PCE Report

Water Quality in New Zealand: Understanding the Science

On 20 March the Parliamentary Commissioner for the Environment (PCE) Dr Jan Wright released a report on water quality titled: *Water Quality in New Zealand: Understanding the Science* ("the Report").

Although the findings and recommendations made in the PCE reports are not binding on Parliament, the reports are politically influential. Therefore, even though the Report does not make specific recommendations, there is a possibility that the Members of Parliament will seek to implement measures to address the water quality issues discussed in the Report. These measures may be implemented through amendments to governance, legislation, policy or regulation.

The Report was produced in response to the high public concern and vigorous debate surrounding water quality issues in New Zealand. The Report seeks to provide an accessible guide to water quality science, covering those aspects which are most useful for the many New Zealanders who are engaged in, and concerned about New Zealand's water quality problems. The Report is aimed at "*increasing understanding of the cause-effect relationships that determine the quality of freshwater…in order to support informed debate and decision-making."* The scope of the Report is limited to freshwater and the three big water contaminants: pathogens; sediment; and nutrients.

Recognising that the science of water quality is very complex and much of the information required to understand it highly technical, the PCE has sought to provide a relatively simplistic summary of water quality issues in New Zealand to enable widespread understanding of the water quality issues.

The Report provides a detailed outline of the history of New Zealand's water quality issues to make clear that these persistent and widespread issues have resulted from well over a century of continued bad water quality management and are therefore not a recent phenomenon.

The Report describes the source of pathogens, sediment and nutrients (in particular, nitrogen and Phosphorus), the impacts that each contaminant has on water quality and consequently impact upon the health of humans and animals, and how these contaminants are measured. The Report emphasises the vulnerabilities of aquatic life to bacterial, sediment and nutrient contamination and notes that nutrient pollution from agricultural sources has rapidly emerged to be one of the greatest environmental challenges.

The methods that are being used to protect and improve water quality in New Zealand are described. Pollutants that come from point sources, such as factories and sewage treatments plants, are the easiest to manage, although treatment can be costly. Methods to reduce point source pollution include avoiding the creation of the pollution in the first place, treating wastewater to lessen its impact on freshwater and discharging wastewater into the ocean or spraying it on to land.

Pollutants that come from diffuse sources such as, eroding slopes and grazing stock, are by their very nature much more difficult to manage. Methods to deal with the causes of diffuse source pollution include: avoiding overgrazing and maintaining vegetation cover; avoiding excess fertiliser; and reducing stock numbers. Interestingly, the Report states that an effective, albeit more expensive solution is to build wintering barns to house cows over the wetter months so cows do not pug the land causing it to become waterlogged. Methods to prevent diffuse pollutants getting into the water include: fencing off streams to keep out stock; establishing riparian strips; and preserving and restoring wetlands.

Managing trapped pollutants that are already in the water, for example sediment laden with phosphorus that has accumulated in a lake, is the greatest challenge and is likely to be very

expensive. Establishing a diversion wall to prevent pollution flowing into the waterbody is one possible method to deal with trapped pollutants.

The Report also provides a case study of the Manawatu River. The Report describes the nature and history of the Manawatu River's catchment and discusses the impact of pathogens, sediment and nutrients upon the Manawatu River. The Report concludes that the Manawatu River is perhaps not the worst river in the western world in terms of poor water quality, but is nevertheless very unhealthy.

As mentioned above the PCE does not make any specific recommendations, rather the PCE seeks to encourage a new way of thinking about the science of water quality problems. The PCE considers that water quality issues should involve working through the following questions:

- What are pollutants?
- How do the pollutants get into water?
- Where do the pollutants end up?
- What can be done about it?

The Report concludes that "*the quality of our fresh water is one of the biggest environmental challenges that we face in this clean green county…*"

There is no formal opportunity to comment on this Report. However, an opportunity for public input may arise if the Members of Parliament decide to take action to address the water quality issues raised in the Report. We will keep you informed of any such developments.

http://www.pce.parliament.nz/publications/all-publications/water-quality-in-new-zealand-understanding-the-science

Maree Baker-Galloway
Direct 03 471 5447
Email maree.baker-galloway@andersonlloyd.co.nz
Mobile 027 295 4704