

Integrated Ecological Research TVA Kingston Ash Recovery Project

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The Kingston fly ash spill deposited several million cubic yards of ash into portions of Watts Bar reservoir. Most of the ash has been removed from the Emory River, but about 300,000 cubic yards remains that may be impossible to remove without causing more environmental damages than benefits.

Recognizing the potential for adverse environmental effects from both the initial spill and the ash that may remain in the rivers, TVA has developed an integrated research program that draws on its own technical expertise, nationally-recognized third-party researchers, and academic institutions to assess effects of ash-related contaminants on ecological receptors at multiple trophic levels. Primary objectives of this program are to 1) accurately assess immediate and intermediate-term effects of the spill on the aquatic ecology of the system, 2) develop information necessary to predict long-term system responses to ash that may remain in the river, and 3) identify potential problems for which innovative solutions must be developed.

This research spans multiple disciplines (e.g., environmental geochemistry, toxicology, and ecology), and examines ecological effects at cellular, organ, organism, and population levels. For key contaminants such as arsenic and selenium, it includes characterizing chemical speciation, bioaccumulation, and biogeochemical transformation rates, and the effects of environmental conditions on those rates.

This presentation and a complementing poster describe the different components of this research program and the methods being used to facilitate coordination and communication among researchers.