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Mining by-product reduces risk of algal blooms

Mining by-products such as iron oxides, aluminium oxides, calcium and magnesium – which can help soils adsorb nutrients – can prevent nutrients from entering river systems, reducing the potential for algal blooms.



Credit: CSIRO

A joint project between CSIRO and the WA Department of Water investigated the potential of unused mining industry by-products to filter nutrients from natural waters, or to treat wastewater that would otherwise be discarded.

CSIRO project leader Dr Grant Douglas says the use of abundant, low-cost by-product materials generated from mineral processing offers a potentially cost-effective, environmentally friendly way to remove nutrients from wastewater.

CSIRO conducted a four-year field trial to evaluate neutralised used acid (NUA), a by-product of heavy mineral sands processing, which was added to soil at a turf farm in WA's Swan Canning catchment. The NUA removed 97 per cent of phosphorus and 82 per cent of nitrogen from underlying shallow groundwater. It also reduced the farm's water use and improved turf health.

'This is good news for the health of Perth's waterways, as it could lead to a substantial reduction in the key nutrients that eventually contribute to algal blooms,' says Dr Douglas.

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