It can stimulate the vegetation

By David Mason-Jones

Various strategies exist to repair an eroded gully in a paddock. One of the options least considered may actually turn out to be the best way of solving the erosion problem. This applies particularly to a woody grassland grazing situation.

The oft ignored solution is the use of animal impact on the eroded banks and bare ground in an eroded stream to stimulate vegetation growth. Animal impact can also help repair low head wall erosion cuts in gullies and low side bank cuts in the gully channel.

'Many people – including farming advisors and concerned environmentalists – will attribute the entire cause of the erosion to sheep and cattle,' says George King, of Coombing Park, near Carcoar, NSW. George has repaired a significant gully erosion problem on the 2,800 hectare grazing property.

'To many people, farmers, advisors and environmentalists alike, it is a big challenge to their paradigm to tell them that sheep and cattle can be part of the solution,' he says. 'But animals can definitely help repair your land. The proviso is that they must be grazed and managed in the right way.'

When confronted with bare patches and gully erosion in their paddocks, the strategy many people automatically leap to is to fence the area off, destock it completely and plant trees. There is a widely held belief that a good riparian zone – with plenty of trees – is the first step in fixing the erosion problem. George takes issue with this.

He says, 'Trees are not always the automatic answer.' Don't get me wrong, they may be an important part of the answer in certain situations but they are not always the best answer in all situations.'

There is an elephant in the room when we talk about what trees can do to stop or repair erosion. If you look closely at the landscape, you will see that the erosion is often worse under the trees than it is in well managed grassland.

There is an 80 hectare paddock at the southern end of Cooming Park and it is mostly covered with dense stringy bark scrub. There is not much grass, and a lot of bare ground, beneath these stringy bark trees. When it rains, the ground is subject to constant and active erosion from water sheeting across it. Livestock are only occasionally present in the scrubby paddock and so there is no possibility of overstocking. In the few parts of that paddock where there is a good groundcover with perennial grasses, there is no erosion problem even after heavy rain.

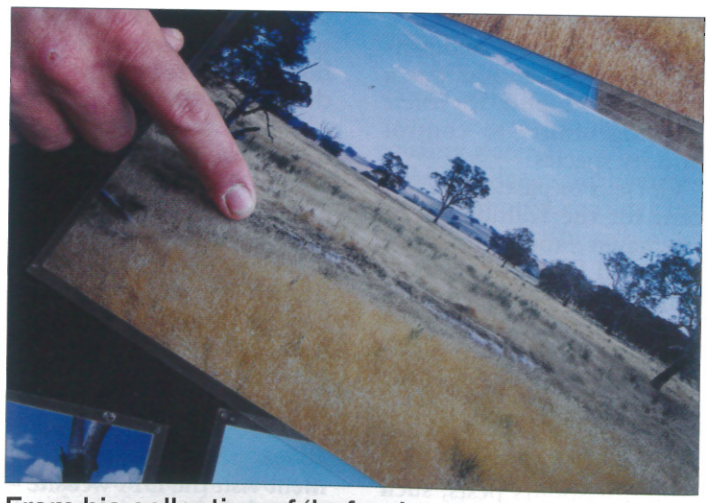
'On the rest of the property where there are grasslands and scattered trees, there is no erosion problem,' says George. 'There was a problem years ago but we have fixed it using our grazing animals and their natural relationship with grasses.'

George gives the following advice:-

Graze small areas one by one: Confine your animal impact, each time, to a small area of the total length of the creek. Do not try and do a whole section of the eroded gully at once because this will only reduce the concentration of livestock you can achieve. You need to achieve

We see small erosion cuts like this so often that we hardly notice them. They are evidence of a degraded water cycle and we need to fix them.

Grazier George King says that planting trees is not always the best way to repair erosion. He believes that it can be done more effectively by managing animal impact.



From his collection of 'before' and 'after' photos on the farm, George shows a 'before' shot of a typical erosion gully on the property.

This grassed area is a repaired erosion gully. The banks have been broken down and rounded by hooves. Grass grows where once there was only bare earth.

a high animal impact in a small area.

You don't want the animals wandering in ones and twos all over the eroded creekline. It is likely that dispersed grazing like this may have caused the problem in the first place. Once you have achieved a high animal impact in one place, move the focus of your animals to another small area.

Concentrate your numbers: Gather together as large a flock or herd as you possibly can. Do not skimp on the numbers.

Use an attractant: Due to the fact that there is so much bare ground in an eroded gully, you need to find a way to make the livestock go to that spot and mill around for a period. Dropping off a large bale of your best and tastiest hay at the centre of the eroded spot may be a good attractant to get the animals to go to the area and create impact.

If you have a large number of animals, it may create a more even animal impact in the selected area if you create several nearby attraction points using several small square bales of hay.

Limit the time: Do not leave the herd or flock on the eroded ground for a few weeks at a time. Leave the animals there for long enough to create the desired effect on the eroded patch and then take them off. This may take only a day or so or, if the animal density is very high, may be achieved in just a few hours. The animal impact you need to create is best achieved by dense

One of the aims in using animal impact is to create trampling, like this, where uneaten grass and hay are trodden down to form a mulch.

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Another case of repair can be seen to the left of the cattle; it is so effective it is hard to see where the erosion gully once was.

mobs of sheep or cattle, milling and jostling around closely together and feeding.

Break up the ground: Hoof impact. Densely packed mobs of hard-hooved animals will walk over the entire area. This will include the eroded banks and head wall cuts where these are not too high. The effect of the hooves will be to break down the banks and disturb the hard patches of their eroded ground. Isolated animals in ones and twos will not have this ground disturbing effect.

The effect of the animals breaking down the banks is to round off the top of these banks so that the gully becomes more like a shallow dish than a mini canyon with vertical sides.

For reasons to do with the physics of how water erodes, water in a shallow, wide dish is less corrosive than water in a narrow, deep channel. By breaking down the banks and rounding them off with cattle, you can limit the future force of water. And in any case, if you had opted for an engineering solution to fix your eroded gully, rounding off the banks with a bulldozer is one of the tasks engineers would have undertaken. So the use of cattle in this situation is achieving precisely the same thing as happens with mechanical earth works.

The other effect of the hooves of milling animals is to disturb and break up the compacted ground rather like a process of light tillage. This makes it easier for colonisation by grasses.

Create mulch: If enticed with an attractant, and crowded together to compete for food, the milling and jostling animals will not be fussy about eating. This will result in spillage of hay across the bare area and this vegetable material can become the basis of new mulch covering the eroded area. In turn, this will create a more favourable environment for colonisation by grasses.

Dung, urine and trampling: While milling and jostling, the sheep or cattle will dung and urinate over the mulch layer they are helping to create. This will help make nutrients available for colonisation by grasses. The sheep or cattle will then provide the additional benefit of trampling the dung into the mulch and also trampling the mixture of dung and mulch into the ground disturbed by the hooves.

Rest: Once the animal impact has been created, take the stock of the eroded patch and do not let them back there again for a period of months. They must not be allowed back onto the area while the new grasses are still growing. Rest periods in the order of 60 - 120 days are not unusual.

Repeat the process: Once the grasses have been allowed to grow fully, repeat another round of animal impact on the area you are wishing to repair. The grass cover from the first round of grazing may not yet provide 100 per cent groundcover and so an attractant may still be needed.

The repeat process of high animal impact will reinforce the first round of impact and cause more dunging, urinating, mulch creation and trampling. Grazing the fully grown plants that have grown as a result of the initial animal impact will stimulate them to vibrant regrowth. This will assist in the development of further grass cover in the eroded patch.

Conclusion: The end result of using animal impact, and co-ordinating it with grasses, is that where there was an unsightly shallow eroded gully in your grazing paddock, there now will be a shallow grassy dish. ■