



The Land Use and Water Quality project

To develop an approach to manage cumulative nutrient (N and P) loads while recognising the spin-off benefits for managing micro-organisms and sediments

The water quality challenge

Over the past twenty years rural land use in Canterbury has changed. Over the same time period, the amount of nutrients reaching waterways has increased, and this has led in some areas to a decline in water quality.

The need to manage water effectively in the region has led in recent years to the collaboratively-developed Canterbury Water Management Strategy and this is now being implemented. This strategy seeks to enable present and future generations to gain the greatest social, economic, recreational and cultural benefits from the region's water within an environmentally sustainable framework.

The strategy sets out water quality targets, requires the establishment of catchment limits for nitrate and other contaminants, and supports primary sector initiatives to improve land management practices.

In addition to the strategy, the Government's Proposed National Policy Statement for Water has now set a national goal of phasing out the contamination of fresh water.

What does the Land Use and Water Quality project aim to achieve?

The Land Use and Water Quality project is working alongside the Canterbury Water Management Strategy, and is complementary to it. It has a science aspect which aims to assess the effects of land use changes on the region's groundwater, streams, rivers and their associated ecosystems.

It also involves extensive work with the community to develop processes and tools which can be used by people in the catchment to reduce and/or avoid nutrient run-off and leaching into waterways. The project will ultimately result in a more effective policy framework for establishing limits for nitrate and other contaminants, and management strategies for improving water quality.

Environment Canterbury is working with the primary sector, and other stakeholders in a collaborative style to ensure solutions are workable and sensible while being science-informed. The outcome will be a range of preferred approaches for managing the impact of land use change on water quality, with these approaches supported and driven by primary industry and Environment Canterbury.

Who is involved?

Those involved with Environment Canterbury, DairyNZ, Federated Farmers, Horticulture New Zealand, Irrigation New Zealand, the Foundation for Arable Research, Fish & Game and Forest & Bird, and supported by the Crown Research Institutes AgResearch, Landcare Research, and NIWA.

What does the project involve?

The project is taking a case study approach with an initial focus on the Hurunui catchment in North Canterbury. The lessons learnt from this catchment will be applied to other areas across the region.

Critical to the project will be: scientific work to establish the implications of different nutrient limits; identifying which parts of the catchment are more susceptible to contaminant losses; modelling to predict the effects of changing land uses; and determining the implications of trends to more intensive land-uses and management practices on surface and groundwater quality.

The work also includes activities at three levels: with land users working on-farm; people living and working within the catchment; and with people working at a regional level to look at the links between economic, social and environmental factors.

The workshops will identify issues and workable solutions to overcome barriers to the take-up of any tools and processes.

Why start by looking at the Hurunui catchment?

The case study area consists of the mid and upper catchment areas of the Hurunui River including the Pahau and Waitohi river catchments. Environment Canterbury is already working with landowners to address water quality problems in this area. The communities with an interest in the Waiau and Hurunui Rivers are also part of a project reviewing and establishing environmental flows for the rivers.

In addition, the area:

- is representative of the surface and groundwater environment in Canterbury
- has reasonable surface and groundwater quality records
- has surface and groundwater hydrology which is known
- incorporates a mix of intensive and extensive land uses
- is likely to undergo further land use intensification in the future.

It is also of a size whereby the scope of the project is manageable.

What is the timeframe for the project?

The aim is to complete the consultation phase, policy development and evaluation by December 2010. The final report, setting out detailed recommendations for a range of initiatives, will be completed by the end of March 2011.

How will the project benefit Canterbury?

The outcomes of the project will be relevant to other catchments in the region and within New Zealand. The project team will be working closely with the team implementing the Canterbury Water Management Strategy.

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