Mr. Tate Wentz, Water Quality Section Manager
Arkansas Department of Agriculture
Natural Resources Division
10421 W. Markham Street
Little Rock, Arkansas 72205

Dear Mr. Wentz:

I am writing to you on behalf of Friends of the North Fork and White Rivers (Friends), a member-based Arkansas non-profit 501(c)(3) founded in 2002, to provide comment on the draft 2022 Arkansas Nutrient Reduction Strategy (ANRS). Friends is dedicated to the maintenance of clean, healthy water in our Ozark streams, rivers, and lakes, and to the protection of the associated watersheds for future generations. Our organization approaches the stewardship of our natural resources in a pragmatic, science-based fashion, recognizing the need to balance the use of our water and watersheds to support fish and wildlife populations, recreational pursuits, and importantly, jobs and the regional economy.

While our organization is focused on the water quality of the Middle White River watershed, we understand that policies and management programs developed and implemented at the state and federal levels are critically important to establishing the foundation for current and future water quality everywhere. From that perspective, we offer some comments on the statewide approach outlined in the ANRS to addressing the tremendous challenge of nutrient pollution. Recognizing the advanced state of this ANRS draft, we will keep our comments at the strategic level, and on points which could potentially be addressed as funding for implementation of the final strategy is sought and committed to action.

The Clean Water Act's National Pollutant Discharge Elimination System for addressing point source pollution has been a demonstrably effective tool for reducing the level of pollutants in the nation's waters, including Arkansas's, since the act's adoption in 1972. However, nonpoint source pollution, through which most of Arkansas's excess nutrients are exported, has been largely unregulated and ineffectively managed. The real-world impacts of this regulatory and management deficiency are clearly evident in prominent and well-known nutrient-driven water quality problems such as the harmful algal blooms seen in waters such as Lake Erie and Arkansas's Buffalo National River, and the hypoxic zones seen in the Chesapeake Bay, the Gulf of Mexico, and many other places, large and small. Indeed, the background section of the ANRS indicates that the Gulf hypoxic zone is one of the primary reasons for the development of state-based nutrient reduction strategies such as the draft ANRS.

In that light, after reviewing the ANRS at the strategic level, we will present our most important concerns within the framework of three categories:
1. the minimal focus on the Mississippi Alluvial Plain (Delta);
2. the insufficiency of water quality data across the state's watersheds; and,
3. the disconnect between the ANRS's priority tiers and the state's greatest opportunity and need to reduce nutrient pollution.

Minimal Focus on the Delta:
Given that the draft Arkansas Nutrient Reduction Strategy explicitly states that, "Agricultural

landscapes provide the greatest opportunity for significant NPS nutrient and sediment reduction," we would have anticipated to see much more focus and a greater future priority placed on Arkansas's Delta watersheds. The Delta is a landscape strongly dominated by agriculture, and farm fertilizer is the largest contributing source of phosphorus pollution. And yet, only three of 11 priority watersheds of the Arkansas Department of Agriculture's Natural Resource Commission's 2018-2023 Nonpoint Source Pollution Management Plan are in the Delta. Further, only two of the ANRS's priority tier 1 watersheds are located in the Delta, with the vast majority of the Delta being priority tier 2 watersheds, i.e., those with insufficient data. With few exceptions, the strategy seems to assiduously avoid focusing on the Delta watersheds, i.e., those watersheds dominated by crop agriculture and where the absolute magnitude of the nutrients entering our waters and Arkansas's contributions to the Gulf of Mexico hypoxic zone would be expected to be the greatest. Concomitantly, this region would seem to be where Arkansas's ability to reduce the level of nutrients entering the waters would also be greatest. In light of this situation, we believe that much more of the Delta should be included with the tier 1 watersheds of the ANRS. But, understanding the deficiency of the data (addressed below) for the waters of the Delta, we strongly urge the Department to address this situation by seeking and applying a greater proportion of available funding to the Delta watersheds even if they technically fall within what are labeled tier 2 watersheds. With the $1 million per state per year to become available through the Infrastructure and Investment and Jobs Act and to be distributed to address the nutrient problems creating the Gulf hypoxic zone, we believe that focusing on the Delta will maximize the state's ability to reduce nutrient pollution and therefore in turn increase the likelihood of Arkansas successfully securing the maximum amount of funding available for that purpose. This will not only benefit Arkansas's waters but will also provide benefit to Arkansas's farmers and its economy. For example, with improved data for the Delta watersheds, Arkansas would be better positioned to seek and secure additional new dollars to dramatically expand and target its "Avoiding, Controlling, and Trapping (ACT)" strategy within these agricultural landscapes.

We also believe that it should be within the scope of the strategy to suggest legislation that would enhance Arkansas's ability to secure such funding and increase its success in nutrient reduction. For example, currently none of the designated "nutrient surplus areas" encompassed by the 2003 Nutrient Surplus Area legislation are contained within the Delta. We suggest that the ANRS should include a strategy that would encourage movement toward applying that legislation's requirements to all areas of the state where large quantities of nutrients are applied to the landscape, not just the currently designated "nutrient surplus areas." In other words, the nutrient reduction goals of a successful ANRS would be enhanced by encouraging and providing support for "certifying all those who apply nutrients to crops or pastureland," "certifying nutrient plan writers," "developing and implementing nutrient management plans" throughout the state. Other legislative needs that would enhance Arkansas's success in nutrient reduction should also be included within such a section of the ANRS.

Insufficiency of Water Quality Data Across the State:

We recognize and appreciate the ANRS's attempt to develop an objective basis for the strategy as presented in the report, "Watershed prioritization to reduce nutrient export: A framework for the State of Arkansas based on ambient water quality monitoring data." However, the insufficiency of the current water quality database is inescapable. The report explicitly acknowledges that situation in stark statements such as, "Uneven coverage in the State's ambient water quality monitoring data sets was the primary challenge to a statewide HUC8-8 prioritization framework," and "The lack of a robust data record that includes multiple active

monitoring locations and regular sample collection is an impediment to understanding how watersheds in these regions fit into a data-based prioritization framework for watershed prioritization under the ANRS." Recognizing that the authors and team did the best they could with what they had, for a state in which water use, needs and related issues are as prominent as they are to the well-being of Arkansas's citizens and economy, this insufficiency of the data is unacceptable and should be a more prominent and more highly prioritized aspect of the nutrient reduction strategy.

As implied above and demonstrated by the geographic distribution of priority tier 1 and 2 watersheds, the Delta is particularly notable in having insufficient data. Given what is known about nutrient application and movement within and from agricultural landscapes, it is to be expected that the Delta is the predominant source of nutrient export to the Gulf of Mexico and therefore should be a focus of attention, both in monitoring and in application of nutrient reduction measures. Also, it seems a bit incongruous to, on the one hand, state that there is insufficient data in most of the Delta watersheds to designate them a priority tier 1 watershed, but on the other hand to imply that the proportional contributions of nitrogen and phosphorus by various sources (agriculture, pasture, urban, developed land, etc.) can be reasonably calculated as is done on page 32 of the ANRS, when so much of the intensively farmed landscape of Arkansas has insufficient data.

In light of the importance of using data to target the watersheds and activities most important to achieving the ultimate goal of reducing Arkansas's contribution of nutrients to the Mississippi River and the Gulf of Mexico, we strongly encourage the department to increase the emphasis on establishing the water quality monitoring system necessary to secure such data. Although we believe this to be an important enough point to warrant editing of the strategy document, if that is not possible at this stage of the process, we strongly encourage the department and its partners to implement the strategy in a way that places a greater emphasis on increasing the monitoring network necessary to strengthen the state's water quality database. This can be done by selectively and strategically seeking and applying funding that would be targeted to strengthening the monitoring framework.

Disconnect Between the ANRS's Priority Tiers and the Greatest Opportunity and Need to Reduce Nutrient Pollution

First, the actual text of the ANRS does not make it as clear as the Grantz and Haggard report (Appendix A) that the system of tiers described in the ANRS is intended to convey the relative priority for activity in each of the tiers. The Grantz and Haggard report explicitly identifies these tiers as "priority tiers" whereas the strategy document seems to avoid using that more precise phrase. Consequently, it is not as clear as it should be to the reader and future implementers of the strategy that tier 1 represents the top priority, which is more important than tier 2, which is in turn more important than tier 3, etc. This small language choice is important because as the tier system is currently presented in the strategy, it could be interpreted to mean that the tiers are merely categories of watersheds and activities, as opposed to reflecting their level of importance and actual priority. This is an important distinction.

Currently, the strategy states that, "Tier 1 had the greatest potential for both nitrogen and phosphorus reduction based on sufficient data as outlined in Appendix A. Tier 2 had the greatest need for future monitoring investments due to demonstrated nutrient reduction needs, data limitations, or both." The phraseology of "based on sufficient data" used with respect to tier 1 implies that there are other watersheds, such as those in tier 2, that very well could be included in the top priority if only "sufficient data" were available. This underscores the need to place a greater priority on strengthening the state's water quality database as we discussed

above to help ensure that nutrient reduction measures that are implemented will have the greatest impact on reducing the state's overall export of nutrients.

All of this takes on great significance in light of the fact, as previously discussed, that the watersheds of the agricultural landscape of the Delta are very likely to be the source of the greatest absolute magnitude of nutrients exported, and therefore are also the watersheds offering the greatest opportunity and need for nutrient reduction. And it appears, as essentially laid out in the Grantz and Haggard report, that the primary challenge to improved prioritization and targeting of nutrient reduction efforts is the insufficiency of the data.

Therefore, we strongly encourage that the ANRS priority tiers put an increased emphasis on data collection so that the state can, strategically and over the long term, maximize the effect of its nutrient reduction investments. We realize that in the short-term there would potentially be a tradeoff of somewhat reducing the impact of nutrient export measures if resources that could be devoted to field-level reduction activities are re-prioritized to bolstering the water quality monitoring efforts in watersheds, particularly those in the Delta, for which there is currently insufficient data. However, we strongly believe that, over the long-term, that strategic tradeoff and resulting improvement in the state's water quality database would lead to the ability to achieve a greater reduction in the magnitude of the state's nutrient export by greatly improving the ability to target nutrient reduction measures to the watersheds that will clearly have the greatest relative impact.

We appreciate the opportunity to provide these comments on what will be an important document for guiding Arkansas's future water quality management. We believe that our comments can be viewed and addressed in ways that are fully in keeping with the guiding principles of the strategy articulated on page 12, which are:

o Encourage actions that are voluntary, incentive-based, practical, and cost-effective.
o Use existing programs, including existing state and federal regulatory mechanisms.
o Follow adaptive management strategies.
o Identify additional funding needs and sources during the annual agency budget processes.
o Identify opportunities for, and potential barriers to, innovative and market-based solutions.
o Provide measurable outcomes.

Respectfully submitted,
Sam Cooke, President
Scott Yaich, Secretary
Friends of the North Fork and White Rivers