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News Release

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Austin Coal-Tar Sealant Ban Leads to Decline in PAHs

The 2006 prohibition on the use of coal-tar-based pavement sealants in Austin, Texas, has resulted in a substantial reduction in polycyclic aromatic hydrocarbons (PAHs), according to a new study by the U.S. Geological Survey.

Pavement sealant is a black, shiny substance sprayed or painted on the asphalt pavement of parking lots, driveways and playgrounds to increase the longevity of the underlying asphalt pavement and enhance its appearance. Pavement sealants that contain coal tar have extremely high levels of PAHs compared to asphalt-based pavement sealants and other urban PAH sources such as vehicle emissions, used motor oil and tire particles. PAHs are an environmental health concern because several are probable human carcinogens and they are toxic to fish and other aquatic life.

In 2006, Austin became the first jurisdiction in the United States to ban the use of coal-tar sealants. USGS scientists evaluated the effect of the ban on PAH concentrations in lake sediments by analyzing trends in PAHs in sediment cores and surficial bottom sediments collected in 1998, 2000, 2001, 2012 and 2014 from Lady Bird Lake, a reservoir on the Colorado River in central Austin. Average PAH concentrations in the lower part of the lake have declined 58 percent since the ban, reversing a 40-year upward trend. The full study, reported in the scientific journal *Environmental Science and Technology*, is available online.

"Identifying contaminant trends in water and sediment is key to evaluating the effect of environmental regulations, and provides vital information for resource managers and the public," said lead USGS scientist Dr. Peter Van Metre.

Results of the USGS study support the conclusions of previous studies that coal-tar sealants are a major source of PAHs to Lady Bird Lake and to other lakes in commercial and residential settings. A sediment core collected by the USGS from Lady Bird Lake in 1998 was part of a study of 40 lakes from across the United States that used chemical fingerprinting to determine that coal-tar sealants were, on average, the largest contributor of PAH to the lakes studied. Chemical fingerprinting of sediment collected for the new study indicates that coal-tar-based sealant continues to be the largest source of PAHs to Lady Bird Lake sediment, implying that PAH concentrations should continue to decrease as existing coal-tar-sealant stocks are depleted.

To learn more, visit the USGS website on PAHs and sealcoat.

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