

# Establishing Nutrient Criteria for Alabama Reservoirs

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## Biographical Sketch of Author

Chris Johnson is employed as an environmental engineer for the Alabama Department of Environmental Management. His major duties include review, development, and revision of water quality standards, preparation of use attainability analysis, water quality modeling, waste load allocations, and assistance in the rulemaking process for water quality standards. Mr. Johnson is currently spearheading ADEM's efforts in the development and implementation of nutrient criteria for waters of Alabama.

## Abstract

Nutrients are essential building blocks for a healthy aquatic community. However, overabundance of nutrients to a waterbody can create undesirable effects such as algal blooms, oxygen deficits and fish kills. Nutrient overenrichment of surface waters has been a long-standing problem throughout the United States. According to EPA's 1998 305(b) Report to Congress, nutrients were the leading cause of impairment to lakes and reservoirs. Like the majority of other States, Alabama has several impaired waterbodies as a result of excessive nutrient loading. In response to this "growing" concern, the Alabama Department of Environmental Management (ADEM) has made the development and implementation of nutrient criteria a top priority for Alabama waters.

Alabama is blessed with abundant water resources compared to other States, ranking 1<sup>st</sup> in navigable rivers, 6<sup>th</sup> in hydropower, and 7<sup>th</sup> in perennial stream miles. ADEM intends to address nutrient issues for all types of waterbodies to include reservoirs, rivers, streams, wetlands, estuaries and coastal waters, however our initial efforts have focused on the unique reservoirs located throughout Alabama. In getting started, reservoirs were categorized by major river basin and then examined individually for nutrient criteria development. Reservoirs within the Tennessee River Basin of north Alabama, managed by the Tennessee Valley Authority (TVA), were the first waterbodies to be addressed. Knowing TVA had both sound data and technical expertise to offer, a collaborative partnership was inevitable. The oral presentation is intended to provide both the technical and analytical methods used by ADEM, TVA and other stakeholders to develop nutrient criteria for reservoirs within the Tennessee River Basin. However, more importantly, the presentation will highlight the teamwork that was necessary to achieve successful criteria development.