



Examples of How New Science and Online Management Tool Are Informing Nutrient Management Decisions

“Prioritization is a key element in water quality planning, even more so during times of budget cuts and increasingly scarce resources. The online SPARROW tool provides nutrient information in a visual format that can help managers quickly prioritize resources for watershed restoration and protection.”

Roger Miranda, P.G., Texas Commission on Environmental Quality

“A majority of the nation's estuaries are moderately to highly impacted by nutrient pollution which threatens living resource habitats, causes oxygen-depleted 'dead zones' and can fuel harmful algae blooms. This USGS decision support system represents a major advance in the availability of sound scientific information to enable the effective management of this growing threat to our valued coastal resources and economies.”

Dr. Robert Magnien, Director of NOAA's Center for Sponsored Coastal Ocean Research

“Results of the regional nutrient SPARROW models in the southeast helped explain lower fish diversity at sites with otherwise ideal streamflow conditions. We are using this knowledge to help inform our thinking about how hydrologic alteration and nutrient conditions affect our rivers and streams in the Tennessee River Basin. We know that nutrient conditions and flow characteristics, and the dynamics between the two, influence the health and diversity of our native fish populations. The SPARROW model results helped us tease out these dynamics, which moves us forward towards more quantifiable and objective management targets for managing flow conditions in our rivers and streams.”

Sally Palmer, Director of Science for The Nature Conservancy in Tennessee.

“The EPA Office of Research and Development has been using SPARROW model results to assess watershed nutrient loadings to lakes, reservoirs in the northeastern U.S. The SPARROW estimates match much of the observed spatial variations documented in EPA probabilistic surveys of lakes throughout the northeast. This allows us to make additional estimates of spatial variation in water quality across the region, and inform governance agencies about opportunities for integrated management of nutrients that enter our waterways from a variety of sources. The online management tool offers new opportunities to evaluate the implications of changes in nutrient sources from air and non-point and point sources. Kudos to USGS for making this very useful information available in an online management tool.”

Hal Walker, EPA ORD NHEERL Atlantic Ecology Division, Narragansett, RI

“The Alabama Department of Environmental Management is nearing completion of the first round of nutrient criteria development for the State's large reservoirs. During the next phase we will be developing chlorophyll a criteria for major tributary embayments in these reservoirs and the SPARROW Decision Support System will allow us to identify and prioritize tributary watersheds that are most likely to be significant sources of nitrogen and phosphorus. The tool, when used in conjunction with data already collected by the State, will provide a much better understanding of how nutrient loads from watersheds influence algal productivity in tributary embayments.”

Lynn Sisk, Chief of the Water Quality Branch, Water Division—Alabama Department of Environmental Management

“The SPARROW DSS is a very useful tool for identifying nutrient sources. I particularly appreciate the flexibility to examine specific watersheds in detail, and the ability to create custom maps, graphics, and spreadsheets.”

Melynda May, Standards Unit, Water Quality Division, Colorado Department of Public Health & Environment

“Minnesota plans to use the model results to inform our state-level nutrient reduction strategy development process. The model will be used, along with monitoring data, to prioritize watersheds and subwatersheds for nitrogen and phosphorus reduction practices. Additionally, we will use the model to help set goals and targets for nutrient reductions, and to evaluate load reductions expected at the state borders attained by meeting local stream nutrient concentration standards.”

David Wall, Technical Assistance, Minnesota Pollution Control Agency

“Resources for protecting water quality are very limited. Tools that the USGS has made available, such as the SPARROW DSS should be useful in helping research and outreach professionals target efforts on preventing nonpoint source pollution in the watersheds where it is most needed”.

Troy Bauder, Extension Water Quality Specialist, Department of Soil and Crop Sciences, Colorado State University

“The new regional SPARROW models provide important nutrient information that already is proving useful to researchers and managers across the Pacific Northwest. This work augments the understanding of background nutrient loads in forested areas and is allowing stakeholders to identify the dominant sources of nitrogen in areas where nitrate contamination of groundwater is an important and growing concern.”

Jana Compton, Project Lead for USEPA Nitrogen Research within the Sustainable and Healthy Communities Research Program

“SPARROW model results have the potential to contribute to NC DENR DWQ’s river basin planning efforts by helping to better understand nutrient contributions from watersheds in order to focus efforts and resources where they are needed the most.”

Jeff Manning, Basinwide Planning Unit Supervisor, Division of Water Quality, North Carolina Department of Environment & Natural Resources

“The USGS Great Lakes Sparrow model, and more specifically applied to Lake Erie, has been a great tool for gaining an understanding of phosphorus quantities and sources by river and watershed. The USGS report describing this model is the only report whose scope is all of the U.S. Lake Erie nutrient sources. This report has helped in the effort to target the watersheds/ivers that deliver the greatest phosphorus loads to Lake Erie. The USEPA has proposed to target the Blanchard River in the Maumee River watershed for phosphorus reductions, but based on the model results there are other watersheds/ivers like St. Marys or the Auglaize rivers where we could get a better bang for taxpayer dollars used to reduce phosphorus loads to the Maumee and Lake Erie. Thank you USGS for this great analytical tool and we hope that the models will be updated every decade or more often to show trends and comparisons of phosphorus contributions in the Great Lakes and especially Lake Erie.”

Sandy Bihn, Lake Erie Waterkeeper

“The total phosphorus SPARROW model currently under development for the Yakima River basin will allow the Washington Department of Ecology to better assess and understand the sources and transport of phosphorus throughout the Yakima River. This model will help us work efficiently and effectively with our stakeholders in the implementation of best management practices (BMPs) and education and outreach efforts. Although the user interface for the SPARROW decision support system could be simpler, it does successfully capture the user requirements. Overall, it is a great tool.”

Sanjay Barik, Water Quality Program, Central Regional Office, Washington State Department of Ecology

“The SPARROW model developed for Lower Mississippi Texas Gulf region provides nutrient loading information that could be useful to states as they develop Nutrient Reduction Strategies. For example, Louisiana Department of Environmental Quality (LDEQ) utilized outputs from this model to prioritize watersheds through USDA’s Mississippi River Basin Initiative (MRBI).”

Jan R. Boydston, Environmental Scientist Senior, Business Community Outreach and Incentive Division, Office of the Secretary, Louisiana Department of Environmental Quality