



Blue Ridge Reef & Pet  
102 WNC Shopping Ctr Dr.  
Black Mountain, NC 28711  
(828) 669 – 0032  
[www.blueridgereef.com](http://www.blueridgereef.com)

# Aquariums 101

I've been keeping aquariums for over thirty years, and if there is a mistake to be made, I've probably made it. I'm neither a chemist nor a marine biologist, but I have learned how to keep a healthy aquarium and I will try to share this information in the simplest of terms. Chemistry will have to be touched upon, but I'll try to keep it brief and as interesting as the subject can be. There are many rules of thumb in the hobby that don't always apply, such as "an inch of fish per gallon of water." But ten one inch *Neon Tetras* wouldn't even weigh an ounce. One 10-inch *Oscar* would weigh a couple of pounds. Guess which one wouldn't live long in a ten gallon tank? There are a few rules that work every single time, though. And I'm going to share those with you.

## Rule #1

Change water regularly!!! I cannot stress the importance of this enough. Even the best filtration systems don't make up for regular partial water changes. Do not remove your fish and take the whole aquarium apart. That is the most disruptive thing you can do to your fish tank. It not only needlessly stresses the inhabitants, it ruins the eco-system that was being established through beneficial bacteria. All you need to do is vacuum the gravel, then replace the removed water with clean water of the same temperature. If you are using city water, you will need to add a dechlorinator. There are several on the market, all serve the same function.

If I had a dollar for everyone with aquarium problems I've heard say that they never change their water, only top off to make up for evaporation, I'd be a wealthy man. Just because the fish continue to survive in this water (sometimes) does not mean that it's healthy for them.

The fish might be living, but you'd have to see to believe how much larger and more colorful they would be if the water was changed regularly. If you have a large tank, or don't care to lug a 5 gallon bucket around, invest in a Python™ automatic water change hose to speed things up. I'd never own an aquarium without one. I'll touch on what all water changes do later, but trust me- water changes are the most important thing you can do for your aquarium.

## Rule #2

Buy good equipment. The adage "you get what you pay for" certainly applies to this hobby, but there are overpriced and unnecessary gadgets out there.

Aquarium: First, decide what you want to keep. From there, you can choose the right size aquarium. Ten gallon aquariums are the least expensive (even more so than 5 and 2 gallon tanks), but are not ideal for anything except the smallest community fish. If you are considering getting a fish that will grow larger, it is advisable to start out with a tank size it will eventually need. That undersized heater and filter will be of little use on a larger tank down the road.

Filter: There is an array of filter types out there, but all perform the same functions: chemical, mechanical, and biological filtration. Buying a water-changing system is a tremendous time saver and may be the best 60 bucks you'll ever spend.

Heater: Unless you are keeping cool water fishes such as goldfish, you will need a heater. Get a quality one. Most fish live in large bodies of water, and temperature fluctuations occur very slowly. A heater going out will badly stress your aquarium inhabitants. When a fish is stressed, its immune system is compromised and it becomes susceptible to disease. I have seen many previously healthy aquariums break out with diseases such as *Ich* after a heater has failed.

Lights: Lighting on some tanks is simply for illumination. On others, it is to grow plants and animals (corals, etc.). Lighting ranges in price accordingly. On many coral systems, the lighting is the most expensive component of the system. On any tank, you never want to leave the lights on for more than 10-12 hours a day.

Substrate: Gravel, sand, etc. is not necessary for fish health and in fact, its presence causes water quality to go down. If you ever see a commercial breeding operation, you will never see a grain of gravel. It is pleasing to the eye, and most aquariums have some type of substrate in them. Bear in mind, if you choose to use it you need to vacuum it regularly. Fish waste, leftover food, and so forth will build up and cause problems if the gravel surface is not cleaned regularly.

### **Rule #3**

Buy the correct sized tank for the species you plan to keep. All too often fish are purchased that outgrow the aquarium that was bought for them. By the time a fish has outgrown an aquarium, it often has growth deformities and never really looks right again.

Sadly, I've seen many large *Oscars* that have holes in their head and are stunted. The smallest aquarium I would put one *Oscar* in is a 75 gallon (48x18") aquarium. Despite what you've heard, fish growth is not limited by the size of their tank! If nitrates from fish waste and hormones released from the fish build up to high enough levels, it will stunt fish growth. But this is never healthy. The fish does not stop growing because of the size of the body of water it's in. Ever.

### **Rule #4**

Start with easy to care for species. 70% of folks who buy an aquarium are out of the hobby within a year. I suspect that buying what appeals to their eye instead of doing a little homework on fish species has a lot to do with this. *White Clouds* and *Zebra Danios* are among the toughest aquarium residents. *Platys* and *Swordtails* would be next on my list. With those four species, there is a big variety of shapes and colors, and all are active. *Guppies* are hit or miss these days. Most *Guppies* and *Mollies* available today are pool-bred in Asia, and are not the bulletproof fish they were twenty years ago. If you can find them from a local breeder, they should be much more hardy.

### **Rule #5**

Don't medicate unless you are sure of what you are trying to treat! Medication is tough on fish. If you are treating for something the fish doesn't have, you are only making things worse. Keeping the fish properly-fed, uncrowded, and peaceful tank-mates while performing frequent water changes is the best way to avoid a disease outbreak.

### **Rule #6**

Don't add chemicals to your tank to raise and lower pH or kill algae! Most of these aren't worth the bottle they're packaged in, and if you don't address the root of the problem, it will come back. There are some exceptions to this, but finding the root of the problem is the best solution. If your tap water is hard or alkaline,

it's much easier to keep livebearers, *Rainbows*, *African Cichlids*, or other fish that thrive in those conditions. In extreme poor tap water conditions, consider an RO/DI filter for source water.

### **Rule #7**

Only add things to your aquarium that are labeled "for aquarium use." This is especially true for rocks and gravel. It's best not to add something you found at a stream or at the beach. Most beach rocks contain calcium carbonate and will raise water pH. Seashells should never be put into a freshwater tank, with the exception of an *African Cichlid* tank. You can put anything in question into a clean bucket of water, soak it for a week, and then test the water parameters. If they've changed, the objects are altering the water chemistry and should not be used in your aquarium.

### **Rule #8**

Don't buy "tank busters" Fish such as *Oscars*, *Pacu*, *Clown Knives*, *Arowanas*, and many other types that are commonly sold grow quickly and outgrow all but the largest of home aquariums. Resist impulse buying a fish without knowledge of its full adult size. It is very hard to place these fish into a good home once they get large. Even *Plecostomus* (algae eaters) can reach well over a foot in length. If you aren't familiar with the species, learn about it before your purchase.

### **Rule #9**

Know your "clean-up crew". These are fish that help keep your tank clean. As mentioned above, *Plecostomus* species can grow huge. Chinese algae eaters quit eating algae at around 4-5" and become aggressive. *Ottocinclus* are great little algae eaters, but are a bit more sensitive to poor water quality than the other species. Snails can also be effective at keeping film algae at bay. There is no need in introducing an algae eater of any kind into a new aquarium, since there are no algae present for them to feed on.

### **Rule #10**

Algae is not harmful to fish. In fact, it pulls fish waste out of the water and makes the water more healthy. Like any plant, it needs light and fertilizer. If your tank water is green, there are too many nutrients in the water. Either the tank is overdue for a water change, it is overstocked, or you are overfeeding. Keeping the lights on for shorter periods of time can also drastically reduce algae.

### **A Few Tips and Pointers**

- Bowls are for bettas! Not goldfish. Bettas have a labyrinth organ that allows them to breathe surface air. Goldfish do not. Even the smallest of goldfish grow too large for any typical bowl.

- Goldfish and tropicals don't mix! Goldfish are a coldwater fish, tropical fish come from warm tropical regions. Putting a goldfish in a heated tank is far from ideal. 65 to 70 degrees is ideal for goldfish, most tropical fish thrive at 78 or so. While it is possible to keep them together, it is akin to keeping a fern and a cactus in the same pot. One or the other is going to be in less than ideal conditions.

- Turn lights off at night. It may be hard to believe, but some people use aquariums as a nightlight. All fish are accustomed to a period of darkness, which is when diurnal fishes sleep.

- Water Changes. If a tank has been neglected for a long period of time or the water parameters are way out of whack, a large water change can kill the fish. Do many, many 10% water changes several days apart instead of one large one. Your fish have adapted to poor conditions, and changing them can cause shock and even death.

- Feed lightly. All food should be eaten in about 60 seconds. You can feed this way multiple times daily, but uneaten food will rot and cause big problems. Most beginners kill fish with kindness. Better to keep them a tad on the hungry side until you know their appetites.

- Be careful with glass cleaners. Most household glass cleaners are ammonia-based. In minute concentrations, ammonia will kill fishes. It doesn't take much. Spray the paper towel not the glass if you use Windex or similar products. A nice glass cleaning rag is the safest bet.

- Fish Aggression: If you have a territorial fish, it is usually necessary to separate it from the fish it is going after. Rearranging the rocks and plants in the tank can (albeit rarely) help, but if the aggressor is hell-bent on running off the other fish, nothing will stop it. In nature, it runs the other fish away and returns to its territory. In the aquarium, it appears to the aggressor that the fish refuses to leave so the attacks get more and more violent. *Cichlid* species are notorious for this behavior, particularly *African Cichlids*. These do well in tanks over 75 gallons and crowded, but will systematically kill off the weakest individuals in smaller tanks or when there aren't many fish to focus on.

- Don't tap on glass or allow children to do this! Fish do poorly when stressed, and this common child behavior is a huge stressor. I have had many fish in the store get badly bruised snouts from darting away into the glass after the glass has been tapped on. Some of these refuse to eat and die.

- Saltwater isn't THAT hard! It is a more expensive than freshwater tanks and requires attention, but keeping a saltwater aquarium isn't that different than keeping freshwater. Saltwater fish are less forgiving of beginner mistakes and are more difficult to keep in small aquariums, but the general care for them is near identical to a freshwater tank.

## Summary

Aquarium keeping is a fun and exciting hobby... when your tank is doing well. These pointers encompass most of the misunderstandings new aquarists encounter. It is my hope that more people have success and enjoy their tanks. Please come by the store to discuss any of these issues in more details.

- Chip Bridges