

## **Beautiful Buffalo River Action Committee**

**16 May 2017**

**ADEQ, Commission Room**

**1:00-3:00 p.m.**

**Members Present:** Becky Keogh (Arkansas Department of Environmental Quality, Director), Bruce Holland (Arkansas Natural Resources Commission, Director), Nathaniel Smith (Arkansas Department of Health, Director), Cynthia Edwards for Wes Ward (Arkansas Agriculture Department, Deputy Agriculture Secretary), Jeff Crow (Arkansas Game and Fish Commission, Director), and Shelby Johnson (Arkansas Geographic Information Office, GIS Officer)

**Members Absent:** Kane Webb (Arkansas Parks and Tourism, Director), Wes Ward (Arkansas Agriculture Department, Agriculture Secretary)

**Invited Guests:** Scott Simon (The Nature Conservancy in Arkansas, Director) and Alex Johnson (Arkansas Economic and Development Commission, Rural Services, Director)

### **WELCOME AND AGENCY REPORT OUTS**

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#### **Becky Keogh - Welcome**

- Recognized the Buffalo River as a resource: agricultural use as a point of community development, and opportunity for state and national tourism.
- Welcomed each of the agency directors that serve on the committee.
- Stated the committee is seeking agency actions, partnerships, and studies to inform non-regulatory opportunities in the watershed.
- Committee member introductions were made.
- Noted Kane Webb and Shelby Johnson were not able to attend.  
*(Note: Shelby Johnson arrived at 1:21 p.m.)*
- Stated that because this is not a voting commission, there is no need to seek a quorum. Acknowledged that fellow agency directors have been very helpful and available to have discussions.

### **Jeff Crow – Arkansas Game and Fish Commission (AGFC) Report Out**

- Stated that it has been a privilege for our agency to participate in the important activities and make resources available.
- Announced that AGFC is participating in the Arkansas Unpaved Roads Program by contributing \$150,000 annually.
- Additional resources became available through the AGFC Foundation. This funding was earmarked for a water quality project, and the Unpaved Roads Program is where they would like to place those funds.
- AGFC partnered with local conservation districts and purchased a feral hog trap. They have successfully eradicated 351 hogs in that area with use of the trap.
- AGFC is working cooperatively with National Park Service managing about 250 acres of open land within the riparian corridor. It is maintained to protect stream bank integrity. The conservation practices include nutrient management, grass buffers, minimal tillage, and crop rotation. This is a cooperative effort with local farmers and the National Park Service.
- Noted that the enforcement division works cooperatively over about 135 miles of river through the Buffalo River National Park. The enforcement operations focus on compliance with glass container laws and litter enforcement during the recreational season. They have worked extensively doing that on thirty-five special operations over the last three years.

### **Cynthia Edwards – Arkansas Agriculture Department (AAD) Report Out**

- Stated that Secretary Ward and the Department are very excited to be a part of this group and to contribute how we can.
- Noted that agriculture is the state's largest industry, and we represent a \$20 billion value to the state every year.
- Our regulatory agencies; the Arkansas Livestock & Poultry Commission, the Arkansas Forestry Commission, and the Arkansas State Plant Board staff are in the field every day across the state, including the Buffalo River watershed. We are excited to have them out there as our eyes and ears on the ground, and we are happy to help in any way we can.

### **Bruce Holland – Arkansas Natural Resources Commission (ANRC) Report Out**

- Noted that Tony Ramick will deliver the Buffalo River Watershed Management Plan presentation for Arkansas Natural Resources Commission today.
- Acknowledged that Secretary Ward has a very good reason not to be here today because he is on active duty, deployed. We want to think about him and all the military folks who are serving so we can be here today conducting this business.
- Announced that during the last legislative session, there was a feral hog task force set up that Directors Crow and Holland will take part. He hopes they can come up with some ways there to help eradicate the feral hog population, which will be a benefit to the entire state and the Buffalo River watershed as well.

### **Nathaniel Smith – Arkansas Health Department (ADH) Report Out**

- Stated he will present Buffalo River *E. coli* monitoring data following his presentation on the Arkansas Swim Beach Program.
- Informed committee members that two handouts reviewing some of the *E. coli* monitoring data have been made available to them.

### **Becky Keogh – Arkansas Department of Environmental Quality (ADEQ) Report Out**

- Reported that ADEQ's Office of Water Quality Planning Branch has initiated the monitoring of *E. coli* concentrations in the Mill Creek watershed. This is a continuation from 2016 and includes the sampling of twelve sites throughout the watershed during critical season (May 1 – September 30).
- Reported that the Office of Water Quality Planning Branch has been developing and updating the Assessment Methodology. Specifically, they have been focused on how to assess continuous dissolved oxygen (DO) data collected by USGS. A stakeholder workgroup has been formed to have input on how to evaluate continuous data. For the first time, they have made this a very public process, and they appreciate the input from the stakeholders. Continuous data assessment methodology is being developed now and will go through public comment as part of the 2018 decision making process.
- Reported that the Office of Water Quality Permitting Branch has been actively working on a draft permit for the C & H Hog Farm. Permit comments have been received. This is a non-discharge state permit, and it replaces a general permit that the farm was constructed under. The general permit in existence, which was due to expire, was not

helpful in administrating the program, particularly for CAFOs. The agency determined that the general permit would be terminated and not renewed. They are currently reviewing a permit application submitted under Regulation 5, which is a state regulation related to land application and animal operations. A permit hearing was held in Jasper on March 7, and they received a high volume of interest. They had a lot of in-state and out-of-state commenters, and the comment period was extended due to the high volume of interest. This has been identified as a priority for the agency, and the Director dedicated a special team across the agency to address this permit in a full, efficient, and scientific way. The final decision will be based on this entire working process, including the comment period.

## **EXECUTIVE DISCUSSION**

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### **Approval of 17 January 2017 Meeting Minutes – Becky Keogh**

- Committee members were asked if there were any concerns or comments regarding the meeting minutes from January 17, 2017.
- **Bruce Holland** motioned to approve the minutes. **Nathaniel Smith** seconded the motion. The minutes were unanimously approved with no discussion or questions.

### **Approval of Remaining 2017 Meeting Dates – Becky Keogh**

- Acknowledged the Governor's directive indicated a minimum of quarterly committee meetings. The BBRAC Charter identifies specific meeting dates will fall on the third Tuesday of the month.
- Noted Kane Webb had discussed a potential float trip early to mid-June. Noted the next Buffalo River Watershed Management Plan meeting is scheduled for Thursday, June 8 in Marshall.
- Third Quarter date options included July 18, August 15, or September 19. Bruce Holland indicated a conflict with the August date. Nathaniel Smith indicated a conflict with the September date.
- **Becky Keogh** approved July 18 as the third quarter meeting date using executive authority with the consent of the panel.

- Fourth quarter meeting date to be determined at the next meeting. Becky Keogh suggested the October 17 date may be most appropriate to allow time for a second fourth quarter meeting if needed.

### **Review of First Year Key Priorities – Becky Keogh**

1. Develop a stakeholder forum.
  - Stakeholder forum is currently available through the watershed management plan. An update will be presented by Tony Ramick for ANRC later in the agenda.
2. Initiate the development of a watershed management plan.
  - Third meeting scheduled for June 8 in Marshall.
  - Noted some public confusion on the difference between the Buffalo River Watershed Management Plan (WMP) and the Beautiful Buffalo River Action Committee (BBRAC). To clarify, the development of the Buffalo River Watershed Management Plan is one action taken by the Beautiful Buffalo River Action Committee. The WMP was initiated through a grant received from the EPA and was agreed upon by agency directors to dedicate the multi-purpose, single-time grant to advance a watershed management plan ahead of any regulatory driver or determination about the watershed itself. The WMP is a pro-active effort intended to drive non-regulatory solutions.
3. Identify early actions to “jump-start” improvements.
  - Best management practices (BMPs) and early actions have been identified at watershed management plan meetings.
  - Acknowledged agency directors for initiatives taken by agencies to inform better practices.
4. Prioritize future research needs.
  - No action taken at this time by the committee.
  - Suggested sub-committee formation to evaluate and prioritize research needs and data gaps would be appropriate as they wrap up the watershed management plan.
  - Becky Keogh recommended the committee consider research needs at the next meeting. She asked Tony Ramick if this is something discussed in the

watershed management plan development, or if it would be helpful for the committee to start a dialogue about research needs and what timing would fit well with the WMP efforts. She stated they should make this a focus in order to report back to the Governor on that key priority.

#### **Development of Metrics – Becky Keogh**

- Recommended the development of metrics should be set as an agenda item for discussion at the next meeting. The committee should determine what metrics might be appropriate to measure within the watershed, and what the committee thinks can be accomplished through our actions. In an effort to maximize efficiency, it may fit well for us to establish metrics as an action committee that align also with our agency metrics.

#### **Second-Tier Interagency Communications Team – Becky Keogh**

- Agency directors are able to communicate one-on-one quite easily, and members have been accessible. ADEQ staff indicated it might be helpful to form a second-tier communications group to better interact with the community and the public. As a treasured resource at the national and local level, there is a lot of interest in the Buffalo River, and the committee meetings should provide a forum to get public input on what is important. The Directors have discussed how the presentations may be a meaningful way to get input on what actions they might want to consider and decisions to make. Presently, those ideas are coming from the Directors and not the public, but they would like to generate some ideas from those who are interested: perhaps they have something they'd like to present about a study or a program that is working in a watershed to consider for the Buffalo. Specifically, best management practices or a research program to apply as part of the specific objectives. The idea is to bring communications directors from all agencies to form a sub-committee to talk about how better relate to the public and get those ideas – including the development of a dedicated website.
- Committee members were asked to submit the name of communications director or staff to Becky Keogh, who will forward the information to ADEQ's Second-Tier Communications Team contacts, Allie Rouse (ADEQ Office of Water Quality, Policy Advisor) [rouse1@adeq.state.ar.us](mailto:rouse1@adeq.state.ar.us) and Donnally Davis (ADEQ Administration Division Manager) [davis@adeq.state.ar.us](mailto:davis@adeq.state.ar.us)

#### **BBRAC Website – Becky Keogh**

- Presently, the public is able to access information through the ADEQ BBRAC webpage: <https://www.adeg.state.ar.us/water/bbri/bbrac/>  
Donnally Davis will add a hot link to the ADEQ homepage for ease of access.
- Stated that ADEQ would like to set up a dedicated website for BBRAC, and ADEQ has the funds to support that going forward. Becky Keogh asked for help with design and maintenance ideas for the website.
- Becky Keogh asked committee members if there are any concerns or questions regarding the establishment of a designated website. Indicated the Second-Tier Communications Team would collaborate on the designated BBRAC website.

## **THE NATURE CONSERVANCY – ARKANSAS UNPAVED ROADS PROGRAM**

### **Scott Simon**

- The Nature Conservancy, together with The Buffalo River Foundation, owns a few thousand acres along the Buffalo River. The Buffalo River Foundation has about a dozen conservation easements along the Buffalo River.
- Unpaved roads are the lifeblood of the rural parts of our state. They connect people to their communities and are critical to industries including agriculture, tourism, energy, and timber. They are a significant part of the economic benefit that each of those industries provides to our state.
- Of the 81,590 miles of county roads in Arkansas, over 85% are unpaved. Maintenance of the roads is a huge responsibility and a substantial financial burden.
- Sediment from these roads flows into the rivers and impacts aquatic species. Those rivers flow into our drinking water reservoirs, and combined with hydropower and flood control, these comprise a multi-billion dollar economic benefit. Keeping those rivers and reservoirs healthy is important to all of us.
- The unpaved roads are a challenge to our water quality. During rain events, entrenched roadside ditches act as a conduit, carrying sediment directly to our streams and rivers.
- Additional challenges are stream and road crossings. Undersized culverts or bridges can't convey floodwaters, which results in road damage and additional erosion up and downstream.

- Rivers can't process the millions and millions of tons of sediment very well, so they expand into their flood plains to slow down and let the sediment drop out. This results in stream bank erosion, particularly in areas without vegetation. Eroding streambanks add additional sediment into the rivers. It starts with the roads.
- An unpaved roads effort was developed by many agencies and organizations in Arkansas. A really practical, pro-active, incentive-based, partnership effort that uses the latest best management practices to improve the road quality so we minimize erosion, minimize sediment in the lakes and rivers, stretch county dollars farther, and provide a better atmosphere for the driving public.
- The state of Pennsylvania developed an Unpaved Roads Program with funding at \$5 million per year and now the legislature has increased funding to approximately \$35 million per year. They have accomplished about 2000 projects over the past few years. This program serves as a model for the state of Arkansas.
- The process begins with an assessment: mapping the unpaved roads in a particular watershed. What we have found is that often times the worst stretches of really steep, eroding, unpaved roads might be only 5% of the whole road system, but they are contributing more than 50% of the sediment. These are the hotspots the counties keep going back to after a heavy rain or flood. Once the hotspots are identified, the projects can commence.
- The partnership developed a series of demonstration projects to test the techniques, determine how they work in Arkansas, customize them, and then held workshops and meetings with county judges and industry leaders to learn together.
- Measured the impact using Water Erosion Prediction Project (WEPP):
  - Road surface: 80% reduction in sediment on the surface of the road.
  - Water quality: 94% reduction in the amount of sediment that left the ditch and made it into the river.
- Partnership formed: Arkansas Association of Counties, Arkansas Farm Bureau, Arkansas Natural Resources Commission, Arkansas Game and Fish Commission, and the Arkansas Economic Development Commission – Division of Rural Services manages the program as a partner.



- A bill was introduced during the legislative session two years ago, with nearly unanimous support. Governor Hutchinson has been a great supporter and signed it into law. We are just finishing our second year of grants.
- How it works: No general revenue funding the first few years. AGFC contributed \$150,000 per year for five years. Private supporters—people who use the rivers and the roads—contributed to The Nature Conservancy a couple hundred thousand dollars for TNC to provide funding to the program. The counties provide a 50% match for every project that is approved.
- The University of Arkansas Center for Training Transportation Professionals and the Arkansas State Highway and Transportation Department work together to provide the training for people who apply for the funding and other interested counties. Training also includes someone from AEDC Rural Services and Arkansas TNC.
- Nearly 100 road professionals went through the workshops in the first year. Projects are a little more expensive, but they pay for themselves in just a couple years. The program is working, and the counties and the county judges appreciate it. We are able to do just a few projects a year, but we think it has a great potential to protect and benefit the Buffalo River.

## **AEDC - DIVISION OF RURAL SERVICES ARKANSAS UNPAVED ROADS PROGRAM**

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### **Alex Johnston**

- Division of Rural Services administers the program, sets the rules and regulations, accepts the grants, does the training, and gives out the funds.
- For fiscal year 2018, we are expecting a little over \$300,000 to give out in grant dollars. This is matched by the counties selected for funding. You can apply for up to \$75,000 for this grant. We've completed five projects each fiscal year for a total of ten projects.
- The counties do have to put up the 50% match. This does not have to be cash; it can be in-kind donations, materials, labor, or a combination of all of the above.
- Seven priorities used to rate eligibility:
  - A water body containing an aquatic species listed as threatened, endangered or a candidate species by the Federal Government;

- A water body that has been determined to be impaired as a result of turbidity or sediment;
- A water body used as a drinking source for people;
- A water body used as an interstate waterway;
- A water body the Arkansas Game and Fish Commission has determined contains a species of greatest conservation need;
- A water body important to agricultural or pasture land use; or
- A water body important to forestry land use
- Ineligible projects:
  - Roadways that have bound surfaces including oil, asphalt, concrete, or any mixture of sealed aggregate
  - Roadways that are not negatively impacting a priority body of water
  - Public roads that are open to the public for less than eight (8) consecutive weeks
  - Any and all private roads
- It is a requirement that you complete training before you are eligible. The training has improved the program. Those trained before the deadline are submitting better applications. Training is good for five years and provided at no cost. You can send different people from the county. Half the day in a classroom, half the day in the field.
- We request that counties ask us for a pre-site visit. Clay Knighten with TNC and Brenda Rowell with AEDC Rural Services will go out and consult on these projects. If a road is not eligible for the program, then the county judge can take them out to other potential project sites.
- All seventy-five counties in Arkansas are eligible for the program; there is no population limit.
- Deadline: March 8, 2018. You don't have to wait until the deadline; we will come out and look any time of the year. Trainings will start fall 2017 and wrap up February 2018.
- Alex Johnston, Director [ajohnston@arkansasedc.com](mailto:ajohnston@arkansasedc.com)
- Brenda Powell, Grants Manager [browell@arkansasedc.com](mailto:browell@arkansasedc.com)

#### QUESTIONS:

- **Bruce Holland:** Stated the presentation opened his eyes because he thought the unpaved roads program was to get roads paved, but that is not what you are doing.

- **Scott Simon:** Replied, “Correct.”
- **Bruce Holland:** Asked if there is a cost per mile on the average on what it takes to do a mile of road.
- **Scott Simon:** I don’t know, but I can find out. What this program is designed for – *county roads* – would be focused on the real troublesome hotspots. So, there would not be an average per area. Stone County’s was about a half mile, and theirs was about \$100,000.
- **Bruce Holland:** Replied “so maybe \$200,000 - \$250,000 per mile would be a rough estimate?”
- **Scott Simon:** Agreed, maybe, that would be a rough estimate for that area.
- **Bruce Holland:** Asked if you have done any research on the Buffalo River watershed: is there an understanding of how many miles of unpaved roads there are in that area?
- **Scott Simon:** Replied we have not. The Nature Conservancy has not done that assessment.
- **Bruce Holland:** Asked if anyone from the county judges association came today that would have that information. I think that would be interesting to understand that, and maybe we could follow up on that in later meetings and see if we can get some feedback on exactly how much money, if we could commit to doing a reasonable measure of roads per year, what would that cost and where we could identify funds.
- **Bruce Holland:** Asked if we can earmark a specific amount of money to be put toward the Buffalo River watershed.
- **Alex Johnston:** Replied I would have to double check. I believe there are ways that we can do that.
- **Bruce Holland:** Commented that it was very telling in the graphic that you put up, the massive amounts of silt going in from unpaved roads.
- **Scott Simon:** Stated that he would like to add one more important statistic: when we were doing assessments of the watersheds, of the rivers that have a forested corridor along the stream (which includes the Buffalo), the roads were contributing 40-60% of the total sediment.
- **Bruce Holland:** Responded, so it becomes even more important in these watersheds.

- **Scott Simon:** “Yes.” But, once we get in to a more agricultural area with mostly pasture, then the stream banks contribute more.
- **Bruce Holland:** Recommended that this is something we definitely need to follow up on as we move forward as a committee to better understand what is needed in this watershed. That is what our task is: to find solutions to some of these problems. Obviously, this is a big problem in the area. I think we may need to have some meetings with the people from the county judges association who might have some better numbers for us, and we can start working on ways to fund that.
- **Becky Keogh:** Asked how the contributions are handled by TNC. How were you able to funnel those contributions toward a specific project? Scott, did you provide a grant to the unpaved roads program, and then they, in turn, applied that to the applications coming in?
- **Scott Simon:** “Correct.” As part of the legislation, there is an advisory committee of all the partners that work on this issue statewide, and they rank the projects. The AGFC contribution and TNC contribution did not have any restrictions. We used it to get the program started to show that it was going to be a great statewide benefit.
- **Jeff Crow:** Commented that this is a model of how government should work for our citizens. It is a win-win-win in all regards. An observation: an application was made from a new county judge (it was a big project). Maybe he was a little intimidated by the scope and scale of the project. Perhaps there is an educational need to help judges understand the cost benefit over time. Seems like a challenge to the program may be hesitation to commit to the size of the project. Moving forward, there is an opportunity to work with the county judges to help them understand the value of the program.
- **Scott Simon:** Responded, thank you for sharing that. It has been interesting to see which counties take advantage of the opportunities. Judge Ellison in Polk County has been a great advocate, as well as Judge Avey in Stone County, and the judge in Van Buren County. These counties that have been affected by intense floods and lots of damage are really focused on trying to do something different. And, the beauty of the program is the ability to quantify the benefits, and we believe that those will speak for themselves. And, as more and more county judges see the economic benefits, it will spread to the rest of the counties.

- **Becky Keogh:** Responded, thank you, Scott. As an action committee with some funding available, I would be interested to see how we can appropriately support the program. Thank you to Director Preston for providing you, Alex, to come share this program with us. He is interested in the economic vitality of that area. Even though he doesn't physically sit on this committee, he and Kane Webb have interest in making sure that what we do supports strong economic development. Perhaps it is time to reach out to Senator Missy Irvin or other representatives or county judges to see what our next step might be to support the unpaved roads program in the Buffalo River watershed. Maybe we can sit down with Director Preston about that. I know the Governor is interested in this program, but I also want to make sure we support the role of the legislature.
- **Shelby Johnson:** Asked if there have been any applicants from Boone, Searcy, Newton or Marion counties?
- **Alex Johnston:** "No."
- **Shelby Johnson:** Asked if any of those counties have sent a judge or official to take advantage of the training for the program?
- **Alex Johnston:** Replied that possibly Newton, but I would have to check to be sure.
- **Shelby Johnson:** Suggested we do something special as a committee to contact those county judges and maybe elicit an application from one of those areas that would be in the watershed.
- **Shelby Johnston:** Asked if there was a National Parks Service road in the park that is unpaved, would it eligible under the program?
- **Scott Simon:** Responded that the language is directed to the counties. So, if it is a county road that the county is maintaining and managing, then that would be eligible. It is directed at helping counties with hotspots.
- **Shelby Johnson:** Commented that particularly on the low water crossings and the susceptibility that we have in that part of the state for flash flooding, I think this is also a public safety issue. We had a loss of life up in Madison County from a low water crossing. When you showed the slide with the elevated structure, I believe that might have saved a life. I believe this is a public safety issue as much as it is an environmental and transportation issue. Thank you.

- **Scott Simon:** Commented that the Division of Rural Services has set up such a great process and infrastructure that it is really easy to drop funding or drop interest into it. So many of these areas are so obviously a priority that it would not need a whole watershed assessment. County judges and technical staff could tour the hotspots and identify a subset of places to start work on. The technical committee provides the support for the county judges that are interested and just need somebody to work with them.
- **Bruce Holland:** Asked Alex Johnston if she could report back to the committee: if we could find funding to put into the program, could we direct it to be used only in the Buffalo River watershed? I think that is something we are very interested in.
- **Alex Johnston:** Responded that she will look into it and get back to you. We are also working on the training schedule right now. As soon as we have that, I will give it to you. We will notify all the judges, but in case you want to do a secondary notice.
- **Bruce Holland:** Agreed we should reach out to those judges and road foremen and encourage participation in the training.
- **Becky Keogh:** Thanked the presenters for the work they are doing across the state. Asked Scott Simon about his work with private donors regarding conservation easements. That may be a topic of interest –to hear more about what conservation easements have been established in the Buffalo River watershed and how private donors might participate more fully as we go forward. I may invite you back to talk about conservation easements and private donors in the future.
- **Scott Simon:** Responded thank you for asking about that. Since there are hundreds and hundreds and maybe thousands of land owners that choose to live there and recreate there, they would be interested in protecting the streams and rivers. I left some information with the committee regarding easements and nature preserves.
- **Becky Keogh:** Thank you again.

## **ARKANSAS DEPARTMENT OF HEALTH – SWIM BEACH PROGRAM**

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### **Nathaniel Smith**

- Recognized ADH staff: Mr. Tom Jones (Senior Environmental Health Specialist, Board of Health member) and Dr. Richard McMullen (Environmental Health Scientist)

- 130 monitored beaches throughout Arkansas, done in partnership with a number of organizations
- A swim beach is: “any bathing place, together with buildings and appurtenances, if any, and the water and land areas used in connection therewith, as a natural pond, lake, stream or other body of water which is operated for a fee or any other compensation or which is openly advertised as a place for bathing or swimming for the public. This definition does not apply to swimming pools.” And, it does not apply to the Buffalo National River, although a lot of people swim there.
- We use *E. coli* as an indicator organism for enteric bacterial contamination. We do grab samples collected on monthly intervals. Any samples that exceed 126 CFU/100mL require beach closure. We require two consecutive samples for two days below the limit before we open the beach.
- Challenges to operating and maintaining a swim beach include flooding and wildlife.
- Other factors contribute to safety including water clarity, flow rates, debris, and low water levels and ultimately contribute to exceedance in *E. coli* levels.
- Once collected, the samples go to the laboratory to be cultured and grown, and it can take up to a week for results to come back. We begin to resample before the results are back. We are looking for two consecutive samples at 126 or below, and because of that delay; it can take up to two weeks before we can get two consecutive samples that are compliant. This can be a challenge with swim beach operators.
- 2016 Swim Beach Report:
  - 130 sites sampled
  - 615 samples collected
  - 58 samples exceeded limits (9%)
- The Buffalo National River is not a swim beach, and these standards do not apply to it.

**ARKANSAS DEPARTMENT OF HEALTH – BUFFALO NATIONAL RIVER  
E.COLI MONITORING**

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**Nathaniel Smith**

- National Forest Department (Shawn Hodges) sample four times per month from three different locations. This data was collected between March 2013 and April 26, 2017.

- Site locations include one on Big Creek (SB309) plus one above (SB308) and one below (SB310) Big Creek's confluence with the Buffalo.
- A total of 750 samples across three sites over four years. The number of exceedances (>126 CFU/100mL) is similar across all three sites; a little higher on the Big Creek site.
- Graphical representation of *E. coli* levels reflects spikes in the concentrations that typically relate to rainfall. When we get excessive rainfall, we get a spike in the *E. coli*. What we do not see is a clear pattern increasing or decreasing over time and the patterns are similar at the three sites.
- We categorized hydrographic flow regimes as base flow, rising or falling at the time of sampling.
  - Base flow
    - 592 samples collected
    - 29 exceedances (5%)
  - Rising hydrograph
    - 41 samples collected
    - 27 exceedances (66%)
  - Falling hydrograph
    - 127 samples collected
    - 56 exceedances (48%)

#### QUESTIONS:

- **Shelby Johnson:** Asked if the collection period reported was well in advance of the C&H Hog Farm being constructed. Were the spikes that are occurring also happening before that became operational?
- **Ryan Benefield:** Replied that the farm became operational in 2012.
- **Becky Keogh:** Commented that we appear to have a fairly robust dataset now, with over four years of monitoring. Do we have relative data on other rivers to see if this phenomenon of spikes during storm events is typical of a forested river, or is that more unique to the Buffalo?
- **Nathaniel Smith:** Replied I do not have data like that on other rivers, but that would be typical, and it corresponds to what we see in our swim beach program. Again, swim



beaches are different than big rivers, but when we have a big rain, that is when we are most likely to see a spike in *E. coli* levels.

- **Tom Jones:** Responded that one of the closest representatives might be Long Pool on Piney. We could pull a history on and compare to that.
- **Becky Keogh:** Responded that might be helpful to us to know what that is.
- **Ryan Benefield:** Noted that about the time this dataset began is when the farm started field application.
- **John Bailey:** Asserted that the facility was probably built at that time, and the application began in December 2013.
- **Becky Keogh:** Responded okay, so maybe the early samples were prior to application. We know there is other nutrient application used in the watershed because it is an agricultural area. We just want to make sure we are getting the best science we can and understand it. I know the National Park Service has been monitoring it themselves on some of the tributaries, and we have taken some of that data into consideration. We have talked to them (NPS) about their protocol on when they post and when they remove their signs. What is an appropriate amount of time to let the public know the water is safe to use?
- **Nathaniel Smith:** Replied that he would not attempt to utilize our protocols for swim beaches on a river. We have used the 126 threshold on other rivers in non-swim beach situations. In a swim beach, it makes sense to close the beach until it comes back to below threshold, but with moving water, it would not make sense to interpret it the same way.
- **Becky Keogh:** Commented that was helpful for public consumption and education; thank you.
- **Nathaniel Smith:** Stated what we see in Big Creek and the Buffalo is that rivers are more likely to see enteric contamination and increased turbidity after a heavy rainfall, and then less likely to see contamination once the river is back down to base flow.
- **Shelby Johnson:** Asked if Long Pool is considered a swim beach.
- **Tom Jones:** Replied yes it is.

- **Nathaniel Smith:** Commented that other sites could have been chosen, but the advantage to these three sites is that we have collected data now for four years, and if we see changes, it is not just due to where we sampled.
- **Becky Keogh:** Stated we will share this information with Kane Webb. I know Director Webb will be interested to see the work you are doing and the fact that you are looking to protect our citizens and our tourism.
- **Nathaniel Smith:** Suggested if we do a float trip, maybe not right after a heavy rain.
- **Becky Keogh:** Responded she was going to say perhaps most people are not in the stream directly following a storm, but there are the kayakers that enjoy the fast paced flow. Becky Keogh thanked Dr. Smith for his presentations.

## **ARKANSAS NATURAL RESOURCES COMMISSISON – BUFFALO RIVER WATERSHED MANAGEMENT PLAN UPDATE**

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### **Tony Ramick**

- Reported that the second WMP meeting was held on March 30, 2017 in Jasper. The WMP is a voluntary, non-regulatory management plan that includes nine key elements suggested by the EPA.
- Sixty-five attendees included local farmers, land owners, political representatives, and folks from agriculture, conservation, recreation, and other interest groups.
- Two break-out groups: Agriculture/Commerce/Local Communities and Tourism/Recreation/Environmental Interest.
- Break-out group discussions focused on management practices to address water quality issues.
- FTN (contractor for ANRC on this project) discussed preliminary analyses conducted from a thirty year dataset. This data is not continuous data, nor is it on the same time scale or frame. It is what it is, and we have to use what we have.
- Considered in analysis: IBI (fishes), SCI (macroinvertebrates), water quality measurements over thirty years, trend analysis over ten year periods, NRCS assessments, and carbonate bedrock percentages.

- Rankings based upon information available resulted in the following sub-watersheds identified for WMP implementation prioritization (listed below in upstream to downstream order, \* indicates top four):
  - Ponca & Whiteley Creek
  - Mill Creek\*
  - Davis Creek
  - Calf Creek\*
  - Bear Creek\*
  - Brush Creek\*
  - Tomahawk Creek
  - Water Creek
- There were stakeholders interested in Big Creek. Big Creek was analyzed using the same process, and it did not achieve highest rankings.
- There were stakeholders interested in analysis of dissolved oxygen and *E. coli*. We said we would try to do that. We have tried to be amenable to what the stakeholders would like, but quite frankly, we are getting to a point now based upon the contract and the contract amount where we will no longer be able to do keep doing initial analysis. Based upon the timeframe and budgetary considerations, we are about to be overextended. We are not going to be able to do additional work outside of the contract.
- The information gathered in Jasper will be integrated with other information previously collected.
- The next meeting will be in Marshall on June 8.
- The WMP is on schedule. The initial draft is scheduled to be completed by March 1, 2018. We are trying to stay on task to end it by the end of January because we will have to have time to do the plan itself before it goes to EPA. EPA does not approve or disapprove the plan; they accept it or do not accept it.
- We are trying to identify areas where additional conservation measures may be put into place.
- ANRC has recently secured a contract to do a Soil and Water Assessment Tool (SWAT), which is a model. This is the tool we have used previously with other WMPs, and in an

effort to remain consistent, we are going to integrate this into the Buffalo River WMP as well.

- SWAT is a river basin scale model developed to quantify the impact of land management practices in large, complex watersheds. It predicts the effect of management decisions on water, sediment, nutrient, and pesticide yields.
- Model components include: weather, surface runoff, percolation, evapotranspiration, transmission losses, pond and reservoir storage, crop growth and irrigation, groundwater flow, reach routing, nutrient and pesticide loading, and water transfer.
- As information is put into the model, it is validated. We do runs to see how accurate the model is based on actual data.
- We have used this in previous watersheds to identify where conservation measures may be most appropriate and most helpful.

#### **QUESTIONS:**

- **Bruce Holland:** Thanked Tony Ramick for all the work he has been doing with FTN and getting the SWAT model set up. Asked if we are doing this WMP any differently than we have done the other eight or nine WMPs we've done in the state?
- **Tony Ramick:** "No." We are staying consistent. Each WMP has gone through the same process, including SWAT. We pride ourselves in the consistency in the work we do. The WMP gives you a starting point. It is the beginning. Anytime we are going to implement or do anything, we have to have a place to start. The WMP will allow the stakeholders, groups and organizations to possibly leverage funding for conservation in the watershed. NRCS is using our WMPs for a lot of the initiatives they have (Mississippi River Basin Initiative, National Water Quality Initiative, EQUIP, and Regional Conservation Partnership Program).
- **Nathaniel Smith:** Asked if FTN will be going back to look at the dissolved oxygen and *E. coli* that the stakeholders requested for rankings.
- **Tony Ramick:** Responded that some of that preliminary work has already been done, where data is available.
- **Nathaniel Smith:** Responded that as a stakeholder, I would be interested in that as well. That is a parameter that we use to look at human safety.

- **Becky Keogh:** Added that we know dissolved oxygen is important to our fishermen and game and fish operations. Thank you, Tony. I really do appreciate the professionalism your team has offered as well as the approach you are taking. It is important to the Governor and all of us that this fits Arkansas and is based on science that can be respected beyond our boundaries.

## WRAP UP & CONCLUSIONS

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- **Becky Keogh:** A few next steps: I will follow up with Director Webb on the float trip. If you will share with me your Second-Tier Communications Team contacts, we will have some follow up with them between now and the next meeting. We encourage you to attend the next WMP meeting on June 8 in Marshall. There is interest in finding out if we can dedicate funds to the Buffalo River watershed through the unpaved roads program. As soon as we get that information, we will distribute that to each of you. Becky Keogh asked Alex Johnston to also provide a list of county officials that have completed the training or specific county judges that we might want to sit down and have a conversation with or send a letter to let them know we might have some funding available if they are interested in initiating a project. The National Parks Service has a number of projects that they are doing, and we continue to want to reach out to them as well, and they did present at the last meeting. Asked the committee if there are any other next steps or thoughts. Director Holland, didn't you want to address the charter?
- **Bruce Holland:** Stated that when we wrote our mission statement, we left a key piece of the Governor's memorandum out. Our mission statement currently reads: "To protect the Buffalo National River as a source of scenic beauty, high quality water, unique aquatic species and habitat and exceptional recreational uses through the coordination of resources within the Buffalo River Watershed." We would like to add to the end of that statement: "...while preserving agricultural productivity, the livelihood of farm families in the watershed." Because the Governor was specific in his memorandum that agriculture be included in that, I think it is appropriate that we add that to our mission statement. **Bruce Holland** motioned to amend the mission statement. **Becky Keogh** seconded the motion and asked for discussion.

- **Becky Keogh:** Suggested an edit. Perhaps we would like to say, "...while preserving agricultural productivity, the livelihood of *communities* and farm families in the watershed." Is that acceptable? We want the livelihood of our full communities and farm families to be protected.
- **Nathaniel Smith:** Asked if our bylaws have any provisions for how we change our bylaws?
- **Becky Keogh:** Responded that we do not have any established bylaws, just the charter that we adopted as a committee. That is a good point of order. I think we are safe to move forward through a vote to adopt the modification. We will consult with Director Webb.
- **Becky Keogh:** Called for a vote. The modification to the mission statement was unanimously adopted.
- **Becky Keogh:** Asked for any further next steps? Noted that she participated in a press event at the Little Rock Zoo, which is really a statewide zoo in many ways. With the director of the Little Rock Zoo and the director of Central Arkansas Water, we opened Water's Extreme Journey, which is a water educational exhibit. You follow a drop of rain water through a maze. I encourage you and your families to attend the zoo to experience Water's Extreme Journey this summer.