Managing water quality:
Examining the 2014 National Policy Statement

June 2015

Parliamentary Commissioner for the Environment
Te Kaitiaki Taiao a Te Whare Pāremata

Contents

Overview

Ka ora te whenua, ka ora te wai, ka ora ai te iwi

If the land is well, and the water is well, the people will thrive

The beauty and variety of New Zealand's rivers, streams, lakes, estuaries, and aquifers is integral to our national identity. The 'clean green' brand on which our tourism industry relies is underpinned by images of clear clean water. Water is the lifeblood of our agriculture. And we value being able to swim, fish and gather mahinga kai in many places across the country.

When I became Commissioner, I knew little about water quality. I also knew that I would not be alone in this. This motivated my first report on the subject *Water quality in New Zealand: Understanding the science*. It was focused on the three water pollutants of greatest concern – pathogens, sediment, and nutrients.

To its credit, the Government has invested heavily in developing policy to improve the management of fresh water. A National Policy Statement (NPS) was introduced in 2011 with an objective of maintaining or improving water quality. Then in 2014 the NPS was given real heft with the addition of a framework proposed by the Land and Water Forum – a framework that introduced 'bottom lines' for water quality.

The 2014 NPS is a major step forward. Some regional councils have already begun to act, and there is a real sense of momentum.

However, we are not out of the woods yet. Some lakes and streams are below bottom lines and many others are not far above them. In many water bodies water quality continues to decline, making the task of improving it that much harder and more costly.

This report is an examination of six aspects of the 2014 NPS, focussed on elements that are absent or unclear. In the last section I have made six recommendations.

The first recommendation is concerned with the objective of 'maintaining and improving' water quality. As currently written, the NPS envisages regional councils allowing degradation of some waterways to be compensated by improvements in others.

This 'unders and overs' approach is unworkable in any scientific way. But even if it were, surely we should, and can be, more aspirational than this. Of course, some waterways may get worse before they get better, but that is no reason to set our sights low. If, for some reason, it is decided that some waterways should be allowed to degrade, this should be made transparent in the NPS by way of exception.

Another concern is the omission of estuaries. The water in estuaries is a mix of fresh water and seawater because they are located at the bottom of catchments where rivers meet the sea. But they are not currently covered by the NPS because it is only concerned with fresh water.

Yet estuaries are home to shellfish like tuangi and pipi, wading birds like oystercatchers and pied stilts, and juvenile fish like snapper, eels, and whitebait. Some have submerged forests of undulating seagrass, the only flowering plant in the sea. Estuaries are particularly vulnerable because of their location at the bottom of catchments.

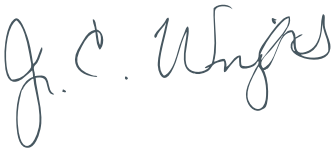
A weakness of the NPS is that it does not direct councils to take a strategic approach to the water quality challenges in their regions. Water bodies that are very vulnerable or subject to particular pressures should be considered first. If not, the difficulty and cost of 'maintaining and improving' will be that much greater.

One such pressure is the increasing nitrogen load on waterways from the change in land use that has been underway for the last two decades. My 2013 report, *Water quality in New Zealand: Land use and nutrient pollution*, showed a clear correlation between the amount of land converted to dairy farms and the amount of nitrogen that finds its way into water. In that report, I said that the expansion of dairying was creating a classic economy versus environment dilemma.

However, I am encouraged by the growing recognition that increased production is not the only way to increase the value of primary sector exports. In its Briefing to the Incoming Minister last year, the Ministry for Primary Industries wrote:

"Consensus is building across the primary sector that the more we can grow exports by growing value, the more we can insulate our economy from commodity cycles, and the better we can mitigate environmental impacts."

Next year's scheduled review of the NPS is an opportunity to ensure that the policy we have in place will actually lead to better water quality in our rivers and streams, our lakes and estuaries, and groundwater.



Dr Jan Wright

Parliamentary Commissioner for the Environment

1 Introduction

Over the past decade, the quality of the country's fresh water has become of great concern to many New Zealanders. In 2011, the Government issued the first National Policy Statement (NPS) for managing fresh water.[1]

In 2014, the Government substantially revised the NPS. Of central importance was the addition of a National Objectives Framework (NOF) that had been developed by the Land and Water Forum.[2] The NOF includes a set of national 'bottom lines' for different 'attributes' of water quality, such as total phosphorus, nitrate toxicity, and dissolved oxygen.

Regional councils must 'give effect' to the NPS in their own planning documents, report on their progress, and fully implement it no later than 31 December 2025.

Meanwhile, the Government is continuing to develop its freshwater policy.

- The Ministry for the Environment has a programme for developing further guidance on implementing the NPS that extends through to 2017. A draft of each 'guidance product' will be released to the public for feedback.[3]
- The Land and Water Forum has been 'reinvigorated' with a work programme extending until December 2017.[4]
- The Minister for the Environment intends to commission an independent review of the implementation and effectiveness of the NPS by 1 July 2016.[5]

The Parliamentary Commissioner for the Environment is an independent Officer of Parliament, with functions and powers granted by the Environment Act 1986. Her role allows a unique opportunity to provide Members of Parliament with independent advice in their consideration of matters that may have impacts on the quality of the environment.

In 2014, the Commissioner made a submission on the proposed amendments to the 2011 NPS for managing fresh water.[6] She remains concerned about a number of aspects of the amended NPS. The purpose of this report is to explain those concerns and recommend improvements to the 2014 NPS.

This report has been produced pursuant to ss 16(1)(a), (b) and (c) of the Environment Act 1986.

2 Maintaining or improving the overall quality of fresh water

The 2011 NPS set an objective to maintain or improve *"the overall quality of fresh water within a region"*.

In her submission on the Ministry for the Environment's 2013 discussion document, the Commissioner's first recommendation was focused on the need to clarify what this objective actually means. Others, including the Land and Water Forum, shared her concern, but the 2014 NPS retained the same unclear objective.[7]

There are two levels on which clarification is required.

- First, what does maintaining or improving the quality of a particular water body mean?
- Second, what does *"overall quality"* within a region mean?

Maintaining or improving water quality

To begin to think about the first question requires an understanding of the National Objectives Framework – the NOF. Box 2.1 contains a simplified description.

In the NOF, various attributes fall within ranges or 'bands'. For instance, *E. coli* lies in the C band if its annual median concentration lies between 540 and 1000 per hundred millilitres.

The Land and Water Forum recommended that *"maintain"* means staying within the same band and *"improve"* means moving to a higher band.[8] This would allow a degree of flexibility, but preclude significant degradation of water quality.

The overall quality of water in a region

Moving to the second question, what then might it mean to maintain or improve water quality *"overall"* within a region?

In its draft guide on implementing the NPS, the Ministry for the Environment endorsed what has become known as the 'unders and overs' approach. Under this approach water quality could be allowed to degrade in some parts of a region, but be compensated for by improvement elsewhere, in order to maintain or improve water quality *"overall"*.[9]

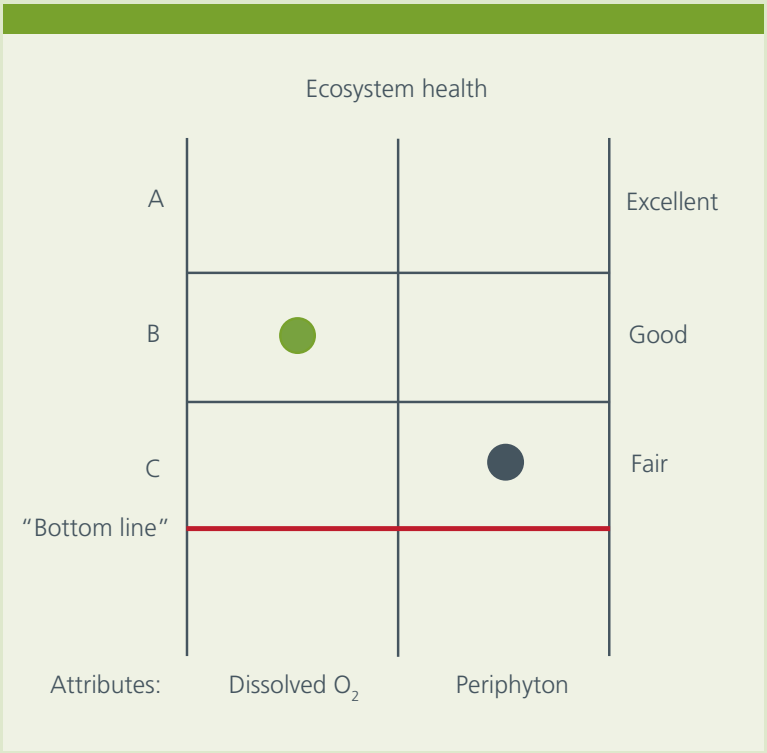
However, the adding up of gains and losses in water quality would require a complex accounting system laden with arbitrary weightings. How, for instance, is a decrease in total nitrogen in a lake to be compared with an increase in dissolved oxygen in a river?

Box 2.1 The National Objectives Framework (NOF)

Each regional council must first classify its water bodies into a set of freshwater management units (FMUs).

An FMU is to be managed for two compulsory national *values*, and potentially a number of other national or local values.[10]

The existing quality of the water in an FMU is measured using a set of *attributes* that are relevant for those values.



Dissolved oxygen and periphyton are two of the *attributes* that are important for maintaining the *value* of ecosystem health in freshwater.

The state of water quality in an FMU is found by measuring the attributes. It is unacceptable for an attribute to be below the red line, that is, below the C band.

The framework is to be used to set objectives and then numerical limits for each attribute for each FMU.

For example, if state B is set as the objective for dissolved oxygen, the minimum level to which it falls on a summer day should not fall below 5.0 mg/litre.[11]

Councils then set targets, methods and timeframes for achieving these limits.

The 'unders and overs' approach has recently been tested in the Environment Court and found wanting on several grounds.[12] Ngati Kahungunu Iwi Inc successfully challenged Hawkes Bay Regional Council's proposal to remove a 'no degradation' plan provision.

The Court found that compliance with s6(e) of the Resource Management Act (RMA) – recognising and providing for the relationship of Maori with their awa – *"… cannot possibly be achieved in failing to even aspire to maintain, let alone improve, the quality of water …"*

Further: *"To not aspire and attempt to at least maintain the quality of water abdicates the functions of a regional council under s30 …"*

The Court also highlighted the practical difficulties with implementing the 'unders and overs' approach, concluding that it would be impossible to know whether overall water quality within a region had been maintained or improved.

"… what kinds of contaminant in one water body could be offset against others, in a different waterbody? … What sort of beneficial effect would counterbalance an adverse effect when those effects are in different water bodies perhaps scores of kilometres apart?"

The 'unders and overs' approach is not workable. There would be major difficulties and expense for councils and communities trying to implement it.

Objectives are, by their very nature, aspirational. Deliberately allowing permanent degradation under the guise of 'maintaining and improving' is misleading and lacks the transparency that is characteristic of good policy.[13]

In some catchments it will be difficult or impossible to avoid some degradation for a time, while still aiming to 'maintain or improve'. If, for some reason, policy-makers consider that permanent degradation of a water body is unavoidable, then this should be done openly by way of exception after an informed public discussion.

The word *"overall"* should be deleted from Objective A2 in the NPS, and *"maintaining or improving"* be defined as at least staying within the same band in the NOF.

3 Freshwater Management Units

The NPS requires councils to divide or group water bodies in their regions into 'freshwater management units', known as FMUs. These units are the basis for measuring water quality and for choosing objectives and setting limits.

In the 2014 NPS, the definition of an FMU is very broad – FMUs need only be *"appropriate"*.[14] There are no principles or criteria specified for selecting FMUs.

FMUs could be set in a way that leads to inadequate management and monitoring of water quality. For example, if particularly vulnerable water bodies sit within a large FMU, they may not receive the attention they need.

In December 2014, the Ministry for the Environment released draft guidance on setting FMUs.

"… the main point to note is that the number and scale of FMUs in a region should reflect common objectives for the waterbody or bodies within it, so that representative monitoring sites can be readily established."[15]

The Ministry recognises that this is inadequate, and is planning to release further draft guidance for public feedback on selecting FMUs in July this year. There are no guiding principles within the NPS, which makes it even more important to propose a list of clear criteria for the selection of FMUs.

4

Exceptions to the national bottom lines

The NPS sets national 'bottom lines' for some aspects of water quality. Water quality objectives can be set below these bottom lines on a permanent basis in two types of exceptional circumstances.

- Where the impact has been caused by natural processes;
- Where the impact is partly caused by existing infrastructure.[16]

The first is clearly uncontroversial.

The second type of exception is included in the NPS as Policy CA3(b), which states if the water quality in an FMU is already below the national bottom line, and the regional council *"considers it appropriate"* to leave it there, it can do so if the degradation is partly caused by *"existing infrastructure"* listed in Appendix 3.

Appendix 3 is currently empty. The Ministry intends to release a draft Appendix 3 later this year for public consultation. A finalised Appendix 3 will then be introduced as an amendment to the NPS.

Regardless of the infrastructure that ends up listed in Appendix 3, Policy CA3(b) could be implemented as a 'get out of jail free card'. If, for instance, a geothermal power plant discharges a contaminant into a river that contributes to it being below the bottom line – no matter how small that contribution is – the regional council could consider it 'appropriate' to leave the river below the bottom line.

This is at odds with the intent expressed in the discussion document.

"Such exceptions will likely apply to river reaches that cannot meet bottom lines due to established infrastructure such as hydroelectricity generation ..." [17]

Policy CA3(b) should be amended to make it clear that the exceptional circumstances only apply where the existing infrastructure is the reason for the FMU being below the bottom line.

A further point is that 'existing' remains undefined.The intent of the policy is that 'existing infrastructure' would need to have been in place by the time the NPS took effect in 2014.[18] This should be clearly stated in Appendix 3.[19]

5

Taking a strategic approach

By 2025 regional councils must have 'implemented' the NPS.[20] In the language of the NPS, 'implementation' means that the different elements of the NPS are incorporated into regional plans. Thus, councils have ten years to divide their regions into FMUs, set objectives for each, set methods for achieving the objectives, measure the attributes of the FMUs, and so on.

'Implementation' does not necessarily mean objectives will be achieved or even progress made towards them.

"… improvements in water quality will have their own timeframes identified for achieving specific freshwater objectives".[21]

In many water bodies, delaying action until the NPS can be fully 'implemented' will lead to water quality falling, making the task of improving it that much harder and more costly. In some cases water quality could fall below the bottom line, possibly irreversibly.

It is therefore critically important that councils prioritise their water quality efforts and expenditure so that immediate problems and pressure points are tackled early. Not every water body in the country is in need of management. And where water quality is under pressure, not every attribute is important. Comprehensiveness should not trump effectiveness.

Taking a strategic approach to prioritising action would entail focused efforts on certain water bodies, including those that are especially vulnerable, or under particular pressure.

One significant and growing pressure is increasing nutrient pollution from land use change. About twenty years ago a major change in land use began in New Zealand, with many sheep and beef farms and some forests being converted to dairy farms.[22] This, along with increasingly intensive use of the land, is a growing source of nutrient pollution in many catchments.

The seriousness of this issue has been acknowledged by officials, who advised the Minister for the Environment that land use change *"… may result in a worsening of water quality in the short to medium-term and make the job of maintaining or improving water quality much harder in the longer-term …"* [23]

As collaborative decision-making and the traditional planning and regulatory processes take time, it is important that all regional councils set interim measures in catchments that are under severe pressure from land use change. [24]

Some regional councils have not waited for the NPS to put in place measures aimed at protecting water bodies and catchments that are obviously at risk – the Rotorua lakes in Bay of Plenty, Lake Taupo in Waikato, and catchments under pressure in Manawatu and in Canterbury.

Environment Southland now requires resource consent and a 'Conversion Environmental Plan' for new dairy farm conversions. While this is a great improvement on the past, approvals are not linked to nutrient limits.[25] Moreover, Environment Southland is setting nutrient limits first for Stewart Island and Fiordland, where water quality is not a major concern. The limit-setting process for the Oreti catchment will not begin until 2018.[26]

6

Measuring ecosystem health – a bio-indicator

Objective A1 (a) of the NPS is to safeguard *"the life-supporting capacity, ecosystem processes and indigenous species including their associated ecosystems, of fresh water"*. Accordingly, 'ecosystem health' is one of the two compulsory values that must be provided for in the objective and limit setting process.

The inclusion of the Macroinvertebrate Community Index (MCI) in the NOF as a way of measuring ecosystem health in rivers was a major theme in submissions on the 2013 discussion document.

Macroinvertebrates are very small animals that have no backbone – they are 'macro' because they can be seen with the naked eye. Aquatic macroinvertebrates can be collected in a net, identified, and counted. The 'richness' of a macroinvertebrate community can be measured and used as a bio-indicator, giving an estimate of the overall health of an ecosystem.

In New Zealand rivers, the presence of many mayfly and caddisfly larvae is a sign of a healthy aquatic ecosystem, while a preponderance of snails and chironomids indicates the opposite.

Macroinvertebrate samples have been collected by regional councils and NIWA for many years. The MCI is commonly used for measuring the effect of increasing nutrient pollution on freshwater aquatic ecosystems. [27]

The Ministry for the Environment sought scientific advice on the inclusion of a macroinvertebrate attribute in the NOF. The authors of the resulting technical report recommended MCI be included, and prepared an attribute table that could be slotted into the NOF with A, B, C, and D bands of MCI measurements for wadeable streams. [28]

However, the MCI was not included as an attribute in the 2014 NPS, following advice from the Ministry for the Environment.

"The greatest value in MCI is as an indicator of ecosystem health and as a measure of performance, not as an attribute to drive limit setting." [29]

MCI is a critical measure of the life-supporting capacity of fresh water, and it should be added to the NOF. Encouragingly it appears the MCI may yet be included as an attribute in the NOF. In March this year, the Minister for the Environment said in answer to a question in Parliament:

"I am having more work done on the practicality of its inclusion and may consider its addition in future if I can be satisfied that it is robust, practical, and workable".[30]

Source: Jon Sullivan, Flickr (CC BY-NC 2.0)

Figure 6.1 The presence of mayflies is a sign of a healthy aquatic ecosystem.

7 Estuaries

The NPS applies to lakes, rivers, wetlands and groundwater, but not to estuaries.

New Zealand's 300 estuaries are areas of considerable biodiversity, cultural and recreational significance. But many are under great pressure. Sedimentation is a major issue – sedimentation rates are ten times greater than before humans arrived. Eutrophication, driven by excessive nutrient concentrations is another: *"… mass blooms of green and red macroalgae … are now widespread on intertidal flats and shallow subtidal areas of nutrient-enriched New Zealand estuaries."*[31]

In 2013, the New Zealand Freshwater Sciences Society and the New Zealand Marine Sciences Society made a joint statement recommending that estuaries be included in the NOF because of the urgent need to manage them within limits.[32]

Estuaries are defined as 'coastal water' in the RMA and covered by the New Zealand Coastal Policy Statement, rather than by the NPS which only applies to 'fresh water'.[33] The reality is, of course, that the water in estuaries is partly fresh water and partly sea water, and it is the contaminants in the fresh water entering the estuary that are the problem.

The New Zealand Coastal Policy Statement contains an objective for maintaining coastal water quality and improving it where it has deteriorated to the point of causing significant adverse effects.[34] But it does not contain a framework for setting objectives and quantitative limits. Nor does it specify national bottom lines for estuaries.

Despite the exclusion of estuaries from the NPS, at least one council is proposing to plan for and manage estuaries through the framework established by the NPS. For example, Environment Southland has proposed to set the coastal boundary of its FMUs at the mouths of the region's estuaries. This will make the vulnerable Waituna Lagoon and others subject to the requirements of the NPS and the NOF.[35]

The NPS directs councils to manage whole catchments in an integrated way.

"To improve integrated management of fresh water and the use and development of land in whole catchments, including the interactions between fresh water, land, associated ecosystems and the coastal environment." [36]

However, estuaries are part of catchments, and should be managed in concert with rivers, lakes, wetlands and groundwater.

The NPS should be amended to include the management of estuaries under the NOF.[37]

Source: Phil Norton, Flickr (CC BY-NC-ND 2.0)

Figure 7.1 Mangawhai Estuary, Northland.

8 Conclusion and recommendations

In 2014 the National Objectives Framework (NOF) was added to the National Policy Statement (NPS) for managing fresh water. This was a major step forward for the management of water quality in New Zealand.

The framework sets some important bottom lines for water quality and specifies how councils should implement the NPS. It was originally proposed by the Land and Water Forum – a collaborative stakeholder-led group which made recommendations for changes to New Zealand's management of fresh water.

As it stands, key elements of the NPS are absent or unclear. This makes it difficult for regional councils who must implement the NPS. It is also difficult to know whether better water quality will actually result.

In many intensively farmed catchments water quality is already poor. Farmers need certainty too. Those making decisions on how to use and develop their land need to know what the NPS will mean for them.

Water quality is scientifically complex and developing policy is not easy. Six recommendations from the Commissioner follow. Some are aimed at providing greater clarity and certainty. Others are aimed at making the NPS better at protecting our many rivers, lakes, wetlands, aquifers, and estuaries.

Recommendation 1: Maintaining and improving water quality

Objective A2 in the NPS states that *"the overall quality of fresh water within a region"* is to be *"maintained or improved"*.

There is no definition of what it means to maintain or improve the water quality of a particular water body or an FMU. However, the Land and Water Forum has proposed a definition that is consistent with the National Objectives Framework.

A far more intractable problem is the maintenance or improvement of water quality *"overall"* within a region. Allowing degradation of water quality in some parts of a region to be balanced by improvements elsewhere – the 'unders and overs' approach – has been found by the Environment Court to be at odds with the law on several grounds. Moreover, gains and losses in water quality across a region simply cannot be added together in any satisfactory way.

I recommend that:

The Minister for the Environment amends the NPS as follows.

a. Defining *"maintain"* to mean staying within the same band, and *"improve"* to mean moving to a higher band within the National Objectives Framework.
b. Deleting the word *"overall"* from Objective A2.

Recommendation 2: Freshwater Management Units

The NPS requires councils to divide or group water bodies in their regions into water management zones termed 'freshwater management units' (FMUs). As there are no guiding principles within the NPS, clear criteria should be set for selecting FMUs.

I recommend that:

The Minister for the Environment directs his officials to provide a set of clear criteria for regional councils to use when selecting FMUs.

Recommendation 3: Exceptions to national bottom lines

The defining feature of the NPS is the setting of 'bottom lines' for water quality. However, exceptions are allowed. Regional councils can let water bodies stay below 'bottom lines' if existing infrastructure is a contributing factor.

It will be important to ensure that exceptions are only made where the existing infrastructure is the reason for an FMU being below the bottom line – simply contributing to it being below is not enough.

Further, the existing infrastructure to be listed in Appendix 3 should have been in place by 2014.

I recommend that:

a. The Minister for the Environment amend the NPS so that an exception can only be made for existing infrastructure if that infrastructure is the reason for the FMU being below the bottom line.

b. The Minister for the Environment direct officials to make it clear in Appendix 3 that 'existing' means existing in 2014.

Recommendation 4: Taking a strategic approach

In many water bodies, delaying action until the NPS can be fully implemented will lead to water quality falling, making the task of improving it that much harder and more costly. It is critically important that councils prioritise their water quality efforts and expenditure so immediate problems and pressure points are tackled.

One significant and growing pressure is the increasing nutrient pollution from the intensification of agriculture and the conversion of many sheep and beef farms and some forests to dairy farms.

I recommend that:

The Minister for the Environment amends the NPS to require regional councils to prioritise the setting of objectives and limits for water bodies and catchments that are particularly vulnerable and under increasing pressure, and to set interim measures to prevent degradation in the meantime.

Recommendation 5: Measuring ecosystem health – a bio-indicator

Ecosystem health is one of the two compulsory values in the NPS. Bio-indicators are used to measure the overall health of ecosystems.

The life-supporting capacity of fresh water is commonly measured by a bio-indicator called the Macroinvertebrate Community Index (MCI). It should be added to the National Objectives Framework in the NPS.

I recommend that:

The Minister for the Environment amends the NPS to include MCI as a compulsory attribute for measuring ecosystem health.

Recommendation 6: Estuaries

The NPS applies to lakes, rivers, wetlands and groundwater, but not to estuaries, although many of New Zealand's estuaries are under great pressure. Under the NPS, catchments are to be managed in an integrated way – this cannot be done if estuaries are excluded.

Bringing estuaries into the NPS would require councils to set objectives and limits above bottom lines for these vulnerable water bodies.

I recommend that:

The Minister for the Environment direct his officials to prioritise the work required to bring estuaries into the NPS.

Notes

1 The full title of this NPS is the National Policy Statement for Freshwater Management. It is referred to as the NPS-FM in Government documents. In this report, it is referred to more simply as the NPS.

2 The National Objectives Framework (NOF) was originally proposed in the second report of the Land and Water Forum. The Forum was established in 2009 with the aim of developing a shared vision and a common way forward among all those with an interest in water, through a stakeholder-led collaborative process.

3 The National Policy Statement for Freshwater Management 2014 guidance programme is on the MfE website.

4 The new work programme for the Land and Water Forum has three parts:

- Managing within limits, including allocation, to be completed by 30 September 2015
- Further population of the NOF to be completed by 30 September 2016
- Further refinements to the water management system, to be completed by 31 December 2017.

Future Government Engagement with the Land and Water Forum, 23 February 2015.

5 National Policy Statement for Freshwater Management 2014, p5.

6 Parliamentary Commissioner for the Environment. *Proposed amendments to the National Policy Statement for Freshwater Management 2011.* February 2014.

7 National Policy Statement for Freshwater Management 2014, Objective A2, p. 9. One change was made to part (a) of the objective. In the 2011 NPS, part (a) referred to the need to protect *"… the quality of outstanding freshwater bodies"*. In the 2014 NPS, this was changed to *"… the significant values of outstanding freshwater bodies"*. This appears to have weakened the objective – not only do *"outstanding freshwater bodies"* need to have been identified in Regional Policy Statements, so do their *"significant values"*.

8 Land and Water Forum, 2012. *Second Report of the Land and Water Forum: Setting Limits for Water Quality and Quantity, and Freshwater Policy- and Plan-Making Through Collaboration.* p.22. Rec 6.

9 *"A community may also choose a state lower than the current state (although not below the bottom line) and balance this with a commensurate improvement elsewhere in the region."* (Ministry for the Environment. 2014. *National Policy Statement for Freshwater Management 2014: Draft Implementation Guide*. Wellington: Ministry for the Environment, p.62)

10 The compulsory national values are ecosystem health and human health (secondary contact recreation). Regional councils can choose to manage freshwater for other values such as natural form and character, mahinga kai, swimming, drinking water, irrigation, and hydroelectric power generation. National Policy Statement for Freshwater Management 2014, Appendix 1.

11 National Policy Statement for Freshwater Management 2014, p.30.

12 *Ngati Kahungunu Iwi Inc v Hawkes Bay Regional Council* [2015] NZEnvC 50, 27 March 2015, Judge Thompson, Commissioner Leijnen, Commissioner Prime. The citations in the report come from paragraphs 104, 105, 62, and 63 respectively.

13 *"However, a conscious decision has been made ... to require a more stringent bottom line than the National Policy Statement which is to maintain water quality in all waterbodies rather than maintaining water quality in an overall sense. The Council does not want water quality to degrade any further than the current position within the various catchments of the region and does not consider it appropriate to allow some waterbodies to deteriorate while others must be improved to compensate." Proposed Southland Regional Policy Statement 2012*. Decision Report 6. Chapter 4: Water. p 13.

14 The National Policy Statement for Freshwater Management 2014 states "'***Freshwater management unit***' *is the water body, multiple water bodies or any part of a water body determined by the regional council as the appropriate spatial scale for setting freshwater objectives and limits and for freshwater accounting and management purposes.",* p.7.

15 Ministry for the Environment, 2014. *Freshwater Accounting: Guidance for Regional Authorities.* Wellington: Ministry for the Environment, p.16.

16 A third type of exception – the impact of historical activities that cannot be readily reversed - was initially proposed but not included in the 2014 NPS because submitters did not suggest any situations where it might apply. Ministry for the Environment. 2014. *National Policy Statement for Freshwater Management 2014: Summary of recommendations and Minister for the Environment's decision.* Wellington: Ministry for the Environment. p.8.

17 Ministry for the Environment, 2013. *Proposed amendments to the National Policy Statement for Freshwater Management 2011: A discussion document.* Wellington: Ministry for the Environment. p.27.

18 Email correspondence between PCE and MfE officials, 24 and 27 January 2014.

19 If 'existing' is to be linked to a particular version of the NPS taking effect, then all that would be needed to turn new infrastructure into existing infrastructure would be a new amendment of the NPS.

20 National Policy Statement for Freshwater Management 2014, Policy E1, p.19. However, if this would result in *"lower quality planning"* or be *"impracticable"*, 'implementation' need not be completed until 2030. Where councils cannot implement the NPS by the end of 2015 they must identify a programme of time-limited stages (to meet the 2025 date) and must report annually on their progress. Links to the progressive implementation programme notified by each council are available at:

http://www.mfe.govt.nz/fresh-water/national-policy-statement/regional-councils-implementation-programmes

21 Ministry for the Environment, 2014. *National Policy Statement for Freshwater Management 2014: Draft Implementation Guide.* Wellington: Ministry for the Environment. p.81.

22 Parliamentary Commissioner for the Environment *Water quality in New Zealand: Land use and nutrient pollution* 2013. p.29.

23 Ministry for the Environment, 2014. *Report and recommendations on the proposed amendments to the National Policy Statement for Freshwater Management and public submissions*, p.63. The full quotation refers to *"Land use change and over-allocation in the short term…"*, but this implies that land use change is only occurring in catchments where nutrient limits have already been set which is clearly not the case.

24 Again, the Land and Water Forum anticipated this need. *"Catchments are under different states of pressure, and prioritisation will be required to target the ones at high-risk. In some cases steps (such as the establishment of targets and interim limits) will need to be taken to prevent further degradation or to avoid over-allocation prior to the development of catchment-specific objectives, limits and water quality management frameworks."* Third Report of the Land and Water Forum, 2012. *Managing Water Quality and Allocating Water*, p.vii.

25 Environment Southland. *Regional Water Plan for Southland 2010*. Policy 13A – Transitional policy relating to the establishment of new dairy farms p.16.

26 Environment Southland. *Our Water and Land 2020 & Beyond Project*, January 2015.

27 Stark J.D. and Maxted J.R. 2007. *A user guide for the Macroinvertebrate Community Index*. Prepared for the Ministry for the Environment. Cawthron Report No.1166. p.13.

28 Collier K.J., Clapcott J and Neale M 2014. *A macroinvertebrate attribute to assess ecosystem health for New Zealand waterways for the national objectives framework – Issues and options*. Environmental Research Institute report 36, University of Waikato, Hamilton. Appendix 3.

29 Ministry for the Environment, 2014. *Report and recommendations on the proposed amendments to the National Policy Statement for Freshwater Management and public submissions.* Wellington: Ministry for the Environment. p.27.

30 New Zealand Parliament Questions for written answer. 2520 (2015) Julie Anne Genter to the Minister for the Environment (13 Mar 2015).

31 Stevens L and Robertson B, 2014. *Havelock Estuary 2014 Broad Scale Habitat Mapping Prepared for Marlborough District Council*, p.2.

32 *You Want Salt With That? Urgent Need to Fix Our Estuaries.* Joint Press Release New Zealand Freshwater Sciences Society and New Zealand Marine Sciences Society. 23 August 2013.

33 *"The NPS-FM applies only to freshwater, not coastal waters like estuaries. National direction on management of estuaries is provided in the New Zealand Coastal Policy Statement rather than the NPS-FM."* Ministry for the Environment, 2014. R*eport and recommendations on the proposed amendments to the National Policy Statement for Freshwater Management and public submissions*, p24.

34 New Zealand Coastal Policy Statement, Objective 1, Policy 21: Enhancement of Water Quality.

35 Environment Southland. *Minutes of the Meeting of the Southland Regional Council*, 12 November 2014, p.15.

36 National Policy Statement for Freshwater Management, Objective C1.

37 This may require an amendment to the Resource Management Act 1991.