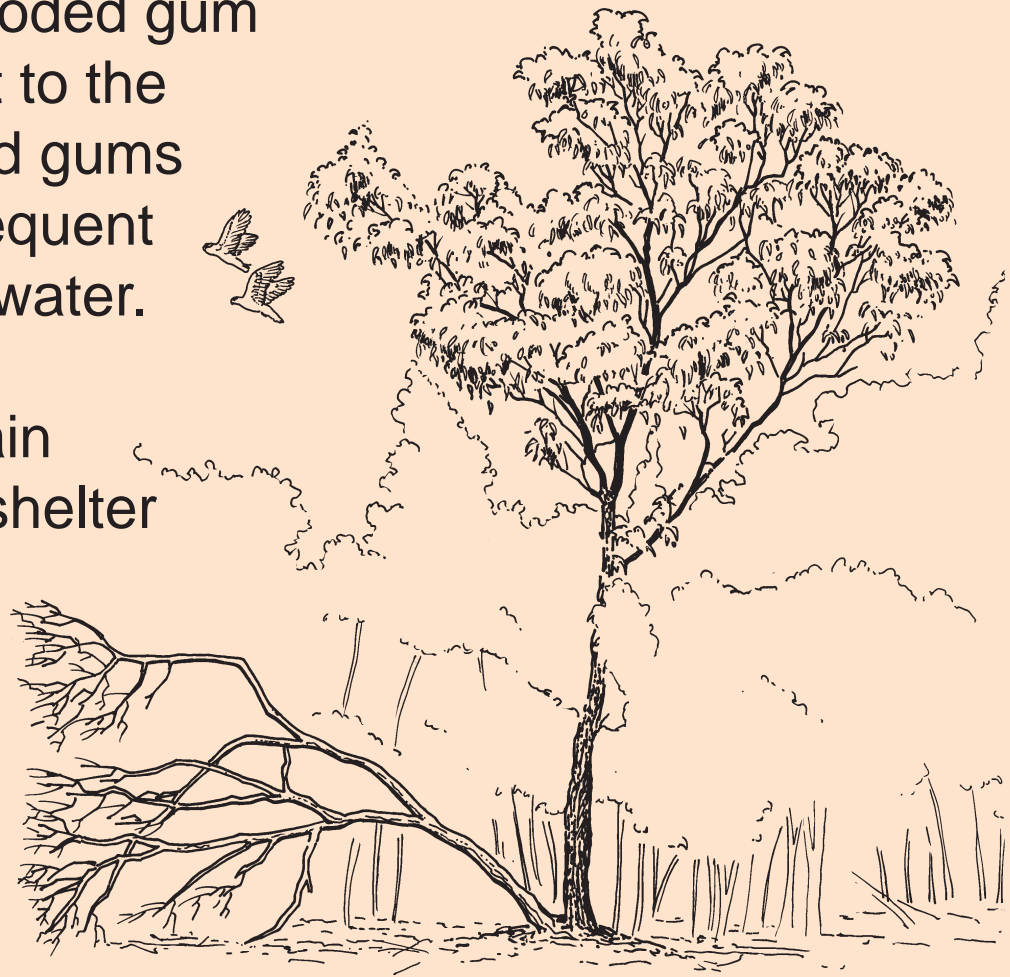


The impact of inundation

Behind you, half of the flooded gum (*Eucalyptus rudis*) closest to the lakebed has died. Flooded gums are very susceptible to frequent flooding and salty groundwater.

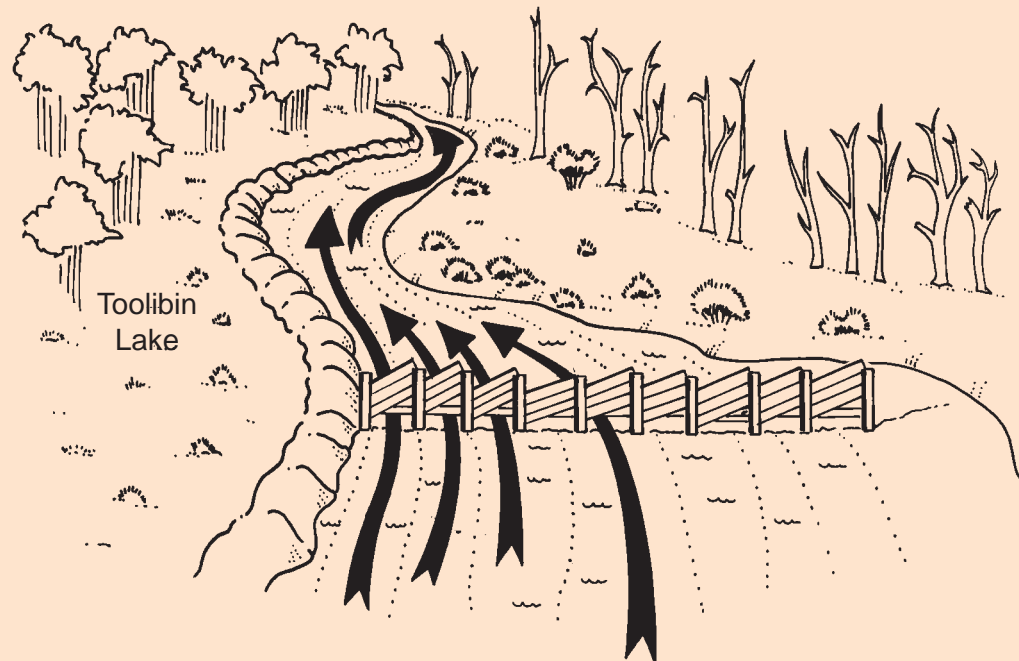
Older flooded gums contain hollows that can provide shelter for animals. Possums and other animals that depend on these trees for food and shelter also suffer when the trees die.



Flushing salt

At the onset of winter rains, surface water flows are very salty as soil salts are washed into drainage lines. Surface water runoff becomes less salty with more rainfall.

Salty water kills most plants. This diversion drain allows low volume highly saline flows to be diverted around Toolibin Lake to the salt-affected Taarblin Lake.



Aerial view sketch of separator gate and diversion channel with water flowing down channel and not in to the lake

Life after death

See the dead trees that have suffered from salinity. It will take many years for new vegetation to replace these trees.

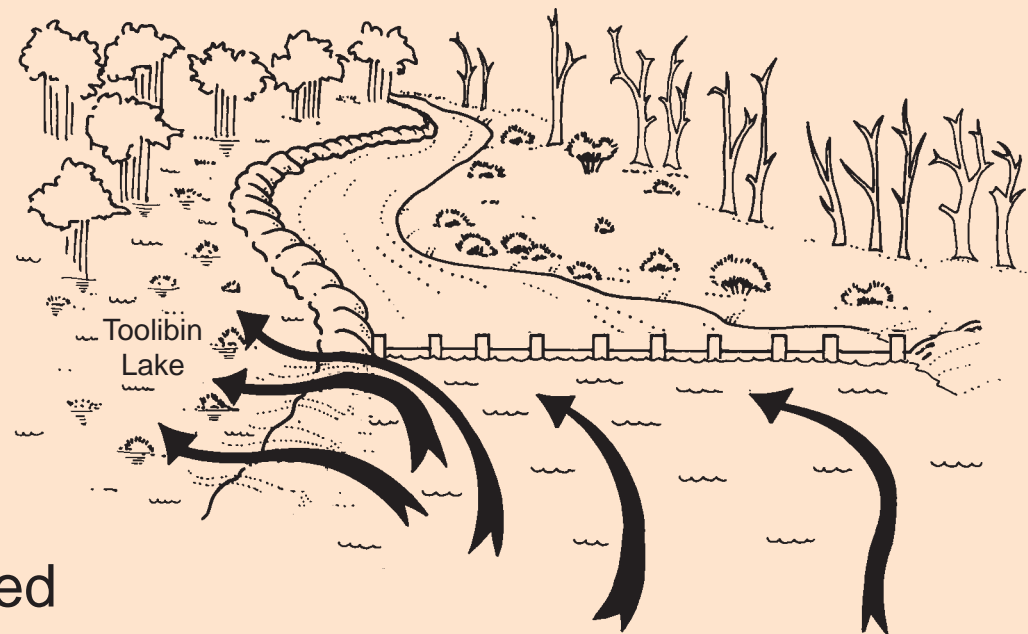
Regeneration relies on obtaining freshwater flows, preventing flooding by 'salty' water and groundwater pumping to lower the groundwater table.



A freshwater life line

At the onset of rain the salts accumulated in the soil are washed into drainage lines then directed down the diversion drain.

Once the initial salty run-off is disposed of, the separator gate is closed using timber planks. This prevents the plants from being killed by the very salty floodwaters. The 'freshwater' is then allowed to flow onto the lakebed.



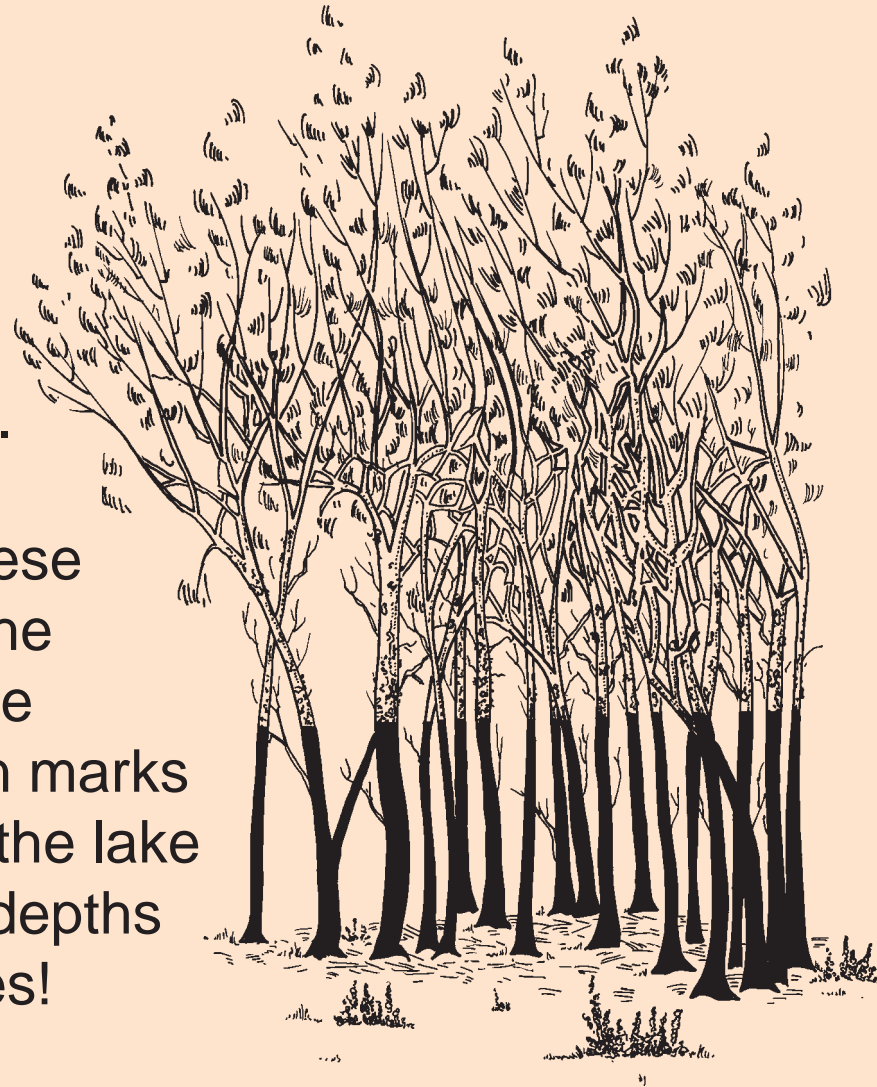
Aerial view sketch of separator gate closed showing how it works, with banked up water and water flowing over revetment mattress

The watermark

Lakebeds covered in trees like this are now rare in the wheatbelt and none are of this size. This makes Toolibin a valuable place worth protecting.



Look closely at these sheoak trees for the green lichen on the trunks. The lichen marks the water level of the lake when full. Water depths can reach 2 metres!

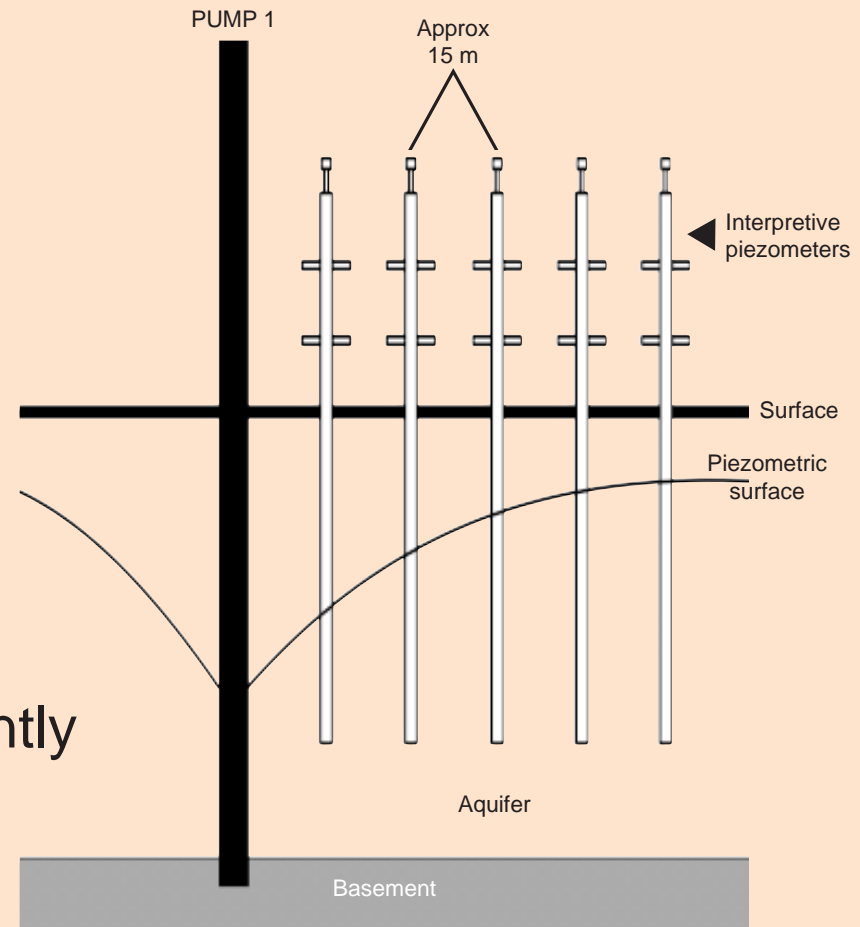


Checking the pulse

Each month 38 piezometers (groundwater monitoring bores) on the lakebed of Toolibin Lake are measured.

Groundwater levels indicate changes in the water table throughout the catchment and under the lake.

The piezometers here consistently show that groundwater table increase as you move away from the pump.

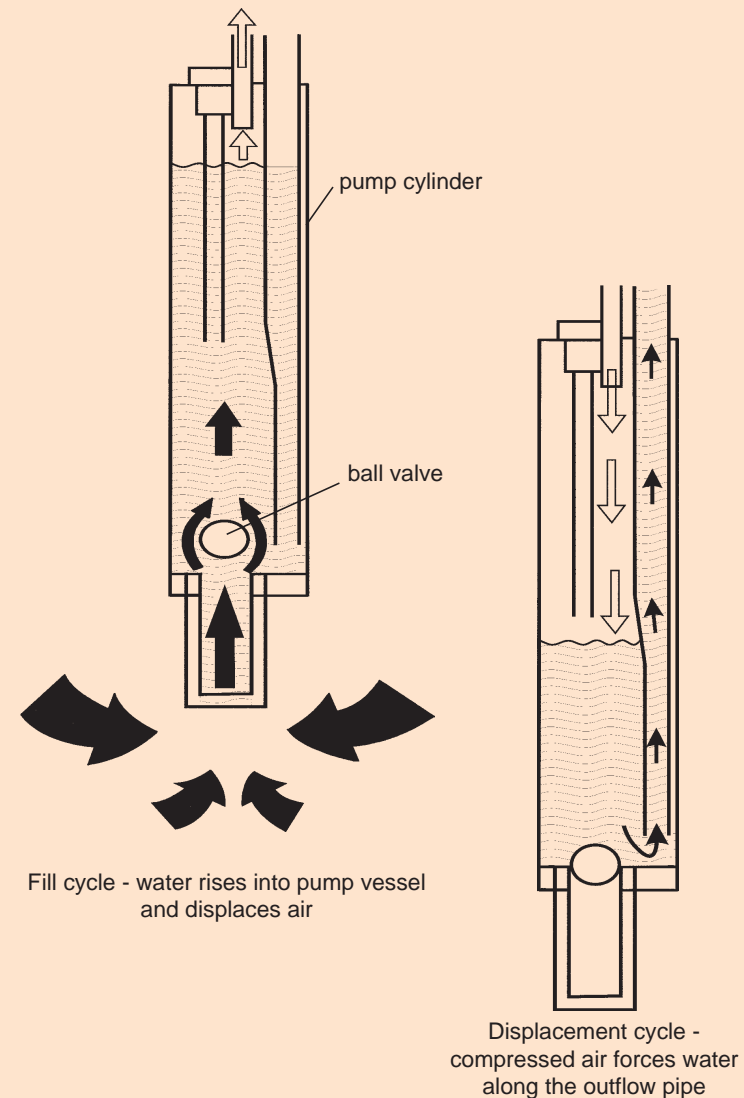


Heart starters

Protecting the roots of the lakebed trees from the highly salty groundwater requires keeping the watertable at least 1.5 metres from the surface.

The groundwater table is lowered by 12 pumps across the lakebed. They pump around 750 000 litres of groundwater everyday!

The loud 'exhausting' sound that you have heard while visiting Toolibin is the sound of the pump releasing air pressure at the end of each pump cycle



Lifesavers

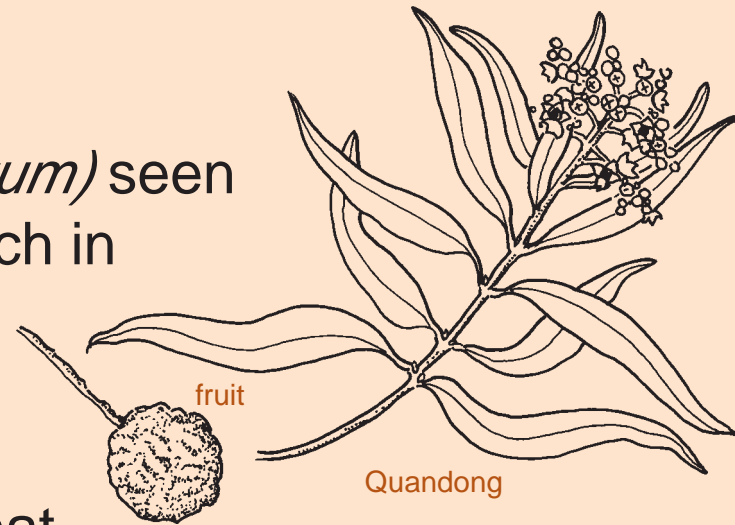
Most paperbarks (*Melaleuca strobophylla*) on the lakebed have died as the watertable has risen. They are very sensitive to salty water flooding their roots.

The reason for some surviving is not clear but perhaps they occur in a slightly elevated part of the lakebed.



Bush medicine

The quandong (*Santalum acuminatum*) seen here has fleshy, edible fruit that is rich in vitamin C.



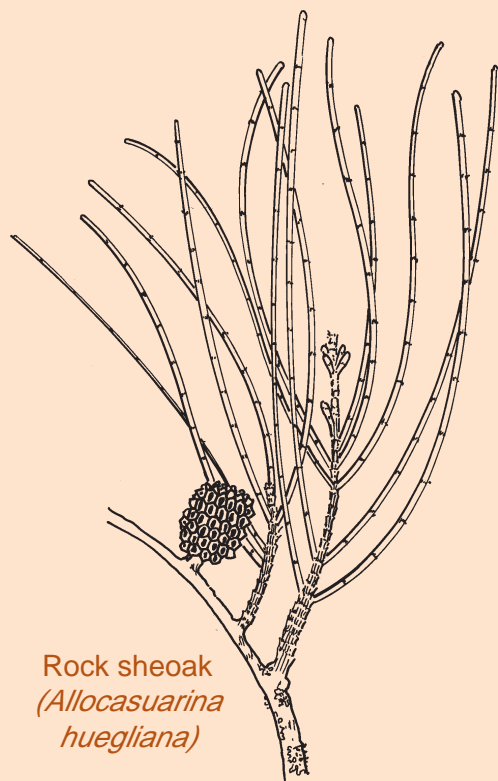
Quandong is related to the sandalwood (*Santalum spicatum*) that was once widespread throughout the wheatbelt. It is prized for its perfumed oil and fragrance.



Santalum are parasitic shrubs that use the roots of nitrogen fixing plants such as acacias as hosts.

Lakebed to woodland

Woodland trees and shrubs grow on the fringing sandy soils know as lunettes.



Rock sheoak
*(Allocasuarina
huegliana)*

Along the lake's edge is broombush
(Melaleuca uncinata).



Broombush
(Melaleuca uncinata)

On top of the sandy slope are rock sheoak
(Allocasuarina huegliana), York gum
(Eucalyptus loxophelba) and jam
(Acacia acuminata) trees.