



Established 1968

## New Zealand Freshwater Sciences Society

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Dear Dacia

### **Re: Water quality in New Zealand: Understanding the science (embargoed report of the Parliamentary Commissioner for the Environment)**

The New Zealand Freshwater Sciences Society (NZFSS) is the major society for individuals and organisations with interests in freshwater sciences, management and education in New Zealand. Members include staff from Universities, Central and Local Government, private industry, crown entities, NGOs and private consultancies. The objective of NZFSS is to establish effective liaison between all persons interested in any aspect of fresh and brackish water research in New Zealand, and to encourage and promote these interests.

The report by the Parliamentary Commission for the Environment (PCE) provides a wide-ranging snapshot and history of water quality changes in New Zealand. The report is suitable for educating and informing the public, water stakeholders, policy-makers and politicians. It indicates how water quality issues are by no means a recent phenomenon. Problems with bacterial contamination leading to human health issues and sediment erosion causing sedimentation problems and flooding of downstream waterbodies have been a persistent and widespread problem in New Zealand with the establishment of urban areas and removal of forest cover for pasture. The report highlights the historical legacy left by land use change, which unitary environmental management authorities continue to deal with today. However, diffuse nutrient pollution from agricultural sources has rapidly emerged to be one of the greatest environmental challenges. The report has identified the need for dual control of nitrogen and phosphorus to begin to address some of the present-day issues with diffuse pollution.


The PCE report has pointed to the important role that scientists play in uncovering the cause-effect relationships that influence water quality. It has also effectively issued a challenge to scientists; to better communicate the outcomes of scientific studies into implications for managing water at a catchment scale. NZFSS has strongly advocated for a non-partisan, science-based approach to freshwater management but continues to be either absent or under-represented from strongly stakeholder-dominated forums relating to water management. As the PCE report indicates, decision-making questions must be addressed in a context of sound scientific knowledge; the implication is that scientists, managers and policy-makers need to be more constructively engaged in this process, right through to policy level.

The PCE report has identified the differing vulnerabilities of aquatic systems to bacterial, sediment and nutrient contamination. In this context it has drawn a focus to estuaries as areas where, in erodible catchments, blanketing layers of mud and silt have directly killed native plants and animals, and shellfish beds have been buried. Increasingly estuaries are being affected by land-based nutrient runoff which will have flow-on effects for commercial and recreational harvests of scallops, mussels and eels.

A single case study in the PCE report is a chapter on the Manawatū River. This chapter presents some of the legacy issues in this catchment relating mostly to sediment erosion from steep pastoral land and the downstream problems of sedimentation and flooding. Nutrient inputs are increasingly being scrutinised due to the degraded biological state of the river. These nutrients come from a variety of sources, both point and diffuse-based. The chapter focuses on recent changes in pastoral land use towards more intensification associated with increasing stock numbers in the Manawatū River catchment. Expansion and intensification of dairy farming has come under particular scrutiny but a large percentage of the catchment includes sheep and beef farming on steep land, for which overall increases in intensification have the potential to substantially increase nutrient loads to the Manawatū River. The latter is an issue that is clearly applicable to pastoral areas right across New Zealand.

In summary the NZFSS considers that this is a timely report that can be used to increase the public's scientific knowledge of freshwater issues in New Zealand. The report draws attention to the need to support catchment-based freshwater research in New Zealand to support the goal of making sensible decisions about maintaining and restoring water quality.

Yours sincerely

A handwritten signature in blue ink, appearing to read 'David Hamilton', is positioned above the typed name.

David Hamilton  
President, NZ Freshwater Sciences Society  
cc. Executive Committee, NZ Freshwater Sciences Society