

Predicting the Fate & Effects of Pollutants in Freshwater and Estuarine Ecosystems with AQUATOX

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AQUATOX is a process-based, time-varying, fate and effects simulation model that integrates aquatic ecology, chemical dynamics, bioaccumulation, and ecotoxicology. AQUATOX can be used to predict the environmental fate and both direct and indirect effects of nutrients, pesticides, and other chemicals in aquatic ecosystems. Results are given in tabular and graphical forms, including concentrations, rates, mass balances, and probabilistic risk graphs. The model has been peer reviewed and released for use by the U.S. Environmental Protection Agency. It has been validated for a variety of environments including lakes, reservoirs, small streams, and rivers. Recently an estuarine version was developed. Application to Galveston Bay Texas exemplifies the analysis of the effects of multiple pollutants on commercial fisheries and of bioaccumulation of toxicants in commercial fish and sea gulls.