

Management Implications

- Forestry is a good land use on hill country.
- Forest harvest practices need to minimise sediment yield to reduce downstream effects, including cumulative effects when harvesting multiple catchments.
- Establishing or maintaining riparian setbacks on permanent waterways is important for sediment control and in-stream qualities.



Garth Eyles (project co-ordinator) and Brian Pritchard (Pan Pac Forest Products) inspect the catchment

Catchment Studies a Real Team Effort

At the study's start, many people disapproved of forestry as a land use, says Carter Holt Harvey environmental planner Robin Black.

"When people see a dirty stream, they automatically assume it is caused by the forestry industry," he says.

"The study wanted to obtain specific Hawke's Bay information to show the wider community the benefits of forestry. Because this area was coming up for harvesting, we could get some very good local information.

"The only thing we missed out on was the impact of a big storm."

When the research started, there was a concern that forestry would use all the available water in summer dry hill country, says Garth Eyles, Land Management Manager at Hawke's Bay Regional Council.

"The study's findings show there were no significant or long-term changes in water quality, other than that of sediment load. Annual water yields under full canopy forest dropped by only 6% compared with those from pastoral land."

Pan Pac Forest Products General Manager Brian Pritchard says the collaboration between the Council and industry has worked well. Pan Pac, Juken New Zealand and Carter Holt Harvey were all involved in the project, from the outset in 1993.

"The study confirmed the strong relationship between land use and erosion. There was significantly less erosion in the forested catchment than the pastured catchment."

Brian says the study results are not only valuable locally in comparing the effects of forestry as a land use in Hawke's Bay, but also nationally.

Timingimigi Catchment



CREDITS:



the Pakuratahi land use study

Well-managed commercial forests are an environmentally sustainable land use, according to the research findings of the Pakuratahi land use study

Researchers compared pastoral farming with forestry over 12 years and found that a forest produces less sediment, uses slightly more water, reduces soil erosion, has a more positive effect on stream environments, and makes no real difference to water quality.

Begun in 1993, the land use study was a response to public concern about the environmental effects of forestry on Hawke's Bay hill country. It was completed in 2005.

The study was jointly funded and run by the forest industry and Hawke's Bay Regional Council. Research was undertaken by crown research institutes, Massey University researchers, regional council and forestry industry scientists.

A paired catchment study approach was used, with one catchment in forest (Pakuratahi) and the other in pasture, farmed with sheep and beef, as a control. The catchments represented eastern North Island hill country (Timingimigi).

Researchers compared the environmental effects of commercial forestry and pastoral farming through various phases of the forest rotation. The sequence of pre-harvest, harvest, replanting, and canopy closure covered times of major environmental change.

ABOVE: Skid site and hauler in operation



Key Findings

- Commercial forestry is a sustainable land use.
- The catchment in mature forest produced 6% less water than the one in pasture.
- Pasture produced almost 4 times more sediment than mature forest.
- During harvest there was a 6-fold increase in sediment yield.
- Sediment yield reduced to mature forest levels within 2-3 years of harvest.
- During harvest, native fish and macro-invertebrate communities became similar to pasture but returned to pre-harvest levels within 3-5 years.
- These findings can relate to more than 700,000 ha of North Island hill country.

The information gained from the Pakuratahi Land Use Study will be useful on the east coast for

Using this information

- + Planners, councils considering rules for land use
- + Land advisors, consultants advising clients
- + Forestry industry for planning harvesting
- + Farmers and landowners considering farm forestry options