

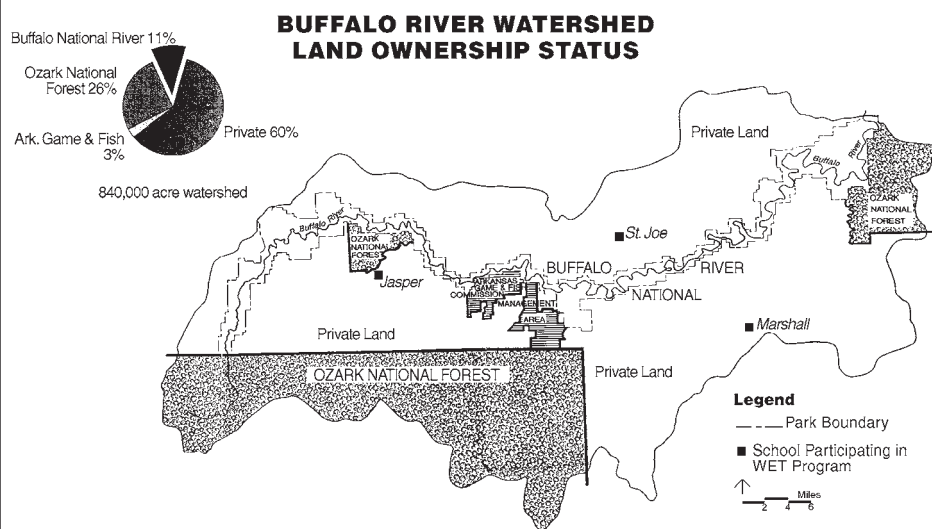


*Figure 1 (left). Buffalo River water quality depends greatly on land use practices outside park, forest, and game and fish management area boundaries, all areas within the Buffalo River watershed. The watershed figure shows land ownership and location of schools participating in the water education team (W*E*T) program.*

BUFFALO RIVER WATERSHED STUDENTS GET *W*E*T*

BY DAVID N. MOTT AND MICHAEL NARANJO

If ten glasses are filled with water from the Buffalo River, the contents of just one glass originates from inside the park! In other words, Buffalo National River manages only 11% of the total watershed, sharing ownership with Ozark National Forest (26%), Arkansas Game and Fish Commission (3%), and many private land owners (60% [fig. 1]).

Land use activities, such as logging, gravel mining, and agricultural operations, occur within the watershed. Although the quality of the water flowing into and in the Buffalo River is generally considered excellent, these practices adversely affect the river in some areas. With 60% of the watershed being managed privately, the future of the river may well be in the hands of our upstream neighbors.

One strategy for preserving the ecological health of the river and its tributaries is education. The National Park Service, U.S. Forest Service, National Park Foundation, Arkansas Department of Pollution Control and Ecology (ADPCE), and Arkansas Game and Fish Commission are joint sponsors of W*E*T (Water Education Team) a pilot interactive water resources education program involving the local schools of Jasper, Marshall, and Saint Joe (fig. 1). The program is long-term, emphasizing environmental values and an understanding of the ecological balance

of streams. Organizers hope the students will pass along the education to their parents and others.

In order to participate, the schools attend a 2-day training workshop where instructors treat students and teachers as equals. Both are taught about water as a resource, the three components of water quality monitoring (chemical, physical, and biological), and the methodologies used for collecting, analyzing, and recording water samples. Experts and guests from various agencies and organizations participate in the sessions (fig. 2).

Participants choose stations to monitor along various tributaries according to accessibility and logistics. Equipped with field gear, meters, and lab equipment, the schools sample each station every month and conduct follow-up lab tests. In addition, the schools also receive computers, software, and modems for networking and data entry.

Buffalo National River, Ozark National Forest, and ADPCE work closely with the schools to troubleshoot problems, replenish supplies, and analyze samples for nutrients. The students use EPA-approved methods to measure pH, dissolved oxygen, conductivity, temperature, turbidity,

fecal coliform bacteria, and identify macroinvertebrates. Program sponsors provide annual refresher training and quality control checks.

The program has been a real success so far. Students and teachers have maintained enthusiasm and remained motivated; some have even taken on special projects. One senior at Jasper High School

demonstrated leadership and initiative by designing a sampling regime for additional sites on the Little Buffalo River. Her



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project paper received state recognition and a \$1,000 Future Farmers of America college scholarship.

The most important thing about this program is how the students feel about their efforts. The following quotes are taken from reaction papers written by students at the end of each year:

“W*E*T is completely different from what I expected. We do a lot more hands on and field work.”
Jessie Baker

“I feel working with bugs is helping me decide what career I may want to pursue. When I first joined project W*E*T I would not touch any of the bugs and now I find myself falling in love with the cute little guys.”
Nikki Dean

“I ... acquired many new skills. I know how to classify and categorize organisms discovered in the water.”
Juliena Arthur

“I learned a lot more than I expected, but the main thing I realized was that everything in the environment affects everything else.”
Tara Dawn Cape

“I have ... learned the usefulness and importance of teamwork. Everyone must give one hundred percent effort for the correct results.”
Christy Grinder

“W*E*T taught me not only how to gather information, but ... also ... how to apply this information in real life.”
Jennifer Richardson

“I have ... learned how people are affecting the rivers ...”
Laura Brinkmeyer

“I have learned to respect the water and not abuse the privilege of having such beautiful creeks around our community.”
Reyna Martin

“I feel some responsibility for the polluting of our streams and land. I now try to be more careful with my actions because now I think of how they will affect our ecosystem.”
Amanda Weaver

As sponsors of W*E*T, we are extremely proud of our students and their teachers. We hope this learning program will contribute to the future success of these students and the long-term health of the Buffalo River and its tributaries.

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