and stick their trunk out to feed on the surrounding areas, leaving little pellets of sand behind them as they go, much like Cucumbers do. Their primary foods source is detritus and slime algae, though they will consume micro and macros as well but their primary feeding is on detritus and fish pooh. They eat a ton, so if needed, you should drop some pellets on the sand occasionally. They also have a nasty habit of disappearing for weeks on end. I had one disappear for 2 months once. I thought it was dead in the sand someplace, only to find it moving around one morning. The other readily available species are the Tongan Fighting Conch and Queen Conchs. There are other species, but those are the most commonly collected and sold. The Queen Conch can grow very large, so if you get one and it lives long enough, you could end up with a sizable critter in your system. In the wild they get upwards of 12" or so. I know a guy in Florida who had one like that and he fed it rabbit pellets J Due to their size and eating ability, these babies get a 5 on the feeding score. Recommendations vary on numbers of these per tank, but one or two smaller ones will be fine. If you have a larger sand bed, you can house more but add them over a period of months so you can adjust the number based on how much they are eating.

Misc Snails and Slugs – There are quite a few snails and slugs that you can add to your tank. Let's go over some of the lesser known but common additions to our systems.

- **Sea Cucumber** – These are sand dwellers and process sand eating the crud off it and leaving behind nice clean sand pellets like a rabbit does. There are many varieties, but my recommendation is always the Tiger Tail. Any dull or brown

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variety will be fine, but you have to be careful with the brighter colored ones as sometimes they will die and pollute (poison) the tank. The reef turd looking ones are the safest, though if they get picked on my fish like a trigger or something, they can expel their guts. This isn't good for the tank or the cuke, so choose wisely.

Crowies – These come in different varieties as well are not all reef safe. The smaller ones will eat detritus and dead tissue matter, but the older and bigger they get, their diet changes and they will start to consume soft corals, LPS, Nems and Sponges.

Abalone – Not only tasty, these are very interesting animals. They can get rather large and are really a cooler temp animal, like the Margarita, but they are high energy consumers of Algae scoring a 5 on the scale. They are mostly nocturnal, so you won't see them often, but they make nice additions provided your temps are suitable for them.

Limpets – There are many many varieties of limpets, most in the hobby are either the Key Hole Limpet or the Black Limpet. Limpets are variety eaters, they will eat algae, film algae, cyno and just about anything they can feed on that is not wanted in the tank. Certain species have been known to munch on Softies and LPS occasionally, but the Key Hole and Black Limpets are totally safe. The black limpets reproduce readily in our systems. I started with half a dozen in my current system and have upwards of 40 or so in my system now, even in the remote sections and associated tanks. They are broadcast spawners so you will end up with them in the sump, your skimmer and any tank plumbed into the system. They eat quite a bit scoring at a 4, and are neat additions, even though they are nocturnal.

Sea Hare – These ugly but fascinating animals are a god-send if you have a hair or bryopsis problem. About the only animal that eats Bryopsis and doesn't die from it, they are voracious eaters scoring a 5+ on the scale. They get large, upwards of 5 to 6" in some cases. They are safe so long as they do not spawn or die in the tank. Once they have laid eggs, they will pass on so if you find an egg mass, remove the hare from your tank and dispose of humanely. If one dies, remove it immediately and start carbon running just in case. I had one eaten by my Elegance Coral and it was quite messy and smelly. No harm done though, other than to the Hare.

Lettuce Nudi – These pretty nudis are quite helpful for eating Hair Algae, though it takes quite a few of them to put a dent in a serious outbreak. They are interesting animals, though expensive for what they do. They score a 2 on the scale.

Collonista Snails - These mini turbos are nice little snails.

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They don't eat a ton, but in numbers they can keep the nooks and crannies clean of algae. They readily reproduce in the tank and look like rice crispys on the glass at night. Being nocturnal, you won't know you have them until the lights are turned on late at night. Their size gets them a score of 1, but if you get a lot of them in there, they can help keep algae down.

Non Reef Safe Snails

There are some varieties of snails you want to avoid in your tank. Some are sold on the market, others are hitchhikers common on LR etc. Most commonly sold are the Bubble Bee snails. These are carnivores and eat other snails and worms in the sand bed if detritus and dead tissue is not available. I don't recommend these to anyone as they are the snail version of Hermits. Another common snail sold on the market that should be left in the wild is the Orange or Red Foot snail. These are cold water snails and will not survive long in our tanks. They are very pretty, but best left in the wild. Whelks of any sort are to be removed and disposed of. They prey upon other snails and can wipe out your snail population over time. Make sure you get your Atlantic Nassarius from a reliable source as these are often confused and sold, only to turn out to be Whelks.

The leftover Algaes

So far I have provided species of snails that eat everything in our tanks, from Hair Algae, Diatoms, Detritus, Dead Tissue, Cyno, Macro Algae etc. There are some algae that are just plain difficult to get rid of. Bryopsis is one, though a Hare will eat it. This can be removed by using Tech M to get your Mg over 1500 or so for a period of a couple of weeks. Other than a Hare, Tech M and manual removal combined with PO4 and nutrient reduction, that is about it as far as solutions to that problem. What about Bubble Algae? Emeralds are good for that right? Well yes and no. Some have been demonstrated to eat it using their 'salad tongs' but do they really eat it or just pop them? I have seen no viable data on that so I will leave that as an unknown. I still think the risks of adding Emeralds outweighs the possible benefits of ridding yourself of bubble algae and would recommend a Dejardini Sailfin or Sohal Tang first, or if that's not possible than manual removal and yes, even popping them. If you have a good skimmer going, you will eventually get any spores out of the water. Just like anything, it will take time and dedication to get rid of it, but try that before you add a snail killer to the tank, or at least remove the things after they have done their job. Put them in the sump and keep them there in case it comes back, but don't leave them free, roaming around for a snail snack. There are other algae that nothing but nutrient reduction, Algaefix or manual removal will get rid of. Things like turf algae, red encrusting fuzzy algae, brown wafer algae etc. I know of no snail that will eat that stuff, nor fish for that matter. If you get that, you can bet your bippy no crab will eat it either so you'll need to remove it some other way.

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Stocking Tips and Advice

So how many of each of these do you suggest DaveJ? Well I don't do that... I don't know how big your tank is, how much algae you have in your system at any given time nor what snails you currently have in your tank. However, I will give you some advice that was passed down to me many years back, start small and work your way up. Forgo those clean-up packages and customize your own crew. Add a few here and there of different varieties and see how they do. Take your time and let them work for you before adding to their number. The goal here is to add enough snails to do the job and keep your tank clean, but not enough to starve themselves out. Let the tank feed the snails, because if you are adding food to the tank for the snails, you have too many. Keep a running count on your population and when you remove those that die etc so you know how many you have added and what happened to them. Snails are not immortal, so you will have losses occasionally but if you lose snails on a regular basis, you have a problem somewhere along the lines. Either you have too many and they are starving, you have a killer lose in the tank or your acclimation procedures are not careful enough. Remember a snail is a sensitive creature and needs to be acclimated slowly and carefully before putting into the tank. Some species like the Tiger Trochus and Atlantic Nassarius are self acclimating, they will close up in their shells with their closure apparatus and open slowly once they go into the tank. I still recommend a slow and careful acclimation but if they show up in a wet paper towel or newspaper, don't freak out. This is a common shipment method since snails tend to foul their water up during shipping. If they do ship like that, acclimate them immediately, don't wait since the ammonia and pH will need to be adjusted for them to survive.

Conclusions

So what have we learned by this little journey down Snail Lane? Well we have learned that there is not Hermit or Crab around that can't be replaced by a snail. Everything a Crab can do, a snail can do and do better. If you get the right kind, they will be totally peaceful and may even replenish or expand their numbers on their own. What crab will do that I ask you?? With a little research and planning, you can find a snail combination that will serve your tank well and for a long time. Why continuously buy snails that die from predation by Hermits and Crabs? In some cases these snails are more expensive than your Hermits and Crabs and all you are doing is providing them with escargot sushi..... Do the right thing for your snails. Lose the crabs to the sump or sell them to a friend. Get yourself a nice mix of snails for your tank and enjoy the peace. Your snails will reward you with a clean tank, additional numbers than you can trade or sell to your friends and a worry free environment consuming just about everything we don't want in our tanks.

Most importantly though, develop a love for the snail, not only its functionality in your tank but the beauty of the animal itself. Learn to appreciate what they can do for you and utilize it to make your tank the envy of everyone around you.

Let me finish this with my last comment on Hermits and Crabs in general. I like the little serial killers, but I have learned to like the snails better. If you insist on having crabs in your tank, consider the snails in your tank. It may take months, but eventually they will fall prey to the crabs. Find a safe place for the crabs and snails to dwell independently of each other because if they mix, there will be death and wasted money.