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HYDROLOGIC AND WATER QUALITY SYSTEM (HAWQS)

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ABSTRACT: The Hydrologic and Water Quality System (HAWQS) is a modeling system designed to evaluate the impacts of management alternatives, pollution control scenarios, and climate change scenarios on the quantity and quality of water at a national scale. The project is a joint partnership between the US Environmental Protection Agency (EPA), the USDA Agricultural Research Service, and the Texas AgriLife Research at Texas A&M University. The HAWQS databases, interfaces, and models are specifically designed to support EPA's Office of Water benefits analyses, in which model outputs can be used to estimate the economic value ("benefits") of improved water quality. The web-based interface can access datasets for modeling at three spatial scales for any watershed over the lower 48 states. At the core of the system is the USDA's SWAT model (Soil and Water Assessment Tool), which uses the latest nationally available federal government databases and the National Hydrography Dataset (NHD Plus) stream network.

HAWQS can be used for other environmental analyses and geographic information system applications as well. It is, for example, capable of supporting a wide variety of national- and regional-scale analyses by simulating baseline and alternative water quality conditions using historical weather data. By providing defensible outputs it can also help estimate human health risks, drinking water treatment costs, and water quality criteria exceedance frequencies which can then be used in regulation and policy development.

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