



## **What's killing the fish in my pond?**

Over the past year our office has received numerous calls from pond owners in Erie County regarding the death of fish in their ponds. Following is an excerpt from *Farm pond management tips* Publication FS-061 – Ohio Sea Grant College Program at The Ohio State University that will give you an idea of what may be happening in your pond.

Farm pond fish kills are common complaints, but a few indicators usually can steer you toward the problem's roots.

Catastrophic fish kills are those in which all of the fish, or at least a major portion, suddenly die. These events happen when the physical-chemical conditions in the pond are upset. Causes might be oxygen depletion or contamination by fertilizer or pesticide runoff. Partial fish kills typically are seen when a few fish, perhaps of different species, die off over a period of one or two weeks. Since some fish were affected and other similar fish were not, disease is frequently the cause.

Low oxygen is the most common cause of catastrophic die-offs, and occurs when biological oxygen demand exceeds the replenishment of oxygen into water. This can happen on hot, cloudy summer days and nights, in the fall when aquatic plants are dying off, or under the ice when snow cover blocks light and prevents photosynthesis. Supplemental aeration usually can cure the problem.

Partial fish kills from bacterial or viral diseases are very common, particularly during early spring following a mild winter. Although some fish respond to medicated food pellets, treatment for most diseases usually isn't practical. Most fishpond disease outbreaks subside on their own without long-term effects on the fish population.

You can view the full text at [www.sg.ohio-state.edu/pdfs/fs-061.pdf](http://www.sg.ohio-state.edu/pdfs/fs-061.pdf)



Most of the calls regarding fish kill come to the District Office in the spring months after winter has released its grip and ponds are adjusting to the changing seasons. Our evaluation of pond owners' descriptions of fish kill typically results in the "low-oxygen" response. If you recall, the 2000/2001 winter season involved plenty of snow cover. Ice on the pond allows adequate exchange of gases between water and air but introduce a thick snow cover and gas exchange is reduced and oxygen to the water is not replenished sufficiently enough. As a result, normal biologic reactions that consume oxygen, such as plant and leaf litter decay, deplete the oxygen supply to fish. Also, snow cover reduces sunlight penetration and decreases photosynthesis, a biologic process during which plants release oxygen. Obviously, reducing photosynthesis therefore reduces oxygen replenishment to the water and to fish.

Is there anything that you can do to prevent winter oxygen deficiency and stimulate photosynthesis? Some ideas you can try are\*:

- Remove the snow from the ice – clearing one-half acre for each surface acre or part thereof.
- Cut 15-20 holes at least two-to-three inches in diameter, through the ice evenly distributed on a quarter-acre pond. Other ways to maintain holes in the ice are to float adequate-sized balls (e.g. basketball) on the water – ice will form around the ball and all you have to do is lift the ball and you have an air-hole; place bales of hay/straw in the shallow portions of the pond (so they are not submerged and are exposed to the air) – ice will form around but not inside the hay bale and air will be exchanged to the water through the bale; allow cattails to grow in portions of the pond – ice will not form tightly around the cattails allowing air exchange.
- Keep, a large portion of the water surface ice free through the winter – approximately one-third surface area of a quarter-acre pond. Use compressed air bubbles or aerators.

\* Make certain that the ice is thick enough and safe to walk on!

Certainly there are many more factors involved with maintaining a healthy pond environment through all seasons and we suggest that you learn more about managing your pond through resources such as library and internet research and/or talking to pond management professionals. The Department of Natural Resources at Cornell University has a web site dedicated to ponds at [www.dnr.cornell.edu/ext/fish/pond1.htm](http://www.dnr.cornell.edu/ext/fish/pond1.htm). The District has a Farm Pond Management Packet available that can help you to manage your pond and answer some of your questions. Call our office if you would like to receive a Farm Pond Management Packet.