Section 32 report:
Wetlands

for the Proposed Natural Resources Plan for the Wellington Region

greater WELLINGTON
REGIONAL COUNCIL
Te Pane Matua Taiao

Issues and Evaluation Report

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REGIONAL COUNCIL
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Section 32 report: Wetlands

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Contents

1. Overview and purpose

This report is an analysis of the provisions related to wetlands that have been included in the Proposed Natural Resources Plan for the Wellington Region (referred to as the proposed Plan and PNRP) and includes an analysis of the objectives, policies, rules and other methods for:

- Natural wetlands
- Natural wetlands with significant indigenous biodiversity values (significant natural wetlands)
- Natural wetlands with outstanding indigenous biodiversity values (outstanding natural wetlands)

The report is guided by the requirements of section 32 of the Resource Management Act 1991 (RMA) and should be read in conjunction with the following section 32 reports to understand the context and approach of the evaluation undertaken during development of the proposed Plan:

- Section 32 report: Introduction
- Section 32 report: Livestock access, break-feeding and cultivation
- Section 32 report: Aquatic ecosystems
- Section 32 report: Māori values

1.1 Report methodology

In order to fulfil the requirement of section 32(2) of the RMA, the report identifies and assesses the benefits and costs of the environmental, economic, social, and cultural effects that are anticipated from the implementation of the provisions.

In accordance with section 32(2), the analysis identifies opportunities for economic growth and employment opportunities that are anticipated to be provided or reduced. In addition, the analysis, where practicable, quantifies the benefits and costs and assesses the risk of acting or not acting if there is uncertain or insufficient information**.**

The structure of the report is shown below:

- *Introduction* (section 2 of this report)
- *Issues statements*: an outline of the main issues identified by the community (section 3 of this report)
- *Regulatory and Policy context:* identification of relevant national and regional legislation and policy direction (section 4 of this report)
- *Operative regional plans:* a summary of the relevant operative regional plans (section 5 of this report)

- *Evaluation of the appropriateness of the objectives*: an evaluation of the extent to which the proposed objectives are the most appropriate way to achieve the purpose of the RMA as required by section 32(1)(a) (section 6 of this report)

- *Assessment of the appropriateness of the policies, rules and other methods*: an assessment of the efficiency and effectiveness of the provisions as to whether they are the most appropriate way to achieve the objectives, in accordance with s32(1)(b) and s32(2) (section 7 of this report)

2. Introduction: Wetlands – valuable and diminishing

2.1 Wetland values

Wetlands are areas of poor drainage or where water accumulates; sites where groundwater seepage or flooding is frequent; and where land meets streams, rivers, lakes and estuaries. Wetland plants and animals are adapted to cope with an over-supply of wetness – some live nowhere else (obligate species), while others also live in dry habitats (facultative species), (Johnson and Gerbeaux 2004). The RMA says the term 'wetland' includes "permanently or intermittently wet areas, shallow water, and land water margins that support a natural ecosystem of plants and animals that are adapted to wet conditions".

Wetlands are vital for human survival. They are among the world's most productive environments; cradles of biological diversity that provide the water and productivity upon which countless species of plants and animals depend for survival. Wetlands are indispensable for the abundant benefits, or 'ecosystem services' that they provide humanity, ranging from fresh water, food, building materials and biodiversity, to flood control, groundwater recharge, and climate change mitigation (Ramsar 2014).

2.1.1 Value to Māori

In New Zealand wetlands are highly valued because they provide habitat for many endemic and indigenous species. Wetland plants and animals are used for food, medicines, and building and weaving materials, and are deeply embedded in kaupapa Māori. For example, according to the following Māori proverb, harakeke, or flax (*Phormium tenax*), is the wetland plant from which Maui made the fishing line with which he fished up the North Island, and snared Te Ra (the sun) to slow his progress across the sky.

> *Hutia te rito o te harakeke,*
> *Kei whea te kōmako e kō?*
> *Kī mai ki ahau;*
> *He aha te mea nui o te Ao?*
> *Māku e kī atu,*
> *he tāngata, he tāngata, he tāngata*
>
> *If the heart of harakeke was removed, where will the bellbird sing?*
> *If I was asked, what was the most important thing in the world;*
> *I would be compelled to reply, it is people, it is people, it is people!*

This proverb portrays harakeke as a symbol of the whanau, or family group. The outer leaves are the tupuna (ancestors); the inner leaves are the mātua (parents); the most inner leaf is the rito or pepe (baby). Only the tupuna are cut as the mātua are left to protect the pepe. Accordingly the proverb reflects that without the sound of children in the world (the next generation) mankind will not survive[1].

2.1.2 Cultural identity

Wetlands are part of New Zealanders' cultural identity as active, outdoorsy people (MSD 2010). Duck hunting season is one of the great social-recreational occasions in New Zealand, enjoyed for exercise and spending time outdoors with friends and family[2]. The New Zealand Game Bird Habitat Trust was established by an act of Parliament in accordance with the Wildlife Act 1953, primarily to improve wetlands for the benefit of game birds and other wetland species.

2.1.3 Ecosystem services

Wetlands are increasingly recognised and valued for the ecosystem services they provide (GWRC 2003):

- Wetlands act like a giant sponge – helping to control water flow and quality
- Their plants slow the flow of water from the land so in times of flood more can be absorbed into the soil
- In summer, stored water is slowly released from wetlands, maintaining water flows
- Bacteria in wetlands' damp soils clean the water by absorbing and breaking down about 90% of the nitrogen contained in farm runoff (such as fertilisers, chemicals and animal wastes)
- Cleaner water prevents nuisance algal blooms – protecting livestock, dogs and people
- Micro-organisms (fungi and bacteria) efficiently decompose and recycle nutrients

A case study of the Whangamarino wetland (DOC 2007) quantifies some of these values:

- As an annual benefit, the passive use (preservation) value of the wetland was assessed as 2.7 times greater than the active use value (recreation, flood control and fishing)
- Its ability to store water during peak flows results in reduced public works on floodgates (estimated at millions of dollars) and less damage to

[1] http://www.paharakeke.co.nz/about/harakeke-folklore-rituals/
[2] http://hunting.fishandgame.org.nz/game-bird-hunting-new-zealand

surrounding farmland (avoiding flooding of 7,300 hectares estimated at $5.2 million)

- It is an excellent medium for carbon sequestration, absorbing 0.5 tonnes per hectare per year from peat bogs

- Wetlands provide habitats for indigenous wetland birds and other threatened/uncommon wetland birds. The Whangamarino wetland hosts 20% of New Zealand's breeding population of native wetland birds

- Approximately 239 wetland plant species make the Whangamarino their home. Sixty percent of them are indigenous, and a number are rare

Another case-study on ecosystem services in the Manawatu-Whanganui region (NIWA 2009) - considered conservative because it *did not account for passive values such as the cultural and spiritual aspects of water* - showed that wetlands return the highest per hectare valuation of the ecosystems in the study as shown in Table 1 below:

Table 1: Annual value per hectare of ecosystem services in the Manawatu-Whanganui region (2010 prices)

Ecosystem Service	Direct ($)	Indirect ($)	Total ($)
Wetlands	5,900	42,400	48,300
Estuarine	2,000	24,000	26,000
Horticultural	21,100	100	21,200
Lakes	14,000	6,900	20,900
Rivers	14,000	6,900	20,900
Coastal	600	9,400	10,000
Exotic forests	500	2,000	2,500
Native forests	200	2,100	2,300
Dairy	1,600	500	2,100
Scrub	300	900	1,200
Cropping	900	100	1000
Sheep and beef	300	500	800

Source: NIWA 2009

2.1.4 Nutrient attenuation

The ability of wetlands to absorb nutrients has become an area of research focus in New Zealand since the quality of freshwater, and farming under environmental limits has been on the national agenda. Wetlands are one of the tools farmers can use to intercept and attenuate the diffuse loss of sediments, nutrients and faecal contaminants. Wetlands occupying 2-3% of catchment are predicted to be able to reduce annual nitrate losses by about 30-40%, and to also substantially reduce suspended solids and particulate phosphorus loads (Tanner et al 2015).

In a recent study (Tanner et al 2015) sites for constructing wetlands for nutrient attenuation were identified. In many cases these sites had been recently drained, and were the last and most difficult areas to convert to farmland. Constructing, or reconstructing, wetlands is estimated to cost $1-200,000 per hectare, with implementation costs of around $2-5,000 per hectare of farmed catchment. “Farmers were understandably not keen to convert such areas back into wetlands.” Maintaining and restoring wetlands will lead to cost savings when compared to man-made infrastructure solutions. Preventing the drainage of wetlands through education and regulation therefore becomes a priority issue for policy-makers.

2.1.5 Rich biodiversity

Wetlands are also valuable for their rich indigenous biodiversity. Wetlands are among the most diverse and productive ecosystems in the world. In terms of number and diversity of species supported, they compete with tropical rainforests and coral reefs. In terms of primary production rates, wetlands have no rival (Mitsch and Gosselink 1986). The combination of shallow water, high levels of nutrients, and high primary productivity is ideal for the development of organisms that form the essential base of our planet’s food web. The food web supports myriad species of birds, fish, amphibians, shellfish, and insects.

In New Zealand, wetland plants include 47 species of rush and 72 species of indigenous sedges. More bird species reside in wetlands than any other type of habitat in New Zealand, including 30% of our indigenous birds, compared to less than 7% worldwide. Iconic bird species like the Australasian bittern, brown teal, marsh crake and white heron rely on New Zealand’s remnant wetlands.

In addition, a disproportionate number of rare species of fish, insects and plants are supported by wetland habitat. Eight of 27 indigenous fish species are found in New Zealand wetlands, including shortfin eel, inanga (the major species of whitebait), and galaxid species such as the giant kōkopu.

2.2 Wairarapa Moana wetlands

The vast majority of original wetlands in the lower Wairarapa valley have been lost since human settlement, however the area still contains over half of the total wetland area in the Wellington Region. The Lake Wairarapa (Wairarapa Moana) wetlands are considered of national importance for flora and fauna, especially wading birds and rare turf plants. An application to Ramsar[3] to recognise the international importance of Wairarapa Moana is pending.

Wairarapa Moana is traditionally very important to Ngati Kahungungu and Rangitāne o Wairarapa for food gathering, especially tuna (eels). The National Water Conservation (Lake Wairarapa) Order was made in 1989. It recognises that:

[3] The Convention on Wetlands of International Importance, called the Ramsar Convention, is the intergovernmental treaty that provides the framework for the conservation and wise use of wetlands and their resources. www.ramsar.org

> *the wildlife habitat created in part as a consequence of the natural fluctuations of water levels, particularly over the eastern shoreline, is an outstanding feature of Lake Wairarapa.*

Wairarapa Moana wetlands are recognised for their role in the landscape, water and nutrient cycles, and the provision of habitat. Landowners, community groups, iwi, non-government-organisations, councils and central government have initiated work to manage and restore wetlands within the Wairarapa Moana area. The project mission is to enhance the spiritual identity and ecology of the wetlands, and improve recreational and economic opportunities for the benefit of everyone.

In summary, wetlands are highly valued by New Zealanders for recreation and hunting, the provision of food (mahinga kai) and traditional materials and medicines. Wetlands and the resources they provide are woven through folk-lore and cultural identity. Wetlands provide a wide range of ecosystem services from water retention and improving water quality to climate change mitigation. Wetlands also support rich indigenous biodiversity, including a disproportionate number of rare species.

2.3 Loss of wetlands in New Zealand

The global extent of wetlands is estimated to have declined between 64-71% in the 20th century, and wetland loss and degradation continues worldwide (Ramsar 2015).

In less than two centuries, the extent of New Zealand's wetlands has been severely reduced to an estimated 10% of their original extent (Aussiel et al 2011b). This loss is attributed to the conversion to pastoral agriculture from the mid-19th century, which involved fires, deforestation, drainage and ploughing. Further degradation of wetland habitat has occurred since the introduction of livestock. Increases in nutrient flows have changed the fragile equilibrium in the wetlands, subsequently altering their species composition.

A dramatic loss of indigenous flora and fauna has accompanied the loss and degradation of wetlands. Fifteen wetland bird species have become extinct, with eight out of 15 being waterfowl, and 10 species are on the list of threatened bird species. Fifty-two wetland plant taxa have been classified as threatened, and the loss of many indigenous fish species have also been attributed to the loss and degradation of wetlands (Aussiel et al 2008).

In 2007 it was estimated that just 9.4% (45,600 ha) of the pre-human extent of wetlands remained in New Zealand (MFE 2007), with only 2.3% left in the Wellington Region in 2008. The only region that has lost a greater percentage is Hawkes Bay with only 1.9% remaining. Many of the wetlands that endure in the region are degraded, and they continue to be degraded or lost by conversion to agricultural land, changes to their hydrology, construction of adjacent roads, the introduction of invasive weeds and pest animals, and pollution. It is clear from recent studies that the conversion of wetlands to agricultural land is still occurring (Tanner et al 2015). The Wellington Region has one of the lowest amounts of freshwater wetland habitat available in New Zealand due to the extent of degradation and habitat fragmentation (Ausseil et al 2011a).

The degradation of wetlands occurs when (GWRC 2003):

- The supply of water is altered from its natural state
- Areas of wetland are dug-out to create areas of open water where open water does not naturally occur
- Wetlands are infested with pest plants that smother the indigenous plant community
- Wetlands are accessible to pest animals (such as cats, stoats and ferrets) that prey on the indigenous fauna, and
- Wetlands are damaged by livestock grazing and trampling, altering plant communities, compacting and pugging the soil, and increasing nutrient inputs through urination and defecation

Degraded wetlands provide poor quality habitat for indigenous flora and fauna, provide fewer ecosystem functions of benefit to landowners, the community, and the environment, and are less likely to support healthy fisheries or mahinga kai. They are therefore less likely to be recognised and valued by the landowner or community, and more likely to degrade further or be lost all together.

3. Issues

There are five significant resource management issues related to managing wetlands identified through engagement with the regional community since 2010. These issues were collated in Parminter 2011, and detailed in the Issues report for the draft Natural Resources Plan (GWRC 2014). The original structure of the issues report addressed freshwater and coastal systems separately, and water quality and quantity as distinct from habitat. All these issues are relevant for this report given that the wetland provisions in the proposed Plan cover wetlands in freshwater and coastal environments, and deal with habitat and water issues.

3.1 Issue 1.11

Indigenous ecosystems and ecosystems of importance to indigenous species are significantly reduced in extent and continue to be degraded. Ecosystem health and function across the region is compromised.

Explanation

The region's indigenous ecosystems have been significantly reduced in extent by urban and rural development, specifically: wetlands; lowland forests; ephemeral and intermittent lowland streams; coastal dunes and escarpments; estuaries; and eastern 'dry land' forests (RPS). The remaining indigenous ecosystems continue to be degraded or lost through further expansion and use, and through the incremental and cumulative impacts of human activities. Rare or threatened species that rely on these ecosystems, or substitute non-indigenous habitats, face increasing pressure from the loss and degradation of habitat. The ability of ecosystems to fulfil their natural functions (such as

nutrient cycling, water purification, habitats for plants and animal reproduction, recruitment, dispersal and migration) is compromised when their size and health are reduced.

Activities that impact on indigenous ecosystems, and ecosystems with significant biodiversity values include:

- Modification, destruction, and fragmentation of ecosystems by pest plants and animals, grazing animals, habitat loss, urban and rural development, and land use intensification

- Contamination of freshwater and coastal ecosystems by sediments, pollutants, and nutrients from land use, stormwater and sewage discharges

- Draining wetlands, channelling or piping natural waterways, and the abstraction of water for human uses

3.2 Issue 1.2

The lower reaches of rivers, lakes, estuaries and harbours are places where there is an accumulation of adverse effects of human activities on land, in water bodies and on the coast.

Explanation

Low energy coastal and freshwater environments include the lower reaches of rivers, lakes, estuaries and harbours. These areas are adversely affected by such activities as sedimentation rates, land development works, and pollution from nutrients and heavy metals that stem from upstream catchments. Over time, the accumulation of different adverse effects can lead to the degradation of the mauri and the ecosystems of such fresh water and coastal environments.

Many of the region's low energy environments are under threat from use and development because they are surrounded by densely populated areas or upstream catchments. Places like the Ōtaki and Waikanae river mouths, Wellington Harbour, Te Awarua-o-Porirua Harbour and Lake Onoke are highly valued. It is vitally important that the amenity and natural values of these resources are retained for the health and well-being of communities.

Some other low energy environments in the region have been degraded to the extent that improvement is needed as a priority. Te Awarua-o-Porirua Harbour is one such example. At the time of writing, pollutants from roads, stormwater and sewage systems foul the Onepoto Arm. Sediment runoff is increasing with earthworks and associated urban development. Modifications to the harbour edge and streams have resulted in the loss of intertidal spawning, nursery and feeding grounds for marine life. Many shellfish beds are contaminated and the shellfish are unsuitable for eating. Recreational activities such as swimming, waka ama, sailing, rowing, kayaking, windsurfing, rowing and speed-boating are also affected by the excessive build-up of sediment in the harbour and poor water quality (Calder 2012). Future development such as Transmission Gully motorway, forest harvesting, wind farm development, and Porirua City's own growth within Te Awarua-o-Porirua Harbour catchment could further affect the

health of the harbour. All of Wellington City's greenfield development up to 2030 will occur in the Te Awarua-o-Porirua Harbour catchment.

The natural values of Lake Wairarapa have also deteriorated significantly from their original state following the development of surrounding land for agricultural production and the diversion of the Ruamāhanga River around Lake Wairarapa in the 1960's as part of the Lower Wairarapa Valley Development Scheme. The water quality of Lake Wairarapa is poor and is described as supertrophic - meaning that it has very high levels of nutrients, and at times algal blooms. Nutrients and sediment accumulate in the lake from erosion, land use, and discharges in the catchment including wastewater from Featherston township and dairy shed effluent discharges. The allocation of surface and ground water that flows to Lake Wairarapa has increased in recent years and it is now fully allocated. The balance of fish species has shifted with indigenous species now threatened by an increasing exotic fish population.

3.3 Issue 4.1

The ecosystem health and function of water bodies is being degraded by contaminated discharges from urban and rural land use, and the abstraction of water.

Explanation

Routine monitoring shows that the health of rivers, streams, lakes, wetlands, groundwater, and estuaries in the Wellington region is degraded by rural and urban land use, particularly in intensively farmed or populated catchments (Perrie and Cockeram 2010; Tidswell et al 2010; Milne et al 2010; Perrie 2005).

Rivers and streams are impacted by non-point sources of nutrients, sediment, organic matter, and toxicants from activities on the land, which cause deterioration in water quality. Increased nutrients cause unwanted algal growth which changes the habitat of freshwater fish and invertebrates, and increases the habitat's susceptibility to invasion by pest plants and fish. Increased sediments reduce water clarity, light penetration for plant growth, and can change the nature of stream beds where native fish and invertebrates live, spawn, and feed. Toxicants can be fatal in high concentrations, and in lower concentrations can affect the health and reproductive ability of aquatic life. Increased organic inputs can result in low dissolved oxygen and high ammonia concentrations which are toxic to aquatic life. The abstraction of water can reduce the dilution of these contaminants, and reduce the health and function and extent of wetlands. Controlled river flows and levels can impact on the amount of habitat available and the seasonal peaks and troughs that ecosystems are adapted to.

Wellington Regional Council has identified the maintenance of ecosystem health and function as priority for the region (GWRC 2012). Not only have many ecosystems been reduced in scale or lost completely, but the condition of many of our remaining ecosystems is poor. The introduction of pest plants and animals puts further stress on our ecosystems. Many freshwater ecosystems, including the iconic Wairarapa Moana, have been seriously ecologically

degraded. Once the water quality of groundwater and lakes is compromised, they are very difficult to rehabilitate or restore.

3.4 Issue 4.2

The ecosystem health and function of surface water bodies is being impaired by activities that degrade habitat quality, with some wetland and lowland stream ecosystems coming under particular pressure.

Explanation

Rivers, streams, lakes and wetlands and their margins are impacted by activities within the bed and on riparian margins (Milne et al 2010; Perrie 2008; Kingett Mitchell 2005; Warr 2007). These activities can reduce the extent of a habitat or cause deterioration in habitat quality by reducing the diversity of flow velocities, water depths and substrate sizes available for aquatic biota, removing interstitial spaces and refuge, increasing water temperature, or blocking of migratory pathways. The connectivity between ecosystem components can also be affected - for example: the connection between instream habitats and riparian margins can be impacted by stopbanking or bank lining; the connection between surface water and groundwater/hyporheic zone can be reduced by the lining of stream beds; and the connection between water and air can be reduced by piping of streams.

Some activities that can lead to habitat loss or degradation over time and impair freshwater ecosystem function and life-supporting capacity are:

- Filling in gullies and ephemeral streams and straightening or piping streams (stream reclamation)
- Lining stream banks and beds with rock or concrete
- Removing riparian and in-stream vegetation
- Works in and adjacent to rivers, such as aggregate extraction and earthworks that generate sediment, particularly during low flows
- The introduction and spread of pests, including didymo and pest fish, and weeds in wetlands which displace wetland plants and alter hydrology
- Livestock access to river and stream beds, lake beds and wetlands, and their margins
- Taking or diverting water from rivers and groundwater connected to rivers, wetlands, and springs
- Reclamation or drainage of lakes and wetlands
- The placement of structures in streams that limit the passage of fish and other migratory aquatic species

3.5 Issue 4.3

Land uses and discharges of contaminants reduce the quality of water bodies.

Explanation

The water quality of rivers, lakes, wetlands and aquifers deteriorates as water flows from the mountains to the sea. Generally, the quality of water bodies in upper catchments is high and declines as water flows downstream into modified parts of catchments where discharges and land use contribute to pollution.

Places where water bodies are in their natural state have been reduced from their former extent. As a consequence of their high natural and ecosystem values, water quality in water bodies with outstanding values should be maintained.

A sufficient amount of high quality drinking water is needed for the health of communities. Over 85% of the region's population has access to existing community sources of drinking water. These existing supplies of relatively high quality fresh water are fundamental to the health and well-being of communities.

Other purposes that water bodies are valued for include; aquatic ecosystems; mahinga kai and customary purposes; places, sites and areas with spiritual, cultural or historic heritage including, tauranga waka, taonga raranga, wāhi tapu, wāhi tipuna and urupä; domestic; drinking and washing water; animal drinking water; firefighting; electricity generation; commercial and industrial processes; irrigation; amenity and recreational activities; food production and harvesting; transport and access; cleaning; and dilution and disposal of waste.

Some rivers and lakes are no longer suitable for swimming or other forms of contact recreation and can no longer be used for customary uses such as mahinga kai. The ecosystems of some water bodies in the region have also changed to the extent that they now lie outside their range of natural variability. Livestock also need access to fresh water taken from water bodies of a suitable quality that is no longer met in some water bodies. The quality of these water bodies is not being managed sustainably and the amount of contaminants getting into them needs to be reduced.

3.6 Issue 4.4

People and communities taking, using, damming and diverting water for their social and economic benefit are compromising instream values.

Explanation

People and communities take, use, dam and divert water for the following purposes: domestic, drinking and washing water, animal drinking water, firefighting, electricity generation, commercial and industrial processes, irrigation, food production and harvesting, transport and access, and cleaning.

People and communities also want to protect the in-stream values of rivers, lakes and wetlands. Such in-stream values include the following: ecosystems and biodiversity; mahinga kai and areas of natural resources used for customary purposes; places, sites and areas with spiritual, cultural or historic heritage including tauranga waka, taonga raranga, wāhi tapu, wāhi tipuna and urupä; and amenity and recreation.

Taking, using, damming and diverting water adversely affects the in-stream values of surface water bodies. Prolonged low flows in rivers can have an impact on aquatic life and potentially exacerbate the effect of pollutants and contamination. Low flows in summer mean water temperatures and algal growths increase, especially if there is no riparian vegetation. Because people's need to take, use, dam and divert water is greatest at times of low rainfall, these

activities generally lower river flows when aquatic life is already stressed, so the management of low flows is a key part of any allocation system.

Taking and using groundwater can deplete the availability of groundwater in the immediate vicinity of the abstraction point leading to interference or drawdown effects on nearby bores. Taking and using groundwater can reduce groundwater levels in an entire aquifer system leading to a reduction in the amount of water available in the future. Lowered groundwater levels can also affect the flow of springs, rivers and streams, and water levels in wetlands. If continued abstractions keep the groundwater level low, these dependent ecosystems can be permanently affected.

Places where water bodies are in their natural state have been reduced from their former extent. As a consequence of their high natural and ecosystem values, the flows and water levels in water bodies with outstanding values should be maintained.

Over 85% of the region's population has access to existing community sources of drinking water. These community water supplies are important to the health needs of people and should be maintained.

3.7 Issue 6.1

Discharges of stormwater, sewage, sediment and other contaminants to the coast are adversely affecting the health and function of coastal ecosystems.

Explanation

Urban and rural discharges to aquatic receiving environments are adversely affecting coastal ecosystems and biodiversity. Catchment activities, such as urban development, forestry and farming, impact fresh water quality which ultimately impacts coastal ecosystems. Monitoring shows that coastal water quality is good in most places except for localised hot spots near discharges of sewage, stormwater, and inputs from streams and rivers (Glasby et al 1990; Pilotto et al 1998; Stephenson et al 2008; Milne and Sorenson 2009; Sorenson and Milne 2009).

Sedimentation is a more pervasive water quality issue, particularly for estuarine and harbour communities because they act as a sink for fine sediments and mud (Stevens and Robertson 2011). Muddy sediments have a higher tendency to concentrate pollutants and become oxygen depleted (Robertson and Stevens 2010), and so impact the distribution of invertebrate communities (Botherway ad Gardener 2002), such as cockles, and key habitat-forming species, such as seagrasses (Turner and Schwarz 2006). Water quality degradation in coastal environments is chronic and pervasive.

3.8 Issue 6.2

Human activities modify and interfere with natural physical and ecological coastal processes in ways that affect ecosystem health and function.

Explanation

Human activities have modified and continue to interfere with natural physical and ecological coastal processes in ways that affect ecosystem health and function. For example:

- Seawalls alter sand and sediment movement along beaches and estuaries and can cause erosion problems in some areas and deposition problems in others (Gibb and Cox 2009)

- Sand dunes and dune vegetation, and shore-dwelling marine species such as seabirds and seals can be significantly affected by inappropriate development, vehicles, and trampling by people and animals

- Some land uses and earthworks can cause increased rates of sedimentation - smothering aquatic life in low energy receiving environments such as harbour margins and estuaries (Stevens and Robertson 2011)

- Reclamation removes foreshore and seabed from the coastal marine area with consequential permanent loss of habitat and biological productivity and ecosystem function (Robertson and Stevens 2011)

- Structures occupying the foreshore and seabed may result in the permanent loss of habitat and biological productivity, or changes to the nature of benthic communities and the natural functioning of physical and biological processes (Robertson and Stevens 2011)

- The discharge of toxic substances or other material such as dredge spoil in the coastal marine area can bury, smother, or contaminate flora and fauna, and have adverse effects on public health if contaminated shellfish are consumed

- Exotic or introduced species can displace native flora and fauna and alter ecosystem function and physical processes (Robertson and Stevens 2007)

4. Regulatory and Policy context

New Zealand is a signatory to the Convention on Biological Diversity (1993), and to the Ramsar Convention (1975). As a signatory to these two international conventions, New Zealand has obligations to protect and restore wetlands. This commitment is captured in the New Zealand Biodiversity Strategy (2000).

In 2007 the Ministry for the Environment identified the protection of indigenous vegetation associated with wetlands (and sand-dunes) as number two of four national priorities for the protection of biodiversity on private land (MFE 2007).

4.1 National requirements and guidance

4.1.1 Resource Management Act

The purpose of the Resource Management Act 1991 (RMA or the Act) is to promote the sustainable management of natural and physical resources. As stated in section 5 of the RMA, sustainable management includes safeguarding

the life-supporting capacity of air, water, soil and ecosystems and avoiding, remedying, or mitigating any adverse effects of activities on the environment (noting that the environment is defined in the RMA as including ecosystems and their constituent parts).

The following sections of the RMA are particularly relevant to managing and protecting wetlands.

Section 6 requires all persons exercising functions and powers under the RMA, including regional councils, to recognise and provide for the following matters of national importance relevant to aquatic ecosystems and biodiversity:

> (a) the preservation of the natural character of the coastal environment (including the coastal marine area), wetlands, and lakes and rivers and their margins, and protect them from inappropriate subdivision, use, and development.
>
> (c) the protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna.
>
> (e) declares that another nationally important matter is the relationship of Māori and their culture and traditions with their ancestral lands, water, sites, waahi tapu, and other taonga.

Section 7 confirms that when protecting natural and physical resources, regional councils shall have particular regard to (aa) the ethic of stewardship, and should; (c) maintain and enhance amenity values. Section 7(d) states that management shall have particular regard to the intrinsic values of ecosystems. The RMA defines intrinsic values in relation to ecosystems, as those aspects of ecosystems and their constituent parts which have value in their own right, including (a) their biological and genetic diversity; and (b) the essential characteristics that determine an ecosystem's integrity, form, functioning, and resilience.

Sections 30(1)(c) and (ga) state that regional councils shall control the use of land to maintain and enhance ecosystems in water bodies and coastal water. Regional councils shall also establish, implement, and review the objectives, policies, and methods for maintaining indigenous biological diversity.

Wetlands are found in the beds of lakes and rivers, the coastal environment, and on land. Restrictions and powers in relation to all of these environments are relevant and are described in the RMA under sections 9, 12, 13, 14, and 15.

4.1.2 New Zealand Coastal Policy Statement

The New Zealand Coastal Policy Statement 2010 (NZCPS) promotes sustainable management of the natural and physical resources of the coastal environment, including coastal land, foreshore and seabed, and coastal waters from the high tide mark to the 12 nautical mile limit. Section 67(3)(b) of the RMA requires that the regional plan give effect to the NZCPS. Objective 1 and Policy 11 of the NZCPS are particularly relevant to the protection of wetlands.

Objective 1 and Policy 11 of the NZCPS are directly relevant to the management of wetlands. Objective 1 is:

To safeguard the integrity, form, functioning and resilience of the coastal environment and sustain its ecosystems, including marine and intertidal areas, estuaries, dunes and land, by:

- *maintaining or enhancing natural biological and physical processes in the coastal environment and recognising their dynamic, complex and interdependent nature;*

- *protecting representative or significant natural ecosystems and sites of biological importance and maintaining the diversity of New Zealand's indigenous coastal flora and fauna; and*

- *maintaining coastal water quality, and enhancing it where it has deteriorated from what would otherwise be its natural condition, with significant adverse effects on ecology and habitat, because of discharges associated with human activity.*

Policy 11 directs the regional plan to protect indigenous biodiversity in the coastal environment. It contains a comprehensive list of taxa, ecosystems, habitats and areas from which the adverse effects of activities must be avoided.

Policy 11 directs regional councils to protect indigenous biodiversity in the coastal environment by:

- Avoiding the adverse effects of activities on particular species, habitats and ecosystems, and

- Avoiding significant adverse effects, and avoiding, remedying or mitigating other adverse effects of activities on habitats with particular characteristics

There is strong direction in this policy to protect indigenous biological diversity in the coastal environment by avoiding adverse effects of activities on habitats that are threatened or naturally rare. As noted above, less than 2.3% percent of the original extent of wetlands remains in the Wellington Region (Ausseil et al 2011), placing wetlands firmly in the category of 'acutely threatened' environments (<10% indigenous vegetation cover remaining), (Walker et al 2007). Policy 11(b) contains further direction to avoid significant effects and otherwise avoid, remedy or mitigate effects on a number of other habitats types, and particularly notes coastal wetlands as being particularly vulnerable to modification.

NZCPS Policies 13 and 14 direct the preservation and promote restoration of natural character. Policy 14 promotes restoration through a number of pathways including the use of policies, rules and other methods in regional policy statements and regional plans to direct restoration and rehabilitation. Policy 14 also directs that conditions be imposed on resource consents to

rehabilitate and restore natural character, making special mention of saline wetlands and intertidal saltmarsh.

4.1.3 National Policy Statement for Freshwater Management

The National Policy Statement for Freshwater Management 2014 (NPS-FM) supports improved freshwater management in New Zealand by directing regional councils to establish objectives and set limits for fresh water in their regional plans. Recent amendments to the NPS-FM give regional councils specific direction on how this should be done. Section 67(3)(a) of the RMA requires that the regional plan give effect to any national policy statement.

The objectives of the NPS-FM are "to safeguard: the life-supporting capacity, ecosystem processes and indigenous species including their associated ecosystems, of freshwater…" by sustainably managing land use, discharges of contaminants (Objective A1) and water takes and use (Objective B1).

The NPS-FM specifically requires protection of the significant values of wetlands when managing water quality to achieve Objective A2, and when managing water quantity to achieve Objective B4.

The NPS-FM directs regional councils to protect the significant values of outstanding water bodies. "Outstanding freshwater bodies" are defined in the NPS-FM as those water bodies identified by a regional policy statement or regional plan as having outstanding values, including ecological, landscape, recreational and spiritual values[4].

4.1.4 Proposed National Policy Statement on Biodiversity

The Proposed National Policy Statement on Biodiversity 2011 (pNPSB) was prepared under the RMA to set the national policy direction for managing natural and physical resources to maintain indigenous biological diversity.

The pNPSB is intended to provide clearer direction to local authorities on their responsibilities for managing indigenous biodiversity. The pNPSB would require district plans and some regional plans to identify areas of significant biodiversity based on criteria for identifying areas of indigenous vegetation and habitats of indigenous animals that are rare and/or threatened at a national level.

Local authorities would be required to manage the effects of activities through district and regional plans and resource consent decisions (or be satisfied that effects are managed by other methods) to ensure that there is no net loss of significant indigenous biodiversity.

As the pNPSB has not been finalised, the proposed Plan is not required to implement or give effect to it. The Greater Wellington Biodiversity Strategy is discussed below in section 4.2.4.

[4] Outstanding wetlands are discussed in this report. See the Section 32 report: Aquatic ecosystems for discussion of outstanding rivers and lakes.

4.1.5 Biosecurity Act

The Biosecurity Act 1993 provides a legal basis for excluding, eradicating and effectively managing pests and unwanted organisms.

Sections 12B and 13 contain the duties and function of regional councils under the Biosecurity Act, including the provision of a strategic and statutory framework for effective and proficient management of selected pest animal and pest plant species in the Wellington region.

Section 7A of the Biosecurity Act provides an exemption, under certain circumstances, from the requirements of Part 3 of the RMA, such as section 9, 12, 13, 14 and 15 restrictions on use and activities. There are no recorded section 7A exemptions in the Wellington region (Kelsall *pers com*).

Many of WRC's pest control activities under the Biosecurity Act rely on the use of agrichemicals and vertebrate toxic agents. These activities are carried out under the requirements of the operative Regional Plans, which require resource consent for the use of these chemicals in some situations.

4.1.6 Freshwater Fisheries Regulations

Pursuant to the Fisheries Act 1983, the Freshwater Fisheries Regulations 1983 contains restrictions on activities related to fish passage and activities in the beds of lakes and rivers.

Section 70 of the Freshwater Fisheries Regulations prohibits any person from taking indigenous fish and leaving them upon the bank or shore.

Part 6 of the Freshwater Fisheries Regulations gives the Director-General of the Department of Conservation (DOC) a decision-making role in relation to fish passage when facilities such as new or modified culverts, fords, dams, weirs and diversions on natural waterways are proposed.

According to the DOC website, where DOC is satisfied that a regional council has imposed appropriate conditions for culverts and fords relating to fish passage, it has interpreted an Environment Court ruling (Transit NZ vs Auckland Regional Council, A100/00 (5 NZED 814) as meaning additional permission under the Freshwater Fisheries Regulations is at its discretion.

Part 6 and section 70 of the Freshwater Fisheries Regulations, are requirements in addition to those contained in the proposed Plan under section 13 of the RMA for activities on the beds of lakes and rivers.

The RMA section 66(2)(c)(iii) requires regional plans to have regard to regulations relating to fisheries resources.

4.1.7 Water Conservation Order for Lake Wairarapa

The purpose of a Water Conservation Order (WCO) is to recognise and sustain outstanding amenity or intrinsic values of a water body in either its natural or modified state.

Legislation that enabled the creation of WCOs was enacted in 1981 under the Wild and Scenic Rivers Amendment to the Water and Soil Conservation Act 1967. This Act is now a part of the RMA, and today WCOs are regulated under Part 9 of the RMA.

Lake Wairarapa has been protected, in part, by a WCO since 1989. The WCO specifically protects the "wildlife habitat" on the eastern shoreline of the lake from reclamation and altered lake water levels. Clause 4 of the Lake Wairarapa WCO makes it clear that it is prohibited to "divert any water within Lake Wairarapa". Clause 5 deals with all other water rights and states:

> *No water right shall be granted and no general authorisation shall be made in respect of any part of Lake Wairarapa if the effect would be significantly diminish the outstanding wildlife habitat features of any part of the lake.*

Legal opinion to the WRC is that the outright ban in Clause 4 applies only to reclamation activities within Lake Wairarapa, such as poldering (Greenberg 2014). Clause 5 does not prohibit water use, rather it requires that water takes and discharges be assessed on a case-by-case basis in order to assess their impact on wildlife values.

The WCO is specific to the open water of Lake Wairarapa and does not cover the wetlands associated with the shoreline. However, the ultimate outcome of preventing reclamation, and managing lake levels and the diversion of water is to preserve the wetlands on the eastern shore.

Section 67(4)(a) of the RMA requires a regional plan to not be inconsistent with a WCO.

4.1.8 Guidance on Good Practice Biodiversity Offsetting in New Zealand

The non-statutory Guidance on Good Practice Biodiversity Offsetting in New Zealand (2014) contains an overview of biodiversity offsetting, including its definition, principles, key concepts, application in New Zealand and the steps necessary to demonstrate good practice when choosing to develop and implement a biodiversity offset and achieve no net loss.

Provisions in the proposed Plan for biodiversity offsetting are designed in accordance with this guidance, working closely with the Department of Conservation.

4.2 Regional requirements and guidance

4.2.1 Regional Policy Statement

The RMA section 67(3) requires the proposed Plan to give effect to the relevant regional policy statement. The second generation Regional Policy Statement for the Wellington Region (RPS) became operative on 24 April 2013. It provides a robust, integrated approach to promoting the sustainable management of natural and physical resources.

Objective 12 of the RPS states that: the quantity and quality of fresh water:

a) meet the range of uses and values for which water is required

b) safeguard the life supporting capacity of water bodies and

c) meet the reasonably foreseeable needs of future generations.

To achieve Objective 12, Policy 12 states that regional plans shall include policies, rules and/or methods that:

a) require that water quality, flows and water levels, and the aquatic habitat of surface water bodies are to be managed for the purpose of safeguarding aquatic ecosystem health and

b) manage water bodies for other purposes identified in regional plans.

Objective 13 states that the region's rivers, lakes and wetlands support healthy, functioning ecosystems. To achieve Objective 13, Policy 18 states that regional plans shall include policies, rules and/or methods including to:

a) promote the protection and reinstatement of riparian habitat

b) discourage stock access to rivers, lakes and wetlands

c) discourage the diversion of water into or from wetlands – unless diversion is necessary to restore hydrological variation to the wetland

d) discourage the removal or destruction of indigenous plants in wetlands.

Policy 19 also achieves Objective 13, and requires regional plans to include policies, rules and/or methods that:

a) maintain or enhance the amenity and recreational values of rivers and lakes, including those with significant values listed in Table 15 of Appendix 1 and

b) protect the significant indigenous ecosystems and habitats with significant indigenous biodiversity values of rivers and lakes, including those listed in Table 16 of Appendix 1.

Objective 16 states that indigenous ecosystems and habitats with significant biodiversity vales are maintained and restored to a healthy functioning state.

To achieve Objective 16, Policy 23 requires the proposed Plan to identify indigenous ecosystems and habitats with significant indigenous biodiversity values, and sets out a list of criteria to guide that identification: representativeness; rarity; diversity; ecological context; and tangata whenua

values[5]. These criteria cover the identification of those ecosystems and habitats stipulated in Policy 11 of the NZCPS.

Only wetlands are discussed in this report. See the Section 32 report: Aquatic ecosystems for discussion of other ecosystems and habitats that meet the Policy 23 criteria.

Policy 24 directs the regional plan to include policies, rules and methods to protect indigenous ecosystems and habitats with significant indigenous biodiversity values from inappropriate subdivision, use and development.

Policy 61 makes WRC and the regional plan responsible for controlling the use of land to maintain and enhance ecosystems in water bodies and coastal water (specifically including wetlands). It also makes city and district councils and district plans responsible for controlling the use of land for the maintenance of indigenous biological diversity – excluding within the coastal marine area and beds of lakes and rivers, but not explicitly excluding wetlands. Arguably, both regional and district plans have responsibility for controlling the use of land to maintain and enhance wetland ecosystems.

4.2.2 Regional Pest Management Strategy

WRC's biosecurity work is guided by the Wellington Regional Council's Regional Pest Management Strategy 2002–2022 Five Year Review 2007 (GWRC 2009), which seeks to:

- Minimise the actual and potential adverse and unintended effects of pests on the environment, economy, biodiversity and the community and
- Maximise the effectiveness of individual pest management through a regionally co-ordinated response

In accordance with section 12B and 13 of the Biosecurity Act, this strategy document will be replaced with a Regional Pest Management Plan (RPMP) and a Regional Pathway Management Plan.

At the time of writing this report, regional councils are waiting for the Ministry for Primary Industries to release a National Policy Direction (NPD) to guide how the new RPMP's will be developed. There have been a number of delays in the release of the NPD but it is currently forecast for mid-2015.

Under s66(2) of the RMA regional plans shall have regard to any management plans and strategies prepared under other Acts.

4.2.3 Conservation Management Strategy under the Conservation Act

Conservation management strategies (CMS) are developed for each region by the Department of Conservation under the Conservation Act 1987. CMSs identify how DOC will manage the land, plants, birds, wild animals, marine

[5] Ecosystems and habitats which are identified as significant using the *tangata whenua values* criterion of RPS Policy 23 are included in the proposed Plan as sites with significant mana whenua values (Schedule C), and are discussed in Section 32 report: Māori values.

mammals, and historic and cultural sites it is responsible for in a region to achieve national conservation outcomes.

The operative Wellington CMS 1996-2005 was developed in 1996 (DOC 1996). In particular relevance to this report, the Wellington CMS identified estuaries (including saltmarsh and wetland habitat) as a priority for conservation management.

The operative Wellington CMS is being reviewed and the new CMS will include a much larger region, which spans from Wellington up the east coast to Cape Turnagain, taking in the Tararua and Wairarapa districts, and across the Ruahine Forest Park. On the west coast, the area includes Taihape, out to the mouth of the Turakina River and back down the Rangitikei and Horowhenua and Kāpiti coast to Wellington.

Under section 66(2) of the RMA regional plans shall have regard to any management plans and strategies prepared under other acts of parliament.

4.2.4 GWRC Biodiversity Strategy

The Biodiversity Strategy 2011-21 (GWRC 2012) guides Greater Wellington's biodiversity management activities, recognising the guidance of the New Zealand Biodiversity Strategy and the requirements of the RMA. The regional strategy aims to protect areas with high biodiversity values across the region as well as to restore ecosystems in degraded areas, where possible. The strategy addresses both terrestrial and aquatic ecosystems.

Of relevance to the proposed Plan, the strategy seeks to identify the highest biodiversity value stream systems for proactive management, to re-establish riparian areas along the 10 highest priority stream systems, and to remove barriers to indigenous fish passage with priority given to high value stream systems.

The strategy supports a suite of programmes for promotion, advocacy and incentives for good practice including fencing livestock out of streams, riparian management, fish passage and stream restoration.

The strategy also supports site management, promotion and advocacy in areas of high biodiversity within the coastal environment.

5. Operative regional plans

5.1 Regional Coastal Plan

The operative Regional Coastal Plan for the Wellington Region (Coastal Plan) identifies the reduction of the life-supporting capacity and the modification and loss of habitats and ecosystems as an issue for the Wellington region.

Objective 4.1.1 in the Coastal Plan states that the intrinsic values of the coastal marine area and its components should be preserved and protected from inappropriate use and development. Objective 4.1.6 states that the natural character of the coastal environment should be preserved from inappropriate subdivision, use and development.

Policies to achieve these objectives include Policy 4.2.1, which recognises that the intrinsic values of the coastal environment are worthy of protection, and Policy 4.2.2, which encourages new developments in areas where natural character has already been compromised. Policy 4.2.35 allows conditions on resource consents to avoid, remedy or mitigate any adverse effects of activities on (among other things) fauna, flora, habitat, natural character and amenity values.

Appendix 2 of the Coastal Plan lists Areas of Significant Conservation Value. Of the five areas listed in the schedule, three are noted as containing significant wetland habitat: Waikanae Estuary, Pauatahanui Inlet, and Lake Onoke. Policy 4.2.10 protects the values of the areas listed in Appendix 2, through a suite of rules related to activities within Areas of Significant Conservation Value: discharges to air are non-complying; take, use, damming or diversion of water is non-complying; surface water and foreshore activities not covered by any other rule are non-complying.

The Effectiveness Report for the Regional Coastal Plan (GWRC 2008) summarised that:

- Water quality is generally good except for localised hotspots, near discharges of sewage, stormwater and the mouths of streams and rivers

- Water quality, shellfish flesh testing and sediment results suggest that the discharges to water provisions are not stringent enough, particularly for stormwater. When sediment settles out of suspension it shifts from being a water quality issue, to being a habitat quality issue - estuaries and coastal wetlands are filled with sediment, and habitats such as seagrass are smothered

- Contaminant flows via rivers and streams needs to be addressed by coordinating the Coastal Plan with the other regional plans (particularly the Regional Freshwater Plan)

- There is a great amount of public concern about coastal development and subdivision, most of which is not within the jurisdiction of the Coastal Plan, but some of which would occur in estuaries and river-mouths where wetland vegetation is predominantly found

- Generally, the policies do give effect to the objectives, but often not very well. Many of the rules fall short of giving effect to the policies. Most methods either are not properly targeted to implement policies or have not been done

The effectiveness report gives direction to the review of the regional plans and the development of provisions for the management of wetlands in the proposed Plan.

5.2 Regional Freshwater Plan

The operative Regional Freshwater Plan for the Wellington Region (Freshwater Plan) identifies several issues with respect to natural and amenity

values that are relevant to the management of wetlands. Wetlands are noted as important because drainage in the past had significantly reduced the number and extent of wetlands in the Wellington Region. Less than 10% of the region's original wetlands remained at the time the Freshwater Plan was produced in 1999. There was concern that adverse effects on remaining wetlands that have retained a high degree of natural character should be avoided.

Wetlands are also mentioned as being vulnerable to the effects of subdivision, use and development; providing habitat for indigenous threatened species; having recreational values; and being affected by water abstraction.

The reclamation or drainage of wetlands was singled out as a particular issue in the Freshwater Plan. Wetlands were acknowledged for their role in buffering lakes and rivers from sediment and nutrients, and slowing flood flows. Reclaiming or draining wetlands was said to reduce freshwater habitat diversity as well as removing these other ecosystem services.

Objective 4.1.4 seeks to protect the natural character of wetlands, lakes and rivers from inappropriate subdivision, use and development, and Objective 4.1.5 aims to safeguard the life-supporting capacity of water and aquatic ecosystems from the adverse effects of subdivision, use and development. Objective 4.1.7 seeks the maintenance and enhancement, where appropriate, of the amenity and recreational values of wetlands, lakes, rivers and their margins.

Policy 4.2.9 directs users of the Freshwater Plan to have regard to the following characteristics of surface water bodies when considering the protection of their natural character from the adverse effects of subdivision, use and development: the protection of ecosystems, habitats and species; water quality; and natural flow characteristics.

Policy 4.2.27 encourages the restoration or rehabilitation of freshwater resources, including the establishment of wetlands. The creation of new wetlands is described as "highly desirable". Policy 7.2.15 discourages the reclamation or drainage of wetlands in river and lake beds.

Policies 6.2.12 and 6.2.13 manage the water levels of wetlands in the region – specifically defining the minimum levels of Lake Wairarapa to give effect to the National Water Conservation (Lake Wairarapa) Order 1989.

Activities in wetlands in the beds of lakes and rivers are managed by a catch-all discretionary rule (Rule 49), but only if a wetland is identified as part of the resource consent.

Policy 4.2.10 directs that adverse effects are to be avoided on the surface water bodies identified in Appendix 2 which includes wetlands, lakes and rivers and their margins, with a high degree of natural character. Part A lists surface waters to be managed in their natural state, and part B lists surface waters to be managed for aquatic ecosystem purposes. Discharges, diversions of water, and reclamation of these wetlands are non-complying activities. The reclamation of the bed of Lake Wairarapa, which is included in the appendix, is a prohibited activity.

There are a number of methods in the Freshwater Plan including the development of a regional strategy that would: encourage the creation of management groups; encourage the sharing of information; make technical information available; promote awareness of the values of wetlands; and work with territorial authorities to develop appropriate provisions in district plans.

Overall, the Freshwater Plan recognises key issues and contains some good objectives and policies, but has failed to safeguard the life-supporting capacity and protect the natural character of wetlands in the Wellington region. The extent of wetlands in the region has decreased from "less than 10 percent" in 1999 when the Freshwater Plan was written to an estimated 2.3% in 2011 (Ausseil et al 2011b).

The continued loss and degradation of wetlands in the region is anecdotally attributed to the fact that activities in wetlands are managed by a catch-all discretionary rule, and this only covers wetlands in the beds of lakes and rivers[6]. Groundwater and rain-fed wetlands are not covered by the plan. Management by this rule means that no specific data are collected on the number or type of consented activities in wetlands.

The Evaluation of the Freshwater Plan (GWRC 2006) found that rules for wetlands were required, particularly for controlling land use. The Freshwater Plan relied on territorial authorities to control land use in wetlands, however, district plans did not always provide suitable controls for the protection of wetlands. And there is sometimes uncertainty about whether a wetlands is within (regional council control) or outside (territorial authority control) a river or lake bed.

The report 'Measuring up' (GWRC 2005) stated that 12% of the estimated historical extent of wetland area remained (or 3.5% if Lake Wairarapa is excluded). Only 9% of wetlands on private land were reported to be protected by covenant, and of the remainder, a third still needed fencing to exclude livestock. Many remaining wetlands are very small – half of them 2 hectares or less. Small wetlands are more susceptible to the detrimental effects of pest plants and animals, human induced changes to the catchment and local hydrology, and pollution.

More specific national direction has been developed since the Freshwater Plan was drafted. The function of regional councils to "manage the establishment, implementation, and review of objectives, policies and methods for maintaining indigenous biological diversity" (section 30(1)(ga)), was included in the RMA by amendment in 2003. The NZCPS and NPS-FM also include direction as discussed above in sections 4.1.2 and 4.1.3.

The RPS directly addressed the issue raised above about whether land use in wetlands is the jurisdiction of the regional or district plan. RPS Policy 61 makes WRC and the regional plan responsible for controlling the use of land to maintain and enhance ecosystems in water bodies and coastal water (specifically including wetlands). It also makes city and district councils and

[6] Resource Adviser, Environmental Regulation team, GWRC.

district plans responsible for controlling the use of land for the maintenance of indigenous biological diversity – excluding within the coastal marine area and beds of lakes and rivers, but not explicitly excluding wetlands. Arguably, both regional and district plans have responsibility for controlling the use of land to maintain and enhance wetland ecosystems.

Shifting societal norms and recognition of the degree and significance of wetland loss has raised awareness of the need to protect wetlands. See section 4.1.3 of this report regarding the NPS-FM for the national importance now placed on the protection of wetlands.

6. Evaluation of the appropriateness of the objectives

Section 32(1)(a) of the RMA requires that an evaluation report must examine the extent to which the proposed objectives are the most appropriate way to achieve the purpose of the RMA. The following assessment and the accompanying summary tables provide an assessment against section 32(1)(a).

The appropriateness test applied in this report consists of four standard criteria: relevance, usefulness, reasonableness and achievability. These criteria are summarised as follows:

- *Relevance* – Is the objective related to addressing resource management issues? Will it achieve one or more aspects of the purpose and principles of the Resource Management Act?

- *Usefulness* – Will the objective guide decision-making? Does it meet sound principles for writing objectives?

- *Reasonableness* – What is the extent of the regulatory impact imposed on individuals, businesses or the wider community?

- *Achievability* – Can the objective be achieved with tools and resources available, or likely to be available, to the local authority?

The proposed objectives assessed are O28, O35, and O31. These are the most specific objectives for the management of wetlands. However the proposed Plan facilitates an integrated catchment management approach and therefore many other objectives are used in the management of wetlands, and these are discussed in other section 32 reports.

6.1 Objectives analysis

6.1.1 Appropriateness of having no objectives in the proposed plan

If the proposed Plan were to exclude any provisions for wetlands it would be a dereliction of duty under the RMA, NZCPS, NPS-FM and the RPS.

The potential outcomes of having no provisions for wetlands in the proposed Plan would include:

- Failure to sustain the potential of natural resources to meet the reasonably foreseeable needs of future generations

- Failure to safeguard the life-supporting capacity of water and ecosystems
- Loss and degradation of areas of natural character
- Loss and degradation of areas of significant indigenous vegetation and significant habitat for indigenous flora and fauna
- Damage to the relationship of Māori and their culture and traditions with their ancestral land, waters, sites, waahi tapu and other taonga
- Loss and degradation of places with high amenity and recreational values and
- Loss of ecosystem services provided by wetlands, including the ability to regulate the quality and quantity of water in a catchment

6.1.2 Appropriateness of no change from operative plans – status quo

The discussion of the effectiveness of the operative regional plans issues, objectives, policies and rules in section 5 of this report highlights the need to strengthen management of wetlands in the region. The operative freshwater and coastal plans are not up-to-date with current direction – they do not give effect to the NZCPS, NPS-FM and RPS, and are therefore not the most appropriate objectives for the proposed Plan.

6.1.3 Preferred objectives for wetland management

Taking into account the current state of wetlands in the region, the national and regional directives, and the inappropriateness of doing nothing, or retaining the objectives in the operative plans – the proposed objectives below are considered appropriate. The assessment of the appropriateness of the proposed objectives has been organised according to the following structure:

- The maintenance of natural wetlands, including significant natural wetlands and outstanding natural wetlands
- The protection of significant natural wetlands
- The protection of outstanding natural wetlands and their significant values

(a) Objective O28

The extent of natural wetlands is maintained or increased, and their condition is restored.

It is estimated that 2.3% of the original extent of wetlands remain in the Wellington Region (Ausseil et al 2008). The loss and degradation of wetlands not only reduces the amount of habitat available for wetland plants and animals, but also means that the ecosystem services provided by wetlands are reduced or no longer available. This objective aims to stop the loss of wetlands, create more, and restore the condition of those that remain in order to provide habitat for indigenous biodiversity and the provision of ecosystem services.

Table 2 discusses the appropriateness of this objective in terms of relevance, usefulness, reasonableness and achievability. This assessment shows that proposed Objective O28 is appropriate to achieve the purpose of the RMA and give effect to the statutory instruments.

Table 2: Appropriateness of Objective O28

Objective O28	The extent of natural wetlands is maintained or increased, and their condition is restored.
Relevance	
Directly related to resource management issue?	Yes, issue 4.2
Will achieve one or more aspects of the purpose and principles of the RMA?	Part 2, sections 5(2)(b), 5(2)(a), 5(2)(c), 6(a), 6(c), 7(d), 7(f), and 7(g)
Relevant to Māori environmental issues? (sections 6(e),6(g),7(a),8	Yes, directly relevant to section 6(e), 6(g), 7(a) and 8
Relevant to statutory functions or gives effect to another plan or policy (i.e., NPS, RPS)?	RMA section 30(1)(c) functions and RPS Policy 61 allocation of responsibilities make WRC the authority responsible for developing objectives, policies and methods including rules under the regional plan to control the use of land to maintain and enhance ecosystems in water bodies and coastal water, explicitly including wetlands. NZCPS Policy 11, NPS-FM Objectives A2 and B4, RPS Policy 18.
Usefulness	
Effectively guides decision-making?	This objective will guide resource consent processing that will impact on the size and condition of wetlands in the region.
Meets sound principles for writing objectives?	This objective is a clear and complete sentence related to an issue. This objective is not time-bound as it aims to deliver benefits over time.
Consistent with other objectives?	Yes, all the objectives have been assessed, and work together to achieve the sustainable management of natural and physical resources in the Wellington region.
Achievability	
Will it be clear when the objective has been achieved in the future? Is the objective measureable and how would its achievement be measured?	This objective will be partly achieved when wetlands are widely recognised to play an important role in the landscape, and are valued for that role. The vast majority of wetlands in the region are known, and mapped using aerial photography, so loss of extent can be easily measured. Objective 18 also includes biological attributes for monitoring the health of wetlands.

Is the objective expected to be achieved within the life of the Plan, or is it an aspirational objective that will be achieved sometime in the future?	Within the life of the Plan there should be no net loss, and preferably a net gain, in the extent of wetlands in the region (their extent is maintained or increased). The health of wetlands should be improved by the rules reducing the effects of activities on wetland ecosystems, wetlands naturally recovering when released from the pressure of effects, and active restoration through the non-regulatory methods in the proposed Plan.
Does the Council have the functions, powers, and policy tools to ensure that the objective can be achieved?	RMA sections 9, 12, 13, and 14 provide the powers for the Council to achieve the objective through the policies, rules, and other methods in the proposed Plan.
What other parties can the Council realistically expect to influence to contribute to this outcome?	Landowners with wetlands on their property, companies involved in urban and agricultural expansion, territorial authorities, Department of Conservation, Fish &Game New Zealand, Forest & Bird, Ducks Unlimited, and community restoration groups.
What risks have been identified in respect of outcomes?	If the outcomes are not met, wetland extent will continue to decline and health to degrade. Associated with wetland loss and degradation will be loss and degradation of indigenous biodiversity and ecosystem services.
Reasonableness	
Does the objective seek an outcome that would have greater benefits, environmentally, economically or socially, compared with the costs necessary to achieve it?	Yes – it will have greater environmental benefits than the costs necessary to achieve it. The outcomes are primarily environmental, but also benefit the community. The costs of achieving the objective are primarily in the fore-gone opportunity to carry out destructive activities in natural wetlands. There are also large economic benefits to landowners with wetlands on their property. When they retain them, they will improve their ecosystem function for water storage, flood protection and nutrient attenuation. If wetlands do not exist to provide these functions they must be constructed, at great expense.
Who is likely to be most affected by achieving the objective and what are the implications for them?	Landowners with natural wetlands on their property will be affected. They will be required to get resource consent to carry out some activities in natural wetlands that they previously did not need consent for.
Existing objectives	
Are the existing objectives still relevant or useful?	The operative Freshwater Plan Objective 4.1.4 has not resulted in the protection of wetlands across the region, nor halted their loss or degradation. A stronger objective and regulatory management framework are needed.

(b) Objective O35

Ecosystems and habitats with significant indigenous biodiversity values are protected and restored[7].

The region's indigenous ecosystems have been significantly reduced in extent, and the remaining indigenous ecosystems continue to be degraded or lost through use and development, and through the incremental and cumulative impacts of human activities. Indigenous species that rely on these ecosystems face increasing pressure from the loss and degradation of habitat.

The RPS directs the regional plan to identify and protect ecosystems and habitats with significant indigenous biodiversity values (Policies 23 and 24). In doing so, the proposed Plan also gives effect to:

- Section 6(c) of the RMA
- Policy 11 of the NZCPS in relation to indigenous biodiversity in the coastal marine area and
- Objectives A2 and B4 of the NPS-FM in relation to wetlands

Table 3 presents the appropriateness of this objective in terms of relevance, usefulness, reasonableness and achievability. This assessment shows that proposed Objective O35 is appropriate to achieve the purpose of the RMA and give effect to the statutory instruments.

Table 3: Appropriateness of Objective O35

Objective O35	Ecosystems and habitats with significant indigenous biodiversity values are protected and restored.
Relevance	
Directly related to resource management issue?	Yes, issue 1.11
Will achieve one or more aspects of the purpose and principles of the RMA?	Part 2, sections 6(c), 7(d), 7(f), and 7(g)
Relevant to Māori environmental issues? (sections 6(e),6(g),7(aa),8)	Yes, directly relevant to sections 6(e), 6(g), 7(a) and 8
Relevant to statutory functions or to give effect to another plan or policy (i.e. NPS, RPS)?	RMA section 30(1)(c) functions and RPS Policy 61 allocation of responsibilities make WRC the authority responsible for developing objectives, policies and methods, including rules under the regional plan to control the use of land to maintain and enhance ecosystems in water bodies and coastal water, explicitly including wetlands. NZCPS Policy 11, NPS-FM Objectives A2 and B4, RPS Policies 23 and 24.

[7] Significant wetlands are discussed in this report. See the **Section 32 report: Aquatic ecosystems** for discussion of other ecosystems and habitats with significant indigenous biodiversity values.

Usefulness	
Will effectively guide decision-making?	This objective will effectively guide the processing of resource consents for activities being undertaken in significant wetlands.
Meets sound principles for writing objectives? (specific; state what is to be achieved where and when; relate to the issue; able to be assessed)	This objective is a clear and complete sentence related to an issue. This objective is not time-bound as it aims to deliver benefits over time.
Consistent with other objectives?	Yes, all the objectives have been assessed, and work together to achieve the sustainable management of natural resources in the Wellington region.
Achievability	
Will it be clear when the objective has been achieved in the future? Is the objective measureable and how would its achievement be measured?	Yes, the achievement of this objective will become clear in the future through reporting on the number of natural wetlands or hectares protected for indigenous biodiversity values. Continued loss of protected sites or habitats will testify that the objective is not being achieved. State of the environment reporting, and site-specific reporting through controlled consents for Restoration Management Plans on the health of protected sites will measure their restoration.
Is it expected that the objective will be achieved within the life of the Plan or is it an aspirational objective that will be achieved sometime in the future?	During the life of the Plan significant natural wetlands will be protected from more than minor adverse effects of activities controlled by the proposed plan. The health of significant natural wetlands will be improved by the rules reducing their loss and degradation, natural recovery, and active restoration through the non-regulatory methods in the plan.
Does the Council have the functions, powers, and policy tools to ensure that they can be achieved?	RMA sections 9, 12, 13, 14, 15, and 30 This objective will be achieved through the policies, rules, and non-regulatory methods in the proposed Plan.
What other parties can the Council realistically expect to influence to contribute to this outcome?	Landowners with significant natural wetlands on their property, companies involved in urban and agricultural expansion, territorial authorities, Department of Conservation, Fish& Game New Zealand, Forest & Bird, Ducks Unlimited, and community restoration groups.
What risks have been identified in respect of outcomes?	The risks to indigenous biodiversity will be reduced through the achievement of this objective. Not all pressures on significant natural wetlands are controlled by the regional plan or the RMA. Climate change also poses a risk to indigenous biodiversity, and the extent and condition of significant natural wetlands.

Reasonableness	
Does the objective seek an outcome that would have greater benefits environmentally, economically or socially compared with the costs necessary to achieve it?	Yes – this objective will have greater environmental benefits than the costs necessary to achieve it. The costs of achieving the objective are primarily in the fore-gone opportunity to carry out destructive activities in significant natural wetlands. There will also be some costs associated with the exclusion of livestock (not including sheep), and loss of income from livestock grazing in significant natural wetlands. There are also large economic benefits to landowners with wetlands on their property. When they retain them, they will improve their ecosystem function for water storage, flood protection and nutrient attenuation. If natural wetlands do not exist to provide these functions they must be constructed, at great expense.
Who is likely to be most affected by achieving the objective and what are the implications for them?	People or agencies undertaking activities will need to consider avoiding significant natural wetlands, or include the costs of obtaining resource consent and/or measures to avoid, remedy, mitigate or offset the effects of their activities on significant natural wetlands. Landowners with significant natural wetland habitat on their property will be most affected by this objective. It will require resource consent for undertaking most activities in the significant natural wetland on their property and/or measures to avoid, remedy, mitigate or offset the effects of those activities on significant natural wetland habitat.
Existing objectives	
Are the existing objectives still relevant or useful?	This objective is consistent with two objectives from current plans: Freshwater Plan Objective 4.1.6; and Coastal Plan Objective 4.1.6. This is because the direction from the RMA that the protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna as a matter of national importance has not changed.

6.1.4 Objective O31

Outstanding water bodies and their significant values are protected[8].

Objective A2 and B4 of the NPS-FM require the protection of the significant values of outstanding freshwater bodies. This links to sections 6(a), (b) and (c) of the RMA, being the preservation of natural character, the protection of outstanding natural features, and the protection of areas of significant vegetation and significant habitats of indigenous fauna.

[8] Only outstanding wetlands are discussed in this report. See the Section 32 report: Aquatic ecosystems for discussion of outstanding rivers and lakes.

Outstanding natural wetlands and their significant values will be protected by provisions in the proposed Plan. Fourteen outstanding wetlands are identified in Schedule A3.

Table 4 discusses the appropriateness of this objective in terms of relevance, usefulness, reasonableness and achievability. This assessment shows that proposed Objective O31 is appropriate to achieve the purpose of the RMA and gives effect to the NPS-FM.

Table 4: Appropriateness of Objective O31

Objective O31	Outstanding water bodies and their significant values are protected.
Relevance	
Directly related to resource management issue?	Yes, Issues 4.3 and 4.4
Will achieve one or more aspects of the purpose and principles of the RMA?	Yes, Part 2, section 5
Relevant to Māori environmental issues? (sections 6(e),6(g),7(aa),8)	Yes, directly relevant to sections 6(e), 6(g), 7(a) and 8
Relevant to statutory functions or to give effect to another plan or policy (e.g. section 30, and any relevant NPS, NES, NZCPS, RPS)?	NPS-FM requires the significant values of outstanding water bodies to be protected (objectives A2 and B4).
Usefulness	
Will effectively guide decision-making?	The objective will guide decision-making by distinguishing how outstanding natural wetlands are to be managed vs other water bodies.
Meets sound principles for writing objectives?	This objective is a clear and complete sentence related to the implementation of the NPS-FM.
Consistent with other objectives?	Yes, all the objectives have been assessed, and work together to achieve the sustainable management of natural resources in the Wellington region.
Achievability	
Will it be clear when the objective has been achieved in the future? Is the objective measureable and how would its achievement be measured?	Yes, there are very few activities that occur in outstanding wetlands. It will be clear when potentially damaging activities occur because resource consent will be required. Monitoring and reporting on restoration activities will be required by the controlled resource consent for each outstanding natural wetland's Restoration Management Plan.
Is it expected that the objective will be achieved within the life of the Plan or is it an aspirational objective that will be achieved sometime in the future?	This objective will be achieved in the life of the plan. Activities with effects that damage the values of outstanding natural wetlands will not be granted resource consent.
Does the Council have the powers, and policy tools to ensure that they can be achieved?	Yes, the Council has the ability to control water quality, water quantity and the beds of outstanding water bodies.

What other parties can the Council realistically expect to influence to contribute to this outcome?	The owners of land in and around outstanding water bodies.
What risks have been identified in respect of outcomes?	The risks from activities that have adverse effects on outstanding water bodies.
Reasonableness	
Does the objective seek an outcome that would have greater benefits either environmentally, economically or socially compared with the costs necessary to achieve it?	Yes – this objective will have greater environmental benefits than the costs necessary to achieve it.
Who is likely to be most affected by achieving the objective and what are the implications for them?	People who use water resources for their intrinsic, aesthetic and recreational values.
Existing objectives	
Are the existing objectives (include a list of objectives or relevant objective to the one being compared) still relevant or useful?	There are no operative objectives specifically addressing this natural resource management issue.

6.2 Conclusion for proposed objectives

The assessment of the operative objectives in section 5 and 6.1.2 show that the operative objectives are not as **relevant** or as **useful** in that they:

- Do not give effect to the RMA, NZCPS, NPS-FM and RPS, and
- Do not sufficiently address the issues

The proposed objectives address the shortcomings of having limited operative provisions, and create a clear and efficient policy tool with which decision makers and plan users can use to assess proposals that may affect sites with significant values. The assessment of the proposed objectives in section 6.1 shows the following:

The proposed objectives are **relevant** as they:

1. give effect to the RMA, NZCPS, NPS-FM and RPS, and
2. use language and terminology that is consistent with the RMA, NZCPS and RPS, and
3. effectively address a regionally significant issue or natural resource management issue.

The proposed objectives are **useful** in achieving the purpose of the RMA as they:

1. are consistent with the guidance and national direction provided in the NZCPS, NPS-FM and RPS, and
2. provide clear, consistent and comprehensive outcomes sought to be achieved.

The assessment summarised in tables 2,3 and 4 above also shows that the proposed objectives are more efficient and comprehensive than the operative objectives, and are more relevant and useful in achieving the purpose of the RMA.

7. Assessment of the appropriateness of the policies, rules and other methods

RMA section 32(1)(b) states that provisions must be examined to assess whether they are most appropriate way to achieve the objectives. The assessment of the appropriateness of the proposed policies and rules and other methods to achieve the objectives has been organised according to the main objectives that the provisions will implement:

- The maintenance of natural wetlands, including significant natural wetlands and outstanding natural wetlands
- The protection of significant natural wetlands and
- The protection of outstanding natural wetlands

At the beginning of this assessment, a discussion is provided on the definition and identification of the three categories of wetlands managed in the proposed Plan.

The proposed policies and methods are assessed in accordance with sections 32(1)(b) and 32(2) of the RMA as to whether they are the most appropriate way to achieve the three main objectives for wetlands in the proposed Plan. A summary of this assessment is also provided in Tables A1-A3 in the Appendix of this report.

7.1 Appropriateness of no change from operative policies, rules and other methods

The Freshwater Plan has policies on wetlands, but primarily for the management of natural character (as discussed in section 5 of this report). There is a schedule in the operative Freshwater Plan (Appendix 2 part B) of wetlands to be managed for 'aquatic ecosystem purposes'. These listed wetlands are all on public land. There is no management purpose stated in the Freshwater Plan for wetlands other than those on the list, and the Freshwater Plan only manages wetlands in the beds of lakes and rivers (not within the coastal marine area or isolated wetlands that are maintained by rain or groundwater).

The Freshwater Plan has not been updated to reflect changes to the RMA in 2003 for regional councils to maintain indigenous biodiversity, and the Freshwater Plan has not been updated to implement the direction from the NPS-FM.

The Coastal Plan has not been updated to give effect to the NZCPS. The provisions from the operative plans are therefore not efficient or effective, or appropriate to achieve the objectives in the proposed Plan.

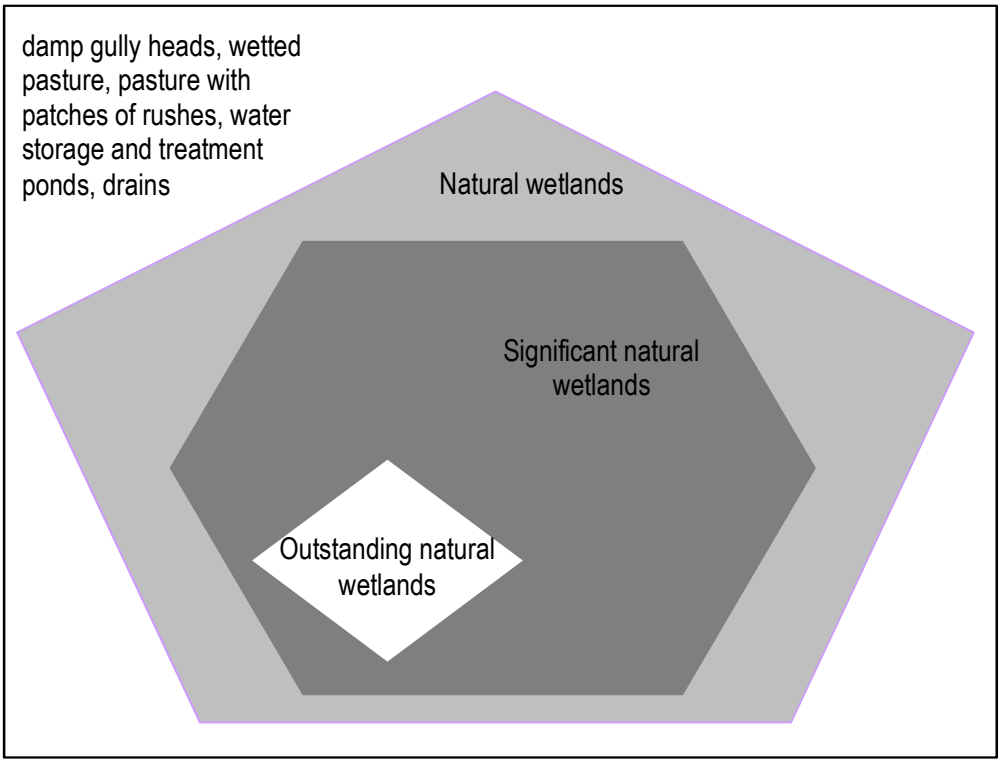
7.2 Components of the proposed policy framework

The proposed Plan must implement Policies 23 and 24 of the RPS (discussed in more detail in section 7.2.2) to identify ecosystems and habitats with significant indigenous biodiversity values and protect them. During the time it took to identify significant wetlands, and develop provisions to protect them, the NPS-FM gave the direction to "protect outstanding waterbodies". A management framework was therefore constructed around wetlands that:

- Do not meet the RPS policy 23 criteria – natural wetlands
- Do meet the RPS policy 23 criteria – significant natural wetlands and
- The best of the best – outstanding natural wetlands

There are several components to this framework, discussed below.

Figure 1: Natural wetlands, significant natural wetlands, and outstanding natural wetlands



7.2.1 Natural wetland definition

Recognising wetlands and determining their boundaries on the ground can be tricky because they take different forms depending on the landform, setting, origin, substrate, hydrology, nutrient status and vegetation (Johnson and Gerbeaux 2004). The RMA defines a wetland as "includes permanently or intermittently wet areas, shallow water and land water margins that support a natural ecosystem of plants and animals that are adapted to wet conditions." Most regional plans use this definition; however it is not practical for identifying wetlands in the field.

In 2012 WRC officers began discussing the development of a more useful definition for the proposed Plan, that is more practical for identifying wetlands in the field and which excludes wetlands associated with waterbodies constructed for other purposes. There was much iteration along the way based on the development of other regional plans, and feedback from stakeholders. The version included in the proposed Plan is:

Natural wetland	Is a permanently or intermittently wet area, shallow water and land water margin that supports a natural ecosystem of plants and animals that are adapted to wet conditions, including in the beds of lakes and rivers, the coastal marine area (e.g. saltmarsh), and groundwater-fed wetlands (e.g. springs). Natural wetlands do not include: (a) damp gully heads, or wetted pasture, or pasture with patches of rushes, or (b) areas of wetland habitat in or around bodies of water specifically designed, installed and maintained for any of the following purposes: (i) water storage ponds for a) public water supply, or b) hydroelectric power generation, or c) firefighting or d) irrigation, or e) stock watering or (ii) water treatment ponds for a) wastewater, or b) stormwater, or c) nutrient attenuation, or d) sediment control, or e) animal effluent, or (iii) beautification, landscaping, amenity, or (v) drainage. See also significant natural wetland and outstanding natural wetland 'Wetland' has the same meaning as in the RMA

The starting point for this definition and list of exclusions was the definition in the Manawatu-Wanganui Regional Council One Plan – which was reached through mediation between the main parties appealing that plan. Those mediating parties are likely to have a similar interest in the proposed Plan for the Wellington Region.

The first part of the natural wetland definition is the same as the RMA definition of wetland.

The second clause makes it clear that the proposed Plan is concerned with natural wetlands in the beds of lakes and rivers, and the coastal marine area, and groundwater fed wetlands.

Stating that "natural wetlands do not include (a) damp gully heads, or wetted pasture, or pasture with patches of rushes" makes it clear that these are not the same as "a natural ecosystem of plants and animals adapted to wet conditions", and are not considered natural wetlands for the purpose of the proposed Plan. This clause responds to a concern frequently raised by rural stakeholders about whether "a few rushes in a paddock" will be managed as a natural wetland.

This language has been altered several times based on comments from stakeholders, for example the draft Natural Resources Plan (draft NRP) had "paddocks subject to regular ponding, which are dominated by cultivated pasture species". The final wording is based on the Bay of Plenty Regional Plan definition, as was suggested by stakeholders' commenting on the draft NRP.

The intention of the list of exclusions in (b) is to assure landowners that ponds or dams which were created for water storage and water treatment will not be managed as natural wetlands under the proposed Plan – even if a wetland has formed in or around the pond or dam. Bodies of water created for water storage are intended to be emptied at certain times e.g. for irrigation, or by fire-fighting activity. Bodies of water constructed to capture sediment or nutrients or contaminants will, from time to time, need to be dug out to allow the treatment function to continue. Managing these water bodies to maintain or protect their wetland values will come into conflict with their primary management purpose. This is not a desirable outcome, and is not intended by the proposed Plan.

Wetlands created for the maintenance or protection of indigenous biodiversity, including offsetting the loss of biodiversity or wetland habitat elsewhere through the resource consenting process, are not excluded from this definition. Those wetlands are considered natural wetlands for the purposes of the proposed Plan.

7.2.2 Significant and outstanding natural wetland definitions

A subset of natural wetlands are those with significant indigenous biodiversity values that meet the criteria in RPS Policy 23, and a further subset have outstanding indigenous biodiversity values (Figure 1). The proposed Plan contains two additional definitions specific to these natural wetlands.

Significant natural wetland	A natural wetland that meets one or more of criteria a to d listed in Policy 23 of the Regional Policy Statement being: representativeness; rarity; diversity; ecological context. Identified significant natural wetlands greater than 0.1ha from which livestock should be excluded under rule R97 are listed in Schedule F3.
Outstanding natural wetland	Outstanding natural wetlands are identified in Schedule A3.

Policy 23 of the RPS contains criteria for the identification of ecosystems and habitats with significant indigenous biodiversity values. This policy benchmarks "areas of significant indigenous vegetation and significant habitats of indigenous fauna", the protection of which section 6(c) of the RMA identifies as a matter of national importance.

The Draft Implementation Guide for the NPS-FM states that outstanding waterbodies are those water bodies identified in a regional policy statement or regional plan as having outstanding values, including ecological, landscape, recreational and spiritual values (NPS-FM definition). The Ministry for the

Environment implementation plan[9] estimates that guidance on outstanding water bodies will be started in 2016 and available in 2017.

Given that there is no existing guidance for identifying outstanding values, and that criteria is in the RPS for the proposed Plan to identify "ecosystems and habitats with significant indigenous biodiversity values", criteria were used to identify outstanding indigenous biodiversity values and therefore to identify outstanding natural wetlands.

Based on the criteria in Policy 23, outstanding natural wetlands are:

a) **highly representative**: wetlands that are the best or one of the best examples that are typical and characteristic of the full range of the original and current natural diversity of ecosystems and habitat-types in the region

and

b) **have high rarity values:**

i. contains an ecosystem or habitat or biological community or physical feature that is nationally rare or threatened or distinctive, or

ii. provides habitat for more than two threatened species or flora or fauna

or

c) **are highly diverse:**

i. a high natural diversity of ecological units or ecosystems or physical features, or the full range of expected natural diversity, or

ii. a high natural diversity of species of flora and fauna, or the full range of the expected natural diversity.

Fourteen natural wetlands have been identified as having outstanding indigenous biodiversity values, and are listed as outstanding natural wetlands in Schedule A3 of the proposed Plan. Six of these were surveyed using the natural wetland definition assessed against the RPS Policy 23 criteria. None of the other values that the NPS-FM identified as being potentially associated with outstanding waterbodies (landscape, recreational and spiritual values) have been assessed at the time of writing this report. Method M7 details a programme of work to for the identification of outstanding recreational and landscape values.

7.2.3 Identifying significant wetlands in the proposed Plan

During the development of the proposed Plan, a number of approaches to identifying wetlands which met RPS Policy 23 were considered and trialled

[9] http://www.mfe.govt.nz/fresh-water/tools-and-guidelines/implementing-national-policy-statement-freshwater-management-8

(a) Habitat-based approach

During the development of the wetlands framework, the Environment Court released its decisions on appeals to the Manawatu-Wanganui Regional Council's Proposed One Plan[10]. The One Plan takes a habitat-based approach to identifying significant biodiversity, (as opposed to the more common site-based approach). The One Plan categorises habitats into rare, threatened (less than 20% remaining) or at risk habitats, and compares the current and former extent to determine the degree of loss. The Environment Court found that rare and threatened habitats should, by definition, be significant. This will apply to all wetlands in the Manawatu region, which the One Plan records as less than 3% of the original extent. As mentioned earlier in this report, the Wellington Region has a similar percentage of wetlands remaining.

Officers considered adopting a habitat-based approach for managing wetlands through the proposed Plan, but determined that it would be inconsistent with the rest of the proposed Plan where significant sites are scheduled and mapped. A habitat-based approach would not provide the degree of certainty for landowners as to which parts of their property were subject to which provisions.

Scheduling significant natural wetlands by name and location also reduces the risk of these wetlands being lost or degraded through lack of information. While there is a risk that some significant natural wetlands might be excluded from a schedule, this is mitigated in the final version of the wetland provisions by having the same consent status for activities in natural and significant natural wetlands (with the exception of livestock exclusion).

(b) Surveys

In June 2012, Te Upoko Taiao (the WRC Committee overseeing the development of the proposed Plan) agreed that listing significant wetlands in the regional plan was the appropriate way to address the RPS directive to "identify habitats and ecosystems with significant indigenous biodiversity values". In making this decision the committee accepted that there may be resistance from some landowners to having wetlands on their property surveyed, and having wetlands on private land identified in the regional plan.

The Wairarapa Moana wetlands (25 distinct wetlands) and 42 other wetlands were surveyed in 2012-13 to determine their boundaries (delineation), and assess their indigenous biodiversity values against RPS Policy 23.

Of the wetlands surveyed, all wetlands that met the definition of a 'natural wetland' were found to be either significant or outstanding. Permission was declined for access to a further 13 sites.

While acknowledging that site-specific surveys provide the best site-specific evidence of significant values, the following problems became apparent as the survey work proceeded:

[10] Decision No.[2012] NZEnvC 182: Part 3

- It is not possible to survey all wetlands in the region – new ones are discovered each year

- Identifying landowners, postal addresses, and gaining their permission to survey is extremely time consuming, and employing ecologists to carry out surveys is expensive

- Landowners can refuse access for the surveys: in this case the decline rate was about 20%

- Only listing wetlands for which survey permission has been granted will not result in a comprehensive list of significant wetlands. This approach could be perceived as 'punishing' landowners who granted permission for a survey, and not regulating those who have refused access

- Given the results that 100% of natural wetlands surveyed met the significance criteria, continuing to survey the wetlands of willing landowners was considered a poor use of rate-payer dollars

As a consequence, further surveys were put on hold.

(c) Include significance assessment criteria in the plan

After working closely with key stakeholders, an approach of determining significance as part of the resource consent process was developed and included in the draft NRP:

- A landowner did not need to know if the wetland on their property is a natural wetland or a significant natural wetland unless they were planning to undertake an activity that requires resource consent

- If consent is required for an activity, as part of the pre-application process or assessment of adverse effects (AEE) an ecologist will determine the significance of the wetland using Schedule F3 of the draft NRP, which will allow the landowner and resource consenting team to identify which resource consents are required

- The WRC would provide advice and guidance, and work with landowners to exclude livestock from significant and outstanding natural wetlands within the required timeframes (of the livestock access rules in the draft Plan)

The approach in the draft Plan worked where an effects-based consent is required to carry out an activity in a natural, significant natural or outstanding natural wetland such as building a structure or diverting water. This approach was not effective for meeting the livestock access provisions where the onus is on the landowner to exclude livestock from Category 1 surface water bodies. Knowing which wetlands livestock need to be excluded from was identified as a key issue for landowners and industry groups in their feedback on the draft NRP.

Feedback on the draft NRP, including from stakeholders who had previously opposed scheduling significant wetlands, showed that people strongly favoured identifying which wetlands are affected by the livestock access provisions by scheduling significant natural wetlands. Examples of comments include:

- *consider developing clear thresholds to easily identify significant wetlands e.g. all wetlands >0.1ha are significant*
- *identify significant wetlands in a schedule*
- *all remaining wetland habitats should be recognised as significant and protected from further loss*
- *GW should be in a position to identify all significant wetlands in the region and list these in a schedule to the Plan*
- *of concern is the onus the regional council are placing on landowners to employ an ecologist to assess natural wetlands. Regional or District Council should identify wetlands with significant values*
- *requiring landowners to classify their own wetlands has the potential for severe negative consequences. Much easier to spend the money that would pay for an ecologist on a digger driver and make the "problem wetland" go away.*

(d) Using the best available information

Although not every wetland in the region has been surveyed, it is possible to compile a comprehensive list of significant natural wetlands using the best available information.

A desktop study for WRC (Fuller 2011) used expert analysis of existing information and aerial photography to identify and map wetlands in the region. The wetlands surrounding Lake Wairarapa, Lake Onoke and Lake Pounui (Wildlands 2012), and 42 other wetlands across the region (Wildlands 2013) have been visited by ecologists to confirm their boundaries, and visually confirm and evaluate their present day biodiversity values. New aerial photography (2012/13) and LiDAR[11] data are also available.

There is strong rationale to support the use of the best available information, and to be confident in scheduling identified wetlands as significant natural wetlands even if they have not been surveyed:

- Less than 3% of the original extent of wetlands remains in the region. All natural wetlands that remain in the region will meet the RPS representativeness criterion of being "no longer commonplace (less than 30% remaining)", and "poorly represented in existing protected areas (less than 20% legally protected)"

[11] LiDAR is a remote sensing technology that measures the earth's surface - wetlands can form in depressions filled by rain or flooding.

- 100% of the wetlands surveyed to date that met the definition of a 'natural wetland' in the draft NRP, have been found to be a significant natural wetland

Based on these reasons, Te Upoko Taiao recommended using the best available information to identify and schedule significant natural wetlands in the proposed Plan, and to consult with landowners who would be affected by the proposed provisions that manage livestock access to these sites.

WRC subsequently wrote to 350 landowners associated with 215 wetlands, inviting them to a number of meetings throughout the region, and to contact the WRC if they had any reason to think that the wetland identified in the letter is not a natural wetland, was constructed, or is not on their property. As a result of this process, Schedule F3 contains 197 identified significant natural wetlands.

7.3 Policies

The proposed Plan uses three sets of policies to implement the objective specific to all natural wetlands and the objectives specific to significant natural wetlands and outstanding natural wetlands. See Tables A4-A6 in the Appendix of this report.

Natural wetlands (including significant natural wetlands and outstanding natural wetlands) need to be managed to maintain their value as habitat, their significance to mana whenua, their role in the hydrological cycle including flood protection and nutrient attenuation, and their value for fisheries and recreation (Policy P37). The restoration of natural wetlands, and the construction of wetlands to provide habitat and carry out the ecosystem function of lost and degraded wetlands are also encouraged (Policy P38). These policies will enable the proposed Plan to achieve Objective O28 which is to maintain or increase the extent of wetlands in the region, and restore their condition.

Other policies to be considered when processing a resource consent application for discretionary or non-complying activities in natural wetlands include Policies P31 (maintaining and restoring aquatic ecosystem health) and P32 (managing significant adverse effects on aquatic ecosystem health) which lays out a mitigation hierarchy including the offsetting of residual adverse effects.

The primary policies for the management of significant natural wetlands are Policies P40 to P43. Wetlands with significant values are to be protected by:

- Avoiding activities within them in the first instance, and

- Thereafter avoiding, remedying, or mitigating any more than minor adverse effects of activities within them, and offsetting residual adverse effects, and

- Managing use and development around them by using buffers, maintaining ecological connections, and avoiding cumulative adverse effects and the incremental loss of these important ecosystems, and

- Encouraging their restoration

A further relevant policy to protect significant natural wetlands is Policy P99. This policy manages livestock access to surface water bodies, which specifically refers to the protection of 'category 1 surface water bodies', including significant natural wetlands. See the Section 32 report: Livestock access, break-feeding and cultivation for a full discussion on livestock exclusion, particularly in relation to wetlands.

Schedule F3 of the proposed Plan contains a list of identified significant natural wetlands, greater than 0.1ha, which are included in the definition of Category 1 surface water bodies. See the discussion in Section 6.2.3(c) above for how these wetlands were identified.

Outstanding natural wetlands, and other outstanding water bodies, have the strongest policy direction in the proposed Plan; that adverse effects shall be avoided. The strength of this policy is appropriate given the direction from the NPS-FM.

7.3.1 Rules

Activities in wetlands are considered for the potential effects on wetland function and indigenous biodiversity with more damaging activities having a higher consenting status. The first discussion with Te Upoko Taiao on wetlands in 2012 suggested activities that are likely to be damaging to wetland values and ideas for consent requirements (rules). The consent status of activities in wetlands evolved during the three years of discussion with the committee, with stakeholders, and as a result of feedback on the draft NRP.

The rules in the proposed Plan make a distinction in activity status between natural wetlands and significant natural wetlands. However this approach requires the applicant to know whether the wetland on their property is natural or significant in order to determine which consent they need to apply for. The final framework makes no distinction between natural wetlands and significant natural wetlands in terms of which consent is required for an activity; rather, which policies and objectives in the proposed Plan inform the processing of the consent.

(a) Permitted activities

Permitted activities are those that are likely to have minor or very minor effects on biodiversity values and wetland function. These types of activities are common, or encouraged by the proposed Plan.

In natural and significant wetlands, the maintenance, repair, addition, alteration and replacement of existing structures is encouraged to prevent structures becoming derelict and hazardous. The proposed Plan also encourages the removal of derelict structures. The placement of new structures (maimai and jetties) is also permitted with conditions to recognise the recreational value of

wetlands for hunting and fishing. If these activities are able to comply with the general permitted activity conditions, the effects will be *de minimis*.

Planting appropriate wetland species and the control of pest plants are also encouraged to restore the values of all wetlands, and so are permitted activities. The benefits of these activities for wetland function and habitat provision are high, and WRC does not wish to discourage them by requiring consent. A consent and consenting process would not benefit the management of the resource, but would impose costs on applicants.

In the draft NRP, planting and the control of pest plants in outstanding wetlands were discretionary activities. Making these activities discretionary would allow WRC to closely manage which plants were introduced, and the means by which pests were controlled or removed in these wetlands with very high values. Landowners argued that removing a pest plant by hand whenever one is encountered is a better way to control them than waiting for consent. Given that there will be a Restoration Management Plan (see next section) for each of the 14 outstanding wetlands, developed collaboratively with landowners, WRC agreed that permitted activity status, combined with guidance material, would be the most beneficial and lowest cost approach.

(b) Restoration activities – controlled

WRC's preferred approach is to engage directly and work collaboratively with landowners to manage and restore wetlands in the region. Working with landowners allows council officers to better understand the wetland in the context of the property/farming operation, the drivers and desires of landowners, and the amount of time and resources required to restore a particular wetland.

The proposed Plan introduces a controlled consent for **activities carried out for the purpose of restoring** all wetlands if those activities are carried out in accordance with a Restoration Management Plan (RM plan):

- The contents of an RM plan are detailed in Schedule F3a of the proposed Plan

- WRC officers will work with landowners to develop an RM plan at no expense to the landowner. Budget allocation of $30,000/year plus 0.5 FTE has already been made for the Biodiversity Department to engage with landowners in this manner. Method M20 describes this non-regulatory package

- Landowners who do not wish to work closely with WRC will have the option of employing a suitably qualified ecologist, at their own expense, to develop an RM plan

- RM plans will be approved by a general manager at WRC to ensure they provide adequate information in sufficient detail. A process will be established for landowners wanting to appeal the decision of the general manager

- WRC will provide further assistance to landowners to apply for a controlled resource consent for activities in an approved RM plan which would otherwise require a discretionary, non-complying, or prohibited resource consent under the proposed Plan

WRC at its discretion, will waive non-notified fees in relation to consents required for wetland restoration (GWRC 2015). This is because GWRC supports the protection of wetland ecosystems including their restoration.

Like permitted activities, the restoration of wetlands is encouraged by the proposed Plan because of the many benefits that will accrue to the landowner, the environment, and the wider community from healthy functioning wetland ecosystems. Major restoration activities may have more than minor adverse effects, however the final outcomes of a successful restoration will outweigh adverse effects that may occur during the implementation stages.

The option to have restoration activities permitted in the proposed Plan was considered, but the Council wanted to maintain some oversight of restoration activities, and restoration needs to be considered and planned on a site-by-site basis. For example – the restoration of most wetlands will begin with the exclusion of livestock, and some control of pest plants. Both of these activities are permitted in the proposed Plan. In most cases the wetlands' natural processes will then rehabilitate the ecosystem with time.

In some situations however, the wetland may require more water, or less water at certain times of the year to return to its natural functioning state. Adjusting water levels needs to be carefully considered not only for benefits to the wetland, but also potential effects on neighbouring properties (e.g. flooding) or the amount of water available for abstraction nearby. Allowing for that careful consideration and providing for council discretion is not possible within a permitted activity. So the option of making all restoration activities permitted was not investigated any further.

(c) Discretionary activities

While WRC's preferred approach is to work collaboratively with landowners, there is still the requirement to have backup rules to ensure that natural wetlands are protected if landowners do not wish to engage in this manner. Discretionary activities are activities that are likely to have more than minor, and sometimes significant adverse effects on wetland ecosystems.

The cost of applying for a discretionary consent is appropriate given these potential effects on the wetland. A site-by-site assessment of these effects is required to ensure that adverse effects are appropriately avoided, remedied, or mitigated. The matters to be considered in assessing the effects of activities are broad – including effects on the wetland itself, surrounding water supply and allocations, effects on neighbouring properties, mana whenua values, and natural character. Given the breadth of matters on this list, a restricted discretionary status is not appropriate.

In the draft NRP, the placement of new structures with a footprint of more than $10m^2$ in natural and significant natural wetlands was a restricted discretionary

activity. Restricted discretion was not carried through into the proposed Plan because comments received on the draft NRP suggested that at a minimum, further matters of discretion would be required, including an assessment of mana whenua values, and impacts on natural character. Given the breadth of the matters of discretion, full discretion is warranted.

The placement of new structures with a footprint of greater than $10m^2$ will likely have more than minor (and in some cases significant) adverse effects on wetland biodiversity and function during the construction phase through disturbance or damage of the bed for placing piles, release of sediment, diversion of water, and disturbance of wetland flora and fauna. There are also potential ongoing effects of the structure if it is inappropriately constructed or placed in the wetland in a manner that affects water movement through the wetland, shades large or vulnerable portions of the wetland, or introduces a path for the passage of pest animals into the heart of the wetland. As such, the placement of new structures with a footprint of greater than $10m^2$ is a discretionary activity in natural and significant wetlands, (and non-complying in outstanding natural wetlands).

Some arguments were made against this strong regulatory stance in the draft NRP in favour of building boardwalks to provide for public access, recreation and education. Given the paucity of wetlands remaining in the region, and the potential for damage from humans or pest animals if they are encouraged to enter wetlands, WRC maintains this strong position in the proposed Plan.

With regard to discharges: it is acknowledged that wetlands play an important role in the purification of water in a catchment, including the settlement of sediment and the absorption of nutrients particularly nitrogen. However, there are natural limits beyond which these contaminants could have more than minor (or significant) adverse effects on the health and function of a wetland. The capacity for each wetland to capture sediment and absorb nutrients will vary widely, and as such a case-by-case assessment of the effects of discharges is required. Full-discretionary status is appropriate because a case-by-case assessment of potential adverse effects will be required, but the proposed Plan does envisage natural wetlands receiving discharges of contaminants, (therefore non-complying status would not be appropriate).

The clearance of wetland vegetation (excluding pest plants) is likely to have more than minor (and sometimes significant adverse effects) on a wetland ecosystem and its ability to perform ecosystem services, and provide habitat for indigenous species. As such, the full consideration of the effects is required as part of a discretionary consent.

In outstanding natural wetlands, the maintenance, repair, addition, alteration and replacement of existing structures are discretionary activities as they need to be considered within the overall RM plan for the wetland. Existing structures may interfere with the values or restoration of the wetland, so their maintenance or replacement requires full consideration. Likewise, existing structures may be maintaining the wetland values (such as structures that retain water at the site), so their removal also needs full consideration. The placement of new structures (maimai and jetties) are also discretionary, as protecting the

significant values outweighs the need to provide recreational activities under a permitted regime.

(d) Non-complying activities

Non-complying activities are those that are likely to have significant adverse effects on wetland biodiversity and function, and need a careful assessment of the objectives and policies of the proposed Plan. The proposed Plan strongly discourages these activities, and they should only be undertaken in exceptional circumstances. Because the policy direction within the proposed Plan is strong, and the need to protect wetlands as a vulnerable resource is so clearly spelt out in high level documents, non-complying activity status is appropriate for activities that threaten the viability of natural wetlands.

A non-complying activity status sets a high test, and it is acknowledged that this incurs costs for applicants. The high cost of a non-complying consent can put applicant's off applying for such a consent, and result in the activity not occurring. This outcome is consistent with the policy direction, which seeks first to avoid locating activities in wetlands.

Take, use, damming and diverting water within, into or from natural wetlands was a restricted discretionary activity in the draft NRP, a discretionary activity in significant natural wetlands, and a non-complying activity in outstanding natural wetlands. Water is integral to the health and function of a wetland. Taking, damming or diverting water will affect the water levels or movement of water in a wetland which may cause vegetation die-back, compromise the plant community allowing weeds to enter or dominate, reduce the extent or flood the wetland, and reduce available habitat for threatened plant and animal species. As such, the manipulation of the amount of water going into or leaving a natural wetland, significant natural wetland or outstanding natural wetland has become a non-complying activity in the proposed Plan, except where it is carried out in accordance with an RM plan.

The reclamation or drainage, or disturbance (including excavation) of a wetland will entirely, and in most cases irreversibly, destroy ecosystem functions and habitat provision. Reclamation and drainage is inconsistent with the proposed objective to maintain or increase the extent of natural wetlands in the region, and to restore their condition, and the direction to protect significant wetlands. Non-complying is therefore the appropriate consent status, as these activities are actively discouraged by WRC, and expected to occur only in exceptional circumstances.

All other activities in outstanding natural wetlands, not already discussed above, are non-complying activities. This is consistent with the strong objective and policy direction to protect outstanding water bodies and their values. Activities in outstanding natural wetlands that are outside the scope of their RM plan are not encouraged or foreseen.

Reclamation and drainage of outstanding natural wetlands is prohibited except where it carried out in accordance with a RM plan. This exception exists as there is the possibility that restoring an outstanding natural wetland could involve reclaiming the edge in order to build a bund to hold a constructed

wetland for nutrient or contaminant attenuation (i.e. to pre-treat water before it enters the outstanding natural wetland). Reclamation for any other purpose would be contrary to the objective to protect outstanding water bodies and their significant values.

7.3.2 Non-regulatory methods

When developing the framework for the maintenance and protection of indigenous biodiversity in the proposed Plan, Te Upoko Taiao drove a 'belt and braces' approach: regulation supported by investment through non-regulatory methods. Te Upoko Taiao recognised that the restoration of ecosystems and habitats can be achieved through the proposed Plan when:

- Policies and rules require activities to have lesser effects on habitats and ecosystems, so they can naturally recover
- Non-regulatory methods such as education and advocacy encourage different behaviours or actions, and
- Non-regulatory methods establish a programme of active restoration

All of these avenues for restoration can incur costs. Restoration of habitats through changes to current practices may cost time and/or money. Some costs may be significant, though considerable benefit can often be gained from small changes in practice. Education and advocacy require staff time and materials. Active programmes of restoration can be carried out through WRC's operational departments or community groups, but also require time and budget.

The primary method that supports the implementation of the wetland objectives and policies is Method M20: Wetlands. This method is multi-faceted. It will:

- Be developed and implemented in partnership with mana whenua, landowners, territorial authorities and the community
- Promote the value of wetlands through the provision of information resources and guidance on the protection, restoration and management of wetlands
- Include the provision of technical and site-specific advice to landowners on the management of wetlands on their property
- Be the vehicle for the development of RM Plans with landowners
- Provide incentives to landowners to actively restore wetlands, including through assistance with the costs of fencing, pest plant and animal control, and planting
- Encourage and assist landowners to protect valuable wetlands through covenanting

WRC's Biodiversity Department will lead the implementation of this method. In the 2014/15 financial year the programme was allocated $30,000 and 0.5 FTE staff time. Depending on the demand and uptake of the programme the budget will be adjusted.

In addition to the Wetland Programme, the Biodiversity Department manages 'Key Native Ecosystems' from a separate budget line. The outstanding natural wetlands in Schedule A3 of the proposed Plan are already managed as part of this programme (with the exception of those on Department of Conservation land or under a DOC covenant), rather than out of the $30,000 allocated to the wetlands programme.

Method M12 is also relevant to the management and protection of wetlands – particularly the provision of plants through WRC's Akura Conservation Centre, and incentives such as assistance with the costs and labour associated with fencing, planting and pest control.

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Appendix: Provisions relevant to implementing the objectives

Table A1: Objective for natural wetlands

Objective O28	The extent of natural wetlands is maintained or increased, and their condition is restored.
Policies	Policy P8: Beneficial activities Policy P31: Aquatic ecosystem health and mahinga kai Policy P32: Adverse effects on aquatic ecosystem health and mahinga kai Policy P36: Effects on indigenous bird habitat Policy P37: Significant values of wetlands Policy P38: Restoration of wetlands Policy P43: Restoration Management plans Policy P102: Reclamation or drainage of the beds of lakes and rivers
Rules	Rule R97: Access to the beds of surface water bodies by livestock Rule R98: Livestock access to the beds of surface water bodies Wetlands general conditions Rule R104: Structures in natural wetlands, significant natural wetlands Rule R105: Planting and pest plant control in natural wetlands, significant natural wetlands, and outstanding natural wetlands Rule R106: Restoration of natural wetlands, significant natural wetlands, and outstanding natural wetlands Rule R107: Activities in natural wetlands and significant natural wetlands Rule R108: Activities in natural wetlands and significant natural wetlands
Method	Method M20: Wellington Regional Council will work in partnership with mana whenua, landowners, government and non-government organisations, and the community to: (a) promote the value of wetlands and advocate for their management, restoration and protection, and (b) provide guidance to landowners with wetlands on their property to assist with the management of those wetlands, and (c) develop and implement Restoration and Management Plans for outstanding wetlands and significant wetlands, and (d) encourage and assist with the legal protection of wetlands through covenanting with the QEII National Trust and the Department of Conservation.

Table A2: Objective for significant wetlands

Objective O35	Significant indigenous biodiversity
Policies	Policy P8: Beneficial activities Policy P31: Aquatic ecosystem health and mahinga kai Policy P32: Adverse effects on aquatic ecosystem health and mahinga kai Policy P36: Effects on indigenous bird habitat Policy P37: Significant values of wetlands Policy P38: Restoration of wetlands Policy P40: Ecosystems and habitats with significant indigenous biodiversity values Policy P41: Restoration of ecosystems and habitats with significant indigenous biodiversity values Policy P42: Managing adverse effects on sites with significant indigenous biodiversity values Policy P43: Restoration Management plans Policy P102: Reclamation or drainage of the beds of lakes and rivers
Rules	Rule R97: Access to the beds of surface water bodies by livestock Rule R98: Livestock access to the beds of surface water bodies Wetlands General Conditions: Rule R104: Structures in natural wetlands, significant natural wetlands Rule R105: Planting and pest plant control in natural wetlands, significant natural wetlands, and outstanding natural wetlands Rule R106: Restoration of natural wetlands, significant natural wetlands, and outstanding natural wetlands Rule R107: Activities in natural wetlands and significant natural wetlands Rule R108: Activities in natural wetlands and significant natural wetlands
Methods	M20: Wetlands

Table A3: Objective for outstanding wetlands

Objective O31	Outstanding water bodies and their significant values are protected
Policies	Policy P8: Beneficial activities Policy P31: Aquatic ecosystem health and mahinga kai Policy P32: Adverse effects on aquatic ecosystem health and mahinga kai Policy P36: Effects on indigenous bird habitat Policy P37: Significant values of wetlands Policy P38: Restoration of wetlands Policy P39: Adverse effects on outstanding water bodies Policy P43: Restoration Management plans Policy P102: Reclamation or drainage of the beds of lakes and rivers
Rules	Rule R97: Access to the beds of surface water bodies by livestock Rule R98: Livestock access to the beds of surface water bodies Wetlands general conditions Rule R105: Planting and pest plant control in natural wetlands, significant natural wetlands and outstanding natural wetlands Rule R106: Restoration of natural wetlands, significant natural wetlands and outstanding natural wetlands – controlled activity Rule R109: Activities in outstanding natural wetlands Rule R110: Activities in outstanding wetlands Rule R111: Reclamation of outstanding natural wetlands
Method	Method M20: Wetlands

Appendix: Costs and benefits of status quo vs provisions in the proposed Natural Resources Plan

Table A4: Costs and benefits of the options to maintain and restore natural wetlands

		Option 1 – Status quo (no change from operative plans)	Option 2 – Include specific rules for activities in natural wetlands (preferred option)
Costs	Council	Costs associated with identifying wetlands in the schedule, processing resource consents and assessing the extent to which proposed activities met the conditions on rules and policies in the operative plan. Low costs associated with implementing non-regulatory methods.	Increased costs associated with processing resource consents for more activities in wetlands, or likely to have effects on wetlands. Increased costs of monitoring and enforcing regulations, and plan outcomes. Increased cost to implement non-reg programmes
	Resource user	Costs associated with meeting the conditions of permitted activity rules, or applying for resource consent if the wetland is in the bed of a lake or river, or listed in the appendix.	Costs associated with meeting the conditions of permitted activity rules, or applying for resource consent for activities in wetlands. Costs associated with actions undertaken to avoid, remedy, mitigate or offset any more than minor effects of activities in wetlands. Lost opportunity to develop wetlands for grazing land or subdivision.
	Community costs	Continued loss of wetlands, from an estimated 10% of original extent when the operative plan was made, to 2.3% now. Subsequent loss or degradation of amenity and biodiversity values, and ecosystem services such as nutrient attenuation, sediment collection, shoreline stabilisation and flood protection.	Loss of potential for new jobs from subdivision or increased agricultural production. Rates to pay for non-reg programmes are shared across the community
Benefits	Council	Allowed the council to take a non-regulatory approach with landowners on wetland management and protection without a strong regulatory backdrop. The council benefitted from this approach through low regulatory costs and by averting conflict with landowners and agricultural sector organisations.	Improves relationships with tangata whenua and the community by delivering on the management of wetlands that they have requested. Contributes to the implementation of the NPS-FM in protecting the significant values of wetlands and of outstanding water bodies. Builds relationships with landowners by providing advice and assistance with wetland management and restoration.

		Option 1 – Status quo (no change from operative plans)	Option 2 – Include specific rules for activities in natural wetlands (preferred option)
	Resource user	Advice was available from the council for landowners wanting to manage their wetland areas. Landowners and other resource users benefited from the operative plan allowing activities that damaged or destroyed wetlands – particularly those that were outside the beds of lakes or rivers (a gap in the operative plan). Wetlands continued to be drained and developed for other purposes such as agricultural land, subdivision and roading projects.	Landowners will benefit from healthy functioning wetlands on their property through the ecosystem services the wetland provides: nutrient attenuation; water storage; flood protection etc. Where these services are not provided by a wetland they need to be engineered at great cost. Landowners will also benefit from fenced wetlands through the reduction in stock losses and time spent retrieving stuck animals. Landowners will benefit from the proposed approach providing a clear management framework for activities in wetlands. Landowners will benefit from the investment of council / rate-payers in providing advice and assistance with wetland management and restoration.
	Community benefits	Parts of the community may have benefited from the educational material developed in the non-regulatory methods of the operative plan, and may have changed the way they manage wetland on their property.	The community will benefit from healthy functioning wetlands and the ecosystem services the wetland provides: nutrient attenuation; water storage; flood protection etc. Where these services are not provided by a wetland they need to be engineered at great cost. The community will also benefit from the contribution of healthy functioning wetlands contributing to improving water quality in the region, and by the maintenance of indigenous ecosystems in wetlands. Mana whenua (being part of the community) will benefit as above – but will also benefit from an expression of kaitiakitanga, and improved mahinga kai. The community will benefit from improved recreational opportunities and amenity values.

		Option 1 – Status quo (no change from operative plans)	Option 2 – Include specific rules for activities in natural wetlands (preferred option)
Efficiency (costs vs benefits) and Effectiveness (will the provisions achieve the objective)		This option is not an efficient or effective way to achieve the objectives for wetland management in the proposed Plan, or give effect to the NPS-FM.	Efficiency - The costs to resource-users (stock exclusion, lost opportunity to develop) will be greater than those associated with the status quo as the provisions for maintaining wetland extent and improving their condition are stronger. However, the benefits will be greater as resource users gain greater appreciation of the ecosystem services wetlands provide to them and the community, and wetlands are protected in order to continue providing these services. Effectiveness - The proposed approach will be effective as it provides clarity to plan-users that there are rules that apply for activities specifically in wetlands. The provisions are effective at communicating the values of wetlands, and in delivering on the objective to maintain their extent and improve their condition in the region.
Risks		The risk of taking this approach is that it will fail to meet the new objective for wetlands, and the proposed Plan will fail to give effect to the NPS-FM. Given the priority given to protecting wetlands on private land, and that less than 3% of original wetlands remain, there is considerable risk in sticking with the status quo of losing the remaining wetlands in the region.	There are no risks identified for taking a stronger and clearer approach to maintaining the extent of wetlands in the region and improving their condition. The risk of *not* taking a stronger and clearer approach to maintaining or increasing the extent of wetlands in the region is that the management of wetlands in the long term will fail to achieve the Plan's more strategic objectives in respect of mauri, the intrinsic values of aquatic ecosystems, aquatic ecosystem health and mahinga kai, and the management and protection of indigenous biodiversity.
Appropriateness		This option is not the most appropriate as it fails to acknowledge and provide for the achievement of a range of objectives relating to the management of natural resources considered to be appropriate to meeting the purpose of the RMA.	The new provisions are appropriate given the high level of efficiency and effectiveness for achieving the Plan's objectives and meeting the purpose of the RMA – the sustainable management of natural and physical resources.

		Option 1 – Status quo (no change from operative plans)	Option 2 – Include specific rules for activities in natural wetlands (preferred option)
Conclusions		Option 1 is not considered to be an effective or efficient means of achieving the proposed objective.	The proposed provisions for the management of wetlands in the region are considered efficient and effective, and the most appropriate way to achieve the objectives.

Table A5: Costs and benefits of the options to protect significant wetlands

		Option 1 – Status quo (no change from operative plan)	Option 2 - Identify significant wetlands and protect them using a combined regulatory and non-regulatory approach (preferred option)
Costs	Council	Costs associated with identifying and scheduling water bodies with a high degree of natural character, and with threatened fish and plants. Costs associated with processing resource consents, enforcement and prosecution for breaches of rules or consent conditions.	Moderate costs associated with identifying significant wetlands to schedule in the plan, and with surveying wetlands in the region in preparation for the plan review ($60 000 + 0.5 FTE), including engaging with landowners. Costs in establishing and running the non-regulatory wetland programme to develop Restoration Management Plans for landowners with significant wetlands. Costs in providing assistance with the fencing, pest control, and planting of significant wetlands
	Resource user	None – the wetlands listed in the Freshwater Plan were on public land. Their protection had no cost implications for resource users.	Forgone opportunity to carry out activities in significant wetlands. Costs associated with applying for resource consent for activities in significant wetlands; and of avoiding, remedying, mitigating or offsetting more than minor adverse effects from activities in or near significant wetlands Landowners may incur costs in excluding livestock from scheduled sites. There may also be a cost in providing reticulated stock drinking water where this does not currently exist.
	Community costs	Cost of continued degradation and loss of indigenous biodiversity and ecosystem functions in the region's wetlands.	Increased rates to fund non-regulatory assistance to landowners.

		Option 1 – Status quo (no change from operative plan)	Option 2 - Identify significant wetlands and protect them using a combined regulatory and non-regulatory approach (preferred option)
Benefits	Council	Not attempting to schedule significant wetlands on private land in the Freshwater Plan gave Council time to work with willing landowners in a non-regulatory way. This approach improved relationships with some landowners, and allowed the council to educate landowners on the benefits of covenanting wetlands on private land.	This approach delivers on WRC's requirement (from RPS policies 23 and 24), and the community's desire to identify protect significant wetlands. It also delivers on one of the priority ecosystems for protection on private land (identified by MFE). Making the time and resources available to identify and identify significant wetlands in the proposed Plan provides benefit to WRC officers (but also to resource users and the community) of being clear where the known significant wetlands are, and what policies and rules apply to them. The non-regulatory methods supporting the policies and rules has benefit for council in that the objectives of the plan are more likely to be achieved through a collaborative working relationship with landowners, stakeholders and other agencies. Standalone objectives, strong policies, clear rules, identified significant wetlands, and non-regulatory investment make up a belt-and-braces approach to protecting the remaining wetlands with significant indigenous biodiversity values in the region.
	Resource user	Resource users are familiar with the current plans, and the approach to protecting a limited number of sites.	This approach has raised the awareness of landowners to the presence of a significant wetland on their property through WRC's engagement with them during the development of the proposed Plan. Resource users will benefit from the continued or improved supply of ecosystem services from the protection of significant wetlands in the proposed Plan. A clear set of rules have been developed for these significant wetlands, so resource users will have greater certainty as to which activities are permitted, and which require resource consent.

		Option 1 – Status quo (no change from operative plan)	Option 2 - Identify significant wetlands and protect them using a combined regulatory and non-regulatory approach (preferred option)
	Community benefits	Communities initially benefited from the non-regulatory approach in the current plans through lower levels of tension and anxiety than would have occurred if wetlands on private land had been protected, and from the education and information campaigns introduced as non-regulatory methods.	Communities will benefit from the protection and restoration of wetlands with significant indigenous biodiversity values through the ecosystem services they provide, through improved recreational opportunities and amenity benefits. All parts of the community will benefit from retaining the intrinsic values of significant wetlands, and tangata whenua will benefit from the restoration of indigenous ecosystems that support their cultural identity and practices.
Efficiency (costs vs benefits) and Effectiveness (will the provisions achieve the objective)		This option is not an efficient or effective way of achieving the objective to protect and restore significant wetlands.	Considering the expected costs and expected benefits this option is seen as being an efficient way of achieving the objective.
Risks		Loss of significant indigenous biodiversity values from the wetlands that remain in the region. Potential appeals from parties wanting to enforce the requirements of the RPS and NPSFM.	There is sufficient information to provide for greater certainty over the risks to indigenous biodiversity from inappropriate use and development. Not acting is a greater risk, given the certainty of information.
Appropriateness		The status quo is not the most appropriate option as it fails to implement RPS policies 23 and 24 to identify and protect ecosystems and habitats with significant indigenous biodiversity values. . It does not implement the RPS or give effect to the NPSFM.	The new provisions are appropriate given the high level of efficiency and effectiveness for meeting the purpose of the RMA, implementing the RPS, and achieving the Plan's objective to protect and restore ecosystems and habitats with significant indigenous biodiversity values
Conclusions		Option 1 is not considered to be the most effective or efficient means of achieving the proposed objectives or meeting the purpose of the RMA.	The proposed provisions for the management of the region's sites and habitats with significant indigenous biodiversity values are considered the most efficient and effective for meeting the purpose of the RMA by protecting these sites in a manner that provides for the community's economic, social and cultural wellbeing.

Table A6: Costs and benefits of the options to protect outstanding wetlands

		Option 1 – Status Quo (no change from the Operative Plan)	Option 2 – Identify outstanding wetlands and protect them using a combined regulatory and non-regulatory approach (preferred option)
Costs	Council	Would not meet requirements of NPS-FM. All outstanding water bodies would have to be identified through an appropriate process.	No costs other than any resource consents arising that would need to be processed. Cost of identifying "outstanding" water bodies for recreational and landscape values remains.
	Resource user	Would not meet requirements of NPS-FM. Costs are unlikely and would be low because high value water bodies already have a high degree of protection and few activities are undertaken in them.	Costs are unlikely and would be low because high value water bodies already have a high degree of protection and few activities are ever undertaken in them.
	Community costs	Would not meet requirements of NPS-FM.	Costs are unlikely and would be low because high value water bodies already have a high degree of protection and few activities are ever undertaken in them.
Benefits	Council	No benefits.	Certainty about the level of protection in outstanding water bodies that are primarily used for their intrinsic, aesthetic, recreation, natural character, and landscape values.
	Resource user	Resource consents in outstanding water bodies would be processed as discretionary rather than non-complying.	Certainty about the level of protection in outstanding water bodies (and their location) that are primarily used for their intrinsic, aesthetic, recreation, natural character and landscape values.
	Community benefits	Uncertainty about the level of protection in water bodies that are primarily used for their intrinsic, aesthetic, recreation, natural character and landscape values.	Certainty about the level of protection in outstanding water bodies (and their location) that are primarily used for their intrinsic, aesthetic, recreation, natural character and landscape values.
Efficiency (costs vs benefits) and Effectiveness (will the provisions achieve the objective)		The approach is the least efficient and effective because it does not give effect to the NPS-FM and takes no steps toward giving effect to the NPS-FM.	The approach will have the least cost for the greatest benefit because it uses existing information while recognising that further work is needed to establish outstanding water bodies for all relevant values in the region. It gives effect to the NPS-FM and provides clarity and certainty about outstanding water bodies.

		Option 1 – Status Quo (no change from the Operative Plan)	Option 2 – Identify outstanding wetlands and protect them using a combined regulatory and non-regulatory approach (preferred option)
Risks		Not giving effect to the NPS-FM in the proposed Plan would be challenged.	Criteria used for outstanding values in the proposed Plan could be challenged.
Appropriateness		The status quo is not the most appropriate approach to achieve the objective and give effect to the purpose of the RMA.	The approach is appropriate because it gives effect to the NPSFW such that the greatest benefit is achieved with the available information while recognising that further information is needed before all relevant values for outstanding water bodies can be included in the Plan.
Conclusions		The approach of the proposed Plan is the best available at the present time.	

The Greater Wellington Regional Council's purpose is to enrich life in the Wellington Region by building resilient, connected and prosperous communities, protecting and enhancing our natural assets, and inspiring pride in what makes us unique

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