

Appendix D

SA Water experience with the application for coir logs

Appendix D is available on the WSAA website

wsaa.asn.au/publication/bushfire-recovery-case-study-2-managing-sediments-after-bushfires

MANAGING SEDIMENTS AFTER BUSHFIRES

SA Water has provided information on their experience and lessons when managing sediments in water catchments following bushfires.



Coir logs with metal droppers – Millbrook Reservoir following the Sampson Flat Bushfire 2015 (SA Water)

Learnings

Larger, more intense fires create more ash

On the fireground, in the experience of SA Water the mobility of sediment seems to be a function of fire intensity. Smaller, less intense burns produce less mobile sediment compared to a larger, more intense fire that lingered in an area and burnt the vegetation thoroughly. For larger more intense fires there could be up to 100mm of deep loose ash that is highly mobile.

Retain bushland sediment, it contains seeds

As far as practical try to retain bushland sediment in-situ as it will be full of seed that will start to hold the catchment together once it germinates, thereby contributing to water quality protection in the long-term.

Tracks are the biggest source of sediment and erosive water flow paths

Tracks within the bushland fire ground are often the biggest source of sediment and erosive water flow paths. Track surfaces are relatively impermeable and tend to concentrate flows

into drains that de-water into the adjoining bushland, where the vegetation normally reduces the energy of flows and entrains the sediment. However, during the early months there is a lack of vegetation cover meaning sediment can be carried much further and new erosion heads can be cut in.

Coir logs work and can be left to biodegrade

Coir logs provide lasting filtration and can be made completely biodegradable if hardwood stakes and cross-braces are used. Tips for using coir logs:

- Place coir log structures to enhance natural depositional areas down a gully to create a chain-of ponds effect.
- Ensure they are wide enough to hold back a weir pool under heavy rain in order to prevent side-cutting.
- Ensure the invert of the coir log weir is lower than the outside edge of the structure to avoid side-cutting.
- Armour the overflow with stone or coir matting to prevent nick-point as the weir pool spills over.
- Shape the ground under the coir log to create a wide, flat weir crest as opposed to a 'V' shape, to spread the flow when the weir spills over.
- Monitor the structure after rain and if necessary dig out the sediment to maintain some freeboard for the next storm event.
- Large or steep track drains can be managed by digging small coffer dams and lining them with stacked coir logs or reinforced silt fence in a horse-shoe shape. Silt can be excavated out of these with a digger from the track after storm events.

Where wooden stakes are not practical use metal droppers

When installing the coir logs at Millbrook Reservoir following the Sampson Flat Bushfire in 2015, SA Water found that wooden stakes did not penetrate the ground/rock sufficiently to secure the structure adequately. Consequently SA Water used metal droppers at various lengths which performed well (see photo).

More information

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