## Algae blooms pose hazard

Summer blue-green algae blooms at a number of Kansas reservoirs are not isolated to large bodies of water. Record hot temperatures this summer have created the algae blooms in farm ponds, as well, and nothing can be more disheartening than to carefully nurture a pond only to discover a fish kill on a hot summer morning. While blue-green algae blooms can be toxic to fish, fish kills can also result from oxygen depletion created by a number of factors not necessarily associated with blue-green algae blooms.

To support fish and other higher organisms, a pond or lake must have one element — dissolved oxygen. Oxygen depletion is the most common cause of fish kills, and low oxygen occurs most often during periods of calm, cloudy, hot weather. Although Kansas has not experienced many cloudy days this summer, 100-degree days have been strung together like glue, and green algae has tinted most ponds this summer.

Most dissolved oxygen in water comes from the atmosphere on windy days and as a byproduct of photosynthesis in aquatic plants such as filamentous algae (commonly called "moss"), green algae, and coontail. If less sunlight penetrates deeper water — because of clouds or murky water — vegetation and oxygen content at deeper levels are reduced. Dissolved oxygen levels can also be affected by temperature. Colder water holds oxygen better, and very warm water easily loses oxygen. Atmospheric pressure is also a factor. Oxygen solubility increases as atmospheric pressure rises.

Most fish kills occur in the early morning before the sun comes up, when dissolved oxygen levels are low-

est, and, unfortunately, larger fish are usually the first to be affected. Ponds or lakes with large amounts of algae or phytoplankton can have high oxygen during the day, but at night, bacteria that feed on these dying plants use up oxygen.

Herbicides or algaecides can help control aquatic vegetation and reduce the chances of a fish kill. However, this must be done carefully to prevent rapid decomposition and further oxygen depletion. Other ways to prevent oxygen depletion include pumping or flowing water into a pond (especially in the early morning hours before sunrise); diluting runoff that adds nutrients to a pond; using a commercial aerator; reducing feed if artificial feeding is used; and maintaining proper fish density for the size of the pond.

Blue-green algae blooms such as those that have affected larger lakes in the state also can cause fish kills in ponds and small lakes. Blue-green algae blooms often resemble green or turquoise paint floating on the water. These blooms result when long-term build up of nutrients in the water (nitrogen and phosphorus) combine with hot weather and other environmental conditions to stimulate algae growth. In time, these algae blooms naturally die off.

For more information on pond management, contact the Kansas Department of Wildlife, Parks and Tourism at 620-672-5911 or visit the department website, www.kdwpt.state.ks.us. Type "Pond Management" in the search box and then click on "Producing Fish and Wildlife in Kansas Ponds."



**RESERVOIR NEWS** 

Blue-green algae can wreak havoc on bodies of recreational waters, especially near agricultural areas. Though it hasn't been a problem at Sebelius Reservoir, the right weather conditions can cause algae to grow very quickly.

-Telegram photo by Dana Paxton



Kansas Ringneck rooster pheasant – Telegram photo by Dana Paxton

## Kansas hunting atlas coming soon

Want hunting access to one million acres of private land? The Kansas Department of Wildlife, Parks and Tourism provides just that and more in the 2011 Kansas Hunting Atlas. This essential hunting tool includes maps showing locations of Walk-In Hunting Access areas and public wildlife areas and will be available online at <u>www.kdwpt.state.ks.us</u>, the week of Aug. 15. Click "Hunting/Where to Hunt in Kansas" to find a link to the document. Printed copies of the atlas will be available in late August or early September at department offices and hunting license vendors around the state.

The atlas provides dozens of full-page maps covering the entire state. Online visitors can view and print

the complete atlas or select specific maps. Hunters can also download maps to global positioning system units for easy navigation. Each map includes an index listing the game species most likely to occur on properties listed.

For information on hunting seasons and regulations, copies of the 2011 Kansas Hunting and Furharvesting Regulations Summary will be available at department offices and license vendors the first week in September, but hunters can view or download the publication Aug. 12 at the department website. Type "Hunting Regulations" in the search box at the department's homepage or click "Hunting/Hunting Regulations."



