

Missouri Department of Natural Resources
Total Maximum Daily Load Information Sheet

Lewistown Lake

Water Body Segment at a Glance:

County: Lewis
Nearby City: Lewistown
Area of impairment: 27 acres
Pollutants: Atrazine
Source: Crop Production
Water Body ID: 7020



Scheduled for TMDL Development: 2011

Description of the Problem

Designated Beneficial uses of Lewistown Lake:

- Livestock and Wildlife Watering
- Protection of Warm Water Aquatic Life
- Protection of Human Health (Fish Consumption)
- Whole Body Contact Recreation
- Secondary Contact Recreation
- Public Drinking Water Supply

Use that is impaired

- Public Drinking Water Supply

Standards that apply

- Missouri's Water Quality Standards 10 CSR 20-7.031, Table A, allows a maximum of 3 micrograms per liter ($\mu\text{g/L}$ or parts per billion) atrazine. Because this number is based on health risk associated with a 70 year exposure period, the 3 $\mu\text{g/L}$ is interpreted as a long term average.

Background Information

The Lewistown Reservoir was formed by damming a tributary of the Middle Fabius River and is 29 acres in size. It was previously the sole public water supply for the city of Lewistown. The city now receives its drinking water from the Clarence Cannon Wholesale Water Commission and no longer uses Lewistown Reservoir as a drinking water supply source.

Runoff from corn and sorghum production in the watershed has resulted in measurable amounts of atrazine within the lake. Atrazine is a systemic herbicide that blocks photosynthesis and has been a major herbicide used for corn production since its introduction in 1958. Atrazine is the most

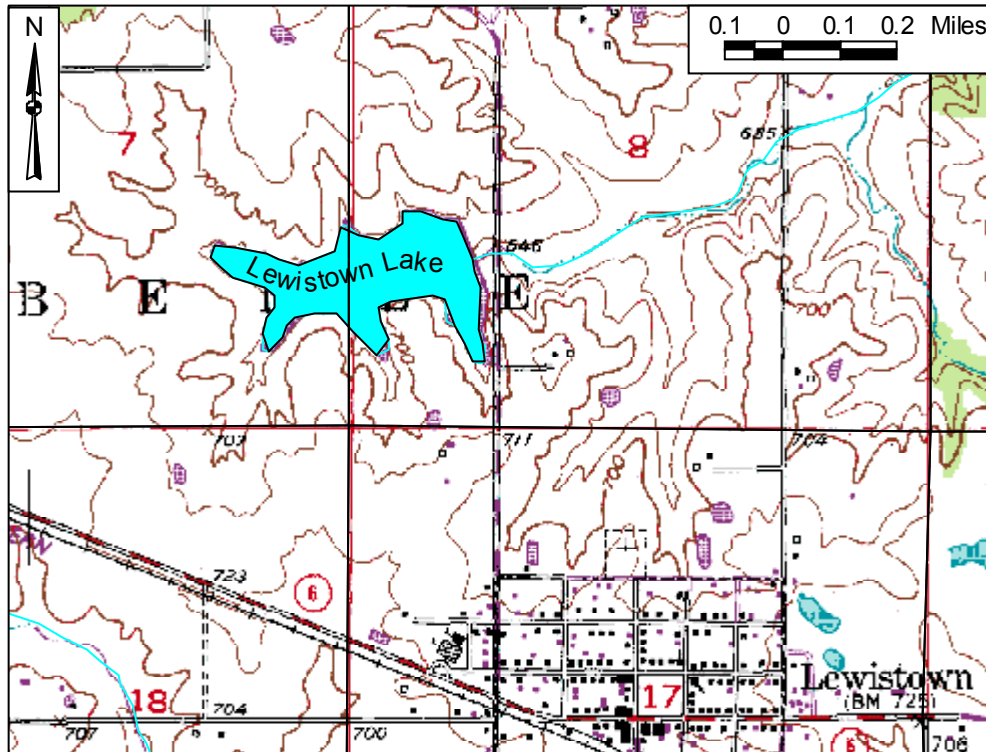
heavily used herbicide in corn and grain sorghum production in Missouri where it provides selective broadleaf control and grass suppression at a lower cost than many other herbicides. Watershed vulnerability to agrichemical contamination is based on the chemistry of the contaminant, hydrology and soils of a region and land-use. Streams draining watersheds with runoff-prone soils, such as those existing in the Lewistown Lake watershed, may periodically contain high herbicide levels.

Atrazine was thought to be a Group C carcinogen (i.e., possibly caused cancer in humans) when the department first placed Lewistown Lake on the 2002 303(d) List of impaired waters. It was listed for atrazine contamination. However, the U.S. Environmental Protection Agency (EPA) stated in the October 2003 *Interim Reregistration Eligibility Decision*, or IRED, that it had no clear indication that atrazine caused cancer in humans. Various studies have also been conducted to assess the effects of atrazine on amphibians, especially focusing on whether or not it was associated with endocrine disruption and thus reproduction. In the October 2003 IRED, EPA stated that the data available at that time was insufficient to make a determination as to the potential for atrazine to impact reproduction in amphibians. EPA continues to review new studies on both issues as they become available.

Lewistown Lake water was monitored for herbicides from 1991 through 1993 and again in 2002. In the early 1990's the average level of atrazine was 5.01 µg/L. In 2002, the average atrazine level was 0.84 µg/L. The department terminated herbicide monitoring of the lake after September 2002 due to the fact that it is no longer used for drinking water. However, under Missouri law, the drinking water use cannot be removed from the books, and so the lake continues to technically be in violation of the criterion. For that reason, a TMDL still must be written in order to get the water body removed from the 303(d) list.

A map of Lewistown Lake may be found on the next page.

Lewistown Lake in Lewis County, Missouri



For more information call or write:

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