Don’t bother changing the water, and when you do, make it a big one. Fish loving swimming in their own filth!

Most fish kept as pets are maintained in artificial systems; tanks and ponds meant to replicate their “wild” environment. In a “wild” environment, water flushes into and out of a system through streams, rivers, brooks, rain or the ocean. In an artificial tank or pond, water will come in and out at the owner’s discretion, commonly called a “water change”. There are many ways to improve your system by getting it very close to a “wild” system, but it’ll never be the same. Let’s get started with some of the various claims you’ve heard over the years.

“I never do water changes and all my fish are fine. The outbreak of (fill in your chosen disease here) has nothing to do with the water.”

In most of these systems, commonly referred to as “natural” systems, a lot of plant debris and sludge can usually be observed. All the nitrates produced by the fish waste is going into the plant growth. This is a fine way to manage your nitrates. But what about the fishes’ other wastes? How do you remove the hormones they produce? What exactly is living in the sludge from months or years of fish and plant waste? In a “wild” system, hormones and other metabolic wastes are diluted out with the influx and efflux of new water, so why aren’t you doing water changes? Yes, water is expensive, especially depending on where you live, but you can manage a system very simply with small water changes. Water removed from fish systems should always be used to water plants. Fish health is tied directly to the water chemistry. If you’ve “never had a problem before,” everything was building up until a tipping point was reached.

“I remove the fish from the tank and do a big water change every ___ months.”

When you take water from your faucet and add it to a fishes’ environment, the metabolic activity of the fish changes the water chemistry over time. Respiration, converting oxygen to carbon dioxide, slowly lowers your pH unless your alkalinity buffers it back up. By the time you get to your water change, the chemistry in the tank could be significantly different than what you originally added from the tap. When you dump that fish from his tiny bowl into a freshly filled tank, the shock of the differing water parameters can stress them out and potentially kill them.

It is understandable that sometimes, tanks and ponds get beyond your weekly/monthly maintenance and the only way to get in and you assume getting the job done properly is to remove the fish. In order to keep your fish from stressing out either from handling, confinement in a tiny tub during maintenance or water shock, keep them in the tank while you work and never remove more than 50% of the water at one time. A greater than 50% water change will alter your chemistry too much. You can spread multiple

“heavier” cleanings out throughout the week. Try to give your fish a day in between cleanings to lower their stress. As long as you aren’t chasing them with the vacuum or siphon, they won’t mind a bit. And yes, you do need to use a gravel siphon. A siphon gets all the debris out from your substrate that a simple water switch won’t accomplish.

“It can’t be my filter, because I replace my filter media every month.”

Sorry consumers, but this is only to get you to buy more filter media. By removing your filter pads every month, you essentially set your nitrogen cycle back at zero. Those flossy pads with carbon pellets tend to fall apart that fast, but switching to a firmer sponge, that could last for several years, will be the best investment you ever make. Your fish will be so much happier not having to go through the ammonia, nitrite and nitrate spikes every month.

When you first set up your tank, it is not considered “cycled.” Cycling refers to the establishment of your biological filtration. These massive microscopic colonies of beneficial bacteria work hard to keep your tank safe for fish. They are responsible to maintaining your nitrogen cycle, the conversion of ammonia waste to nitrite and finally nitrate.

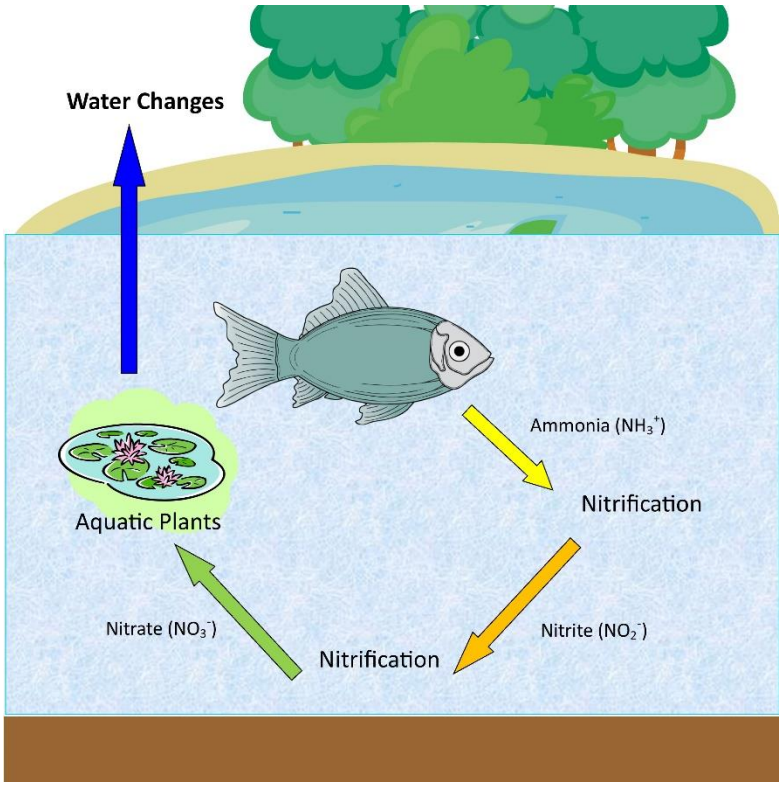

Figure 1: The Nitrogen Cycle