

SOIL HEALTH AND PASTURE RECOVERY IN THE AFTERMATH OF BUSHFIRES

Significant bushfire events can leave paddocks bare at the time of year when they're most susceptible to erosion. There are several management options available to landholders to consider in the immediate aftermath of bushfires to mitigate the risk of soil erosion in bare paddocks and reduce the time taken to regenerate the paddock to productive feed.

It is strongly recommended to remove all stock from burnt areas immediately, or as soon as is practicable, to minimise the impacts of erosion, significantly aid the recovery of surviving pasture species and reduce damage to any perennial vegetation. Leaving stock off the burnt pastures for six or more weeks after the break improves the vigour and the growth of surviving plants (See below: Pasture Recovery after fire – Ag Vic).

- **Temporary wind breaks** - using shadecloth and steel posts can be used to stop soil build up around gates and troughs.
- **Contain stock** - containment of livestock is critical, not only as an animal husbandry practice, but as a land and vegetation management tool. Minimising animal footfall on areas/paddocks susceptible to erosion will assist in retaining whatever surface soil structure exists. Consider first areas that are at greatest risk of erosion, such as gullies, dunes or lighter soil types.

Containment feeding also minimises the spread of introduced weed species through bought in or donated feed. Bare/burnt pasture paddocks provide very little competition to the establishment of new weed species.

- **Sell stock** - consider whether or not any of the stock are suitable for sale. Selling stock will reduce the number of stock that need feed and water, while also receiving a cash injection to aid with infrastructure replacement or purchasing supplementary feed. (See below: Which Sheep Should I Keep?).
- **Adding new pasture seed** - new pasture seed can be added to the new pasture in a variety of ways such as by direct drilling or chisel seeding. It is usually best to wait until there is a germination of annuals after the autumn break. If

weeds are dense, chemical weed control may be necessary before sowing the seed.

- **Heavy harrowing** - heavy harrowing can unearth buried seed and improve the germination, especially of subterranean clover. However, this harrowing may cause further damage to surviving perennial species.
- **Fertiliser** - where there is an adequate density of regenerating plants, or pasture seed has been sown, fertiliser application will speed the growth and recovery of the pasture.
- **Crop** - less stock on the property opens up the possibility of cropping greater proportions of the farm the following season, providing faster soil coverage than re-sown pastures. Consider varieties that can be early sown, establish well and produce lots of biomass early in the growing season. Planting grazing crops to fill short-term feed gaps is one option in the months following a fire whilst establishing pastures in other paddocks.
- **Spread clay** - a case study undertaken by farmers impacted by the 2015 Pinery, SA bushfire involved cultivating large sections of paddocks to bring up 'clods' from the subsoil, as well as clay spreading on sandhills to reduce erosion. Not all soil types will be suitable for and benefit from this technique, so it's worth seeking advice prior to heading down this path. Their findings can be found here: https://www.naturalresources.sa.gov.au/files/sharedassets/adelaide_and_mt_lofty_ranges/land/case_studies/amlr-case-study-clay-improves-soil-after-bushfire.pdf
- Rainfall events on firegrounds have the potential to cause significant erosion in runoff areas where soils are exposed. Risk is exacerbated on steep country, non-wetting soils and in high rainfall events: <https://www.sheepcentral.com/warning-on-flooding-erosion-and-landslides-in-fire-areas/>

Further resources:

- **Pasture Recovery after Fire**
<http://agriculture.vic.gov.au/agriculture/emergencies/recovery/pasture-recovery-after-fire>
- **Technical Resources Manual For Farm Fire Recovery**
This is a resource compiled by PIRSA and SARDI in the aftermath of the Black Tuesday fire on the Lower Eyre Peninsula. Whilst livestock are considered in the Manual; cropping is the predominant land use on the Lower Eyre Peninsula. The Manual offers some excellent insight into the short- and medium-term implications of fire and recovery strategies.
https://grdc.com.au/_data/assets/pdf_file/0031/98437/technical_resource_manual_for_farm_fire_recovery.pdf.pdf
- **Farmers fight to save topsoil after 85,000-hectare blaze**
<https://www.abc.net.au/news/2016-03-05/sa-farmers-fight-to-save-soil-after-devastating-bushfires/7221906>
- **Which Sheep Do I Keep? A guide for sheep producers in drought**
<https://www.wool.com/globalassets/wool/land/drought-resources/accordion-1/2017-which-sheep-do-i-keep.pdf>
- **Recovering after Bushfires – Land Management**
[https://www.pir.sa.gov.au/_data/assets/pdf_file/0018/355203/Fact sheet - Recovering after bushfires - land management.pdf](https://www.pir.sa.gov.au/_data/assets/pdf_file/0018/355203/Fact_sheet_-_Recovering_after_bushfires_-_land_management.pdf)
- **Fire Recovery, Preparation and Prevention**
https://grdc.com.au/resources-and-publications/resources/fire-resources?utm_source=website&utm_medium=hero_search_buttons&utm_campaign=resource_landing_page&utm_content=Fire%20resources
- **Managing sheep in containment areas after fire**
A resource with case studies and practical tips to establishing a containment area to feed stock whilst paddocks are bare
<https://www.wool.com/globalassets/wool/land/bushfires/managing-sheep-in-containment-areas-2020.pdf>