



August Commission Meeting and Fieldtrip to Cove Creek

The August 26, 2009, meeting of the Arkansas Natural Heritage Commission included a business session at the Rockefeller Institute on Petit Jean Mountain, followed by a special trip to [Cove Creek Natural Area](#) to "unveil" and actually install the entrance sign at the new and improved access area. The commissioners and staff enjoyed the uncommon, cool August weather and assembled at the new parking area to erect the sign identifying the site as part of the System of Natural Areas.



September
2009

Cove Creek Natural Area encompasses approximately one mile of Cove Creek, a major tributary of Cadron Creek. Cove Creek is formed by the convergence of Hogan's Creek and Pine Mountain Creek in Van Buren County. Bluffs tower as high as 140 feet above the streambed. This site's topographic relief, varied exposures, and considerable extent provide habitat for a mosaic of aquatic and terrestrial communities characteristic of the Arkansas River Valley Natural Division.

Commissioners and staff hiked the area, with ANHC botanist Theo Witsell identifying various plants along the way, including a native orchid. The group explored one of the smaller bedrock bottom streams (see photograph below) that tend to be more shallow and open because the bedrock does not allow the stream to erode down into the channel. The areas beside the stream, with bedrock near the surface, thin soils and few trees, support dry glade plant communities while the nearby stream itself may have more typical wet community plants

Driving directions for the new access:
From I-40 in Conway travel north 7 miles on Highway 25 to Wooster, then travel 7 miles on Highway 285 to Mallet Town Rd, turn left and travel two miles to Town Circle Rd, turn right. Follow Town Circle Road for 0.3 miles and turn right and follow the gravel access road for 0.2 miles to the parking area.



Additional signage for the area and updates for the website are underway.

[-Jane Jones-Schulz](#)

ANHC Sends Teachers and Students for "Fire School"

The [Arkansas Prescribed Fire Council](#) (APFC) will be conducting a week-long training workshop at Camp Robinson September 21-25, entitled "Fire as a Management Tool". This course is designed to provide training and experience to individuals who plan, conduct, or administrate on-the-ground prescribed fire operations with specific management objectives in mind. The course combines classroom training on a variety of topics ranging from fire weather, personal safety, fire behavior, smoke management, and the ecological effects of fire. ANHC will provide three trainers for the course, who will introduce students to



fire and personal safety equipment in a hands-on, outdoor classroom. Our veteran burn crew members will also lead teams on two prescribed burns on the grounds of Camp Robinson. One ANHC staff member will attend the workshop as a student, to increase our overall number of staff trained to participate in prescribed burning conducted by the agency.



The Arkansas Prescribed Fire Council was started in 1997 as the Arkansas Prescribed Fire Committee by natural resource managers across the state to promote the benefits of prescribed fire to agency personnel and citizens. The first product of this committee was the "Prescribed Fire as a Management Tool" workshop which is held once a year to educate state and federal agency personnel on the use and benefits of prescribed fire on the landscape. After eleven years, participants now include non-government personnel and a few private landowners for a week's worth of education and on-the-ground training and experience using prescribed fire in Arkansas.

[-Bryan Rugar](#)

A Cost-Saving and Greener Annual Report

The ANHC 2009 Annual Report will be released on an earlier schedule this year because we are changing the reporting period to match the state fiscal year. The printed document will be ready for distribution in October; however, our monthly website monitoring indicates that the majority of annual report readers are using the digital version available on-line. Just last month, 642 website visitors chose to download the [latest \(2008\) report](#). With a printing cost of \$14 each, this could be considered a cost savings to the ANHC of almost \$9,000 in August alone, for a report that was originally released last November.



Our annual report has developed in one of our major outreach tools. In addition to highlighting agency activities for the year, it provides detailed information on each of the 66 natural areas with the System of Natural Areas and contains lists of the rare species and natural communities tracked by the ANHC. Watch for the new 2009 annual report on-line next month.

[-Karen Smith](#)

Stabilizing Stream Banks

[The Nature Conservancy in Arkansas](#) is involved in two projects to stabilize stream banks that are losing tons of sediment to erosion every year. At the Middle Fork of the Upper Little Red River in Van Buren County, the Conservancy completed in August the restoration of 500 feet of a bank on private land enrolled in a U.S. Fish and Wildlife program designed to provide habitat protection for the endangered speckled pocketbook mussel, which is found only within the watershed of the Little Red River (see "Endemic of the Month" below).



At the Middle Fork of the Saline River in Garland County, the Conservancy is working to restore a 2,600-foot bank section. To keep soil out of the river, the team changed the slope of the bank, constructed in-stream structures designed to focus the river's energy inward and planted trees and other vegetation to hold the earth in place.

The project, scheduled for completion in October, followed a two-year study, funded by the U.S. Environmental Protection Agency's Clean Water Act that concluded that sediment is among the Saline River's worst pollutants. After zeroing in on sediment, Conservancy researchers then identified the biggest contributors, which included eroding stream banks.

A second part of the project will involve the erection of fencing for nearby landowners to keep cattle from the stream's riparian area and the creation of alternative watering sources for the cows.

"The Upper Little Red and Saline river watersheds are both home to streams that provide drinking water for local communities, habitat for rare animals and opportunities for outdoor recreation," said Joy DeClerk, the Conservancy's Ouachita Rivers program manager. "Improving the water quality within these watersheds

[Jay Harrod](#)

Senior Media Relations Manager
The Nature Conservancy, MRC Southern U.S.

Freshwater Mussels – the Silent Sentinels

If your chief experience with freshwater mussels has been on a menu, you might wonder why some scientists devote their careers to studying these bivalve mollusks. Although freshwater mussels are distributed throughout the world, they reach their greatest diversity in North America. With 74 native species, Arkansas has a greater diversity of mussels than other states west of the Mississippi River. The United States is home to approximately one-third of world's freshwater mussel species, but mussel populations have been in decline for more than 100 years. Currently, nearly three-quarters of North America's native freshwater mussel species are considered endangered, threatened, or species of special concern, and some researchers believe that as many as 35 species are already extinct.



In late 1800s, the commercial value of freshwater mussels was recognized by the newly born American button industry. This, coupled with loss and degradation of freshwater habitats associated with the America's rapid industrialization, contributed to the first major declines in freshwater mussel populations in the United States. By 1912, nearly 200 button factories were operating in towns all over the country. The pearly shells of harvested mussels were used for buttons and their soft tissues for livestock feed. The button industry declined with the advent of plastics in the 1950s, but by then the Japanese had found a new market for freshwater mussels - as a source material for cultured pearls.

The shells of freshwater mussels are cut and finished into beads for insertion into oysters to serve as nuclei for cultured pearls. Thousands of tons of mussel shells are processed and exported to Japan each year to supply the cultured pearl industry. Additional commercial and medical uses for freshwater mussels are also being explored. For example, recent research suggests that some mussels may be resistant to certain types of cancer and that the extraction of cancer curing drugs from mussels may be feasible in the future.

Freshwater mussels are an important part of the food web in aquatic ecosystems. As natural filter feeders, freshwater mussels strain out suspended particles and pollutants from water and help improve water quality. Some mussels can filter up to 10 gallons of water per day. Mussels are, in turn, consumed by muskrats, otters, and raccoons and young mussels are often eaten by ducks, herons, fish, and many aquatic invertebrates.

Mussels are often used as indicators or biological monitors of past and present water quality conditions in rivers and lakes. A sudden increase in the mortality of freshwater mussels may be indicator of toxic contamination. The disappearance of freshwater mussels usually indicates chronic water pollution problems. Moreover, biologists can measure the amount of pollutants found in mussel shells and tissue to determine the type, extent, and even timing of water pollution events.

Data about Arkansas's mussel populations is collected, compiled and geo-referenced in a specific MUSSELDATA database developed cooperatively between ANHC and the Arkansas Game and Fish Commission (AGFC). Recently, ANHC conservation data manager [Cindy Osborne](#), who worked in designing the database, reviewed and edited a manuscript prepared by Dr. John Harris to be submitted to the *Journal of the Arkansas Academy of Sciences* entitled: "Unionoida (Mollusca: Margaritiferidae, Unionidae) in Arkansas, Third Status Review." Dr. Harris utilized the MUSSELDATA database extensively in preparing his paper and Cindy edited the section describing the NatureServe conservation ranking system.

AGFC malacologist Bill Posey reports regularly on the status of Arkansas mussels in the non-game aquatics' quarterly newsletter [Life in the Rocks](#). For additional information, including field guides and downloadable teaching resources, visit the U.S. Fish and Wildlife Service site at <http://www.fws.gov/midwest/mussel/index.html>. And also check out our mussel "endemic of the month" for this E-newsletter below.

[-Jane Jones-Schulz](#)

Continuing with the discussion of mussels in this month's E-newsletter, Arkansas is home to several species of freshwater mussels that are found nowhere else in the world. The speckled pocketbook (*Lampsilis streckeri*) is federally endangered and is found only in the Little Red River System. It is a thin mussel in both shell thickness and depth of shell. Adults are about 3.1 inches long with shells that are elliptical, dark yellow or brown with chevron-like spots that form rays in a chainlike arrangement. The shells of adult females are usually broader and more evenly rounded posteriorly than the males. The speckled pocketbook inhabits stream sections with clear, constantly flowing water and substrates varying from coarse to muddy sand, in depths up to approximately one and half feet.



Due to their sedentary lifestyle, all mussels in Arkansas rely on a unique reproductive strategy to colonize new areas. They have three basic life stages: larval (or parasitic), juvenile, and adult. Females brood the young from the egg to larval stage in their gills. The larvae, called "glochidia", may mature and be released the same year or may be retained in the gills over winter and released the following spring. Once released, glochidia must attach to the gills or fins of an appropriate fish host to complete their metamorphosis to the juvenile stage. For many species of mussel, the host is limited to a single species of fish, and their survival is wholly dependent on the presence of that species in the ecosystem. Research is on-going to understand the host species of the speckled pocketbook as an integral part of conserving this unique species.

The term "pocketbook" refers to that fact that some common names of mussels are based on the similarity of the mussel's shape to an item that was used in the 1800s, when many of the mussels were first described. Pocketbook mussels were thought to resemble the small purse, also called a pocketbook. Other mussels named after items commonly used in the 1800's include: washboard, snuffbox, spike (after a railroad spike), and spectacle case.

[-Jane Jones-Schulz](#)

Upcoming Events

November 3, 2009 - Arkansas Natural Heritage Commission meeting

The ANHC will meet Tuesday, November 3, 2009. Details TBD

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