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South River Science Session

Enhanced Adaptive Management Approach for Remediation of the South River

Uncertainties about future conditions and the effects of chosen actions, as well as increasing resource scarcity, have been driving forces in the utilization of adaptive management strategies. However, many applications of adaptive management have been criticized for a number of shortcomings, including limited ability to learn from action and lack of consideration of stakeholder objectives. To address these, we supplement existing adaptive management approaches with a decision-analytical approach that first informs initial selection of management alternatives and then allows for periodic re-evaluation or phased implementation of management alternatives based on monitoring information and incorporation of stakeholder values. We describe the application of this enhanced adaptive management (EAM) framework to compare remedial alternatives at a mercury-contaminated river, based on an understanding of the loading and behavior of mercury in the South River near Waynesboro, VA. The process itself demonstrates that a decision model can link project performance criteria, decision-maker preferences, environmental models, and short- and long-term monitoring information with management choices to help shape a remediation approach that provides useful information for adaptive, incremental implementation.