

Data Sheet

Watercourse

Fencing

The information in this sheet responds to the now widespread knowledge that watercourse protective fencing is needed to prevent soil erosion and ensure the success of revegetation programs. We have responded especially to the problems of fencing across watercourses.

What observations can be made about unfenced watercourses on grazing land?

- Firstly, sheep and especially cattle foraging for choice green pickings along the sparsely vegetated, sandy and dispersible clay banks of our watercourses cause considerable soil destabilisation. They make innumerable tracks, trample the toe and batter of the banks and push sediments into the water. The overall effect - after winter rains, Murray River pumping locally and peak water flows - is bank scouring and slumping.
- Secondly, an open, poorly vegetated watercourse is an unbalanced ecosystem, providing little habitat for ground, airborne and aquatic animals.
- Finally, the real service done by fencing is to define the buffer part of the watercourse filter system...the control of the inflow of chemical, manure and roadside contaminants and soil sediments.

NB We have seen no evidence to substantiate concerns over dense, properly-balanced native species vegetation being a summer fire hazard - quite the reverse.

We strongly emphasise the need for noxious weed and pest animal control within fenced areas.

How much to fence?

The ideal buffer zone on LARGE river systems is variously proposed at between 20-30 metres. The River Torrens, being a significant catchment/drainage system and situated in a non-intensive agriculture region, may be more appropriately suited to a 5-10 metre buffer to be an effective filter. However, in some circumstances, commonsense would demand some changes to this.

This sheet presumes that the readers are familiar with the traditional forms of permanent fencing for sheep and lambs, goats, cattle and horses.

River crossing fences

Here, we pay special attention to fencing across watercourses, using electric fencing. Such fences are sometimes called flood gates because they 'open' to let water and litter pass.

The familiar problem of stock entering neighbouring properties - through poor temporary fencing, or after flooding has flattened the fence on the bank - can be prevented or made

Golden Rules

- The crossing fence must not be secured to the main fence line. It should stand independently - then only this portion will go in a big flood - see it as a disposable section.
- The crossing fence suspension wire/cable should be strung above the highest flood level.
- The type of fence selected should suit the profile of the site, the usual pattern of water flow, and the kind of stock you wish to exclude.
- If the electrified main fence continues across the river and does not terminate at the flood gate, then a (+) and an earth wire need to be hung securely across the river. This ensures a live main fence should the flood gate be swept away.
- Monitor and maintain.



Corrugated iron floodgate... an oldie, but not necessarily a goldie

easier to maintain. As well, that winter/spring task of retrieving bits of the customary rough and ready fence across a river and rebuilding it can be avoided - or at least made easier. Some readers may also be interested in vermin-proof fencing to exclude rabbits and hares from revegetating areas. Gallagher Power Fence Systems can advise on any of the fence designs. Locally, see Farmer Johns, Mt Torrens.

References:

- Gallagher Power Fence System:
 - 9th International Power Fence Manual
 - G604 Flood gate controller pamphlet
 - Gordon Keech

Options for electrified flood gates across the main rivercourse and tributary watercourses...

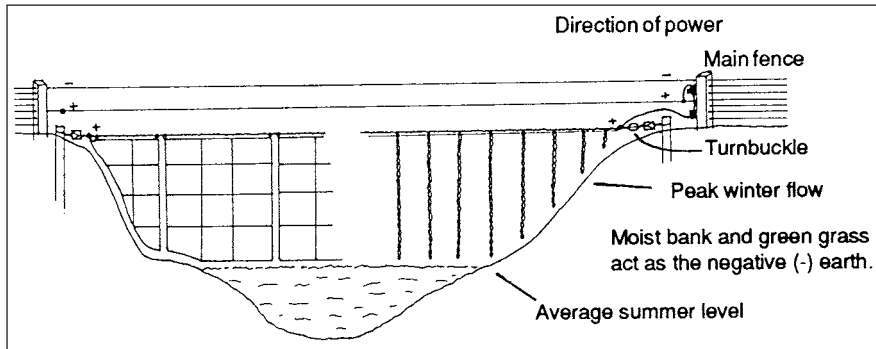
We ask that you grasp the principle, then use your inventiveness to adapt it to suit your site.

Materials - Hinged lightweight mesh or chain (2.5mm) or traditional single strand wire (using 1.6mm high tensile/BHP). Chains can be expensive, but they tend to move aside independently to by-pass snags.

Action of Flood Control Unit: Power through a flood gate control unit will deprive the main fence system of approx. 200 volts when totally shorted by a flood.

Permanent fixture - suited to deep, narrow crossings, especially tributaries

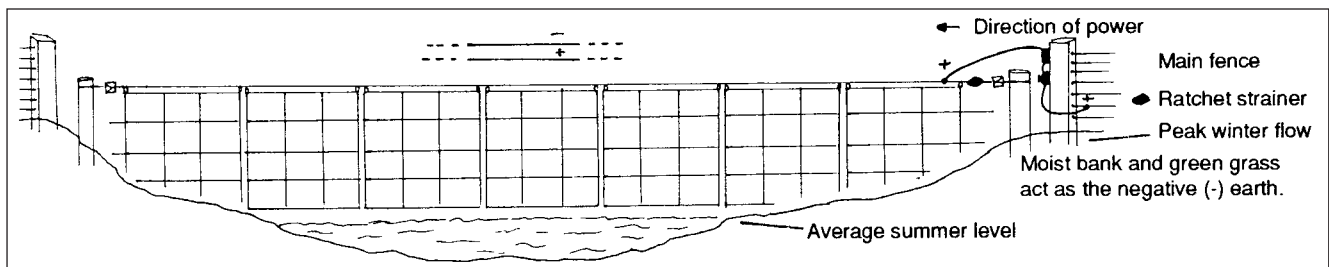
HINGED GALVANISED MESH PANELS or GALVANISED CHAIN



Steel cable (6.4, 8, 10 or 12mm) is used to carry the fence (we used 8mm). This is anchored with engineering eye bolts and turnbuckles or tractor strained chain assembly to maintain tension (turnbuckles are not suitable for straining more than 25 metres). See A. Noble and Sons, Kilburn. A wire, holding the mesh or chains apart, carries the positive (+) pulse.

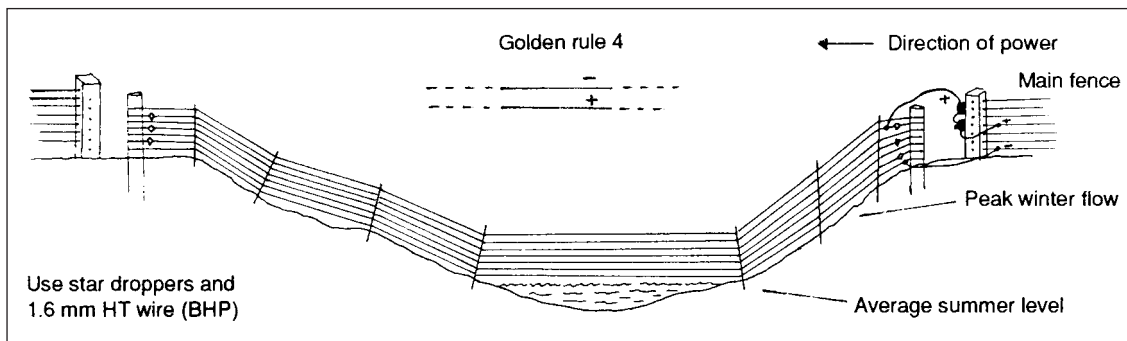
Semi-permanent - suited to wide, flat crossings, including fords

HINGED AND SEPARATED GALVANISED MESH PANELS



Semi-permanent with disposable sections - suited to uneven crossings

Wire each section or couple of sections separately. The joins then become the breakaway points. Hand strain.



All flood gates should incorporate:

- A controller unit to limit voltage loss to the whole fence line when flooding occurs.
 - A cut-out switch in case of prolonged flooding. Use joints clamps (G603V) to link wires.
- Consider trialling floatation devices on the bottom of the hinged mesh to help it lift above snags.

Debris:

Flood gates cope well with low to mid-peak flows, which are of short duration (quite common locally). However, a torrential flood, with vast amounts of debris, would take out any such obstruction in its path.

"When nature deals its heaviest hand, no river crossing fence will stand." (Bob Myers, 30.8.92)