

Bushfire recovery, erosion and water supply

Fact sheet | January 2020



Bushfires burn the plants and organic material that naturally stabilise the soil, making it more prone to erosion.

The loss of plants and organic material also means that water runoff after rainfall moves faster across the landscape, potentially causing erosion and the loss of valuable top soil.

Water runoff after a fire can carry ash, silt, manure and other fine material and deposit them in dams and creeks. This can significantly impact water quality, cause bacteria and algae to grow, and make the water unpalatable for stock.

The best time to act to reduce the risk of erosion on your property is prior to any rainfall.

There are simple ways, listed here, to reduce this risk and promote the recovery of your property. Each is based on maintaining a stable soil structure and encouraging plant growth.

Remove grazing pressure and minimise soil disturbance

Any ground cover is better than no cover. After the fire, leave burnt and unburnt vegetation in place including trees, woody debris and leaf litter as it will help to slow the flow of water and its erosive force on the burnt ground.

Encourage the regeneration of native and perennial pasture by minimising disturbance to burnt ground. Agisting out or containing stock, controlling feral animals and over-abundant native species may be necessary.

Containment areas for livestock are recommended if you choose to keep, or return your stock to your property soon after fire.

Containment areas provide time for pasture to grow and the rest of your property to recover.

Controlling feral animals such as rabbits, goats and deer will help to reduce grazing pressure and allow plants to germinate and establish. Kangaroos can also severely hamper regeneration, particularly without natural predators to keep their numbers in check.

Contact your local natural resources centre for more information on the construction of containment areas, feral animal control, or to discuss kangaroo control and obtain a destruction permit if necessary.

Slow the flow of water

Whatever you can do to slow surface water flow on the fire ground will help. A quick and simple way is to build strategically placed sediment fences in drainage lines and on hillsides.

The purpose of a sediment fence is to slow the flow of water and trap debris and soil before it reaches a watercourse or dam. You may need to construct several small fences.

To help decide how many sediment fences you need and where to put them, consider the following:

- large catchments and areas of high rainfall need more fences because larger volumes of water will be captured
- steep catchments need sediment fences closer together to slow the water down
- to protect water quality in dams and creeks, construct sediment traps at the inflow points.



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A practical video demonstrating how to construct a sediment fence is available on YouTube. Search for *Practical steps for landowners: Building sediment fences*.

Shown here are photos of various sediment fences. The materials used to construct a fence generally include star droppers, chicken mesh, fence wire, and shade or hessian cloth. The materials you use will depend of what you have available.

The exact design of your structure will depend on your needs. When designing your fence, remember that it should allow for:

- effective filtering of fine sediment (i.e. through shade cloth or straw)
- natural overflow of some runoff water (aiming to fully dam the water will likely cause the structure to collapse)
- the prevention of erosion around the sides or underneath the structure.

Reseed pasture

There is much to consider prior to undertaking the expensive task of reseeding pasture. A short-term cover crop may be appropriate in some situations.

For more information on these matters, contact your local natural resources centre.

Dam siltation and water quality

Protecting your water supply from contamination is a high priority after a fire. Rainfall after a fire can carry ash, silt and increased nutrient loads into dams. This deposited organic material provides ideal food for bacteria and algae. These organisms grow rapidly using up dissolved oxygen, causing putrid, anaerobic conditions.

Symptoms of putrid conditions are dark water, a bad smell and black scum around the edge which stock may find unpalatable. Water may be harmful to young or weak stock. Bright green scum around the edge of a dam is usually only algae, which is harmless to stock. However, blue-green algae (cyanobacteria) can be toxic to stock.

Once material is in the dam, aeration of the water is necessary to improve its condition and make it more palatable to stock. This is best done by pumping to a tank and reticulating to a trough. Other methods are available to improve contaminated water (see agric.wa.gov.au/water-management/contaminated-farm-dams), one of which is the addition of barley straw.



After rain, monitor watercourses for erosion or siltation and look out for algal blooms in dams. Protect surface runoff areas by fencing off waterways from stock movement and ensuring trough watering points are functional.

Strategically placed sediment fences may help in trapping soil and debris before they reach watercourses and dams, preventing water quality problems.

Water supply – do you have enough water after the fire?

Carefully evaluate current reserves. Sheep require up to 40 litres of water per animal per week. A cow requires about 500 litres per week. You may need to consider whether you have enough water to maintain livestock over coming weeks by calculating how the status of these reserves may change over time.

Options for managing a water shortage:

- reduce stock numbers
- combine stocks of water
- reticulate from dams into troughs rather than allowing direct stock access
- purchase additional water (be sure to use a licenced carrier).

Water affecting activities - Is a permit required?

Water affecting activities can potentially impact on the health and condition of water resources, other water users and ecosystems that depend on them. After a fire, you may need to drain or discharge water into a watercourse or repair a dam wall, which may require a permit. Please contact your local Natural Resources Centre for details on what a water affecting activity is, and how they can help you.

Natural resources centres

Gawler (08) 8115 4600

Black Hill (08) 8336 0901

Willunga (08) 8550 3400

Mount Barker (08) 8391 7500

www.naturalresources.sa.gov.au/adelaidemtoftyranges

www.naturalresources.sa.gov.au/samurraydarlingbasin

