5. Fresh Water

5.1 Introduction

The Act divides water resources into three categories: fresh water; geothermal water; and coastal water (s. 2). This chapter discusses fresh water, while chapter 7, "The Coastal Environment", deals with coastal water. There is, of course, a strong link between fresh and coastal waters because rivers and streams eventually flow into the sea. Fresh water is usually thought of as including surface water (lakes, rivers, streams, swamps, wetlands, etc.) and groundwater (aquifers, underground streams, etc.). The Act's special provisions for geothermal water are not relevant to this Region as it does not contain any known geothermal water. The Act provides definitions for such words as "fresh water", "river", "bed" (of a lake or river), "wetland", and so on, which are adopted in this chapter. However, references to water should be taken to mean fresh water unless specifically identified as coastal water.

Water is essential to the social, economic and environmental well-being of the Region. However, the demands placed on it are not easy to satisfy and frequently clash with one another. This occurs most often over the use to be made of a particular river or water body. Many people value water's natural or intrinsic characteristics. Some wish to use it to carry away waste or as a raw material for a production process, so generating wealth and jobs; others wish to use it for swimming, fishing or other forms of recreation; all of these uses may conflict with the need for pure water for public water supply purposes. In some areas, and at certain times of the year, there are conflicts between the human need for water and the environment's needs for survival. There may be inadequate water to satisfy user needs and community aspirations, as well environmental or ecosystem needs. Although water is, in general, a renewable resource, the ecosystems that depend on it can be seriously damaged by even brief periods of inadequate supply or inferior water quality.

The Act makes the trade-offs between human needs and environmental requirements much more explicit than in the past. The sustainable management of fresh water means it should be available (in quantity and of an appropriate quality) for meeting a range of human needs. However, this should not be at the expense of its life supporting capacity or its ability to meet the needs of

future generations. Furthermore, the effects of its use on the environment should be managed as far as possible.

The Wellington Regional Council has the primary role for managing the use of water and resolving any conflicts that arise from its use. Unlike some of the other resources discussed in the Policy Statement, the management of water has a strong regulatory focus. This is because the Act stipulates that taking water or discharging into water are prohibited unless expressly authorised.

The only possible forms of authorisation are a resource consent (which must be obtained from the Council) or a rule in a regional plan allowing an activity without a consent - making it a permitted activity (s. 14(3)). Some other activities are considered to be existing uses and these may continue until a plan says otherwise (s. 20). Moreover, while the Act provides for some economic instruments (e.g., permits to take water may be sold subject to certain conditions (s. 136)), these are limited.

However, the Council is committed to facilitating growth and economic development in the Region. It will make the process for obtaining consents as straightforward and efficient as possible and work to identify activities which may become permitted or controlled through minimal regulation.

Similarly, while economic instruments appear to be limited in their application, the Council will continue to investigate their future use. This will include the use of tradeable water permits and the promotion of charges for domestic consumption to ensure water is used efficiently.

5.2 Issues

Issue 1

Poor water quality is of concern to many people. The quality of fresh water is high on the list of the community's most significant environmental worries. Disposal of wastes into water is becoming more and more unacceptable to the regional community. For iwi, discharges of sewage are an affront to the mauri (life principle) of water bodies. However, sewage in fresh and coastal water is also of concern to the community more generally.

Fresh Water Objectives 2 and 3.

See also Waste Issue 6.

Freshwater bodies identified by the Wellington Regional Council as having impaired water quality include:

- Waikanae River Estuary, Ngarara Stream and Mazengarb Drain, (Kapiti District);
- Hulls Creek (mid-section) (Upper Hutt City);
- Waiwhetu Stream and Wainuiomata River (Lower Hutt City);
- Ngauranga and Makara Streams (Wellington City);
- Makoura Stream (Masterton District);
- The lower Ruamahanga River (South Wairarapa District); and
- The shallow groundwater aquifer in the vicinity of the former Waingawa freezing works (Carterton District).

Poor water quality reduces the use that can be made of the water and, in particular, downgrades instream values, for example, aquatic ecosystems, swimming, fishing and mahinga kai.

The most common factors which limit water quality are bacterial and nutrient contamination. *Giardia* cysts have also been located at over 20 river sites throughout the Region.

Water quality is primarily affected by discharges, although the severity of any discharge is related to the quantity of the water in a water body. Pollution discharges can result in reduced species diversity and ecosystem instability. Discharges include:

- Pollution spills, for example, from manufacturing processes, petrochemicals, timber treatment chemicals.

See also Waste Issue 8.

- Stormwater run-off from industrial zones and city streets, for example, heavy metals and chemicals.
- Sediment from land clearance, track and road construction, quarries and new subdivision, for example, silt, loess.

See also Soil Issue 6.

- Discharges from sewage treatment plants, septic tanks, and

See also Waste Issue 6.

leaks from sewage pipelines, including trade wastes.

- Diffuse pollution (non-point source), for example, silt from eroding hill country, and nutrients, including nitrate and phosphorous from agricultural activities, animal excreta, and chemicals.
- Agricultural wastes, e.g., cowshed effluent, poultry, stockyard and piggery waste, etc. These lead to high nitrates in shallow groundwaters or nutrient enrichment in streams.

See also Soil Issues 2 and 11.

- Discharges from mining operations, for example, stormwater run-off and water from aggregate washing which is often high in silt.

See also Soil Issue 9.

While there are undoubtedly areas of poor fresh water quality in the Region, public concern with water quality may be somewhat at variance with the scientific evidence. This concern may reflect a widely felt desire rather than a realistic appraisal of the state of the resource. There is also likely to be a degree of "carry over" from the **coastal** water quality (sewage) issue which has been prominent in the Wellington metropolitan area for many years. The 1993 New Zealand Water Quality Index, which measures the quality of rivers and streams, found (for the area west of the Rimutaka and Tararua Ranges) that 59 percent of monitored sites were in a good or very good condition (and classified as "suitable for general use"), 36 percent of sites were "doubtful", and only 5 percent were unsuitable for general use.[6]

See also Coastal Environment Issue 4.

This 5 percent are in a poor condition. In general, the rivers of the Wairarapa are in a better condition than those of the western part of the Region.

In this Region, as elsewhere, the quality of streams and rivers is closely linked to the predominant land use. The Region's catchments which are in native vegetation are in very good condition and our rural streams are in a better state than those regions with high density dairy production. Our urban streams are typical of urban streams elsewhere, whilst rivers such as the Hutt compare favourably — it passes through a major urban area and yet has high quality water and supports a quality trout fishery.

Issue 2

Some uses of fresh water do not meet the **expectations of the tangata whenua** for water. For them, water is a taonga (see section 3.3(2)). It provides essential elements of both a spiritual and physical nature and possesses a mauri or life force which can

Fresh Water Objectives 1-3.

be harmed by certain practices, such as diverting water between catchments or rivers.

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[6] Wellington Regional Council, 1993, *Baseline Water Quality of Rivers and Streams in the Wellington Region : 1992/3*, Wellington Regional Council, Wellington, pp. 3-13.

Iwi believe some rivers to be under threat, saying mauri has been diminished by discharges and/or water diversion, for example, Ngati Raukawa believe this of the Otaki River.

Issue 3

There are conflicts in the allocation of water because of **competing uses and values**. These competing demands on the resource cannot, at times, be satisfied. Fresh water is of importance for:

Fresh Water Objectives 1-3.

- The community as a source of public water supply, for example, Hutt River at Kaitoke, Waikanae River upstream of the railway bridge;
- Industry, both as a resource to use and as a medium in which to dispose of waste;
- Anglers for its trout population, for example, mid-Ruamahanga River, Wainuiomata River;
- Recreationists for the "thrill of the experience", for example, Otaki River Gorge;
- Intrinsic and wildlife values, e.g., migrating birds use Lake Wairarapa and its associated wetlands (a habitat of national significance);
- Farmers for irrigation and other uses; and
- The community in general for its aesthetic and scenic values, beauty, inspiration, and so on.

Issue 4

Overallocation and the **demands of sustainable management** are presenting increasing challenges to water management.

Fresh Water Objective 1.

The sustainable management of water requires an adequate residual flow to be left in rivers to safeguard fish and wildlife habitats and provide for other instream values.

However, overallocation of water has, in some places, created periods when the demand exceeds supply, for example, the Waitohu River, the Hutt River at Kaitoke (Wellington water supply), and the Kaipatangata Stream in the Wairarapa (Carterton water supply).

There are also a number of notified uses, authorised under previous legislation, but without time limits or conditions, which have resulted in takes or discharges which cannot be considered sustainable in the long-term. The Act states that these will expire in 2001.

Issue 5

Of related concern is how to manage water so that **the needs of future generations** are taken into account (s. 5). While it may be hard to determine what future generations may need, it is easier to determine what they do not need — water bodies that are polluted or over allocated to such an extent that they cannot be used or enjoyed.

Fresh Water Objectives 1 and 2.

Issue 6

Some **activities in the beds of rivers and streams**, such as shingle abstraction, cross blading, and stopbank construction, may have a significant impact on the river ecosystem and threaten related groundwater systems. Works are undertaken for a number of purposes, including protection of the community and its assets (flood prevention), telecommunications, structures to take or dam water, and the extraction of shingle.

Fresh Water Objective 2. See also Soil Issue 8.

Issue 7

There is widespread concern about the **loss of freshwater habitats**. Wetlands, in particular, are a fast disappearing habitat and there is considerable support for their protection. Natural areas have also declined dramatically through human settlement and land clearance. Most of the catchments in the Region are heavily modified, except for those in the Tararua and Rimutaka Ranges.

Fresh Water Objective 3. See also Ecosystems Issues 1 and 6.

Further losses of habitat may result from overallocation of water, modification of small stream channels and silting due to run-off from subdivision, for example, at Pauatahanui. Discharges from sewage ponds or agricultural waste can also cause algal growths which restrict habitats.

Issue 8

S. 6 and 7 of the Act require consideration to be given to the **protection of various aspects of fresh water**, including quality, natural character, and any scenic, cultural, recreational, fisheries, or other amenity values. There is currently little formal protection for rivers, lakes and streams, or parts thereof, that are highly valued by the community (e.g., the aquifer under the Hutt Valley).

Fresh Water Objective 3. See also Ecosystems Issues 5 and 6.

Only some water bodies are protected in any way by the Wellington Regional Council. This includes limiting access to water supply catchments, preserving the Lake Wairarapa wetland system through a national water conservation order, and maintaining the quality of the Hutt aquifer from saline intrusion. As well as protection, there are also public demands for the enhancement of water quality.

Issue 9

People are concerned about their inability, in some instances, to gain **access to water bodies** and about the potential loss of access elsewhere. Many people enjoy the experience of interacting with fresh water. People are concerned at the denial of public access into the headwaters of public water supply catchments. Such access, without continuous full treatment of the water supply, will increase risks to public health.

Fresh Water Policy 16.

Issue 10

The **increasing use of water** for domestic, commercial, agricultural and industrial purposes (garden watering, car washes, bottling plants, irrigation, etc.) has made water conservation an important issue. Population growth, a changing demography, and climatic conditions, for example, have put pressure on the Waikanae River. The Kapiti Coast District Council has already taken steps to reduce consumption in its area. This issue, however, is likely to become a problem for the Wellington urban area as a whole if consumption is not held in check. Issues such as charging for water, metering, efficient use, and leakage from reticulation systems are all related to this problem.

Fresh Water Objective 1.

Inefficient and inappropriate use of water will result in increased costs being passed onto urban ratepayers if new water sources have to be investigated and supply infrastructure developed.

5.3 Objectives

Objective 1

The quantity of fresh water meets the range of uses and values for which it is required, safeguards its life supporting capacity, and has the potential to meet the reasonably foreseeable needs of future generations.

Fresh Water Policies 1-3.

The meaning of this objective is that water should be available to meet the range of uses that people make of it and to provide for the requirements of the riverine ecosystem. Water should be available for the following (not listed in any order of importance):

to achieve growth and development in the Region; to enable people to provide for their social and cultural well-being, and their health and safety; to meet the spiritual, recreational, scenic, heritage, and other amenity needs of the regional community; to provide for the requirements of aquatic and riparian ecosystems; to meet the reasonably foreseeable needs of future generations; and to safeguard the water's life supporting capacity.

Objective 2

The quality of fresh water meets the range of uses and values for which it is required, safeguards its life supporting capacity, and has the potential to meet the reasonably foreseeable needs of future generations.

Fresh Water Policies 4-9.

The meaning of this objective is the same as for Objective 1, except that it is concerned with the quality of fresh water (that is, water should be available of a quality that allows for the uses and values listed in the explanation to Objective 1 to be provided for). There is a strong public expectation that good quality water should be available so that all of its associated benefits may be enjoyed. Poor quality water has the potential to reduce its life supporting capacity and prevent both present and future generations from fulfilling their reasonable needs. It is also a statutory requirement that the quality of fresh water is maintained.

Objective 3

Freshwater resources of significance or of high value for cultural, spiritual, scenic, ecosystem, natural, recreational, or other amenity reasons are protected or enhanced.

Fresh Water Policies 10-16.

Some water bodies (or parts thereof) and their component ecosystems, habitats, and flora and fauna have greater importance than others and require a higher level of protection than the norm. For iwi, all water bodies are a taonga. Other rivers and streams may have the potential for a higher status if they were improved in some way. The principal reasons for adopting this objective are to safeguard these waters and to give effect to s. 6-8 of the Act.

See also Ecosystems Objective 5.

5.4 Policies

Policies for fresh water are arranged in three groups: **Policies 1 to 3** deal with water quantity; **Policies 4 to 9** deal with water quality; and **Policies 10 to 16** deal with iwi matters, the management of waters of special significance and amenity values.

Policy 1

To manage the quantity of fresh water so that it is available for a range of uses and values, and:

Methods 1-6.

(1) Its life supporting capacity is safeguarded; and

(2) Its potential to meet the reasonably foreseeable needs of future generations is sustained; and,

(3) For surface water, any adverse effects on aquatic ecosystems are avoided, remedied, or mitigated.

Water is used in many ways and may have a number of values attached to it. These values include recreational, cultural, spiritual, scenic, and heritage values, as well as the needs of fish and other components of the aquatic ecosystem.

Water management has traditionally been concerned with balancing these uses and values. This remains a practical necessity. However, the Act now requires additional consideration to be given to the sustainability of the resource and to the needs of future generations. While ensuring water is available for the many and varied uses humans make of it (meaning some balancing must occur), the Act requires some priority to be given to these requirements. In addition, s. 7 requires policy to have regard to the quality of the environment and the intrinsic values of ecosystems — hence the requirement to reduce any adverse effects on aquatic ecosystems to the extent possible.

Policy 2

To promote the conservation and efficient use of fresh water.

Fresh Water Methods 7-12.

Competing water uses can result in water shortages and conflicts, particularly during low flow periods. The conservation and efficient use of water may reduce conflicts and increase water availability. S. 7(b) of the Act requires that particular regard be given to the efficient use of natural resources.

A reduction in the use of water now will also reduce the stress on vulnerable water bodies and assist them to meet the needs of future generations.

Policy 3

To control the use and allocation of groundwater so that it is not depleted in the long-term and sea water intrusion is minimised.

Fresh Water Methods 13-16.

Groundwater is a valuable resource currently used for public water supply (rural areas, Lower Hutt and Otaki), industrial uses (cooling water in Lower Hutt City and Upper Hutt City), and the irrigation of horticultural crops (grapes, kiwi fruit, pip fruit) and pasture. Iwi regard it as important for its spiritual qualities and its purity.

The resource needs to be managed so that abstractions are sustainable both in the short and long-terms (i.e., that groundwater levels do not decline over time) and that adverse effects from human activities, such as ground sinking, interference between wells, and springs drying up are minimised.

Aquifers that connect with the sea must be protected against over-extraction to prevent sea water flowing into them. This can render them unusable for many years.

Policy 4

To maintain and protect the quality of fresh water so that it is available for a range of uses and values, and:

Fresh Water Methods 1, 2 and 17-21. See also Soil Policies 1, 2 and 6.

(1) Its life supporting capacity is safeguarded; and

(2) Its potential to meet the reasonably foreseeable needs of future generations is sustained; and

(3) For surface water, any adverse effects on aquatic and riparian ecosystems are avoided, remedied, or mitigated.

This policy is similar to Fresh Water Policy 1. It is aimed at ensuring there is water available of a **quality** that meets the uses and values which might reasonably be expected of it. Quality may have a number of dimensions (colour, clarity, the presence of contaminants, biological growths, etc.) and these may vary from one water body to another. The desired quality of a water body will depend on the uses and values which the community desires for it. For example, it may be desirable to allow some deterioration in one river in order to protect the special scenic or recreational values of another.

The policy recognises that fresh water may be used to assimilate wastes and that there may be some acceptable diminution, or local deterioration, of water quality as a result. However, in no instance should any deterioration in quality be allowed to jeopardise the life supporting capacity of the water body or prevent its potential for providing for the needs of future generations from being

realised. With regard to surface water, the needs of the aquatic ecosystem also need to be considered and adverse effects provided for, where necessary. The Act also contains a number of parameters relating to surface water quality which must not be exceeded (e.g., s. 69 and 70). These parameters are also relevant to other policies in this chapter (e.g., Policies 6, 9 and 10).

Water bodies may need to be protected from a number of external influences or changes in their composition. For surface water this could include waterborne disease, sewage, excess nutrients, changes in temperature and colour, or activities likely to damage the aquatic ecosystem (such as river works). If water bodies are to be managed according to differing parameters, it follows that what is maintained or protected will also vary from one water body to another.

While the overall intent of this policy is to ensure water is available for the widest possible range of uses and values, it is recognised that in some cases some of these may be inconsistent with others.

Policy 5

To improve water quality and restore contaminated water to a standard which is appropriate for its desired uses and natural values.

Fresh Water Methods 22-25.

Natural and near natural water is widely sought after by people. It protects ecosystems and contributes to meeting the needs of future generations. The degree of improvement required for any particular water body should be determined by reference to the uses the community may desire of it and the values attached to it. In this policy the word "uses" should be widely defined to include any values which the community may also attach to the water. This may include, for example, recreational, aesthetic, or cultural values.

The community may be happy to see lesser quality water continue in some cases where the cost of improvement is prohibitive. Implementation of the policy should also recognise that some contaminated water is naturally contaminated and enhancement is not realistic. For example, some groundwater is more highly mineralised than other groundwater. This is because saline water from deeper formations has migrated to near surface water through natural processes such as faulting.

See also

This policy is also important for integrating environmental processes in both inland and coastal waters. The policy seeks to ensure that, where necessary, the quality of the water entering the coastal marine area is improved with a consequent improvement in the quality of coastal waters.

Coastal Environment Objective 3 and Coastal Environment Policy 5.

Policy 6

To ensure that the effects of contaminants contained in point source discharges on the quality of fresh water and aquatic ecosystems are avoided, remedied, or mitigated and allowing for reasonable mixing:

Fresh Water Methods 26-29.

(1) Do not render any fresh water unsuitable for any purpose specified in any regional plan for that water;

(2) Do not prevent the receiving fresh water from meeting any standards established in any regional plan for that water;

(3) Do not render any water in the coastal marine area unsuitable for any purpose specified in a regional coastal plan for the Wellington Region.

See also Coastal Environment Policy 5 and Waste Policy 10.

Point source discharges of contaminants emanate from a single (usually controllable) source. Examples include stormwater discharges, pollution spills, mining discharges, sewage overflows and discharges, landfills, dairy shed effluent disposal, piggery and poultry farms wastes, and septic tanks.

A variety of instruments is currently in place to manage these activities, but there are inconsistencies of approach across the Region. The effects of some of the more minor of these activities are covered by rules in the Transitional Regional Plan called general authorisations. These allow activities to occur without a resource consent. However, the effects of some of these may not be sustainable.

The potential for the quality of point source discharges to be controlled means that the discharge of contaminants can be managed to meet any desired objectives in relation to receiving waters. Discharges can be tied to the purposes to which their receiving waters are put (clause 1 of the Policy). Under the Act, purposes for particular water bodies may be specified in a regional plan (s. 69).

Clause 2 of the policy is designed to ensure that the discharge of contaminants does not prevent the receiving water from meeting any standards that may have been established for it.

The purpose of clause 3 is to ensure that the quality of fresh water entering the coastal marine area does not affect the quality of any water in that area to such an extent that it is not suitable for any purpose specified in the Regional Coastal Plan for the Wellington Region.

Clause 3 also provides for the resources of the Region to be managed in an integrated manner, consistent with the philosophy of the Act (s. 59).

In addition to the requirements of this Policy, any discharge for which a resource consent is granted by the Council must, after reasonable mixing, comply with criteria established by the Act (s. 107(1)). These criteria establish a set of statutory minimum water quality standards that apply irrespective of whether a discharge is permitted as of right or controlled in some way.

Policy 7

To avoid, remedy, or mitigate adverse effects on water quality and aquatic ecosystems of contaminants contained in non-point source discharges.

Fresh Water Methods 30-33.

See also Soil Policy 6.

Fresh water (including groundwater) may be contaminated by pollutants entering it from a diffuse range of sources (non-point sources), as well as from a single controllable discharge (point sources). The run-off from most land uses — pastoral, horticultural, forestry (during establishment and logging operations), industrial, urban areas — contains contaminants with the potential to degrade the quality of water. Rural run-off may contain nutrients, sediment, agrichemicals and effluent. In urban areas run-off may also contain sediments and nutrients, as well as hazardous substances and heavy metals from motor vehicles and roads.

The reduction of adverse effects is the only practical policy response to this issue since the relationship between the cause (activity) and the effect (contamination) is often difficult to determine. The diffuse nature of the origin of such contaminants prevents the adoption of a more strict policy to ensure their effects are consistent with the purposes and uses identified for their receiving waters.

Policy 8

To promote the retirement and planting of riparian margins for the purposes of maintaining or improving the structural integrity of the beds and banks of water bodies, flood management, maintaining or enhancing water quality, and encouraging the healthy functioning of aquatic and riparian ecosystems.

Methods 30-33.
See also Soil Policies 1, 4 and 8, and Ecosystems Method 17

In determining catchments, subcatchments, or reaches of water bodies to which this policy might apply, to have regard to the following:

(1) Any existing inferior water quality (including high water temperatures, and nitrate and dissolved phosphate levels);

(2) Any existing inferior habitat quality (including instream habitat);

(3) The potential of land uses to affect water quality and their proximity to a watercourse;

(4) The actual or likely contamination from non-point source contamination;

(5) The extent of any bank degradation, erosion, or loss of vegetation;

(6) The actual or potential uses made or to be made of the water body;

(7) The actual or potential amenity values of the water body (including scenic and recreational values);

(8) Any relevant Maori spiritual or cultural values; and

(9) Any significant flora or fauna in the water body.

The purpose of this policy is to reduce the effects of non-point source pollution on water quality, bank erosion, and riparian ecosystems and to promote the benefits of riparian margins. While riparian management offers a means of improving the freshwater environment, it involves costs which must be justified. The policy, therefore, includes criteria for identifying and prioritising water bodies for which riparian management may be applicable.

Policy 9

To avoid, remedy, or mitigate the adverse effects of modifications to the beds of water bodies on water quality, groundwater, aquatic

ecosystems, and the amenity and cultural values of water.

Methods 34-37.

See also Soil Policies 4 and 5.

This policy refers to activities in or on the beds of lakes and rivers. Although river and lake beds are classed as land by the Act, policy for the effects of their use on water and related ecosystems is provided for in this chapter. Provision needs to be made for the management of activities that have the potential to affect adversely water based ecosystems, water quality, groundwater, or any uses and values associated with the water. Such activities include river management works (rock rip-rap, concrete blocks for bank protection, bank protection plantings, groynes), the extraction of material from watercourses (gravel), and structures (bridges, culverts, dams, weirs, stopbanks, poles, pylons supporting overhead wires, discharge outlets and water intake inlets). Adverse effects on the environment from such activities may include flooding, water quality degradation, interruption of flows, inhibitions on the movement of aquatic life, and soil erosion.

The need for river works is often considerable, despite their adverse effects, as communities take steps to avoid or mitigate natural hazards, store water for use during low flow periods, or generate hydro-electricity.

Policy 10

To manage the quality of water in, and the flows, levels and beds of, water bodies so that the following values are protected:

Fresh Water Methods 38-42.

(1) Regionally significant natural features, indigenous vegetation or regionally significant habitats of indigenous aquatic fauna, including those identified in table 4.

(2) Scenes or landscapes of regional significance within which water forms an essential component, as identified in table 5.

(3) Landforms and geological features of regional significance, including those identified in table 6.

(4) Heritage, recreational, scientific, or other amenity or intrinsic values of regional significance, including those identified in table 7.

This policy is designed to provide a high degree of protection for waters of high value. Rivers, lakes, and streams may be regarded as regionally significant for a number of reasons. These include the presence of indigenous fauna and flora, scenic or landscape

See also Ecosystems Policy 5 and Coastal Environment Policy 1.

attributes, the presence of landforms or geological features (fault trace, river terrace, dune lakes, etc.), naturalness, heritage, recreational, or scientific qualities, and other amenity or intrinsic values (e.g., their form, biological diversity, resilience).

Some of these values are matters of national importance which are required to be recognised and provided for in a Regional Policy Statement (s. 6). Others are mentioned in s. 7, which states that particular regard shall be had to amenity values (including heritage, recreational, and scientific values), the intrinsic values of ecosystems, the quality of the environment and any of its finite features.

Although s. 6 refers to the need to protect **outstanding** natural features, the Act provides no guidance as to the meaning of this word. In this case (Policy 10(1)) any natural feature which is regionally significant is considered to be an outstanding natural feature under s. 6.

Table 4 : Water Bodies of Regional Significance for their Natural Features, Indigenous Vegetation or Habitats of Indigenous Aquatic Fauna

- Waiohine River (gorge and above)
- Otaki River (gorge and above)
- Hutt River (Kaitoke Gorge and above)
- Lake Kohangapiripiri
- Lake Kohangatera
- Lake Onoke
- Upper Wainuiomata River
- Orongorongo River
- Lake Wairarapa

Table 5 : Water Bodies of Regional Significance for their Landscape and Scenic Qualities

- Ruamahanga River (gorge and above)
- Waiohine River (gorge and above)
- Otaki River (gorge and above)
- Hutt River (Kaitoke Gorge and above)
- Orongorongo River (upper reaches)

Table 6 : Water Bodies of Regional Significance for their Landforms and Geological Characteristics

- Hurupi Stream (stream cliffs at coast)
- Bells Creek, Mangaopari Stream, Makara River (4 km of river and stream cuts)
- Otaki River, upstream of Pukehinau Stream
- Ruakokopatuna Gorge
- McLouds Trig Rock Slump (Hidden Lakes)
- Kaiwhata Stream Sills

Table 7 : Water Bodies of Regional Significance for their Heritage, Recreational or Other Amenity Values

- Mid-Ruamahanga River (recreation, angling)
- Otaki River, gorge and above (recreation, angling)
- Otaki River, gorge to State Highway 1 (recreation, angling)
- Hutt River, Kaitoke Gorge and above (recreation)
- Mid-Hutt River (angling)
- Wainuiomata River (angling)
- Kopuaranga River (angling)
- Middle and Lower Orongorongo (recreation)
- Lake Onoke (recreation)
- Lake Wairarapa (recreation, waterfowl hunting)

This policy seeks to protect the special values which make the water body regionally significant. This may include protection from effects which arise indirectly or cumulatively. Water bodies identified in tables 4 to 7 were derived from assessments prepared by relevant professional bodies since 1984 and other studies by the Wellington Regional Council.[7]

The policy seeks to provide protection for the listed sites, but not to exclude protection of sites of regional significance that have not been identified in the tables.

S. 7 of the Act requires the Regional Policy Statement to have particular regard to the protection of the habitat of trout. This is achieved by the following: protecting the recreational fishing values of highly valued streams and rivers under **Policy 10** (thereby protecting the conditions that exist in those rivers which cause them to be valued highly); requiring the avoidance, remedying, or mitigation of effects on recreational fishing values and the habitat of trout in water bodies to which **Policy 11** applies; **Policy 11's** attention to near natural areas; the requirements of **Policy 9** (on modifications to watercourses and river works); and

all other policies which aim to maintain or improve the quality or quantity of fresh water.

Policy 11

To ensure that, in respect of all water bodies not covered by Fresh Water Policy 10, any adverse effects on amenity values or the intrinsic values of ecosystems which may result from any use and development, and on any natural or near natural areas, are avoided, remedied, or mitigated.

Fresh Water Methods 38-42.

All water bodies have values or intrinsic qualities that require some protection, but these values may not be as significant as those listed in **Policy 10** and so may not deserve the same level of protection. Avoiding, remedying, or mitigating effects (depending on their severity) will be the most appropriate management response to ensure this. Natural areas are given some prominence because they:

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[7] Kenny J A and Hayward B W, 1993, *Inventory of Important Geological Sites and Landforms in the Manawatu and Wellington Regions*, Geological Society of New Zealand Miscellaneous Publication No.73, Lower Hutt; Grindell D S and Guest P A, 1986, *A List of Rivers and Lakes Deserving Inclusion in a Schedule of Protected Waters*, Report of the Protected Waters Assessment Committee, Water and Soil Miscellaneous Publication No. 97, NWASCA, Wellington; Egarr G D and Eggar J H, 1981, *New Zealand Recreational River Survey,* Water and Soil Miscellaneous Publication Nos 13 and 14, NWASCO, Wellington; Richardson J, Tierney L D and Unwin M J, 1984, *The Relative Value of Wellington Rivers To New Zealand Anglers*, MAF, Wellington.

(1) Are of special importance for their rarity in or along water bodies that may otherwise be reasonably modified (s. 7(f) and (g)); and/or

(2) Are likely to provide a more conducive habitat for indigenous fauna or vegetation (s. 6(c)); and/or

(3) Are likely to provide a more conducive habitat for trout (s. 7(h)); and/or

(4) Are appreciated by humans for their naturalness, scenic and other amenity values (s. 7(c)).

The term "near natural" reflects the fact that few areas in New Zealand are completely free of the influence of human induced change.

Near natural areas, therefore, are more likely to occur in most instances (particularly in and around heavily populated areas or

within a wider and more highly modified ecosystem) and are areas where disturbance by humans is of a minimal nature or which resemble as closely as possible an original condition.

Policy 12

To avoid, remedy, or mitigate any adverse effects of any new or existing use and development where these effects impact on the natural character of wetlands, lakes, rivers, and other water bodies, and their margins.

Fresh Water Methods 38-42.

This policy gives effect to the requirements of s. 6(a) to recognise and provide for the preservation of the natural character of water bodies and their margins. Natural character is not defined by the Act. It can be thought of as the extent to which the naturally occurring ecology and/or physical processes of a place or resource remain intact. It does not exclude structures or other human induced changes (a place may retain some of its natural character even with a building in it) but it is reduced by their presence.

As natural character is not an absolute concept, its absolute preservation is not required in every case. It is appropriate, therefore, that the policy prescription of "avoid, remedy or mitigate" should apply, depending on the degree of natural character of the water body or site in question. In places where the natural character is largely intact, the emphasis of management should be on avoiding adverse effects. Where human activities have already modified the natural character, a more flexible approach may be appropriate. Where substantial deterioration of natural character has occurred, some effects might still need to be avoided but remedying or mitigating adverse effects may have a more prominent role.

Policy 13

To recognise the cultural relationship of the tangata whenua with rivers, lakes, wetlands, and other water bodies, and to promote the management of fresh water in ways that take into account iwi values and beliefs. In addition, to promote the protection and management of sites of significance to iwi within the beds of water bodies.

Fresh Water Methods 43-44.

Many of the policies in this chapter are consistent with iwi values, for example, safeguarding water resources for future generations, seeking the highest water quality possible, restoring degraded water, and so on. In addition, this policy aims to meet the requirements of s. 6(e) of the Act.

See also Iwi Policies in chapter 4.

Policy 14

To protect the healthy functioning of wetlands and their biological communities from the inappropriate effects of land and water use

Fresh Water Methods 45-

and to promote the restoration of degraded wetlands and the creation of artificial wetlands.

50.

In assessing the appropriateness of the effects of land and water use, to have regard to the following characteristics of any wetland:

(1) The degree of modification from a natural state;

(2) The degree of significance of areas of indigenous vegetation and/or habitats of indigenous fauna;

(3) The degree of representative importance;

(4) The biological uniqueness and/or diversity of species, communities, or habitats;

(5) The amenity values of the wetland (including cultural, recreational, and aesthetic values); and

(6) The degree to which the wetland provides for the continued functioning of ecological and physical processes.

Wetlands are recognised as vital ecosystems. They provide a habitat for a rich variety of flora and fauna. They can also be used to help reduce the impact of flooding and abate water pollution by naturally filtering out contaminants and excess nutrients to improve water quality. They also have high social (leisure), cultural, and recreational values (bird watching).

See also Ecosystems Policies 5-7 and 9.

Over the last 150 years wetlands have suffered from subdivision, land drainage, the modification of streams, river channels and estuaries, pollution, and the invasion of habitats by exotic plants and animals. Many are still at risk from these influences. There is public concern to protect and enhance those that remain and to reinstate others where this is feasible.

A recent study by the Wellington Regional Council identified 169 wetlands in the Wellington Region comprising 13,300 hectares (of which the Lake Wairarapa complex totals 9000 hectares.)[8] The remainder vary in ecological status, size, and ownership. Fifty percent are less than 10 hectares and only 10 exceed 100 hectares. Approximately two-thirds are in private ownership. Fifteen of the wetlands are considered to be either nationally or regionally important by the Department of Conservation. Only one is protected by a national conservation

order (Lake Wairarapa).

S. 5, 6 and 7 of the Act all relate to the need to preserve and protect wetlands in order to safeguard the life supporting capacity of water and ecosystems, preserve their natural character, and protect them as significant habitats of indigenous fauna and flora. Wetlands are also of significance to the tangata whenua.

S. 6 of the Act regards the preservation of wetlands as being of national importance but does not preclude their "appropriate" use. Decisions as to what might constitute "inappropriate" use are essentially management decisions involving the weighing up and prioritising of a wide range of competing uses and values. The criteria have been included to assist with assessing the significance of wetlands and the appropriateness of any adverse effect.

By using these criteria it should be possible to protect wetlands, but not preclude their use for some purposes, especially those that could assist with environmental management (e.g., the disposal of treated effluent or as a filter for removing contaminants from stormwater).

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[8] Wellington Regional Council, *Wetlands in the Wellington Region*, op. cit.

Policy 15

To protect water resources used for public water supply from abstractions of water and discharges of contaminants which may affect the suitability of those waters for water supply purposes.

Fresh Water Methods 51 and 52. See also Soil Policies 1 and 6.

This policy recognises the importance of ensuring a reliable supply of potable water, free from any risks to human health. There is general public agreement that waters that provide for the needs of communities for public water supply (both urban and rural) should receive some protection.

Policy 16

(1) To ensure, when planning for and making decisions on new subdivision, use, and development, that:

(a) There is no reduction in the quality of existing legal access to and along water bodies, and

Fresh Water Methods 53-55.

(b) Opportunities to enhance access to water bodies, or parts of water bodies, which are:

(i) Of regional significance (as listed in tables 4 to 7 of Policy 10 or in a regional plan); or

(ii) Are considered by the relevant territorial authority to be of benefit to the local community for their recreational, cultural, scenic, spiritual, or other amenity values

are recognised and provided for.

(2) To promote through other means, where practicable, access to and along water bodies (to which subsection 1(b) of this policy applies), other than in exceptional circumstances.

The maintenance and enhancement of public access to and along the margins of lakes and rivers is a matter of national importance (s. 6). Policy 16 gives effect to this requirement. The Policy seeks to maintain existing legal opportunities for access to and along water bodies. The policy recognises that, through changes in land use, there are likely to be situations where **existing** access points are sought to be removed or altered. The policy requires that alternatives are provided of a number or nature that maintain the quality, as far as possible, of the access that was previously provided. "Quality of access" refers to access of a type and scale that allows users of a water body to continue to enjoy the benefits and values they derive from the water body and from the access itself.

See also Coastal Environment Policy 4.

The policy also recognises that there will be opportunities to **enhance** access to certain water bodies when changes in land use are sought. Those opportunities should be recognised and provided for by territorial authorities in their district plans. Requirements for esplanade reserves and esplanade strips are likely to be the most appropriate way of doing this.

In addition, there may well be circumstances (other than through planning or consent procedures) where it may be appropriate or beneficial to provide or enhance access. The policy encourages local authorities and landowners to do this where it is practicable and other than in exceptional circumstances. "Where practicable" means taking into account the costs and benefits of providing

access arrangements. Exceptional circumstances include the need to:

- Protect any characteristics of any sites or features which give a water body its special value or any conservation values;
- Provide for public health and safety;
- Provide for security on private property; and
- Protect the rights of property owners, including the protection of crops and stock.

The protections provided by the reference to exceptional circumstances in clause (2) of the policy are not explicitly provided for in clause (1) of the policy. This is because these protections are provided by the Tenth Schedule of the Act which applies when esplanade strips or access strips are established.

Not all water bodies, or parts thereof, require access. The policy applies only to water bodies of regional significance (as identified in Tables 4 to 7 or in a regional plan) and of local amenity value, as determined by the territorial authority in whose district the water body lies.

The principal reasons for adopting **Policy 16** are to meet the requirements of the Act (s. 6) and to provide a framework for balancing the demands of the public for access and the rights of landowners. It is recognised that private landowners in the Region are generally willing to provide access so long as their property and stock is respected. It is also recognised that there are limits to the resources of territorial authorities in the Region and that providing for access to every river and stream is impractical.

5.5 Methods

Methods for Fresh Water Quantity

Fresh Water Policy 1.

The Wellington Regional Council will:

Method 1

- *Manage the use and development of all fresh water by*

means of resource consents unless the use is allowed by a rule in a regional plan or the water is taken for reasons allowed by the Act (s. 14 (3)).

Method 2

- *Prepare a Regional Fresh Water Plan to address water availability and allocation issues, to permit or regulate the use of fresh water and activities which affect it, to establish priority uses for low flow periods (including life supporting capacity) and to consider other water issues of a regional nature.*

Method 3

- *Develop and apply flow regimes and safe yields based on instream habitat requirements and other relevant factors (e.g., to preserve amenity, cultural or intrinsic values) for surface water bodies which require them.*

Method 4

- *Prepare a location specific plan to safeguard life supporting capacity, establish minimum flows and allocate the safe yield of any water body (or the water resources of a particular locality) which is under pressure from competing uses, or has special ecological needs or values that need protection. The water resources of the Kapiti Coast District are a priority.*

Method 5

- *Investigate transferable water permits (under s. 136) and provide for their use where appropriate*.

Method 6

- *Establish a methodology for providing for future generations and identifying the components of life supporting capacity of the Region's fresh water.*

The regulatory regime in **Method 1** is required by s. 14 and 15 of the Act. Any activity that would contravene s. 14 requires a water permit, and any activity that would contravene s. 15 requires a discharge permit. However, regional councils may develop regional plans under s. 63 which may contain rules to allow, regulate, or prohibit activities. Activities for which a consent is not required are known as permitted activities. The preparation of a Regional Fresh Water Plan will provide the opportunity to facilitate minor or desirable activities by removing the need to apply for a consent.

This plan will provide an overall legal framework for managing consents and replace, where necessary, related sections of the Transitional Regional Plan that are no longer appropriate. The

transitional arrangements were not designed to provide a comprehensive or lasting framework.

Where circumstances require, a location specific regional plan may be prepared. In issuing resource consents for water bodies for which such a plan has been prepared, the Wellington Regional Council will have regard to any flows, levels (minimum flows, etc.), standards, or agreements contained in that plan.

A location specific plan will take into account the needs of all those people with an interest in the water body.

The Act requires the management of water to be on a basis which is sustainable. In determining the quantity of any water body which may be allocated or used (the safe yield), consideration must be given to safeguarding its life supporting capacity and sustaining its potential to meet the needs of future generations. Instream habitat assessments will allow for the identification of minimum flows and flow regimes which, in turn, will establish the quantity of water that can be safely allocated for other purposes.

Flow regimes of this kind are likely to be established for rivers which are suffering from pressure of use, where life supporting capacity is threatened or which have significant values which require the protection of a flow regime. Other rivers may not require such careful management but will be subject to the policies of the Regional Fresh Water Plan and may have minimum flows set on a more general basis.

Allowing for the future is a pivotal component of sustainable management but how it might be put into practice is not well understood. Research will be necessary to identify aspects of the freshwater resource which may require explicit protection, or more careful management, to safeguard the interests of future generations (e.g., guarding against the irreversible loss of wetlands). To some extent, the needs of the future will be dealt with automatically by adopting the basic principles of sustainability the Act requires.

Similarly, it is not clear what safeguarding the life supporting capacity of water entails. While an activity (such as a take or discharge) may damage a particular habitat, species or place, it may not have any appreciable effect on the overall life supporting capacity of the freshwater ecosystem or on the freshwater body as a whole. Effects at particular times (fish spawning), or on critical parts of the ecosystem, may have a greater impact and thus require

more control.

An understanding of what is required to provide for life supporting capacity and the needs of future generations will enable the requirements of s. 5 of the Act to be met and ensure that effects on the aquatic ecosystem are minimised.

Above these environmental bottom lines (the two may be different), allocation will be determined by the variety of purposes for which a particular water body is managed.

These purposes will be decided by reference to current uses (although s. 128 of the Act allows these to be reviewed if need be), the views of the local and regional communities, iwi values, and any reason for the waters being highly valued on a regional or national basis. For example, a river may be managed for ecological purposes, for a consumptive purpose, and for recreation, as well as for its scenic values and value to iwi.

Mechanisms for safeguarding the requirements of instream uses (that is, setting minimum flows) have in the past utilised "rule of thumb" techniques which did not take into account biological habitat requirements (for example, 30 percent of mean monthly flow). However, the Act has established the need for a more comprehensive approach which includes assessing factors which contribute to biological health, such as habitat and food production. Community requirements and the needs of users (for clarity, safeness of contact, etc.) will also influence the flow requirements which are established and may well set these at levels higher than any ecological "bottom lines". Ultimately, flows and levels will be determined through the combination of a number of overlapping layers relating to the varying needs of those who use or value the water, and will vary by place and by season.

Location specific regional plans will enable the Wellington Regional Council to control water takes and discharges more effectively through policies and rules directed at the conditions of the water body in question.

Other waterways may not be subject to such pressures and, while using water would still require a permit (unless otherwise authorised), a plan may not be necessary.

The Act allows for the transferability of water permits in certain

circumstances. However, this is a new tool for the allocation of water and further investigation is required of its workability. While the Council will continue to uphold the Act and to facilitate requests to use this procedure, it will not promote its general use until it has completed **Method 5**.

Methods for Fresh Water Efficiency and Conservation

Fresh Water Policy 2.

The Wellington Regional Council will:

Method 7

- *Place conditions on water permits to promote efficiency and water conservation.*

Method 8

- *Investigate the use of consumption targets for uses such as irrigation, residential supply and leakage from closed pipe reticulation systems, in order to encourage the efficient use of water.*

Method 9

- *Promote water conservation and the efficient use of water through advocacy, education, and the provision of information.*

Method 10

- *Require water race systems to obtain consents to take water by 1 October 2001.*

Method 11

- *Require, where practicable, that abstractors provide evidence of actual consumption according to the class or type of consumption and demonstrate how water is being used.*

Method 12

- *Undertake or promote research into methods which promote water conservation and efficient use, including the use of economic instruments, and collect and publicise water usage data to ensure progress in meeting consumption targets.*

As the regulator of water usage, the Council has a responsibility to promote the efficient use of water and the avoidance of waste.

Efficient use lowers demand and helps reduce the need for costly future storage and supply infrastructure. By reducing the pressure on existing freshwater systems and assisting them to meet demand

on an indefinite basis, water will continue to be available for the future.

The efficient use of water can be promoted in the following ways: by the Council discussing users' needs with them at the time an application is made; through educating and informing existing users about more efficient and less wasteful ways to use water (**Method 9**); and through placing conditions on water permits (**Method 7**).

Such conditions are an effective method and one which is easy to administer. Conditions which could be applied include:

(1) Requiring users to install flow meters to measure water use (to ensure the correct amount is taken or to identify that a lesser amount is actually needed than the consent allows for);

(2) Requiring the irrigation or water supply system to be designed so that excess water does not run to waste;

(3) Requiring records of use to be kept and supplied to the Council (e.g., daily or weekly use); and

(4) Imposing a financial contribution as a condition of a consent to achieve positive effects on the environment, in line with s. 108(9) of the Act. These could be used to offset adverse effects, where these cannot be avoided, and as a means of mitigating and remedying adverse effects.

The intent of **Method 8** is to identify reasonable levels of consumption for particular uses so that excessive use and wastage is avoided. As a responsible regulator, the Wellington Regional Council needs to know what constitutes reasonable use (particularly where the resource is under pressure) and to estimate and plan for potential future uses or demands on the resource.

Appropriate ways of achieving possible targets (**Method 8**) must be discussed and their costs and benefits determined. Possible time frames must allow the relevant authorities to prepare medium to long-term plans for achieving targets and for spreading costs accordingly.

Method 10 refers to unpiped reticulation systems from which significant losses can occur through uncontrolled seepage and evaporation. The right to take water for these systems was

initially granted under the Water and Soil Conservation Act 1967. The continued right to do so is in s. 386 of the Resource Management Act 1991. However, this right will expire on the 10th anniversary of the commencement of that Act (i.e., 1 October 2001) (s. 386(3)). At this time new consents will be required.

Method 11 is necessary to ensure a basic level of information is available to manage the resource and promote efficiency. The Council will require waste abstractors to monitor their use (e.g., by flow metering) in some circumstances, particularly where the abstraction makes a significant difference to the quantity or quality of a water body.

Legal advice to the Wellington Regional Council suggests that economic incentives for achieving the efficient use or conservation of water (e.g., by charging more for water as "bottom lines" are approached) are not provided for by the Act. However, research by the Council into the use of such methods will continue.

Advocacy, information and public education (**Methods 9 and 12**) are necessary to achieve meaningful reductions in domestic and commercial use.

Methods for Groundwater Quantity

Fresh Water Policy 3.

The Wellington Regional Council will:

Method 13

- *Determine the safe yield of significant groundwater systems (e.g., Lower Hutt, Te Ore Ore), and allocate groundwater in order to protect its recharge capability and minimise sea water intrusion.*

Method 14

- *Require resource consents for all groundwater abstractions (except where s. 14 of the Act allows otherwise) and bore permits for the construction of bores.*

Method 15

- *Review the suitability and applicability of the general authorisations relating to groundwater and the Underground Water Bylaws operating in the Hutt Valley and prepare, if appropriate, a regional plan for the Hutt groundwater system, and for such other aquifers as*

required.

Method 16

- *Seek to educate drillers and groundwater users in appropriate construction methods to improve efficiency and prevent leakage or wastage between aquifers.*

Groundwater within the Region is used for both private and public water supply. Major takes for public water supply occur in the lower Hutt Valley and near the towns of Otaki and Masterton. In Upper Hutt the groundwater is used for industrial purposes (cooling water, bottling processes). On the Kapiti Coast and in the Wairarapa groundwater is predominantly used for agricultural purposes (e.g., stock water and irrigation).

The allocation of the resource requires careful management to ensure it is not overextracted. Overextraction could result in "mining", saltwater intrusion, subsidence of the surrounding land, or interference between users.

The Act provides for a range of small takes which do not require consents (s. 14). Large takes will continue to be controlled by means of water permits. The general authorisation requires reconsideration as it allows takes of up to 20,000 litres per day. However, as the Council has little knowledge of what is actually being taken, the sustainability of the resource is unknown in some cases.

Education of groundwater drillers and users is an effective means of avoiding waste and other adverse effects of extraction.

Methods for Fresh Water Quality

Fresh Water Policy 4.

The Wellington Regional Council will:

Method 17

- *Require resource consents for all discharges to water, land or groundwater not allowed for in the Act or in a regional plan.*

Method 18

- *Include fresh water quality in the Regional Fresh Water Plan and/or prepare a location specific regional plan for water bodies, or parts of water bodies, which are suffering from poor water quality (including from non-point sources) or are not suitable for the uses or values the community desires (if the issue is not manageable through the consent*

process).

Method 19

- *Review its water classification methodology. A new methodology, if judged necessary, will review areas not presently classified and determine which areas require water quality standards (s. 69).*

Method 20

- *Investigate the use of bonds and other financial contributions in preventing discharges of contaminants.*

Method 21

- *Investigate and engage in public education about the use and care of fresh water.*

The maintenance and protection of water quality will be controlled through the regulatory regime imposed by s. 15 of the Act (**Method 17**). If necessary, conditions will be attached to resource consents, or rules could be included in the Regional Fresh Water Plan, to set limits on types and volumes of discharges, regulate non-point source discharges, and limit abstractions to control quality.

Where a management plan or regional plan for a specific water body is prepared (**Method 18**), discharges of contaminants into water, or onto land where water may be contaminated, would be permitted only (by a consent or a rule) if the discharge was consistent with the uses agreed upon in the plan. A regional plan could also indicate prohibited discharges and land uses which might also be controlled where water might be contaminated.

Classification of water bodies (**Method 19**) is a method with both advantages and disadvantages. The advantages of such standards are that they establish bench marks, simplify the consent process, and establish certainty. The disadvantages include the difficulties of applying standards in practice, difficulties in accounting for the effects of natural run-off and non-point source discharges, and the likely degradation of water to a minimum standard.

The existing water quality standards in the Region have not succeeded in achieving the degree of uniformity expected of them. The Region has a disjointed series of classified water bodies based on two different sets of standards (Water Pollution Regulations 1963, Water and Soil Conservation Act 1967). These classifications have been included in the Transitional Regional Plan as an interim measure. The Act provides a set of water classifications (Third Schedule) but the Council may propose

more stringent standards if it wishes (s. 69).

Legal advice to the Council suggests that the Act does not allow for charging polluters according to the quantity or quality of pollutants discharged. This would appear to rule out a quota system, whereby polluters could discharge contaminants up to a defined level.

Methods for Enhancement and Restoration of Poor Quality Water

Fresh Water Policy 5.

The Wellington Regional Council will:

Method 22

- *Identify water requiring an improvement in its quality and provide advice to consent holders and the public as to how this might be achieved.*

Method 23

- *Investigate any request for contaminated or poor quality water to be improved and, if necessary, prepare a programme for doing so for public debate.*

Method 24

- *Where the quality of fresh water entering the coastal marine area is inadequate to meet any purposes for which coastal water is being managed, investigate means of improving the quality of the water through, for example, riparian management and the encouragement of better or alternative land use practices, and conditions on consents which require staged improvements in quality over time.*

Method 25

- *Seek improvements in water quality in the Waikanae River Estuary, Mazengarb Drain, Ngauranga Stream, and Makoura Stream in co-operation with the relevant territorial authority; monitor the effectiveness of works undertaken to reduce bacterial contamination in the Kaiwharawhara Stream which the Wellington City Council provided for in its 1993/94 capital works programme; monitor Hulls Creek and the Waingawa Freezing Works aquifer for improvements which are expected from remedial work which has been completed; address the discharge of treated sewage to the Wainuiomata River through the consent process and prepare a regional plan for the management of this river.*

Once water has been degraded significantly it may take considerable time and expense to reinstate it to a standard

applicable to its desired use.

Specific studies may be required to locate the source of the degradation and identify how the resource can be cleaned up. Non-point source pollution may be difficult to identify.

The Wellington Regional Council will consider any request to improve the quality of water in a water body. Where it is desirable to rehabilitate water, public consultation will enable the regional community to decide whether it is prepared to accept the cost of upgrading on a case by case basis. Costly upgrading of water may take a number of years to be implemented in full. For example, the Council is already seeking improvements in stormwater quality in some urban areas but recognises that this is costly and time is needed for the communities concerned to sustain the costs involved. Cost effective mechanisms for improving water quality should always be considered. Other means, such as catchment afforestation, may deliver improved water quality to communities at a lesser cost **Method 25** provides an indication of other ways in which the Council is addressing areas of poor quality water.

Education and advice are powerful means of changing behaviour. Studies by the Wellington Regional Council have indicated that farmers and business interests would like greater information on how to deal with wastes and avoid pollution before it occurs. Similarly, recreational users such as trampers, campers and anglers need to be advised of successful waste disposal and removal methods.

Methods for Controlling Point Source Discharges

Fresh Water Policy 6.

The Wellington Regional Council will:

Method 26

- *Where necessary, develop standards, guidelines and codes of practice (based on nationally recognised codes of practice and in association with territorial authorities, industry and professional groups) for the following activities or effects:*

  (1) Dairy shed effluent disposal;

  (2) Stormwater run-off;

  (3) Land clearance;

See also Soil Methods 4, 10, 20-23.

(4) Subdivision and mass earthworks effects;

(5) Mining;

(6) On-site sewage treatment and disposal (e.g., septic tanks);

(7) Installation of underground storage tanks; and

(8) Spills of contaminants.

Method 27

- *Reassess the effectiveness of the general authorisations (under s. 22 of the Water and Soil Conservation Act 1967) and replace these where necessary.*

Method 28

- *Undertake education programmes and provide information and advice to the public and industry on the requirements for, and proper handling of, discharges.*

Method 29

- *Investigate complaints regarding water resource misuse, including unauthorised pollution, and will invoke the enforcement procedures of the Act when less formal methods of enforcement are not successful.*

Controlling point source discharges is required by the Act. Some discretion can be exercised as to the extent to which regulation is used to do this. In many cases, activities with inconsequential effects on water may be authorised in a regional plan so that regulation will not be necessary. In other cases the effects may be of such a magnitude that a consent is warranted.

Adverse effects can be reduced through the use of guidelines and codes of practice. The intention of **Method 26** is for the Regional Council to prepare guidelines or codes of practice (where necessary and in co-operation with the relevant groups) which can be used in a voluntary way to reduce the adverse effects of the listed activities. Even where a consent is required, the additional voluntary use of guidelines and codes of practice can also assist in reducing effects through better practice.

In addition, the Council may state in the Regional Fresh Water Plan or any other regional plan relating to water quality that discharges (such as dairy shed effluent and stormwater) should

meet certain standards. The degree of control exercised over these activities in the plan would be dependent on the degree to which the discharge met these standards. Moreover, standards relating to the receiving waters of some of these activities, particularly those with significant adverse effects, could also be included in any regional plan relating to water quality under s. 69 of the Act.

Where activities are controlled by means of receiving water standards, those from different sectors which cause similar environmental effects will face consistent controls.

Guidelines and codes of practice are useful as an educational tool, and where ongoing maintenance of systems is necessary (e.g., on-site sewage systems).

However, the Council will not prepare guidelines for subdivision and mass earthworks effects where territorial authorities have district plans and codes of subdivision and engineering practice that deal with these matters.

The purpose of **Method 27** is to reconsider and replace any defective general authorisations with more appropriate control mechanisms.

The enforcement regime in the Act (**Method 29**) is necessary to ensure compliance with consents, plans, regulations, and orders. Enforcement provisions enable direct intervention if necessary and provide adequate penalties if the Act is contravened or environmental damage is caused.

Methods for Avoiding Land Use Effects on Water and for Promoting Riparian Management

Fresh Water Policies 7 and 8.

The Wellington Regional Council will:

Method 30

- *Identify land based activities which contribute to adverse effects on water bodies and provide advice on ways of minimising those effects through district plans or other means available to territorial authorities.*

See also Soil Methods 4 and 23.

Method 31

- *Identify waterways suffering from the effects of non -point source pollution and investigate the potential of managing riparian margins (e.g., by afforestation and other vegetation*

management systems) to mitigate these effects.

Method 32

- *Encourage landowners and other organisations or agencies acting under other legislation to create and manage riparian margins (including, where appropriate, advocating to territorial authorities that esplanade reserves or strips be used for water bodies suffering from non-point source pollution).*

See also Soil Method 7.

Method 33

- *Manage land it owns or controls to implement Fresh Water Policy 7 and will encourage land users to adopt management practices which control non-point contaminant sources.*

See also Soil Method 23.

Land management practices and activities on land can be modified to limit the effects of contaminants on water quality and ecosystems. This is true of both point source discharges and non-point source contamination. However, the relationship between activities on land (in particular, non-point source contamination), and their effects on water and how they might be mitigated effectively through the range of instruments available to local authorities, is not well understood.

The Wellington Regional Council has identified a range of effects on water which are influenced or caused by land uses and which it wants to avoid or reduce. The Council will work with territorial authorities to identify the causes of these effects and ways of avoiding them. The Council will provide advice to territorial authorities seeking assistance with such matters as subdivision impacts, the effects of earthworks, and so on. Methods which might be used to influence this nexus between land and water at the territorial level include provisions in district plans (including rules), guidelines and/or standards (for earthworks, track cutting, etc.) bylaws, design conditions, and operational activities by local authorities.

While the Wellington Regional Council has the power to control land use for the purpose of maintaining or enhancing water quality and quantity (s. 30 (1)(c)), it will seek, in the first instance, to avoid the effects listed below by co-operating with territorial authorities and using the instruments available to these authorities.

The major effects on water quality, quantity, and ecological processes which the Council will seek to avoid or reduce are as follows:

Effects on fresh water quality:

- Increased sedimentation
- Nutrient enrichment *
- Increased water temperatures *
- Decreased oxygen levels
- Increased suspended solids *
- Reduced clarity
- Changes in colour and acidity
- Increased faecal bacteria *
- Nuisance growths
- Toxicity (e.g., from agrichemicals, heavy metals, etc.)

Effects on fresh water quantity:

- Increased surface run-off
- Increased run-off velocity
- Decreased groundwater storage and recharge capability *

Effects on ecological processes:

- Erosion and disturbance of soil
- Public health effects
- Bioaccumulation of toxic substances

(It should be noted that many activities will cause these effects to a small extent; the Council's interest will lie with those which are likely to have a significant adverse effect.)

Effects on this list marked with an asterisk are particularly relevant to groundwater. The quality of this resource should be protected to enable present uses to continue and because it has the potential to provide for water needs that are currently not being adequately met by surface waters, for example, on the Kapiti Coast. The Council will identify the recharge areas of groundwater systems and work with territorial authorities to avoid effects which might threaten these areas or activities which could pose a threat to the quality of groundwater (e.g., underground storage tanks).

Agricultural activities, in particular those close to watercourses, can cause non-point discharges, for example, the application of fertiliser and agrichemicals. High stocking rates may also cause high nitrogen levels in groundwater.

Management of a riparian buffer zone, in particular the protection of stream bank vegetation, is an effective technique for controlling non-point source contamination of surface waters. It has been demonstrated that riparian zones containing vegetation contribute to a reduction in bank erosion and a reduction in sediment entering waterways. They also act as a natural filter of run-off and provide treatment of nutrient rich animal excrement, fertilisers, and sediment.

Riparian buffer zones contribute to lower water temperatures in the summer and enhance fisheries and wildlife habitats. Aesthetic and scenic values are enhanced and the buffer can be managed for walking and fishing.

However, the effectiveness of riparian strips is variable and depends on the nature (width, channel morphology, etc.) of the river or stream, the nature of any land uses adjacent to a strip (improved practices might achieve the same result at a lesser cost), the quality of the water, and the nature of the problem for which a strip is the suggested solution (type of pollutant).

The Council's intention is to identify rivers suffering from non-point source pollution and investigate the ability of riparian management to mitigate these effects (**Method 31**). The Council will work co-operatively with territorial authorities, advising them of water bodies which might benefit from riparian management so that adequate provision can be made for riparian margins in planning decisions. The Council will also work with the Department of Conservation and other agencies as appropriate (**Method 32**). Land management and land use practices which reduce the incidence of non-point source pollution will be promoted because these reduce the need for riparian margins (**Method 33**).

There are significant costs involved in retiring land from grazing, fencing, and providing alternative stock watering facilities. Apart from when subdivision occurs (when esplanade reserves are established), the agreement of landowners will be required. While the Wellington Regional Council will promote buffer zones of this nature, the above mentioned variables mean its financial involvement will of necessity have to be assessed on a case by case basis.

Methods for Controlling Activities in River and Lake Beds

Policy 9.

The Wellington Regional Council will:

Method 34

- *Control activities in river or lake beds by means of resource consents or authorisation in a regional plan.*

See also Soil Method 18.

Method 35

- *Prepare, where appropriate, guidelines to assist in the reduction of adverse effects on river and lake beds and promote adherence to any that are prepared amongst those engaged in riverbed activities.*

See also Soil Methods 4 and 19.

Method 36

- *Require river works to provide for the passage of fish, where appropriate.*

Method 37

- *Place conditions on consents to work in a river or lake bed that require, where appropriate, activities to be undertaken in ways that cause the least disturbance to aquatic ecosystems (e.g., outside breeding season) or indigenous fauna and flora.*

S. 13 of the Act provides for Council control of any activities that would alter the character of, or detrimentally disturb, lake or riverbeds. Activities on the surface of rivers and lakes are controlled by territorial authorities. Until a regional plan containing rules is in place (this may be either the Regional Fresh Water Plan or another regional plan) riverbed activities will continue to be controlled through the transitional provisions of the Act.

Guidelines for activities, (**Method 35**) such as gravel extraction or the movement of vehicles in riverbeds, will encourage responsible practices by operators and provide information to allay the concerns of other river users (anglers, picnickers, etc.).

The free passage of fish to and from spawning and feeding areas is essential to the well-being of a fishery (**Method 36**). Structures can prevent this from occurring. Uses of riverbeds and water should, where practicable, provide for the passage of fish. The appropriateness of providing for fish passage in relation to any particular use may be established in a regional plan or a resource consent.

The Director General of Conservation has authority under the Freshwater Fisheries Regulations 1983 to require facilities for the passage of freshwater fish past or over structures (dams or

diversions) in watercourses.

Methods for Protection of Waters of High Value

The Wellington Regional Council will:

Method 38

- *Prepare, as part of the Regional Fresh Water Plan, an inventory of water bodies of high value and identify means of protecting these waters where necessary (including heritage protection and water conservation orders and rules in regional plans). It will include water bodies of national, and regional significance, as well as those waters of regional significance to iwi.*

Method 39

- *In determining safe yields or preparing plans for water bodies or catchments, take into account natural character, any values attached to highly regarded rivers, lakes, and streams, and the amenity and intrinsic values of other water bodies.*

Method 40

- *Identify, in co-operation with other agencies such as the Department of Conservation, water bodies most likely to provide regionally significant habitats for indigenous fauna (freshwater fish, etc.) and areas of significant indigenous flora.*

Method 41

- *Where waters are of national or regional significance, encourage the protection of adjacent land in order to maintain or enhance their value.*

Method 42

District plans would be an appropriate means of implementing Fresh Water Policy 10 through land use controls alongside waters of high value.

In general, the Region does not have many rivers and streams of high value on a national scale. None are cited in the National Inventory of Wild and Scenic Rivers[9]. Nor are there any in either of the top two categories of the New Zealand Recreational Rivers Survey[10]. While the overall quality of the freshwater resource is good, the preservation (and enhancement, where practicable) of those of high quality on a regional scale is a priority.

Existing records of waters of high value are dated and may be inaccurate in places. The assessments upon which tables 4 to 7

were derived, though professional, may have been overtaken by development in the intervening years.

Moreover, very little is known of rivers, streams, and lakes of significance to iwi. It will be necessary for the Wellington Regional Council to advance its knowledge in this area to provide a complete coverage of waters of regional significance (**Method 38**). The Region also has a number of wetlands of regional, national and international significance which should be included in this inventory (e.g., Lake Wairarapa).

High value waters and the preservation of the natural character of water bodies will be given consideration in every plan

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9 Grindell D S, 1984 *A National Inventory of Wild and Scenic Rivers,* Water and Soil Miscellaneous Publication No. 68, NWASCA, Wellington.

10 Eggar G D and J H op. cit.

prepared by the Council for the management of fresh water (**Method 39**).

Amenity values will also be taken into account in the management of water bodies.

The location of indigenous fauna and instream flora in the Region is not well understood. Further work is necessary to identify important habitats and ensure these are taken into account in consent granting. This is a responsibility that the Wellington Regional Council shares with other agencies.

The Council will advise applicants for resource consents relating to waters of high value of the significance of the water body, and of such matters as significant sites of significant indigenous fauna and flora. These will need to be taken into account by applicants in their assessment of environmental effects.

Method 41 refers to steps which may be taken by the Council to protect important values in relation to water bodies, including advocacy, economic incentives, direct service provision, rules, and so on.

Most water bodies of high value are so valued because of a combination of water and land features or characteristics. In some

cases it may be necessary to provide for the protection of land in order to preserve valued features.

Control of the use of land is primarily a territorial authority responsibility and is most appropriately dealt with by territorial authorities (**Method 42**).

Methods for Implementing Iwi Policy

Fresh Water Policy 13.

The Wellington Regional Council will:

Method 43

- *Promote, where appropriate, high water quality, restoration of degraded water and the maintenance of the spiritual integrity of water bodies through its management of the Region's freshwater resources.*

Method 44

- *Investigate and provide, if necessary, policy for the diversion of water from one catchment into the watercourses of another catchment.*

The principal reasons for adopting these methods are to meet the requirements of the Act and ensure iwi values and tikanga are considered in the management of fresh water. Other relevant methods are described in chapter 4.

Methods for Protecting Wetlands

Fresh Water Policy 14.

The Wellington Regional Council will:

Method 45

- *Request territorial authorities to ensure it is notified of any proposal for any activity on land (which includes or lies adjacent to a wetland) or for any other activity which may have an impact on the quality or quantity of water in a wetland.*

Method 46

- *Require permits to take, divert, or discharge into water where wetlands may be affected. An assessment of effects will be required and the appropriateness of any effect measured against the criteria in the policy.*

Method 47

- *Identify wetlands and wetland systems of national and regional significance, and establish methods for their protection in a regional plan or the Regional Fresh Water Plan.*

Method 48

- *Manage wetlands on land owned or controlled by it in accordance with Fresh Water Policy 14, investigate the workability of measures required to protect wetlands and wetland systems (e.g., buffer zones and land use practices), and advocate for protection by landowners for all significant wetlands.*

Method 49

- *Where appropriate, investigate transferring powers of management so that some wetlands could be managed by iwi and/or interested groups.*

Method 50

District plans and resource consents would be appropriate means for territorial authorities to give effect to Fresh Water Policy 14.

The principal reasons for adopting a strong regulatory regime for the control of wetlands is to prevent the rapid reduction in these vital habitats. These methods address the finite character of this resource (s. 7(g)) and recognise that if current patterns continue without some control there will be a significant overall loss in the quality of the environment (s. 7(c)) and in the intrinsic value of these ecosystems (s. 7(d)).

The Wellington Regional Council will control activities that could potentially impact on the hydrology and aquatic ecology of wetlands, such as the use and diversion of water and the discharge of contaminants. The Council will advise territorial authorities of the wetlands to which **Method 45** applies.

Other means of protecting wetlands include voluntary protection arrangements entered into by landowners (e.g., open space conservation covenants negotiated with the Queen Elizabeth II National Trust). The Council will advocate for the greater use of such arrangements (**Method 48**). Territorial authorities could also protect wetlands from the adverse effects of land use through provisions in district plans.

Methods for Protection of Public Water Supply

The Wellington Regional Council will:

Method 51

- *Through resource consents, control abstractions and discharges with the potential to detract from the quality or quantity of any water which is used to maintain public water supplies. Conditions may be imposed on existing consents over time where it is necessary to improve the quality or availability of water.*

Method 52

- *Encourage water supply authorities and other authorities to use the provisions and powers of other Acts, regulations and guidelines to protect the quality of water in water bodies and promote public health.*

Method 51 is the most direct and effective means of providing for Fresh Water Policy 15.

The main water bodies to which **Method 51** applies are the Hutt River, Orongorongo River, Wainuiomata River, Waikanae River, and Otaki River, Bush Stream, Waiohine River, Waingawa River, Huangara River, Hutt Aquifer and various other small aquifers.

There are a number of regulations, guidelines and other Acts which promote the maintenance of clean water for public water supply purposes and which encourage supply authorities to deliver a high quality product. These include the New Zealand Drinking-water Standards, Health Act 1956 and grading criteria for public water supplies. The Council will encourage the relevant authorities to use these, where relevant, in the interests of promoting public health and ensuring a sustainable potable water supply for future generations.

Methods for Public Access to Water Bodies

Fresh Water Policy 16.

The Wellington Regional Council will:

Method 53

- *Investigate and identify water bodies or parts thereof which are of regional significance in terms of public access, and encourage the provision of access where appropriate.*

Method 54

- *Where riparian management is adopted as a method, encourage its dual use for public access where this is possible.*

Method 55

District plans and land use consents would be an appropriate means of implementing Fresh Water Policy 16.

Access to water bodies is primarily a territorial authority responsibility as it involves the use of land. Provisions relating to esplanade reserves, esplanade strips, and access strips would be appropriate means of recognising and providing for access in district plans. The Wellington Regional Council will encourage landowners and territorial authorities to provide access to waterways (or parts thereof) of regional significance, where there is an identifiable demand for that access.

5.6 Anticipated Environmental Results

(1) Water quality, flows and levels do not fall below standards set to safeguard the life supporting capacity of water or the needs of future generations.

(2) Water quality, flows and levels set to manage a water body for certain purposes are maintained.

(3) Water is available for the social and economic development of the Region.

(4) The sustainable yield of groundwater is not exceeded and saltwater intrusion is minimised.

(5) The ecological health of aquatic ecosystems is protected and enhanced.

(6) The relationship of the tangata whenua with fresh water is better understood and iwi concerns and values are considered in the management of water bodies.

(7) Water of poor quality is enhanced where necessary and contaminated water is restored to appropriate levels.

(8) Water quality is improved through appropriate land use practices and integrated land and water management.

(9) All discharges into fresh water comply with the relevant water quality standards.

(10) The quantity and quality of water for public water supply is

protected so that supply is ensured and public health is protected.

(11) Efficiency and conservation targets established by relevant authorities are achieved.

(12) The adverse effects of river works and other activities in the beds of lakes and rivers are avoided, remedied, or mitigated.

(13) The special values attached to water bodies are protected.

(14) Significant indigenous flora and significant habitats of indigenous fauna are protected.

(15) There is no net loss in the number and quality of wetlands and wetland systems in the Region of national and regional significance.

(16) Riparian management programmes are established where appropriate.

(17) Public access to water bodies is maintained and/or enhanced where appropriate.