

Sediment

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OVERVIEW

- Sediment refers to particles of soil and other matter (e.g., organic particles) that can move in the landscape.
- Sediments in waterways, drains and water storages may contain contaminants, including trace elements (e.g., heavy metals), nutrients, salt, and pathogens.
- *Phytophthora* can be found on the surface of pond sediments and throughout the water column.
- Below the top few centimetres, underwater sediment is typically anoxic (without oxygen). This affects how contaminants can move through the system.
- Disturbing sediment on nursery lots and in water storages leads to chemical and biological reactions.

KEY FACTORS

- Sediment build-up in water storages is caused by erosion uphill, and runoff carries loose material into the water storage where it settles on the bottom.
- The addition of sediment to the water, or disturbance of sediment in the bottom of a water storage, releases trapped nutrients, metals, pathogens and other contaminants into the water.
- Dredging, heavy rainfall, flooding, manual removal of aquatic plants, fish, and use of ponds by humans or animals can all disturb sediment.
- The release of nutrients from sediment after major disturbance can encourage algal blooms.

HIGHLIGHTS

- Sediment in waterways and in water storages can contain high loads of heavy metals, nutrients, and pathogens including *Phytophthora*.
- Disturbing sediment can release those contaminants into the water.
- Filtration of water before using it in irrigation is encouraged.
- After a disturbance to sediment in a water storage, allow enough time for the sediment to settle again before using the water for irrigation.

MANAGEMENT

- Maintenance and dredging of water storages should be carefully planned.
- Performing sediment testing ahead of time is recommended, especially if you plan to reuse the sediment elsewhere on-site.
- After a significant disturbance event, try to allow the sediment to settle before the pond is used to provide irrigation water.
- Filtering pond water (e.g., through a sand filter, flocculation tank, or bioreactor) before using it to irrigate plants is encouraged.
- Sediment build-up can be slowed by reducing erosion and planting vegetation around the edges of a water storage.

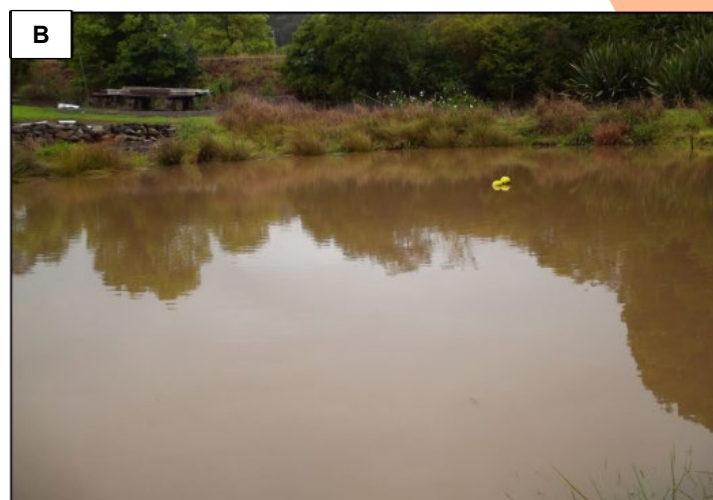


Figure 1. Example of photos of a water storage showing changes in water level and water quality indicated by turbidity. A) before rainfall and runoff, B) hours after rainfall and runoff with suspended sediment, pathogens, and algae.