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Integrating Basinwide Water Quality Plans in Google Earth to Enhance Public Access and Connect Water Quality Concepts to the Landscape in a Geographic...

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Abstract Text:

Basinwide Water Quality Planning in North Carolina is a non-regulatory, watershed-based approach to restoring and protecting the quality of North Carolina's surface waters. The NC Division of Water Quality (DWQ) prepares Basinwide Water Quality Plans for each of the 17 major river basins in the state. Among their many uses, Basinwide plans identify impaired water bodies, outline restoration and protection strategies, and guide agency program and policy development. Over time, the volume of information contained in the plans has increased dramatically. As a result, the plans have become difficult for users to navigate and draw connections between the many concepts presented. Concurrently, plan emphasis has shifted from point source (NPDES) management to addressing nonpoint pollution in a land use context. Thus, a new method for distribution in an easily accessible platform that intuitively links water quality concepts to the landscape is required. Recent innovations in web-based geographic information systems present new opportunities to meet changing program needs.

DWQ partnered with the Center for Earth Observation at North Carolina State University to develop an interactive Internet-based tool that meets both of these challenges. The Basinwide Document Display System is a GIS based system that disseminates information in the Google Earth environment. Relevant stream and basin water quality information are linked to a web map for selected basins and a web template was developed for use with subsequent planning efforts. This graphic display offers a greatly enhanced public portal for information useful in management and planning. The user is able to zoom to the desired geographic region, easily identify the information available, and display and print the information needed.

Impact Statement:

This project uses intuitive search and navigation functions in Google Earth to produce an easily accessible public portal for document retrieval and data distribution. The document storage structure supports quick and easy updates as water quality conditions change and local restoration efforts advance. Additionally, the Google Earth platform visually links water quality concepts to existing land use patterns using aerial photography and generally familiar features (roads, municipalities, county boundaries, etc.). Finally, the Google Earth computer code is straightforward, allowing for the quick training of new agency staff and deployment of new information.