Are ugly parking lots healthier?

Parking lot sealants, also called "sealcoat," are applied to many parking lots and driveways in an effort to protect the underlying asphalt pavement and enhance appearance. However, the sealants contain concentrations of polycyclic aromatic hydrocarbons (PAHs)—a group of widely recognized carcinogenic aquatic contaminants. According to the U.S. Environmental Protection Agency, PAHs adversely affect mammals (including humans), birds, fish, amphibians, invertebrates, and plants. In aquatic environments, the effects of PAHs on invertebrates include inhibited reproduction, delayed emergence, sediment avoidance, and mortality, and the effects on fish include fin erosion, liver abnormalities, cataracts, and immune system impairments (U.S. Environmental Protection Agency 2003).

Mahler et al. (2005) reveals parking lot sealant as a previously unidentified source of PAHs that may be the dominant source of PAHs in watersheds with residential and commercial development. Other sources of PAHs include automobile exhaust, lubricating oils, gasoline, tire particles, erosion of street material, and atmospheric deposition. With the exception of the sealant itself, unsealed parking lots receive PAHs from the same urban sources as sealed parking lots, yet the average yield of PAHs from sealed parking lots is 50 times greater than that from unsealed lots (Mahler et al. 2005). Adding to these concentrations, manufacturers recommend that sealant be reapplied every two or three years because it abrades relatively rapidly from parking-lot surfaces.

The revelation of this study is that although previously identified sources of PAHs, such as automobile exhaust and atmospheric deposition, have been difficult to control or even quantify because of their non-point nature, sealed parking lots are now a recognized point source. This realization provides a means for reducing PAHs to aquatic systems because the use of parking lot sealant is voluntary and controllable.

References

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