STATUTORY SERVICES | INFORMATION SHEET

Erosion & Sediment Control

Erosion control measures are critical to reduce the amount of productive topsoil blown away in the wind, or washed downhill into dams and waterways. Soil is left more exposed after fire and ash can cause significant problems in water bodies.

Areas at high risk from water erosion include steep slopes near access tracks and firebreaks, culverts, and changes of grade in creeklines. On larger rural properties it is not practical to put erosion control measures everywhere at risk of erosion. Initial efforts should be focussed on areas that would affect water sources, vehicle access or infrastructure, or have shown a tendency to erode in the past. The soil and plant life will be slower to recover after hotter fires.

What can be done to prevent erosion?

- Restrict stock access to burnt or vulnerable areas until there is 50% ground cover
- Minimise vehicle movements across burnt ground and don't rush to clear burnt vegetation
- Spread seed or hydro-mulch
- Hessian, jute or other geofabrics can be spread over an at-risk area and firmly pinned down
- Silt fences, coir-logs, hessian rolls or staked straw bales can be used to make terraces or intercept water flow and sediment
- Spread coarse compost on exposed upper slopes
- Use 'brushing' to protect bare areas with cut branches
- Revegetate along creeklines to stabilise, slow water flow and catch sediment before it enters the waterway

Weeds

Emerging weeds will provide some protection against erosion. Weed treatment can be focussed on the most serious weeds, choosing methods that leave the roots to hold the soil together. The Department of Primary Industries and Regional Development (DPIRD) has a Pest and Disease Information Service, and 'MyPestGuide' website and app to help identify unusual weeds.

The Shire also has a free Plants out of Place booklet for information on common local weeds and removal methods. Printed versions of this booklet are available from the Shire Administration Building. You can also find it within the Environmental Services section of the Shire website at www.mundaring.wa.gov.au or phone the Shire on 9290 6651 for a copy.

Slowing down wind and water over bare soil is the key to minimising erosion until plants re-establish. Even after a hot fire, pioneering plant species, pastures and weeds will generally return quickly once there is moisture in the soil. Some erosion control methods and materials are more costly but may last longer than others – a range of options are noted below.

Staked straw bales

Set rectangular straw bales in a row (may be set into the ground slightly) and then stake each one in with two posts. Water is slowed by filtering through the bales, while sediment is caught. Like all methods of erosion control, it will be more effective in mild or moderate conditions and will not prevent runoff in really heavy rain.

Silt fences

Short, curved silt trapping fences can be installed on slopes that are likely to carry sediment into dams or watercourses. Shade-cloth, hessian or straw is supported by wire on star pickets or similar.

Agriculture Victoria has produced a short video on building silt fences to protect water sources. Find it online by searching 'How to build sediment fences video'.

Coir-logs, hessian rolls & silt socks

On sloping ground, coir-logs or hessian rolls can be strategically placed to create what looks like land terraces. They can be dug in, or held in place with short posts or pickets.

Silt socks or 'sand sausages' are flexible tubes that can be filled with sand, gravel, woodchips or compost. Logs can also be used, and seedlings put in along the edge.

Contour banks and drains

A series of short, shallow banks or drains can be installed next to tracks to divert some water away and encourage infiltration.

Contour banks or furrows can reduce water flowing over or along the track.

They should curve away from the track, roughly following the contour. The ends of the bank can turn slightly upslope to hold some water to pool and soak in.

Department of Primary Industries and Regional Development (Tim Overheu) assisted with this information sheet. You can contact DPIRD on **9368 3333** or dpird.wa.gov.au

Hessian, jute & geofabrics Geotextile cloth, jute blankets or coir mesh can be used as erosion control mats to prevent scouring. The cloth or mesh can be pinned over a mulch layer using wooden stakes, metal pegs or staples and weighed down with rocks or tree debris on top. Sheets needs to be firmly anchored and overlapped in the direction of water flow. Plants can be added through small holes for long term stabilisation of the slope.	
Spread coarse compost Coarse compost can cover soil and create a rougher land surface, slowing down wind and water erosion, while also adding some beneficial organic nutrients. Compost products do come with risks which should be considered before bringing onto a rural property (i.e. biosecurity risks, micro plastic / glass content, weed seed etc.) and should not be used close to waterways. Avoid resinous pine mulch as it can transfer water repellence to the soil.	
Seed or hydro-mulch Hydro-mulch or spray grass can be used for stabilisation and grass establishment. It is mainly used by developers to cover vacant lots but can be used for rural properties. It spreads a coloured, biodegradable surface sealer infused with grass seeds. For smaller areas, seed can be covered with straw mulch for some protection.	
Revegetating creeklines Choose local native plants (see back page), and look for seed or seedlings from suppliers with disease and dieback controls. 'Brushing' or laying cut branches over bare areas between seedlings can reduce trampling, as well as provide some erosion protection. On steeper sites they can be pegged in with branch forks. If branches are from native plants with seed on, they can also support natural regeneration.	

Planting trees for windbreaks will also help prevent wind erosion in the longer term.

Photos sourced from Shire staff, Catchments & Creeks, and Aussie Environmental (2021).

Creekline Restoration

Revegetation along watercourses using local native plants will help stabilise the banks, slow down sediment, and maintain wildlife corridors. There are three main ways to revegetate an area – regeneration, direct seeding, and replanting. Controlling weeds (e.g. Arum Lily) can allow for native plants to regenerate naturally, provided there is still seed in the ground. After a very hot fire the seed bank in the soil will be depleted.

If there is not much native vegetation left along the creekline, some can be reintroduced using direct seeding. There are limited species and suppliers for WA local native plants and what is available depends on what was collected in the previous few years. If you can find suitable seed it is quicker than planting seedlings and can create a more natural mix of species and spacing.

Revegetation by replanting often involves planting native seedlings from tube stock, but can include transplanting young native plants from one part of the property to another. Native tube stock can be sourced from many nurseries, or may be available through the Shire's annual Seedlings for Landcare Program (rural zoned properties). They may survive better and look more natural if planted in clumps, with a mix of tree and understorey species.

Choosing Plants

It is best if you can identify plants that are already naturally occurring in the local area. Some plants that are often suitable for planting near dams and creeklines are listed below, and there is more information about these and others in the Shire's Landscape and Revegetation Guidelines. You can ask for advice from Shire Environmental Officers or a local landcare or catchment group.

Note that plants labelled 'native' in a nursery may be from the Eastern States, and some can become a problem in this landscape. Local wattles (Acacias) are okay but Eastern States wattles should be avoided, as many can spread easily here and become a future fire hazard.

Type	Common name	Botanical name
Taller Trees	Flooded Gum	*Eucalyptus rudis*
	Blackbutt	*Eucalyptus patens*
	Marri	*Corymbia calophylla*
Smaller Trees	Swamp Paperbark	*Melaleuca raphiophylla*
	Moonah	*Melaleuca preissiana*
	Swamp Sheoak	*Casuarina obesa*
	Swamp Banksia	*Banksia littoralis*
Shrubs	Swamp Peppermint	*Taxandria linearifolia*
	Grey Honey Myrtle	*Melaleuca incana*
	White Myrtle	*Hypocalymma angustifolium*
	Orange Wattle	*Acacia saligna*
	Prickly Moses	*Acacia pulchella*
Ground covers / climbers	Native Wisteria	*Hardenbergia comptoniana*
	Coral Vine	*Kennedia coccinea*
	Scarlet Runner	*Kennedia prostrata*
Rushes/sedges	Knotted Club Rush	*Ficinia nodosa*
	Jointed Rush	*Baumea articulata*
	Pale Rush	*Juncus pallidus*
	Finger Rush	*Juncus subsecundus*