



PACK & PADDLE



Fall

September 2017

"The challenge goes on. There are other lands and rivers, other wilderness areas, to save and to share with all. I challenge you to step forward to protect and care for the wild places you love best." - Dr. Neil Compton

Algae Bloom Season

By David Peterson, Ozark Society President

Remember the reports last fall of algae mats for miles on the Buffalo River? We are coming up on the fall algae season again, but perhaps the story will be different this year because of the wet and cool summer. The primary causes of algae blooms are available sunlight, high temperatures, low stream velocity, and nutrients - primarily phosphorous and nitrogen.

In addition to reducing the aesthetic enjoyment of the river for swimmers, floaters and anglers, there are well documented indirect ecological effects on stream structure and function. Some algae blooms are just natural but others have human and wildlife caused components. What can be done about these?



The Buffalo National River (NPS) is developing a plan for the upper Buffalo to "reduce stream bank erosion and runoff of nutrients and pesticides." Stay up-to-date on the on-going planning process by visiting: http://parkplanning.nps.gov/buff_boxleycap.

Governor Hutchinson's initiative, Beautiful Buffalo River Action Committee (BBRAC), has met 4 times to clarify possible action plans, with active input from the Ozark Society and Buffalo River Watershed Alliance.



Cows are not really permitted to plod in the Buffalo River (the photo comes from the Shenandoah River via the Environmental Integrity Project, environmentalinTEGRITY.org).

But both the NPS and BBRAC recognize the need for decreasing cattle and feral hog access to tributary streams, and controlling septic system leaks and road and trail erosion as well. The intent is to use outside funding to reimburse private land owners to implement improvements, but unfortunately BBRAC is not funded beyond the current planning stage. If stream banks were stabilized then there would be an increased tree canopy and deeper, faster water with cooler

water temperatures. This would benefit the smallmouth bass fishery, which has been under stress from increasing water temperatures (global warming, stream widening) and very high fishing pressure. The Arkansas Game and Fish has been trying to protect bass in the river via decreased creel limits since 1994, and finally in 2008, by making the Buffalo River essentially catch and release.

How about nutrients? Stream nitrogen to phosphorus ratios, N:P, can be useful in predicting a potential for eutrophic problems. In general, if N:P >20, a stream is considered to be phosphorus limited.



Algae on the Buffalo National River | Credit: Carol Bitting

This means that adding more nitrogen will not yield appreciably more plant biomass because there is a relative shortage of phosphorus.

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Membership Renewal Form for 2017



Dues are for one calendar year and include a subscription to the Society's newsletter, **Pack & Paddle**, and conservation bulletins. **Remit to: The Ozark Society, Inc., P.O. Box 2914, Little Rock, AR 72203** using the form below, or you can renew online at: www.ozarksociety.net – click on the “About Us/Membership” link.

1. Please check one: New Member: Renewal:

2. General Dues: (Required - Please Circle One)

- Individual/Family: \$20
- Individual Students: \$5.00 (High school or college, if not included with family)
- Contributing/Sustaining: \$25
- Individual Life: \$200 (Individual over age 65: \$100) (*This is for OS membership only and it does not include chapter membership.*)

3. Chapter Dues: (you may choose not to join a chapter, or choose more than one)

- | | |
|---|--|
| - Bayou Chapter - \$10 (Shreveport, LA) | - Mississippi Valley Chapter- \$5 (Cape Girardeau, MO) |
| - Buffalo River Chapter - \$10 (\$5/email newsletter only; N. Central AR) | - Pulaski Chapter - \$10 (Central AR) |
| - Highlands Chapter - \$10 (NW AR) | - Sugar Creek Chapter - \$5 |

Name: _____

Phone: _____
(Home) _____ (Cell) _____

Address: _____

Please send newsletters to my U. S.
mail address instead of by email

Email: _____

Total Amount Enclosed: _____

SOCIETY OFFICERS (2017-2018): President: David Peterson, (501) 679-2935, drpdpr@windstream.net; Past President: Alan Nye, (501) 258-7137, osacnye@gmail.com; Vice President: Lucas Parsch, lparsch@uark.edu; Financial Chair: Kay Ewart, ozarksocietyewart@sbcglobal.net; Recording Secretary: Sandy Roerig, (318) 686-9481, sroeri@lsuhsc.edu; Conservation Chair: Alice Andrews, (501) 219-4293, alice209ok@yahoo.com; Education Chair: Fred Paillet, (479) 935-4297, fredp@cox.net; Membership Chair: Chris Kline (479) 409-0394, cl_kline@sbcglobal.net; Communications Chair / Editor, Pack & Paddle: Carolyn Shearman, tucshea@gmail.com.

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Ozark Society Supplies & Publications: Mary Gordon, (501) 425-4471, mb2rene@aol.com.

Buffalo River Trail Coordinator: Michael Reed mereed@runbox.com.

OZARK SOCIETY DEPOSITORY: Special Collections Division, University of Arkansas Libraries, Fayetteville, AR 71701, (501) 575-5577.

MEMBERSHIP: Dues for membership in the Ozark Society are: Individual: \$20; Family: \$20; Contributing: \$25; Sustaining: \$25; Individual Life (one-time fee): \$200 for individuals under 65 years, or \$100 for individuals over 65.

Chapter membership adds to the fun of Ozark Society membership, but is not required. **However, chapter membership requires membership in the Society.** Their dues structure is as follows: **Mississippi Valley Chapter of Cape Girardeau**, Missouri: \$5; **Bayou Chapter** of Shreveport, Louisiana: \$10; **Highlands Chapter** of Northwest Arkansas: \$10; **Sugar Creek Chapter** of Northwest Arkansas: \$5; **Buffalo River Chapter** of North-Central Arkansas: \$10, or \$5 for email newsletters only; and **Pulaski Chapter** of Central Arkansas: \$10; **Student Membership**: \$5. Mail one check for both Society and chapter dues to: Ozark Society, P.O. Box 2914, Little Rock, AR 72203.

Algae Bloom Update

(Continued from Page 1)



Likewise, if $T:P < 10$ then a stream is nitrogen limited and increasing biomass such as algae likely occurs with increasing nitrogen not phosphorus. There is an analogous concept for farm or garden nutrients but the goal is just opposite: which nutrient, think fertilizer, is most important in increasing biomass.

In general, Buffalo River tributary streams with higher pasture percentages are phosphorus limited, whereas a few tributaries like Leatherwood Creek, which drains a wilderness area, are nitrogen limited. How about Big Creek at Mt. Judea? ANS: $T:P = 7.3$, Big Creek is nitrogen limited at this point. But the picture is more complicated, both nutrients enter the stream in large quantities. As Big Creek passes the farm, phosphorus

jumps by 117% and nitrogen increases by 81%. Compared to 23 other tributaries, above the farm, phosphorus levels are only 21st highest, but below the farm, 10th highest. For nitrogen levels Big Creek goes from 4th highest above the farm, to highest below the farm. Nitrate levels jump 140% when passing the farm, an indication of intensive land use, and over application of manure. [This analysis uses ADEQ data as reported by BCRET in the latest quarterly report]

So what can we do about excess nutrients?



The Ozark Society wants to see best management practices in the watershed that would minimize nutrient loss to the streams. Unfortunately, the lenient nutrient management plans (NMP) for CAFO's, as required by ADEQ, allow excess nutrient application to fields. The Ozark Society

has three main goals: i) get rid of C&H if possible, but if not possible, ii) minimize the excess nutrient loss from C&H and make sure there is no expansion of the facility, and iii) allow no other swine CAFO's in the watershed. A fourth goal, but only remotely realistic at this time, would be improving the methods employed in the NMP's at ADEQ.



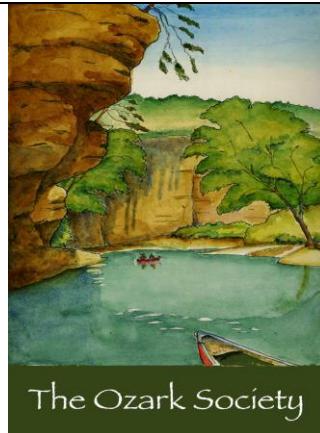
How about individual actions? Right now would be a good time to float/hike the Buffalo and take pictures and notes documenting algae blooms, stream bed erosion, and other potential problems on the river. This is useful information for the Park and for the Ozark Society. Perhaps we could add a BR eco webpage. Send the results:

drpdr@windstream.net.

Membership News: It's T-Shirt Time!

By Chris Kline, Membership Chair

T-shirts are here and they are great!!!!
They are forest green with this Buffalo River graphic on the back. This is proprietary to the Ozark Society, not to be copied. The OS name is on the front and our logo is on the left sleeve:



Ozark Society T-shirt Order

Adult Shirt \$20.00

Shipping \$4.00/Shirt

Name or Chapter*	3X	2X	XL	L	M	S	Shipping	T-Shirt

Total _____

Child Shirt \$15.00

Shipping \$4.00/Shirt

Name or Chapter*	L	M	S	Shipping	T-Shirt

Total _____

Ship To: _____

Address: _____

Make Checks Payable to: The Ozark Society

Address: Chris Kline

801 N. Rush Dr.

Fayetteville AR, 72701

*If you are ordering 3 or more, contact Chris at cl_kline@sbcglobal.net for revised shipping estimate.

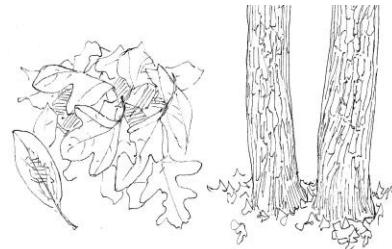
A Sacred Grove for the Ozark Society

By Fred Paillet, Education Chair

Many early cultures such as the Celts, Druids, and Vikings had sacred groves that served as shrines providing locations for their religious ceremonies. Later civilizations such as those of the Greeks and Romans continued this reverence for special stands of trees that captured their interest on account of their size, rarity, or unusual growth form. So, it seems that reverence for special trees with special cultural resonance is a natural human response to the environment around us. On a recent outing, it occurred to this Ozark Society member that perhaps our own society could use a sacred grove, especially one that is based on an especially important tree located in our own Ozark wilderness. Therein lies a story.

When I first arrived in Arkansas to begin my affiliation with the university and its renowned tree ring laboratory, I chose the Ozark Highlands Trail at the Cherry Bend trailhead for my first short venture into the local woodland. Within a year my hiking buddies from Colorado began to show up to join me in more strenuous Ozark outings. One of these hikes was again at Cherry Bend with the objective of climbing to the top of Hare Mountain and back on a pleasant early spring day. Much of the walk was

through mature second growth oak-hickory woodland with a bit of disturbance from old roads and even a small abandoned quarry on a ridgeline along the way. As a geologist, I am aware of how the sedimentary fabric of bedrock influences the landscape, with cliffs where hard sandstone or limestone intersect the land surface, and narrow benches with fertile soil following shale and siltstone outcrops. The trail to Hare Mountain wended along some of these shale benches and across low sandstone ridges, often underneath substantial red, white, and black oaks nurtured by rich, clay-based soils.



Details from the sassafras grove: leaf litter and deeply-ridged bark texture on mature trees.

Amid this scenery, one unusual stand of equal-sized trees with especially handsome, deeply ridged brown bark stood out. It is unusual in our diverse forest to see such stands locally dominated by a single tree. This was especially so on a section of fertile shale bench

where one would expect to see an assortment of magnificent oaks, hickories, and maples. At the time we were in a hurry to get to small stream shown on the map so filtered water could replenish our dwindling supply. With this first glance along the way, the rough brown bark and heavy branches on these trees made me think of black walnut.

Perhaps these walnuts came in on a small cultivated plot on this local section of nearly level and fertile soil. After that our attention was demanded by smoke and flames rushing up the front of Hare Mountain ahead of us. The USFS was apparently conducting an unannounced burn with no warning at the trailhead. So, we beat a hasty retreat back to the parking lot ahead of the billowing smoke.

Years later, a Highlands Chapter hike had me once again on the trail to Hare Mountain on a delightful autumn day. I was naturally looking for that unusual “walnut” stand just short of the point where the trail winds around a small drainage and heads up onto the mountain proper. This time there was a chance to take a serious look at this strangely uniform grove of unusual trees.

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A Sacred Grove for the Ozark Society

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The first surprise was that these were all large, mature sassafras trees.

All evenly spaced and about a foot to 16 inches in diameter. The ground was covered with the bright crimson mitten-shaped leaves making certain identification of these trees as sassafras, the official symbol of the Ozark Society. We usually think of sassafras as a small understory tree scattered about the forest. Here sassafras was the main forest itself in the better part of an acre of tall, sturdy trees. How did this happen?



The probable origin of this grove holds some important lessons about Ozark forests.

The stand is located on a relatively wide section of fertile shale-based bench. Early settlers were adept at finding such places as suitable for planting their crops. The sassafras stand must have originated by invading such a field after it was abandoned. But why would sassafras fill in the old field in such a way? We usually see uniform stands involving species of nut trees like walnut that can be brought in by rodents from a single productive seed tree.

In this case, the field was probably invaded by just a single sassafras tree that happened to seed in early when still surrounded by open field. The tree then began to spread out laterally underground by sending up new shoots from an expanding root system, a process known as "suckering". Nice idea, but do we have proof? In fact, we do. All of these trees had been shedding their leaves at the same time and in the

exact same shade of color. This is strong evidence that each of these trees is part of the same plant – a single clone. This provides a neat little example of how one can read the history of the landscape by considering the evidence at hand.

But what about making this a scared grove of our society's emblematic tree? The grove is located on a secluded and scenic part of the Ozark Highlands Trail. The sassafras trees located here are all straight and tall, with handsomely furrowed medium brown bark. The understory is filled with pawpaw, another tree reproducing by underground runners, and also indicative of rich, moist soil. The perfect place for a bench and a plaque dedicated to our society and its founders, where hikers can pause to ponder the value of preserving our remaining wild places.

Some Special Fall Activities

By Carolyn Shearman

Ozark Society Fall Meeting October 28th

The Fall Meeting will be all day October 28th in Fayetteville at the Ozark Mountain Smokehouse, 1725 Smoke House Trail, Fayetteville AR 72701

BNRP Buffalo River Clean-up September 30th

Our friends at the Buffalo National River Partners are having a clean-up of the lower Buffalo on September 30th check with them at www.bnrbpartners.org.

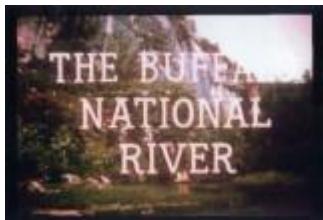
BNRP Boxley Mill Tours and Wildlife Viewing in October and November

Again, our BNRP friends are beginning tours starting October 7th on Saturdays and Sundays for Boxley Mills and wildlife viewing of the elk.

University of Arkansas Ozark Society Archives and Collections

By Janet Parsch

Janet Parsch, Ozark Society Highlands Chapter member and librarian at the University of Arkansas, wants to remind everyone of what the University of Arkansas Special Collections Department has regarding the Arkansas environment.

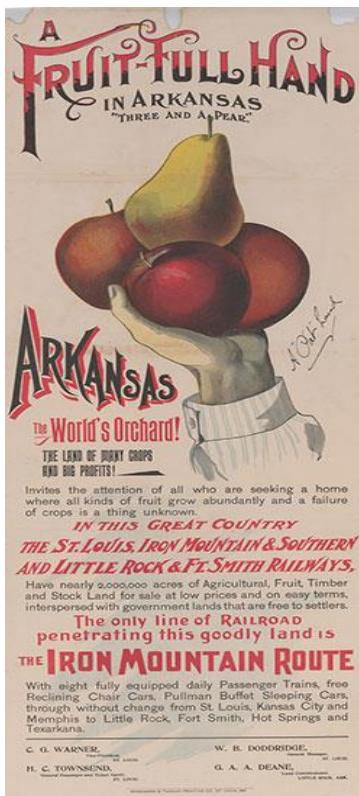


Archival collections include papers of the Ozark Society and Ozark Society Foundation, the Neil Compton Papers, Gus Albright Scrapbooks, the Arkansas Audubon Society Records, and sections on the environment in the political papers of U.S. Senators J. William Fulbright, Dale Bumpers, and David Pryor, Congressman John Paul Hammerschmidt, and Arkansas Governor Orval Faubus.

There are also related collections from other sources, for example, Arkansas horticultural and garden clubs and Agricultural Extension Services. You can check these out at the website <http://libraries.uark.edu/SpecialCollections/> and then look through what's called "finding aids" to discover the titles of individual files within a particular collection.

You can also check out various digital exhibits that pertain to Arkansas's environment at <http://digitalcollections.uark.edu/>

The Arkansas Extension Circulars were just "opened" to the public in August http://digitalcollections.uark.edu/cdm/landingpage/collection/Ark_Bulletins. Two other digital exhibits are also relevant. Created in conjunction with the Crystal Bridges Museum of American Art in Bentonville, "Fruit-Full Arkansas – Apples" includes lovely drawings of apples and describes the apple industry in northwest Arkansas in the early 1900s <http://digitalcollections.uark.edu/cdm/landingpage/collection/apples>.



And many newsletter readers may recall the "40-50-100" celebration in 2012 commemorating the 40th anniversary of the establishment of the Buffalo River as the first National river, the 50th anniversary of the founding of the

Ozark Society, and the 100th anniversary of Neil Compton's birth. (Compton Gardens in Bentonville just held its sixth annual public commemoration of Dr. Compton's birthday.) Digitized materials relating to these celebrations can be found at <http://digitalcollections.uark.edu/cdm/landingpage/collection/arknatenv>

In addition, two related physical exhibits are currently on display in the UA Mullins Library: Ken Smith's "Arkansas Heritage: The Buffalo National River Through the Lens of Ken Smith;" and "Curiosity Unbound: Samuel C. Dellinger, Champion of the University Museum," who taught anthropology and was the creator of the University Museum and was instrumental in establishing the Arkansas Archaeological Survey. Many stories are waiting to be researched and written about in these treasure troves of materials for those interested in studying more about Arkansas's natural environment and the people who protect it.



Should you have questions about doing research in Special Collections, or if you have materials related to Arkansas's environment or other topics that you think might have long-term historical value to preserve and that you might be interested to donate, feel free to contact Janet Parsch at jparsch@uark.edu.

Images in this article courtesy of UA Libraries Special Collections and Crystal Bridges Museum of American Art.



Ozark Society
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Little Rock, AR 72203

Please Note:

If you would like to receive *Pack & Paddle* ONLY by email, not through US Mail, please contact Mary Gordon at mb2rene@aol.com.

Buffalo River Trail Fall Work Week and Celebration October 21-27

By Mike Reed

The fall work session for the Buffalo River Trail will run from October 21-27 (Saturday through Friday). Sites #22-26 in Tyler Bend's main campground are reserved for us 10-19 through 10-29.

Ken's Krew will be camped there and working during the week. Those interested in helping who can't be there during the week can join us the morning of the 21st and/or all day the 22nd. The work will consist of clearing the summer growth from areas between Grinders Ferry and Red Bluff Road. Be at our "headquarters" before 8:30 AM - the big white tent in site #25. Bring your drinking water, gloves, and snacks. Please let me know in advance if you can join us so I can be better prepared.



The afternoon (and evening?) of the 21st there will be a trail completion celebration at the Tyler Bend pavilion. Anyone that had a hand in building the trail over the last 15+ years is welcome, as well as those that didn't but want to meet those that did. Plan on bringing your own food & beverages. If you want to spend a night or the whole weekend, sites 22-26 are reserved for us.

Help spread the word of our celebration. There are many, many people who have contributed that aren't on the email list I "inherited" from Ken Smith. Michael Reed mreed@runbox.com

website. www.ozarksociety.net.

Tyler Bend, Buffalo National River

