

Hurricane Preparedness and Your Pond

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Common sense will tell you which of the following recommendations are relevant to your particular situation. Remember all ponds are different and possibly will require different preparation and or treatments. With almost all of the following information you will need to be physically present at the pond location or arrive shortly thereafter to effectively deal with the situation.

What to do now or at the start of the Hurricane season

If you have a couple thousand dollars worth of koi in your pond seriously consider buying a generator after last years storms. There has never been a better selection available and at lower prices. Publix has an 8000 watt (Briggs & Stratton) for sale at \$699 an excellent price for a large unit. Today the consumer has the advantage; this is quickly lost when a hurricane watch is issued.

Emergency self starting generators that activate when the regular power source is interrupted are highly recommended, however they are costly and are not totally foolproof.

If you have a generator, make sure it starts, I recommend that gasoline which must be stored with stabilizer be used up after 1 year. Stock up on gas, gas stabilizer and engine oil. Store gas in a shed or other building away from your house. Do

not plug any generator into the house circuit.

The koi kichi among you will want to use the generator to power your pond pump and or air pump, your significant other will most likely want it for home use like refrigeration, fans, TV etc If you have to compromise at the least have the air pump running as they use very little power. Using 12 volt batteries (deep cycle) and a power inverter are a good Idea, be sure the batteries are charged up. A battery tender works well and ensures that they are ready at all times.

An inverter using your car can also be used in an emergency but you will need to leave you car running so as not to run down the battery.

Check your emergency equipment and supplies to be sure everything is in order.

To use up stored gas from the previous year I add a couple gallons to my car each time I fill the tank up at the gas station.

This is a great time to get your new test kits or kit refills, include chlorine/chloramines test, PH, ammonia, nitrite and oxygen.

Have Dechlor and Ammonia binders on hand that are sufficient for 2 weeks.

If you have a lot of large trees near or hanging over your pond consider getting a chainsaw. Electric saws or OK for light work (providing you have a power source) Gas powered are much more powerful but will require some skill and safety

considerations.

Purchase an inexpensive swimming pool net (for leaf and light debris removal).

You may need a heavy duty chain and a good lock to secure a generator and prevent theft.

Give some thought to your pond overflowing from heavy rains, Will your fish be able to swim out. If your pond wall is above grade level consider a 2 inch pipe with a screw on screen cap, they are designed to prevent becoming blocked up from leaves etc that will definitely blow into your pond.

You ***do*** have all your pond power supplies on a GFI don't you? You should and it is required by the electrical codes. In line GFI's are simple to use and are available from AES and are adequate for temporary use, however I do not recommend them for permanent use.

If a hurricane watch is issued start your preparations now. You have approximately 36 hours before winds begin to pickup.

Stop feeding, this will help reduce ammonia output and keep levels lower. Koi will survive easily with little or no food for a few weeks. If in the center of the projected path stop feeding 2 or 3 days earlier

If heavy rains are predicted drop the water level by a few inches; make sure that this action will not interfere with the running of your system.

Purchase baking soda, this is used to keep your kH

high enough to prevent a pH crash from heavy rains which will drop the pH. Baking soda added at the rate of 1 lb. per 1000 gallons will raise the kH by 70 points.

Baking soda will raise your pH to 8.4, and keep the water stable.

Clean your filters now. When cleaning filter media, brushes etc do not use untreated water.

City water has sufficient chlorine in it to destroy your nitrifying (good) bacteria.

Pick up salt. In the event your fish are traumatized, they will be more susceptible to diseases and parasites.

Unless your water is in perfect condition do a 30% water change, that way your fish will have water that is as near perfect as possible before the storm hits.

A couple quarts of inexpensive hydrogen peroxide should be purchased.

If a hurricane warning is issued complete your preparations NOW. Always leave all air pumps running even during the storm, make sure they are above potential flood level and are firmly secured.

Right before the storm hits and depending upon its severity, consider shutting off the water pump if there is the possibility that exposed pipework could be broken by flying debris, falling branches etc. The last thing you want to have happen is to have

your pond pumped dry.

It goes without saying that you must secure anything that can blow away or become a flying hazard.

As the storms strength increase's koi will generally go to the bottom of the pond and remain there, however koi dislike rapid changes to their environment and a few could be prone to jumping out of the pond, we all have a koi or two who jump when spooked. Net or sand bag your ponds perimeter. This is highly recommended if your pond is at ground level and susceptible to flooding.

Consider using a clean bathtub for small fish. (fish and soap residue don't mix) set up a show tank, in your garage or other protected area.

At some point depending on the severity and storm track we will be in a great hurry (read borderline panic for some) to get things done and that is when we are vulnerable to making dumb decisions or doing stupid things. As a Koi Health Advisor (KHA) one of the most if not the most important thing I learned was

**“FIRST DO NO
HARM”**

Don't make a large water change and kill the fish, don't clean the filter and kill the nitrifying bacteria. In times of stress it is easy to make mistakes.

After the storm When it is safe to do so make an

assessment of your personnel needs first. Watch for fallen power lines. Even around your pond use extreme caution; water and electricity can be a fatal combination. If without power start your generator and keep away from and downwind of any occupied building. Be sure to secure it to prevent theft. Do not operate in an enclosed space (garage) or near your air pumps or pond. Carbon monoxide (the silent killer) kills fish as easily as it kills people and exposure to even minimal amounts over time will likely cause serious problems including death.

After the storm; municipalities IF they have water service will often super chlorinate supplies.

If they lose power (pressure in the lines) they will always super chlorinate making additions to your pond dangerous. Fill a clean large container (i.e. garbage can) with tap water, test it, treat it, test it again and if ok add to pond.

If you have a garden pond with just a few fish and no filtration. There should be enough surface area for oxygen levels to remain sufficient. If you have bog plants they should be able to handle the filtration.

A lightly stocked koi pond (I don't know anyone with one of these) should be OK for a number of hours without any harm coming to your fish.

With a densely stocked pond, water parameters will quickly deteriorate without filtration.

The chances are that if this is your particular situation and you have a history of having few fish health problems then you have an efficient filter system and considerable knowledge and skills. However without filtration things can go bad fast. Test the water a couple times a day

Shade is very important and will keep your water temperature down. Tarps work well when suspended above the pond but may be hard to get after a storm. Another solution is to float sheets of the white expanded polystyrene, these are available in 4'X 8' size sheets at the supply stores, they offer the additional benefit of making your fish feel secure hiding under them, however herons are easily able to stand atop them and spear your fish. String fishing line around and over the pond to prevent this happening.

If your dissolved oxygen levels are low add hydrogen peroxide to the pond. Use $\frac{3}{4}$ cup per 100 gallons applied using a squirt bottle forcefully into the water. 60 squirts are good for 100 gallons agitate or mix with the water as much as possible to disperse evenly. This will generally be sufficient for 2 to 6 hours dependant on a number of factors, fish load, shade etc.

If unable to run the filter the nitrifying bacteria will die off due to oxygen starvation (go anaerobic). It will also start going bad producing hydrogen sulfide (deadly to koi). If your filter is not running for 4 or 5 hours or longer. I recommend that when you are able to resume filter operation you first run the water that was in the filter to waste, then

resume regular operation.

Operating air stones in the filter will considerably lengthen the life of the nitrifying bacteria from a few hours to possibly a week or longer. Small quantities of ammonia can be added to feed the filter chambers to prevent starvation. I strongly recommend you flush this water to waste upon filter start up.

Consider this: Ponds with heavy algae growth will consume large amounts of oxygen overnight, early morning is the most dangerous time, when we are still sleeping (I hope).

Air pumps provide a far more efficient use of power to oxygenate your water than water pumps.

If you lose power turn the main switch to the off position, this action will prevent unexpected surprises when power is restored.

If you decide to evacuate remember it may be days before you are permitted to return.

You and your family's safety are far more important than that of your fish.