



**FLUVAL**<sup>®</sup>  
SEA

**SALTWATER  
AQUARIUM  
CARE GUIDE**

Includes simple  
**STEP-BY-STEP INSTRUCTIONS**  
on how to set up a new aquarium  
and keep it looking great

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## Introduction

Welcome to the wonderful world of saltwater aquariums. My name is Mark Callahan (a.k.a. Mr. Saltwater Tank), and I've been in love with fish-keeping ever since my father brought home my first tank when I was 10 years old. Years later, I remain actively involved in the industry, running a popular website ([mrsaltwatertank.com](http://mrsaltwatertank.com)), hosting my own YouTube channel (Mr. Saltwater Tank TV) and traveling all over the world to set up and consult on saltwater tank projects of all shapes and sizes.

Most recently, I've joined forces with Fluval to create this practical saltwater aquarium guide, which is designed in a simple-to-follow format with useful How-To tips, pitfalls to avoid, stocking suggestions, reference photos, web links and more.

While the guide incorporates expert knowledge and explains everything you need to run a successful saltwater aquarium, my best piece of advice is to remain patient throughout the process and avoid getting lost in the endless pool of Internet opinions.

For now, simply take a deep breath, read on and enjoy!



Mark Callahan  
Mr. Saltwater Tank



**MR.  
SALTWATER TANK**  
**HAPPY TANK OWNERS. THRIVING TANKS.**

## The basic equipment to get started

Setting up a marine aquarium requires an understanding of what livestock you plan to keep, and providing the right the environmental conditions to ensure their proper long term care. There is nothing that beats the raw beauty of a thriving SPS (short polyp stony corals) reef, for example, but it can also be among the most expensive and time-consuming marine aquariums to operate. You can still enjoy reef keeping in a smaller aquarium (5 to 20 gallon range), and with the right livestock choices, your operating costs and maintenance time will be greatly reduced. In short, have a clear picture of what your budget will allow, where you plan to keep the tank and the amount of time you can realistically commit to maintaining it.

The following is a checklist of the most essential equipment required to keep your marine livestock, water and tank looking their best.



### AQUARIUM

Aquariums come in many shapes, sizes and materials. Glass is preferable, due to its ability to resist scratches. Despite what you may think, larger aquariums are not only typically easier to maintain, but also provide a more stable environment. We recommended going as large as your budget will allow.

### AQUARIUM STAND

Water is extremely heavy – roughly 8.3 lbs per gallon. This means that the water in a 10 gallon tank, for example, will weigh close to 83 lbs, and this doesn't even factor in rocks and sand. A strong base is therefore vital as any uneven support across the base of the tank can prove disastrous. Regular furniture stands, especially the self-assembly kind, are NOT suitable for use with most aquariums. Using them will also void your warranty. Fortunately, Fluval carries an extensive line of stands designed specifically to support its aquariums.

### FILTER

Filtration helps to remove harmful elements, trap debris, oxygenate the water and provide ideal surfaces for beneficial bacteria to cultivate upon. A combination of mechanical, biological and chemical filtration are recommended to help achieve optimal water conditions.

#### BIOLOGICAL FILTRATION:

Biological filtration relies on bacteria to process and filter the water in your tank.

**MECHANICAL FILTRATION:** Mechanical filtration relies on a type of medium (usually a sponge or foam) to physically filter out particles suspended in the water (i.e. fish excrement, sludge, uneaten food, dust).

#### CHEMICAL FILTRATION:

Chemical filtration removes pollutants such as chlorine, discoloration, tap water impurities and other dissolved waste materials through chemical reactions.





## HEATER

All fish are cold-blooded, which means their bodies are the same temperature as the water around them. Sudden changes in that temperature can cause stress, disease and even death, therefore, a heater is necessary to ensure the environment remains consistent and set to the ideal range they require. A thermometer, or heater equipped with one built-in, will help you keep a close eye at all times.



## WATER TREATMENTS AND TEST KITS

Ensure your water quality is optimally maintained by using Fluvial water treatments to remove and neutralize any chemicals in your tap water which, although harmless to humans, can be deadly for fish. **Fluvial Water Conditioner aka Aqua-Plus** is specifically formulated to condition water as soon as it is added to the tank, while **Fluvial Biological Enhancer aka Cycle** helps prepare the filter for your fish and maintains the aquarium's natural biological balance. **Fluvial Biological Cleaner aka Waste Control** breaks down organic waste to allow the filter to collect it more easily. As you set up your tank and even once established, regular testing is required.

## ROCK, SAND AND DECORATION

It is advisable to buy rocks, ornaments and sand that have been specifically designed for use in a marine aquarium. There is a vast selection to choose from, which can make your aquarium truly unique by combining various textures, shapes, colors and arrangements. This topic is covered in greater detail further in the guide.



## MARINE AQUARIUM LIGHTING

Understanding the needs of your livestock (specifically corals) will guide your decision on the type of lighting you need. Hard corals that build reefs in the ocean, for example, generally require high lighting levels of a specific spectrum and color temperature. Many soft corals and LPS (large polyp stony coral), on the other hand, require much less demanding light intensities. Whatever environment you decide to keep, it is preferable to use light units that are resistant to saltwater as it is very corrosive. Fluvial offers several waterproof marine-specific lighting solutions that will meet the needs of any budding marine hobbyist. **For further information, please visit [FluvalAquatics.com](http://FluvalAquatics.com)**





## ACCESSORIES

You will need to invest first and foremost in a Hydrometer, which is essential for your aquarium inhabitants and provides specific gravity and salinity readings in your saltwater (this is covered in further detail later on). Other key accessories should include feeding devices for your coral (i.e. extra long tweezers, a baster, etc.), a strong glass cleaning magnet, epoxy sticks for affixing your corals, a light lens cleaning kit, a few important marine supplements (i.e. alkalinity, calcium, strontium, trace elements) and a complete water test kit.



## PROTEIN SKIMMERS

By mixing air and saltwater through the use of a skimmer (there are many different types), you effectively strip organic matter out of the aquarium, mostly before it can break down further and plague your tank with ammonia and nitrite issues. The odor from a properly adjusted protein skimmer when removing and cleaning its “collection cup” demonstrates just how toxic the elements this indispensable piece of hardware removes.

## CIRCULATION PUMPS

Marine fish originate from water that has great force, therefore, strong water movement is key. It not only provides for a more natural environment, but also washes waste from corals, helps them propagate and more. Circulation pumps are not expensive and usually very energy efficient.



## SUMP PUMPS

Typically required for larger marine tanks, sump pumps are stronger pumps with good head capacity (they can deliver water vertically against gravity) that are exposed to very harsh conditions. Please note that only marine-certified pumps should be used, such as the Fluval SP series.



## Where to Place Your Aquarium

Deciding where to place your tank can be a big decision and once it is set up, moving it isn't something that is easy to do. Since your tank will literally become a fixture in your house, here are some tips to help you decide where to place it.

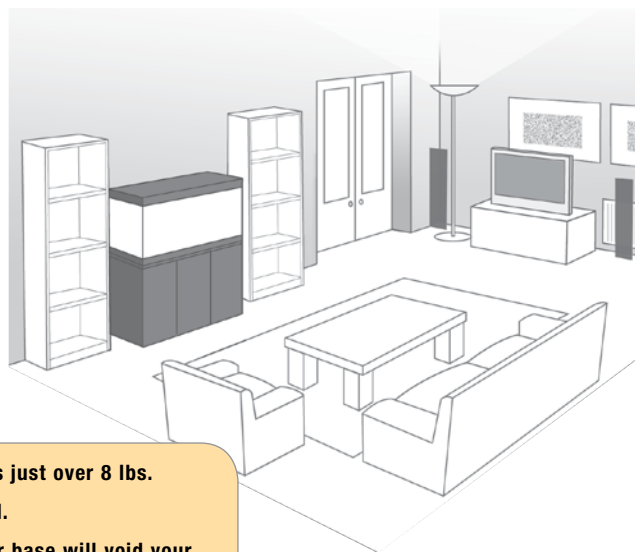
### Tip

Give yourself easy access to your aquarium - leave about 2-3" behind the aquarium to run the wires, and make sure you have unrestricted access to the canopy

**Remember 1 gallon of water weighs just over 8 lbs.**

**Always use the correct Fluval stand.**

**Use of any other kind of furniture or base will void your warranty.**



### AVOID DIRECT SUNLIGHT

While you might think that having sun shining into your tank is a good idea, natural sunlight can cause undesired algae growth, or heat up your tank beyond ideal range.

If you have no other option but to place your aquarium in sunlight, ensure you close blinds or curtains to reduce exposure as much as possible.

### POWER ACCESS

Make sure you have power outlets nearby.

Your aquarium requires numerous pieces of electrical equipment to run. Choose a place where there are at least 2 sets of power outlets nearby. You may also need a power bar for extra sockets.

### AIR VENTS

When desired, air vents can help cool your tank in the summer and heat it in the winter. Excess heat, however, is not advisable, so ensure your vents are not blowing air directly onto your tank. If your house has baseboard heaters, giving yourself extra space between your tank and the heater is ideal. Generally speaking, however, you will want to position your aquarium where it is not affected by any heating or cooling source.

### LIVING AREAS

Place your tank far enough from your TV. It isn't much fun to settle down to try to watch a movie and have a brightly lit fish tank distracting your view or casting glare across your screen. Also, every aquarium makes some amount of noise. You'll likely hear "white noise" (i.e. pumps running, water gently flowing, etc.), therefore, if the room has to be 100% silent, consider placing the tank elsewhere.



## Rock and Sand

Rock and sand serve several purposes in a saltwater aquarium.



### Tip

If the sand you choose is too fine, it will likely get blown around by the water movement inside the tank. Ideal sand size has a diameter of 0.04-0.08" (1-2mm).



### HOUSING

While saltwater tanks simply look better with sand inside, the sand bed is home to all kinds of critters that perform useful tasks to help the aquatic environment thrive. Rocks are also aesthetically pleasing and provide a hiding place for fish to feel secure. Use several small pieces of rock, rather than just one or two, to create several caves and crevices. Believe it or not, the more places a fish has to hide, the less it actually will.

### FILTRATION

Nitrifying bacteria lives in and on sand and rocks, taking fish waste and processing it into a less toxic compound called nitrate. Without the surface area provided by rock and sand, there will be minimal nitrifying bacteria in your tank, which leads to fish loss, algae outbreaks, etc.

Now that you understand why you need rock and sand for your tank, the question is how much rock and sand do you need?

For sand, you'll need enough to make a bed 1-2" deep, which roughly equates to about ½ to 1lb of sand per gallon. Saltwater aquarium-specific sand is available at your local fish store and comes in 2 varieties: Dry and Live. Live sand, containing natural organisms that more quickly establish a safe environment, is always recommended. Regular sand (i.e. playground sand) is never appropriate, nor is colored gravel used in freshwater tanks.

For rock, approximately 1 to 1.5 lbs of cured live rock (available from your local fish store) per gallon is recommended. For example, you will need about 5 to 7.5lbs of live rock for a 5 gallon aquarium, or 12-18lbs of cured live rock for a 12 gallon aquarium. Aquacultured cured live rock is best because it is environmentally friendly and does not harm precious coral reefs in the wild.

### DECORATION

When constructing a rock formation inside your tank, build directly on the bottom of the glass as this ensures a more stable fit than placing on top of sand. Ensure you leave enough breathing room between your structure and glass on all sides to allow for a circulation pump to push water through. Create some open caverns and channels throughout your structure to provide additional water flow space and avoid areas where organic waste can accumulate.

Since your rock structure serves as a base for various coral, you will also want to incorporate some flat areas where possible. Lastly, ensure that your rock formation is not too close to the water surface as it will not be practical for coral placement at a later time. Leave at least 3 - 4" between the top of your structure and the surface.

### Tip

FluvalAquatics.com and MrSaltWaterTank.com/Fluval include several helpful aquascaping videos.



## Salt

It is impossible to overestimate the importance of using a quality marine salt, which should mix to clear water within 5 - 10 minutes. You can have the best hardware available, but if your marine salt is not providing values within the ideal ranges mentioned below (which can be measured with basic aquarium test kits), it will become a problem.

- **pH:** 8.1 to 8.2. Be wary of high alkalinity salts, which can bring pH values to 8.5 or more and greatly stress your corals.
- **Alkalinity:** 150 to 175 mg/L
- **Calcium:** Approximately 460 mg/L
- **Strontium:** 8-12 mg/L
- **Magnesium:** 1200 - 1300 mg/L

## Supplements



Fluval SEA offers a wide range of saltwater-specific supplements that must be added back into the aquarium over time as corals, coralline algae and other elements will naturally absorb and deplete them.



### CREATING YOUR SALTWATER MIX

In a separate and clean container (i.e. 5 gallon bucket), add a professional grade saltwater mix, such as Fluval Sea Pro Salt, to either filtered drinking water or Reverse Osmosis water. Make sure to follow the instructions on the package until the salt is fully dissolved. Keep in mind the rock and sand in the tank will displace some of your saltwater mix, so don't be surprised if the amount of water you've prepared doesn't fit in the tank.

### FLUVAL HYDROMETER

A Hydrometer should be used to measure the salt level in your water. You may elect to use tap water, however, be aware of potential unwanted elements such as chlorine, chloramines, phosphate, silicates, etc.

Once the tank is filled with saltwater, plug in your pump, filter and heater. Leave the tank running for several hours to allow the water to warm up. Once the temperature in your aquarium has reached between 77-79 Fahrenheit (25-26 Celsius) and you get a reading of 1.025 on your hydrometer, you're then ready to cycle your tank.

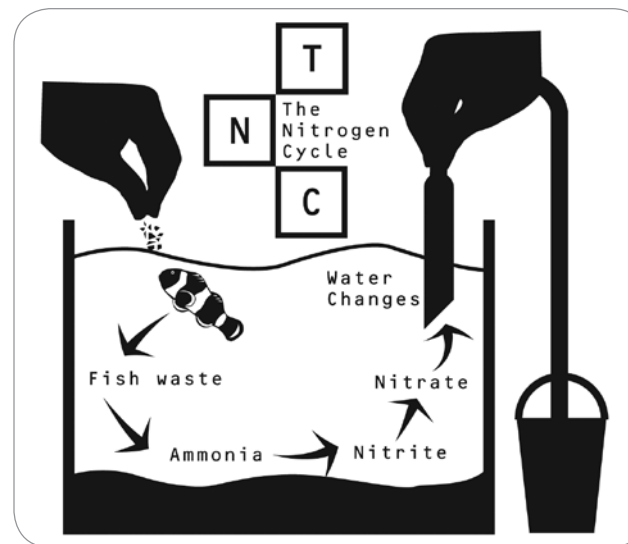


## The Nitrogen Cycle

Understanding the biology and chemistry that makes a saltwater tank tick is vitally important. Here are some key concepts to understand the Nitrogen Cycle.

### The Nitrogen Cycle

At its simplest level, the nitrogen cycle involves taking toxic Ammonia and processing it into less toxic Nitrates.



### Why is the Nitrogen Cycle important and how do I apply it?

When you first start your tank, it will have limited existing nitrifying bacteria to process fish waste, therefore, ammonia and nitrite levels will raise rapidly. To prevent this sudden buildup, you will need to "cycle" your tank. Cycling involves growing enough nitrifying bacteria to quickly process the ammonia into nitrates. One of the quickest ways to achieve this is by dosing your tank with Fluval Cycle or Biological Enhancer (see next page).

### STEP #1

When you feed your fish, their bodies process the food and excrete waste in the form of Ammonia (NH<sub>4</sub>) (i.e. feces and urine). Additionally, uneaten food breaks down and creates Ammonia as well.

### STEP #2

Ammonia is very toxic to your fish and invertebrates, but is a feast to nitrifying bacteria. Nitrifying bacteria will convert the Ammonia (NH<sub>3/4</sub>) into Nitrite (NO<sub>2</sub>), which is also toxic to fish but necessary in the overall process.

### STEP #3

Nitrites are then broken down into Nitrates (NO<sub>3</sub>). While Nitrates aren't very toxic to the livestock in your tank, if you let them build up over time they can reach toxic levels. That's where regular water changes come in. A water change involves taking part of the water out of your tank and replacing it with new saltwater. You need only change roughly 15-20% of your tank water, not the whole thing. One water change every two weeks is usually ideal.



## How To Cycle Your Tank

Your tank should be up and running for at least 24 hours. The water temp should be between 77-79 Fahrenheit (25-26 Celsius) and your specific Hydrometer reading should be 1.023-1.025.

### STEP # 1:

#### Realize it takes time

Cycling your tank can happen quickly, but it can also take days or at most, weeks. So take a deep breath and don't be in a rush to put fish in the tank. One of the best things you can do here is take it slow.

### STEP # 2:

#### Add Fluval Cycle or Fluval Biological Enhancer



Fluval Cycle or Biological Enhancer is a responsive biological aquarium supplement that immediately inoculates your aquarium water with a powerful team of beneficial nitrifying bacteria.

It goes to work fast, eliminating toxic

ammonia and nitrites to create a safe and biologically well-balanced aquarium for healthy fish to thrive. It also establishes safe conditions so that you can introduce fish to your new aquarium once you have completed the set up instructions outlined in this guide.

#### Dosing Fluval Cycle or Biological Enhancer for New Aquariums:

Follow the dosage instructions below when you add your first fish to the aquarium.

#### New Aquariums:

Day 1: 25ml per 10 gallons

Day 2: 10ml per 10 gallons

Day 3: 10ml per 10 gallons

#### When adding additional fish:

10ml per 10 gallons

#### Weekly Maintenance Dose:

5ml per 10 gallons

### STEP # 3:

#### Introducing Fish

Add new fish SLOWLY! We recommend no more than 1 fish every 1-2 weeks when your tank is new (the first months of its life).

The reason is that you want your tank's biological filter to build up enough beneficial bacteria, and that takes time. If you add too many fish too fast, you will have a build up of ammonia and nitrite, which can kill your fish.

### Tip

Never add fish to a new aquarium without treating the water first. Please visit [MrSaltwaterTank.com](http://MrSaltwaterTank.com) to view a video on how to properly introduce fish into a tank.

### STEP # 4:

#### Start Testing Your Water

While your tank is cycling, you are going to want to test your ammonia, nitrite and nitrate levels a couple of times a week. Nutrafin provides a full range of test kits for these and several other parameters.

Using Fluval Cycle or Biological Enhancer will result in a small rise in ammonia levels, nitrite levels followed by a gradual rise in nitrate levels. Don't panic, this is normal the levels will stabilize once cycling is complete.



## What to Avoid When Cycling Your Tank

**Damselfish:** Damsels are hardy fish, and are often recommended to help cycle tanks since they can tolerate reduced water quality during this process. Once cycling is complete, however, they can make poor tank mates since they are also known to be territorial, often nipping at other fish or even killing them.

**Table Shrimp:** The theory behind placing table shrimp (those for human consumption) in your tank is that you are providing food that will break down into ammonia, which will incite the cycle process. In reality, this adds an unnecessary step as the shrimp must first rot, and then get converted into ammonia, before your tank will cycle.

Using Fluval Cycle or Biological Enhancer, in combination with the fish in your aquarium, will provide all the ammonia required to complete the cycle process. No shrimp needed!

### Tip

Never cycle your tank with fish UNLESS you apply Fluval Cycle or Biological Enhancer. Forcing your fish to swim in a toxic pool of ammonia and nitrite can be lethal.

## When do you know when Cycling is complete?

The title is a bit misleading. Your tank is constantly converting ammonia to nitrite to nitrate, you just don't see it as you have enough bacteria to quickly convert any ammonia or nitrite before the levels get high enough to detect. As a guide, Cycling is achieved when the following levels are reached:

**Ammonia:** 0 ppm

**Nitrite:** 0 ppm

**Nitrate:** 5-10 ppm

### Tip

If at any time you see the ammonia or nitrite levels rise again, something is probably wrong. Potential causes include dead, overstocked or overfed fish.



Damselfish



Table Shrimp

## A Word About Nitrates

Nitrates are a bit of a moving target as they are a less toxic compound to fish than ammonia or nitrite, but you still don't want high levels of them in your tank (above 20 ppm).

Many saltwater tank hobbyists become concerned whenever their nitrate levels aren't at 0 ppm. A little bit of nitrate here and there (especially for fish only tanks) won't hurt anything.

**Tip:** The best way to control nitrate levels is with regular water changes.



## Adding Fish and Corals

Once your tank is stable and cycled, it's time to add fish and/or coral.

### HOW TO PICK FISH FOR YOUR TANK

1. Know the characteristics of the species you're interested in (i.e. feeding habits, compatibility with other fish, etc.) and only select those species that are intended for beginners. Later in this guide, you will find several recommended options.
2. Observe the fish's behavior at the pet store. A healthy fish will display normal behavior for its breed. For example, Clownfish and Chromis will be constantly swimming, while Blennies will largely perch and swim only some of the time. If the fish seems like it is acting strange (i.e. lying on its side, breathing hard, etc.), then avoid it. As it is likely sick.
3. Ask to see the fish eat. Once you have picked a fish, ask the clerk at the store to feed it, even if they advise that it has already been fed. A healthy fish will nearly always go after food
4. Remember that fish and corals grow. Most store fish are purchased as juveniles, and corals sold in small fragments or "frags." Your aquarium may look sparse at first, but this is preferable since everything will grow in due time. Remember that it's all about quality when it comes to keeping livestock, not quantity.
5. Start Slow. You might be tempted to add several fish at once. Please resist this urge and go slowly. One fish is fine to start, then add no more than 1 fish every 1-2 weeks. Remember, the biological filter of nitrifying bacteria needs to establish, and every time you introduce a new fish you are adding bioload (waste) to your tank. The nitrifying bacteria needs to multiply to process the waste from the new fish, so adding too many at once can cause your tank to re-cycle, which is bad.

## Acclimating Your Fish

Acclimating your fish is an important yet often overlooked subject. Many fish that seemed fine at the store have met unfortunate fates when brought home due to improper acclimation, so please follow these steps carefully.

1. Place the bag containing the fish in your tank. Do NOT open the bag yet. The bagged fish should float in your tank for 15 minutes so that the temperature of the water in the bag matches the temperature of the water in your tank.
2. After 15 minutes, take the bag out of your tank, cut it open and discard about 1/2 the water in the bag. Make sure you don't pour out the fish!
3. Place the opened bag back in your tank, then increase the bag's water volume 25% by using water from the tank.
4. Wait 10 minutes and repeat step 3 so that the bag is now full again.
5. Discard 1/2 of the water in the bag and repeat steps 3-4.
6. Pour out as much water as possible while keeping your fish inside. This can help prevent potential disease issues.
7. Finally, gently introduce your fish into the tank.





## Feeding Your Fish

Fish should ideally be fed 2-3 times a day.

Don't be concerned if your new fish doesn't eat for a day or two after you introduce it to your tank as travelling from the retailer to a new home tank environment can sometimes be stressful. Certainly do feed it, but sparingly. Don't be surprised if it takes a couple of days to begin eating again.

Variety is key when feeding fish, so a mixture of frozen and dry foods can form the basis of a balanced and nutritious diet. Frozen shrimp, krill, mysis, mussel,

clam, spinach, kelp and an assortment of frozen foods (which consists of a mixture of various crustaceans and vegetables) are all excellent choices. Including some flake and pellet food is always recommended to ensure additional nutrients are provided.

Remember that certain species may have a stronger need for plant matter than others (surgeon fish, for example), so ensure you do your research carefully and give them exactly what they need.

## How to Choose and Place Coral

The goal when bringing coral home is not to stress them, while providing sufficient water flow and light spectrum exposure for their specific needs. Don't be shy to ask your coral supplier (i.e. aquatic store, online retailer, etc.) about these particular areas of interest as not all corals are created the same.

Also, understand that a reef is a competitive place, and certain corals can actually be considered aggressive. Some grow quite substantially and can block light for those beneath them, while others can use their 'sweepers' to attack neighboring corals. With that said, don't crowd your corals and make sure they always have access to the aquarium light above.

You will also want to ensure that you place your corals securely to avoid getting knocked over by water movement, snails, crabs, urchins, etc. Corals must be bonded using a marine water-safe adhesive such as the Fluval Sea Epoxy Stick.



Fluval SEA Epoxy Stick



## Feeding Your Corals

Many corals that photosynthesize also require feeding. For corals with very small polyps, there are a variety of powdered and liquid commercial diets available. When feeding short polyp stony corals, err on the side of less food since they are already strongly supported by light and photosynthetic process. The same can be applied to anemones. LPS (large polyp stony) corals, on the other hand, need foods such as chopped clam or krill, and require that water movement is stopped (or at least reduced) about 15-30 minutes so they can properly ingest. Feeding usually twice a week is fine.



## Fish, Invertebrate and Coral Species

When considering what livestock to place in your tank, choose wisely as this is another area where mistakes can easily be made. As a responsible saltwater aquarium owner, it is your duty to keep livestock that is not only suited to your skill level, but also well-matched to the environment you place them in (i.e. compatible tank mates, size of tank, lighting needs, etc.).



### CLOWNFISH

Clownfish are hardy and great for both beginners and advanced hobbyists. They are easy to come by, fun to watch swim and can even pair up and breed in your tank. Clownfish are also often captive bred, which supports the sustainability of the hobby. We cannot expect to harvest wild-caught fish from the ocean forever, therefore, this supports the longevity of the species for future generations to enjoy.

**Tip:** Gold Stripe Maroon and Tomato Clownfish are examples of species that can be aggressive and large in size. Opt for Ocellaris or Percula Clownfish instead. They are hardy, much more friendly and smaller in size.



### CHROMIS

Chromis make great starter fish as they can better withstand environmental stresses. They are in the same family as damselfish, but are not aggressive. Chromis are also very colorful, so they'll add interest to your aquarium.

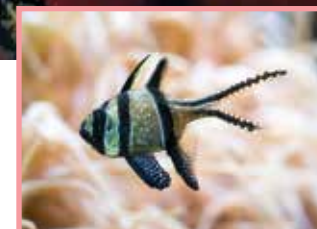
**Tip:** Stick to buying one Chromis. People often buy several in the hopes they will school in the tank. Over time, however, they always disappear, leaving the remaining few to fight with one another.



### BLENNIES

Blennies are also great for beginners. They're colorful, hardy and rarely aggressive. They are fun to watch, often perching on rocks and waiting for food to drift by. Blennies also eat algae, which will help keep your aquarium clean.

Avoid Scooter Blennies and Mandrins. They eat small invertebrates in your tank, called copepods, and nearly all saltwater tanks can't produce enough pods to keep them alive.



### CARDINALFISH

These are another commonly captive-bred species that usually hover in one area of the tank. They also have big eyes, making them viewable even at night. The Banggai Cardinals particularly do great in saltwater tanks.



### GOBIES

The Pink Spot Shrimp Goby and Orange Spot Diamond Goby are hardy and will sometimes eat mouthfuls of sand, which will get sifted through their gills.

The Yellow Watchman Goby is a resilient starter fish and fun to watch.

The Randall's Goby is also interesting to observe as it has a nicely shaped dorsal fin.



## Popular Fish with Special Considerations:



### MANDARIN GOBIES

Despite their beautiful coloration and notorious fluttering fins, Mandarin Gobies often only eat copepods such as Scooter Blennies. Most saltwater tanks can't produce enough pods to keep the Mandarins alive, therefore, their life expectancy is short lived.



### DAMSELFISH

As mentioned previously, damselfish are often recommended for saltwater aquariums as they are considered to be a great starter fish. When selecting Damsels, choose species carefully as some are less aggressive than others.



### TANGS

Tangs are a delicate species and require a well established aquarium to thrive. They are best suited for larger tanks (55 gallons and above) as they need lots of swimming room, despite what others may say.



### ANTHIAS

These beautiful fish are readily available, but can be delicate. They require frequent feeding and should be paired appropriately with the opposite sex so they don't fight.



### LARGE ANGEFISH (FRENCH, EMPEROR ANGELS)

These fish can grow over a foot in length and require lots of swimming room. They are best suited for larger aquariums, which you likely won't be starting with.



### EELS, LIONFISH, GROUPERS

These fish are for predator-only tanks. They don't play well with others and certainly aren't ideal for beginners.

## CORALS



**CANDY CANE CORAL**  
(*CAULASTREA FURCATA*):

Max size: 12" / Min. aquarium size: 10 gallons. They are hardy and fast growing, with short sweeper tentacles that will need occasional trimming. They eat a typical small-minced carnivore diet.



**DUNCAN CORAL**  
(*DUNCANOPSAMMIA AXIFUGA*):

Max size: 2" per polyp / Min aquarium size: 2 gallons. These are a passive, non-aggressive coral that are also hardy and grow fast. They are carnivorous, and prosper from some target feeding.



**GREEN STAR POLYPS**  
(*BRIAREUM VIRIDIS*):

Max size of polyps: Less than 0.5" (which spread rapidly) / Min. aquarium size: 10 gallons. This is another great passive coral choice, which is mostly photosynthetic (feeding not necessary).

## CORALS



**RICORDEA (RICORDEA FLORIDA, RICORDEA YUMA):**

Max. size: 2.5" / Min. aquarium size: 1 gallon. Yet another mostly photosynthetic species that benefits from micro plankton feedings. They are generally passive, however, can sting encroaching corals.



**YELLOW POLYPS**  
(*PARAZOANTHUS SPP.*):

Max. size: 2" (can spread rapidly) / Min. aquarium size: 2 gallons. They can be aggressive, so some removal from time to time may be necessary as they can easily multiply. They are also mostly photosynthetic, but can ingest typical carnivorous diets.



**ZOANTHIDS**  
(*ZOANTHUS SPP.*):

Max size: 0.5" / Min. aquarium size: 2 gallons. Zoanthids are mostly photosynthetic, but we suggest feeding them a couple of times per week with a typical carnivorous diet. They do need room as the colony can spread rapidly.

**SAND ANEMONE**  
(*PHYMANTHUS SPP.*):

Max size: 5" / Min. aquarium size: 10 gallons. Nematocysts are mild and best suited to smaller aquariums. They eat a typical carnivore diet (shrimp, mussel, krill, etc.).

**PINEAPPLE CORAL**  
(*BLASTOMUSSA WELLSI*):

Max size of colony: 18" / Min. aquarium size: 10 gallons. They will need to be pruned, but handle carefully as the skeletons are fragile.

Another passive, non aggressive species, Pineapple coral thrives with a typical carnivorous diet fed at night.

**CLOVE POLYPS**  
(*CLAVULARIA SPP.*):

Max size of polyp: Less than 1" / Min. aquarium size: 10 gallons. Clove polyps are not aggressive, and be warned that Pygmy angelfish may eat or pick at them. They benefit from night feedings of a typical carnivorous diet.

**MUSHROOMS (DISCOSOMA SPP. RHODACTIS SPP.):**

Max. size: 4" (can spread rapidly and encroach on other coral) / Min. aquarium size: 2 gallons. These are also passive and mostly photosynthetic, but can benefit from micro plankton feedings. Keep them at the bottom of the tank as they prefer lower light.

## INVERTEBRATES

**CAMELBACK SHRIMP**  
(*RHYNOCINETES DURBANENSIS*):

Max size: 2" / Min. aquarium size: 2 gallons. They eat a carnivorous diet and are good scavengers. Although typically peaceful, they are capable of attacking some polyps in rare instances. Keep them in groups.



**CLEANER SHRIMP**  
(*LYSMATA AMBOINENSIS*):

Max. size: 2" / Min. aquarium size: 10 gallons. They make a great addition to your tank as they are hardy, peaceful carnivores that help to clean parasites from fish hosts.



**RED LEG HERMIT CRAB**  
(*PAGURISTES CADENATI*):

Max. size: 1.5" / Min. aquarium size: 2 gallons. These nocturnal crabs are scavengers that also help to clean your tank as they require algae in their diet. They are peaceful, but may kill a snail to obtain a bigger shell for their own growth.

## Identifying and Preventing Fish Disease

Most living organisms can suffer illness at one time or another. The most effective way to deal with this reality is to prevent it from happening in the first place. Having to treat a stocked aquarium with medication can be stressful in itself. You need to get to know your fish well if you are going to spot diseases or illnesses before they become untreatable, so spend time observing our fish and how they normally interact within the environment. If you see any variation, the first thing to do is to check water quality as it may be a sign of pollution or poor conditions. If this is not the problem, you should then seek advice from an authority (i.e. your local fish store or supplier).

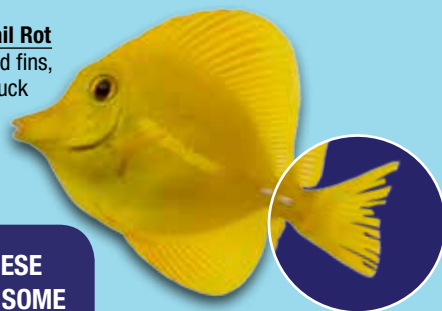
### TOP 10 TIPS FOR PREVENTING FISH DISEASE:

1. Choose only healthy fish, avoid purchases from aquariums containing sick fish.
2. Purchase fish in limited groups, slowly build fish populations.
3. Consider a quarantine aquarium. This will allow observation and

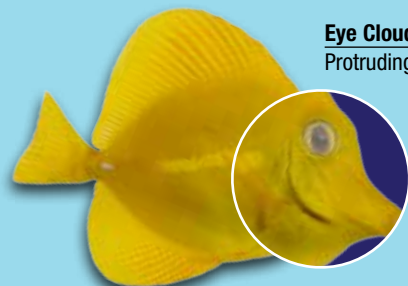
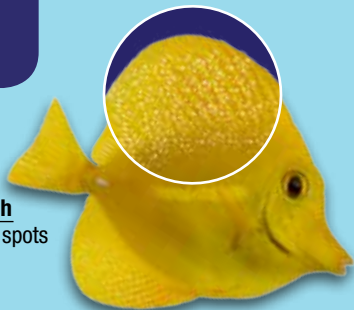
LOOK FOR THESE SYMPTOMS OF SOME COMMON FISH DISEASES

#### Fin and Tail Rot

Torn ragged fins, possibly stuck together

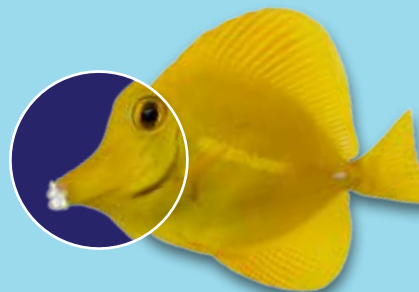


#### Ich White spots



#### Eye Cloud or Pop Eye Protruding or cloudy eyes

#### Body Slime and Mouth Fungus White viscous film on lips and mouth



4. Follow proper acclimatization of new specimens.
5. Always condition new water with Fluval Water Conditioner before adding to the aquarium. Chlorine, chloramines, and metals are damaging to aquarium inhabitants.
6. Perform basic water tests and maintenance on a regular basis.
7. After power failures, ensure that all equipment is working properly. Observe fish carefully, temperature variations will stress them.
8. Regular illumination periods are important for fish and plants. Switch lights on and off at the same time every day or use an automatic timer.

9. If a medication has been used, after the treatment is complete, perform additional water changes and use Fluval Carbon filter media to remove residual traces. Test water and dose with Fluval Cycle or Biological Enhancer and Fluval Aqua Plus or Water Conditioner. (Note: Carbon should always be removed from the filter during medication and replaced only when treatment is complete. Please note that many corals are affected by fish medications, so caution is advised).
10. Supply regular feedings of various quality foods.

### COMMON FISH DISEASES

#### White Spot Disease (aka "Ich")

A common ailment that responds to treatment well, although it is best to treat the whole tank.

#### Tailrot/Finrot

Look for torn, ragged or fins stuck together. Try to treat at early stage. If the rot reaches the body, cure is unlikely.

#### Skin/Gill Flukes

Watch for fish scratching themselves on rocks or plants, this nasty parasite causes colour to fade and fish to become feeble. They may rest near the surface. The good news is that this disease usually responds well to treatment.

#### Slimy Skin

A thin grey film that covers their body, usually in response to parasites.

#### Pox

White spots that join to form patches. Fish become emaciated and twisted, often caused by poor condition and food.

#### Mouth Fungus

Unlike body fungus, this requires specific treatment.

#### Eye Infections

Cloudy, protruding eyes could be the sign of fungus, bacteria, parasites or even fish tuberculosis.

#### Hemorrhagic Septicemia

A bacterial disease that is visible by reddish patches and streaks on the fishes mouth, fins and body.



#### Velvet Disease

Infected fish have a dusty look, the treatment is similar to White Spot.



#### Fungus

Usually only attacks fish weakened by other poor conditions, disease or parasites. Healthy fish will not be affected.



#### Dropsy

Highly contagious and difficult to cure, the fish's body can become so bloated that the scales protrude. Sick fish must be removed at once.

## Essential Schedule

The best formula for success is to keep a regular maintenance schedule. Here is a quick guide you can refer back to at any time for your future reference.

### EVERY DAY:

**FEED FISH** twice daily in small amount, taking care not to overfeed.

**CHECK ALL INHABITANTS** for disease, liveliness and normal behavior.

**CHECK TEMPERATURE** and make sure pumps, filters and lights are running smoothly.

**REMOVE ANY DEBRIS** like accumulated waste sitting between coral polyps or rock structure, uneaten food, etc.

### EVERY 1-2 WEEKS:

#### PERFORM A PARTIAL WATER CHANGE.

Change out about 15-20% of your water to ensure cleanliness and reduce build up of unwanted chemical waste. Be sure to replace any water you remove with newly mixed saltwater at the same specific gravity and temperature as the aquarium (Your hydrometer will be needed here). Also, measure basic water parameters (pH, Magnesium, Alkalinity, Calcium, etc.) using a proper test kit, and supplement where necessary. Remember, Fluval SEA offers a full range of saltwater supplements.

#### CLEANING INSIDE AND OUT.

Remove visible waste and siphon off water. Clean your lighting unit with a proper lens cleaning kit to ensure a consistent light source reaches your livestock. Clean glass surfaces (inside and out) with specially designed algae scrapers, whether or not you see any algae growth.

### EVERY 1-2 MONTHS:

**MAINTAIN FILTER** Check your filter impeller and change out any expired filter media by referring to your specific filter instruction manual. Also, remove any circulation pumps or return pumps and clean them thoroughly as accumulated carbonate and calcium deposits need to be removed. Use 1 part vinegar to 3 parts water to your pumps in the solution. You can use the same solution to clean out your protein skimmer. If you are using a sump, this is a good time to remove the foam bubble trap and thoroughly rinse it out.

**CHECK YOUR SUPPLIES** Food, supplements, test kits, filter media and other regularly used items.

## What Comes Next?

**Congratulations, you now have a saltwater tank set-up in your house!**

**So what comes next?**

- Add more fish, slowly! Remember that your aquarium's biological filter is young and needs time to develop. Adding 1 fish every 1-2 weeks is plenty. As always, make sure you understand the species you are placing in your tank by researching them and asking questions to the experts at your local fish store.
- During the 2nd week of your tank's life, perform a water change. A water change involves taking out a percentage of your tank's water, then adding in freshly mixed saltwater. Replacing 15-20% of your aquarium water volume is recommended. You will want to perform a subsequent water change about every 2 weeks to maintain ideal conditions.
- Consider adding a few small reef hermits or a small group of snails. These invertebrates act as a natural clean-up crew, actively eating algae and leftover food while helping to dislodge waste in small nooks and crannies. You do not need many - a few of each will do the trick.

## 10 BASIC RULES FOR RUNNING A SUCCESSFUL MARINE AQUARIUM

1. Research the livestock you wish to keep before purchase. Think long-term and know their specific needs (i.e. lighting, diet, etc.) and compatibility with other species.
2. Provide appropriate, regular and varied feeding 2-3 times a day.
3. Avoid overpopulating your tank with too many fish or corals. Remember that they will eventually grow.
4. Remember that some species of coral are more aggressive than others, so don't crowd them
5. Understand the nitrogen cycle, especially when starting a new aquarium.
6. Remember that water movement is essential. Always leave adequate space when adding rock for proper circulation.
7. Ensure you mix a quality marine salt. Fluval SEA salt dissolves quickly and consistently provides accurate pH levels.
8. Keep water stable (consistent salinity level) and supplement as necessary. Use test kits to check pH, KH, calcium, etc. parameters regularly.
9. Maintenance is crucial – ensure you follow the daily, weekly and monthly schedule mentioned previously.
10. Enjoy your aquarium - it's a fascinating underwater world!





# FLUVAL® SEA

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