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8-8-2018

Pond Fish: Die-Offs

Despite recent rains in East Texas, as far as pond fish are concerned, it's still a drought. I have received a few calls this week concerning the low water conditions here in Rains County. For those of you with farm ponds that have been stocked with beloved catfish, pay close attention within the next few weeks to make sure that your fish are not struggling for oxygen.

Farm pond levels remain low, and when water levels recede, fish become stressed and may die. Fish stress and die-offs in small ponds are often caused by oxygen depletion, a condition that occurs when hot, cloudy weather is the rule of the day. Most years that occurs in July and August. Oxygen depletion problems account for about 85 percent of all fish die-offs in Texas farm ponds.

Under sunny conditions and moderate temperatures, aquatic plants, mostly single-celled algae, produce enough oxygen to maintain oxygen levels in ponds. Summer conditions can upset this balance of oxygen production and use in a number of ways. First, warm water holds less oxygen than cool water. And as water temperatures climb, fish, being cold-blooded animals, experience a rise in their metabolic rates, which increases their need for oxygen.

At the same time, less oxygen may become available. Cloudy days slow down photosynthesis – a process dependent upon solar energy –which results in aquatic plants making less oxygen available to the fish. Also, as the temperature of water rises, it absorbs less oxygen. Extremely hot weather can even cause oxygen debt in moderately to highly stocked ponds.

After a drought, more than just a few good rains are needed to bring pond levels back to normal. Heavy rains for several days are needed to significantly raise water levels and this just hasn't happened.

Oxygen-starved fish can be seen gasping at the surface or swimming weakly to the edge. Oxygen depletion affects all sizes and species of fish to differing degrees. But often the largest fish present are the first to be affected. Because photosynthesis shuts down during the night, fish showing symptoms of oxygen depletion will be most obvious during early and mid-morning hours.

Pond owners who have a motor-equipped boat can easily and cheaply counteract oxygen depletion. Just back the trailer into shallow water and leave the motor running in gear until the fish recover. The submerged prop will stir water enough to increase oxygen levels. If no trailer is available, he recommends lodging the boat against a stump or in deep water against the bank.

Simply cruising around the pond in the boat won't help much, because the prop is pushing the boat, not the water, resulting in considerably less oxygen absorption.

Pumps can also be used to increase oxygen, but the intake should be set 2 or 3 feet beneath the surface. However, using boats and pumps to increase oxygen levels are only temporary solutions. If the real problem is too many fish present, it's time to go fishing and significantly lower the fish population – or pray for rain.

As fish die-offs happen even in wet years, pond owners must begin to address such problems by determining the stocking rate. Begin by estimating the surface area of a pond in acres. An acre consists of 43,560 square feet.

Next, determine the pounds of fish in the pond. If the pond owner knows how many fish were originally stocked in the pond, he or she may have a good idea how many fish have been taken since stocking. By catching a few fish and weighing them, the pond owner can closely estimate the total pounds of fish currently in the pond.

Once the surface area in acres is calculated, make sure that you are not carrying in excess of 1,000 pounds of fish per surface acre in the summer months. This fish density is seldom achieved except for heavily stocked catfish ponds that are fed supplements on a regular basis. If you are using supplement feeds, it does not take long for fish to grow in excess of 5-6 pounds. So, if you stocked 100 fingerlings per acre and they now weigh 5-6 pounds you will have an estimated poundage of 600 pounds per acre. This poundage should be figured on the basis of the pond's surface area during its annual low water level, not when it is brimming full in the winter or spring.