



Dan River Coal Ash Spill

Summary of Baseline Fish Data Rounds 1 and 2

Rockingham and Caswell Counties

Coal ash related metals may be present in the water, sediment or organisms living in the river downstream from the spill. Although the levels of these metals are too low to cause harm to people who use the river for recreation, fish downstream of the spill are being monitored to see if these metals could accumulate in the fish and harm people who eat the fish. Some metals could be present in the water, sediment and organisms from natural sources.

Not all metals are in forms that could be taken up by the fish, but certain environmental conditions can change the chemical nature of metals in ways that could be more easily taken up by fish. For this reason, it could take a long time to see if the coal ash metals are accumulating in the fish.

The N.C. Department of Health and Human Services (N.C. DHHS) is evaluating fish sample data from the N.C. Department of Environment and Natural Resources (N.C. DENR) and other agencies as it becomes available to see if eating the fish downstream of the spill could harm people's health.

Evaluation

- The N.C. DENR collected the first set of fish samples in the Dan River from February 24th to March 5th, 2014 and a second set of samples from April 9th to the 24th, 2014.
 - The N.C. DENR considers both fish collections to represent "baseline" metal concentrations in the fish. Baseline metal concentrations are concentrations in fish before the fish are thought to be affected by the coal ash spill.
- The two sample sets include more than 150 fish fillet samples of 21 different species.
- The samples were analyzed for 16 metals seen in coal ash.
- Some metals are necessary to maintain good health both in fish and people. All metals, even those needed in small amounts for good health, can be harmful if accumulated to elevated levels.

Results

- Human health screening values were exceeded in 22 of 157 (14%) of the samples.
- The exceedances were for mercury, arsenic and thallium in a total of five species. Mercury, arsenic and thallium can occur naturally in rock, soil and water. Mercury is also found in most waterbodies in the state because of widespread mercury pollution.
- Twelve out of 50 fish samples (24%) exceeded the mercury human-health screening value. Eight of 26 largemouth bass (31%), 2 of 12 striped bass (17%), 1 of 11 golden redhorse (9%) and the single walleye collected exceeded the mercury human-health screening value.
- Nine of 12 (75%) striped bass collected exceeded the arsenic human-health screening value.

- One of 10 redbreast sunfish collected exceeded the thallium human-health screening value. There was no thallium detected in any other fish, but the analytical method used cannot detect thallium levels below the human health screening value.
- The baseline fish sample data do not provide sufficient information to evaluate the long-term uptake of metals by the fish and the potential harm to people who eat the fish.

Recommendations

- People should not eat fish or shellfish from the Dan River downstream of the coal ash spill in North Carolina's Rockingham and Caswell counties. This is to protect people's health until we have enough data to determine the long-term fish and shellfish accumulation of coal-ash-related-metals. The coordinates of the spill site are 36.492071, -79.711608. This advisory will not be lifted until we have fish tissue data that can be used to evaluate long-term effects to the fish and potential health effects to the people who eat the fish.
- There is a statewide largemouth bass consumption advisory for mercury in North Carolina that has been in effect since 2008. It recommends that pregnant women, women who could become pregnant and children under age 15 should not eat any largemouth bass. All other people should limit eating largemouth bass to one meal a week or less (<http://epi.publichealth.nc.gov/oe/m Mercury/safefish.html>).
- The DPH will continue to evaluate future fish sample data from N.C. DENR and other agencies to determine if eating the fish from the Dan River downstream of the coal ash spill location could harm people's health.

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