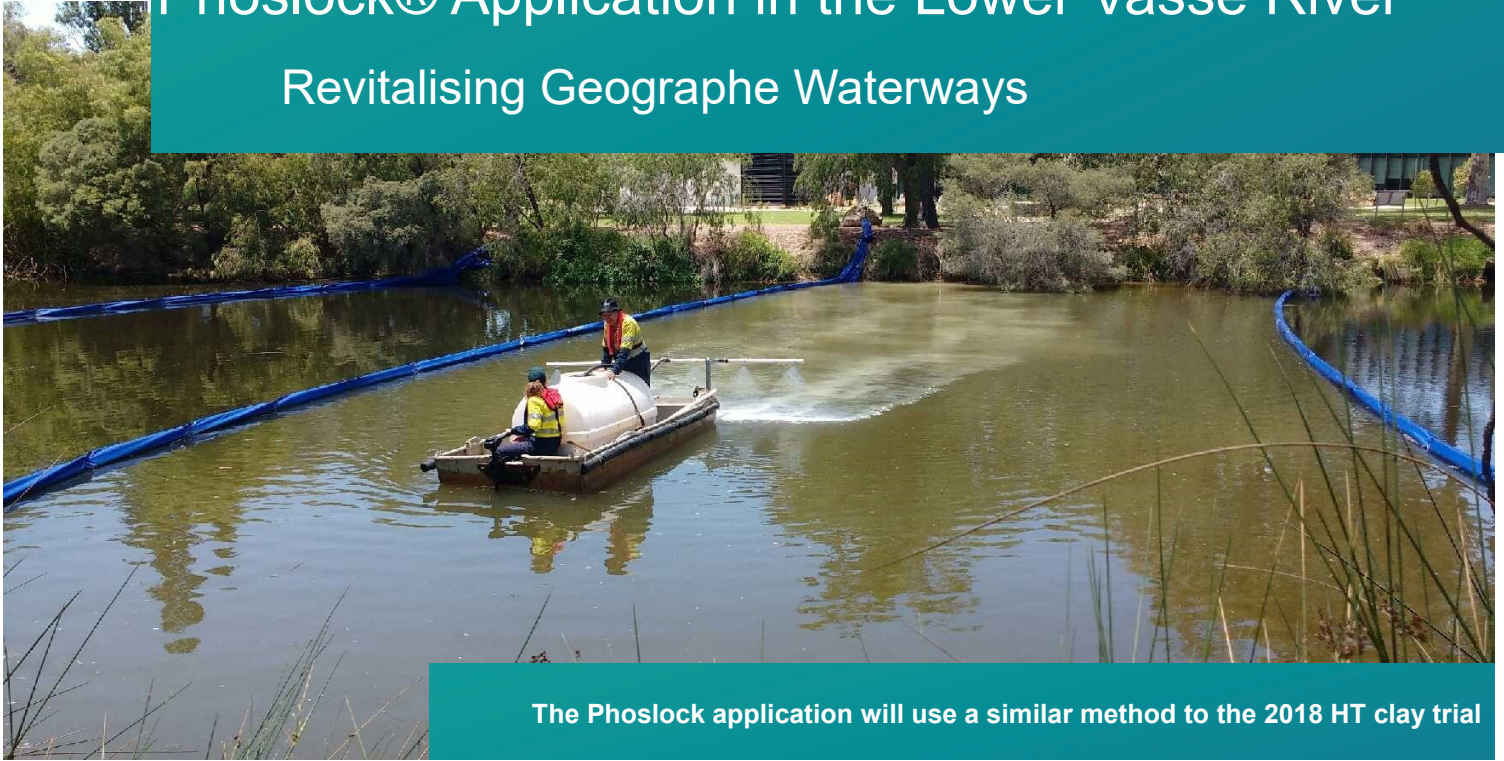


Phoslock® Application in the Lower Vasse River

Revitalising Geographe Waterways



The Phoslock application will use a similar method to the 2018 HT clay trial

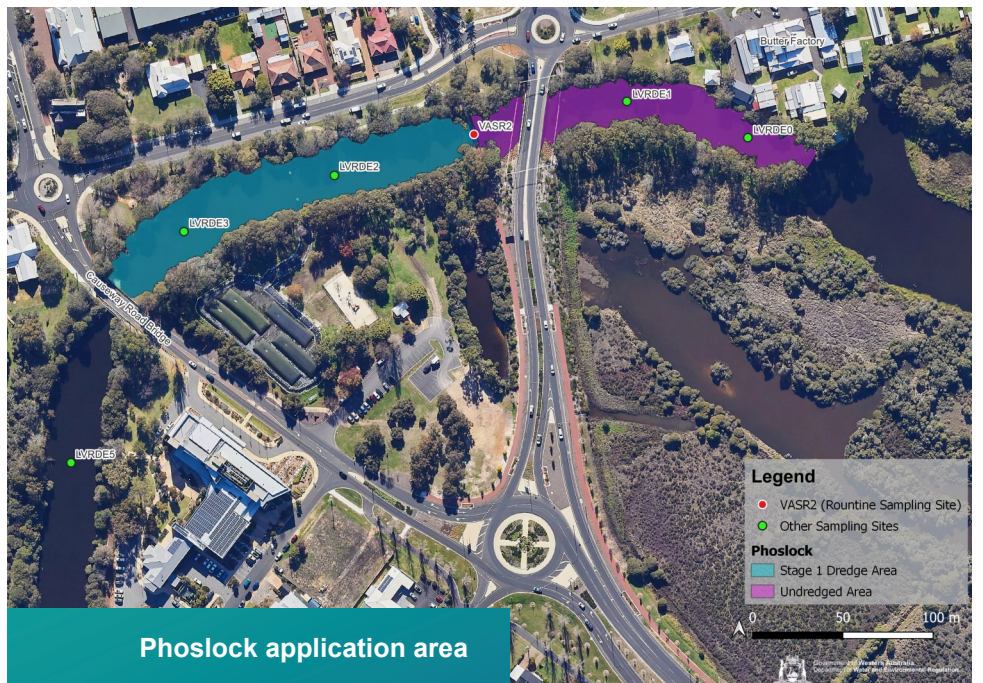
The Department of Water and Environmental Regulation (the Department) is undertaking a broad scale Phoslock® application in the Lower Vasse River between November 2023 and January 2024. The aim of the Phoslock® application is to evaluate if the product is a cost effective treatment to control algal blooms in the river over summer months.

Phoslock® is a commercially available clay product that removes dissolved phosphorus from the water and prevents phosphorus release from the sediment so that it is unavailable for algal growth. It has been approved for use in waterways worldwide and has been shown to be successful.

What work will take place?

Between November 2023 and January 2024, Phoslock® will be applied between the Causeway Road bridge and the Butter Factory in Busselton. The application will add on average 2-3mm of clay to the sediment where it will remain active in binding phosphorus.

The first stage of the application will involve installing a floating curtain at Causeway Road bridge to minimise water flowing into the treatment area. This will be followed by two to three applications of Phoslock® which will be applied as a slurry with a spray boom from a moving pontoon. Water quality monitoring will be undertaken in the river over summer months to measure the changes in phosphorus levels and algal growth.



Phoslock application area

How does Phoslock® work?

Phoslock® is a patented water treatment technology that aims to improve water quality by reducing phosphorus levels in aquatic systems. The main component of Phoslock® is lanthanum-modified clay, which forms a stable compound with phosphorus. Lanthanum chloride is widely used in a range of products and is used to reduce phosphorus concentrations in water bodies in the zoo, aquarium and fishery industries.

Phoslock® comes as dried pellets and is mixed with water in a slurry that is applied to the water surface from a pontoon. The pontoon is moved at a rate that allows around 2-3 mm of clay to be deposited on the sediment. As the clay sinks phosphorus is removed from the water column making it unavailable for algal growth. Phoslock® incorporated into the sediment also

reduces the release of phosphorus from the sediment that contributes to algal blooms.

Phoslock® has been trialled a number of times in the Vasse River at smaller scales in the early 2000s. Post application sediment cores show that the applied clay is quickly incorporated into the sediment and covered with organic matter and other sediment.



Sediment coring in the river

Is Phoslock® safe?

Phoslock® is considered safe for waterways when used according to recommended guidelines. The product is designed to specifically target and immobilize phosphorus without causing harm to aquatic ecosystems. In the early 2000s CSIRO developed Phoslock® by modifying lanthanum chloride with a natural clay, thereby reducing potential toxicity and making it safe for use in natural waterways.

In the development of Phoslock®, extensive testing was undertaken to determine toxicity levels and ensure the product was safe to use in natural waters. A rigorous assessment was then undertaken by NICNAS (National Industrial Chemicals Notification

and Assessment Scheme), now known as the Australian Industrial Chemical Introduction Scheme (ACIS). Phoslock® was subsequently approved for use in Australian waters by NICNAS and is now listed on the ACIS registry. Phoslock® has also been assessed by the USEPA and approved for use in US natural waters and similarly by the European Union.



Snake-necked turtle in the Lower Vasse

How can I get more information on this project?

For further information on this project visit the rgw.dwer.wa.gov.au or contact the GeoCapes District Office on 9781 0111.



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