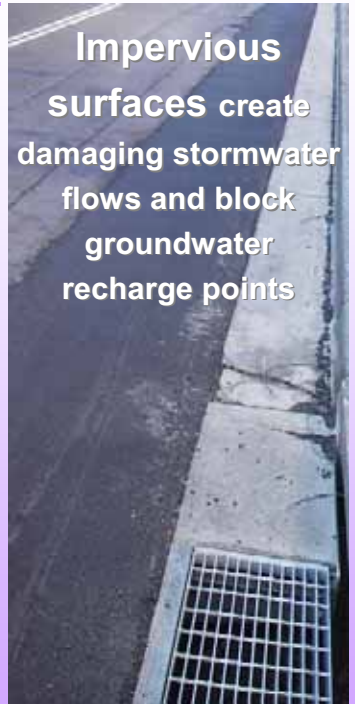


In urban or residential areas, **impervious surfaces** such as roads, roofs and driveways may **block traditional groundwater recharge points**, reducing the supply to seeps and springs that feed swamps. The “flashy” delivery of concentrated, high volume and high velocity stormwater to swamps often leads to the development of **incised channels** that drain water out of swamp substrates, resulting in **dehydration** and ultimately **hydrophobia**. **Sediment** carried by stormwater may also be deposited in swamps—smothering flora, compromising fauna habitat and disrupting swamp hydrology. This disturbance combined with the **nutrient enrichment** often associated with stormwater can provide ideal conditions for **weed invasion**, further degrading swamp values.



Impervious surfaces create damaging stormwater flows and block groundwater recharge points



Groundwater extraction reduces water supply to swamps

Swamps have evolved diverse floristic structures suited to pre-European fire regimes. Changes to these regimes threaten to simplify swamp structure: bad news for biodiversity. Post-fire erosion is also a problem.



Informal foot & 4WD tracks encourage erosion



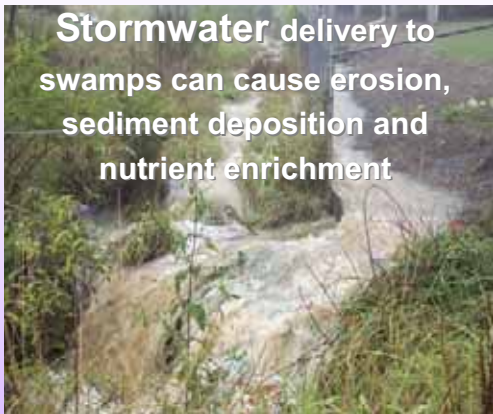
Part of the solution: rainwater tanks and permeable surfaces

HELP address threats to swamps

All residents of the Blue Mountains can help to protect our unique swamps from degradation. Suggestions include:

- **Use rainwater tanks** to harvest water from roof areas—this water can be used instead of bore water to protect groundwater levels. Rainwater tanks also have the added benefit of helping to regulate storm flows, reducing impacts such as channelisation and erosion.
- **Limit impervious surfaces**—this allows a portion of rainfall to soak into the ground, potentially recharging groundwater and reducing “flashy” stormwater flows.
- **Control and remove noxious and environmental weeds** such as Blackberry, Himalayan Honeysuckle and Montbretia to avoid weed invasion in swamps.
- **Look after swamps on private property**—do not mow, graze or “reclaim” swamp areas
- **Avoid using or creating informal paths/4WD tracks** through swamps—this will help maintain robust swamps that are less susceptible to erosion and weed invasion
- **Get involved in Swampcare** activities to help restore degraded swamps
- **Report swamp degradation** to Council: 47805000

Threats to Blue Mountains Swamps



Stormwater delivery to swamps can cause erosion, sediment deposition and nutrient enrichment

Approximately one-third (ca. 1000ha) of the Blue Mountains Swamp Community occurs within catchments that are disturbed by human impacts. Considering that BM swamps tend to be found in small patches with high proportions of **edge areas**, the potential for degradation of swamps in human-impacted catchments is quite high. Predominant threats to Blue Mountains swamps in these catchments include:

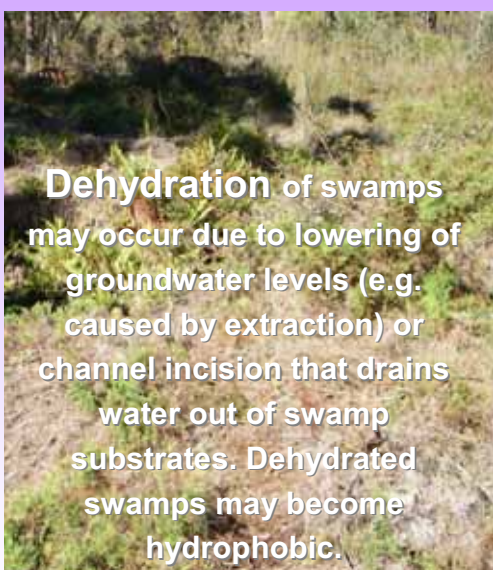
- **Stormwater impacts** such as channelisation, sediment deposition and nutrient enrichment
- **Weed invasion** and **feral animal impacts** (e.g. fox burrows encouraging erosion of swamp substrates)
- **Water extraction** (e.g. bores, tapping springs and building dams)
- **Altered fire regimes**
- **Inappropriate treatment of swamps on private property** (e.g. mowing, grazing and infilling)



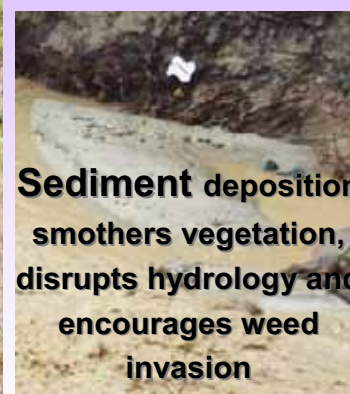
Swamp substrates are degraded by channelisation and erosion from stormwater delivery

Even in totally undeveloped catchments within protected areas, swamps may still be threatened by factors such as altered fire regimes, groundwater extraction and climate change.

Altered hydrology is one of the most fundamental threats to Blue Mountains swamps. Healthy swamps depend on a steady supply of water from seeps and springs. In swamps in good condition, this water is generally retained and slowly filtered through unchannelised swamp substrates. However, several types of disturbance can disrupt normal hydrological processes.



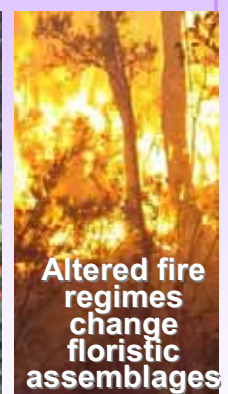
Dehydration of swamps may occur due to lowering of groundwater levels (e.g. caused by extraction) or channel incision that drains water out of swamp substrates. Dehydrated swamps may become hydrophobic.



Sediment deposition smothers vegetation, disrupts hydrology and encourages weed invasion



Invasive weeds displace swamp species, especially in swamps subject to stormwater impacts



Altered fire regimes change floristic assemblages