



Ozark Waters

VOLUME I, ISSUE 24

DECEMBER 17, 2007

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Happy Holidays from the Upper White River Basin Foundation!



Greetings of the Season!

The Staff and Board of Trustees of the UWRB would like to wish all our readers a very happy, healthy and safe holiday. Thank you for your continued interest in Ozark Waters, and have a wonderful New Year!

Because Foundation offices will be closed between December 24 and January 1, 2008, Ozark Waters will not be produced for two weeks. We will resume publication on Monday, January 7, 2008.



Taneycomo in Snow

Photo by Stephanie Phillips
stephaniephillips.com



REPORTING ON WATER QUALITY

By John E. Moore, Jr.

Some months ago we wrote an article about the importance of defining and measuring water quality. Once this is accomplished, the next logical step is to report on what we find and answer relevant questions about how our Ozark waters are doing. These are issues I've wrestled with for some years, reflecting my interest in our region's water resources.

We have widely reported and understood metrics for the economy (e.g. the consumer price index) and the weather (e.g. temperature and humidity), but we don't have comparable indices for water quality. Although this challenge is more complicated than it first appears (prompted by the question of quality for what purpose), I've been convinced that not only is such a measure important for communicating about water quality, it also must be tractable in some way.

As our board discussed priorities last summer for our work, we determined to make monitoring and reporting water quality in the basin one of our top concerns. This is no small undertaking inasmuch as the upper White River basin covers some 14,000 square miles including much of southwest Missouri and northwest Arkansas and the numerous rivers and streams draining into

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Reporting on Water Quality

Continued from page 1

the White River watershed. The challenge, as we perceived it, was to develop a report which would be at once reasonably comprehensive, scientifically defensible, and amenable to communication in a down-to-earth, understandable way. It also had to be done efficiently because our resources, like those of most other organizations, are limited.

For some years our rivers, lakes and streams have been monitored and data collected on water quality.

Our Foundation sponsored water testing on Beaver Creek for a period of four years in connection with a project we were supporting in that area. Municipal waste water treatment plants in the region monitor their discharge and watershed organizations have sponsored water testing in their portions of the basin area. The U.S. Geological Survey (USGS) has a number of gaging stations on streams and collects water quality data at these and other sites around the region. Yet no effort has been made, to our knowledge, to pull these monitoring efforts together in any systematic way, assuming the testing and reporting protocols might be reasonably consistent, to present an overall picture of Ozark waters and a trend line in water quality.

In a region as extensive geographically as upper White basin, an evaluation of water quality extending to the upper reaches of every sub-watershed is probably not practical. Nonetheless we believe that by checking the watersheds downstream near their confluence with the lakes, a reasonably valid picture of water quality can be discerned. Accordingly,

we set to work to study how to gather data needed for such an evaluation.

Enter again the data collected by USGS. This federal agency with state offices in Rolla, Mo and Little Rock, Ar, does pure science including water quality work. Its testing and analytic protocols perhaps represent the "gold standard" in water quality data, all of which are published to an easily accessible website. The problem with these data is that to the uninitiated, making sense of them is much like reading a Greek newspaper. They tell a story, but interpreting it for the lay person is another challenge.

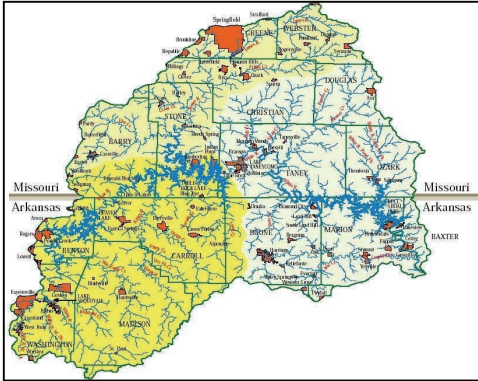
In looking at the location of USGS sample sites, it became clear that a number of these sites are reasonably distributed around the basin area and many have a record of years of water quality data. We determined that if a few additional sites were added, we could build a reasonably comprehensive set of data for the entire basin. We are now in the process of getting this done, and have determined that the data we will use in the quality profile will include flow data, dissolved oxygen, temperature, pH, conductivity, turbidity, phosphorus, nitrogen and bacteria. Our intent is to interpret these data in common language and show what changes have occurred and what changes take place over time.

As an additional and complementary measure of water quality, we have deter-

mined to do stream surveys on an annual basis according to a protocol referred to as an "Index of Biotic Integrity." We are in the process of selecting 30 stream sites throughout the basin, ten of which would be surveyed each year on a rotating three year schedule. These surveys will examine benthic invertebrates, the little creatures which live under rocks in the streams. These invertebrates are in some respects like canaries in the mine; if they are plentiful and if there are the same or greater numbers than in the last sample, the stream has healthy water. If the numbers are few or declining, it suggests that the water is less healthy.

We are working now to put these evaluation processes in place. The end result should be an annual report on the "state of the watershed." We intend this report to be reasonably comprehensive and efficient, scientifically sound and completely understandable to the lay person. We hope to distribute the report as widely as possible, in the effort to promote awareness and understanding about the importance of maintaining water quality in the Ozarks. If behavior follows belief, as we wrote recently, we will do our best to promote belief.

This is essentially a report on work in progress, but this priority project is coming along well. We believe this approach has considerable merit and can help make a difference. In subsequent articles we will look forward to describing this work and our first "state of the watershed" report. Stay tuned.



The Upper White River Basin covers geographical territory in both northwest Arkansas and southwest Missouri.

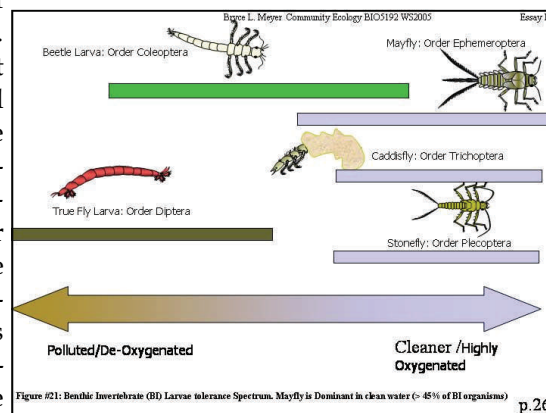


Figure #21: Benthic Invertebrate (BI) Larvae tolerance Spectrum. Mayfly is Dominant in clean water (> 45% of BI organisms) p.26

BASIN NEWS

Farm Bureau opposes case against poultry industry

The Oklahoman

<http://newsok.com/article/3179341>

The Oklahoma Farm Bureau's request last week to submit a legal brief in the state's pollution lawsuit against the poultry industry is a defense of all Oklahoma livestock producers, the organization's president said.

Missouri DNR: Expect stricter CAFO rules

Quincy Herald-Whig

<http://www.whig.com/290491991188817.php>

The Missouri Department of Natural Resources is revising the rules governing large confined animal feeding operations, including stricter monitoring of nutrient management plans when applying animal waste to fields.

Missouri sees decline in ethanol plant applications

The Southeast Missourian

<http://www.semissourian.com/story/1297387.html>

Missouri has seen a slowdown in applications for construction of ethanol plants in recent months. But plants that already have applications pending or approved are continuing the process of establishing their operations, say Kyra Moore, permits section chief for the Air Pollution control Programs in the Missouri Department of Natural Resources.

Jetton: 'Village law' was rural outreach

Springfield News-Leader

<http://www.news-leader.com/apps/pbcs.dll/article?AID=/20071212/NEWS01/712120412>

House Speaker Rod Jetton said Tuesday he endorsed a change in Missouri's so-called "village law" to make it easier for rural communities to get water and sewer systems. Jetton has dodged public comment about it since a Republican colleague named him as the one who pushed the controversial law.

History lets sinkhole stay as is for now

Springfield News-Leader

<http://www.news-leader.com/apps/pbcs.dll/article?AID=/20071217/COMMUNITIES0401/712190318>

Pendergrass said 1953 photos showed it became larger and deeper, but it stopped growing through the 1990s. The sinkhole "reactivated" in 2001, Pendergrass said. In late 2006, following heavy rains after a lengthy drought, the sinkhole collapsed some more.

WATER NEWS

Clinton calls for local control over large livestock operations

The Des Moines Register

<http://www.desmoinesregister.com/apps/pbcs.dll/article?AID=/20071212/NEWS/71212049>

Western states to share Colorado River water

NPR.org

<http://www.npr.org/templates/story/story.php?storyId=17246515>

Seven states sign Colorado River water pact

USAToday.com

http://www.usatoday.com/news/nation/2007-12-14-colorado-river_N.htm?POE=click-refer

Purification 'going green' with help from JBU

Herald-Leader

<http://www.nwanews.com/hl/News/22905/>

Remembering Arkansas: Stagecoach route wound rugged way through state

Arkansas Democrat-Gazette

<http://www.nwanews.com/adg/Travel/210888/>

UPCOMING EVENTS

December 19, 2007

WASHINGTON COUNTY LEAGUE OF WOMEN VOTERS
WATER QUALITY AND PROTECTION PROGRAM

11:30 to 1 p.m.

Fayetteville Public Library, Walker Room
Fayetteville, AR

Speakers include: Fred Jacks, Mayor of Bethel Heights; John Gray, Mayor of Greenland; Kevin Harrison, Project Coordinator for Grandview Heights Condominiums; and Alison West, Field Inspector for Arkansas Department of Environmental Quality (ADEQ). Sack lunches are permissible. Coffee and cider will be provided.

Call (479) 575-1841 or visit lwvarwc.org

December 20, 2007

NORTHWEST ARKANSAS CONSERVATION AUTHORITY
(NACA) MONTHLY MEETING

First Security Bank Annex, 100 W. Emma Street,
Springdale, AR.

Call (479) 586-3122 or info@nwaconservation.org
for more information.