



Guide to Making Money from your Aquarium
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Introduction to making money from your marine aquarium

Buying, stocking and maintaining an impressive marine aquarium can cost a fair bit of money. There are few ways you can make your aquarium self funding or even take it to the next step and turn your aquarium into a money-making business.

Increasingly in the world of home aquariums there is pressure on aquarists from governments and conservationists to limit the amount of marine species collected from the wild, this pressure is increasing as the extent of the damage already done to coral reefs around the world becomes apparent. You can capitalize on this new way of thinking by growing, breeding and propagating marine creatures you can then sell to aquarium shops or home aquarists.

This could be done by setting up a simple website, listing items on Ebay, advertising in your local newspaper/online aquarium forums or visiting pet shops and aquarium shops and offering your services as a supplier. This current trend definitely encourages aquarium enthusiasts to purchase marine creatures that have been aquarium reared and not collected from the wild. The first step you need to take if this interests you is to decide what area you want to specialize in:

- Breeding fish, corals, sea plants or invertebrates
- Propagating corals, invertebrates or sea plants
- Growing large impressive specimens of fish, sea plants, corals or invertebrates

Once you have decided what exactly you want to do, you will need to carry out your own research and become an expert on this subject and the species you want to use for your money making venture. A good idea is to ask around

and see what marine creatures are in high demand but are not that easily available to buy.

Obviously when first starting out you would want to concentrate your efforts on something that will not be too difficult to achieve, for example don't try to breed fish that no-one else has been able to as you could be setting yourself up for a difficult, expensive waste of your time. Start simple, then as your knowledge and experience increases expand your field of expertise.

Another thing to keep in mind is set up costs for your particular venture, make sure that you plan out your strategy very thoroughly and work to your plan and budget you have available, do not over capitalize.

Another thing to keep in mind is aquarium space, you may need more than one aquarium (depending on the scale of your project), ways to save money here are installing refugiums plumbed into your main tank, but it all depends on how much space you will need.

Remember start slow, keep detailed notes to see what is working the best and experiment!

Most importantly do research; read books, articles, web sites, online forums about your project and amass as much knowledge as possible before you begin as this will help you to avoid costly mistakes. Good Luck!

An Overview of Breeding Fish

Having a saltwater aquarium can be a costly hobby. It's not unusual for aquarium owners to decide they'd like to try to make money from their hobby. If your goal is to breed and sell fish to retailers and/or aquarium hobbyists directly, you'll need to learn how to effectively breed healthy fish.

Specific breeding requirements will differ depending on the fish you are breeding, but it almost always starts with the requirement of having a breeding pair of the species you hope to breed.

How Do Fish Make Babies?

There are actually two different methods of breeding used by fish. Some breeds of fish lay eggs while other breeds have live babies, referred to as livebearing.

Egg laying: The female fish lay eggs, and often require a male to fertilize the eggs. Between one and two weeks, depending on the type of fish, the eggs mature into fish and hatch.

Livebearing: The female fish is internally fertilized by a male fish, and then carries the fry for about a month before they are delivered. When the fish are born, the babies swim off to find a place to hide and food to eat. In most breeds, once a female fish has been fertilized by a male fish, she can produce multiple batches of babies without the presence of a male fish.

Using Breeding Tanks

The most common way to breed fish is to set up breeding tanks. This will

prevent the eggs or newly born fish from being eaten by other fish in the tank.

In the separate breeding tank, you can place the “parent” fish so that they may spawn and give birth to their young. Think of it as a honeymoon for the fish! Once they have spawned and/or given birth, you can remove the parents and return them to the main fish tank so that the eggs or babies are not harmed.

Breeding tanks need to be kept clean as eggs and fry need extremely clean water to hatch and grow properly. The tank can often be simple, bare with only a sponge filter for filtration. You'll be able to see any extra food or debris particles in the water and siphon them out daily to keep the water clean.

Another method for using breeding tanks is to allow egg-laying fish to breed within the community tank, and then move the eggs to the breeding tank to grow and hatch. You can often place yarn mops, plants, or a piece of glass in the community tank that the fish can lay the eggs on for an easy transfer into the breeding tank.

Breeding Within the Community Tank

While it's typically recommended to use a special breeding tank for the safety of the new fish, there are instances when you can breed within the community tank and avoid having the need for an additional tank. There are special breeding nets that can be installed within the community tank for livebearing fish to give birth and then to be used to keep the baby fish safe while they're growing.

Overview of Growing Large Specimens

It's natural to think the larger your fish, the healthier they are and the more money you can charge for them. However, there are a number of factors that contribute to the growth of your fish (and other marine creatures) and how large they can become. Some of the factors are constant and can't be changed, in particular, the species of the fish, while others can be modified by the aquarist in order to achieve the optimal growth rate.

More important than the overall size of your specimens is to focus on healthy growth that will not be detrimental to the fish over the long term. Fast growth is typically not good for your fish and can actually keep the fish from developing their full colors as well as cause other health concerns. Promoting healthy growth is good for the fish and your sales.

Growth Factor You Can't Change: DNA

The DNA of each fish specimen will always have a maximum growth limit. Hobby aquarists are not able to alter the DNA of fish – and while some long term breeding programs headed by scientists sometimes alter DNA in order to remove undesirable genetic configurations and encourage desirable ones, this is not something you can do for your little breeding program.

Foods to Promote Growth

Both starvation and overfeeding will have detrimental effects on how your fish grow. Fish require varied diets with essential nutrients that are given in suitable proportions. They also need to have appropriate feeding intervals and times.

When you are feeding your fish and you notice they eat very little, or nothing at all, you need to find out why. Sometimes, a fish that is eating poorly may be ill, other times they may be sick of the meal you are providing. Water chemistry can play a large role in the desire for fish to eat, so be sure you are checking your water chemistry and level of nitrogenous waste regularly.

If a fish stops eating properly, try a simple fix first of changing the type of food you provide. If they had typically been eating a flake food, try a pellet version instead. In some cases, you may have to offer the fish live foods to trigger their natural hunting instincts and get them to begin eating again.

Study your fish species in books and online to determine what they eat and how they eat in the wild, so you can do your best to replicate that within your aquarium.

Growth Prohibitor: Disease

If there is disease within your tank then your fish will be using their energy to fend off the disease and bad microorganisms that will result in their being much less energy available for them to grow! Some fish are capable of fending off diseases like Ich or Velvet without too much noticeable difficulty or intervention on your part – if your goal is to promote growth you'll want to work hard to ensure the parasites never enter your tank in the first place. Also, frequently adding medication to your fish tank is not the way to handle or prevent disease, as medication can cause stress for fish which will also result in a reduced growth rate.

To prevent disease from hampering the growth of your specimens, always quarantine new fish, soak new plants in saltwater before introducing them to the

tank and cultivate your own live food.

Promote Growth and Health Through Water Quality

To know which water parameters effect your fish and their optimal growth rate, you'll have to do a bit of research regarding the species you are keeping. When you are selecting fish for your aquarium, you'll want to choose fish that prefer similar water conditions so that you can keep the water at the optimal levels for each of your fish, rather than setting the water parameters at levels that are “the least damaging” to a larger variety of fish that require different water settings.

In general, the most important water parameters in the aquarium for all species include the temperature, water hardness, nitrite and nitrate levels, as well as the pH-value and the levels of ammonia. They can all interact with each other and altering one of them produces surprising effects on the others which can be detrimental or beneficial to the fish. Before making any water condition changes in the aquarium, be sure to thoroughly research it.

Watch Out for Tank Bullies

If there are bullies in your tank, they will cause stress in weaker fish which prohibits their growth. The same will occur if you have too many fish for the size of your aquarium, although in some cases aggression will be spread out over many different species and minimize the effects of bullying to any one fish.

Overview of Propagating Corals, Invertebrates and Seaweeds

Propagation is simply to multiply the number of individuals, it is also referred to as “fragging” (short for fragmenting). In the aquarium this can be done for corals, sea plants and some invertebrates. The basic principle involves cutting up the organism and getting each cutting to grow into an entire new organism. This regeneration ability only occurs in some invertebrate species, all plants and most corals. With time, optimal water conditions and a lack of stress propagated individuals can grow quickly and be fragmented in turn themselves.

A key consideration for propagation is space, as each fragment of organism will regenerate into a full size adult if left long enough. It is not uncommon to fragment more than one piece of “motherstock”, so as you can imagine space can fill up very fast. It is often recommended to keep a separate propagation tank.

Propagation requires relatively little specialised equipment, it does however require a fair amount of planning and preparation. A sharp implement (scissors, razor blade, secateurs can be used to cut off a healthy growing tip of coral (3-10 cm seems to work best) then the “frag” is glued, tied or attached with a rubber band to a piece of substrate on which it will eventually attach itself and grow into a new coral.

This propagation principle also works for marine plants and some invertebrate species. Each individual species may need to be propagated in different ways regarding the area to be cut and placement and treatment of the fragment removed.

The key to successful propagation is working quickly and carefully to avoid damaging the motherstock and the frag. Careful handling is a must as is aftercare. After propagation placing the motherstock organism where it came from will help minimise stress, ensure adequate food, lighting and minimal stress (from other marine creatures, poor water quality etc), these factors will increase your success rate.

Disease is something to keep in mind while fragging, ensure implements used for cutting are cleaned with rubbing alcohol to sterilise them and you can even add activated carbon to the water afterwards to eliminate any nasties. The best

way to prevent infection is to minimise stress after fragging, this can be achieved using a propagation tank to keep the frags away from any possible infections that may reside in the display tank while they are healing.

Some organisms when fragged can exude toxic substances into the water as a defence mechanism; a propagation tank and activated carbon (charcoal) can help to mop up this, as can placing the organism into an area of high water movement.

More information on fragging can be found in my “Propagation of Invertebrates, Corals and Sea Plants” report.

Breeding Tips for Fish

Breeding fish is a rewarding experience, although takes a considerable amount of patience and some trial and error. It's a lot like when you were first setting up your saltwater aquarium - you had to run water quality tests and make changes until you got everything set up properly to care for your fish. You need to be scientific in your approach; experiment if you want to and take detailed notes so you know what is working best.

Water quality is important for the health of your fish in general; but is extremely important when you are trying to breed saltwater fish as well. The specific levels and chemistry will depend on the fish, so you will need to do a little research regarding the type of fish you want to breed.

The temperature of the water is just as important as the chemistry – so make sure you've got the water temperature appropriately set for the fish you are attempting to breed.

Many fish will eat their eggs or young, so it's often best to move the eggs or newly born fish into a separate breeding tank (that's already been prepared with the appropriate water temperature and chemistry).

3 of the Easiest Salt Water Fish to Breed:

1 Clownfish.

You need a pair of clownfish to breed. All clownfish are born male. As they become adults, the largest and most dominate fish in the group will actually become a female clownfish. The second largest will become the breeding male.

It's a good idea to keep your clownfish pair in a separate tank if you are planning to breed. The tank should be approximately 200 liters. In this tank, you'll want to give the parents a nice compatible anemone to live in, a few live rocks and a layer of coral sand on the bottom. Clownfish need bright lighting, good filtration and a protein skimmer to ensure proper water quality.

While your parent fish are preparing to spawn, you'll want to feed them a varied diet of fresh seafood and vegetables, including prawns, squid and mussels in small portions at regular intervals.

When the fish become more aggressive, this means they are about to spawn. It can be within one month to a year after the clownfish have settled into their new home. You'll enjoy watching a "clownfish waggle" as the male clownfish dances up and down in front of the female.

Both fish will clean one of the rocks in the tank by biting on it. When the spawning is complete, the male will be responsible for attending to the eggs and the female will protect the eggs and supervise the male. Spawning will occur in intervals of about two weeks, and you should leave the eggs alone unless the parents turn out to be egg eaters.

The eggs will be bright orange in color, but will fade as the eyes appear. Hatching takes between six and fifteen days.

2. Damsel fish

Breeding Damsel fish is similar to breeding clownfish. You start with a pair of fish – and again, the fish will change sex so that one is male and one is female so that breeding is possible.

The male fish will find a flat horizontal surface in the tank, such as coral or live rock, and will clean it to use as their nesting site. Once he has gotten the area ready, he will begin courting the female fish. (Some males will court several female Damsel's at the same time, and gather all of their eggs in the same place and then guard them all!) The male will literally fan the eggs with his fins to keep them cool, and sometimes forget to eat himself while protecting the eggs.

The male fish will dance for the female fish, often changing his colors and making loud clicking sounds.

Once the fry have hatched though, the fatherly damsel loses interest and it's best that you remove the fry from the busy tank and place them in a breeding tank to grow. You can feed them plankton in the early days.

3. Angelfish

Breeding Angelfish starts with getting a mated pair. While it could be possible to add just two Angelfish to the aquarium and end up with a mated pair, you'll have much better results if you have at least 3 Angelfish, if not 5 or 6. Get them during the fry stage and allow them to grow up together in order to increase your mated pair possibility. They can be fed flake food and frozen bloodworms.

When the Angelfish have paired, you will probably notice that the two of them fight with other fish. They will start picking at a flat surface in the tank in order to prepare a place to lay their eggs. You can place a piece of aquarium tubing in the tank, vertically, so they can use it to lay their eggs on; and then make it easier for you to move to the breeding tank afterwards.

The female Angelfish will lay eggs on a vertical surface, and the male Angelfish will swim over to fertilize them. This typically happens during the daytime.

Once the eggs have been fertilized, you can move them to a breeding tank for safety from other fish if you'd like. Between seven and ten days, you'll have fry that can swim. This is when you start feeding them hatched brine shrimp, flake foods or cuts of bloodworm.

Breeding Tips for Coral

Relatively little is still known today about breeding corals in a home aquarium. Sexual reproduction in captive corals is a true mark of success for any coral keeper, this is because getting coral to spawn is a relatively rare event in a home aquarium.

However it is still possible to do this, but it is much easier growing new corals from reattached fragments of the original coral (called fragging), this is usually done by cutting or breaking off a growing segment of coral growing tip of the branch about 3-10 cm in length and attaching it to the substrate by gluing, pinning or tying it in place. Other species reproduce asexually by a process known as “budding” where little buds of new coral are grown and drop off the main coral, these buds can be collected and be relocated to where you want the new coral to grow.

Key factors in getting coral to breed:

Inducing corals to sexually reproduce can be difficult but is possible.

The key factors for getting coral to spawn seem to be water temperature and “moonlight” intensity and duration as well as photoperiod (basically mimicking what is occurring with the sun and moon outside with your lights). Another major factor is maturity of the coral (mostly being the correct size not necessarily age to spawn). These are some of the main factors that induce coral to spawn in the wild, so it makes sense for us to try and duplicate these signals at home.

Basically when you gradually adjust the water temperature to exactly the right level that exists in the geographic area (eg Pacific ocean) where your corals

come from in the wild (including any temperature fluctuations), at the time when they usually spawn, spawning in the aquarium should occur, but you will have to do some research to find out this temperature information. But not only does the temperature have to be just so, but also moonlight intensity and duration needs to be as it is in the wild; moonlight can be achieved by putting a dimmer on your normal lights at night time. Also photoperiod needs to be like it is outside (meaning leaving the daytime lights on for the same amount of time as its light outside and the same with the moonlight).

These steps to mimic conditions in the wild have had some success with aquariums, but because there is still not enough known about exactly what triggers spawning in the wild there is no sure fire way to go.

However, even without these spawning triggers an established, well looked after aquarium is likely to see some coral sexual reproduction at some point.

When corals spawn at night a good idea is to remove the spawn with a net and transfer it to a new tank, complete with a substrate the baby coral can settle on and attach to. It is widely thought that baby coral are attracted to settle on coralline algae in the wild, but in the aquarium environment many different hard surfaces will do.

Another thing to keep in mind when your corals do spawn is the negative effect it may have on the water quality, you will need to closely monitor this in order to keep the other inhabitants of your tank happy. Another thing to keep in mind is any fish that may enjoy a midnight snack of coral eggs, it is not unusual for a small school of fish to completely consume all a single corals spawn. Also, it pays to remember that a protein skimmer will take up a good proportion of the spawn also. So if you don't want your coral spawn eaten (by fish and protein

skimmers) make sure you are quick with your net to transfer them into a nursery tank.

Breeding Tips for Invertebrates

When breeding invertebrates you can breed those species used for fish food (such as mysis shrimp), tank cleaning (such as some species of snail, sea urchins and algae eating Emerald crabs) or display purposes (such as clown fish anemonies).

All types of invertebrates have very different requirements to breed. The best way to go about breeding them though is probably to use refugiums so pest species and predators cannot enter the tank, but optimal water quality is ensured from the maintenance of the display tank.

A good rule of thumb would be to get a fair number of individuals together of a particular species (especially one that has previously been able to be bred in captivity) and provide a similar environment to where they live in the wild. Feed them well and provide suitable habitat and eventually they should reproduce. Live sand or rock is a good addition to a refugiums, it provides food and place to hide and breed.

A good place to start is online marine invertebrate forums, here you can obtain specific information about your chosen species and ask any questions you may have.