



# Current Events



## The Newsletter of the Arkansas Stream Team

Volume 14, Number 3

July – September 2010

### News from Region II (Delta) Stream Team Coordinator, Stephen O'Neal...

Can you feel it? The chill of autumn is in the air. What a super time to get out and enjoy the bounty of Arkansas and all its rivers and streams. But, before we rush headlong into the crispness of the season, let's highlight a couple of the 'high points' of the recent grueling summer for the Region II Stream Team.

Another habitat project on the South Fork of the Spring River is completed. This ongoing effort to abate streamside erosion and provide habitat for the local fishery, and its related components, has been accomplished through the Landowner Incentives Program (LIP) funded via the U.S. Fish and Wildlife Service (USFWS) and the Arkansas Stream Team Program. Property owned by Harley Harbor, east of Salem, was experiencing some severe erosion issues, due to a weakened riparian area and a rapidly migrating river channel. As is the case with the South Fork, the river becomes quite narrow (the width of a canoe) and then widens out substantially (often a couple hundred feet wide). This area was in one of the "widening zones." The 12-foot high vertical bank was sloped to a 2:1 grade (suitable for planting shrubs and trees this winter), covered with 100% coconut fiber erosion matting, and staked in place. The habitat component of the project consisted of installing four upstream angled rock vanes, each 70-110 feet long with woody debris trapped on the leading edge, partially exposed on each vane for added fishery benefits.



*South Fork Spring River project after bank had been sloped and four rock vanes with woody debris entrapment installed. The landowner retains his soil, the fish respond to additional habitat, and the riparian area will be restored—a good deal all-around.*



Let us pause and explain the concept of placing rock vanes angled upstream—somewhat counterintuitive to a rational person’s way of thinking, I suppose. Angling the vanes upstream at 30 degrees (a critical angle) will allow water at low-flow to be directed to the tips of the vanes, and will move the swiftest water directly off the ends of those structures (as one would look downstream) and line up each vane tip as it terminates in the channel. During higher flows, when the vanes are partially submerged, the water that “stacks up” behind the vanes almost completely slows to zero velocity, and the water that flows over the vanes comes off of the structure 90 degrees—the resulting water response forces the river back out *away* from the erosion-prone bank, and out into the center of the river.



*This rock vane used to be 70 feet long. Now, it shows roughly 30 feet as it has captured a great deal of sediments, and is beginning to naturally vegetate due to the seed bank that washes downstream each rain event. The vanes provide for tremendous fish habitat as well.*

Likewise, when the river is at flood stage (and the vanes cannot be seen), water is moving very slowly *near* the bank. However, immediately off the tips of the vanes the water velocities are extremely fast—in essence, the river itself is setting up a ‘buffer zone’ of *hydraulic protection* near the erosion-prone bank surface, and sending the primary water velocities right down the center of the channel. Think about it: the river that once was tearing the landowner’s bank apart, due to extreme water velocities, is now protecting that bank with the same energy—amazing, really!

Put it all together: the vanes will move the most erosive forces of the river away from Mr. Harbor’s bank (he likes that). The vanes create “dead” water near his bank, which will allow for sediment deposition, and native seed inputs will naturally revegetate the site (good bank stability needs that). The deepest part of the channel will be centered in the waterway, allowing for some great canoeing (the canoe folks and boaters like this). The rock vanes with woody debris entrapment will provide habitat for many sport and non-game species alike (if you are a crayfish, endangered darter species, smallmouth bass, or any number of aquatic macroinvertebrates—ALL of them *like* this!). Also, once the area has been planted with native grass, tree and shrub species in the riparian area surrounding the river bank site, the site will be a virtual vegetative utopia (and the local terrestrial wildlife, songbirds, amphibians, and a host of compliment species will all love this). All-in-all, this is a win/win/win project.

Also, this summer we worked on a State Wildlife Grant (SWG) funded project to remediate a historic cattle watering site on the Eleven Point River near Pocahontas. This project entailed the installation of eight rock vanes—two of them being “J-Vanes”—combined with the addition of large rock slabs (300 tons) designed specifically for Ozark Hellbender habitat improvement, cattle exclusion fencing, riparian zone restoration, and an alternative cattle watering component.



*This actively eroding site on the Eleven Point River was contributing over 9,000 TONS of soil to the waterway annually—not good if you are a spawning fish, a mussel requiring clean gravel substrate, or an Ozark Hellbender (not to mention the loss to the landowner of his/her property).*

This site will be a model for restoring eroded river sites, and a working demonstration area to show potentially interested landowners how they, too, can provide alternative watering sources for their cattle, stop their banks from eroding, improve water quality, and dramatically improve the local fishery of an area. Preliminary fishery data collection shows the immediate fishery response to be overwhelming—both in number of species and abundance of fish.



***BEFORE--Active erosion is evidenced as you can see the swiftest water is near the bank on the right.***



***AFTER--You can see the very fast water off the tip of the vane at low-flow, and the completely still water near the bank—the erosive forces have been moved, and that is the key.***

Work was completed during the low-flow period that has certainly come to define this year with all of the heat and drought we have endured. The landowner, Wayne Gerhardt, was extremely helpful, and was on site EVERY day of construction, and who proved to be one of the best I've had the pleasure to work with. He was extremely pleased with the alternative livestock watering source comprised of a well, solar pump, 3,000 gallon holding tank, and gravity-fed, freeze-proof quad watering devices. Keeping the cattle out of the river will help in their feed conversion, and improve their overall health by reducing their parasite load and reducing hoof problems associated with "wet foot watering."



*The alternative watering source consisted of a well, solar pump, holding tank, and freeze-proof quad waterer. The cattle keep their feet dry, the practice can be installed anywhere, and maintenance is negligible. A great alternative cattle-watering system.*

Excluding cattle from the river will also help by keeping agricultural inputs out of the waterway, reducing bank erosion due to cattle migration, and will prolong the life of the cattle in that area—floods regularly kill calves and full-grown cattle on this river. The riparian area will be planted this winter with native trees and shrub species to restore the riparian function of this area, and to help provide long-term soil stability which the roots of those species will provide. We will survey this area annually to determine if Ozark Hellbenders will repopulate this riverine site—now that proper hydrology and habitat have been provided. Even if hellbenders don't take up residence here (I personally think they will), that habitat is perfect for smallmouth bass, crayfish, darters, mussels, and other aquatic organisms—thus, the immediate fishery response that we have seen only three weeks after the final vane construction.



*Fisheries data was collected under the watchful eye and expertise of Sam Henry, District III Fisheries Assistant Biologist, with the assistance of Josh McLarty, Caleb O'Neal, Karl McLarty, and Naomi O'Neal.*



*Electrofishing was conducted to collect fishery data for the State Wildlife Grant funded project on the Eleven Point River.*

This will be a project we will all want to stay tuned to in order to see how this site progresses.

If you have questions about these grants, the projects, or to discover what a “J-Vane” is and how it works, contact your local Stream Team Coordinator. Region II’s contact is Stephen O’Neal at 501-351-6208 [sroneal@agfc.state.ar.us](mailto:sroneal@agfc.state.ar.us) .

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### **News from Region I (Ozark Highlands and Boston Mtns.) Stream Team Coordinator, Dave Evans...**

In July, work finally began on a major bank restoration project on Crooked Creek in Marion County. Like most large projects, this one was several years in the works. The efforts of a lot of folks are finally paying off, and the final "construction day" is rapidly approaching.

This project is located at the Fred Berry Conservation Education Center on Crooked Creek at Yellville or, as a lot of people know it, Kelly Slab. As with most major erosion sites, no single event created the entire problem. However, significant destruction occurred a few years ago as the result of a rather freaky set of rain events. That year, the northern part of the state had three major storm events in rapid succession. While none of these were "100 year storms," they were 35-to-50 year events. In addition, just a couple of months after those rains, we were hammered by the remains of two fairly major hurricanes. This series of unusual rain events caused significant bank destruction across the entire region of the Ozarks.

The river right bank at the Fred Berry Center suffered significant erosion, and the slab (low-water crossing) was partially destroyed. Once the waters receded the slab was repaired, but the eroded bank remained. Shortly after, it was determined that the slab would be replaced by a new bridge approximately 600 feet upstream. It was also determined that once the bridge was completed the eroding bank would be repaired. And so, here we are...the new bridge is built, and most of the bank restoration is completed.

This project involved the construction of a 600-foot-long LFSTP (longitudinal filled stone toe protection) and two rock vanes upstream of the slab, and a 90-foot-long LFSTP downstream of the slab. It also included the creation of a flood bench behind the LFSTP, and the sloping of the vertical bank. A significant portion of the dirt from the cut bank was used to fill-in two holes that the flooding had created when the slab was destroyed. Once the construction is completed the banks will be seeded to annual grasses and covered with coconut matting. This winter the entire area will be planted to trees and shrubs.



*LFSTP Being Built.*

Most of the trees that were removed during construction were utilized in the project as fish habitat. Six very tall trees were placed under the LFSTP as "locked logs." The crowns (or root wads) of these trees stick out into the channel as much as 20 feet, and the remainder of them are covered by the LFSTP. In addition, one root wad was set out in the middle of the channel and weighted down with BFR's (big fat rocks). These structures began drawing fish as soon as they were placed in the water.



### *Instream Habitat*

A portion of Kelly Slab will be removed later this year in order to allow fish passage upstream. There is a lot of local concern regarding this portion of the overall project. No one wants to see the nice swimming/fishing hole below the slab destroyed. This site has been here, in various forms, for a number of decades, and is very popular.

The plan calls for a "notch" to be cut into slab, and the existing tubes to be removed. In addition, a shallower notch will be cut through the river left portion of the slab to accommodate higher flows. This should keep the average flow about the same, and allow the swimming/fishing hole to maintain itself in approximately its present condition.

Funding and materially speaking, this was a huge project, so it included a team of people. Initially, my boss, Steve Filipek, was able to obtain a stimulus grant and be able to fund this project. Along with AGFC manpower and equipment, this stimulus project funded the rock, fuel, and part of the span bridge that comprised portions of the project. It involved the placement of approximately 600 dump truck loads of rocks and six large trees. The bank sloping required the removal of an additional 600 truck loads of dirt. On-site, 10 people were involved in various phases of the construction. I would like to say "thanks" to the major construction folks involved in making this project work: Bill Seeley, private contractor; Aaron Middleton, summer intern; the Trout Habitat Program crew: Tim Burnley, Eli Powers, and Tony Crouch. A special "thanks" goes out to the AGFC construction crews who did the "lion's share" of the work, and really kept this project going: Neal Ramer, Don McCollum, and James Buck. Also, Andy Turner, Ken Shirley, Eli Powers, and Steve (Filipek) electrofished above and below the slab, prior to this work being conducted, in order to evaluate the impact of this project on the fishing community.

The *Master Naturalists* are continuing their water testing efforts at numerous sites across the Ozarks. Their sites include creeks around Rogers, Bella Vista, and War Eagle Mill. The Bergman High School Stream Team plans to get up and running in the very near future. The kids in the Mountain View East Lab began their program last summer, and recently received their mini-grant check in order to purchase their testing equipment.

All this being said, lest you think that all I did this last quarter was play in the water on one of the nicest creeks in the Ozarks (which is mighty inviting), I also spent time working with and training new and existing Stream Teams across Region I.

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**News from Region III (Gulf Coastal Plain)  
Stream Team Coordinator [currently  
vacant]...**

The Region III Stream Team Coordinator position is currently vacant. The Region III news will continue once this position has been filled.

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**News from Region IV (Ouachita Mountains and  
Arkansas River Valley) Stream Team Coordinator  
[currently vacant]...**

The Region IV Stream Team Coordinator position is currently vacant. Andy Turner (former Region IV Coordinator) has taken a position in his home state of Missouri. The Region IV news will continue once this position has been filled.

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*The Arkansas Stream Team Staff would like to take this opportunity to wish each of our Stream Team members a "Happy Autumn" and a hope that this fall season is the best one ever for you and yours!*

### HAS ANYTHING CHANGED?

Please let us know if your address, phone numbers or e-mail information has changed.

Name: \_\_\_\_\_

Address: \_\_\_\_\_

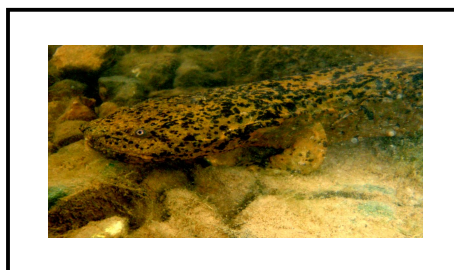
City, State, and Zip Code: \_\_\_\_\_

Home Phone: \_\_\_\_\_ Work Phone: \_\_\_\_\_

E-Mail: \_\_\_\_\_

Mail to: Stream Team Coordinator (OR) E-Mail to: [sfilipek@agfc.state.ar.us](mailto:sfilipek@agfc.state.ar.us)  
2 Natural Resources Drive  
Little Rock, AR 72205

For those reading a Stream Team newsletter for the first time, Stream Teams are groups of citizens from 6 years old to 96+ who care enough about Arkansas' water resources to form or join a team and adopt a stream or other water body in the state for the purpose of keeping it clean and healthy. Started in 1996, there are now over 500 Stream Teams statewide that carry out a variety of activities in the quest of keeping our state's water more natural. These teams conduct litter pickups, repair eroding streambanks on willing owners' land, plant trees to restore degraded riparian areas, work with local leaders to better manage their watersheds, and a variety of other activities aimed at conserving one of the most valuable of Arkansas' natural resources, its water. Anyone out there who hasn't already joined this winning team and is interested in joining the Stream Team, or learning more about this grassroots way to conserve our state's water resources, can contact Steve Filipek at the AGFC (501) 223-6371, or e-mail him at [sfilipek@agfc.state.ar.us](mailto:sfilipek@agfc.state.ar.us). There is no cost to join. Classes on how streams work, what animals live in and around them, and how a healthy stream functions, are offered each year at a reasonable rate.



### **NEWSLETTER AVAILABLE VIA E-MAIL.**

*In an effort to conserve resources, Stream Team members with current e-mail addresses were notified of the option to receive the newsletter via e-mail. If you have not received an e-mail notification and would like to receive the newsletter via e-mail, please notify Steve Filipek at [sfilipek@agfc.state.ar.us](mailto:sfilipek@agfc.state.ar.us), or at (501) 223-6371.*

### **► NEWSLETTER UPDATE: Easier access (a direct link) to the Stream Team Newsletter has been made available on the**

**Internet:** <http://www.agfc.com/streamteam>

NOTE: [Under: Arkansas Stream Team Program---Click: Arkansas Stream Team Quarterly Newsletter---then, click on your choice of newsletter(s).]

**Stream Team Name:** \_\_\_\_\_

# Activity Sheet

**Stream Team #:** \_\_\_\_\_

[illegible]

# The Process of becoming a STREAM TEAM...

1. Express an interest and request more information: **Send your name, address, and phone number to:**  
STREAM TEAM PROGRAM COORDINATOR

Arkansas Game and Fish Commission

2 Natural Resources Drive

Little Rock, AR 72205

2. Sign up. You will get the newsletter and be counted among Arkansas' STREAM TEAM members. This will also get you in the network of those wanting to help out Arkansas' waterways.

3. Adopt a stream. To become more involved in the program you can adopt a stream. Select a stream that you or your group are particularly concerned about. For example...the creek on your land, your favorite fishing hole, or the stream you drive over every day to work or school.

A. Inventory your stream with help from STREAM TEAM coordinators.

B. Decide what you want to do---trash pickup, habitat improvement, water quality monitoring, and/or whatever is of interest to you!



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**MAIL TO:**