

# ***Roland McDaniel - Principal/Senior Scientist***

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## ***Summary***

Mr. McDaniel is a Principal with GBM<sup>c</sup> & Associates, Inc. He has over 25 years of experience in investigations relating to environmental impact studies and environmental assessments, regulatory water quality issues; aquatic insect and fish communities; toxicity reduction/identification evaluations. He has in-depth knowledge (both theoretical and applied) of regulatory issues under the Clean Water Act, State Water Quality Standards Programs for Region 6 states, National Environmental Policy Act (NEPA), Federal Energy Regulatory Commission (FERC) and the National Pollutant Discharge Elimination System (NPDES). He has project management and implementation experience for a wide variety of environmental applications including environmental assessments, EIS, water quality standards development, ecological toxicological investigations, biological assessments, and NPDES permitting issues.

## ***Education***

1984 MS Biology: Aquatic Ecology, Arkansas State University  
Thesis: Selected aspects of the life history of the Yellowcheek darter (*Ethostoma moorei*)

1978 BS Wildlife and Fisheries Management, University of Arkansas Monticello

## ***Experience***

### **Environmental Assessments**

Mr. McDaniel has managed and conducted numerous inventories and habitat assessments for EA and EIS projects including a proposed state park, endangered species, irrigation projects, and projects evaluating the impact of storm water runoff from solid waste facilities and hazardous waste sites.

Mr. McDaniel has developed and implemented sampling and analyses plans for a wide variety of ecological investigations including water quality issues for NPDES permits, ecological risk assessments, long term monitoring programs as required by various regulatory settlements for both ecological and human health endpoints, and to establish baseline conditions prior to industrial activity and/or restoration.

He has developed, planned and implemented numerous multi-year fisheries and water quality studies for a variety of applications. Included in these are: a fish community assessment program to identify standing crop and estimate impacts from a major proposed pump storage electric generating facility, as required by FERC licensing, to establish baseline conditions and predict future impacts, evaluation of an industrial discharge on the fisheries biomass in a mainstem reservoir, the restoration and enhancement of a urban fishery, and long term monitoring of contaminated watersheds for recovery.

In addition, Mr. McDaniel has developed endangered species recovery plans for the Bald Eagle, mitigation plans for a proposed state park and water diversion projects, as well as protection and mitigation plans for mitigation of anticipated impacts.

### **Biological Assessments**

As a project manager, Mr. McDaniel has conducted over 30 Use Attainability Analysis (UAA) and Section 4(g) studies to modify the State of Arkansas Water Quality Standards to reflect site specific conditions. He was a principal investigator in developing ecoregion water quality standards for the State of Arkansas (principally responsible for aquatic insect and fish community assessments).

He has conducted hundreds of rapid bioassessments above and below point and non-point pollution sources to evaluate benthic and fish communities. In addition, he has conducted habitat assessments relating to the potential for community development and is versed in the practical application of the USFWS Habitat Evaluation Procedures (HEP) for both aquatic and terrestrial systems.

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## ***Roland McDaniel - Principal/Senior Scientist (cont.)***

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### **Water Quality**

Mr. McDaniel has planned and conducted numerous field studies to evaluate impacts of point and non-point sources contributions to water quality in receiving streams. He has developed and reviewed documentation to establish appropriate site specific criteria for various potential pollutants and has developed water quality requirements for maintenance of designated uses. He conducted site assessments and identified reference conditions for an urban stream and lake system impacted by a superfund site and developed the monitoring and assessment plan to identify appropriate remediation activities.

In addition, he has reviewed and developed an expert opinion on an ecotoxicological surface water assessment on the Neches River in Texas and served as an expert witness in negotiations with the Texas Natural Resource Conservation Commission. Mr. McDaniel has served as expert witness on numerous water quality issues and potential impacts of specific contaminants.

### **Toxicity Issues**

As a project manager, Mr. McDaniel has planned and implemented numerous Toxicity Reduction Evaluations and Toxicity Identification Evaluations to identify and reduce toxicity in a variety of effluents, including potential toxic impacts related to metals, dissolved minerals, organics, wastewater treatment chemicals, acid mine drainage, agrochemical and storm water constituents.

While employed at the Arkansas Department of Environmental Quality, Mr. McDaniel developed NPDES permit language and regulatory requirements for the State of Arkansas' NPDES program which serve as the foundation for the current effluent toxicity provisions of NPDES permits. He has evaluated hundreds of toxicity testing results for adherence to required protocol and appropriate interpretation by analytical laboratories and regulatory agencies.

### ***Professional Affiliations***

SETAC – Society Environmental Toxicology & Chemistry

Past President, SETAC South Central Chapter (AR, TX, LA, OK, NM, KS)(1997)

1996-98, SCC Board Member (1994-98)

2000-2001, Vice President of Mid South Chapter SETAC

Arkansas Academy of Science (Lifetime Member)

American Fisheries Society

Arkansas Environmental Federation, Water Quality Committee

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