

**Arkansas State Water Plan Revision
Fish and Wildlife Flows – Moving Toward Implementation
Next Steps
Meeting Summary**

Purpose:

The purposes of the ad hoc meeting on fish and wildlife flows were:

1. Summarize the 27 March Fish and Wildlife Technical Workshop recommendations.
2. Identify statutes and Title 3 administrative processes that would need modification for incorporating an ecological response model into the water plan.
3. Propose a process for use during the interim before the ecological response method is completed and accepted.
4. Discuss a stakeholder involvement process for integrating other stream uses.
5. Layout the next steps in the interim process.

Meeting participants included: Edward Swaim, ANRC; Joe Nix, retired; Kathryn Hazelett, TNC; Ken Brazil, ANRC; Kent Thornton, FTN; Mike Armstrong, AGFC; Steve Filipek, AGFC; and Tim Snell, TNC.

27 March 2013 Fish and Wildlife Flows Technical Workshop Recommendations

The recommendations emerging from the 27 March 2013 Fish and Wildlife Flows Technical Workshop were:

1. Use the Arkansas Method to estimate fish and wildlife flows for the update of the State Water Plan
2. Shift away from presumptive flow standards (AR Method, Tenant Method) to empirical, risk-based ecological impact/flow relationships as the foundation for determining fish and wildlife flows.
3. Use the empirical, risk-based ecological impact/flow relationships for permitting and allocation studies.
4. Meet again to determine how minimum streamflows will be estimated.

While there was agreement on the recommendations from the Technical Workshop, it is likely to require a decade or more of research and development before empirical, risk-based ecological impact/flow relationships are available state-wide. Several questions have arisen since the 27 March workshop that prompted this ad hoc meeting, including:

1. Are any changes needed in ANRC statutes or regulations to ensure new methodologies can be adopted and implemented once they are proven,
2. How might the State Water Plan revisions be formulated to accommodate the implementation of these improved methods,
3. How would this research be funded, and

4. What stakeholder process would help facilitate the implementation of this framework or methods?

These questions were, in part, addressed at the meeting as described below.

Statutes and Title 3 Administrative Process Exclusions

There are no statutes, regulations, or policies that prevent ANRC from adopting and implementing any new methodology or procedure for estimating fish and wildlife flows or safe yield. Any new or improved methods that might be developed can be implemented, but it would be useful to have a framework or process through which these methods could be vetted to ensure they are scientifically and socioeconomically credible. The Water Supply Fish and Wildlife Flows Subgroup recommended that this framework or process be developed and incorporated in the State Water Management Plan updates. The ad-hoc group supported the development of this framework or process.

Process Framework for Fish and Wildlife Flows

There were three discussion paths related to the framework development and implementation of the updated State Water Plan during the interim period until the empirical, risk-based method for estimating fish and wildlife flows is ready for adoption and use. These three paths, and topics, are summarized in Table 1 below and subsequently discussed.

Table 1. Discussion paths

Technical Path	Policy Path	Public Relations Path
New methodology research and development	Incorporate adaptive management language in the State Water Plan	Emphasize the desired outcome is for sufficient water to satisfy all desired uses
Priority area projects to evaluate, improve methods	Explicit description of the process or framework for implementing new/improved methods	Diffuse adversarial or controversial positions
Funding for gages and other needed information	Specific, stable language for 2015 legislative session to support the updated State Water Plan	Specific, targeted messages for targeted audiences provided in measured doses
Use AR Method, with possible refinements, during the interim.	Establish Science & Technology Committee to support the State Water Plan	Ensure the right language and words are used with different audiences. Words have power

Technical Path

There was consensus on the need for research and development on new or improved methods. Even though the empirical, risk-based research is underway, there was a suggestion to conduct a series of projects in several priority areas that would help: 1) identify the critical issues and information needs for specific streams or watersheds; 2) develop appropriate field designs and sampling approaches; 3) test methods developed for other streams; and 4) identify potential issues prior to implementation of the empirical method as part of the State Water Plan. These studies could be used not only to improve the applicability of the empirical, risk-based approach, but also test the AR Method or other methods for use during the interim before the empirical approach is available.

Funding has been, and currently is, an issue. In the current legislative climate, additional funds are not likely to be forthcoming, now or in the near future. Therefore, alternate funding mechanisms or approaches are needed to compile the information needed to refine the AR Method and develop the empirical, risk-based method. Several ideas were discussed, including requiring water use permit applicants to fund the instream study as part of the permitting process. This might be similar to the NPDES process where industrial or municipal permit applicants are required to document that their wastewater effluent will not result in non-attainment of designated stream uses through site-specific studies.

A critical review of existing flow gages in the State and identifying gaps is another need. Dan Magoulick has identified all the flow gages in the state and documented their period of record. This data set could serve as the foundation for such a review. ANRC conducted a similar review several years ago to determine which agencies/organizations were funding different gaged sites throughout the state.

It was previously decided the AR Method would be used in the interim. However, the studies, as discussed above, might also provide information to refine the AR Method or demonstrate its applicability for smaller streams. Refining the AR Method would be a useful interim activity.

Policy Path

The State Water Plan must be implemented through adaptive management, which means the language in the plan must reflect this philosophy and process. Science and technology continually improve, which means the Plan must be malleable and adapt to these improvements. The Plan should strive to achieve a balance of certainty on procedures and protocols, so readers and users fully understand how the Plan will be implemented, and flexibility and adaptability so that better methods can be implemented as the science evolves.

As was stated in the Technical Path, the framework or process for implementing new or better methods should be included in the Plan updates. Science and methodologies will continue to

evolve and the Plan should have the flexibility, and describe the process, for incorporating these scientific and methodological advances.

The Plan is scheduled for completion in November 2014. Plan recommendations should include specific, stable, legislative language for consideration by 2015 legislators. Funding priorities should be part of this language. In addition, a Science and Technology Committee might be proposed to support and recommend new methods and technologies for implementing the Plan as these become accepted within the scientific and engineering community.

Public Relations Path

Water is essential for life, and issues arise when there is fear that there might not be sufficient water to sustain a specific sector, whether agriculture, industry, or fish and wildlife. It is critical that discussions of fish and wildlife flows emphasize the goal of ensuring there is sufficient water to satisfy all desired uses.

Adversarial approaches need to be diffused and commonalities identified for controversial issues. In many instances, there is 80 to 85% agreement on how to resolve most water issues, but the 15 to 20% differences drive the argument and results in polarization. Finding the right words early in the discussion is essential to diffusing potential controversies. The same words used in different sectors can have entirely different meanings, so it is important that messages are targeted to specific audiences. Creating an awareness of water issues and developing outreach and education programs can not start too early. These efforts need to begin now, and could begin with key stakeholders to characterize their understanding and knowledge about various water issues. Recent efforts associated with House Bill 2088 illustrate that the underlying concerns were not clearly understood.

Engaging stakeholders is critical to acceptance and implementation the State Water Plan. Fish and wildlife flows are an important component, but only one component, of managing and allocating water use. The framework or process proposed should include both technical (scientific) and socioeconomic considerations.

Social media and various networking approaches might provide mechanisms for targeted messages in measured doses to begin increasing the awareness and understanding of different audiences on water issues of potential interest to them.

Next Steps

Next steps include:

1. Summarize the ad hoc discussions that occurred in the 10 April meeting.
2. Prepare a strawperson framework or process that might be included in the State Water Plan to guide the development and application of any new or refined methods for

estimating fish and wildlife flows. This process should include both scientific and socioeconomic considerations.

3. Present this framework or process to the Water Supply Fish and Wildlife Subgroup and, following comments and revisions, present this to the larger Water Supply Group.
4. Develop preliminary approaches for identifying specific stakeholder audiences and targeted messages on fish and wildlife flows and their relationship to other desired surface water uses. Emphasize the desired goal of satisfying all water uses.