



PACK & PADDLE



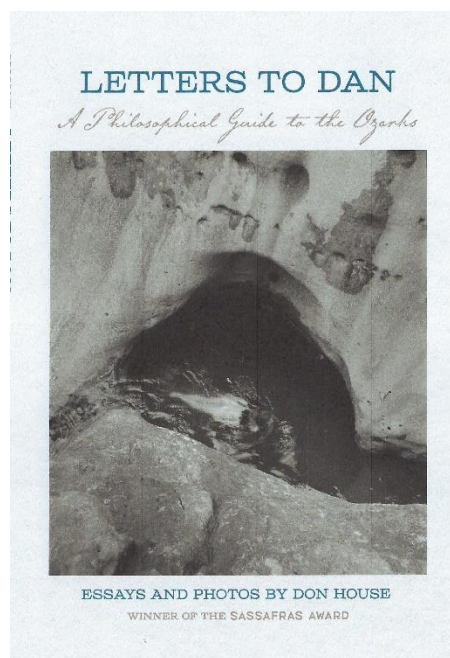
Spring "The challenge goes on. There are other lands and rivers, other wilderness areas, to save and to share with all.
March 2023 I challenge you to step forward to protect and care for the wild places you love best." - Dr. Neil Compton

Letters To Dan, Our Sassafras Award Winning Book

By Brian Thompson, Ozark Society President

The Ozark Society Foundation has selected *Letters to Dan: A Philosophical Guide to the Ozarks* by Fayetteville, Arkansas-based writer and photographer Don House for the Sassafras Award for Excellence in Environmental Writing. The award includes a \$3,000 prize and publication of the new book. You can get it now at the Ozark Society Store:

www.ozarksociety.net/store/



Letters to Dan includes personal essays and photographs that reflect the Ozark region's heritage and modern culture. Finalist judge for the award, Davis McCombs, called

Letters to Dan "a rare and remarkable book."

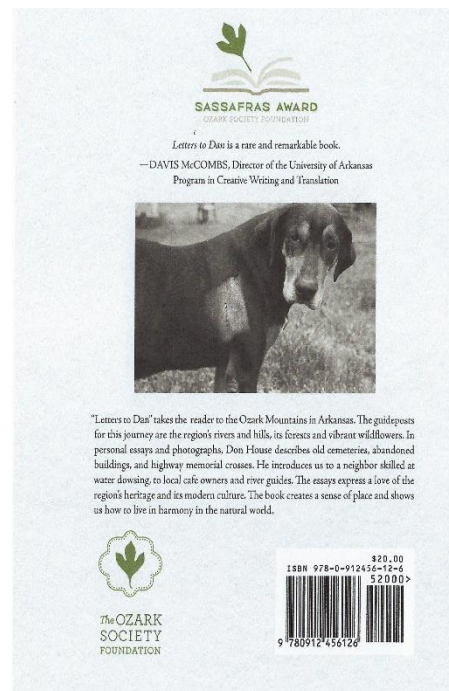
McCombs, Director of the Program in Creative Writing and Translation at the University of Arkansas and a former park ranger at Mammoth Cave National Park, described *Letters to Dan*:

"Like the lens of the author's camera, the writing throughout this extraordinary book is trained unwaveringly and lovingly on the hills, rivers, cemeteries, old churches, small-town diners, people, plants, and animals of the Ozark Mountains of Arkansas. Each essay—in its understated, eloquent way—speaks to the wonder and complexity of the natural world and to the interconnectedness of all life. The authenticity and urgency of this message is woven deep into the fibers of the writing. Behind each word lies the authority of a lifetime of observation and insight."

The Ozark Society Foundation established the Sassafras Award to encourage innovative writing and new perspectives of nature and conservation as well as new voices and the expression of

contemporary environmental experiences. House's book is the first awarding of the prize. The book is available to the public through the Ozark Society, the University of Arkansas Press, and other booksellers.

There will be a reception promoting the book on March 26th from 2:00 to 4:00 PM at the Fayetteville Public Library. Don House will do a reading and book signing. Mark your calendars for this great event.



In Memoriam: Hubert Ferguson, Terry Keefe, and Jay French Hill

By Stewart Noland, Tim Ernst, and Carolyn Shearman



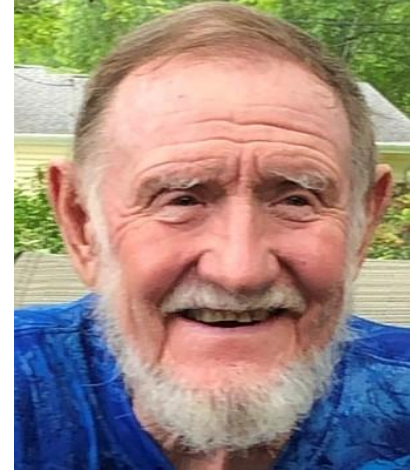
Hubert Ferguson by Stewart Noland: Hubert Ferguson, born in 1925, grew up in DeWitt, Arkansas. After serving in World War II, Hubert returned home and attended UCA in Conway. Hubert and his wife Mary Virginia had three children Francie, John, and Bill. Hubert worked with Conway Printing Company, where many Ozark Society books, guides, and maps were printed. As long-time members and supporters of the Ozark Society and its mission, Hubert and Mary Virginia (MV) shared a love for the Buffalo River country. That shared appreciation led them to spend their honeymoon float fishing on the Buffalo River. In the early 1970's, they followed their passion to Boxley Valley, and settled into their historic home. Even after Mary Virginia (MV) passed, Hubert remained there until his death February 4, 2023.

The Ferguson family supported the Ozark Society

throughout life. MV and son John were on the Ozark Society's Jubilee Bus to Washington D.C. in October 1971, to testify before Congress in favor of the Buffalo National River enabling act. Hubert and MV's preservation efforts created a positive impact in the watershed, including Hubert's involvement in developing the Boxley Valley Historic District management plan. Ozark Society hiking and boating outings drew Hubert's presence and wisdom to the group. As a member of the Greatest Generation, Hubert was a generous contributor to our state in myriad ways.

One of the most fortunate events in my life occurred in April 1974, when I met Hubert and MV on Big Piney Creek on an Ozark Society float trip. Our meeting resulted in our families becoming close life-long friends. Hubert and MV grew to be much like a second set of parents to me; a development for which I am forever grateful. I, like many Ozark Society members, loved them immensely.

Hubert's passing leaves a void with all who knew him and valued his friendship, and there are many of us. Treasured memories of Hubert will remain with us until we are no longer here. It is difficult to say good bye to loved ones, but I will say this: See you downriver Hubert, I know you will be there waiting for us.



Terry Keefe by Tim Ernst from the Arkansas Democrat Gazette:

We lost a mountain of a man. Terry was known for and will be so fondly remembered because of the pace and the depth that he embraced life - especially the outdoor life - and for enriching the lives of so many people (and other critters) he encountered along the way. My last connection with Terry was just last Friday, when he so kindly spent nearly an hour on the phone trying to locate a new waterfall find of his on a topo map - I was using the latest digital version, and he was using his much-more-refined and accurate memory to recall minute details of the trek to the waterfall he'd discovered many moons ago. Terry is the grandfather of the sport of waterfall hunting in Arkansas (just one of MANY things he was great at - really tough to keep up with him!). One of the most beautiful waterfalls in the state was named after him more than 20 years ago - TERRY KEEFE FALLS.

In Memoriam.....Continued

He no doubt visited many thousands of waterfalls in Arkansas and around the globe, and I hope that you will give a nod to the heavens in his honor the next time you are splashed by one. Rest In Peace my friend - you deserve it! And THANKS for all that you did for the world.



Jay French Hill by Carolyn Shearman from the Arkansas Democrat Gazette:

Jay Hill was a Little Rock community leader, a LIFE member of the Ozark Society, and a committed community volunteer. He was devoted to his Catholic faith serving as a lecturer and lay minister at Christ the King parish, a long-time troop committeeman of Troop 27 of the Boy Scouts of America at Our Lady of Holy Souls Catholic Church, board member and president of Subiaco Academy, and as an advisor to the Catholic diocese for its money management needs. He was a second-generation member of the Rotary Club of Little Rock (Club 99) and was an active member of

the Quapaw Area Council, Boy Scouts of America executive board and various committees. For his devotion to scouting, Hill earned the Order of the Arrow's highest honor, the Vigil Honor, and he was a recipient of the district award of merit and the Silver Beaver award. At the Gus Blass Scout Reservation, Hill's contributions are remembered with the Jay F. Hill Order of the Arrow Council Circle & Amphitheater. In retirement, he was the president of the Pulaski County Master Gardeners and enjoyed outdoor recreation with his friends and family at Lakeside Country Club and the Country Club of Little Rock. Jay was affectionately known as "Jaybird".

Gravel Bar Migration, Climate Change, and Mussels on the Buffalo

By David Peterson, Ozark Society Past President

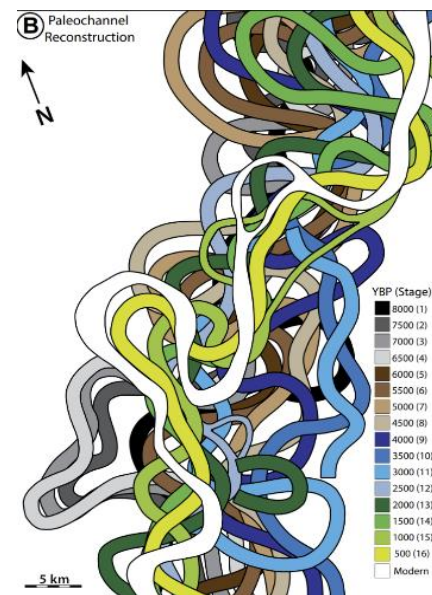


Gravel bar migration: The Buffalo River and its tributaries are a dynamic system. Streambank erosion occurs on the outside of loops where the current is strongest and the debris is deposited on the inside of downstream curves where the current is less, hence gravel bar migration (see above, Calf Creek near Tyler Bend). Over time these loops expand, multiple bars can form, which eventually degrade and reforest when the river creates a new channel. Old channels and gravel bars can be seen

everywhere in the Buffalo River flood plain when you walk away from the river. Upstream migration can also occur as bank cover and trees erode. On the right is a dramatic documentation of this process on the Mississippi over the last 8,000 years in 500-year increments. Each loop had its system of gravel bars which subsequently were degraded by the next flood or channel relocation. While basic physics governs these structures, over time specific future predictions are impossible.

If a historical study were made of the Buffalo River a similar map might occur except for local geography and scale: the river is smaller, the valley walls constrain the meanders, the gradient is

much steeper, and the underlying geology (Boone Formation etc.) and erosion rate is different.



Mississippi Meanders

Continued on page 4.

Gravel Bar Migration.....Continued

Flood rises are much steeper (52 feet in 1982) and of shorter duration, but the physics and long-term non- predictability remains the same. Migrating gravel bars are a nuisance to the United States Geological Survey (USGS) since they need to recalibrate their gauges as changes inevitably occur. Excessive gravel travels down channels making the river shallow.



Buffalo River Gravel Bar

Climate change:

According to the USGS, stream flow increased 14% over the last 61 years, but there have not been corresponding significant increases in extreme events, making the role of climate change unclear. Burning of forest understory and fields, which increases runoff, was in use by indigenous people long before settlement began (1820), it continued during the heyday of logging (1880-1920), increased with clearing for pasture after 1920, and is doggedly pursued by the forest service today. Carbonate rock (limestone) and cleared land result in shallower

channels, fewer pools, gravel substrata and eroding banks. But recent studies over the last 35 years show that the amount of gravel in the Buffalo, especially in the upper reaches, is declining.

Mussels:

Filter feeding mussels need clean running water and specific fish species to transport their parasitic larva to a new location. According to BNP biologist Shawn Hodges, “the Buffalo River may prove to be an important refuge for a declining mussel resource.” Mussel surveys on the Buffalo dating back to 1910 show relatively stable numbers and species (~25 compared to about 50 on the much larger White River). Possible threats are loss of necessary fish species and hydrological instability (eroding banks and shifting channels). The relative detrimental role of climate change verses other human intervention is not clear.



Rabbitsfoot Mussel



Fresh-water Mussels

If surveys indicated a possible extirpated species (e.g. endangered Rabbitsfoot mussel), artificial insemination and transportation of juveniles to suitable unpopulated bed sites might be a short term solution. How about stream bank restoration? Unlike the White River there are no dams on the Buffalo and after 50 years of protection as a national park, natural stream bank restoration is slowly occurring within the park. But 89% of the watershed is outside the park.

There has been growing support in state government and organizations like the Ozark Society for hard surface road building, fencing cows out of streams, septic tank improvement, bank stabilization on tributaries, as well as human waste control in the park. These efforts will need to continue as the nascent recreational property movement (an after effect of Covid), and commercial property development continues to spiral.

An Ozark Mystery Lost in Deep Geologic Time

By Fred Paillet, OS Education Chair

Mysteries have always been of great interest to readers, and we have a fascinating example of a mystery right here in our Ozark Mountains that relates to the rocks under our own feet – and even has a possible biblical implication. If you were stuck on US 71 in Bella Vista before the I-49 bypass was opened or have hiked past some of the rock shelters along the Back Forty trails you have seen the near vertical walls of layered limestone forming steep cliffs. Geologists call this the St Joe member of the Boone Limestone deposited about 300 million years ago. That was during what we hear of as the Coal Age when vast swamplands of primitive plants covered the lowlands east of the Ozark Plateau. Our area was often covered by shallow seas where rivers draining those swamps spread deltas over those sea sediments to form sandstone ledges, we see at places like Pedestal Rocks in the Boston Mountains. No mystery in any of that so far. But what still puzzles geologists and occasionally provides fodder for creationists, is the deep black layer of slate-like rock exposed at the base of those limestone cliffs dated to about 350 million years ago. There has long been an ongoing controversy about what those black rocks represent and why they are so widespread across eastern North America from New York to Oklahoma. Welcome to the mystery of the Chattanooga Shale.



Along US 71 in Bella Vista where limestone ledges lie on top of Chattanooga Shale

The general class of rocks known as “black shale” are a kind of fossilized mud where platelets of clay mineral have gently settled to the bottom of unagitated water. The clays represent the natural result of the minerals derived from the “decay” of hard crystalline rocks by slow reaction with slightly acid water – a process geologists call hydrolysis. Such small flakes of layered clay mineral are seen to settle to the bottom of still water. In most cases, these soft layers of flakey mineral form brown or gray beds after eons of burial. Only

when they incorporate large accounts of carbonaceous organic matter do they attain the black color of the Chattanooga Shale. In deep ocean basins, most of the organic material comes from the remains of microflora and fauna (plankton) that inhabit surface waters where they can absorb sunlight. These creatures use oils for floatation, and the release of those oils when they decay into the mud lets the resultant shale (fossilized mud) become the source for future oil reservoirs. That’s why black shales are identified with adjacent oil deposits (geologists call them source rocks) and why fracking can be effective at releasing even more hydrocarbons from shale for our energy needs.

When investigating the origin of geologic formations geologists often refer to “uniformitarianism” associated with the famous early naturalist James Hutton. He maintained that the present is the key to the past in that ancient sedimentary rocks were created by processes we can see operating at excruciatingly slow rates today – emphasizing the immense depth of time in earth history. So, where can we look today to see the ongoing formation of black shale? Geologists point to the Black Sea as a deep basin where fresher (less dense) water overlies a deep layer of more saline (and denser) water.

Continued on page 6.

An Ozark Mystery Lost in Deep Geologic Time.....continued

The density stratification impedes vertical mixing and keeps oxygen from penetrating to the anoxic bottom where organic debris is raining down along with clay particles. Organic debris in the resulting mud cannot be oxidized by decay and remains embedded in the forming shale. Sediment samples recovered from the Black Sea demonstrate how black (and smelly) this mud can be. As a result, geologists often label such black organic mud as Euxine deposits using the ancient Greek name for the Black Sea.

In view of this history, the existence of black shale in the form of the Chattanooga Shale is not by itself a real mystery. But the details of this particular kind of black shale confound geologists to this day. If you look at the rocks within the Chattanooga Shale, there are overwhelming signs that that it was generated under conditions far different from that of the modern Black Sea. As early as 1952 USGS scientist L. C. Conant published a report listing the many characteristics that imply the Chattanooga Shale was formed under shallow water conditions. The organic compounds in the shale appear to be derived from land as well as sea life. There are a series of erosion surfaces that imply exposure above water for a time as sea level rose and fell. This would indicate that the shale was being created in shallow water subject to

periods of exposure. Organic clumps of sediment look like lag deposits that were worked over by waves on some of these erosion surfaces. There are textures within the shale fabric that appear to result from agitation near the wave base at a few tens of meters in depth rather than thousands of meters. In many places the texture seems to indicate bioturbation as an indication that there was enough oxygen present to allow burrowing worms to function. Most surprising of all is that the Chattanooga Shale is draped over the entire middle of the eastern North American platform and seems to be contemporaneous with other shale layers in the Catskills and Illinois Basin. So, all signs suggest that these organic-rich shales were being deposited in a large region where shallow waters exposed to wind and wave agitation extended far up onto continental lowlands.



Chattanooga Shale

If the most frequently cited modern analog to black shale (isolated deep basin) does not apply to the Chattanooga, what kind of environment does that shale indicate? The one place we can go

to see regional deposition of organic material in shallow seas is in mangrove swamps along the coast of Indonesia. But there the influx of mineral is so modest that the deposits are more like dirty peat than black shale mud. The basic conclusion is that the world of the Chattanooga was far different from today's sedimentary environment. Sea levels were higher, the atmosphere warmer and the carbon dioxide content in the air several times greater than at present. Those conditions might have allowed the rate of organic material production to be much higher in warm, shallow seas than at present, accounting for organic matter being delivered to coastal muds faster than primitive decay organism of the time could break it down. But the details have yet to be worked out in global models. Biblical overtones even creep into the discussion when extreme creationists argue that the black mud with bioturbation evidence draped over the landscape resulted from Noah's flood and the desperate attempts of doomed creatures to escape from the events overtaking them. For the rest of us, the bizarre nature of the conditions of Chattanooga Shale deposition demonstrates the extreme sensitivity of earth's atmosphere to the nature of biological inputs and their recycling in the environment. Maybe there is a lesson here for us modern dispersers of abundant waste products.

The Sassafras Hiking Award

By Stewart Noland and Brian Thompson

The Sassafras Hiking Award is a new form of recognition that the Ozark Society has established. It is given for individuals who hike all four major regional trails:

- The Ouachita Trail – Talimena State Park OK to Pinnacle Mountain State Park AR, 223 miles
- The Ozark Highlands Trail – Lake Fort Smith to Woolum and Spring Creek to Matney Knob, 196.6 miles
- The Buffalo River Trail – Boxley to Pruitt, 37 miles + Woolum to Dillard’s Ferry, 42 Miles
- The Ozark Trail – Western Trailhead of Eleven Point Section to Onondaga Trailhead, 217.5 miles

Once hikers complete all four trails, they may contact the Ozark Society at:

www.ozarksociety.net/ozark-society-awards-grants-scholarships/os-sassafras-hiking-award/sassafras-hiking-award-registration/ to complete the registry form and submit \$10 to cover the cost of shipping the award. The Sassafras Hiking Award is an original design created by Little Rock ceramic artist Katherine Purcell. Each individual award has its own distinctive sequential number.

The Ozark Society will maintain a numerical registry of all Sassafras Hiking Award recipients on its website.



A biography of Wade Colwell winner of the first Sassafras Hiking Award by Stewart Noland

The first Sassafras Hiking Award recipient is Wade Colwell. Wade is an Ozark Society member and a native of Fayetteville, where he currently resides. Wade is a committed hiker whose hiking roots include hiking with Neil Compton to Hemmed in Hollow and numerous Boy Scout hikes. His hiking interest peaked while working at the Pack Rat and working with Tim Ernst on early Ozark Highland Trail Association work. The most important hiking take aways for Wade are the serenity and solitude offered by the trail and the resultant stress relief. Wade always enjoys whatever new the trail offers.

Wade has thru hiked the Ouachita Trail, Ozark Highland Trail, and Ozark Trail. His favorite and most challenging of the three is the Ouachita Trail. One thing he tries to never go without on the thru hikes is venison jerky, made by a hiking friend. Wade’s next thru hike is in early March 2023, on the River to River (Ohio to Mississippi rivers) Trail in southern Illinois. It will be a 17-day, 200-mile hike.



Wade is proud to be the initial recipient of the Sassafras Hiking Award, and in his words it “means the world” to him. He hopes to leave a hiking legacy his grandchildren can follow.

Future hikes for Wade could include the Pacific Crest Trail, John Muir Trail, or the Benton MacKaye Trail. His goal is to keep moving.

Continued on page 8.

Sassafras Hiking Award Continued

Wade's advice to fellow hikers includes to be mindful of your step, and to always know where you are.

Congratulations Wade Colwell! The Ozark Society is proud that you are the initial Sassafras Hiking Award recipient. Happy trails!

An interview with Christina Bethalee, the 2nd winner of the Sassafras Hiking Award by Brian Thompson.



Christina is in her thirties, formerly from Fayetteville, currently living in Clinton AR. She moved to the state about ten years ago and has been hiking Ozarks trails for most of that time. In addition to hiking, she is an avid kayaker. She heard about the Sassafras Award through Facebook.

The bulk of her hikes are day hikes, sometimes solo, sometimes with friends or

family. She describes her hiking style as casual, mostly going slow, stopping to look at wildlife and take pictures. She enjoys getting out at different times of the year to appreciate the seasonal differences in the landscape. She hikes not so much to get to a destination as to simply get outside.

One particular day she remembers well was when her group was attempting to locate the NARs (the narrows) on the Buffalo National River, where the hillside is eroded by the Buffalo on one side and Richland Creek on the other. This is also where the Ozark Highland Trail crosses at Woolum, continuing on the south side as the Buffalo River Trail. She and her friends knew the NARs was nearby, but they had difficulty locating it. This resulted in a fair bit of bushwhacking. Despite the difficulties, the NARs and the scull bluff are some of her favorite spots.

Asked about wildlife, she has seen a bear on the Syllamo Trail, but never encountered one on the others. She has seen what was either a mink or an otter. "It was really shiny and black." She notes that some of the weirdest creatures can be the people,

though she'll also tell you that some of the scariest looking folks she's seen were picking up trash along the trail. You just never know.

Christina says she's never really had a bad day on the trail, though she did step in a mud hole on the Ozark Highland Trail which pulled one of her hiking boots off "which were expensive." She spent some time reaching deep into the goop to pull it out, but never could find it. Not sure how to best proceed, she removed her other shoe and finished her hike in her socks. "It felt like a really long walk."

Of the four, Christina's favorite trail is the Buffalo River Trail.





Ozark Society Membership Application/Renewal



Join us, or renew now! Dues are for one year, January-December, and they include a subscription to the Society's newsletter, *Pack & Paddle*. To join or renew, go online to the Ozark Society website at www.ozarksociety.net. Or you can fill out this form and send it with a check written to "The Ozark Society." See below for our mailing address.

Name(s) _____ Date: _____
 Address: _____
 City, State, and ZIP: _____
 Phone: _____
 Email 1: _____ Old Email (if changed) _____
 Email 2: _____ Old Email (if changed) _____

Please check one:

- New Member Start at **Section A** for your OS and Chapter Membership
- Renewal Start at **Section A** to renew your OS and Chapter Membership
- LIFE Member Start at **Section B** to renew just your Chapter Membership

Section A: Please specify both the Level of Membership and the Chapter you are joining:

Level: (choose one)

- Friend: \$30 = \$20 OS +\$10 Chapter
- Associate: \$50 = \$40 OS +\$10 Chapter
- Supporter: \$100 = \$90 OS +\$10 Chapter
- Sponsor: \$250 = \$240 OS +\$10 Chapter
- Patron: \$500 = \$490 OS +\$10 Chapter
- Benefactor: \$1000+ = \$990+ OS +\$10 Chapter

Chapter: (choose one)

- Bayou (Shreveport, LA)
- Buffalo River (North Central, AR)
- Highlands (Fayetteville, AR)
- Mississippi Valley (Missouri)
- Pulaski (Central, AR)
- Schoolcraft (Springfield, MO)
- Sugar Creek (Bentonville, AR)
- No chapter, all to central Ozark Society

Section B: For Members who wish to join more than one Chapter or Life Members renewing their Chapter Membership only

(Choose as many as you wish and add \$10 for each chapter)

- \$10 Bayou (Shreveport, LA)
- \$10 Buffalo River (North Central, AR)
- \$10 Highlands (Fayetteville, AR)
- \$10 Mississippi Valley (Missouri)
- \$10 Pulaski (Central, AR)
- \$10 Schoolcraft (Springfield, MO)
- \$10 Sugar Creek (Bentonville, AR)

Section C: Donations to our Funds

(Choose any amount)

- \$ _____ The Conservation Fund
- \$ _____ The Endowment Fund
- \$ _____ The Legal Fund
- \$ _____ The Compton Scholarship Fund
- \$ _____ The Hedges Scholarship Fund

My Total is: \$ _____

Please remit to: The Ozark Society, PO Box 2914, Little Rock, AR 72203

You will receive an email Thank You from the Ozark Society. Please contact oscomms@ozarksociety.net for questions.



Ozark Society
P.O. Box 2914
Little Rock, AR 72203

Please Note: If you would like to receive *Pack & Paddle* by email, not through US Mail, please contact Carolyn Shearman at oscomms@ozarksociety.net.

The Officer, Director, and Chair List

SOCIETY OFFICERS: President: Brian Thompson, ospres1@ozarksociety.net; Vice President: Tim Mason, osvp@ozarksociety.net; Financial Chair: Kay Ewart, ozarksocietyewart@gmail.com; Recording Secretary: Sandy Roerig, sandra.roerig@lsuhs.edu; Past President: David Peterson, ospastpres@ozarksociety.net; Co-Conservation Chair: Alice Andrews, alice209ok@yahoo.com; Co-Conservation Chair Tom McClure caddo716@hotmail.com; Education Chair: Fred Paillet, education@ozarksociety.net; Community Engagement Chair: Lowell Collins ossugarcreek@gmail.com; Communications Chair: Carolyn Shearman, oscomms@ozarksociety.net.

STATE DIRECTORS:

ARKANSAS: Mary Schlatterer, schlatterer@yahoo.com; Laura Timby, laurab2053@gmail.com;

MISSOURI: Jennifer Ailor, jailor65721@yahoo.com; Brenda Crites, bcsetirc@outlook.com;

LOUISIANA: Perry Hill, kramerhill@suddenlink.net, Karen Pitts, tuffenufchuck@aol.com

CHAPTER CHAIRS: Bayou Chapter: Grace Eyer bayouchair@ozarksociety.net; Pulaski Chapter: Emily Roberts pulaskichair@ozarksociety.net; Highlands Chapter: Tom Perry, highlandspres@ozarksociety.net; Buffalo River Chapter: Kris McMillen, buffaloriver@ozarksociety.net; Mississippi Valley Chapter: Brenda Crites, bcsetirc@outlook.com; Schoolcraft Chapter: Curtis Millsap, schoolcraftchair@ozarksociety.net; Sugar Creek Chapter: Lowell Collins, ossugarcreek@gmail.com.

BUFFALO RIVER TRAIL COORDINATOR: Michael Reed, mereed@runbox.com

OZARK SOCIETY STORE: Brittany Plouch, outreach@ozarksociety.net.

OZARK SOCIETY ARCHIVES: Stewart Noland, stewartnoland51@aol.com

OZARK SOCIETY DEPOSITORY: Special Collections Division, University of Arkansas Libraries, Fayetteville, AR 72701, (479) 575-5577.

MEMBERSHIP: Dues for membership in the Ozark Society include the overall Society and one Chapter of your choice. The levels are Friend \$30; Associate \$50; Sponsor: \$250; Patron \$500; and Benefactor \$1000+. You can join more than one Chapter however, by just adding an additional \$10 for each extra one. Please refer to www.ozarksociety.net/membership or mail your check including our Membership Form to: Ozark Society, P.O. Box 2914, Little Rock, AR 72203.