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Abstract Title:

Initial assessment of trace element exposure in insectivorous birds nesting near the Kingston ash spill

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Abstract:

On 22 December, 2008, the Tennessee Valley Authority (TVA) suffered a retaining wall failure at its Kingston Fossil Plant facility in Roane County, Tennessee. This event resulted in the release of approximately 5.4 million cubic yards of ash into the Emory River. In April, 2009, TVA initiated an investigation to examine potential impacts of the spill to insectivorous birds in the vicinity. A colony of tree swallows (*Tachycineta bicolor*) was established at three sites near the ash spill and two reference sites >11 miles from the spill. Seventy-six nests were monitored (30 at the spill, 46 at reference sites). From nests that were not predated, a single egg and a nestling (day 15-17) were collected. Sixty-three eggs and 47 nestlings were collected and tested for a suite of metals. Initial results indicate that there was little difference in trace element concentrations between sample sites at the spill. Overall, trace element concentrations were lower in eggs and nestlings from nest boxes at the spill compared to reference sites. This study will serve as a foundation for upcoming work that will examine potential bioaccumulation of trace elements to avian receptors and their prey.