



## STOCK EXCLUSION—MANAGING STOCK AROUND WATERWAYS

### What are waterways

Waterways can include rivers, streams, creeks, drains, ponds, lakes, wetlands, and estuaries. Wetlands can include bogs, gully bottoms, swamps and seeps that contain or channel water all or some of the time.

Valley floors that occasionally have storm water flows over productive pasture areas are 'ephemeral waterways' where extra care is needed when grazing stock.

Proposed new regulations around stock exclusion may mean that waterways will need to be fenced to exclude stock. You will need to consider things such as stock type, slope, carrying capacity, and the size and type of waterway when considering putting stock in areas that have waterways. Please seek advice from your local regional council or other qualified person before installing any permanent fencing to make sure you are complying with current rules or able to meet requirements of future regulations.

### What are the benefits of keeping stock out of waterways?

#### Improved water quality

Keeping stock out of waterways can reduce the amount of contaminants reaching waterways. The main contaminants in New Zealand waterways are nitrogen, phosphorus, sediment and faecal pathogens. In excessive amounts these can lead to lower water quality, reduced habitat and potential health problems for humans or stock.

Research has shown that cattle prefer to drink from a clean water trough rather than a stream. They possibly do this because of improved water quality, better footing, improved visibility and a more desirable water temperature. The benefits from stock drinking clean reticulated water include faster live weight gain as well as better milk yield in lactating females. These benefits translate into faster growing offspring and better returns at the farm gate.

Putting water troughs away from waterways can help improve pasture quality and utilisation. Stock are more likely to move across pasture to get to water troughs, spreading the nutrients in dung and urine more widely in a paddock. If waste is deposited in waterways, nutrients are lost from the pasture. Water troughs can also be located in areas where pasture utilisation can be maximised. Strategic use of shade and mineral blocks can also help in this way.

#### Improved stock health

Keeping stock out of waterways and providing alternative water supplies reduces the likelihood that stock will come into contact with a range of pathogens.

Pathogens carried by cattle that deposit dung or urine in waterways are easily spread to other stock when they drink or stand in the contaminated water, putting them at risk of a range of diseases or conditions.

Many of the pathogens released also cause illness to people, particularly affecting recreational users such as children swimming downstream.

Some of the pathogens include *Brucella spp.*, *Clostridium spp.*, *E.coli*, *Listeria monocytogenes*, *Salmonella*, *Cryptosporidium parvum*, *Giardia lamblia*, *Campylobacter* and faecal coliforms.

Reticulated water supplies also make it easier to deliver animal remedies such as zinc (for facial eczema) or supplements directly to stock.

#### Reduced stock losses

Excluding stock from waterways at lambing and calving reduces the likelihood of lambs or calves falling into the water and drowning.

Stock of any age can fall down banks and may be injured, become stuck, or unable to escape. At times of heavy rain they can be lost in deep or fast flowing flood waters. Such losses can be costly.

#### Safer work environment

Mud, crumbling or steep banks, slippery stream banks and slimy beds also make waterways hazardous for people, especially when using motorbikes and ATVs. Keeping stock out of these areas also reduces the need for people to be there and will help make for a safer work place, which can result in fewer work days lost and lower insurance premiums.

## Market demands for sustainability

“Clean, green and environmentally responsible” is an image that has been carefully cultivated in New Zealand’s discerning international markets for agricultural products. It is important that farmers are able to demonstrate the reality of environmentally sustainable farming, and that includes keeping stock out of waterways.

## Industry reputation

With environmental issues increasingly becoming the focus of attention, the primary sector needs to be not just protecting the country’s waterways, but to be seen to be protecting the whole farm environment.

## Resource management

With the advent of the national policy statement for freshwater management, regional councils are looking closely at water quality management. One of the areas being focussed on is keeping stock out of waterways. Some regional councils already have specific stock exclusion or waterway fencing requirements, and many more are looking at similar requirements.

## Biodiversity benefits

Keeping waterways free of sediment, nutrients and pathogens will enhance their biodiversity and provide food and habitat for flora and fauna. Fish spawning areas will help boost native kokopu, bullies and eel numbers as well as introduced trout and salmon. Overhanging grass can help provide spawning sites for whitebait in coastal areas. Overhanging vegetation can provide habitat, spawning sites and shelter for animals as well as helping to stabilise water temperatures

## Improving the look and value of your property

Clean, clear streams and lakes, abundant aquatic life, and protected riparian areas all add to the overall aesthetic appearance of a property. There is good evidence that these activities add to property values realised at sale time.



## How can I keep stock out of waterways?

### Permanent fencing

A long term option for keeping stock out of waterways is permanent fencing. Focus on the highest risk areas first e.g. where high stock numbers are being run, or heavier stock classes are common. What sort of fence to use will depend on your particular situation in regard to terrain and stock type. Flat and rolling country are generally much easier to fence than hill country, and fencing steep hill country or extensive, lightly grazed farms may be impractical. For those situations there are a range of other options that can be used.

When building permanent fences along waterways, consider including a gate or access at some point. This will allow stray stock to be removed or occasional access by sheep for grazing to control vegetation. Access may also be needed for pest control or for maintenance. Consider also if flooding could be an issue when deciding on what sort of fence and where it should go.

### Temporary fencing

Temporary electric fences around waterways are an option when managing sensitive areas at critical times e.g. when stock are only grazed on adjacent pasture at certain times of the year, or where flooding may be an issue. They can also allow waterways to be protected until work programmes and budgets provide for permanent fencing to be erected. They generally have lower cost, but may require time to erect.

Temporary fences can be used in a number of situations:

- When strip grazing or break feeding crops. Graze parallel to the waterway, beginning at the furthestmost point and working back towards the waterway. This way there will be a good sized buffer zone in place to help filter runoff for most of the time. Aim for a buffer of at least three metres\* being left un-grazed along the waterway.
- When grazing stubble
- At spawning time (February-June for whitebait in tidal areas, April-November for salmon and trout)
- When flooding may make it dangerous for stock
- To protect intermittent wet areas such as springs or seeps, especially those that feed into waterways
- To prevent pugging of wet or low lying pasture, especially in winter
- To prevent stock getting bogged in wet areas

\*Check your regional council regulations

### Reticulated water systems

Providing well positioned water troughs will encourage stock away from waterways. Good quality water from troughs will improve stock health, can improve production and can be used to deliver animal remedies or supplements.

Taking water for stock watering is generally allowed under the resource management act, where it doesn’t adversely affect the environment. However, please check with local council regulations about this.

## Bridges and culverts

Bridges and culverts can be of benefit to your business as well as the environment.

They will make it easier, safer and faster for people and stock to get around the farm, particularly if water levels are high or in flood. They also improve the value of the property.

Bridges and culverts prevent stock damaging stream beds and habitat for fish and insects, as well as reducing the amount of sediment, dung and urine and pathogens getting in to the water from stock movement.

There are some very good guides to building bridges or culverts on farms. Advice should be sought from an engineer on capacity, choosing a good site and for more substantial structures. Regional and District Council consent requirements should always be checked and regional councils can be sources of information on good practice.

## Shade and shelter

Provide shade and shelter for stock away from waterways. Recent research has shown cattle perform better with plentiful shade. Spreading shade trees across paddocks discourages stock from "camping" and can be combined with planting trees for erosion prevention or mitigation. Placing trees away from water troughs reduces shading around the trough that may result in pugging.

## Grazing and stock class management

Graze sheep, younger or lighter classes of stock next to unfenced waterways. Their impacts are less than heavier classes of stock.

Keeping stock numbers low in unfenced paddocks will help reduce damage to unfenced waterways, or if possible, avoid grazing these paddocks altogether when it is wet or at important spawning times.

Keep a good watch when stock have to graze close to unfenced waterways, and move the stock if they start to damage banks or cause pugging of waterway margins.

## Uncultivated buffers

In areas used for cropping or winter feed, leave an uncultivated, grassed buffer beside waterways, to slow run-off and help remove sediment. These can be used in conjunction with temporary fencing. The wider the buffer the more effective it will be. Three metres\* is a good starting point for flat or rolling land. Steeper slopes need a wider buffer than flat land, up to ten metres or more depending on slope.

\*Check your regional council regulations

## Riparian protection and enhancement

Keeping stock out of waterways and their margins is just one important action that can be taken to improve water quality. Vegetated buffers, planting a range of riparian plants to provide shelter, shade and encourage bird life all help improve the functioning of riparian protection.

Steep banks and existing vegetation can be used to form natural barriers. Additional planting of unpalatable, dense or spiny plant species can also help.

There are a number of publications that can provide more information on managing waterways on farms especially providing riparian buffers and enhancing vegetation to improve bank stability and improve water quality. Some readily available ones are listed in the resources section.

## Mix and match to suit

Every farm is different, so the mix of tools and techniques needed to keep stock out of waterways will vary according to land type and farming mix. Permanent fencing is the most effective long term option, but it may not always be practical.

Often a mix of techniques will be required for different parts of a property, and at different stages in a property's development. If in doubt, there are many good publications available to help, many accessible online. Or you could talk with a farm advisor from your regional council or other rural advisors, or neighbours who have experienced similar issues to yours.



## Resources and references

[A Guide to Managing Waterways on Canterbury Farms. Environment Canterbury](#)

[Managing farm runoff. Waikato Regional Council](#)

[A Guide to Managing Stock Access to Waterways in the Wellington Region. Greater Wellington Regional Council. August 2011.](#)

[The New Zealand Deer Farmers Landcare Manual, 2012. New Zealand Deer Farmers Association. PO Box 10-702, Wellington, New Zealand.](#)

[Stock and Waterways: A NSW Manager's Guide](#)

[Schutz, K. June 2012. Effects of Providing Clean water on the Health and Productivity of cattle. A report for Northland Regional Council. Client report number RE400/2012/346, AgResearch.](#)

[Staton, J. and O'Sullivan, J. 2006. Stock and waterways: a manager's guide. Land and Water Australia, Canberra.](#)

[Zeckoski, R. Benham, B. Lunsford, C. 2007. Streamside Livestock Exclusion: A tool for increasing farm income and improving water quality.](#)

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