

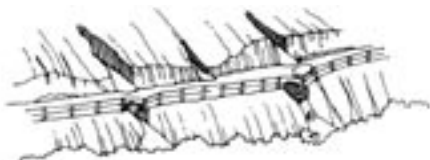
13. site fence-lines according to landform



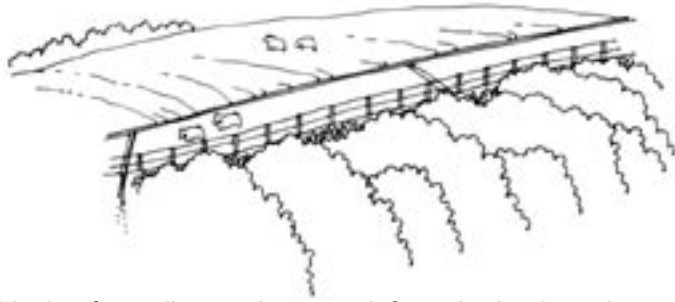
Use the landform to assist in maintaining the integrity of the area being protected and to enhance its management. Site fences according to natural landform patterns such as close to ridge lines and crests of catchment boundaries, at sharp changes in topography – (e.g. terrace edges, base of slope). Don't fence off in a way that is unrelated to the landform.

Site fence-lines where it will be easy for fence checks. In some instances fencing may be unnecessary or impractical e.g. at high altitudes.

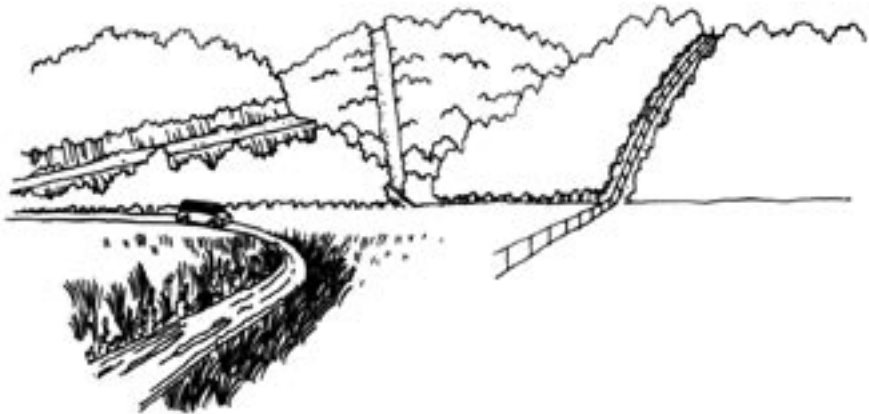
Try to avoid having gates into a protected area – it is too easy to forget and leave open allowing stock to enter, causing large scale damage of several year's growth in one event. Use stiles instead, if need be.



Some stock will follow fence-lines more than others, so avoid siting fences on obviously unstable land where erosion (e.g. tunnel gully) may allow stock to squeeze underneath into the protected area.

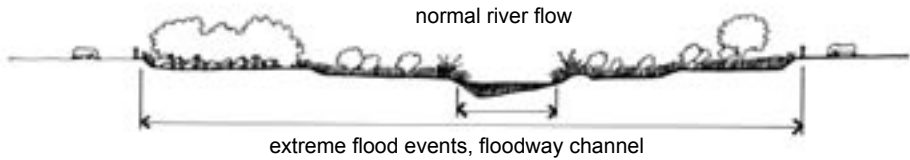


Avoid bulldozing fence-lines – the scars left on the land can be very unsightly. Cutting swathes through the bush, shrubland or tall grassland to provide for a fenceline provides an invitation to pests. A cut fence corridor can quickly become an animal pest or predator corridor and a plant pest or weed corridor for invasion.



For protecting riparian waterway areas, locate fences on the edges of the floodway channel to protect the entire river system. Restricting waterway access during the breeding season may be necessary. Artificial structures such as bridges can be used to define the upstream and downstream extremities of protected natural areas where fencing is not feasible.

Protect entire river system



14. consider carefully plant pests....

The majority of plant pests are borne by air (wind), water, animals and birds, and they will tend to colonize the open areas within and adjoining natural areas. Time taken to carefully assess the risks plant pests pose to protecting a natural area can save significant time and money in later pest eradication and management programmes. For example, eliminating a small up-wind or upstream threat may be the most cost effective long-term measure. Or, containing a buffer area of dense vegetation or dense mulch around the natural area may reduce the ability of new plant pests to invade the area. This vegetation could be composed of existing gorse (contained on the unprotected edge) which will allow native seedlings to eventually emerge and naturally suppress the gorse over time.



15. ... and the risks of animal pests

Assess the risk of animal pests on an area's natural values. Browsing animals such as deer, goats, rabbits, hares and possums can devastate regenerating vegetation – and even mature vegetation if under pressure. Rodents, mustelids, feral cats and stray dogs can decimate populations of bird-life, especially ground dwelling and nesting birds and their fledglings. Hedgehogs can also pose a threat.

As an existing habitat starts to regenerate, this may result in an influx of hitherto unrecognized pests. For example, the new young shoots of regenerating seedlings may attract browsing rabbits or hares (in turn attracting an increase in mustelid pests). Also, an increase in seed-bearing saplings may attract a range of pests including rodents.

Generally, animal pests can be managed (through trapping, shooting, and poisoning by licensed operators) for most areas being protected for their vegetation communities. However, where rare and endangered species are involved it is essential that more professional assistance⁴ is sought for the pest management to be undertaken. This is also the case for protecting the habitat of important invertebrate or bird species and may involve predator proof fencing.

If the area being considered for protection is in close proximity to other indigenous areas, consider carefully the advantages and disadvantages. Will the new protected area pose any new threats to these areas and their values already under protection?

16. natural regeneration or vegetation restoration?

In many cases, nature may be able to do most of the work. Simply fence, protect from fire, and control exotic weeds and pests.

You can help this process by hand releasing emerging native trees or planting native food bearing plants in small nuclei where birds will come and feed and disperse seed into the area. This may be effective in areas where there is a good nurse-cover of broom, gorse, or native shrubland that the native seedlings would come up through following germination.



gorse/broom with native self seeded/ bird distributed seedlings beginning to emerge

nuclei planting that has established suppressing the nurse crop cover. Birds use as reliable food source.

Where an area has a plant pest or weed problem requiring ongoing maintenance, determine whether this can be turned to advantage (e.g., a contained area of gorse determine if it may be a valuable nursery for natural regeneration) or, if it needs to be eradicated, this may be an area to initially revegetate to reduce ongoing weed spread, or containment and control costs. However, carefully check the nature of the weed problem first. Importantly, some weeds have seeds with very long viability and do not require much light to establish while others do not and are quickly out-competed.

Where carrying out revegetation to restore parts of an area, consider carefully where best to start and work with nature, establishing areas that will recover easily. This will not only provide greater satisfaction but will assist by establishing seed-rich areas for nature to give a helping hand. Consider soil moisture and aspect. In cooler climates a warm northerly aspect may be an advantage or, in hot dry prevailing conditions, a cooler, wetter southerly aspect may be more viable for ensuring planting success and establishment with minimal ongoing after-care (e.g. watering).

If the area has already undergone some human-induced or natural modification and restoration is needed, a commitment must be adhered to that will be maintained for the length of time that it will take until the protected area becomes largely self sustaining.

17. be aware of cultural needs

Respect any recognised historical or archaeological sites that may be present. There may also be features or values that are important to tangata whenua. You may need to consult with the local tangata whenua or the NZ Historic Places Trust. Seek that the local community support and appreciate the area becoming protected. A protected area might provide for physical, social and spiritual renewal.

18. public access to protected natural areas can have advantages

Public access should generally be permitted and, when well managed, can greatly assist the monitoring of problem pests. A stile best provides for access, with any gates left locked. A simple informative sign will generally be respected and additional signs should indicate any closed periods (e.g., for bird nesting, maintenance poisoning operations, lambing etc). People should not have to ask for permission to access the protected area, particularly if involving any area of public land or funding.

Protecting natural areas - summary and check

Use the table to check the factors to address in protecting natural areas

		Factors	page	yes/ no	comment
ecological	1	How significant is the natural area to the wider landscape character?	7		
	2	How important is the natural area to enhancing the wider eco-system (e.g., as food or nesting habitat? a natural buffer area?)	8		
	3	To what extent can the area extend across continuous ecological sequences?	9		
	4	How well does the natural area relate to the under-lying land systems?	10		
	5	How much of the natural catchment area is it possible to protect? Can this be added to in future?	11		
	9	Can isolated areas be linked up to enhance their value?	15		
site management	6	Can natural boundaries be used to their best effect?	13		
	7	Can the natural area cope with some natural change?	14		
	8	Is the natural area designed to be self-sustaining?	15		
	9	Can isolated areas be linked up to enhance their value?	15		
	10	How well has the core been maximised? - and the edge minimised	16		
	11	Have adequate buffer areas been considered in determining the boundaries?	17		
	12	Have management and maintenance requirements been fully incorporated?	20		
	13	How well do fence-lines relate to landform?	21		
	14	Have plant pests been fully considered? Which ones and how will they be managed?	23		
	15	Have animal pests been fully assessed? What are they and how will they be managed?	23		
	16	Is natural regeneration possible? Or is some restoration necessary?	24		
	9	Can isolated areas be linked up to enhance their value?	15		
cultural values	17	Have cultural needs been considered?	25		
access	18	Is public access possible?	25		

References

Nature Heritage Fund's Assessment Criteria www.nhf.govt.nz

McEwen, Mary. 1987. *Ecological Regions and Districts of New Zealand*. 3rd rev. ed. Department of Conservation, Wellington.

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