Koi Ponds and Hurricanes

By Joyce Nichols

Be Prepared!

OK its Hurricane season, not a problem you're a pro at this - you got your emergency house kit ready, first aid kit, evacuation plan, even prepared for the house pets. Have you remembered about your Koi and their house (Pond)? OOPS

Let's think this through, what are the major things we need to protect the Pond from. **Rainwater** and lots of it or **Flooding**, this is really going to mess up the water chemistry and deplete oxygen. Lots of rain will often lower the pH, alkalinity, and hardness of the pond, making it closer to rainwater. **Wind** and lots of it, this will knock all types of **debris** into the pond from dirt and leaves to large broken branches or worse unsecured patio furniture. So we are looking at possible liner damage and once again messed up water chemistry. **Power Outage**, this means no filtration or oxygenation to handle water that has already been badly treated by the storm.

Before the Storm

Small storms or when you have been given ample notice are easier to prepare for than large storms. Large Storms require a few more considerations, such as beefing up your protection and power consideration. Really severe storms like Katrina could mean completely removing your fish from your pond.

I found following these few simple steps will help get your pond and your Koi safely through the storm.

1) **Food** - Stop feeding your fish! Your Koi will not starve, but more importantly, not feeding you fish will cut down on any ammonia buildup later on if the filtration process is interrupted.

2) **Water** - Try to do as large as possible, but change at least 25% in your pond. In the event that something goes really wrong and you are without water for awhile your Koi will start off the storm with the clean water.
    a. Don't top off the pond; in fact take the water line down a few inches. You need to allow for all that extra rainfall that's coming and prevent overflow.
    b. Check your overflow or drainage systems; make sure to clear them of any debris so they can handle the rainfall.
    c. Ground level ponds are especially susceptible to flooding and overflow problems. Think about adding additional protection by either trenching to divert the flow or sand bagging around low areas. If nothing else, the increased height from sand bagging just might keep your Koi confined within the pond if flooding occurs.

3) **Cover** - Net over your pond to protect it from any flying debris. Large storm protection may require the net to be supported underneath with PVC or with plywood.

Make sure you properly secure whatever you use so that it doesn't go flying off during high winds.

4) **Secure** - Remove anything that could potentially blow over, get blown away, or fall into your pond. A good rule of thumb, if you can push it over, so can the wind. Potential items that could blow away should be completely removed from the area and placed indoors or securely tied down.

5) **Power** – If it's a small storm and the power outages are expected to be only a few hours – take care of the other stuff and forget about the fish for now. However a long outage from large storms means you will need an alternate power source. Use them to run your air pump (first) and your water pump (second), or alternate between the two.
    a. Generators: the cost between a small one just big enough to handle the pond and a larger one that can handle the pond and a few household items is sometimes just a matter of $200 or so. Make sure you have 5 gallon fuel cans, a siphon to refill the cans from your car's tank, and the correct filters. And remember to TEST the generator at least once a month. When you need it is not the time to find out that it's malfunctioning.
    b. Inverters: these little items plug into the cigarette lighter of your vehicle to convert the car's DC power into AC. Small inverters that will supply 300 watts of constant running are available for $40.00. Larger inverters of 750 watts are also available for about $80.00. Either one have two 3-pronged (grounded) outlets and will run for 2 ½ to 3 hours before you will need to start the vehicle to recharge its battery.
    c. Marine battery: use this instead of your car battery to run the inverter.

6) **Transporting** – You may need to move your fish from the pond after the storm due to damage, so get all those supplies together now. The stores might not be open after the storm when you need them and a forgotten item can't be purchased.

7) **Temporary Housing** – You are going to need someplace to put your Koi if there is a severe storm that's coming or afterwards if there is damage to the pond. It will need to be big enough to house your collection and have an adequate filtration and aeration system attached. Consider using a kiddie pool or in a pinch, stacked cinder blocks, a little timber, and a liner filled with water will work.

During the Storm

Sit tight and stay indoors! Do not go outside during the storm for any reason, not to batten down the hatches one more time or check on the fish. Listen to the weather bureaus for the all clear before venturing out.

After A Storm

First, you must undo all of your storm precautions to survey the possible damage.

1) **Damage Assessment** – Survey the damage and assess what needs to be attended to FIRST.

a. Clear off as much debris as possible from your net or plywood before removing it. If you sand bagged the area and it seems safe to remove them, get them out of the way so you can access your pond. If you have a bottom drain, make sure it isn't clogged and is taking up the junk on the bottom of the pond. If you don't have a bottom drain, vacuum the pond as soon as you can.
b. Locate and account for the fish and plants. Note you fish may stay at the bottom of the pond for quite a while after the storm, this is normal behavior.
c. Upright any plants, remove any dead animals that may have blown in, retrieve fish, etc.
d. Check all plumbing to ensure that there are no breaks or leaks.

2) **Transport or Repair** – If you find major damage, you will need to transport your Koi to that temporary housing setup. If you found only minor repairs or better yet nothing needs done, then focus on water quality.
   a. If it has – and you don't have a quarantine facility available, consider getting a kiddy pool to be used until the fish can be returned to their home. These are relatively cheap and can remain boxed in your garage until necessary. (Hint: keep these pools in mind at the end of the "season" when they're on close-out: they become downright economical at that point!) If all else fails, call your local club: show tanks work very well indeed!

3) **Power** – Get power up as soon as you can. When there is no electricity, try to get some battery or generator-driven aeration. Most fish that die from hurricanes die due to lack of oxygen caused by rainwater and power outages.
   a. For information on what to do with a pond during and after power outages, check out this site (fishpondinfo.com) click here.

4) **Water Quality** – Take a water sample and test for ammonia, nitrites, pH and/or KH.
   a. If Nitrates are present, add the proper amount of salt to the water. Typically you would add 3/4 to one pound of salt per 100 gallons of water, 1/3 at a time (or 8 lbs. per 1,000 gallons) over a period of 24 hours to achieve a level of 0.1 ppm.
   b. If you are having KH issues (especially if it is below 100) you will want to add baking soda to your pond. Typically you can add 1 cup of unpacked baking soda per 1000 gallons of water. If you have "bead" type filtration, you need to have your KH above 200
   c. If the pond water is discolored, or chemicals were washed into the water, add a mesh bag of activated carbon to the filter to help remove those.
   d. Chances are good that your pond water will be murky; at the very least, the nutrient levels will be "off" due to the excessive rain water. Now is a good time to add Koi Clay at the rate of 3 Tbs. per 1,000 gallons, dissolved in pond water and distributed around the pond. You can use up to 1 cup per 1,000 gallons if necessary (or more – you can't overdose).