



Sites in Reuse

TVA Kingston Removal Site

U.S. Highway 70, Kingston, Tennessee 37763



Left to right: Cleanup work at the site, cap installation, and a before and after of the Middle Embayment area.

Site size: Over 300 acres

Site Reuses: Restored habitat, a 32-acre passive park with recreational amenities, and a planned sports complex and emergency response center

The Tennessee Valley Authority (TVA) Kingston Ash Recovery Project is located in Roane County, Tennessee. The project area, or site, includes TVA's Kingston Fossil Fuel Plant, several miles of riverway and over 300 acres of land affected by the release of coal fly ash from a containment failure.

GOING ABOVE AND BEYOND: ADDRESSING CONTAMINATION...

The Kingston Fossil Fuel Plant (KIF) is located at the headwaters of Watts Bar Reservoir near the confluence of the Clinch and Emory Rivers. Built in the 1950s, KIF generates 10 billion kilowatt-hours of electricity a year, enough to supply the needs of more than 700,000 homes in the Tennessee Valley.

On Monday, December 22, 2008, a containment dike surrounding part of a landfill storing ash from power plant operations failed. The initial release of material – about 5.4 million cubic yards of coal fly ash – created a wave of water and ash that choked the adjacent Emory River, disrupted electrical power, ruptured a natural gas line, covered a railway and local roadways, and necessitated the evacuation of a nearby neighborhood. The material also covered about 300 acres of adjacent parts of Watts Bar Reservoir, including most of the Swan Pond Embayment and reservoir shorelands. The material contains naturally occurring metals – arsenic, chromium, copper, lead, mercury, nickel, selenium, thallium, vanadium and zinc

– as well as naturally occurring radionuclides, which are hazardous substances.

EPA, TVA and the agencies' state and local partners responded immediately. Throughout the cleanup, EPA's overall objectives were to ensure that it was protective of public health and the environment, employed sound science, and took place as quickly and safely as possible. EPA addressed the cleanup in three phases.

- Phase 1 – time-critical removal actions – began immediately after the spill. They included dredging, excavation and disposal of the ash.
- Phase 2 – non-time-critical removal actions – followed. These actions included additional ash removal and disposal, and construction of a perimeter system that would withstand earthquakes. Further actions by TVA then restored riparian and wetland habitat. Final restoration activities finished in April 2015.
- Phase 3 – human health and ecological risk assessments and monitoring – is ongoing. The focus is on making sure the remedy remains effective over the long term. To date, the health of the river is improving much faster than expected. There are no unacceptable risks to public health or the environment.

Reuse Timeline

1955 to present: KIF provides power to Tennessee Valley communities.

December 2008: Ash release from the power plant.

December 2008 - December 2010: Time-critical removal actions.

December 2010 - April 2015: Non-time-critical removal actions and habitat restoration.

May 2014: Lakeshore Park opens.

June 2015: TVA receives EPA Region 4's Excellence in Site Reuse Award.



Revegetation of over 50 acres of shoreline and wetland habitat used special native seed mixes. Several varieties of wetland shrubs were also planted and are now well established

...CREATING LONG-TERM BENEFITS

Ecological Restoration

TVA's extensive ecological restoration efforts have gone far beyond cleanup requirements. Ecological restoration on site focused on creating diverse natural habitats using native plants. These habitats provide an interconnected ecosystem that supports a wide range of wildlife and allows for recreation. Ecological restoration efforts included reforestation, restoration of the shoreline and wetland habitat, and reclamation of other disturbed areas. About 15 acres have been reforested, using over 40 types of trees. Plantings of hardwood trees and understory shrubs promote natural successional growth of hardwood forest. Revegetation of shoreline and wetland habitat used special native seed mixes. The native plants provide much-needed habitat for pollinators. The native seed mixes included many plants that attract flies, bees, beetles and butterflies.

Recreation

These areas are also now part of the 32-acre Lakeshore Park, which opened in May 2014. The community park has two miles of paved walking trails, a boat ramp and dock, fishing piers, canoe launches, restroom facilities, and a pedestrian bridge that spans the East Embayment.

Community Support and Outreach

TVA's community support and outreach activities have also been remarkable. Over more than six years, TVA has invested \$1.178 billion to protect public health and environment. With \$43 million in TVA funding, the Roane County Economic Development Foundation built new public schools and a wastewater treatment plant for the City of Kingston, and

rehabilitated the historic Princess Theatre in Harriman. About 60 acres of a former TVA-owned soil borrow area are now planned for a Roane County sports complex that will house a festival field, soccer fields and ball fields. Ten acres of TVA property nearby will host Roane County's new Emergency Response Center and a volunteer fire station for the Swan Pond community. TVA also gave \$500,000 of surplus material to Roane County and spent \$350,000 to repave Swan Pond Road/Circle. Overall, TVA has invested more than \$10 million in recreational and ecological enhancements in the Swan Pond area.

LOOKING BACK, LOOKING FORWARD

In recognition of TVA's efforts in going above and beyond to support cleanup, ecological restoration and community revitalization, EPA Region 4 awarded TVA its Excellence in Site Reuse award in June 2015. Looking forward, EPA will continue to support TVA, Roane County, and other local and community partners as they manage these resources and plan for the future.

FOR MORE INFORMATION, PLEASE CONTACT:

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TVA Kingston Removal Site

THEN

East Embayment



NOW



North and Middle Embayment



Middle Embayment



Swan Pond Road Intersection

