

National Instream Flow Program Assessment

Peer Review Evaluation of Mississippi's Instream Flow Program.

Summary Evaluation:

Mississippi's program strength is in the Legal area, possessing sufficient authorities for protecting instream flows. The program needs strengthening in the Institutional, Public Involvement, Physical, Hydrological, and Biological sectors so that its legal authorities can be exercised. Mississippi needs an aggressive Public Involvement program to building support so its instream flow program can act as a viable fish and wildlife protection vehicle. The program needs to use an array of biological and hydrological information to promote public understanding of instream flow needs for protection of the State's trust resources.

Recommendations in six program areas are:

- 1. Legal:** Mississippi's instream flow program is rated "High" relative to all states and is the highest of the southeastern states (AL, AR, FL, GA, KY, LA, MS, NC, SC, TN). Since Mississippi's strength is in the legal area, efforts toward program improvement are best aimed at the other program areas. One approach to accomplishing this is funding an "Opportunities to Protect Instream Flow in Mississippi" report by the U. S. Geological Survey's Biological Resources Division to increase awareness of which statutes may be used to reserve or protect instream flows.
- 2. Institutional:** Mississippi's instream flow program is rated "Low" relative to all states and ranks "Low" relative to the southeastern states. Funds and staffing devoted primarily to developing biological methods and criteria for quantifying instream flow needs are suggested as an essential step in developing a strong program. Emphasis also should be placed on developing institutional strategies for an aggressive flow restoration and maintenance program. Look to those states (such as Michigan, Minnesota, and Vermont) with strong Institutional support for ideas.
- 3. Public Involvement:** Mississippi's instream flow program is rated "Low" relative to all states and ranks "Low" relative to the southeastern States. Emphasis should be placed on developing public outreach strategies to build support for an aggressive flow restoration and maintenance program. Look to those states (such as New York, Wisconsin, and California) with strong Public Involvement programs for ideas in building such support.
- 4. Physical:** Mississippi's instream flow program is rated "Low" relative to all states and ranks "Low" relative to the southeastern states. It is recommended that Mississippi begin looking at physical elements in quantifying and recommending instream flow. Some examples of these elements are riffle pool ratios, dissolved oxygen, bed load, and turbidity. Equal consideration needs to be given to the streamflows needed to maintain channel integrity and suitable hydraulics (depth and velocity) for aquatic habitats. Look to those states (such as New York, California, and Maine) with strong Physical programs for useful examples.

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5. Hydrological: Mississippi's instream flow program is rated "Low" relative to all states and ranks "Low" relative to the southeastern states. Suggestions for improvement are to increase the frequency of usage of real-time and historical flow data; to initiate usage of flow regimes which mimic natural spatial and temporal hydrological variability; and to use hydrological information such as the shape of the hydrograph, sediment transport flows, channel maintenance flows, and overbank flows. It is well established that the 7Q10 methodology currently used to set flows is biologically inappropriate. Look to states like New York, Illinois and Maine with strong Hydrologic program for ideas in building a strong program.

6. Biological: Mississippi's instream flow program is rated "Low" relative to all states and ranks "Low" relative to the southeastern states. Emphasis should be expanded beyond just the fin fishes to include all fish and wildlife species dependent upon stream corridor habitats for healthy populations. Stream surveys and biological monitoring appears to be needed for the purpose of documenting the status and trends of aquatic populations, their habitat, and the effectiveness of any streamflow protection efforts. It may be useful to examine Wisconsin's biological-monitoring program.