

WHAT IS COAL ASH

and how could it affect me?

Alabama is globally recognized for the variety of plants and animalsⁱ that live in the 145,000+ miles of rivers and streams that flow within its borders.ⁱⁱ However, these bountiful waters are threatened by the unregulated disposal of coal ash, a waste product produced by burning coal for electricity. Studies show that this waste is highly toxic, yet current law allows industries to store it in unlined landfills or lagoonsⁱⁱⁱ that have been known to release their toxic contents.

By the end of 2014, the US Environmental Protection Agency is expected to issue a rule under the Resource Conservation and Recovery Act, a federal law that regulates the disposal of both hazardous and solid wastes. This will decide whether coal ash should be regulated as hazardous.

“Alabama has at least forty-four ash ponds on the banks of our rivers.”

Coal ash often contains arsenic, mercury, chlorine, fluorine, lead, copper, and selenium.^{iv} These elements are hazardous to both human health and ecosystems. Alabama has 44 coal ash ponds located on the banks of our rivers. The EPA estimates that these ponds can hold over 24.1 billion gallons of toxic coal ash.^v This quantity of coal ash on our rivers presents a grave threat to our communities and waterways. As seen in recent disasters in North Carolina and Tennessee, a spill into our waters can happen at any time.

For more information:

Alabama Rivers Alliance - www.AlabamaRivers.org
Black Warrior Riverkeeper - www.BlackWarriorRiver.org
Coosa Riverkeeper - www.CoosaRiver.org
Southern Alliance for Clean Energy - www.SoutheastCoalAsh.org

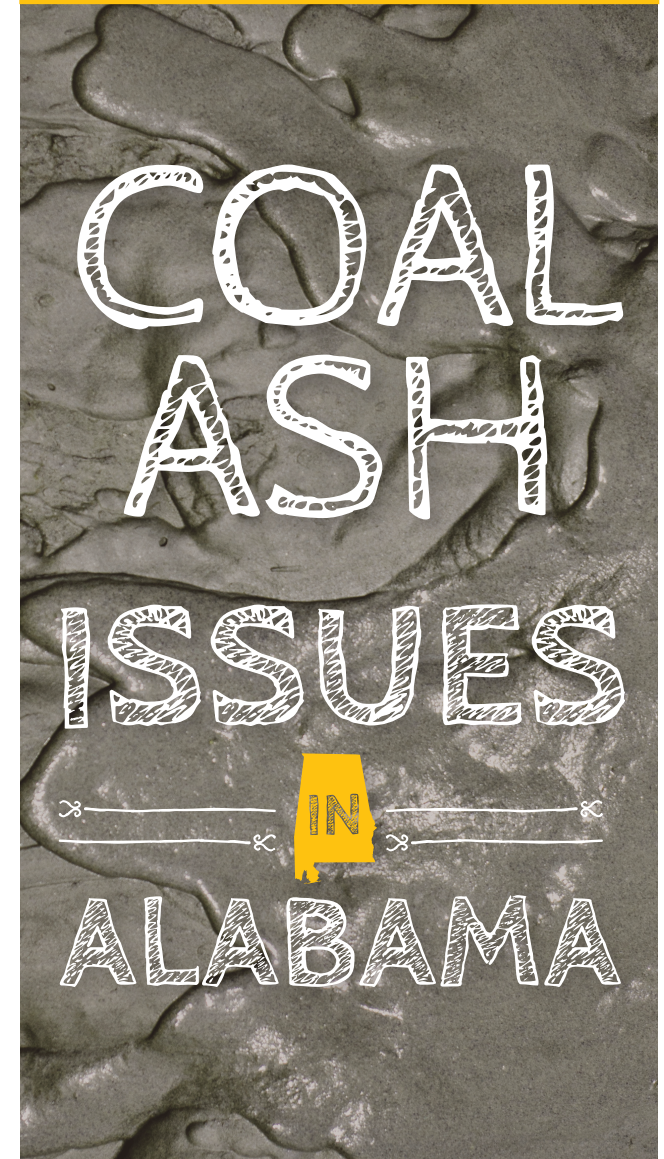
Sources:

- ⁱ Duncan, S. R. (2013). "The Aquatic State." Southern Wonder: Alabama's Surprising Biodiversity. Tuscaloosa, AL: University of Alabama Press.
- ⁱⁱ NHD Plus Version 2 Website. Retrieved from <http://www.horizon-systems.com/nhdplus/>.
- ⁱⁱⁱ Environmental Protection Agency. (2010). Human and ecological risk assessment of coal combustion wastes [PDF document]. Retrieved from <http://earthjustice.org/sites/default/files/library/reports/epa-coal-combustion-waste-risk-assessment.pdf>
- ^{iv} Ruhl, L., Vengosh, A., Dwyer, G. S., Hsu-Kim, H., Schwartz, G., Romanski, A., & Smith, S. D. (2012). The impact of coal combustion residue effluent on water resources: a North Carolina example. *Environmental science & technology*, 46(21), 12226-12233.
- ^v Alabama: A state's role in coal ash regulation. (2013). Southern Alliance for Clean Energy and partners. Retrieved from <http://www.southeastcoalash.org/>
- ^{vi} Dewan, Shaila. "Waste Spills at Another TVA Power Plant." *New York Times*, January 9, 2009. Retrieved from <http://www.nytimes.com/2009/01/10/us/10sludge.html>
- ^{vii} Letter from William G. Cronin, Widows Creek Plant Manager, to Alabama Department of Environmental Management, Environmental Data Section, "Notification of Upset Condition," (January 14, 2009); Tennessee Valley Authority, Widows Creek Fossil Plant Gypsum Removal Project, Final Environmental Assessment, July 2009.
- ^{viii} Tennessee Valley Authority, Widows Creek Fossil Plant Gypsum Removal Project, Final Environmental Assessment, July 2009, at 1-4.
- ^{ix} Cole, J. and Dobbins, E. G. "Effects of surface runoff from a landfill containing coal ash on water chemistry in adjacent surface water in Perry County, Alabama." (presentation, 75th Annual Meeting of the Association of Southeastern Biologists in Spartanburg, SC in April 2-5, 2014).



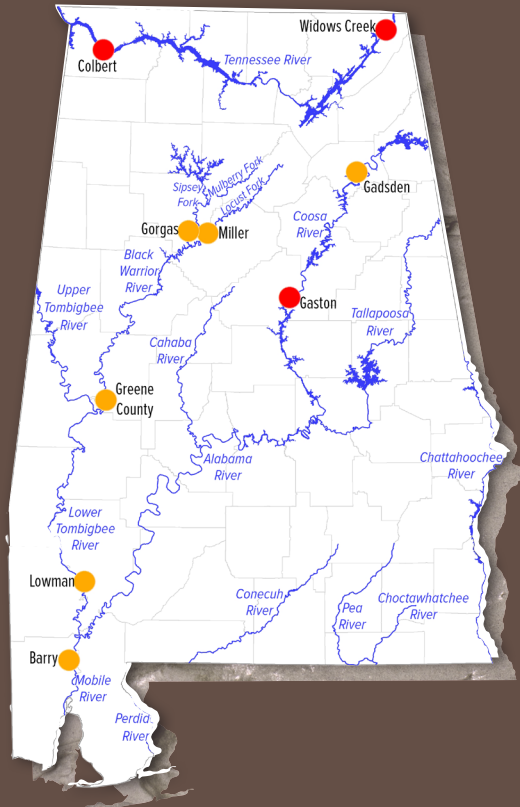
A special thanks to our contributors:

Alan Clayton, Research • Misha Mitchell, Research
Daniel Spanier, Graphic Design • Melissa Fulmer, Editorial



COAL ASH STORAGE SITES IN ALABAMA

Alabama has nine coal-fired power plants with at least 44 coal ash ponds resting on rivers and creeks throughout the state. These plants produce 3.2 million tons of coal ash every year, and because of the high quantity of toxic heavy metals, Alabama houses the most toxic coal ash of any other state in the US. ^v



HIGH HAZARD
Indicates that a dam failure is likely to cause loss of human life.

SIGNIFICANT HAZARD
Failure is likely to cause significant economic loss, environmental damage, or damage to infrastructure.

WET STORAGE

Wet coal ash is often stored in ponds or lagoons neighboring directly on the banks of the nearby waterways. ^v

WIDOWS CREEK CASE STUDY

On January 9, 2009, a wet storage coal ash pond spilled approximately ten thousand gallons of coal ash waste into Widows Creek, which feeds into the Tennessee River, near Stevenson, AL. ^{vi} An abandoned drain cap on a 36-inch standpipe in the gypsum pond became dislodged, sending coal ash gypsum into a secondary holding pond that overflowed into adjacent waters, contaminating them with gypsum. ^{vii} Gypsum waste is the by-product of a process used to reduce air emissions. ^{viii}

Coal ash gypsum is less toxic than fly ash, but it is still dangerous and can contain contaminants such as boron, cadmium, molybdenum and selenium. ^{vi} Spills such as the one at Widows Creek show the susceptibility of coal ash ponds to leaks and spills that can endanger both public health and the environment.

Currently, Alabama has no laws or regulations ensuring the safety and integrity of coal ash dams.

DRY STORAGE

Dry coal ash is stored in landfills. Currently, landfills in Alabama must have groundwater monitoring and liners, but those built before this was mandated are not required to be retrofitted to meet these standards. ^v

ARROWHEAD LANDFILL CASE STUDY

Arrowhead Landfill in Uniontown, AL is infamous for its problems with coal ash storage. Coal ash waste came there in the aftermath of the TVA Kingston Fossil Plant disaster that struck under three weeks before the Widows Creek spill. In Kingston, over 1.1 billion tons of fly ash flooded tributaries to the Tennessee River near Knoxville, TN. The sheer pressure of the ash flood ripped docks off banks, buried boathouses, knocked homes off their foundations, and polluted surface waters for miles.

Roughly 400 million tons of fly ash recovered from the Kingston spill was transported by open rail cars to the Arrowhead Landfill where it was used as cover material for other wastes. In 2013, scientists from Samford University found that coal ash at the landfill had escaped into an adjacent stream. Arsenic levels in this exceeded the levels set by the Alabama Department of Environmental Management standards for Fish and Wildlife classified streams. ^{ix}

Arrowhead Landfill is sited on an area rich with Selma Chalk, a supposedly impermeable subsoil. However, without proper regulation and protections, this coal ash remains a threat to surrounding communities whose citizens are predominantly minority and largely impoverished.

HOW SHOULD WE REGULATE COAL ASH TO PROTECT OURSELVES AND OUR ENVIRONMENT?

We must ask our state and federal decision-makers to regulate coal ash in a way that is protective of human health and our environment. Coal ash regulation must include:

- 1. Guaranteed federal oversight and enforcement.** Federal enforcement is necessary because states have demonstrated repeatedly that they are unwilling or unable to mandate safe coal ash disposal. Coal ash rules must be consistent in all 50 states.
- 2. Required cleanup of all polluting coal ash dump sites, including legacy sites.** The rule must require timely cleanup of all leaking and unstable coal ash dump sites that threaten public safety and the environment, including safe closure of lagoons and landfills no longer receiving waste (legacy sites).
- 3. An end to wet coal ash disposal.** Policy should require the timely and safe closure of all coal ash lagoons.
- 4. Facilitation of citizen enforcement and meaningful public participation.** Operating permits must be required for all coal ash dumps, and water monitoring and inspections must be publicly posted so that the public is immediately alerted to dangerous conditions.
- 5. Clear and enforceable cleanup standards.** There must be clear cleanup requirements and deadlines for timely cleanup. Leaking dumps must not be allowed to operate indefinitely. They must be required to cleanup or be forced to close.
- 6. No loopholes for structural fills.** The rule must regulate coal ash fill projects (where large volumes of ash form the base underlying embankments, golf courses, or other structures) as disposal sites and protect the public against unsafe ash reuse.