Breaking down PAHS requires a lot of patience

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Polycyclic aromatic hydrocarbons (PAHs) in contaminated sludge break down of their own accord eventually if they have enough oxygen. This finding comes from a long-term study.

Dredging work in watercourses produces a lot of sludge that is contaminated with polycyclic aromatic hydrocarbons. These PAHs, which can be carcinogenic, are produced by the incomplete combustion of materials containing carbon, for example in coal gasification or when burning fuel. In 1994, Wageningen started a study for the Dutch government and the Rivierenland water board on the biodegradation of PAHs in contaminated dredge spoil. Back then, contaminated spoil was stored in low-oxygen depots, often in the sea or lakes. That had the opposite effect to what was intended. With enough oxygen, microorganisms will break down the PAHs almost entirely in 20 years, found the researchers Joop Harmsen and René Rietra. So contaminated sludge will eventually become purified. 'If you have a contaminated site, you need to manage it so as to allow oxygen access,' says Rietra. Targeted use of the soil in a way that increases the oxygen content can bolster the biodegradation, he explains. 'For example, growing rape as an energy source or willows on the dredge spoil, or nature development. You can use it for another purpose later, when the soil is no longer toxic.'

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