



3.0 Nitrogen Management

The use and protection of the Tukituki River has long been a topic of debate.

Since 2008 Hawke's Bay Regional Council has been working on a range of plans and actions in the catchment to provide positive environmental, social, cultural and economic outcomes for the region, now and into the future.

A combination of water storage and higher minimum flows set by HBRC will release the potential for the Lower Tukituki River to be returned to more natural flows in summer, especially if current irrigators can be moved to storage.

A significant amount of work has gone into a wide range of investigations assessing the possibility of large-scale water storage in the Ruataniwha basin. The scheme, coupled with the Proposed Tukituki Plan Change provisions aims to improve water security for farmers, unlock economic potential for Hawke's Bay and improve water quality and quantity in the Tukituki River.

Limit effects on aquatic life, by managing Nitrates

Nitrogen is a nutrient that 'leaks' out of all land and often ends up in nearby water bodies. It is usually associated with farming activities but will come from any land, including land that is covered in native forest.

In some parts of New Zealand Regional Councils are looking at using Nitrogen limits to manage the growth of periphyton (slime and algae) in rivers. Over many years the HBRC has conducted investigations and research in the Tukituki. This work tells us that we can control the growth of slime and algae through active management of Phosphorous (see information sheet 2.0).

This is for two reasons:

- Given the specific characteristics of the catchment, it would take a very long time to effectively control periphyton by limiting Nitrogen. If this method was used, much of the current land use would have to cease and large areas of the catchment would have to be turned into forest. There would be significant adverse economic impacts for individual farmers and the region;
- Managing slime and algae can instead be achieved by limiting Phosphorous through a range of rules and incentives.

However, the setting of limits for a Nitrogen component called "nitrate" is proposed for the Tukituki Catchment.

High levels of the nitrate component of nitrogen in the water can affect the ability of living things in the water, such as fish and insects to grow. So it is important to carefully manage the amount of nitrate leaking out of the land and going into nearby waterbodies.

In late 2011 Hawke's Bay Regional Council asked NIWA to look at what are the maximum level of nitrate in the water that need to be set to protect the important species living in the Tukituki River, like Inanga, insects and trout. This is the first time any Regional Council has looked specifically at what the right levels should be for our native New Zealand species. This information has been used to develop a specific risk management framework for the Tukituki. This framework is a very conservative approach to managing nitrate because it includes very sensitive species that do not occur in the Tukituki or New Zealand.

This research is also being used for limit setting in many other regions and is being incorporated into the revised ANZECC (Australian and New Zealand Guidelines for Fresh and Marine Water Quality) guidelines.

In the Tukituki we are fortunate that our nitrate levels in the water are far lower than NIWA say the maximum limits need to be. This means we can safely add more nitrate to the water without affecting any of the important species living in river. The rules and policies we are proposing for the Tukituki will allow more nitrates to go into the water but will control the levels to ensure we do not breach the limits. This will ensure the protection of our important species.



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