Lake Managers Perspective: Harmful Algal Blooms
(Photo taken: July 2011, Grand Lake, Oklahoma)
Lake Managers Perspective
(Long-Term Economic Benefits and Ecosystems Services)

• How Do We Mitigate/Prevent HAB’s

• How Do We Address Active Bloom
  – Health & Public Safety
  • Monitoring Economic/Rec Impacts

Ada Evening News: July 21, 2011

Heat wave fosters toxic algae in touristy lakes

OKLAHOMA CITY (AP) - A prolonged heat wave in the state has led to a rapid growth of a dangerous form of algae in lakes and ponds, threatening swimmers and livestock and scaring away tourism during the busy summer season.

Blue-green algae are actually cyanobacteria that produce toxins harmful to humans and livestock. It blossomed in warm, shallow waters until this year's heat wave combined with Oklahoma's water drought since the Dust Bowl have created what one water official called a “perfect storm” for its growth.

Officials have issued a series of warnings, telling boaters and swimmers at lakes in northeast Oklahoma that contain cyanobacteria to avoid direct contact with the toxic plankton. The state's economic and water officials are concerned about the long-term effects of the bloom.

The high publicity has had dire consequences for some businesses in Oklahoma where tourists have started leaving.

Public warned of algae at Bernice

Staff Reports

An Oklahoma Department of Environmental Quality (DEQ) recommendation to temporarily avoid body contact with water at Bernice State Park is prompting the Grand River Dam Authority to remind lake enthusiasts to take extra precaution on Grand Lake this summer.

The state park is putting up signage to notify the public.

DEQ made the recommendation after the GRDA Ecosystems Management's water lab confirmed blue green algae (BGA) was in the waters near the park, and in portions of Horse Creek and the back of Duck Creek.

BGA are microscopic organisms that are naturally present in lakes and streams, usually in low numbers. However, the algae can become abundant in shallow, warm water that receives heavy sunlight.

While most BGA are not toxic, toxins can be produced in some algae blooms. Results of the tests of BGA water samples taken by the GRDA Ecosystem Management Department will not be available until early next week. However, as a precau-

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Mitigate/Prevent
(Grand Lake Watershed)
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Heat wave fosters toxic algae in touristy lakes

OKLAHOMA CITY (AP) — A prolonged heat wave in the southwestern United States has led to the growth of a dangerous form of algae in lakes and ponds, threatening swimmers and livestock and leading away tourists during the busy summer season.

Blue-green algae are actually photosynthetic bacteria that produce toxins harmful to humans and livestock. It bloomed in warm, shallow lakes where the heat was enough to promote the algae’s growth. Officials in Oklahoma and Kansas have issued warnings to swimmers and livestock owners about the potential dangers.

Officials have issued a series of warnings, telling boaters and swimmers to avoid the heavily bloomed area.

The high temperature has had dire consequences for some businesses in Oklahoma where tourists have been discouraged from visiting the state.

Problems in Grand Lake have been addressed, the Grand River Dam Authority has warned lake enthusiasts to take extra precautions on Grand Lake this summer. The lake is one of the most popular in the state and is known for its clear waters and abundant fish populations.

Public warned of algae at Bernice

Staff Reports

An Oklahoma Department of Environmental Quality (DEQ) recommendation to temporarily avoid body contact with water at Bernice State Park is prompting the Grand River Dam Authority to remind lake enthusiasts to exercise caution on Grand Lake this summer.

DEQ made the recommendation after the GRDA Ecosystem Management’s water lab confirmed blue-green algae (BGA) was present in the waters near the park, and in portions of Horse Creek and the back of Dusk Creek.

BGA are microscopic organisms that are naturally present in lakes and streams, usually in low numbers. However, the algae can become abundant in shallow, warm water that receives heavy sunlight. While most BGA are not toxic, toxins can be produced in some algae blooms. Results of the tests of BGA water samples taken by the GRDA Ecosystem Management Department will not be available until early next week. However, as a precaution, DEQ made its recommendation to avoid body contact.

GRDA joins with the DEQ in urging lake users to practice caution and use common sense when

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Grove Sun: June 28, 2011

Courtesy Photo

This blue green algae has appeared near Bernice State Park.
Monitoring
### Recreation and tourism

Recreation and tourism are billion-dollar industries in the United States. According to the American Sportfishing Association, there are over 30 million anglers in the U.S., generating over one million jobs and over $45 billion in retail sales annually. Healthy intact ecosystems are essential to the viability of both commercial and recreational fishing. More people in the U.S. fish (30 million) than play golf (24.2 million) or play tennis (10.2 million).

In a 2003 study, the Outdoor Industry Foundation found that the outdoor recreation economy contributed $730 billion annually to the economy, supported 6.5 million jobs and generated $88 billion in state and federal tax revenues. Wildlife watchers in The Chesapeake Bay region spend about $3 billion annually on trip-related expenses and equipment; this estimate does not include job creation and multiplier effects from these activities. Rural areas near forest land and other types of open space often depend on tourist spending to help support their local economies. Outdoor recreation and eco-tourism are large economic forces whose foundation rely on the maintenance of healthy watersheds and the protection of open space.

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![Federal and state tax revenues generated by recreational activity](Outdoor Industry Foundation 2003)