

Gully erosion on the Munderoo Back Creek

The Issue

Streams in the Upper Murray have been impacted by Bushfire and high rainfall and flooding over the past 3 years.

The Upper Murray is the headwaters of the Murray, upstream of the Hume Weir on the NSW side. This site is in the Munderoo Ck Catchment, near Tumbarumba

A headcut (or knickpoint) formed on this property on the bank of the Munderoo Back Creek, driven by the high rainfall events and groundwater seepage from a swamp flowing over the edge of the bank. The usual fix of creating a rock chute was complicated by highly dispersible soils and the constant flow of water at the site.



Figure 1. The lateral headcut formed and was starting to accelerate up the catchment. The fence is where the creek is fenced off and the headcut has moved up the flow line beyond the fence

The Solution

The Soil Conservation Service installed subsurface drainage and reshaped the headcut that had formed in the hope that most of the water would be able to enter the creek directly via the drainage pipes and that the area would revegetate and prevent surface flow eroding the site.

The Impact

Addressing the headcut now will reduce the amount of erosion and sediment entering the Munderoo Back creek, and it will also prevent the gully progressing back up the drainage line – threatening the integrity of the dam and also making access to the paddock difficult.

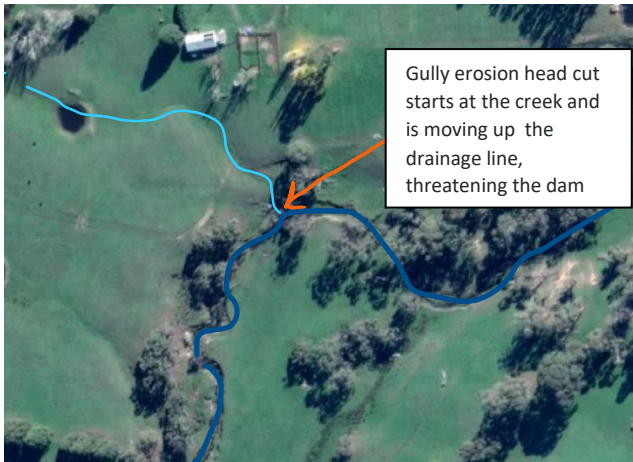


Figure 2. Diagram of the site – red arrow indicating the location of the headcut



Figure 3 Before the works

Gully erosion starts when a creek bed lowers and drainage lines coming in to the main creek then have to drop over the bank . That 'drop' in grade forms a headcut(or knickpoint) that can move up the drainage line, causing a gully to be formed.

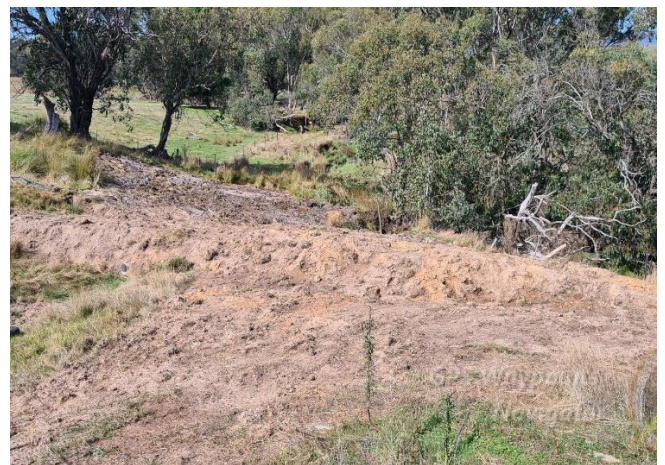


Figure 2. After the works - Subsurface drainage and reshaping so that the area is stable for grass to grow back over it

Any stream that is third order or above requires a controlled activity permit for any instream works, or to be undertaken by an exempt authority (Soil Conservation Service or Local Government). Go to the Water Front Land e-Tool to determine what permit you may require.

<https://water.dpie.nsw.gov.au/licensing-and-trade/controlled-activity-approvals/waterfront-land-e-tool>

Fencing and revegetation are essential tools for the recovery of waterways.

"Since the fires and the wet years, we have had areas suddenly start eroding and its been so wet that you cant get near it to try and intervene early. We are grateful for the help to try and pull it up before it starts affecting the creek too much".

– Landholder, Upper Murray region

For more information

Contact your nearest Local Land Services office on 1300 795 299 or visit our website www.lls.nsw.gov.au