Information campaigns highlighting simple water management practices to farmers could provide a cost-effective way to restore natural water sources, a recent study concludes. Researchers in New Zealand found that deer farmers who received information packs voluntarily adopted simple practices, such as fencing off livestock from streams, which restored stream health on their farms.

Human activities are known to stress lake and stream ecosystems. Although sewage drainage into freshwater systems has, fortunately, been reduced in most western countries, poor water quality, turbidity and loss of biodiversity remain major problems in many parts of the world.

A range of methods have the potential to counter man-made stressors, but there is little information on which practices work best.

This two year study carried out on thirty deer farms in southern New Zealand was designed to monitor the responses of deer farmers to environmental information and to assess the impact of these changes on stream health. The farmers were allocated to groups that either did or did not receive information packs. The environmental advice included best management practices aimed at reducing the negative impact caused by deer farming on waterways. The streams were tested for ecological quality in March 2001, 2002 and 2003, before and after the voluntary adoption of these methods.

The results, published in the December issue of the *Journal of Applied Ecology*, found that the most cost-effective solutions were often the best at restoring stream health. Where farmers adopted fairly simple practices, such as erecting permanent fencing to exclude stock from streams and limiting grazing intensity in paddocks containing waterways, there were marked benefits.

The freshwater systems benefited from improved water quality and restored ecology, as evidenced by a boost in aquatic invertebrate species. No such changes were apparent in streams where best management practices were not adopted.

The study provides evidence that farmer education and simple cost-effective approaches to improving stream health that can be readily adopted by farmers do have positive outcomes. Putting these recommendations into practice in Europe could help bring freshwater systems to the standards demanded by the European Water Framework Directive by 2015.


Contact: gerry.closs@stonebow.otago.ac.nz

Theme(s): Agriculture, Biodiversity, Water