

***Addressing Sediment Runoff from Recreational ATV Trails for Fourteen Species  
of Greatest Conservation Need***

***Ouachita Headwaters Watershed, Polk County, Arkansas***

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*January, 2011*



**Project Summary:**

The Nature Conservancy conducted a trails assessment of the Wolf Pen Gap area in the summer of 2010 with the objective of assessing drainage conditions, establishing permanent photo monitoring points, and locating potential project locations. The Nature Conservancy, in partnership with the Ouachita ATV Club, intends to implement on-the-ground trail restoration activities specifically targeting drainage repair on 1-3 of the highest priority trail segments. TNC also proposes to assess the stability of significant portions of Board Camp, Gap Creek, and the Ouachita River.

**Principal Project Partner:**

➤ ***Ouachita ATV Club*** – Tim Kiser [timsyamaha@sbcglobal.net](mailto:timsyamaha@sbcglobal.net) Ph: 479-394-4539

**Total Project Cost: \$103,848**

**Total Amount Requested: \$67,498**

**Total Matching Funds/In-kind Services: \$36,350**

**Matching Funds Sources:** The Nature Conservancy, Riggs Cat Rental, Ouachita ATV Club, and Volunteers.

This restoration project will address the following funding priorities outlined in the Arkansas Wildlife Action Plan:

**Maintain, protect and restore habitat for the Caddo madtom and Paleback darter.**

**To restore, enhance and/or maintain wetland integrity.**

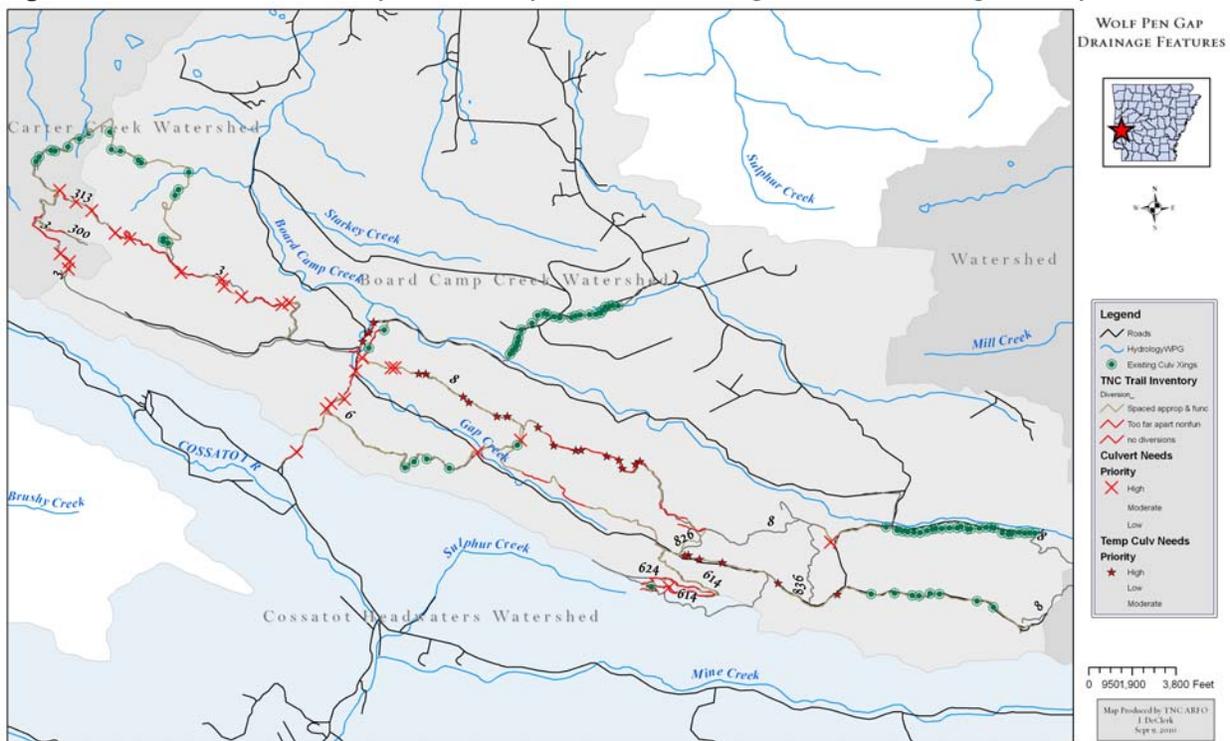
**Continue watershed planning process for high priority streams.**

**Measure regional bank erosion rates.**

**Implement road (trail) BMP projects/workshops.**

**Project Area:** The project is located in the Ouachita Ecoregion, Ouachita Headwaters watershed, Polk County, Arkansas; and is targeted to address both small river riparian terrestrial habitat, headwaters aquatic habitat of the Ouachita River (see Figure 1), stream water quality, streambank habitat, and fourteen species of greatest conservation need (See Table 2).

**Figure 1. The Nature Conservancy's Trail Analysis Results: Existing Conditions and High Priority Needs**



**The Need:**

While recognizing the recreational and economic value of the Wolf Pen Gap trail system, it has become necessary to balance this need with concerns regarding declines in water quality and impacts, such as excessive sedimentation, to the aquatic targets listed in Table 2. During the 2010 trail assessment, excluding trail segments identified unanimously by the stakeholders as needing a re-route or immediate closure, The Nature Conservancy located 27 stream crossings with a high priority for installation of culverts. A high priority weight was given to crossings based on size of the stream, the amount of disturbance or erosion noted, and/or if there were aquatic passage issues evident. There were an additional 57 locations ranked as a moderate priority for installation of culverts. Of these prioritized locations, 7 crossings had a drop of 6” or greater on the downstream side causing aquatic passage issues. Of the trail segments identified for future re-route, there were 15 crossings through these segments with a high enough priority weighting that if the re-route was not to occur for 2+ years, due to funding constraints or other, were prioritized for installation of temporary culverts to provide adequate drainage

for the trail during the waiting period. Of the existing 83 stream crossing culverts in place, 8 culvert crossings are inadequately functioning and need replacement due to the culvert either being undersized to accommodate flow or damaged. Fourteen of the eighty-three existing culvert crossings have a significant drop > 12" on the downstream side of the crossing.

Of the 28 miles of trail surveyed, 6.78 miles, or 24% of the total, were characterized as having either no water diversions at all or the diversions in place were too far apart and/or nonfunctioning. Other characteristics of the trail system include segments located streamside totaling 10.8 miles, or 39% of the trail system, 4.99 miles of trail with a width of > 2 ATV widths, and 2.33 miles of trail noted with standing water either in multiple areas > 1ATV length or single locations with > 5 ATV lengths. Roughly 3 miles of trail were noted for having sediment plumes diverging off the trail > 6 feet in length. In addition to these statistics, long-term biological monitoring conducted by the USFS shows a declining trend in sensitive species' range and population and thus it has become evident that the issue of sedimentation in these streams must be addressed quickly and efficiently. The USFS is also currently under consultation with the U.S. Fish and Wildlife Service regarding endangered species in the watershed and have proposed a plan of action in 2011 to address these issues. Due to a reduction of available funding for maintenance and restoration of dysfunctional trail systems such as these, it will take a series of collaborative efforts, grants and/or other private funding to get much of the immediate needs addressed. This project would pool resources and partnerships to implement objectives that align with the proposed action plan for Wolf Pen Gap. This collaborative effort to address the issues with Wolf Pen Gap among stakeholders, including the USFS, TNC, Trails Unlimited, Ouachita ATV Club, and landowners, is a unique partnership that could be replicated in other forests with recreational ATV trails.

***Method:***

The proposed project is targeted to compliment and build on work already underway by both the US Forest Service and the Ouachita ATV Club through implementation of drainage repair necessary for immediate reduction of sediment to Board Camp Creek, Gap Creek, and ultimately the Ouachita River. The Nature Conservancy proposes to utilize SWG funding to complete, in coordination with partners, high priority trail restoration work. This will include installation and/or re-establishment of appropriately spaced water diversions from the trails to the forest floor, installation of culvert crossings where needed, and re-shaping the trail to drain more effectively, while keeping the footprint of the trail small. The restoration work will utilize appropriate best management practices and innovative techniques specific to addressing drainage issues in a highly sloped environment with bedrock, cobble, gravel, and fine substrates. In addition to the trail restoration work, TNC proposes to assess the geomorphic stability of key representative reaches of Board Camp and Gap Creeks, identify any reference reaches if found, and establish a minimum of two permanent survey sites that reflect the channel conditions found throughout the drainage. TNC also proposes to establish geomorphic conditions of the Ouachita River mainstem both up and downstream of the confluence of Board Camp Creek. This data should complement and enhance historic and current biological data produced by the USFS. Over time, detailed geomorphic data collected in these drainages could be used to establish additional links between changes in stream and riparian physical habitat, resulting from degradation and/or restoration, with changes in macroinvertebrate and fish communities.

***Measurable Outcomes/Objective:***

The goal of this project is to reduce direct sediment inputs to the streams coming from the Wolf Pen Gap trail system. The completed project will restore the top 1-3 priority sites identified in the 2010 trail survey and establish permanent geomorphic survey locations on the streams for assessment of channel stability and to provide baseline data for future assessments of erosion rates. A before/after assessment of the trail segments under restoration using the WEPP, or Water Erosion Prediction Project, model will be conducted to estimate sediment reduction resulting from restoration work. The project will be show cased to private landowners, ATV groups, and other stakeholders in the watershed as a demonstration of

successful restoration techniques that can be replicated in other areas of the Wolf Pen Gap trail system. This project is aimed to directly address the problem and would be complimentary to the Wolf Pen Gap proposed action plan produced by the USFS.

**Leverage of Existing Resources:**

This project has a diverse number of partners involved with a history of working together to collectively address trail issues.

- ✓ **Ouachita ATV Club** – technical assistance with trail restoration, use of equipment, and supplies.
- ✓ **US Forest Service, Ouachita National Forest** – technical assistance with stream surveys.
- ✓ **The Nature Conservancy** – coordination of volunteer work days, coordination between groups, collection of geomorphic data, use of equipment, and supplies.
- ✓ **Rich Mountain Community College** – local student volunteers for data collection.

**Table 1. Budget**

Category	Funds Needed	TNC/Match	3rd Party Match	Total
Salaries and Benefits	\$ 34,676	\$ -	\$ 14,780	\$ 49,456
Operating Expenses	\$ 20,200	\$ 12,500	\$ 6,195	\$ 38,895
Capital Expenses	\$ -	\$ -		\$ -
<b>Subtotal</b>	<b>\$ 54,876</b>	<b>\$ 12,500</b>	<b>\$ 20,975</b>	<b>\$ 88,351</b>
Indirect Cost (23%)	\$ 12,622	\$ 2,875		\$ 15,497
<b>Total</b>	<b>\$ 67,498</b>	<b>\$ 15,375</b>	<b>\$ 20,975</b>	<b>\$ 103,848</b>

\* The Nature Conservancy has a current 23% Negotiated Indirect Cost Rate (NICRA) that is accepted by USFWS.

**Table 2. Aquatic Species of Greatest Conservation Need, Ouachita River Headwaters:**

	Scientific Name	Common Name	Global Status	State Status
Fish	<i>Etheostoma pallidiorsum</i>	paleback darter	G2	S2
	<i>Noropsis perpallidus</i>	peppered shiner	G3	S2
	<i>Noturus lachneri</i>	Ouachita madtom	G2	S2
	<b><i>Noturus taylori</i></b>	<b>Caddo madtom</b>	<b>G1</b>	<b>S1?</b>
	<i>Percina sp nov</i>	Ouachita darter	G2?	S?
	<i>Percina uranidea</i>	Stargazing darter	G3	S3
Insects	<i>Agapetus medicus</i>	Arkansas agapetus caddisfly	G?	S?
Mussels	<i>Alasmidonta marginata</i>	elktoe	G4	S3
	<i>Cyprogenia aberti</i>	western fanshell	G2	S2
	<b><i>Lampsilis powellii</i></b>	<b>Arkansas fatmucket</b>	<b>G1G2</b>	<b>S2</b>
	<i>Ptychobranthus occidentalis</i>	Ouachita kidneyshell	G3G4	S3
	<i>Ligumia recta</i>	Black sandshell	G5	S2
	<i>Pleurobema rubrum</i>	Pyramid pigtoe	G2	S2
	<i>Toxolasma lividus</i>	purple lilliput	G2	S2

**Joy DeClerk**, Ouachita Rivers Project Manager, will be responsible for coordination between partnering groups and completion of the project. DeClerk has worked as project manager with The Nature Conservancy since April 2005. In her current position she has completed four courses in “Applied Fluvial Geomorphology” and “Natural Channel Design” led by instructor Dave Rosgen, Ph.D. In addition to these courses, DeClerk has a wide array of experience developing watershed restoration plans, assessing and addressing sediment as a non-point source pollution, completion of species threats assessment, and proposing strategies to abate the threats. She also completed an EPA funded, two-year study (2006-08) to quantify and prioritize major sediment sources within the Middle Fork Saline River watershed, followed by a large stream restoration project conducted in 2009-2010 abating more than 1,700 tons of annual sediment on a ½ mile stretch of the Middle Fork Saline River. DeClerk also has a working relationship with the USFS in the Ouachita National Forest, Ouachita ATV Club, and local citizens of the Mena area.

**The Nature Conservancy** has a great interest and knowledge in watershed restoration, and has successfully planned and implemented many watershed projects across the country, including Arkansas. This experience is crucial in generating public involvement for watershed restoration across the state. Furthermore, the Conservancy’s Arkansas Field Office has a successful track record in leveraging limited conservation dollars through collaborations with multiple partners toward measurable conservation successes.

**Tim Kiser**, owner of Tim’s Yamaha and Pawn Shop, is a very active member of the Ouachita ATV Club and connected citizen of the community. Tim has been integral to the process of collaboration between all partners with a focus on establishing a clear line of communication about the issues at hand in Wolf Pen Gap. Tim has helped facilitate public meetings involving and informing the local citizens of the Wolf Pen Gap area and has actively participated in partner meetings with the USFS, Trails Unlimited, and The Nature Conservancy. Tim and many other members of the Ouachita ATV Club have actively sought out, applied for, and received grants to assist in trail restoration and have personally volunteered many hours of time in manual labor associated with trails restoration work and routine cleanup of the trails. Tim and the Ouachita ATV Club will be a vital partner in this project.