

Greg Phillips - Senior Scientist

Summary

Mr. Phillips is a Senior Scientist with GBM^c & Associates, Inc. He has a diverse background in aquatic biology, toxicology, and hydrology. His over 12 years of experience includes: surface water quality modeling to determine the fate and transport of pollutants in the aquatic environment; detailed hydraulic studies using fluorescent dye tracers; conducting ecological surveys to characterize fish and benthic macroinvertebrate communities; comprehensive watershed management studies; ground water studies with detailed statistical analysis; management of a certified biomonitoring laboratory that required toxicity testing, toxicity data interpretation, and toxicity identification/reduction evaluations; and environmental sampling of various media.

Education

Graduate studies, Aquatic Ecology, University of Arkansas
1990 BS Biology, Ouachita Baptist University

Experience

Watershed Studies/TMDL's and Water Quality Modeling

Mr. Phillips has completed numerous water quality studies on small to large watersheds. He is experienced in watershed assessment, classification and restoration practices according to natural channel design methodology (Rosgen, 1996). He is proficient in the identification and characterization of both point and non-point source pollutant loading. He has designed and performed total maximum daily load (TMDL) studies to determine the pollutant assimilative capacity of lotic and lentic waters. His water quality modeling experience includes use of various EPA supported models including: AQUATOX, Multi-SMP, QUAL2K, WASP, and CORMIX. He has modeled the transport and fate of DO, CBOD, Ammonia, pH, TSS, phosphorus and generic conservative constituents. He has conducted mixing zone studies to determine dilution ratios in the regulatory mixing zone and the zone of initial dilution.

Mr. Phillips is experienced in the assessment of nutrient loading to streams and reservoirs including assessments based on USDA's SWAT model. He has performed agricultural activities impact analysis in several projects. He was the lead technical team member involved in the process of developing nutrient screening criteria for use in a states 303(d) list development. He has also participated in the process of de-listing streams in the states of Oklahoma and Missouri with listed "causes" such as nutrients, pH, DO, TSS and pathogens.

Environmental Hydrology

Mr. Phillips has completed numerous hydraulic/hydrology studies using various techniques. He has measured flow in streams by the velocity area method using digital flow meters. He has measured flow in streams and conducted time of travel studies using fluorescent dye tracers. By use of the dilution gauging method he has determined losing and gaining sections of an Ozark stream. He has conducted numerous low-flow frequency studies to determine 7Q10 and 7Q2 flow of streams and rivers. He has performed dye studies to determine the retention time of wastewater holding ponds. He has completed dozens of storm water run-off analyses using the SCS Curve Number method and sophisticated computer models, on both small catchments and large watersheds.

Aquatic Toxicology

Mr. Phillips managed the operations of the Pine Bluff Arsenal biomonitoring laboratory and completed special ecological studies to evaluate restoration activities and ecological risk associated with Arsenal activities. This position required proficiency in Quality Assurance/Quality Control processes, data analysis (including statistical methodologies), data interpretation, and technical report writing.

As an aquatic biologist, Mr. Phillips has performed and interpreted numerous chronic, acute, and flow-through toxicity tests for NPDES compliance. He has also cultured various invertebrates and fish for use in toxicity testing. He has performed toxicity identification/reduction evaluations on industrial and storm water discharges.

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Recently, Mr. Phillips designed and implemented a water effect ratio (WER) study for copper. The results of the WER study were effective in changing the water quality standard.

Risk Management

Mr. Phillips is experienced in preparing risk management plans for industrial and municipal facilities. He has prepared over a dozen RMP's for over a dozen different toxic chemicals and flammables including chlorine, anhydrous ammonia, nitric acid, sulfur dioxide, hydrogen, methanol, etc. He has utilized sophisticated air dispersion models and site specific climatic data as well as EPA look-up tables to determine distances to off-site consequences.

Wetlands Biology

Mr. Phillips is a trained USACOE Wetland Delineator. He has identified and delineated wetlands in the Vicksburg, Little Rock, and Tulsa ACOE districts. He has prepared Section 404 permit applications and prepared comments addressing public concerns relating to Section 404 permitting. He has been involved in an assortment of wetland creation and restoration projects. Project tasks have included: bank stabilization and erosion prevention using geotechnical materials, planting and transplanting of native wetland plants, and the construction and maintenance of a wetland pilot treatment plant.

Ecological Field Studies

Mr. Phillips has conducted dozens of aquatic life assessments to evaluate the condition of benthic macroinvertebrate and fish communities using rapid bioassessment protocols. Assessments have been completed as part of use attainability analysis, site specific criteria development, ecological damage litigation, and determination of biological integrity. He has conducted quantitative assessments of the benthic community to determine seasonal distribution and fluctuation. In addition, he has conducted zooplankton sampling and identification studies in lentic waters.

He has used the Asiatic clam to assess the bioaccumulation of DDT and mercury in lotic environments. He has been involved in an ecological risk assessment (ERA) of hazardous waste sites at a Department of Army base. Mr. Phillips was the on-site contact for all field activities and historical data research during the ERA.

Water Quality Monitoring (Surface and Ground Water)

Mr. Phillips has sampled wastewater and surface water as part of the NPDES permit requirements and in non-point source pollution studies. He has designed and implemented numerous water quality studies with stringent QA/QC requirements and completed detailed data assessment/analysis using statistical and graphical methodologies. He is proficient in the use and analysis of data generated from water quality monitoring equipment including: pH meters, dissolved oxygen meters, conductivity meters, temperature meters, fluorometers, spectrophotometers, various Hach kits, dredges, sediment core samplers, secchi disks, flow meters, water level sensors, bailers, Kemmerer bottles, and ISCO auto-samplers.

In addition, he has performed various chemical analyses on wastewater for NPDES permit reporting including: TSS, TKN, ammonia, fecal coliforms, BOD, oil and grease, and many other wet parameters.

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Professional Affiliations and Licenses

American Water Resources Association
-Hydrology and Watershed Management Committee Member
-Aquatic Ecology Committee Member

North American Benthological Society

Certificates:

Watershed Concepts (Michigan State University)

Building and Implementing Watershed Management Plans (Michigan State University)
