

## **Summer Time Brings the Potential Danger of Fish Kills in Ponds**

We all have those memories of wandering down to the pond with a fishing pole. Fishing in the ponds around our farm was a fun pastime for me growing up, as I'm sure it was for many of you as well. Fishing is a peaceful, relaxing way of enjoying nature that is passed down from generation to generation.

But what happens when you wander down to the pond, and instead of finding a peaceful oasis, you find a pond full of floating fish? Likely, you're left with more questions than answers. Why are the fish dead? What killed them? Was it something I did or didn't do? All of these are relevant questions to ask if you see this happen.

There are many reasons why you might see floating fish in a pond. Fish, like every other animal and aquatic species, have a life span and can become sick. If you only see a few floating fish, it could be old age, spawning stress, starvation, or injury of some sort. Unfortunate though it may be, all of these reasons are a part of life and should be expected over time if you are the steward of a pond.

However, if you see lots of dead fish, especially if they are different types and size, further investigation as to the cause is necessary. Have there been applications of herbicides in or near the pond to control aquatic weeds? While there are a number of fish safe herbicides and products that are used to control aquatic weeds, inappropriate herbicide selection, off label use, or use in the hot part of the summer could pose some problems. If there was runoff or overspray into the pond of the wrong product, it could result in a fish kill. In most cases, the best time to control aquatic weeds is during the spring or fall when it is less stressful for the fish. Options that contain copper should also be avoided due to toxicity to the fish. Additionally, if there was a large algal bloom recently, that could be the culprit of a large fish kill. The decomposing of the algae ties up the oxygen in the water resulting in a depleted amount available for the fish.

In the instance that none of the above has happened, yet you still see a large number of floating fish, it may be environmental and out of our control. Surprisingly enough, thunderstorms are more responsible for fish kills in the summer time than any other reason. It has to do with the depth of the pond, pressure changes, temperature of the rain, and oxygen availability for the fish. Essentially what happens is when we have a pop-up thunderstorm, the pressure and the temperature change rapidly. We've all felt that in the air before—it's how we know a storm is brewing. The cold rain changes the temperature in the pond, and when coupled with the pressure change, it causes a "turnover" in the water in a deep pond. The deep water in a pond is less oxygenated than the water closer to the surface. Basically, they switch places to where the less oxygenated water is on top, where the fish usually are, and sometimes the fish don't have time to adapt and move before their oxygen supply is depleted resulting in dead fish.

While there is no way to predict when exactly a turnover may happen, there are some key things we can do to mitigate the chance that it will occur. Because turnovers result in oxygen depleted waters, the addition of an aerator to the pond can be a game changer. A bubbler or paddler type aerator will agitate the water to increase the oxygen available to the fish. Placing this type of aerator about two feet off the bottom of the pond is more ideal over the floor of the pond because placement on the floor of the pond will stir up mud and debris. Population control is also a tactic to mitigate the chance of a fish kill as a result of a turnover. Large fish are more sensitive to changes in oxygen so removal of large fish from time to time can be helpful. Furthermore if your pond is crowded, reducing the population is a good way of lowering the need for extra oxygen.

If you have questions, concerns, or would like to know more, please email [sorr6@utk.edu](mailto:sorr6@utk.edu) or call 423-623-7531. Through its mission of research, teaching and extension, the University of Tennessee Institute of Agriculture touches lives and provides Real. Life. Solutions. [ag.tennessee.edu](http://ag.tennessee.edu)