

Missouri  
Department of  
Natural Resources

DRAFT TRIBUTARY TO BARKER CREEK TMDL  
PUBLIC COMMENTS

Public Notice  
Nov. 21 – Dec. 21, 2003

**Tributary to Barker Creek  
WBID # 9000**

Henry County, Mo.

Missouri Department of Natural Resources  
Water Protection Program  
PO Box 176  
Jefferson City, MO 65102-0176  
800-361-4827 / 573-751-1300



# MISSOURI DEPARTMENT OF CONSERVATION

## Headquarters

2901 West Truman Boulevard, P.O. Box 180, Jefferson City, Missouri 65102-0180  
Telephone: 573/751-4115 ▲ Missouri Relay Center: 1-800-735-2966 (TDD)

JERRY M. CONLEY, Director

**REPLY TO:** Columbia Research Center  
1110 S. College Ave.  
Columbia, MO 65201  
Telephone: 573/882-9880  
FAX: 573/882-4517

DEC 19 2003  
MTC

December 16, 2003

Mrs. Becky Shannon  
Water Pollution Control Program  
Missouri Department of Natural Resources  
PO Box 176  
Jefferson City, MO 65102-0176

Dear Mrs. Shannon:

RE: McDaniel Lake and Barker Creek TMDLs

The following are the comments of the Missouri Department of Conservation concerning the draft TMDL for McDaniel Lake and Barker Creek (tributary to).

### McDaniel Lake

1. Page 1. The pollutant for McDaniel Lake is identified as "algae". Increased algae production is the result of excessive nitrogen and phosphorus enrichment which should be the listed causes of impairment.
2. Page 3, Paragraph 1. We concur with the intent to remove Fellows Lake from the TMDL list.
3. Page 4. The definition of eutrophication listed in the document incorrectly suggests that lake and reservoir eutrophication is exclusively a human-induced process. Reservoirs and lakes naturally age through the eutrophication process and rate of aging or succession can be increased by human disturbance. A better definition follows with its source:

Eutrophication (1) Natural process of maturing (aging) in a body of water. (2) Natural and human-influenced process of enrichment with nutrients, especially nitrogen (total nitrogen greater than 600 mg/m<sup>3</sup>) and phosphorus (total phosphorus greater than 25 mg/m<sup>3</sup>) leading to an increased production of organic matter.

COMMISSION

STEPHEN C. BRADFORD  
Cape Girardeau

ANITA B. GORMAN  
Kansas City

CYNTHIA METCALFE  
St. Louis

HOWARD L. WOOD  
Bonne Terre

Armantrout, N. B., compiler. 1998. Glossary of aquatic habitat inventory terminology. American Fisheries Society, Bethesda, Maryland

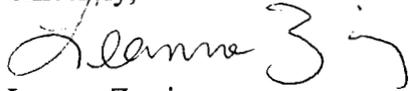
4. Page 5, Paragraph 1. "Liver shad" should be corrected to "gizzard shad". The relationship between shad and zooplankton populations is speculative and assumes that shad are present in exceedingly large numbers and have been successful in depressing what might otherwise be more dense populations of zooplankton. While this is a possibility, data are not presented to adequately support a conclusive determination.
5. Page 5, Footnote 5. The last sentence should be changed to read: "If this layer of the food chain is reduced, algae *may* increase."
6. Page 8. Add the word "excessive" for "As mentioned in the introduction, the presence of *excessive* cyanobacteria has been definitively linked..."
7. Page 12, Paragraph 4. Should the target load (LA from the preceding formula) be 2.06 lbs/day, rather than 1.94 lbs/day as stated here?
8. Page 12. Waste Load Allocation. The seven point sources present in the watershed were presumed in the draft to contribute no significant nitrogen or phosphorus to the McDaniel Lake watershed. This assumption is not supported by any data, nor was any data provided from these discharging facilities. Since nitrogen or phosphorus is a known concern in this watershed, as permits for these facilities are renewed, nutrient monitoring and limits should be added to the discharge permits to determine and limit their contribution. Until such time as the nitrogen and phosphorus contribution of these seven facilities can be quantified it is premature to assume that their WLA is zero pounds per day.
9. In the document the descriptor "Cyanobacteria" and the obsolete "blue-green algae" are used interchangeably. Although they both refer to the same organism, one should be chosen for consistency (preferably the taxonomically accurate "Cyanobacteria").
10. Bibliography. Taxa in Latin should be in italics.

#### Barker Creek

Page 6. The use of surrogate Tebo Creek data to determine the alkalinity vs. pH regression model was reasonable considering the paucity of available data for Barker Creek. The relation for Barker Creek should be verified in the future with planned additional monitoring data collected from Barker Creek. Also, further discussion in the text, figures and charts should specify that surrogate Tebo Creek data was used in the regression.

The Department supports efforts by Department of Natural Resources to improve Missouri's aquatic resources and appreciates the opportunity to comment on these TMDLs.

Sincerely,

A handwritten signature in black ink that reads "Leanna Zweig". The signature is written in a cursive style with a large, stylized "Z" and a long horizontal stroke at the end.

Leanna Zweig  
Environmental Services Biologist

STATE OF MISSOURI      Bob Holden, Governor • Stephen M. Mahfood, Director  
**DEPARTMENT OF NATURAL RESOURCES**

[www.dnr.state.mo.us](http://www.dnr.state.mo.us)

December 23, 2003

Ms. Leanna Zweig  
Missouri Department of Conservation  
Columbia Research Center  
1110 S. College Avenue  
Columbia, MO 65201

Dear Ms. Zweig:

Thank you for reviewing the Tributary to Barker Creek Total Maximum Daily Load (TMDL) document and taking the time to comment in your letter of December 16, 2003. The Department of Natural Resources values our partnership with the Missouri Department of Conservation in safeguarding our state's natural resources.

To the extent our budget allows, I anticipate that monitoring in the Tributary to Barker Creek system will continue with regular measurements being taken for chloride, sulfate, alkalinity/ acidity, temperature, pH, specific conductance and flow. During this time of state budget uncertainties, it is difficult right now to plan any expansion in monitoring. Any further monitoring will be initiated as funds permit.

Regarding the need for discussion in the document for use of surrogate Tebo Creek data, the text on page 6 notes that additional data from other nearby creeks in the Tebo Creek system were used to help calculate the regression used to develop alkalinity values. Language reflecting the use of surrogate data from adjoining watersheds and extrapolation from that information, however, was added to Appendix C to reinforce that fact as you requested.

*Integrity and excellence in all we do*



RECYCLED PAPER

Ms. Leanna Zweig  
Page 2

Once again, thank you for your interest in the Tributary to Barker Creek TMDL document. If you have any questions, you may contact Gail Wilson at (573) 526-1535 or at the Missouri Department of Natural Resources, Water Pollution Control Program, P. O. Box 176, Jefferson City, MO 65102-0176.

Sincerely,

WATER POLLUTION CONTROL PROGRAM

A handwritten signature in black ink, appearing to read "Becky L. Shannon", with a long horizontal flourish extending to the right.

Becky L. Shannon, Chief  
Water Quality Section

BLS:gwd