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FEATURED

State environmental officials are inching closer to imposing a 'pollution diet' on James River toxins

By MEL LEONOR Richmond Times-Dispatch Jan 1, 2019

Matt Carter with the Virginia Department of Environmental Quality prepared James River soil samples for testing. At left is bi Warren Smigo, also with the DEQ. The pair collected soil in October from the river's Goochland County shoreline.

ALEXA WELCH EDLUND/times-dispatch

Carp, large catfish and gizzard shad caught in the James River near Richmond all bear “do not eat” advisories from state health officials due to high levels of toxins that have contaminated the river for at least two decades.

Polychlorinated biphenyls, or PCBs, are man-made toxic substances once used in lubricants, fluorescent lights and caulking material because of their heat resistance and stability. The manufacturing of PCBs is now banned, but ongoing discharges into soil and water from industrial sites and landfills means the substances remain pooled into the river’s sediment and lodged in the tissues of the fish that swim in it.

State environmental officials are inching closer to imposing a “pollution diet” on known sources of PCBs in the James River Basin, with preliminary limits on discharges into the lower James coming this spring.

“It’s so persistent, and it loves the fat in the fish so much, that even though it was banned in the ’70s, it’s everywhere,” said Mark Richards of the Virginia Department of Environmental Quality.

The limits are currently being scrutinized by the agency, which is planning to implement what’s known as a Total Maximum Daily Load, or TMDL, on area polluters.

The “maximum load,” agency officials argue, is the highest amount of PCBs that can wind up in the James without violating water quality standards.

If implemented, specific limits on discharges will be levied on localities, manufacturing plants and waste sites. TMDL restrictions fall under the U.S. Clean Water Act, with federal oversight from the Environmental Protection Agency.

Meanwhile, 22 species of fish present between the Interstate 95 James River Bridge in Richmond downstream to the Hampton Roads Bridge-Tunnel bear advisories or restrictions from the Virginia Department of Health.

PCBs are known to have adverse health effects on humans, and the EPA has concluded that PCBs are “probable human carcinogens.” Studies on workers exposed to PCBs found increases in liver cancers and malignant melanoma, according to the agency.

The substance may also affect the immune system, reproduction and the nervous system, research has found.

PCBs are “fat-loving” and accumulate in fish tissue or down in river sediment, making fish consumption the most likely way to become exposed to high levels of PCBs. Large, older fish, officials say, are more likely to have higher accumulations of PCBs.

Virginia health officials warn against consuming any amount of carp, gizzard shad, and blue and flathead catfish larger than 32 inches. For the remaining species, the agency says individuals should limit consumption to two meals per month.

The agency also suggests people remove the skin and fatty tissue from any fish they catch to reduce the amount of accumulated PCBs. Broiling, baking or grilling the fish, as opposed to cooking it in a stew, can also help reduce exposure, the agency says.

Jamie Brunkow, senior advocacy manager with the James River Association and the group's James Riverkeeper, says PCBs in the James have long been a problem.

"If you eat fish from the James River below Richmond, it probably has PCBs in its tissue," said Brunkow, who called PCBs the "main toxic concern" in the James.

Richards said that even though PCBs were banned in the 1970s, they remain a "legacy issue" due to discharge from sources containing PCBs before the ban, like older factories or landfills.

"It's become more recognized that this is an ongoing issue," he said. "Studies have shown there are continuing sources."

DEQ has been studying PCBs in the James River since at least 1993. The first advisory against eating too much fish containing the substance came in 2002.

Improvements to the way the agency studies PCBs in the water now allow researchers to take a closer look at their presence in the water.

“We could never detect it in the water column,” Richards said, explaining that the new tool allows the agency to go much further than just fish tissue.

“This new tool allowed us to see it at very, very low level.”

He added that the newer technology also allows experts to better understand the sources of different kinds of PCBs present in the water, knowledge that will be key as the agency aims to set discharge limits.

The agency’s TMDL would focus on the entirety of the James River, from its mouth in Hampton Roads all the way to the Jackson River in the Allegheny Mountains.

Right now, the agency is studying target limits for the lower part of the James, stretching from the I-95 bridge that crisscrosses the river in Richmond down to the Chesapeake Bay.

DEQ, Richards said, is expecting to have draft limits in hand early this year. Once it does, it will kick off a series of public meetings, as well as private meetings with local governments and industry representatives that may be affected by the TMDL.

If the limits are implemented, the state would be taking a closer look at discharges and corrective action. The agency would also kick off investigations into hotspots of pollution and previously undefined sources of PCBs.

Implementation of the plan, however, may be years away. The agency’s goal is to have the EPA approve the proposal by 2022.

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