

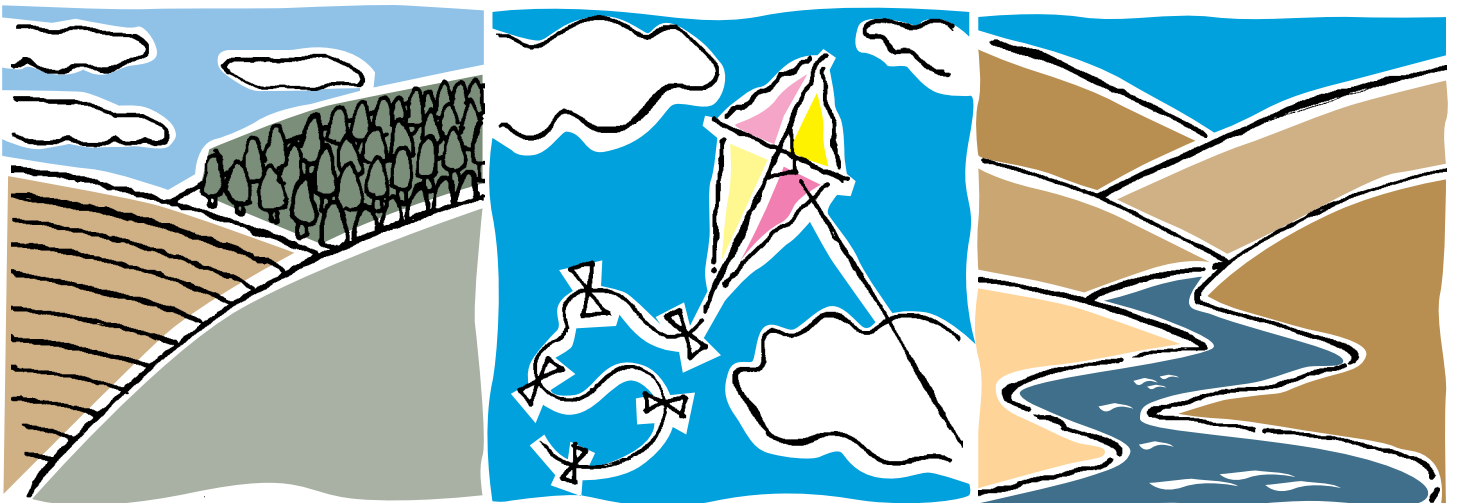
Canterbury Natural Resources Regional Plan

Chapter 7:

Wetlands

Prepared under the Resource
Management Act 1991

Operative
11 June 2011



R11/5

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**Environment
Canterbury**
Regional Council
Kaunihera Taiao ki Waitaha

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This is a true and correct copy of Chapter 7 of the Canterbury Natural Resources Regional Plan of the Canterbury Regional Council.

This document is part of a statutory regional plan prepared by the Canterbury Regional Council in accordance with the requirements of the Resource Management Act 1991.

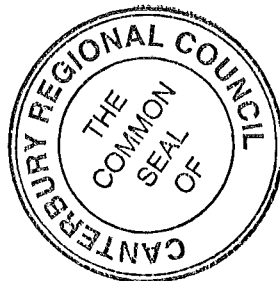
Variation 1 which forms this copy of Chapter 7 was approved at a meeting of the Canterbury Regional Council on 26 May 2011 in accordance with Clause 17(2) of the First Schedule of the Resource Management Act 1991.

Chapter 7 was publicly notified on Saturday 28 May and became operative on Saturday 11 June 2011.

The Common Seal of the Canterbury Regional Council was fixed in the presence of:



**Wayne Thomas
Acting Chief Executive
Canterbury Regional Council**



**Dame Margaret Bazley
Chair
Canterbury Regional Council**

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7.1 Introduction

This chapter:

- (a) Summarises the main wetland issues in Canterbury, the constraints on managing those issues and the directions suggested by those constraints.
- (b) Introduces a range of voluntary measures backed up by more focused regulation of wetland hydrology than s14 of the Resource Management Act (RMA) provides for. One of its main intentions is to begin raising awareness and motivating people to voluntarily retain wetlands and also to encourage them where possible to enhance and restore wetlands.
- (c) Puts the highest priority on the region's most depleted wetland types.

7.2 Background

7.2.1 Wetland characteristics

Although neither dry land nor truly aquatic—wetlands have elements of both—wetlands are a form of water body. Healthy functioning wetlands occupy an ecological transition zone. Plants and animals adapted to the permanent or intermittent wet conditions found in wetlands are sufficiently specialised to be a key to actually defining wetlands.

There are five distinct wetland types in Canterbury:

Estuarine—semi-enclosed areas, with or without tidal habitats inundated with salt or brackish water. Examples include Opihi Lagoon, Ashley Saltwater Creek Estuary.

Lacustrine—wetlands associated with the margins of deep water bodies that are large enough to be influenced by characteristic lake processes such as fluctuating water level and wave action. Examples include Lake Pearson and Lake Clearwater.

Palustrine—the most commonly occurring wetland type, generally bounded by dry land, includes swamps, marshes, bogs, tarns, fens, and red tussock areas. This category includes all wetlands that are not placed in other categories. Examples include Travis Wetland, Otukaikino Wetland, Valletta Swamp, and Ashburton Lakes wetlands.

Riverine—situated within the bed, terraces or nearby floodplains of rivers and streams. Generally shallower and slower flowing than the associated river or stream. Examples adjoin the upper Clarence and Ahuriri rivers.

Karst—underground and above-ground systems associated with limestone. Examples occur in Broken River.

There is wide variability within these types, some grade from one type to another, and there can be marked differences in management needs. Rather than dealing with wetlands on the basis of these types, this chapter focuses on the effects of activities on wetland values whatever their setting.

Overall, perhaps only 10% of the region's original wetlands as defined in the RMA remain (Canterbury Regional Policy Statement). A higher percentage remains in the high country (especially alpine areas), but in the lowlands, inland basins and along the coastal fringes the proportion is lower, in some cases markedly so.

In general, wetlands that still exist have retained higher naturalness where land use is less intensive, or where there are particular physical or climatic limitations. This has skewed the representativeness of what remains. Coastal, lowland, and inland basin wetlands are relatively more depleted both in quality and extent. This greater loss makes wetlands that remain in these areas even more significant.

Remaining wetlands are distributed across all forms of land ownership, including Crown land, the conservation estate, other public lands, such as council reserves, and private land including land owned by Ngāi Tahu hapū.

7.2.2 Intrinsic values

Wetlands have value in their own right, irrespective of any resource value. Over often long periods they evolved specialised flora, birdlife, aquatic and invertebrate fauna. With much less wetland area it is not only wetland plant communities that have diminished, but just as equally the other life forms that depend on wetlands as habitats.

The plants and their soil, water and invertebrate associations enable wetlands to perform unique hydrological and ecological functions. Many wetlands provide specialised nesting, breeding, and/or feeding sites for local and migratory birds and a range of other fauna.

The Canterbury Regional Policy Statement (RPS) recognises the contribution wetlands make to Canterbury's regional sense of identity. Those wetlands that remain, and are in reasonable health, contribute a significant natural heritage dimension to the Canterbury landscape. Many of the above values must be recognised and provided for as matters of national importance (see Chapter 7.3.1 for a discussion of section 6 RMA).

7.2.3 Wetlands as natural resources

In addition to their intrinsic values, wetlands are often of direct practical value to people. They are integral parts of the water flow within catchments, in some cases acting like sponges to reduce run-off in wet periods and release water in droughts. In the process they reduce erosion and flooding. Wetlands are increasingly used to purify ("polish") water. Many wetlands are attractive features without which their surrounding landscapes would be the poorer. This characteristic sometimes has commercial value in relation to tourism.

Traditionally, Canterbury's wetlands were and many still are of special value to Ngāi Tahu as mahinga kai areas or wāhi tapu. Several have developed recreational significance for holiday making, fishing or shooting and as part of the general attraction of the outdoors. Wetland areas provide opportunities for recreation, study and research. Wetlands are a legacy to be passed on to future generations.

Given proper attention to their design, artificial wetlands can help compensate for reduced areas of natural wetland, and become an asset to wildlife and the landscape. They can also be a useful tool for treating contaminated water, including stormwater—although both advantages can seldom be maximised at the same time. Artificial wetlands used to store water may also have a role in drought preparedness, but again this purpose usually compromises their value as natural habitats.

Light grazing may be beneficial to some natural wetlands, depending on how it is managed and the types and rates of stocking.

7.3 Statutory framework

7.3.1 Resource Management Act

The statutory basis for Environment Canterbury's involvement with wetlands comes from the Resource Management Act 1991, the purpose of which is "to promote the sustainable management of natural and physical resources". Sustainable management is defined as "managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic and cultural wellbeing and for their health and safety". What people do must, however, sustain the potential of resources to meet the needs of future generations, safeguard life-supporting capacity, and avoid, remedy or mitigate adverse effects on the environment (RMA section 5).

Sections 6 (Matters of national importance), 7 (Other matters) and 8 (Principles of the Treaty of Waitangi) further condition these responsibilities. Their implications are discussed later in this chapter in conjunction with regional council functions. It is to the exercise of those functions that sections 6, 7 and 8 apply.

The RMA defines "wetland" as: "includes permanently or intermittently wet areas, shallow water, and land water margins that support a natural ecosystem of plants and animals that are adapted to wet conditions". Water is defined as: "water in all its physical forms whether flowing or not and whether

over or under the ground; [it] includes fresh water, coastal water, and geothermal water; [but] does not include water in any form while in a pipe, tank, or cistern” (RMA section 2).

Ownership of water is vested in the Crown, and the RMA has no equivalent of section 85 when it comes to water. (Section 85 provides remedies where land use controls are injurious to a person’s interests in that land.)

There has been a long history of controls on water, for example those in the RMA are little different from the earlier Water and Soil Conservation Act 1967. Wetlands are water bodies just as equally as streams, rivers or lakes. No person may take, use, dam or divert water in any of these water bodies unless allowed by a resource consent or a rule in a regional plan. (Limited takes for emergencies, stock or domestic use may be exempt.) In other words, nearly all activities that may affect the hydrology—that is, the water quantity and flows—in a wetland are regulated under section 14 of the RMA.

In addition, under section 15, no person may discharge any:

- (a) Contaminant or water into water; or
- (b) Contaminant onto or into land in circumstances which may result in that contaminant ... entering water ... unless the discharge is expressly allowed by a rule in a regional plan or a resource consent.

Like section 14, section 15 also applies to all water bodies, including wetlands. In essence a contaminant is any substance that when discharged into water, changes or is likely to change the physical, chemical or biological condition of that water.

Chapter 4 Water Quality deals with most of the direct effects of contaminants on water within or connected to wetlands. That chapter’s policy on riparian management also deals with some of the less direct effects, complementing the good wetland management that this chapter promotes. In certain circumstances wetlands, particularly artificial wetlands, may play an important part in actually removing contaminants from water. Any contaminant discharge not covered by rules in a regional plan continues to require resource consent under section 15.

It is a function of regional councils to administer sections 14 and 15. Other regional council functions include the integrated management of natural and physical resources, and preparing objectives and policies to deal with regionally significant effects of land use (section 30 RMA).

7.3.1.1 Matters of national importance

When Environment Canterbury exercises any of these functions under the RMA it must also recognise and provide for matters of national importance in section 6, have particular regard for other matters in section 7, and take into account the principles of the Treaty of Waitangi in section 8. Giving effect to these sections is not a function, but a duty. Sections 6, 7 and 8 direct the way Environment Canterbury exercises its functions. For example, when Environment Canterbury receives a consent application to drain a wetland, among the effects it must consider are any effects on indigenous biodiversity under section 6(c).

Just as importantly, section 6 also requires the natural character of wetlands to be preserved, outstanding landscape values to be protected, and attention given to the relationship of Māori with things of value to them.

Among the other matters in section 7 are the ethic of stewardship, the efficient use and development of natural resources, amenity values, intrinsic values, heritage values, the quality of the environment, finite characteristics of resources, and the habitats of trout and salmon.

Section 8 creates a strong duty to take into account the principles of the Treaty of Waitangi.

7.3.2 Instruments under the RMA

As noted in greater detail in Chapter 1 of the NRRP, the RMA provides for a hierarchy of planning instruments, with national, regional and district levels. In broad terms, lower level documents must not

be inconsistent with those at higher levels. The RMA provides for national policy statements, but when this chapter was being prepared, although there was a national policy statement on biodiversity in preparation, no national policy statements had any official status. The NZ Coastal Policy Statement (NZCPS) is operative, and in addition to the operative RPS, there are some operative regional and district plans. A number of other regional and district plans are in various stages of preparation.

The starting point for this chapter has been the RPS, and to the extent that it is relevant, the NZCPS. Other Environment Canterbury regional plans, and district plans in the region have also been taken into account according to their relevance and the weight those in the earlier stages of preparation warranted. There are strong linkages between this chapter and chapters 4, 5, 6 and 8 of the NRRP.

7.3.2.1 NZ Coastal Policy Statement

Under the NZCPS it is a national priority to avoid or remedy adverse effects on wetlands in the coastal environment and estuaries, and to protect coastal wetlands¹.

7.3.2.2 Canterbury Regional Policy Statement

The RPS has recognised a number of wetland issues as being of resource management significance to the region. For several important reasons the RPS seeks to retain most of Canterbury's remaining wetlands, restore others and even create new ones. Chapter 8 includes the following objectives and policies:

RPS Objective 1

Protection or enhancement of wetlands, particularly the gross area of wetlands in the region, their ecological integrity and functioning, their cultural, amenity and recreational values, and the preservation of their natural character.

The ultimate outcomes sought in this objective are very clear. At the most basic level there should be no further reduction of wetland area. There can be some give and take, making up unavoidable losses through restoration or wetland creation, but the gross area must be retained. To give effect to this objective it is necessary to define what areas constitute wetlands. This chapter puts in place processes to do this.

In achieving this objective, RPS Policy 1 requires adverse effects on the following to be avoided, remedied or mitigated, and where practicable, wetland areas should be enhanced:

- (a) The ecological integrity and functioning of wetlands.
- (b) The natural character of wetlands.
- (c) The cultural, amenity and recreational values of wetlands.

RPS Objective 3, Chapter 8, is also relevant. It focuses on Canterbury's characteristic original biodiversity.

RPS Objective 3

Protection or enhancement of:

- (i) *Indigenous biodiversity, (including the survival of threatened species, communities and habitats, and species, biological communities and habitats unusual or characteristic of Canterbury);*
- (ii) *Indigenous ecosystem functioning; and*
- (iii) *Indigenous vegetation and habitats which contribute to the region's natural character.*

¹ NZCPS Policy 1.1.2

Other RPS objectives and policies relating to water quality and quantity refer to the needs of present and future generations, protecting water quality, and retaining sufficient quantities for drinking water, ecosystems, amenity values and cultural values.

7.3.2.3 Environment Canterbury regional plans

A regional plan must not be inconsistent with, among other things, any other regional plan of the region. These include the other chapters of the NRRP as well as the other Environment Canterbury regional plans listed below.

How one regional plan relates to another regional plan depends on factors such as context and specificity. A plan that has dealt explicitly with a wetland issue is generally due more weight in that topic area than one where wetland issues are peripheral or absent altogether. Nevertheless, consents granted under any of the plans listed below may include conditions to protect wetlands.

Table WTL1 Relationship between existing regional plans and NRRP Chapter 7

Existing regional plans	Relationship to NRRP Chapter 7
Transitional Regional Plan for the Canterbury Region (excluding Kaikoura District). Transitional Regional Plan for the Nelson-Marlborough Region.	These plans carry over by-laws and other statutory provisions, including rules relating to water quantity and quality, from the legislation and organisations that preceded formation of Environment Canterbury and the RMA. They permit some activities that may affect wetlands, such as minor takes of water, minor realignments of watercourses and minor discharges of contaminants. These rules will cease to have effect when rules on the same matters in this and other chapters of the NRRP become operative.
Land and Vegetation Management Regional Plan: Part I Kaikoura East Coast.	This plan contains controls on earthworks and vegetation clearance in the eastern part of Kaikoura District. Its principal purpose is soil conservation rather than to protect wetlands, but it does complement this chapter to some degree.
Land and Vegetation Management Regional Plan: Part II Port Hills.	This plan contains controls on earthworks and vegetation clearance covering the Port Hills area of Banks Peninsula. Its principal purpose is soil conservation rather than to protect wetlands, but it does complement this chapter to some degree.
The Land and Vegetation Management Regional Plan, Part IV: Land Management Fires, Canterbury Hill and High Country.	This plan regulates burning in and adjacent to wetlands. Its principal purpose is soil conservation rather than to protect wetlands, but it does complement this chapter to some degree.
Opihi River Regional Plan (ORRP)	This plan is mainly concerned with controlling water allocation, the taking, damming and diversion of surface water, and contaminant discharges in the Opihi River and its tributaries. This includes dealing with any effects such activities may have on wetlands in the area to which it applies. The rules in the ORRP have a similar effect to rules in this chapter, therefore in general the rules in this chapter do not apply except the rules for permitted activities. The Opihi River mouth, which is in the CMA, comes under the ORRP as far as opening of the mouth is concerned, and under the Regional Coastal Environment Plan in other respects.
Waimakariri River Regional Plan (WRRP).	This plan includes rules that apply to wetland drainage in the upper Waimakariri catchment and within the main stem of the river and its tributaries. The rules in the WRRP have a similar effect to rules in this chapter, therefore in general the rules in this chapter do not apply. See the other chapters of the NRRP for guidance on the status of provisions in the Transitional Regional Plan in relation to the Waimakariri River Regional Plan.
Regional Coastal Environment Plan.	Estuaries and many other wetlands fall at least partly within the coastal marine area (CMA). In the CMA, the Regional Coastal Environment Plan, and not this chapter, controls activities that may affect wetlands.
Waitaki Catchment Water Allocation Regional Plan	The Waitaki Catchment Water Allocation Regional Plan (WCWARP) primarily deals with the allocation of water within the Waitaki catchment. The WCWARP includes objectives, policies and rules that apply to the taking, use, damming and diverting of surface water and hydraulically-connected groundwater and the effects on wetlands. The WCWARP defines "wetlands with a moderate or higher significance" as those assessed and classified in accordance with Appendix WTL1 of the NRRP Chapter 7 and protects those wetlands and also wetlands that have not yet been classified. The rules in the WCWARP have similar effect to the rules in this chapter, therefore the NRRP rules addressing the same activities do not apply in this catchment.

Chapter 7 is affected by other chapters of the Canterbury Natural Resources Regional Plan:

- (a) Chapter 4, Water Quality has a number of rules pertaining to activities that involve contaminant discharges. These rules either restrict direct discharges into wetlands or require a separation distance between the activities and wetlands.
- (b) Chapter 5, Water Quantity has a number of rules pertaining to activities that involve the taking, use, damming or diversion of water. Some of these rules are restrictive, but there is also a rule to permit lawfully established activities to continue.
- (c) Chapter 6, Beds of Lakes and Rivers has a number of rules pertaining to activities within the beds of lakes and rivers and land adjacent to the bed. Conditions in these rules protect moderate or higher significance wetlands.

7.3.2.4 District plans in the region

Rules in district plans generally deal with effects of the use of land, while in the wetland context, rules in regional plans deal with the water. Thus, the role of district plans in relation to wetlands is mainly to restrict activities such as earthworks, vegetation clearance and animal grazing. This complements the NRRP, which has rules governing activities affecting water, such as taking, use, damming or diversion, and discharges of contaminants.

Some district plans have also targeted wetland drainage or certain contaminant discharges as effects of the use of land, with the result that overlaps in jurisdiction can arise. Where this has occurred it is desirable to develop a process whereby people avoid having to apply to more than one consent authority for essentially the same activity.

7.3.3 Other documents and legislation

Provisions in other planning documents and legislation also have a bearing on the contents of this chapter.

- (a) Ngāi Tahu Claims Settlement Act 1998—some wetlands are part of the settlement, but in general this makes no difference. For example, this chapter's provisions still apply.
- (b) Te Taumutu Rūnanga Natural Resource Management Plan - this document is an expression of the kaitiakitanga of Te Taumutu Rūnanga over the natural resources within their rohe.
- (c) Te Whakatau Kaupapa - Resource Management Strategy for the Canterbury Region - this document expresses many of the resource management concerns and aspirations of Ngāi Tahu for the Canterbury Region.
- (d) The Department of Conservation Arthur's Pass and Aoraki/Mount Cook national park management plans, and the Canterbury, Otago and Nelson-Marlborough conservation management strategies include many wetlands. This chapter's provisions generally complement those plans and strategies.
- (e) The plans or strategies of Ngāi Tahu, Fish and Game NZ regions, the regional plans of the adjoining Tasman and Marlborough unitary authorities, and the Otago Regional Council apply in various ways to wetlands. This chapter's provisions are not inconsistent with those plans and strategies, and generally complement them.

7.3.4 National and international guidance

Although without statutory force, the *New Zealand Biodiversity Strategy* (NZBS) is a blueprint for attaining national biodiversity goals by 2020. Its principal goal is to halt the present decline in indigenous biodiversity.

The qualities of wetlands have long been recognised internationally. Formal recognition came in an international convention adopted in Ramsar, Iran, in 1971. This was ratified by the NZ Government on December 13, 1976. Although the Ramsar Convention has never been recognised expressly in New

Zealand legislation, the RMA reflects the Ramsar principles, particularly the obligation to “promote ... as far as possible the wise use of wetlands”.

As recommended by the Ramsar Convention, in 1986 the New Zealand Government adopted a policy on wetlands. In approving this policy, the cabinet committee noted “that the policy is intended to indicate that in broad terms the Government regards the protection of representative important wetlands as being desirable, rather than bind the Government to any course of action or to justify restrictions on actions of the private sector”. Recently the Department of Conservation advised Ramsar that this policy is becoming outdated, and this advice may lead to a formal review.

While international agreements do not bind local authorities unless embodied in subsequent legislation, the principles of the Ramsar Convention have provided this chapter with important guidance.

7.4 Resource management issues

7.4.1 Wetland decline—the causes

The causes of wetland decline and loss may be intentional—such as when a drain is cut into a wetland, or unintentional—such as when change due to some other activity lowers the water table and reduces the wetness.

Wetlands have been reclaimed, artificially drained, and flows have been intercepted. General land drainage, alterations to watercourses, and even irrigation have all also had an effect. Schemes to manage rivers and reduce flooding have sometimes impacted on wetlands.

Wetland hydrology is complex. Probably more than any other part of the catchment, wetlands reflect the subtleties of changes in land use. The direct effects of localised drainage are only one factor; many changes have the potential to affect wetlands. These include the activities already mentioned as well as surface and groundwater takes, and changed vegetation cover, such as from tussock or scrub to forestry. Like other ecosystems, wetlands are never static but continue to change and evolve over time. Sudden change, however, does not allow enough time to adapt.

Along parts of the Canterbury coast, long-term coastal erosion poses a threat to wetlands that have also been affected by saltwater inundation, encroachment, and infilling by beach sediments and deposited debris. Coastal wetlands, caught between an eroding coastline and the developed hinterland or coastal stopbanks have nowhere to retreat unless an effort is made to accommodate some landward movement. Artificial lakes formed behind dams have also inundated wetlands.

When vegetation is lost, the habitat for fauna is also lost. Fire was the earliest tool of wetland transformation. Burning began the opening up of drier wetlands, thereby facilitating stock access and weed invasion. Attempts to drain wetter areas quickly followed.

Grazing depleted the vegetation, and was accompanied by trampling and pugging. Dung and urine inputs altered nutrient status. Frequently the resulting changes in plant cover led to drying out and further loss of indigenous plant vigour and stature. In response to less water and higher nutrient levels, the structure and composition of the plant community then changed. Exotics invaded more easily and natives less tolerant of the new conditions disappeared. Wetland functioning then tended to decline, lessening habitat value, flood buffering, and water purification and storage. Many wetlands were simply ploughed up, and still others were drained and reclaimed in the course of building cities and towns.

As well as domestic livestock, feral deer have also been implicated in grazing impacts on wetlands. Even in otherwise unmodified wetlands, exotic plants—grasses, herbs, shrubs, and trees like willows and wilding conifers—are frequent agents of wetland change.

Except in the conservation estate and some reserves, people have generally not realised the full value of wetlands, and even in legally protected areas grazing sometimes continues to damage wetlands. Beyond protected areas, wetlands have been lost almost in direct proportion to the intensity of land

development. In the hill and high country and some coastal fringes, wetlands have fared better than in more arable areas. Settlement has also taken its toll.

On private land there is sometimes a lack of awareness of wetland values, and a perception that remaining wetlands are no more than unproductive land. This seems to have hindered wetland protection.

A survey of rural councils about landholder attitudes towards wetlands suggest that landholders:

- (a) Generally appreciated wetlands as an important natural resource that should have some protection, but thought those on their own properties did not have any significant attributes.
- (b) Took a pragmatic view of wetlands. They were useful for grazing, but generally were not aware of other wetland values or that agricultural practices can have adverse effects.
- (c) Strongly favour voluntary methods and incentives over regulatory controls.

An emerging issue is the inappropriate use of all-terrain vehicles, mainly within estuarine and riverine wetlands, destroying vegetation, forming unnatural channels, stirring up sediment and disturbing wildlife.

7.4.2 Wetland decline—changing wetland economics

Historically, areas of former wetland yielded some of Canterbury's most productive farmland, as well as land on which to establish settlements large and small. In the hill and high country, draining the wetlands was often the only way to create places suitable for fodder crops and hay production. In such circumstances it was almost universally accepted that wetlands were areas ripe for development. Those that had not yet been drained were known disparagingly as swamps, bogs, quagmires and the like, implying that they should really be "improved" for pastoral or similar uses.

But perspectives change. In the last 30 or so years it has become recognised world wide that too little wetland now remains, and that wetlands are not the wastelands they were once perceived to be. Reflecting this new awareness, global commodity markets increasingly demand evidence that New Zealand practices good environmental stewardship. The various new forms of tourism based on unspoiled back country experiences are an even more tangible example of monetary benefit from wetlands and other natural areas. Times have changed and the economic value of many preserved wetlands already compares favourably with their potential use as farmland², adding value to those properties. Where this is not the case, publicly funded assistance with some costs of their protection may be appropriate in recognition of the public good element.

7.4.3 Resource management conflict

Sustainable management recognises the need to enable people and communities to provide for their own social and economic wellbeing, but also requires any adverse effects of their doing so to be avoided, remedied or mitigated. This very often results in conflicting resource management goals.

Under the RMA, land may be used in any way that does not contravene a rule in a plan. But to utilise resources other than land generally requires resource consent unless rules in a plan enable the activity. For example, unless a rule permits the taking, use, damming or diversion of water, doing so requires resource consent.

It is frequently difficult to frame permitted activity rules, either because we cannot foresee some of the potential adverse effects or cannot write conditions that people can interpret with sufficient certainty. There is then a choice to leave control of the activity under the RMA itself or to introduce a rule that requires resource consent. A rule is frequently the better choice because it narrows the range of

² A recent Ministry for the Environment study set out to quantify the extent to which particular New Zealand exports benefit from positive perceptions about our environment. That study placed the annual value of New Zealand's clean green image to the dairy industry alone at between \$241 million and \$569 million, and the value to tourism at between \$530 million and \$938 million (*Valuing New Zealand's Clean Green Image*, PA Consultants for the Ministry for the Environment, August 2001).

issues to be considered. This in turn allows a prospective applicant to assess in advance whether consent is likely to be granted and also the conditions likely to be imposed.

A single chapter of the NRRP is rarely able to resolve every aspect of an issue, and so each chapter must ensure as well as it can that gaps and overlaps do not occur.

Resolving conflict between the aims of sustainable management and within and between plan chapters not infrequently involves settling for a net benefit. For example, more efficient irrigation is a generally desirable goal that may sometimes have undesirable effects on wetland values. Sometimes these values are not so significant as to outweigh the benefits of increased water efficiency; in other cases ways can be found to preserve wetland water levels during and after the transition to more efficient irrigation. However, it may be necessary to forego improved water efficiency to protect a significant wetland.

A rare but sometimes more difficult conflict to resolve is where a development of regional or even national importance entails the loss of wetlands. While there is very definitely no presumption that such development should prevail, the NRRP does have to provide for the possibility that wetlands will sometimes come second.

A more common conflict is between a private landholder wishing to use a wetland area in some other way when doing so may adversely affect water flows beyond the property boundary, and/or destroy the incumbent ecosystem. This type of conflict is perhaps the key issue this chapter deals with. It focuses on resolving these types of issue in accordance with the principles of sustainable management discussed next.

7.4.4 Achieving sustainable management

The first function of regional councils is to establish, implement and review objectives, policies and methods to achieve integrated management of the natural and physical resources of the region. This entails a very broad approach to resolving issues, with a range of methods, both regulatory and non-regulatory.

Objectives in the RPS already provide the broad direction for this chapter. In addition to those objectives, a more detailed assessment has led to the emergence of a further issue to do with the region's more poorly represented wetland types. Resolving that issue adds another compatible dimension to the RPS objectives. Achieving these objectives requires reliable means of protecting and enhancing wetlands. These means can be difficult to find. For example, the most direct threat to one RPS objective, protection of the gross area of wetlands, is loss of water, the causes of which range from the obvious (drainage/reclamation) to the very complex and subtle, and may include changes in water movement throughout the wider catchment.

Although section 14 of the RMA itself controls the taking, use, damming or diversion of water in wetlands, obligations are not always crystal clear. For example, when does drain maintenance become drain enlargement? Which areas are actually wetlands in terms of the broad RMA definition, and where do these areas end? For these and other reasons, obligations under section 14 have sometimes been misunderstood or overlooked. In the few cases where resource consent applications have been received, they have been granted.

Better long-term management of wetlands is vitally important, but, while controls can attempt to require that new adverse effects on wetlands are avoided, remedied or mitigated, they can rarely insist on wetlands being managed better. That relies almost entirely on voluntary measures. Accordingly, while activities that may impact materially on wetlands will continue to require resource consent, the policies in this chapter place at least as much emphasis on raised awareness, education and incentives. One rule is intended to minimise a quirky anomaly that has meant people wishing to restore a wetland often needed resource consent. This was an obvious barrier to those who were otherwise willing to enhance wetlands.

While the protection of wetlands, and where possible their enhancement or restoration, are requirements of sustainable resource management, so too is enabling people and communities to provide for their social and economic wellbeing. With all taking, use, damming and diversion of water

controlled under section 14, and all discharges of contaminants that may affect wetlands controlled under section 15, as things stand people may not feel greatly enabled.

The RMA provides for many forms of control, including some that are stricter than sections 14 and 15, but section 32 tempers those possibilities by requiring justification for whatever level of control is actually imposed. Above all, whatever is done is subject to section 5, the purpose of the RMA.

The overall effect of all this is to make clear that there should only be as much control as is necessary to achieve sustainable management of natural and physical resources. That will sometimes mean less control than exists under sections 14 and 15, and will sometimes mean similar or greater control. The final form of control provided for in the NRRP is intended to have more sophistication and refinement than the existing controls.

Although lowest in the plan hierarchy referred to earlier, the district plan is still a very important instrument, with a particularly vital role in controlling effects of the use of land. These effects sometimes manifest themselves in wetlands, giving district plans a clear complementary role in helping to achieve the aims of this chapter. Both kinds of plan may regulate activities, and their combined scope to encourage voluntary improvements in wetland management need only be limited by the resources available.

Sustainable management of wetlands need not be difficult. Often all it needs to bring a wetland gradually back to a more healthy self-sustaining condition is to manage it with wetland values in mind. That will usually mean long-term commitment to a sustained though not necessarily big effort. Completely artificial wetlands may also have a place in achieving sustainable management. They have potential to become interesting landscape features and leisure areas, and to help compensate for lost natural habitats. However, where an artificial wetland has been created for flood control, water treatment or storage, it is recognised that while the wetland may acquire natural values, these wetlands must be able to be operated and maintained for their primary purpose.

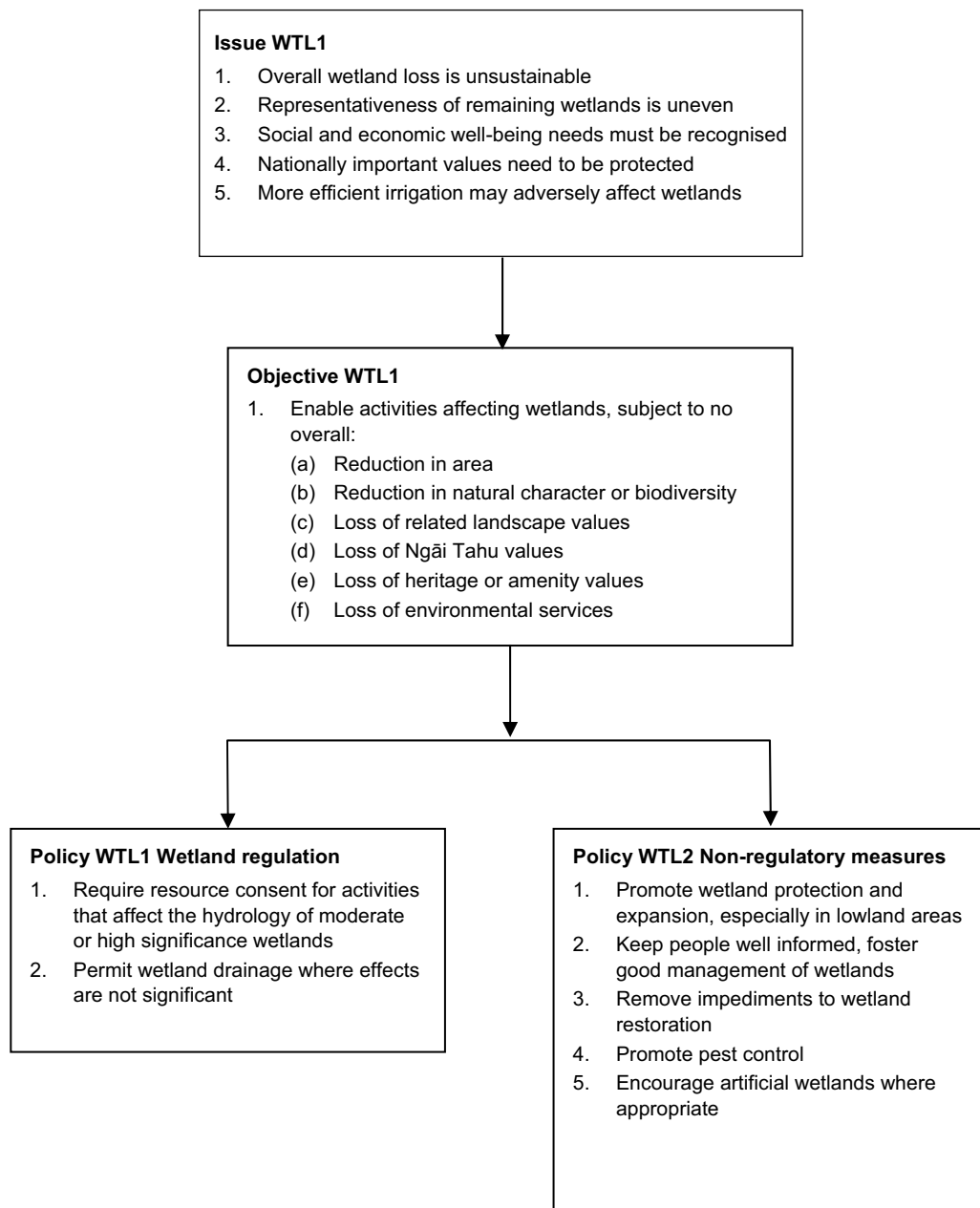
This NRRP chapter strives to implement in a balanced and complementary way efficient and effective approaches to achieving the stated objectives, and through them, sustainable management. Some obstacles to fully achieving these objectives still remain, however. Perhaps the most fundamental of these while the wetlands chapter was being prepared, was the lack of a wetland inventory.

A desktop review had been completed, enabling a field study to be planned, but this work would probably take many years to complete to a reasonable degree. As well as providing a baseline for future wetland monitoring the completed inventory will provide definitive answers to such questions as whether areas are wetlands or not, and how significant each wetland is. It will also enable the overall area of wetlands in the region to be ascertained, and among other things, levels of control to be matched more closely to the significance of the wetland.

7.5 Issue resolution

Resource management begins with identifying issues. Issues are significant matters of concern. Objectives are then formulated, which if achieved should resolve the issues. Policies outline how to achieve the objectives. This diagram shows how these three steps connect together.

This is only a summary, the detailed issue resolution process forms the substance of the whole plan.



Issue WTL1

Over the last 150 years there has been a major decline in the gross area of wetlands in the region. Many of these drained wetlands have formed productive farmland or have been used for urban development. Existing wetlands may provide stock water. While much wetland loss is historic, some remaining wetlands continue to lose their wetness and biological diversity. Wetlands can enhance downstream water quality by filtering flows, and can help maintain baseflow in streams and rivers. Ongoing issues in wetlands include:

- (1) A very serious decline in the total area and diversity of wetlands in the region, with wetlands continuing to lose wetness, biological diversity, and go out of existence. The loss of wetland area has also adversely affected water quality, quantity, and levels and flows, including groundwater recharge. Factors to have contributed to this include:
 - (a) lowered water tables due to:
 - (i) drainage (both direct and indirect);
 - (ii) the interception of water flowing into wetlands;
 - (iii) abstraction; and
 - (iv) changed vegetation composition—from plants that retain moisture to plants, such as willows, that remove it;
 - (b) infilling/reclamation/waste disposal;
 - (c) vegetation clearance;
 - (d) grazing by both domestic and feral animals, pugging and trampling;
 - (e) contaminants from animals and adjoining land uses;
 - (f) invasion by undesirable species of plants and animals (predation and/or competition); and
 - (g) a general loss of ecological integrity and function accompanied by a continuing downward spiral of wetland decline.
- (2) A non-uniform decrease in wetlands, with coastal, lowland and inland basin wetlands now most seriously depleted. Protecting all that remain will not alter that imbalance, there are just too few left. Under-represented wetland types need to be augmented, thereby increasing the populations of wetland species and the numbers of wetland communities not found or well represented in other types of wetlands.
- (3) Most wetlands occur on private land where the landholder may have plans to convert them into pasture or for other non-wetland uses. There is occasionally conflict between regionally or nationally important development and wetlands. As well as protecting wetlands, sustainable management requires consideration of the need to enable people and communities to provide for their social and economic wellbeing.
- (4) A diminished contribution to matters of national importance and the region's identity as expressed in its wetlands, due to a long-term decline in the area and quality of Canterbury's wetlands. Aspects that are in decline include:
 - (a) the natural character of wetlands and their margins;
 - (b) areas of significant indigenous flora and significant habitats of indigenous

fauna;

- (c) the role of wetlands as outstanding natural features or parts of outstanding natural landscapes;
 - (d) wetlands and areas of significance to Ngāi Tahu, and the role they play in the culture and traditions of Ngāi Tahu; and
 - (e) the role of wetlands in Canterbury's cultural heritage, history, amenity and recreation values, including the significant habitats of trout and salmon.
- (5) Improving the efficiency of irrigation and some stockwater systems may adversely affect some wetlands and wetland values associated with water races.

Objective WTL1

- (1) Canterbury's wetlands are managed in ways that enable people and communities to provide for their social, economic and cultural wellbeing, while meeting the constraints listed (a) to (d) below:
- (a) no overall reduction in the area of moderate or higher significance wetlands in the region, increasing that area where possible, especially in coastal, lowland and inland basin parts of the region;
 - (b) no overall reduction in the natural character of wetlands and their margins, and in particular no overall loss of significant³ areas of indigenous vegetation or significant³ habitats of indigenous fauna;
 - (c) no overall reduction in the contribution wetlands make to outstanding natural landscapes or as outstanding natural features; and
 - (d) no overall reduction in the contribution of wetlands to the relationship of Ngāi Tahu and their culture and traditions with their ancestral lands, water, mahinga kai sites, wāhi tapu and wāhi taonga.
- (2) In addition, the quality and quantity of wetlands is enhanced where possible, particularly in areas where wetlands are most depleted, and as a minimum there is:
- (a) no overall reduction in the cultural, heritage, and recreational values of wetlands, or the maintenance and enhancement of their amenity values, or their value as significant habitats of trout and salmon; and
 - (b) no overall reduction in the role that wetland ecosystems play in water capture, groundwater recharge, water storage and flow attenuation, and in maintaining water quality.

Explanation and principal reasons

The objective has two main threads:

- (a) to protect wetlands where a range of values still remain in good condition; and
- (b) to enhance or restore wetlands where possible, particularly in areas where wetlands have become most depleted.

The protection of wetlands applies to those that are remaining. Where wetlands have already been lost through activities allowed by resource consents, it is not intended that those wetlands will be required to be recreated or restored when resource consents are reviewed or renewed. However, in

³ Assessed using the criteria and methodology in Appendix WTL1.

renewing or reviewing those consents, the effects of the activity on remaining wetlands will need to be considered.

Use of the qualification “no overall” in this objective is necessary to allow a case-by-case judgement of whether effects on a wetland are consistent with the sustainable management of natural and physical resources.

The “no overall” concept allows losses provided they are offset by equivalent gains. This is consistent with Objective 1 in Chapter 8 of the RPS, which includes a similar notion expressed as “protection or enhancement of ... the gross area of wetlands”. (And also their ecological integrity and functioning, cultural, amenity and recreational values, and natural character). “No overall reduction” implies that a kind of wetland ledger must be kept, with debits and credits and a running balance of overall wetland area and other wetland qualities.

In setting its broad policy direction, the RPS placed no qualification on the word “wetlands”. Among other things, however, the NRRP must determine an appropriate level of regulatory intervention. To do that requires differentiation between areas that justify regulatory protection, and those that do not. Accordingly, the objective here is to achieve no overall reduction in wetlands of moderate or higher significance.

After one and a half centuries of change, lowland Canterbury’s character has come to be dominated by pastoral and arable land uses. This contrasts with these areas’ original character, which included substantial areas of wetland. What has occurred has been crucially important to the region’s economy but has marginalised the original species and ecosystems, and depleted environmental services that wetlands once provided. (These included water capture, groundwater recharge, water storage and flow attenuation, and acting as filters to maintain water quality.) Through the loss of wetlands, some species and even ecosystem types have already become extinct and others rare or threatened. The aim in seeking to increase the area of coastal, lowland and inland basin wetlands—which can only be achieved by voluntary means—is to begin redressing the balance, albeit in a comparatively small way.

Natural character depends on a variety of natural elements, the most easily threatened of which include the flora and fauna. These biological elements rely for their existence on the ecological integrity and functioning of wetlands, which in varying degrees depend on a certain level of water quantity and quality. Achieving this objective is thus linked with objectives, policies and methods in Chapter 4 Water Quantity and Chapter 5 Water Quality, but it also depends heavily on appropriate wetland management.

In addition to their hydrological or habitat value, wetlands can also be distinctive elements of the landscape. Often cultural values may add further to that distinctiveness. The long-standing cultural values which Ngāi Tahu hold regarding wetlands include values such as mahinga kai, water purification, wāhi tapu and wāhi taonga. There are many other people who also value wetlands for their aesthetic values, scientific and educational interest, for hunting or fishing, and for many other reasons. The objective is to keep these values to at least their present levels.

Wetland vegetation and associated microfauna remove nutrients and other contaminants from water passing through, and the low water velocity characteristic of wetlands also traps suspended sediments. These properties are being maximised in some artificial wetlands but are also present in varying degrees in natural wetlands, providing a natural remedy for degraded water quality. The ability of wetlands to store water, and their natural tendency to impede flows can lower flood peaks and delay the onset of drought. There should be no overall reduction in these environmental services.

Policy WTL1 Wetland regulation

In exercising control of the taking, use, damming and diversion of water, the quality, quantity, level or flow of water, and discharges of contaminants into water or onto land where any area of wetland may be affected:

- (a) Environment Canterbury will use rules to regulate some or all of the above activities where the affected wetland:**
 - (i) has not had its significance assessed in accordance with the NRRP⁴; or**
 - (ii) having been assessed in accordance with the NRRP, is considered to have moderate or higher significance; or**
 - (iii) has values significant to Ngāi Tahu; or**
 - (iv) is a significant salmon or trout habitat.**
- (b) Environment Canterbury will require as a condition of any resource consent granted in accordance with this policy, an enforceable arrangement to offset any loss or reduction of moderate or higher significance wetland pursuant to that consent. Any such arrangement should provide an offsetting wetland area as nearly as possible equivalent in area, type, condition and location, to the original wetland.**
- (c) Environment Canterbury will, where possible without risk of adverse effects on the environment, use rules to permit the taking, use, damming or diversion of water, minor discharges of water into water or onto land, and the minor disturbance of stream beds where the purpose is wetland enhancement, restoration or creation.**
- (d) Environment Canterbury will use rules to permit the taking, use, damming or diversion of wetland water, but only where there is no adverse effect on any area of moderate or higher significance wetland.**
 - (i) A moderate or higher significance wetland is a wetland identified as such in accordance with the methods and criteria in Appendix WTL1.**
 - (ii) The reduction of wetland area permitted under this policy is:**
 - 1. Unlimited where Environment Canterbury has assessed the significance of wetlands in the area as being of less than moderate significance.**
 - 2. Otherwise limited to 0.5 hectares of each separate wetland area. In this case it must be certified by a suitably qualified person that there would be no adverse effect on any moderate or higher significance wetland.**
 - (iii) In any case:**
 - 1. any relevant water quantity and quality standards shall also be met; and**
 - 2. values significant to Ngāi Tahu shall be safeguarded; and**
 - 3. any significant habitat of salmon or trout shall be safeguarded.**

⁴ Using the criteria and methodology in Appendix WTL1.

Explanation and principal reasons

Under section 14 of the RMA, all taking, use, damming or diversion of water requires resource consent unless permitted by a rule in a regional plan⁵. The RMA also requires resources to be managed in a way or at a rate that enables people and communities to provide for their social, economic and cultural wellbeing, so long as the environment is safeguarded.

Many other factors are required to ensure a healthy functioning wetland, but water is the most basic necessity. With the original stock of wetlands so depleted, few risks can be taken with those that remain. This makes it difficult to justify much liberalisation of the existing controls on the water on which wetlands depend. There is a case, however, for bringing more guidance and certainty to that control, which is a major role of this chapter.

Not all of Objective WTL1 will be achieved through control of the taking, use, damming or diversion of water. Sometimes consent conditions can require a degree of improvement in the existing state of wetlands, but in the majority of cases regulation can only protect the existing water quantity or restrict contaminant discharges. Controls may go a long way to achieving the most readily measurable part of Objective WTL1—protecting the overall area—but will seldom achieve better care or the objective's other aims to any great degree. That is the purpose of Policy WTL2.

Part (a) of the policy acknowledges that the complexities and the differing circumstances of each case generally demand the flexibility and detailed examination that only a resource consent process can provide. The information requirements of this process can be kept to a practical minimum, and attention focused on the essential issues by restricting Environment Canterbury's discretion where appropriate.

Part (b) of the policy requires any resource consent that will result in the loss of some moderate or higher significance wetland to include a condition to offset that loss. This may be achieved by enhancing, restoring or creating wetland on the same property as the original wetland or on another property, or take the form of a financial contribution as specified in Chapter 7.15 Financial Contributions. Generally it is expected that the higher the value of a wetland the more difficult it will be to offset its loss. The order of increasing difficulty in offsetting a wetland would be enhancement of an existing wetland, followed by restoration of a degraded wetland, and lastly creation of a new wetland.

Part (c) of the policy recognises that rules, such as those requiring resource consent to take, use, dam or divert water sometimes act as a disincentive to people who would otherwise be willing to enhance or restore a wetland. These disincentives can be reduced by permitting the necessary activities, subject to conditions to ensure any adverse effects are minor.

Part (d) of the policy acknowledges that it is not justified to require resource consent where the affected wetlands have low significance and any other adverse effects can be excluded. In cases where Environment Canterbury has not had the opportunity to assess a wetland in its wider context, any risk of unforeseen consequences is minimised by limiting the scale of the permitted activity. It is important to note that many areas that at present have little significance still have excellent potential for wetland restoration.

⁵ A General Authorisation in the Transitional Regional Plan for the Canterbury Region (TRP) permits takes of between 10m³/d and 20m³/d from any type of water body. The NRRP when it becomes operative will no longer permit such takes from wetlands. Note that under the TRP, takes must be for the purpose of obtaining water, not disposing of it. In other words, drainage is not a form of take.

Methods

Methods used or to be used to implement Policy WTL1 are:

Method WTL1(a) Wetlands inventory

In consultation with landholders, Ngāi Tahu and a range of community organisations, Environment Canterbury has prepared a methodology and criteria to classify the significance of different wetlands. These are included as Appendix WTL1. Over time they will be used to prepare an inventory of wetlands in the region by visiting and assessing so far as practicable each wetland. The resulting inventory will identify, locate, and describe the principal natural values and hydrology of each wetland. It will also assess levels of hydrological and ecological significance, record any threats, and suggest actions needed to retain existing wetlands and avoid any decline in their present condition.

Environment Canterbury is responsible for the inventory, and intends to carry out most of the assessments at its cost. However individuals, at their own cost, can have assessments undertaken by a “suitably qualified person”.

Method WTL1(b) Sites of significance to Ngāi Tahu

Environment Canterbury will, in conjunction with rūnanga and Te Rūnanga o Ngāi Tahu, identify sites or areas of significance to Ngāi Tahu in or adjacent to water bodies, or in areas where water related activities could cause significant adverse effects on sites or areas of significance. As appropriate, these sites and areas will be brought into the NRRP by way of RMA Schedule 1 processes.

Method WTL1(c) Regional rules

Regional rules WTL1 to WTL4 inclusive, and Rule WQL1 in Chapter 4 Water Quality, give effect to Policy WTL1.

Method WTL1(d) Compliance and enforcement

Environment Canterbury will:

- (a) monitor compliance with conditions for any activity affecting wetland water quantity or quality. To achieve compliance Environment Canterbury may apply for enforcement orders, issue abatement notices, issue infringement notices or use any other enforcement mechanisms available to it;
- (b) maintain a database recording details of any complaints received about activities adversely affecting wetlands; and
- (c) report regularly on the response to complaints, including the results of any investigations and/or subsequent enforcement action.

Method WTL1(e) Resource consents

When considering resource consents for the taking, use, damming or diversion of water, Environment Canterbury will have regard to Policy WTL1.

When considering the duration of any resource consent, Environment Canterbury will set the duration of the resource consent for as long as is consistent with the purpose of the RMA, shall have particular regard to the matters set out in Chapter 1, Section 1.3.5, and any need to set a common expiry date consistent with Section 7.10.

Method WTL1(f) Wetland monitoring agreements

(a) Definitions

- (i) **Wetland monitoring agreement** means an agreement between the owner or occupier of a property and Environment Canterbury. It identifies the surveillance wetlands on the property and includes a schedule under which officers of Environment Canterbury may monitor the existence and condition of each surveillance wetland at approximately five-yearly intervals.

- (ii) **Surveillance wetland** means a wetland that Environment Canterbury believes is likely to be of moderate or higher significance if assessed using the methodology set out in Appendix WTL1.

(b) Methodology

- (i) The first step in forming a wetland monitoring agreement is an approach by a landholder to Environment Canterbury or Environment Canterbury to a landholder. Neither party is under any obligation to take the matter any further.
- (ii) The next step is for suitably qualified Environment Canterbury officers to visit the property and establish which if any wetlands appear to be of moderate or higher significance. Those that appear to qualify will have their condition recorded as per Part A of Appendix WTL1, but there will be no attempt to complete a Part B significance assessment.
- (iii) In gauging possible significance, an Environment Canterbury officer may have regard to wetlands listed in the relevant district plan or identified by the Department of Conservation.
- (iv) The results of this work will be supplied to the landholder who may challenge any proposed surveillance wetland but only on the grounds that the selection is inconsistent with the significance criteria in Part B of Appendix WTL1. A dispute that cannot be resolved by the parties will be referred to an arbitrator agreed to by both parties, whose decision shall be final.

(c) Monitoring

- (i) Environment Canterbury will return to monitor any surveillance wetlands on the property at approximately five-yearly intervals, at which time it will update the condition record referred to in (b)(ii) above.
- (ii) The landholder will receive a copy of the results of this monitoring, which will not be available to the public other than in an aggregated report covering a number of properties. Every care will be taken to avoid identifying an individual property or the properties in a single locality in such a report.
- (iii) No sites or land on a property (other than surveillance wetlands), whether wetlands within the RMA definition or not, will be monitored under a wetland monitoring agreement.

Policy WTL2 Non-regulatory measures

In achieving integrated management of the natural and physical resources of the region, in relation to wetlands Environment Canterbury will:

- (a) promote the protection and expansion of wetlands in the region, giving particular priority to the most depleted wetland types;**
- (b) keep people, especially private landholders, well informed about the value of wetlands, and foster good wetland management;**
- (c) recognise that the cost of land uses foregone, resource consents and other costs can be a barrier to landholders protecting, enhancing or restoring wetlands, and will, where appropriate, consider helping to meet a share of these costs;**
- (d) promote control of undesirable plants and animals within wetlands, together with steps to minimise exotic plant spread from one water body to another;**
- (e) encourage the development of artificial wetlands particularly as new habitats.**

Explanation and principal reasons

No part of the Canterbury region can afford to lose significant wetlands, and there is a need in many parts to expand those areas. This is because originally the region's wetlands were much more extensive in type and area and were much more interconnected than they are now. Although wetlands have disappeared from all parts of the region, proportionately more have gone from coastal, lowland, and inland basin areas. For Canterbury to achieve anything like a true representation of the original range of naturally connected wetland habitats it will be necessary to expand existing wetlands, restore or even create more wetlands.

The overall intent of this policy, then, is to retain what still exists, promoting increases wherever possible. The number one priority for wetland expansion is in coastal, lowland and inland basin areas where wetland loss has been greatest.

The push in part (a) of the policy towards a more representative range of wetlands is important because of the differences, sometimes marked and sometimes subtle between wetland types and functions in different settings. These differences include climate, topography, soil types, water sources, water levels and rates of flow, vegetation, fish and bird life, and invertebrates. Improving ecological connections within and between natural systems is another important factor.

Unless given priority, wetlands characteristic of the most depleted locations will remain very much under-represented. So long as that is the case, flora and fauna adapted to those areas will remain at a disadvantage and increasingly at risk.

Part (b) of the policy recognises that it is fundamental to motivating voluntary action that people see wetlands as assets—that they appreciate the full range of wetland attributes and the potential for restoration as well as enhancement. In addition to being conscious of the true value of wetlands, to be able to manage them well requires knowledge and understanding.

This calls for methods that raise people's awareness of the biological and other values associated with Canterbury's remaining wetlands, and promote the message that preserving wetlands is important. It will often require the exchange of problem-solving information.

Part (c) recognises that there must also be tangible forms of encouragement, including financial and other incentives, such as wetland assistance grants, enhancement fund grants, public recognition, and direct assistance through various forms of partnership. Wetland owners may then be motivated to take a generally more active interest in their wetlands. This may include maintaining the proper wet conditions, restricting livestock access, controlling pests and other undesirable species, and if planting is necessary, mainly choosing locally-sourced native species.

The costs of foregoing the use of land or obtaining resource consent to take, use, dam or divert water sometimes act as disincentives to people who would otherwise be willing to protect, enhance or restore a wetland in accordance with these policies. In these cases Environment Canterbury will consider giving assistance towards meeting these costs. In doing so it will consider grants in lieu of rates relief and/or reimbursement of Environment Canterbury's resource consent processing charges. Environment Canterbury will have regard to the value of what is being done in terms of the objective and policies of this chapter, together with any prevailing financial constraints.

Control of undesirable plants and animals within wetlands (part (d) of the policy), while it includes control of many of the undesirable species associated with other environments, also includes plants or animals not formally identified as pests. For example, introduced species such as common pasture grasses can become pests in a wetland context, threatening to out-compete native species.

Most wetlands in Canterbury have long since acquired a considerable exotic plant component. These and the remaining native vegetation co-exist sometimes more, sometimes less comfortably. In some wetlands, exotic plants have assumed a degree of ecological importance, but most exotics are of little value from that perspective, and many are simply undesirable in these particular situations. In purest terms, introduced plants are at odds with the ecological integrity of wetlands. So also is the wider introduction or spread of cattle, deer, goats, cats, undesirable fish or other exotic species that can degrade the habitat values and native biodiversity of wetlands.

This policy may be implemented in a number of ways. In some cases landholders may be responsible under a regional pest management strategy for controlling certain recognised pest plants and animals. In other cases they may qualify for assistance. In part the policy may be implemented by providing information on undesirable species, and appropriate methods of control. Incentives or a degree of direct assistance from Environment Canterbury may also be needed.

The policy also focuses on the risk from accidental introductions of exotic species, particularly undesirable aquatic plants, when people use machinery near rivers, drains or streams, or move recreational equipment from one wetland to another. People in these situations need reminding of these risks and the necessary precautions.

Artificial wetlands—wetlands created by people—can have definite benefits. Under part (e) of the policy these should be encouraged, provided their limitations are also recognised. The benefits and limitations of created wetlands include:

Purpose	Benefits	Limitations
Water treatment (including sediment control, stormwater treatment and wastewater treatment)/flood control/water storage	Effective nutrient stripping, sediment/heavy metal trapping. Flood control Less instantaneous demand on flow regimes Some amenity values	Operation and maintenance routinely destroys natural values Operation and maintenance prevents development of true ecological complexity
Replacement of lost natural wetlands	Restore connectivity Provide habitat Improve representativeness Provide amenity values	Require long time and careful management to develop ecological complexity in any way comparable to natural wetlands

As the RPS notes, the same artificial wetland seldom provides both habitat and water management advantages.

Wetland creation can be encouraged by providing incentives, and in some cases may be required as a condition of resource consents.

Methods

Methods used or to be used to implement Policy WTL2 are:

Method WTL2(a) Wetlands on public land

Environment Canterbury will seek out opportunities for improved wetland management on public land and land that public agencies or community groups own or could acquire, and also promote improved wetland management to other local authorities in the region.

Environment Canterbury itself has reserve lands that include areas of wetland. Its management of these wetlands increasingly reflects an aim to lead by example. As resources permit, Environment Canterbury will also support wetland maintenance, restoration and enhancement by other public bodies and community groups on other publicly owned land.

Method WTL2(b) Enhancement funding

Environment Canterbury will provide funding through its Environment Enhancement Fund for, among other things, enhancement or restoration of the ecological, cultural or amenity values of wetlands. Full details of this fund and how to apply are available on request, or from the Environment Canterbury website, www.ecan.govt.nz. Environment Canterbury may encourage groups large enough to form an incorporated society to apply instead to funding bodies such as the various community trusts, with Environment Canterbury assisting to prepare the application if requested. Territorial authorities will be informed of Environment Enhancement Fund grants being approved in their respective areas and may be invited to consider making a supplementary contribution.

Method WTL2(c) Wetland assistance grants

In the spirit of a working partnership, Environment Canterbury will each year consider applications for grants towards the costs of wetland enhancement or restoration, and the costs of forgoing other uses of the land involved. The contribution towards enhancement or restoration is generally limited to reimbursing some of the costs incurred when resource consent is required, but grants in lieu of rates relief continue for as long as the wetland is properly managed.

Method WTL2(c)(i) Reimbursement of resource consent processing charges

- (a) Subject to meeting the criteria below, applicants for resource consent, may when applying for resource consent, also apply for reimbursement of part or all of the Environment Canterbury resource consent processing charges. Only charges incurred in obtaining resource consent for a wetland enhancement, restoration or creation project are eligible. In considering applications for these grants, the following conditions shall apply:
- (i) the dominant purpose of the resource consent must be to enhance or restore a wetland utilising locally indigenous vegetation unless that conflicts with some other equally important conservation purpose;
 - (ii) there must be a long-term commitment to maintaining the wetland in its enhanced or restored state;
 - (iii) grants will only take into account Environment Canterbury's consent processing charges and the costs of obtaining relevant information from Environment Canterbury, but not those of obtaining expert advice or complying with conditions placed on the consent;
 - (iv) where some other benefit or purpose is also served by the resource consent, the particular grant may be reduced in direct proportion to the other benefit or purpose; and
 - (v) in any given year budgetary processes govern the total amount Environment Canterbury has available for reimbursement grants. Any reductions this makes necessary will be made on a strictly *pro rata* basis.
- (b) Nothing in this method guarantees that consents will be granted or costs reimbursed.

Method WTL2(c)(ii) Wetland protection grants

- (a) Environment Canterbury shall consider applications for grants in lieu of rates relief from the party responsible for paying Environment Canterbury general rates where land has been set aside for wetland management. The following conditions shall apply:
- (i) a wetland protection grant shall only be made in respect of wetlands and other land set aside for any purpose consistent with the objective and policies of this chapter; and
 - (ii) for a wetland protection grant to be considered there must be satisfactory evidence that the subject land has been set aside, that stock are ordinarily excluded from that land, and that it is being managed primarily to preserve its natural character and/or maintain or improve its indigenous values in accordance with a management plan.
- (b) Applications for wetland protection grants shall be considered once a year no less than 60 working days after advertising for applications.
- (c) Approval, once granted, shall continue from year to year so long as none of the circumstances leading to the original grant have changed.
- (d) In any of the following cases Environment Canterbury shall be informed, and if a wetland protection grant is still required, a new application may have to be made:
- (i) the original landholder changes; or
 - (ii) the original area set aside changes; or
 - (iii) the approved management of the area set aside changes.

Note: The subject land shall not be used at any time for any economic activity. However, limited grazing for conservation purposes is allowed. Any fees charged to visitors shall only be sufficient to recover the costs of installing and maintaining relevant visitor amenities. No wetland protection grant shall be available where the wetland being managed is one of the attractions of a commercial tourist venture.

- (e) Wetland protection grants shall be equivalent pro rata to the amount of Environment Canterbury general rate levied on the subject property.
- (f) To be eligible, the amount that may be applied for annually shall exceed \$50.
- (g) Areas eligible for any other remission of regional rates or equivalent payment of any kind are not eligible for this grant.
- (h) Wetland protection grants will be calculated in accordance with the following formula:

$$W = G * F/A$$

Where:

G = Environment Canterbury general rate on the capital value for the whole property for the year concerned.

F = area fenced out or otherwise set aside for conservation purposes.

A = total rateable area.

Method WTL2(d) Territorial authorities

Environment Canterbury shall encourage territorial authorities in the region to increase their commitment to policies and methods generally similar in intent and effect to Policy WTL2 and its methods.

Method WTL2(e) Information/awareness programme

Environment Canterbury shall, within two years of this chapter of the NRRP becoming operative, set up a Wetland Information/Awareness Programme for the region. This programme will regularly disseminate information to private landholders and anyone else who requests it about the value and importance of the region's wetlands. The programme will advise on the following important values associated with Canterbury's remaining wetlands, and how to manage them:

- (a) functioning and value as water bodies;
- (b) biological diversity;
- (c) natural character;
- (d) historical and cultural heritage;
- (e) traditional value to Ngāi Tahu, including current or potential value for cultural harvest; and
- (f) amenity, recreation and landscape values.

The programme will give priority to raising awareness of existing and former wetlands in coastal, lowland and inland basin areas, and will encourage the restoration or creation of wetlands in these areas.

Method WTL2(f) Field days

Environment Canterbury will, as part of its Information/Awareness Programme, arrange field days when and where there appears to be sufficient interest, for the purpose of demonstrating aspects of wetland management. These need not be limited to hydrological or ecological aspects but could also include Ngāi Tahu cultural values, or commercial aspects compatible with this chapter's objective and policies.

Method WTL2(g) Partnerships and co-ordination

Environment Canterbury will act as a co-ordinating agency for parties willing to join its integrated approach to wetland management. Environment Canterbury will work alongside landholders to better understand landholder's perspectives on wetland management. Parties include but need not be limited to other local authorities. Ngāi Tahu, the Department of Conservation, any individual or agency might also play a part. The programme will have a minimum of formal structure, and participation will be voluntary. Each party will, however, be expected to bring as much as it can to what is essentially a partnership. For the most part, members will be expected to subordinate their own particular interests to the agreed goals of the partnership.

Method WTL2(h) Co-operation

Environment Canterbury will promote co-operation among other bodies in the region with an interest in conserving wetlands and/or an ability to contribute to that aim. Environment Canterbury will co-operate with and where appropriate assist these other bodies. They include: landholders, territorial authorities, Ngāi Tahu, Federated Farmers, Nature Heritage Fund/Nga Whenua Rahui, QE II National Trust, NZ Landcare Trust, Fish and Game NZ, Royal Forest and Bird Protection Society, Water Rights Trust, landcare and other community groups, Department of Conservation, Ministry for the Environment, recreational groups, ornithological groups, Transit New Zealand and Land Information New Zealand.

Environment Canterbury will offer ongoing co-ordination, co-operation and where appropriate leadership to these parties, looking where possible for opportunities to work together and where not actually working together, to be working towards generally similar goals.

Method WTL2(i) Technical advice

Wherever possible, Environment Canterbury will, on request, provide technical advice on wetland management good practice factors including:

- (a) water levels and flows that may be needed by a particular wetland;
- (b) the desirable water quality;
- (c) pest control and any necessary grazing regime;
- (d) the appropriate range of plants to choose from in any planting programme; and
- (e) any re-introduction of wildlife.

Method WTL2(j) Regional pest management strategies

Environment Canterbury has prepared two regional pest management strategies under the Biosecurity Act 1993. These strategies recognise several pests with direct or indirect effects on wetland biodiversity. The Regional Pest Management Strategy (1998) obliges landholders to control specified pests on their land in certain circumstances, while the Regional Pest Management Strategy (Biodiversity Pests) (RPMS—Biodiversity) recognises a further range of pests that threaten biodiversity. The RPMS—Biodiversity does not oblige landholders to take action, but may fund programmes to control certain pests in high-value environmental areas, or facilitate and assist community and landholder self-help programmes in other areas.

Included among the pests recognised in the RPMS—Biodiversity are possums, mustelids (ferrets, stoats, weasels), feral cats, pigs and deer, wilding conifers, and the aquatic plants Phragmites and Egeria. Between them these pests threaten trees and native birds, skinks and geckos, native invertebrates such as giant wetas and grasshoppers, and existing aquatic and aquatic-margin plants.

One of the criteria used in the RPMS—Biodiversity for prioritising control work in high-value environmental areas is to recognise partnership opportunities between and within individual landholders and community groups. Such partnerships will also complement this chapter. The RPMS—Biodiversity criteria recognise sites where an individual or group is already making progress with other aspects of wetland management.

When applications for Environment Enhancement Fund grants are being processed, any need for pest control assistance will also be considered (although this does not imply that assistance can always be approved).

Method WTL2(k) Aquatic pest education programme

Environment Canterbury will, within 12 months of this chapter of the NRRP becoming operative, implement an Aquatic Pest Education Programme. This programme will encourage landholders, users of earthmoving equipment and recreational users of wetlands to avoid assisting the spread of aquatic species, especially aquatic plant material, from one water body to another. The programme for doing this will work through recreational bodies, regular publicity, distributing printed material and erecting warning signs.

7.6 Regional rules

Figure WTL1: Generalised relationship between rules and resource consents

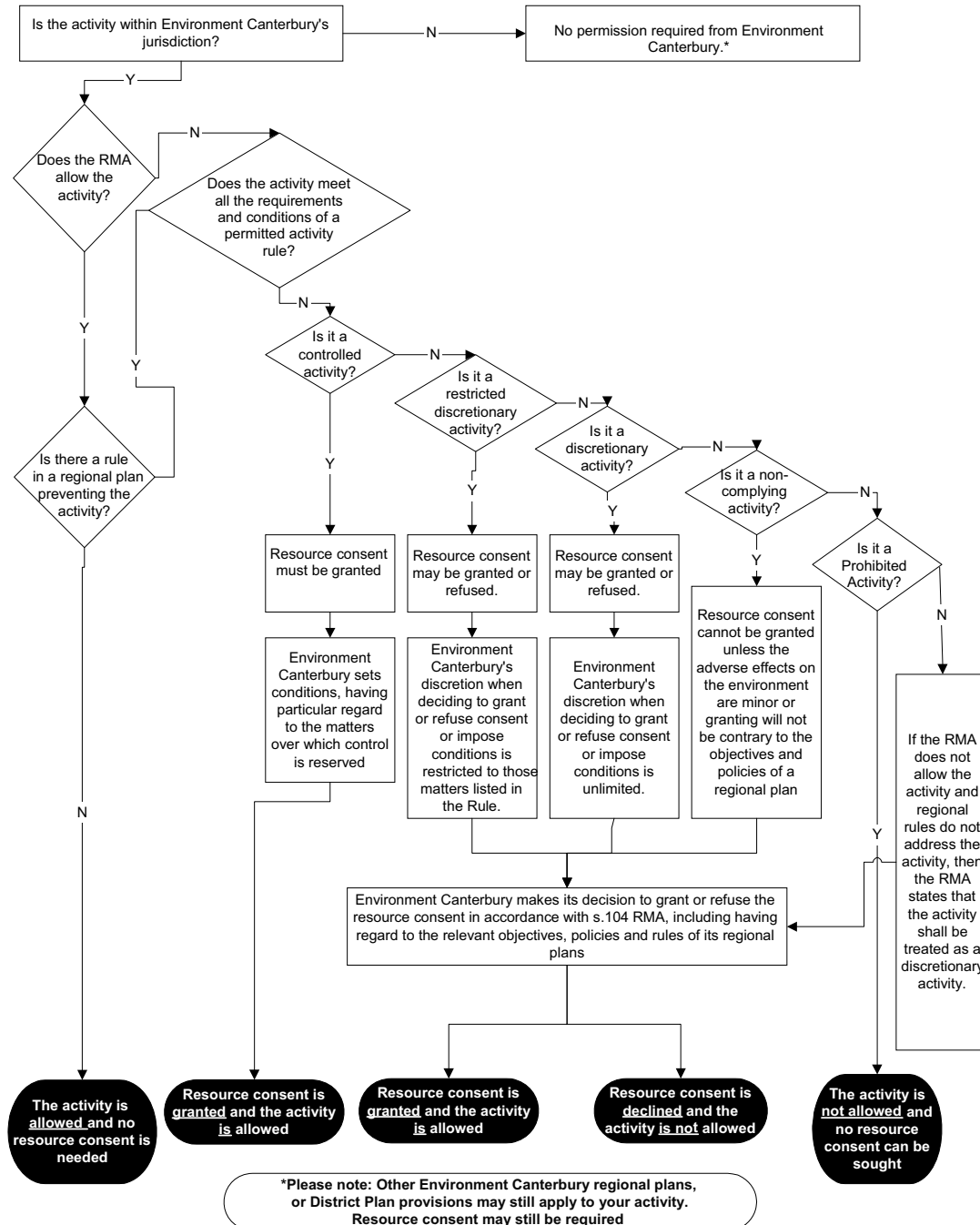


Table WTL2 Index of rules

Each rule in the index table below applies everywhere in the region landward of the coastal marine area unless the area covered by the rule is specifically limited to the area identified in the left hand column of the Index adjacent to a rule.

Activities in the nature of drainage, reclamation, dumping and infilling are considered to be forms of damming and/or diversion of water and are therefore subject to these rules.

The status of an activity is generally determined by reference to conditions. An activity that complies with all the conditions in the rule is permitted. The status of an activity that does not comply with all the conditions depends on which conditions it does not comply with.

If an activity, for example, take, dam, divert or discharge, fails to comply with one or more conditions in a rule, then the activity will be considered under the most restrictive type of rule activity specified for any of the conditions that cannot be complied with.

Rule(s) in this chapter may not be the only rule(s) that apply to the activity you intend to carry out; it may also be subject to other rules in this or another regional plan, or the RMA. If you are unsure, please call Environment Canterbury. Rules in the district plan for your area may also apply. You may check this with your local city/district council.

Where rule applies	Rule N°	Description	Activity status	Page N°
These rules do not apply in the coastal marine area. They apply everywhere else in the Canterbury Region, except where the activity is already covered by: <ol style="list-style-type: none"> a rule in the following regional plans: <ol style="list-style-type: none"> the Opihi River Regional Plan; the Waimakariri River Regional Plan; or the Waitaki Catchment Water Allocation Regional Plan provisions in a water conservation order that are stricter than a permitted activity. Where a resource consent is required, both Chapter 7 and the relevant water conservation order apply. 	WTL1	Enhance, restore or create wetlands	Permitted Restricted Discretionary	27
	WTL2	Reduce the area of wetlands	Permitted Restricted Discretionary Discretionary Prohibited	32
	WTL3	Continue activities beneficial to wetlands	Permitted Restricted Discretionary	36
	WTL4	Activities to control unwanted organisms	Permitted Restricted Discretionary	37

Rule WTL1 Enhance, restore or create wetlands

Activity	Conditions
<p>For the purpose of enhancing, restoring or creating a wetland, the:</p> <ul style="list-style-type: none"> (a) taking, use, damming or diversion of water from a river; or (b) disturbance of the river bed; or (c) reclamation of any river bed; or (d) discharge of excess/overflow water from the wetland onto land or into surface water; <p>is -</p> <ol style="list-style-type: none"> 1. a permitted activity, provided the activity complies with the conditions in this Rule. 2. a restricted discretionary activity where the activity does not comply with any of Conditions 3 to 13 inclusive. 3. Where Condition 1 or Condition 2 is not complied with, the taking, use, damming or diversion of water is classified by Rule WQN7 or WQN25 in Chapter 5 Water Quantity. 4. This rule does not authorise the taking, use or diversion of water from within the subject wetland. 	<ol style="list-style-type: none"> 1. The activity is limited to rivers where the catchment area shall not exceed 100 hectares or the mean annual flow of the river shall not exceed 200 litres per second at the point of taking, damming or diversion. 2. The sole purpose of the activity must be to enhance, restore or create levels or flows of water in an existing, former or new wetland so as to assist in managing its conservation values. 3. Where the activity is being carried out in fulfilment of a resource consent condition requiring an offsetting wetland, the wetland shall be managed in accordance with a wetland management plan provided to, and certified by, Environment Canterbury as being sufficient to protect the values of the offsetting wetland: <ol style="list-style-type: none"> (a) In particular, the management plan shall deal with the following issues: <ol style="list-style-type: none"> (i) control of livestock access to and within the wetland; and (ii) if there is to be any grazing of the wetland, details of the grazing regime; and (iii) if control of plant and animal pests is required within the wetland, the standards for that control; and (iv) any other measures for the long-term protection or enhancement of wetland values, for example, riparian or other planting. 4. The activity shall not reduce levels or flows of water in any other wetland. 5. There shall be no restriction of fish passage. 6. No works shall be carried out during the spawning periods of species set out in Table WTL3 if those species are likely to be affected. 7. In the course of diverting or realigning a river, all practical steps shall be taken to minimise disturbance of the original bed, and any riverbed construction or other riverbed works shall: <ol style="list-style-type: none"> (a) be similar in standard and character to the original bed. For example, gravel where the former bed was gravel, and replicate as closely as possible the variety of pool, riffle and run habitat, and any meanders of the original riverbed; and (b) include means of trapping sediment as far as practicable during commissioning for later disposal to land. 8. On completion of any works, any water discharged into water shall meet the requirements of Rule WQL 1.

<p>Where rule applies: This rule applies in some, but not all areas/situations in the Canterbury Region; see Table WTL2 Index of Rules for the areas/situations in which the rule applies.</p>	<p>9. To minimise the risk of erosion, any former riverbed not part of the wetland shall either be contoured and planted, or be backfilled using uncontaminated soil, sand, gravels or rock, and planted. In either case, planting shall be undertaken within 12 months of the works being completed. Planting shall then be maintained and any failures made good for a period of two years. Part of any taking or use permitted under this rule may be used as required to irrigate any plantings made to comply with this condition.</p> <p>10. Irrespective of the path it follows in the course of damming or diversion, the flow remaining in the source river where it leaves the nominated area (see Condition 12) shall not be less than 75 percent of the available flow where it enters the nominated area. In this context:</p> <p>(a) where a minimum flow has been set, and/or one or more permits to take water have been granted and have not lapsed, "available flow" means the actual flow minus the sum of any set minimum flow and every take authorised by a water permit; and</p> <p>(b) where (a) does not apply, "available flow" means the actual flow in the river.</p> <p>11. No dam shall exceed one metre in height relative to the average level of the original bed at the base of the dam, and any such dam shall be constructed and maintained so as to avoid any risk of failure.</p> <p>12. All aspects of the activity shall be confined within a nominated area, which may be any convenient area within a single property or may extend over several properties (see Figure WTL2).</p> <p>13. A plan showing the nominated area and a description of the proposal shall be lodged with Environment Canterbury at least 10 working days before any work commences. This plan shall be signed by or on behalf of each owner or occupier of land in the nominated area.</p>
Restriction of discretion	
<p>Information to be provided: An application for a resource consent under this rule must meet the information requirements set out in Section 7.8 of Chapter 7.</p>	<p>Where the activity is classified as a restricted discretionary activity, Environment Canterbury has restricted its discretion to the following matters:</p> <ol style="list-style-type: none"> 1. The provisions of any management plan. 2. The location and rate of the take or diversion. 3. Effects on river flows and the reliability of supply of existing users. 4. Effects on habitats and biota. 5. Effects on natural character. 6. Effects on amenity. 7. Effects on heritage sites or sites of significance to Ngāi Tahu. 8. The extent of the nominated area. 9. Effects on other owners or occupiers within the nominated area. 10. Effects of flooding. 11. Risk of failure of any dam structure. 12. Effects on water quality. 13. Effects on other wetlands. 14. Consent Duration. 15. Financial contributions or bonds as specified in Part 7.15 of this Chapter.
<p>Cross reference: This rule contributes to the implementation of Policy WTL1(c).</p>	
<p>For information only:</p>	
<ol style="list-style-type: none"> 1. The onus is on anyone carrying out activities permitted by this rule to ensure that conditions to be met before commencing the activity, and once it is in effect, are all complied with. Provided they have been, no resource consent is required. If at any time a condition is not complied with the activity must cease or a resource consent obtained. There are penalties for non- 	

compliance.

2. Information on any minimum flows and authorised takes may be obtained from Environment Canterbury. Environment Canterbury is also able to provide free technical advice in accordance with Method WTL2(e) and (i) to assist landholders when planning wetland creation and enhancement projects and if a resource consent is necessary the fees for that consent may be able to be refunded under Method WTL2(c)(i).
3. Permitted activity rules do not take effect until any submissions in opposition have been withdrawn or decided and any appeals withdrawn or determined.
4. People carrying out any of the activities authorised by this rule are strongly advised to obtain a copy of Environment Canterbury's fact sheet "Drain and Waterway Guidelines" and to carry out the work in accordance with it.
5. In relation to fish spawning periods, the species likely to be affected may be found by reference to the most up-to-date information held by authorities such as the Department of Conservation, and National Institute for Water and Atmospheric Research (NIWA) – for example, the New Zealand Freshwater Fish Database maintained by NIWA (<http://www.niwascience.co.nz/services/nzffd/>).

Figure WTL2: Nominated area

A nominated area may be any convenient area. It may lie within a single property or extend over several properties.

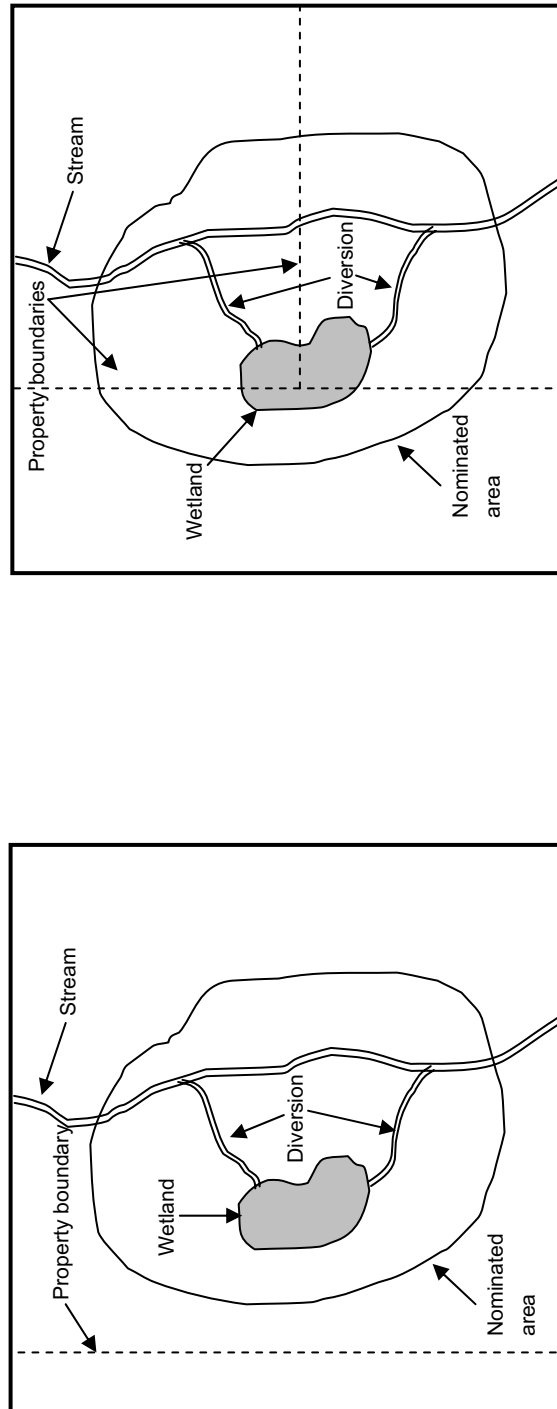
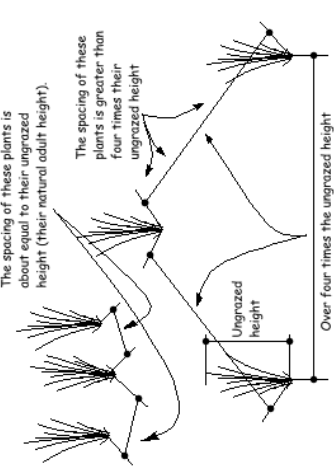


Table WTL3 Critical periods for selected fish spawning
 (relates to conditions in Rules WTL1 and WTL4)

Fish	Spawning habitat	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr
Quinnat salmon	Gravel riffles												
Brown trout	Gravel riffles												
Rainbow trout	Gravel riffles												
Canterbury mudfish <i>If you find any mudfish please advise the Department of Conservation.</i>	Weedy overgrown streams												
Whitebait (includes, inanga, koaro, banded and shortjawed kokopu)	For inanga, the base of vegetation, mainly grass at the high spring tide mark near the saltwater/freshwater edge.												
Giant kokopu (also a whitebait species)	Slow moving vegetated streams												
Upland bullies	Slow flowing stony-bedded rivers to weedy streams												
Kanakana/lamprey	Upstream boulder clusters/overhanging banks, soft sediments along stream margins where flows are gentle												
Least impact on fish in waters connected with but above the tidal influence is from October to April.													
Least impact on fish in waters affected by tides is from October to January.													

Critical periods for spawning

Rule WTL2 Reduce the area of wetlands

Activity	Conditions
<p>Where it reduces or is likely to reduce the area of a wetland:</p> <ol style="list-style-type: none"> the taking, use, damming or diversion (including draining) of water; and the discharge of any water onto land or into surface water; <p>is -</p> <ol style="list-style-type: none"> a permitted activity, provided the activity complies with Conditions 1 to 9 in this rule. a restricted discretionary activity where the activity complies with Condition 1 and does not comply with any of Conditions 2 to 9 inclusive. a discretionary activity where the activity complies with Conditions 10 and 11 and does not comply with Condition 1 a prohibited activity where the activity does not comply with Condition 1 and Condition 10 or 11. 	<ol style="list-style-type: none"> The activity shall only affect wetlands that are: <ol style="list-style-type: none"> Not of moderate or higher significance; Certified not of moderate or higher significance; Not a surveillance wetland on a property where a Wetland Monitoring Agreement is in effect as determined by Method WTL1(f); or Artificial wetlands created for the primary purpose of: flood control; water treatment (including sediment control, stormwater treatment and wastewater treatment); or water storage. Where Condition 1(b) applies, the wetland concerned shall not have had any of its vegetation except for pests or unwanted aquatic organisms cleared by burning, spraying or mechanical means during the two years prior to the assessment by a suitably qualified person. Where Condition 1(b) applies, irrespective of whether it is reduced in a single step or in stages, the total reduction in the area of any separate wetland (see Figure WTL3) shall be no more than 0.5 hectares. <ol style="list-style-type: none"> The total reduction shall be calculated by comparing: <ol style="list-style-type: none"> the location of the wetland edge prior to the commencement of the activity permitted by this rule (the original wetland edge); to the location of the wetland edge at least five years after the commencement of the most recent part of any activity permitted by this rule (the final wetland edge). The original wetland edge and the final wetland edge shall each be taken as that point in the transition from wetland to dryland where the spacing between individual plants of any of the species listed below first exceeds four times the ungrazed height of those plants: <ol style="list-style-type: none"> For coastal estuarine wetlands and brackish lagoons: <ol style="list-style-type: none"> <i>Apodasmia similis</i> (oioi, jointed wire rush) <i>Bolboschoenus caldiwellii</i> <i>Juncus kraussii</i> var. <i>australiensis</i> (sea rush) <i>Plagianthus divaricatus</i> (saltmarsh ribbonwood) <i>Schoenoplectus tabernaemontani</i> (kapungawha, lake clubrush) For freshwater wetlands: <ol style="list-style-type: none"> <i>Carex secta</i> (purei) <i>Carex virgata</i> (purei) <i>Cordyline australis</i> (ti kouka, cabbage tree) <i>Eleocharis acuta</i> (spike sedge) <i>Juncus articulatus</i> (jointed rush) <i>Phormium tenax</i> (harakeke, NZ flax) <i>Schoenus pauciflorus</i> (bog rush)
<p>Definitions for this rule:</p> <p>A. Not of moderate or higher significance describes any wetland in a locality where an assessment of wetlands has been completed. This assessment must be carried out in accordance with the <i>Appendix WTL 1: Wetland assessment methodology</i>, and the results of the assessment show that the wetland is not of moderate or higher significance. Such an assessment is only complete once Environment Canterbury has decided whether or not to include any wetlands from that assessment in the NRRP, and if Environment Canterbury has decided to do so, the process laid down in Schedule 1 of the RMA has concluded.</p>	<div data-bbox="869 235 1372 806" style="border: 1px solid black; padding: 5px;"> <p>To find the wetland edge, multiply the ungrazed height of the predominant wetland species by four. The edge is where those plants have that spacing.</p>  </div>

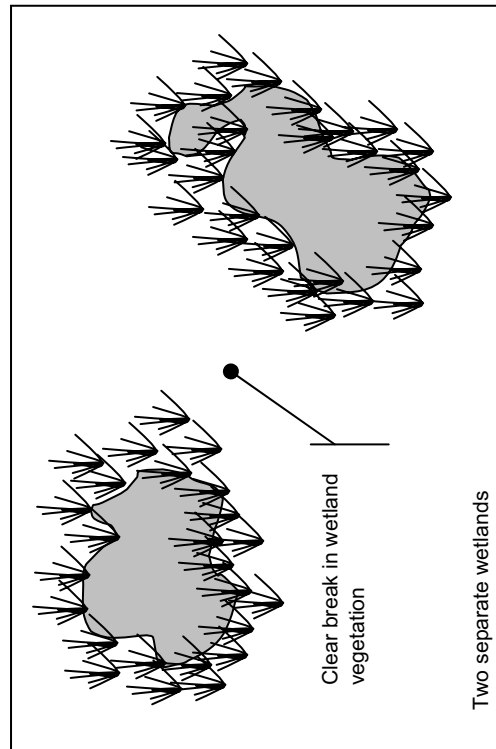
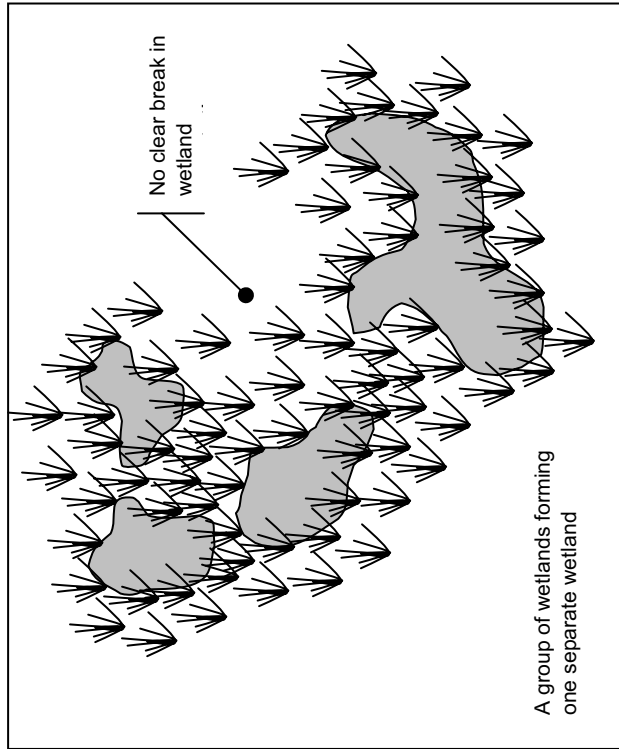
<p>B. Certified not of moderate or higher significance describes any wetland in a locality where an assessment of wetlands as described in Definition A has not been completed, provided a suitably qualified person has certified the wetland is not of moderate or higher significance. The certifier concerned must work in accordance with <i>Appendix WTL1: Wetland Assessment Methodology</i> and certification must be received by Environment Canterbury at least 10 working days before any activity under this rule commences.</p> <p>C. Suitably qualified person means a person who has been certified by Environment Canterbury as possessing the necessary qualifications and experience to apply the Appendix WTL1 procedures competently. A list of such suitably qualified people will be maintained by Environment Canterbury, and kept available for public inspection.</p> <p>D. Not a surveillance wetland means a wetland on a property where a Wetland Monitoring Agreement has been agreed in accordance with Method WTL1(f) and the wetland has not been identified as a surveillance wetland.</p>	<p>(8) <i>Schoenoplectus tabernaemontani</i> (<i>kapungawha</i>, <i>lake clubrush</i>)</p> <p>(9) <i>Typha orientalis</i> (<i>raupo</i>).</p> <p>4. No part of the activity shall affect any area shown as a significant salmon or trout spawning site in Schedule WQN14.</p> <p>5. Where the activity involves filling or reclamation, only uncontaminated soil, sand, gravels or rock may be used as fill.</p> <p>6. The construction methods of any drains shall include means of trapping sediment as far as practicable during commissioning for later disposal to land. Construction shall be followed within 12 months by planting to stabilise any disturbed soil. Planting shall then be maintained and any failures made good for a period of two years. Part of any taking or use permitted under this rule may be used as required to irrigate any plantings made to comply with this condition.</p> <p>7. Any water discharged onto land shall be managed so as not to flow onto or pond on any neighbouring property without the express written agreement of that owner or occupier.</p> <p>8. On completion of any works, any water discharged into water shall meet the requirements of Rule WQL1.</p> <p>9. At least 10 working days before commencing any work, written notice shall be sent to Environment Canterbury including a sketch plan of the site and a description of what is intended. The plan shall be drawn accurately to scale and show the wetland boundary before and after, with distances in relation to suitable fixed reference points adjacent to the site. Where a wetland straddles one or more property boundaries this notice shall be signed by or on behalf of each affected owner or occupier.</p> <p>10. Where an activity is classed as a discretionary activity under this rule, any reduction or loss of moderate or higher significance wetland area shall be offset by the applicant:</p> <ul style="list-style-type: none"> (a) enhancing an existing wetland, and in doing so, increasing the area of the existing wetland by an area at least as large as the area of wetland which is being reduced or lost under this rule; or (b) restoring a former wetland of an area at least as large as the area of wetland which is being reduced or lost under this rule; or (c) creating a wetland of an area at least as large as the area of wetland which is being reduced or lost under this rule; or (d) making a financial contribution in accordance with 7.15 Financial Contributions. <p>11. If the offsetting area of wetland referred to in Conditions 10(a), (b), or (c) of this rule is located wholly or partially on land which is not owned by the person seeking to carry out the activity under this rule, there must be an enforceable covenant (or other equivalent instrument) registered over the land so owned by other persons, binding those other persons and their successors in title to allow the offsetting wetland to be enhanced, restored or created on their land.</p>
<p>Restriction of discretion</p>	
<p>Information to be provided:</p> <p>An application for a resource consent under this rule must meet the information requirements set out in Section 7.8 of Chapter 7.</p>	<p>Where the activity is classified as a restricted discretionary activity, Environment Canterbury has restricted its discretion to the following matters:</p> <ol style="list-style-type: none"> 1. Effects on habitats and biota. 2. Effects on amenity. 3. Effects on sedimentation and erosion. 4. Effects on heritage sites or sites of significance to Ngāi Tahu. 5. The extent of the wetland boundaries. 6. Effects on neighbouring owners or occupiers.

	7. Effects on water quality. 8. Effects on other wetlands. 9. Consent Duration.
<p>Cross reference: Activities 1 and 3 of this rule implement Policy WTL 1(d). Activity 2 of this rule, together with 7.7 Assessment Matters and Activity 4, implement Policy WTL 1(b).</p>	

For information only:

1. The onus is on anyone carrying out activities permitted by this rule to ensure that the conditions to be met before commencing the activity, and once it is in effect, are all complied with. Provided they have been, no resource consent or other formality is required. If at any time a condition is not complied with the activity must cease or a resource consent obtained. There are penalties for non-compliance.
2. Permitted activity rules do not take effect until any submissions in opposition have been withdrawn or decided and any appeals withdrawn or determined.
3. Related aspects of an activity that complies with this rule may require land use consent from the relevant city or district council.
4. People carrying out any of the activities authorised by this rule are strongly advised to obtain a copy of Environment Canterbury's fact sheet "Drain and Waterway Guidelines" and to carry out the work in accordance with it.

Figure WTL3: Separate wetland
The meaning of the term “separate wetland”



Rule WTL3 Continue activities beneficial to wetlands

Activity	Conditions
<p>To:</p> <p>(a) dam a river and/or take, use or divert water; or</p> <p>(b) discharge excess/overflow water from a wetland onto land or into surface water for maintaining conservation values of a wetland; is -</p> <ol style="list-style-type: none"> a permitted activity, provided the activity complies with all of the conditions in this rule. a restricted discretionary activity where any condition is not complied with. 	<ol style="list-style-type: none"> The activity is a lawfully established existing activity that has not been discontinued for any period exceeding six months, and any effects are the same or similar in character, and no greater in intensity or scale than those that existed when the activity was lawfully established. If subject to a management plan under Rule WTL2 when it was established, the wetland shall be managed in accordance with that plan. Values previously identified as making the wetland suitable as an offsetting wetland under Rule WTL2 shall not be damaged or destroyed. If required when the wetland was lawfully established, an effective means of controlling livestock access within the whole of the wetland shall be maintained at all times, and no livestock shall be allowed within the wetland except in accordance with any management plan referred to in Condition 2. The activity shall not reduce levels or flows of water in any other wetland. There shall be no restriction of fish passage. On completion of any works, any water discharged into water shall meet the requirements of Rule WQL1.
<p>Where Rule Applies:</p> <p>This rule applies in some, but not all areas/situations in the Canterbury Region; see Table WTL2 Index of Rules for the areas/situations in which the rule applies.</p>	<p style="text-align: center;">Restriction of discretion</p>
<p>Information to be provided:</p> <p>An application for a resource consent under this rule must meet the information requirements set out in Section 7.8 of Chapter 7.</p>	<p>Where the activity is classified as a restricted discretionary activity, Environment Canterbury has restricted its discretion to the following matters:</p> <ol style="list-style-type: none"> The provisions of any management plan. Effects on habitats and biota. Effects on natural character. Effects on amenity. Effects on heritage sites or sites of significance to Ngāi Tahu. Effects on neighbouring owners or occupiers. Effects of flooding. Effects on water quality. Effects on other wetlands. Consent Duration.
<p>Cross reference: This rule contributes to the implementation of Policy WTL1(b)</p>	
<p>For information only:</p>	
<ol style="list-style-type: none"> The onus is on anyone carrying out activities permitted by this rule to ensure that the conditions to be met before commencing the activity, and once it is in effect, are all complied with. Provided they have been, no resource consent or other formality is required. If at any time a condition is not complied with the activity must cease or a resource consent obtained. There are penalties for non-compliance. Permitted activity rules do not take effect until any submissions in opposition have been withdrawn or decided and any appeals withdrawn or determined. 	

Rule WTL4 Activities to control unwanted organisms

Activity	Conditions
<p>Where the sole purpose is to control unwanted aquatic organisms in an existing wetland; to</p> <ul style="list-style-type: none"> (a) take, use, dam or divert the water; or (b) disturb any associated riverbed; or (c) discharge water from the wetland onto land or into surface water; is - <ol style="list-style-type: none"> 1. a permitted activity provided the activity complies with the conditions in this rule. 2. a restricted discretionary activity where any condition is not complied with. <p>Where rule applies: This rule applies in some, but not all areas/situations in the Canterbury Region; see Table WTL2 Index of Rules for the areas/situations in which the rule applies.</p> <p>Information to be provided: An application for a resource consent under this rule must meet the information requirements set out in Section 7.8 of Chapter 7.</p>	<ol style="list-style-type: none"> 1. The activity shall not exist for more than three months irrespective of whether it occurs continuously. 2. If necessary, the activity may be repeated the following year, but after that there shall be no further activity of any kind authorised by this rule and affecting the same area of wetland within the next five years. 3. No works shall be carried out during the spawning periods of species set out in Table WTL3 if those species are likely to be affected. 4. The construction method of any temporary diversion shall include means of trapping sediment as far as practicable during commissioning for later disposal to land. 5. All practical steps shall be taken to minimise damage to any area of significant indigenous vegetation or any significant habitat of indigenous fauna. <ol style="list-style-type: none"> (a) For this purpose: <ol style="list-style-type: none"> (i) information Environment Canterbury has gathered from assessments carried out in accordance with Appendix WTL1 may be relied on; or, alternatively (ii) an assessment by a suitably qualified person working in accordance with Appendix WTL1. (b) Any mitigation measures suggested by either of these sources shall be put into effect at the appropriate stage in the activity. (For the purposes of this rule, "suitably qualified person" has the same meaning as in Rule WTL2.) 6. On completion of any works, any water discharged into water shall meet the requirements of Rule WQL1. 7. No dam shall exceed one metre in height relative to the average level of the original bed at the base of the dam. 8. Any water discharged onto land shall be managed so as not to flow onto or pond on any neighbouring property without the express written agreement of that owner or occupier. 9. The activity shall be confined within a nominated area, which may be any convenient area within a single property or may extend over several properties (see Figure WTL2). 10. A plan showing the nominated area and a description of the proposal shall be lodged with Environment Canterbury before the activity commences. This plan shall be signed by or on behalf of each owner or occupier of land in the nominated area. <p style="text-align: center;">Restriction of discretion</p> <p>Where the activity is classified as a restricted discretionary activity, Environment Canterbury has restricted its discretion to the following matters:</p> <ol style="list-style-type: none"> 1. The provisions of any management plan. 2. Effects on habitats and biota. 3. Effects on natural character. 4. Effects on amenity. 5. Effects on heritage sites or sites of significance to Ngāi Tahu. 6. The extent of the nominated area. 7. Effects on other owners or occupiers within the nominated area. 8. Effects of flooding. 9. Effects on water quality. 10. Effects on other wetlands. 11. Consent Duration.

Cross reference: This rule contributes to the implementation of Policy WTL 1.

For information only:

1. The onus is on anyone carrying out activities permitted by this rule to ensure that the conditions to be met before commencing the activity, and once it is in effect, are all complied with. Provided they have been, no resource consent or other formality is required. If at any time a condition is not complied with the activity must cease or a resource consent obtained. There are penalties for non-compliance.
2. Permitted activity rules do not take effect until any submissions in opposition have been withdrawn or decided and any appeals withdrawn or determined.
3. People carrying out any of the activities authorised by this rule are strongly advised to obtain a copy of Environment Canterbury's fact sheet "Drain and Waterway Guidelines" and to carry out the work in accordance with it.
4. In relation to fish spawning periods, the species likely to be affected may be found by reference to the most up-to-date information held by authorities such as the Department of Conservation, and National Institute for Water and Atmospheric Research (NIWA) – for example, the New Zealand Freshwater Fish Database maintained by NIWA (<http://www.niwascience.co.nz/services/nzffd/>).

7.7 Assessment matters

- (a) The matters contained in sections 104 and 105 and Part II of the RMA apply to the consideration of resource consents for activities.
- (b) In addition to these matters, Environment Canterbury shall, when considering whether or not to grant consent or to impose conditions under Rule WTL1 or Rule WTL2, also have regard to the specific assessment matters set out below.

7.7.1 Water quality and quantity

Effects on the quality, quantity, level or flow of water in any affected wetland or other related water body, including effects on water capture, water storage, groundwater recharge, flow attenuation, and sedimentation shall be assessed as follows:

- (a) Water quality shall be assessed against the relevant objectives, policies, schedules, and conditions in Chapter 4 Water Quality.
- (b) Water quantity, levels and flows shall be assessed against the constraints (1)(a) to (1)(d) in Objective WTL1 and the relevant objectives, policies, schedules, and conditions in Chapter 5 Water Quantity.

7.7.2 Overall area of wetlands

Effects on the overall area, ecological integrity and functioning of wetlands in the region shall be assessed:

- (a) On the degree to which any condition (including any financial contribution required in terms of Chapter 7.15 Financial Contributions) would address or fail to address:
 - (i) the overall loss of wetland area generally, and under-represented wetland types in particular; and
 - (ii) the maintenance of the ecological integrity and functioning of wetlands in the region.
- (b) Taking into account:
 - (i) the degree of risk that where an offsetting wetland is to be enhanced, restored or created after consent is granted, the necessary measures will not be implemented or not be sufficiently successful; and
 - (ii) the degree to which future management of any offsetting wetland is likely to maintain and where possible enhance the values required of it to offset wetland values lost if the consent is granted.

7.7.3 Natural character

Effects on the natural character of wetlands and their margins shall be assessed on the degree to which any condition (including any financial contribution required in terms of Chapter 7.15 Financial Contributions) would address or fail to address effects on natural character, and ensure that any overall reduction in the natural character of wetlands and their margins is avoided, remedied or mitigated.

7.7.4 Ngāi Tahu values

Effects on the relationship of Ngāi Tahu and their culture and traditions with their ancestral lands, water, sites, wāhi tapu and other taonga shall be assessed on the degree to which any condition (including any financial contribution required in terms of Chapter 7.15 Financial Contributions) would address or fail to address the diminution or loss of any values established as being of significance to Ngāi Tahu.

7.7.5 Indigenous flora and fauna

Effects on flora and fauna (and in particular areas of significant indigenous vegetation and the significant habitats of indigenous fauna) shall be assessed:

- (a) On the degree to which any condition (including any financial contribution required in terms of Chapter 7.15 Financial Contributions) would protect or fail to protect values identified as significant:
 - (i) by reference to the Wetland Assessment Methodology in Appendix WTL1; or
 - (ii) by reference to the significant natural area (or equivalent) provisions of the relevant district plan.

7.7.6 Landscape values

Effects on landscape values shall be assessed:

- (a) On the degree to which any condition (including any financial contribution required in terms of Chapter 7.15 Financial Contributions) would protect or fail to protect values identified:
 - (i) by reference to the paragraph headed “Assessments of effects should be made by considering:” in Policy 3, Chapter 8 of the RPS; and
 - (ii) by reference to the landscape provisions of the relevant district plan.

7.7.7 Cultural, heritage and recreational values

Effects on cultural, heritage, amenity and recreational values shall be assessed on the degree to which any condition (including any financial contribution required in terms of Chapter 7.15 Financial Contributions) would address or fail to address values identified by reference to Policy 5, Chapter 8 of the RPS.

7.7.8 Salmon and trout habitat

Effects on salmon and trout habitat shall be assessed on the degree to which any condition (including any financial contribution required in terms of Chapter 7.15 Financial Contributions) would protect or fail to protect any significant habitat of trout and salmon identified by reference to the relevant regional office of Fish & Game NZ.

7.7.9 Undesirable plants and animals

Effects related to undesirable plants and animals shall be assessed on the degree to which any condition (including any financial contribution required in terms of Chapter 7.15 Financial Contributions) would improve or fail to improve control of undesirable plants and animals.

7.7.10 Adequacy of the offsetting wetland

The adequacy of an offsetting wetland shall be assessed on the degree to which, so far as is reasonably practicable, it is equivalent in area, type, general location, ecological integrity and functioning, and condition to the original area.

7.7.11 Conditions to protect the offsetting wetland

- (a) Any need for conditions to protect the offsetting wetland shall be assessed on the likelihood that values making the wetland suitable as an offset could be destroyed or compromised through the applicant’s future action or failure to take action. Matters that may need to be addressed through conditions include alterations to the inflow or outflow of water, water quality, the removal of vegetation, the control of livestock access and/or the control of undesirable plants and animals.
- (b) Any need for conditions to exclude livestock altogether or to specify an appropriate grazing regime, should be assessed on the likely types and numbers of livestock and their likely impacts, expressly considering the following adverse effects:
 - (i) Soil compaction;

- (ii) Effects of grazing and trampling on important wetland vegetation;
- (iii) Effects of animal excrement on water quality; and
- (iv) Effects of nutrient changes on wetland ecology.

7.7.12 Management plan

Any need for a management plan shall be assessed on the need to specify the future management of an offsetting wetland. For example, the need for any of the following to be specified:

- (a) A regime of controlled grazing to control certain types of vegetation.
- (b) A regime and targets for control of undesirable plants and animals.
- (c) Measures for the long-term protection or enhancement of any key wetland values, for example, riparian or other planting.
- (d) Monitoring of any important trends in wetland state or condition.

7.8 Information to be provided with resource consent applications

7.8.1 Form of application

Application for a resource consent under any rule in the Canterbury Natural Resources Regional Plan should be made in accordance with the procedures and forms provided for in the RMA. Such applications should be made in accordance with section 88 and the Schedule 4 of the RMA. Section 88 specifies the information that must be provided with a consent application. In particular, an assessment of any effects the activity may have on the environment is required. Schedule 4 sets out the matters that should be included in such an assessment of effects.

The information provided shall be in such detail to correspond with the scale and significance of the actual and potential effects the activity may have on the environment. If the environmental effects are likely to be minor, less detail will be required than if the effects could be significant or their extent is not known.

Environment Canterbury has prepared application forms and information booklets to assist applicants when preparing a consent application. Resource Consent Information Series Booklet 1: *Applying for a Resource Consent*, describes how the application will be processed by Environment Canterbury. Other information booklets provide more specific guidance regarding information required for specific types of consent applications, such as sewage disposal in unsewered parts of the Canterbury region, discharges of animal effluent, construction of bores, groundwater takes, etc.

The application forms, information booklets and fee schedules are available from your nearest Environment Canterbury office or from the Customer Services section by phoning 0800 EC INFO (0800 324 636). A list of consultants who may be able to help prepare an assessment of the effects of the activity is also available.

7.8.2 Information to be provided for all activities

- (1) Full name, postal address, home and business telephone numbers of the person or organisation to whom the consent is to be issued.
- (2) Name, address and telephone number of the person or consultant who is fully conversant with all aspects of the consent application.
- (3) Name and address for service of documents (if different from above).
- (4) A description of the activity, its nature, purpose and duration.
- (5) The location of the activity together with a site plan, legal description, and map references (Topomap 260 1:50,000).
- (6) A description of possible alternative locations or methods and the reasons for making the proposed choice.

- (7) The scale of the activity, including the size of the area required for the activity in hectares or square metres.
- (8) An assessment of any actual or potential effects of the activity on the environment.
- (9) A description of the measures to be undertaken to avoid, remedy or mitigate any effects on the environment.
- (10) A list of names and addresses of property owners or occupiers likely to be directly affected by the activity.
- (11) Details of any consultation undertaken with persons affected, the views of those persons and any response to those views. The extent of consultation required will depend on the type of activity proposed, its scale and location. In addition to people likely to be directly affected, others who may need to be consulted include:
 - (a) local rūnanga;
 - (b) Te Rūnanga o Ngāi Tahu;
 - (c) Department of Conservation;
 - (d) territorial authorities;
 - (e) Fish & Game NZ;
 - (f) commercial user groups;
 - (g) New Zealand Historic Places Trust;
 - (h) recreation user groups; and
 - (i) the community in general.
- (12) A statement of all other resource consents or approvals that the applicant may require from Environment Canterbury or any other consent or approval authority to undertake this and every other activity associated with the proposal, and whether or not the applicant has applied for, or obtained, such consents or approval. Note that where other resource consents will be required, Environment Canterbury or any other consent or approval authority may require applications for those consents to be proceeded with at the same time.
- (13) Where an application for resource consent has arisen because one or more conditions for a permitted activity cannot be met, the application must identify those particular conditions. It must also include an undertaking to meet every other condition of the permitted activity.

7.8.3 Specific information requirements

In addition to the general information requirements, the following particular information is required for certain activities.

7.8.3.1 The taking, use, damming or diversion of water

In addition to the information required for all activities, applications to take, use, dam or divert water resulting in a reduction in the area of a wetland shall include:

- (1) A definition of the present wetland boundary based on the density of wetland plant species, and using the following method:
 - (a) For coastal estuarine wetlands and brackish lagoons, characteristic species useful in defining the wetland boundary will include:
 - (i) *Apodasmia similis* (oioi, jointed wire rush)
 - (ii) *Bolboschoenus caldwellii*
 - (iii) *Juncus kraussii* var. *australiensis* (sea rush)

- (iv) *Plagianthus divaricatus* (saltmarsh ribbonwood)
 - (v) *Schoenoplectus tabernaemontani* (kapungawha, lake clubrush)
 - (vi) *Schoenoplectus pungens* (three square)
- (b) For freshwater wetlands, characteristic species useful in defining the wetland boundary will include:
- (i) *Carex secta* (purei)
 - (ii) *Carex virgata* (purei)
 - (iii) *Cordyline australis* (ti kouka, cabbage tree)
 - (iv) *Eleocharis acuta* (spike sedge)
 - (v) *Juncus articulatus* (jointed rush)
 - (vi) *Phormium tenax* (harakeke, NZ flax)
 - (vii) *Schoenus pauciflorus* (bog rush)
 - (viii) *Schoenoplectus tabernaemontani* (kapungawha, lake clubrush)
 - (ix) *Typha orientalis* (raupo)
- (2) The wetland boundary shall be taken as the point in the transition from wetland to dryland at which plants from any of these species occur four times their ungrazed height apart.
- (3) Details of the likely reduction of wetland area, including whether any part of the wetland will remain.
- (4) An assessment of the ecological character of the wetland, including:
- (a) The wetland type.
 - (b) The principal class of wetland plant community and principal species present within that community.
 - (c) The principal fish and other aquatic species present.
 - (d) The principal wildlife species present, including migratory species found during any period of a normal year.
 - (e) The principal invertebrate species normally present.
- (5) An assessment of the hydrological character, including:
- (a) The principal sources of water.
 - (b) The usual range of water levels.
 - (c) The principal hydraulic linkages to surface or groundwater, and water flows generally within the catchment.
- (6) A general assessment of water quality.
- (7) An assessment of the natural character of the wetland, including:
- (a) The degree of modification to the original natural elements and character of the wetland. (These elements include the flora and fauna, the water, the landform, any other naturally occurring element, and their original form and structure.)
 - (b) A list of any structures or other evidence of engineering of any kind (including earthworks, dams, bridges, roading, etc).
- (8) A description of the surrounding landscape and an assessment of the effects of the proposed activity on that landscape, visually or in any other way.

- (9) An assessment of any actual or potential effects the activity may have on other aspects of the environment, including:
 - (a) Cultural and spiritual values.
 - (b) Heritage values.
 - (c) Human use values.
- (10) Details in relation to Rule WTL2 of how it is proposed to offset any loss of wetland, including how it is proposed to ensure that any offsetting wetland will have as close as possible the same values as the existing wetland.

7.9 Duration of resource consents

When considering the duration of any resource consent for an activity relating to a wetland Environment Canterbury will set the duration of the resource consent for as long as is consistent with the purpose of the RMA, and shall have particular regard to the matters set out in Chapter 1, Section 1.3.5.

7.10 Common expiry dates of resource consents

Environment Canterbury will retain the discretion to set common expiry and review dates having particular regard to the following matters:

- (a) Where the consent holders in a wetland wish to collaborate and prepare a joint assessment of effects on the environment that considers the cumulative effects of these activities within their area.
- (b) Where the consent holders agree that it is more cost effective and efficient to prepare one assessment of environmental effects and to share the cost between consent applicants.
- (c) where the cumulative effects of the activity, in combination with other activities, are not well understood and some time is needed to gather more information before reconsidering whether these activities should continue and with the same effects.
- (d) If a resource consent is sought within five years of a common expiry date set for a wetland, the expiry date for the consent may be set at the next following common expiry date and a review of permit conditions under s128 of the RMA on the earlier date.
- (e) The demand on the Council's administrative resources and the practicability of processing applications which also require consent under a rule in another chapter of the NRRP within the statutory time frames set by the RMA 1991.

7.11 Principal reasons for methods other than rules

7.11.1 Wetlands inventory

This method provides an opportunity for wetlands in the region to be visited, assessed and ranked.

This will clarify the status of wetlands to the benefit of landholders.

The inventory will interpret the RMA wetland definition site by site and classify areas as meeting or not meeting that definition. This will provide certainty to those with an interest in the region's wetlands, including occupiers of the surrounding land, Environment Canterbury and others.

A wetland inventory will also allow the overall (or gross) area of wetlands to be defined and monitored, and will facilitate a simplified and more certain permitted wetland drainage rule.

Landholders and other interested parties, will be consulted on protocols for the conduct of the surveys, the release of information and similar related matters.

Among other things, the rights of landholders to challenge facts and interpretations will be specified, as well as the means of resolving any disputes.

7.11.2 Compliance and enforcement

Environment Canterbury must ensure that activities, whether permitted or authorised by resource consent, comply with any conditions. To this end, Environment Canterbury may monitor both specific sites and the environment generally, and must maintain a procedure for dealing with complaints received.

Provisions of the NRRP or the RMA may be enforced to prevent a recurrence of any breach, and/or to ensure remediation or mitigation of any adverse effects.

7.11.3 Wetland monitoring agreements

This method is intended to provide another option for landholders who prefer less formality compared with participation in the Method WTL1(a) wetland inventory process. Because it is a little less certain than Method WTL1(a), it is designed to err on the side of caution. It does, however avoid the need to place details of sites into the public domain (unless there is a subsequent resource consent application).

7.11.4 Wetlands on public land

A local authority or community group that overcomes wetland management problems leads by example, and at the same time secures valuable additions to the stock of wetlands.

7.11.5 Enhancement funding

This method is not specific to wetlands. It is already an established Environment Canterbury programme with other benefits that will also contribute significantly to achieving the aims of the NRRP. Making it an integral method in this chapter will ensure the programme includes a wetlands emphasis.

7.11.6 Wetland assistance grants

This method provides grants to reimburse some of the costs of obtaining resource consents needed for wetland enhancement or restoration projects. It also enables grants equivalent to the amount of Environment Canterbury general rates estimated to have been levied on land that has been set aside for wetland management. Compared with waiving consent charges and rates relief, these grants are more readily budgeted for and avoid some of the technical difficulties of giving rates relief.

These grants recognise in a tangible way the public good component of wetland protection, enhancement or restoration. Grants are not available where the subject wetland is one of the attractions of a commercial tourist venture because the land is then in productive use.

This measure has potential to increase landholder goodwill and encourage desired outcomes well in excess of its relatively low cost.

7.11.7 Territorial authorities

Rules in district plans in the region generally complement the aims of the NRRP by controlling the effects of land use activities such as earthworks and vegetation clearance. In addition to these controls, many district plans also give effect to section 6 of the RMA through a range of non-regulatory methods. Territorial authorities making a greater commitment to these methods would increase the possibility of any particular one joining Environment Canterbury and other councils in partnerships or other joint non-regulatory initiatives.

7.11.8 Information/awareness programme

A small but growing segment of the population already values wetlands, understands their importance in the natural scheme of things and is motivated to do whatever it can to manage wetlands better. For voluntary wetland protection and enhancement to be relied upon to the extent proposed in this chapter, the number of people who value wetlands must be increased markedly. To do that will require an intensive stream of information on a whole range of wetland-related topics.

It is also a key part of the wetland chapter's strategy to widen understanding that the most depleted types of wetlands have higher relative importance.

Much wetland loss has been due to poor appreciation of the role of wetlands as integral parts, along with other water bodies, of a hydrological system. Greater awareness of this is likely to contribute to more people voluntarily retaining and perhaps restoring wetlands, bearing in mind that on private land there is very limited power to compel wetland enhancement, restoration or creation.

In implementing this method, information may be obtained from Environment Canterbury's own research, the National Institute for Water and Atmospheric Research, Landcare Research and others, and may include work funded by the Public Good Science Fund.

7.11.9 Field days

Field days are one way of providing opportunities for people to learn from others, who, after adopting and practising the ideas, often become effective teachers themselves.

7.11.10 Partnerships and co-ordination

Commenting on what it calls "the gap of frustration" between the desired goal and what is affordable, *Biodiversity and Private Land* (MfE 2000) notes: "the emphasis ... should be on doing as much as we can". Elsewhere the same report goes on to say that the gap between top-down and bottom-up approaches to managing biodiversity can only be bridged "by forming *partnerships* between public agencies and community groups and individuals." The comment continues, "By partnerships we mean working arrangements where each party contributes something towards a common goal."

There are obvious opportunities for informal partnerships to achieve more with the same amount of resources if each agency works together rather than separately. Examples include programmes to inform, raise awareness, encourage certain actions, or provide certain kinds of incentives. The basic cost of preparing such programmes is often little different whether it covers one district or the whole region. Combining to prepare one programme that meets several territorial authorities' needs and Environment Canterbury's will save on first costs and should also provide an opportunity to harmonise the message and thus make it more effective.

Protecting, let alone enhancing, the region's stock of wetlands is a very large undertaking. This is particularly so when compared with the available resources, whether those of individuals, community groups, local authorities or central government. By working together more should be achieved than by each party working independently.

7.11.11 Co-operation

Given the very limited resources within the wider community for improving wetland management, it is important to make the most efficient use of what resources there are. This can be achieved in part by working together. It is consistent with integrated management to foster co-operation and partnership,

provide leadership and generally advocate for common approaches to common goals in all sectors of the community.

7.11.12 Technical advice

Expertise within Environment Canterbury particularly equips it to provide the kinds of advice set out in this method. By doing so, Environment Canterbury will advance the general aims of the wetland chapter at a more reasonable cost.

7.11.13 Regional pest management strategies

While neither of the regional pest management strategies is specific to wetlands, they will each contribute significantly to improving wetland biodiversity. It will be valuable to have these strategies complementing this chapter's other efforts.

7.11.14 Aquatic pest education programme

Given the limited range of practical methods to reduce the risk of undesirable aquatic species being spread, publicity and warning signs are an appropriate choice.

7.12 Principal reasons for rules

7.12.1 Rule WTL1: Enhance, restore or create wetlands

Often enhancing, restoring or creating wetlands involves the taking, use, damming or diversion of water, and possibly stream bed disturbance, and so requires resource consent. With adequate conditions to protect the environment, making small-scale hydrological adjustments and associated activities carried out in the course of wetland enhancement, restoration or creation can be made a permitted activity.

Conditions in this rule ensure that any possible adverse effects are avoided, remedied or mitigated. It is important that the scale of any adverse effects is kept within predictable limits, and restricting the size of stream and the amount of flow that may be taken and not returned does this.

Due to the limited circumstances when the rule will apply, this rule over-rides the rules in Chapters 4, 5 and 6 except when the conditions 1 and 2 (regarding the size of river and the purpose) are not met, in which case the rules in Chapter 5 apply to the taking or diverting (Rule WQN7) and damming (Rule WQN25). Furthermore, under Rule WQN7 the taking and damming is required to not affect the allocation limits.

This rule requires written notice to be sent to Environment Canterbury 10 days prior to commencing the activity. This creates a record for monitoring purposes. It does not imply that Environment Canterbury is able to exercise any kind of discretion over the activity.

7.12.2 Rule WTL2: Reduce area of wetlands

Without Rule WTL2 any taking, use, damming or diversion of water that affects a wetland would require resource consent under section 14 of the RMA.

One of the rule's purposes is to permit drainage of areas many people would regard as wet pasture, but which have very basic remnant or exotic wetland vegetation. In these areas, provided conditions to avoid, remedy or mitigate any adverse effects are met, a resource consent process is not necessary. Limiting the scale of the permitted activity in Condition 1(b) to 0.5 hectares of any separate wetland area, takes account of the lesser reliability of one-off assessments of wetland significance, and the absence of a Schedule 1 consultation process.

Wetland plant density is a useful indicator of wetland boundaries for the purposes of Condition 1(b). The range of plants to be used in this role is wide enough to ensure that at least one listed species will be present at the boundary of most wetlands.

Where a Wetland Monitoring Agreement has been made under Method WTL1(f) the wetlands on the property that are not Surveillance Wetlands are those that Environment Canterbury is confident are not of moderate or high significance. A reduction in these wet areas is permitted.

Where an artificial wetland has been created for flood control, water treatment or storage, then although the wetland may acquire natural values, these wetlands have been exempted from this rule so that they can be operated and maintained for their primary purpose.

The condition that requires an offsetting wetland is necessary to ensure the objective of no overall loss of wetlands is achieved. Activities involving drainage, reclamation, dumping and infilling are considered to be damming or diversion of water, and are subject to this rule.

The qualities and biological complexity acquired over many years by natural wetlands can seldom be fully offset. It is therefore preferable to avoid wetland loss wherever possible. Where that cannot be achieved the loss must be offset to at least an equivalent extent.

The rule provides a wide choice of means to offset the loss of wetlands, from wetland enhancement, restoration or creation on the same property, to similar actions on some other property, to making a monetary contribution to Environment Canterbury's Wetland Protection Fund. In some circumstances, the offsetting wetland will itself require resource consent, and any such application should normally be considered at the same time as the application under this rule.

Under this rule activities that do not meet the offsetting requirements of Rule WTL2 become prohibited activities, meaning that resource consent cannot be applied for or granted. This removes doubt in situations where conditions in Rule WTL2 are not met.

7.12.3 Rule WTL3: Continue activities beneficial to wetlands

Maintaining enhanced, restored and created wetlands assists in achieving this chapter's objectives, but having to replace the resource consents periodically is an important disincentive. This rule removes that disincentive. There are conditions to prevent any increase in adverse effects and ensure that relevant conditions of the original consent still apply.

7.12.4 Rule WTL4: Activities to control unwanted organisms

This rule permits temporary alterations to wetland hydrology (mainly drainage) in order to assist in controlling unwanted plants or animals. The conditions in the rule provide adequate mitigation of any possible adverse effects.

7.13 Environmental results anticipated

Within ten years of the NRRP becoming operative:

Environmental result anticipated WTL1

Fifty percent of landholders on properties where the wetlands have been assessed will be implementing management plans to protect and enhance their moderate and higher significance wetlands.

Environmental result anticipated WTL2

There will be no further loss in the area, diversity or natural character of the region's wetlands.

There will be a significant improvement in the ecological functioning and condition of natural wetlands in the region.

Environmental result anticipated WTL3

The range and diversity of wetlands in the region will have begun to increase, with particular improvement in the proportion representing coastal, lowland and inland basin wetland types.

7.14 Wetlands monitoring

Introduction

A regional plan is required by sections 35(2)(b) and 67(1)(i) to state the procedures to be used to monitor the efficiency and effectiveness of policies, rules, or other methods. A regional plan has to be reviewed not more than ten years after it has been made operative. For a review to be successful it is necessary to know how efficient and effective the policies and methods have been in contributing to achieving the NRRP's objectives and environmental results anticipated. In particular it is necessary to know whether each individual policy, and the methods to implement it, are contributing positively, neutrally or negatively.

Linked to this is the need to monitor the state of the environment, understand the causes of any changes, and the extent to which provisions in this chapter may have brought about those changes.

Chapter 1.3 of the NRRP outlines the general procedures to be used to monitor the overall effectiveness of the NRRP. Section 7.14 of this chapter is additional to that. This section sets out the general procedures to be used in Chapter 7 to monitor the:

- (a) achievement of the anticipated environmental results; and
- (b) the efficiency and effectiveness of the chapter's policies and methods.

It also identifies some other areas of environmental monitoring that Environment Canterbury intends to undertake. From time to time Environment Canterbury may need to deviate from the specific programmes listed if it is shown that the monitoring identified is no longer appropriate, or there is a more effective way of undertaking the monitoring.

7.14.1 Monitoring procedure

The procedures to monitor the effectiveness and efficiency of the wetlands chapter of the Canterbury Natural Resources Regional Plan are outlined below. Environment Canterbury will monitor:

- (a) progress towards achieving the environmental results specified;
- (b) the effectiveness and efficiency of this chapter; and
- (c) compliance with resource consents, permitted activities and the other obligations or duties of resource users to ensure that the requirements of the Resource Management Act and this chapter are being given effect to.

7.14.2 Monitoring environmental results anticipated

Environmental result anticipated	Observation factor	Pressure indicator	Location of monitoring	Method of monitoring	Frequency of monitoring	Method of reporting
Fifty percent of landholders on properties where the wetlands have been assessed will be implementing management plans to protect and enhance their moderate and higher significance wetlands.	Percentage of landholders implementing management plans	Wetland area and condition	Whole region	Random sample of moderate or higher significance wetlands on private land	five-yearly	Next annual report
There will be no further loss in the area, diversity or natural character of the region's wetlands. There will be a significant improvement in the ecological functioning and condition of natural wetlands in the region.	Condition of sites randomly selected from wetland inventory	Factors listed under A.1.2 in Appendix WTL 1	Whole region	Random sampling	five-yearly	Next annual report
The range and diversity of wetlands in the region will have begun to increase, with particular improvement in the proportion representing coastal, lowland and inland basin wetland types.	Extent of enhanced, restored and created wetlands	Amount and quality of any increase	Coastal, lowland and inland basin areas	Study	five-yearly	Next annual report

Note: Environment Canterbury will report back to the landholder the results of monitoring.

7.14.3 Monitoring effectiveness and efficiency

Environment Canterbury will base its monitoring of the effectiveness and efficiency of this chapter on pressure/state monitoring as set out in the following table:

Pressure	State indicator	Location of monitoring	Method of monitoring	Frequency of monitoring	Method of reporting
Drainage affecting any wetland	New wetland drains	Whole region	On-site/remote sensing	Three-yearly	Three-yearly review of trends
Cultivation/earthworks affecting any wetland	New disturbance around wetlands or their margins	Whole region	On-site/remote sensing	Three-yearly	Three-yearly review of trends
Induced hydrological change (existing and new) affecting moderate or higher significance wetlands	Water table/related stream flows, wetland species composition/condition	Whole region	Randomly selected sites	Three-yearly	Three-yearly review of trends
Grazing affecting moderate or higher significance wetlands	Condition/composition of vegetation—endemics, threatened species	Whole region	On-site/remote sensing	Three-yearly	Three-yearly report
Undesirable plants affecting moderate or higher significance wetlands	Species and density	Whole region	Monitor sites/remote sensing	Three-yearly	Three-yearly report
Undesirable animals affecting moderate or higher significance wetlands	Species and density	Whole region	Randomly selected areas	Three-yearly	Three-yearly report
Motor vehicles affecting moderate or higher significance wetlands	Damage due to motor vehicles	Whole region	Regular assessment of problem sites	Continuous record keeping	Annual report

Note: Environment Canterbury will report back to the landholders the results of monitoring.

7.14.4 Compliance monitoring

Environment Canterbury will carry out compliance monitoring on the basis set out in the following table:

Type of authorisation	Method of monitoring	Frequency of monitoring	Reporting
Permitted activities	Inspection of randomly selected sites Inspection in response to complaints	Ongoing	
Discretionary activities (including restricted discretionary)	Site inspections. Inspections in response to complaints	On the basis of: Potential extent and severity of adverse effects Imminence of threats History of compliance Extent and type of self-monitoring Number, frequency and type of complaints	Annually in Environment Canterbury Annual Compliance Monitoring report

For more information on monitoring of compliance with resource consents, refer to the **Resource Consent Information Series Booklet No. 9**, obtainable from your nearest Environment Canterbury office or the Customers Services section by phoning 0800 EC INFO (0800 32 4636).

7.15 Financial contributions

Where Environment Canterbury (either itself or through an authorised agent or delegated authority) grants a resource consent under the rules in the NRRP, it may impose a condition requiring a financial contribution, or bond.

7.15.1 Financial contributions

Environment Canterbury will place primary emphasis on adverse effects of an activity being adequately avoided, remedied or mitigated by the proposal itself, or by consent conditions. As a secondary measure Council will consider the use of financial contributions.

Financial contributions may be in the form of money, land or a combination of money and land. Environment Canterbury cannot include a condition in a resource consent requiring a financial contribution unless: the condition is imposed in accordance with the purposes specified in the NRRP (including the purpose of ensuring positive effects on the environment to offset any adverse effect); and the level of contribution is determined in the manner described in the matters to be considered.

All contributions of money under this provision shall be paid into Environment Canterbury's Wetland Protection Fund, the objects of which are to protect, restore and create wetlands in Canterbury.

7.15.1.1 Purposes

The purpose of such financial contributions is to offset the actual or potential loss of wetland area and other wetland values through the exercise of resource consents.

7.15.1.2 Matters to be considered

When deciding whether or not to impose financial contributions, the types of contribution and their value, Environment Canterbury will have particular regard to the following matters:

- (a) Every offsetting wetland shall, as far as possible, have the same or superior ecological and cultural values, and be at least equivalent to the area of wetland being offset.
- (b) Subject to (a), the amount of any financial contribution shall be determined on the following basis:
 - (i) Where the contribution is money alone, the contribution shall be equivalent to the sum required to meet the cost of suitable land together with all reasonable costs of measures required to enhance, restore or create an area of wetland at least equivalent to the original area.
 - (ii) Where the contribution is wetland, the contribution shall be of an area of wetland at least equivalent to the original area.
 - (iii) Where the contribution includes land other than wetland, the contribution shall also include money sufficient to meet all reasonable costs of measures required to enhance, restore or create on that land an area of wetland at least equivalent to the original area.
- (c) In deciding whether or not to require a financial contribution Environment Canterbury will have regard to any other financial contribution required by any other statutory authority with respect to that activity to ensure that there is no duplication of the purposes for which the financial contributions are taken.

7.15.2 Bonds

A bond is a registered surety or monetary deposit to ensure compliance with one or more conditions of a resource consent, or to secure the ongoing performance of conditions relating to adverse effects on the environment including long-term effects that may become apparent during the exercise of the consent or after it has expired.

Although a regional plan does not need to specify the circumstances and matters for considering a bond, the following guidance is given to assist users of the NRRP.

7.15.2.1 Circumstances

The circumstances where a bond may be required to ensure the performance of resource consent conditions requiring an offsetting wetland.

7.15.2.2 Matters to be considered

In deciding whether or not to impose bonds, matters that Environment Canterbury (either itself or through an agent) will consider include, but are not limited to:

- (a) the likelihood of failure to fully establish or maintain the offsetting wetland values.

In determining the terms of a bond, matters that Environment Canterbury will consider, but are not limited to:

- (b) what the actual cost would be to Environment Canterbury to meet resource consent conditions itself, in the event that a consent holder becomes unable to do so themselves, or defaults from their resource consent conditions;
- (c) whether the bond will be required before the resource consent is exercised or at any other time;
- (d) the liability of the holder of the resource consent;
- (e) the requirement for a bond on a land use consent to be registered under the Land Transfer Act 1952;
- (f) the provision of such security as Environment Canterbury thinks fit for the performance of any bond;
- (g) the need for a guarantor to pay for the carrying out of a condition in the event of a default by the holder of the resource consent or where an adverse effect occurs that requires remedying;
- (h) the circumstances where the bond may be varied, cancelled or renewed by agreement between the consent holder and Environment Canterbury;
- (i) the period of the bond.

Appendix WTL1: Wetland assessment methodology

This procedure was developed by Environment Canterbury with assistance from outside experts. As at 4 February 2004 it had been trialled on a limited number of sites and generally found to be satisfactory. Other trials were to continue in conjunction with a working party convened by Environment Canterbury to advise on any need for the procedure to be amended.

Introduction

Wetland surveys carried out in accordance with the NRRP, and any resulting schedule of moderate or higher significance wetlands, will focus on:

- (a) palustrine ecosystems (dominated by shallow or sub-surface fresh water with attached root vegetation, and including wetlands in the margins of rivers and lakes); and
- (b) estuarine ecosystems (coastal wetlands semi-enclosed by land and dominated by effects of saline water).

These surveys must only be carried out by suitably qualified and experienced people, and have two purposes, to document the nature and extent of wetlands in the region and provide a basic assessment of their ecological and hydrological significance. Practical limitations mean that no more than a rapid assessment of any one site, focused largely on vegetation and the generalised hydrology, is possible. The information compiled in this way will be sufficient to define the significance thresholds relied on by provisions in the NRRP, and to facilitate ongoing trend monitoring. However, depending on the circumstances, applicants for resource consent for activities affecting wetlands may need to furnish information beyond the scope of this type of survey (see *Chapter 7.8 Information to be provided with resource consent applications*).

The Ministry for the Environment (MfE) has developed a national standard process for the classification and assessment of estuarine and palustrine wetlands (Clarkson et al 2002). In classifying wetlands, and assessing their condition and pressure indicators, ecological field surveys of wetlands carried out for the purpose of the NRRP will follow the MfE methodology.

Mapping wetland extent during field surveys, assisted as appropriate by photography will provide for baseline monitoring of this indicator, necessary for wetlands inventory at both the regional and national level. Monitoring wetland extent at a regional level can be used to test the effectiveness of policies aimed at reducing wetland loss, achieving no net loss, or increasing the area and number of wetlands (Ward and Lambie 1999).

Generally, the presence of certain indicator plant species provides the most practical method for delineating the edge of a wetland (Anderson 2001). Indicator species will vary depending on locality (i.e., coastal, lowland, high country). The dryland-wetland edge will typically be defined where one or more of these wetland indicator species are spaced less than four times their ungrazed height apart. Alternatively, analysis of soils can be used to help determine wetland-dryland boundaries.

Following field survey of a wetland site, an assessment will be made of its significance from both a hydrological and ecological viewpoint. The ecological assessment process will interpret the site information collected on wetland type and condition in the light of the following criteria: representativeness, rarity/distinctiveness and ecological context (after Norton and Roper-Lindsay 1999). Each wetland will be assessed as having low, moderate or high ecological significance using these criteria.

Each wetland will also be assessed as having high, moderate or low significance in relation to its hydrology. The aspects to be considered in making hydrological assessments are listed in Part D of this appendix.

The overall significance of any wetland is the higher of its ecological or hydrological significance.

It is important to realise that wetlands assessed as having low hydrological and/or ecological significance may still have considerable restoration potential. Any such restoration is, however, entirely voluntary.

Part A: Method for wetland classification and recording condition and pressure indicators

The *Handbook for Monitoring Wetland Condition* (Clarkson *et al* 2003) provides a framework for classification of wetlands (Figure WTL4) and a standardised wetland field record sheet (Figure WTL5). (Those not familiar with this handbook should refer to it before embarking on a wetland survey.) The information on the field record sheet, together with a map showing wetland extent and main vegetation types, will help inform subsequent assessment of the wetland's ecological significance. The scores of the various state- and pressure-indicators can also form a baseline for subsequent monitoring of the general condition of a wetland site.

A.1.1 Wetland classification

The first box on the wetland field record sheet deals with wetland classification. Each surveyed wetland is classified based, in descending order, on:

- (a) The wetland system (i.e., estuarine or palustrine);
- (b) Wetland subsystem, based on water flow regime (e.g., intertidal, non-tidal, permanent, ephemeral);
- (c) Wetland class, based on substrate and site chemistry (e.g., saltmarsh, mudflat, swamp, bog, flush);
- (d) Wetland form, based on landform (e.g., estuary, lagoon, shore, slope, channel, basin).

The main vegetation types (indicated on an accompanying map) would also be recorded on the field sheet, together with notes on native fauna and other general comments.

A.1.2 Recording wetland condition

In the second box on the field record sheet, wetland condition at the time of survey is assessed and scored on the basis of five state indicators and six pressure indicators. The state indicators are:

- (a) hydrology.
- (b) physico-chemical parameters (e.g., fire damage, sedimentation, erosion, nutrient enrichment).
- (c) ecosystem intactness (i.e., loss in area of original wetland, fragmentation).
- (d) browsing, predation and harvesting regimes (i.e., effects of introduced herbivores, predators and humans).
- (e) dominance of native plants (i.e., proportion of introduced species in canopy and understorey).

Each state indicator is scored on a 0-5 scale where a low score indicates a high degree of modification, giving a total wetland condition index / 25. The higher the score, the better the wetland condition.

Hydrology is probably the single most important determinant of the establishment and maintenance of wetlands and wetland processes. In the absence of existing monitoring or historical information on the hydrological regime, the presence of man-made structures (e.g. drains, stopbanks) that influence hydrology can be used as simple indicators of modification.

Sedimentation, nutrient enrichment and fire are the physico-chemical parameters most commonly affecting wetlands. Runoff of suspended sediment into wetlands can smother vegetation and reduce light penetration into standing water. Sediment input is often associated with nutrient enrichment, but wetland nutrient enrichment may also result from groundwater loading and surface run-off.

Sedimentation and nutrient enrichment lead to changes in the vegetation (often with increases in exotic plant species) and cause the habitat to become more anaerobic, with negative effects on invertebrate, fish and bird populations. Fires may occur naturally, but most often are of human origin. Fires disrupt wetland nutrient cycles, destroy wildlife habitat, and provide opportunities for weed invasion.

A large, intact wetland ecosystem is better able to maintain its viability and resist human effects. Wetlands that have been reduced in extent or fragmented are more vulnerable to disturbance, and can no longer offer habitat for species with low dispersal capability. The original extent of wetlands can be estimated using historical information and soil maps.

Domestic stock can cause severe damage to soil and plants from trampling and browsing; the extent of which is usually obvious. Feral animals also damage wetland flora and fauna, but are less visible than domestic stock and are much harder to control.

The change in abundance of native plants indicator is assessed by determining the extent to which native plants have been displaced by introduced plants, as introduced plants are one of the major threats to wetland condition.

A.1.3 Recording wetland pressure indicators

Pressure indicators, also scored on a 0-5 scale, with 0 being no pressure and 5 very high pressure, are:

- (a) Modifications to catchment hydrology.
- (b) Catchment water quality.
- (c) Animal access (livestock or other introduced mammals).
- (d) Key undesirable species (weeds or pests).
- (e) Proportion of the catchment in introduced vegetation.
- (f) Other pressures (as specified).

The total wetland pressure index will thus be scored out of 30, with a high score indicating a greater degree of pressure on the site.

In the state (or condition) indicators, the section on change in hydrological integrity focused on modifications within wetlands. In addition, an important risk to wetlands is from changes in the catchment hydrology that can lead to lowered regional groundwater tables or reduced surface water inputs. Features affecting this score include drains and other structures that divert water from or into the catchment, clearance of vegetation within the catchment, and extraction of groundwater from shallow bores.

Deteriorating upstream water quality is an indication of future deterioration in wetland condition. Surface water and groundwater quality data from upstream of the wetland can be used, as well as other indices such as the stream health monitoring assessment kit.

Assessing the animal access indicator can be based on direct observations during the site visit or can be deduced from the nature of the catchment and the size of the wetland itself. Some background knowledge of factors such as predator control operations in the vicinity may be required to score this feature accurately.

Once key undesirable species have invaded and become established in wetlands, control and eradication can be difficult and expensive. As most undesirable species that enter wetlands usually do so only after being present in the catchment for some time, identification of these species before invasion is an important pressure indicator. The relevant species are those plants and animals that are known to be damaging to wetlands—the most common examples are willows which are able to survive and out-compete native species in most wetland habitats.

For the proportion of the catchment in introduced vegetation feature, the score is based on quantification from 0 = 0% to 5 = 100%. The reason for its inclusion is that the risk of new weed arrivals is much greater if the catchment has introduced vegetation, and that predominantly introduced catchments are less likely to allow migration of desirable animal species. For restored and created wetlands, a predominantly native catchment provides a greater likelihood of desirable plant and animal species re-introducing themselves.

Other pressures that might be scored in the final category of the pressure indicator box are residential development, mining, dairy conversions, deer conversions, off-road vehicle use, logging activity and other land use change. Surrounding gardens may also be an important threat, as many wetland weeds are garden escapees.

Figure WTL4: Classification framework for palustrine and estuarine wetlands

Level I Hydrosystem	Level IA Sub-System	Level II Wetland Class	Level IIA Wetland Form	Level III Structural Class [examples]	Level IV Dominant Cover [examples]
Estuarine (<i>Alternating saline and fresh water</i>)	Intertidal Subtidal	Saltmarsh Seagrass meadows	Estuary Lagoon	[e.g. herbfield] [e.g. (wire) rushland]	[e.g. <i>Zostera</i>] [e.g. <i>Leptocarpus/Juncus</i>]
	Non-tidal Inter-dunal	Algalflat Mudflat Cobbleflat Rocky reef Sandflat	Dune slack	[e.g. forest] [e.g. wormfield] [e.g. cocklebed] [e.g. gravelfield] [e.g. musselreef] [e.g. sand]	[e.g. <i>Avicennia</i>] [e.g. <i>Polychaetel</i> [e.g. <i>Austrovenus</i>] [e.g. <i>Diatomfelt</i>] [e.g. <i>Perna</i>] [e.g. <i>Muehlenbeckia</i>]
Palustrine (<i>Vegetation emergent over fresh water, not including floating plants</i>)	Permanent Ephemeral	Marsh Swamp Fen Bog Flush	Shore Artificial Slope Channel Flat	[e.g. reedland] [e.g. algalbed] [e.g. macrophyte bed] [e.g. sedgeland] [e.g. cushionfield]	[e.g. <i>Typha</i>] [e.g. <i>Enteromorpha</i>] [e.g. <i>Ruppia</i>] [e.g. <i>Carex</i>] [e.g. <i>Leptospermum/ Cordyline</i>]
		Seep	Basin Pool	[e.g. rushland] [e.g. rockfield]	[e.g. <i>Donatia</i>] [e.g. <i>Schoenus</i>] [e.g. <i>Nostoc</i>] [e.g. <i>Spirogyra</i>]
Basis of discrimination: Hydrological setting, Salinity	Flow Regime	Substrate, pH, Chemistry	Land Form	Biotic Structure	Dominant species

Source: Clarkson et al, Handbook for monitoring wetland condition, Ministry for the Environment

Figure WTL5: Wetland Record Sheet

Wetland name:	Date:
Region:	GPS/Grid Ref:
Altitude:	No. of plots sampled:

Classification: I System	IA Subsystem	II Wetland Class	IIA Wetland Form

Field team:

Indicator	Indicator components	Specify and Comment	Score 0–5 ⁶	Mean score
hydrological integrity	Impact of manmade structures			
	Water table depth			
	Dryland plant invasion			
physico-chemical parameters	Fire damage			
	Degree of sedimentation/erosion			
	Nutrient levels			
	von Post index			
ecosystem intactness	Loss in area of original wetland			
	Connectivity barriers			
browsing, predation and harvesting regimes	Damage by domestic or feral animals			
	Introduced predator impacts on wildlife			
	Harvesting levels			
dominance of native plants	Introduced plant canopy cover			
	Introduced plant understorey cover			
Total wetland condition index /25				

Main vegetation types:

Native fauna:

Other comments:

Pressure	Rating ⁷	Specify and Comment
Modifications to catchment hydrology		
Water quality within the catchment		
Animal access		
Key undesirable species		
% catchment in introduced vegetation		
Other pressures		
Total wetland pressure index /30		

 Source: Clarkson *et al*, Handbook for monitoring wetland condition, Ministry for the Environment, August 2002.

⁶ Assign degree of modification thus: 5=v. low/ none, 4=low, 3=medium, 2=high, 1=v. high, 0=extreme

⁷ Assign pressure scores as follows: 5=very high, 4=high, 3=medium, 2=low, 1=very low, 0=none

Part B: Assessing ecological significance

To assess ecological significance, site information contained on the wetland record sheet will be evaluated in terms of the criteria described below. Note that the bald scores for wetland condition and pressure as given on the wetland record sheet cannot be directly translated into an assessment of ecological or hydrological significance. However, the scores and comments on the field sheet will assist in assessing the relative significance of similar types of wetlands (e.g., comparing several high country lake-edge wetlands from within the same ecological district).

B.1.1 Criteria for assessing ecological significance of wetlands

Various criteria and methodologies used for assessing ecological significance under section 6(c) of the Resource Management Act have been developed to assist territorial authorities in the identification of significant natural areas (SNAs) for their district plans. A similar but slightly different approach can be applied to assess the ecological significance of wetlands surveyed for a regional plan. The SNA approach is not fully transferable, because both the context of the assessment and the present pattern of wetland distribution in the wider landscape are different and necessitate some changes to method. The hydrological component, so important to an overall assessment of a wetland's significance is another point of difference. Thus, for example, it is quite possible that wetlands considered of only low or moderate ecological significance under an SNA process may rank more highly in this exercise.

The criteria and methods used for assessing ecological significance under the RMA described by Norton and Roper-Lindsay (1999) have been widely used by a number of local authorities, and will be used, in modified form, to assess the ecological significance of wetlands for the NRRP. Under this approach, the three main criteria for assessing ecological significance are:

- (a) Representativeness.
- (b) Rarity/distinctiveness.
- (c) Ecological context.

B.1.1.1 Representativeness

Representativeness compares elements of natural diversity (usually ecosystem diversity) in the present landscape with the same patch of landscape as it existed at some time in the past. Ideally the only changes should be those that would have occurred naturally (that is, without human intervention).

Since wetlands can seldom be regarded as climax ecosystems, with ongoing change being more typical, the most fundamental question to be answered is: which time in the past? Wetland change was much more marked following European settlement, and a baseline can be established with greater certainty for this than for any earlier period.

Ideally, then, the NRRP would be aiming to identify a range and distribution of wetlands in the region that is representative of the immediate pre-European period, but there is a problem. With the passing of more than 150 years, irrespective of European settlement, wetlands would have continued to change naturally albeit at a very slow rate. It is not simply a matter of establishing what a particular landscape was once like and trying to represent that, there have to be some adjustments.

In making these adjustments, two of three possible kinds of change are relevant:

- (a) Natural evolutionary changes in response to variations in the natural background, including, changes to climate, changes to adjacent ecosystems, and natural hydrological changes.
- (b) Induced evolutionary changes in response to bush and forest clearance, land drainage, rivers trained to single courses, and naturalisation of a whole range of exotic plant and animal species.

The third kind of wetland change includes wetland loss as the direct result of land development. This is not taken into account when deciding representativeness, since it is not a natural process.

Any assessment of representativeness also needs a spatial scale to define the landscape patch being represented. Ecological districts provide a well-established and suitable frame of reference for this purpose.

Assessing wetland representativeness begins, then, with developing an understanding of the types and extent of wetlands in each ecological district immediately before European settlement. This baseline must then be adjusted for changes that would have occurred since, either entirely naturally or induced by environmental changes.

For example, it is generally unrealistic to expect to adequately represent plains swamp forest now that almost all the plains have become pasture. Often the best that can be hoped for is to represent the sort of wetland such a swamp forest would probably have evolved into given the changes that have occurred, and excluding any deliberate damage.

In adjusting the baseline to the present day, sources of information may include early survey maps, soil maps, the Land Cover Database, and Land Environments New Zealand, together with relevant studies of wetland ecology and ecological change.

While soil mapping provides little insight into ecosystem character, it affords a particularly useful and easily accessible baseline for determining wetland loss within an ecological district.

This is valuable information because the greater the wetland loss, the more significant what is left becomes. Given similar condition, wetlands in an ecological district that has only two or three percent of its original wetlands are more significant than where a much higher percentage still remains.

Land Environments are also helpful. They identify climatic and landform factors likely to influence the distribution of species. Land Environments can predict the likely natural occurrence of wetlands in an area, allowing what actually exists to be assessed not only in terms of potential extent but also ecological character.

It is generally to be expected that:

- (1) Lowland wetlands that retain even a small proportion of their original character will be of *very high* representative significance because their previous extent has been so vastly reduced.
- (2) Coastal wetlands will generally be of high representative significance as they have likewise been substantially reduced from their previous extent and are likely to have retained a higher proportion of their original character.
- (3) Hill and high country wetlands having retained more of their original extent and character will tend to be distinguished to a greater degree by ecological functioning and health rather than by mere existence. These wetlands may well present a wider array of representative significance levels.

B.1.1.2 Rarity/distinctiveness

The rarity part of this criterion looks at the presence of particular indigenous species or groups of species within a site. It recognises that it is not only the common and typical features of our environment that contribute to ecosystem functioning and health.

A significant habitat need not be predominantly indigenous provided there is rarity or distinctiveness in the indigenous species found there. Rarity in this context need not mean nationally rare, but rare at a local or regional level. Species rarity is assessed on knowledge of the species taxonomy and distribution.

Classification systems for rarity are still evolving and being developed to overcome problems such as the need to distinguish between species that are naturally rare and species that are rare because of human influences. In assessing rarity, the best authorities currently available should be used.

Distinctiveness refers to unusual species, communities or habitats. Distinctive species may or may not be rare nationally. They can be common nationally and rare locally. The assessment of distinctiveness must be based on a good understanding of species and habitat distributions. Factors to consider include:

- (a) The presence of a species or habitat at a national distributional limit.
- (b) The presence of a species or habitat that only occurs in that area (i.e., an endemic species).

- (c) The presence of a species or habitat that although common elsewhere is particularly uncommon in that ecological district.

Distinctiveness can also encompass the seasonal presence of migratory species in the area. In assessing rarity/distinctiveness, particular attention is drawn to the possibility of the area being habitat for a threatened species, such as for example Canterbury mudfish (*Neochanna burrowsius*). In this connection, reference should be made to the most up-to-date information held by authorities such as the Department of Conservation, and National Institute for Water and Atmospheric Research (NIWA) - for example, the New Zealand Freshwater Fish Database maintained by NIWA (<http://www.niwasience.co.nz/services/nzffd/>).

B.1.1.3 Ecological context

Wetlands do not occur in isolation, but as part of a wider landscape in which ecosystems interact and connect in a variety of ways. In the lowlands, hill country and inter-montane basins of Canterbury, the ecological landscape is typically patches and corridors of remnant indigenous or semi-indigenous ecosystems within a matrix dominated by agricultural, urban and plantation systems. Both the matrix and the patches/corridors can contain a mixture of native and exotic elements. There are cases where a corridor or patch of great value to native fauna is made up of exotic plant species.

Ecological context is most important to animals able to make use of corridors to move between patches. Context can also be important in assessing waterways and wetlands that depend for so many of their characteristics on the wider catchment. Examples of wetlands that could be ecologically significant on the basis of context alone include:

- (a) Wetland remnants that provide stepping stones for birds between larger wetland areas.
- (b) A wetland within an area of native shrubland or mixed gorse and native shrubland where each ecosystem provides connectivity between the other.
- (c) Wetlands where adjacent vegetation provides vital buffering from grazing animals or other pressures.
- (d) A wetland connected to a river will be more valuable to indigenous fish habitat than another wetland that might have more native plant species but no river connection.
- (e) A site that might have low botanical significance but provides seasonal food for native birds.

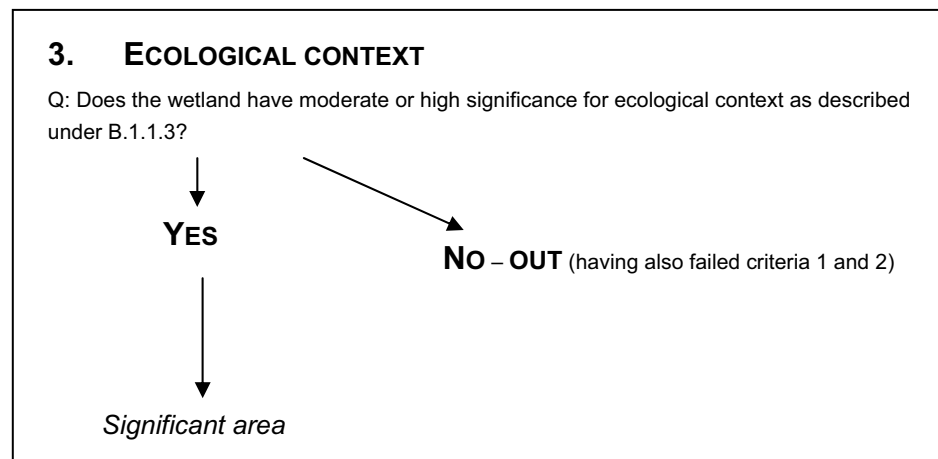
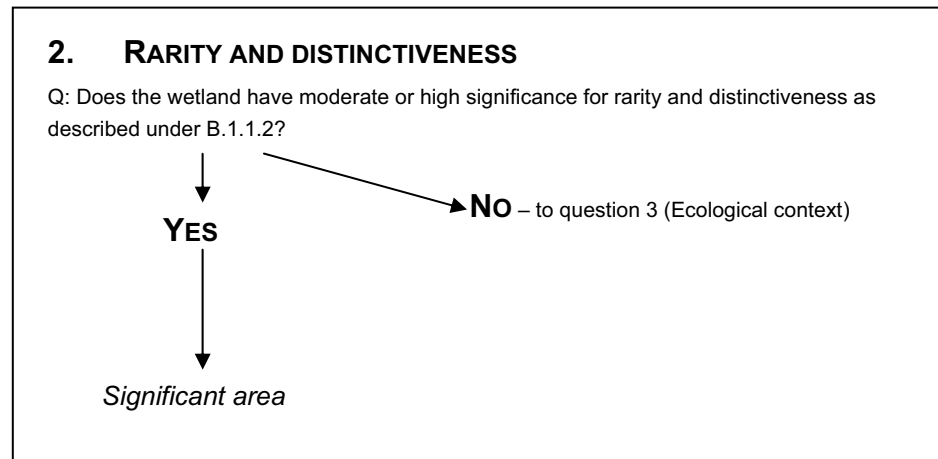
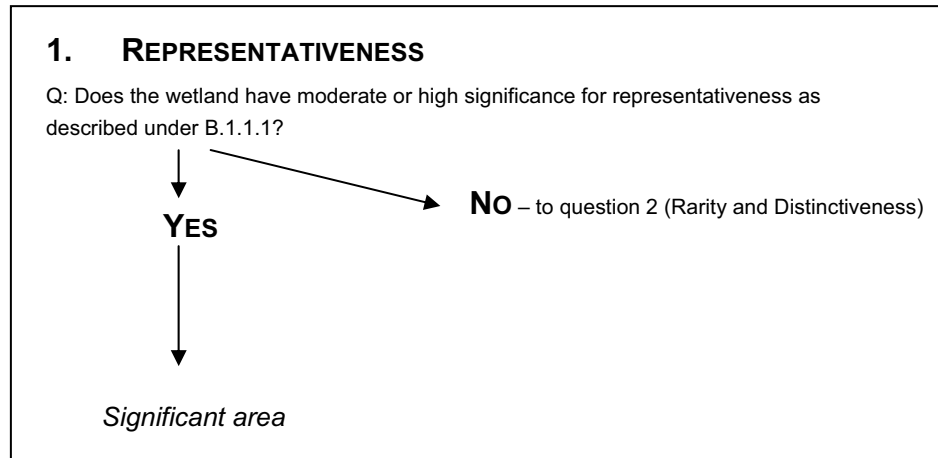
Ecological context is assessed on the actual or potential role of a site in:

- (1) Enhancing connectivity between patches.
- (2) Buffering or otherwise influencing a specific site.
- (3) Providing seasonal habitat for particular indigenous species.

B.1.2 Applying the criteria

This flow chart shows application of the criteria used in assessing ecological significance. Each site is evaluated sequentially for the three main criteria—representativeness, rarity/distinctiveness and ecological context.

Figure WTL6: Ecological significance flow chart



Part C: Recording hydrological factors

C.1.1 Hydrological information for wetland and catchment

The form reproduced below as Figure WTL7 provides a standardised field record of information relevant to the quantity and quality of water in the wetland and its catchment. This information, together with the ecological field records will inform subsequent assessment of the wetland's significance.

Figure WTL7: Wetland water quantity and quality summary sheet
Purpose:

- (a) To provide input into assessments of the sensitivity of the subject wetland to changes in upstream water quantity and quality.
- (b) To provide input into assessments of the significance of the wetland in maintaining water quantity in its downstream catchment.
- (c) To provide input into assessments of the significance of the wetland in maintaining and improving water quality in its downstream catchment.

Owner/occupier:

Wetland name:

Location:

Area of wetland (hectares):

Record hydrological information for wetland and catchment	
Landscape setting	
Geomorphology of wetland	
Geology of catchment surface	
Dominant water source	
Other significant water sources	
Location of water source (e.g., seepage from terrace, aquifer discharge, natural dam, coastal beach barrier, oxbow cut-off, rainfall ponding, etc)	
Flow direction	
Periodicity of flow	
Dominant wetland vegetation	
Fertility (vegetation indicators)	
Presence of peat soils	
Groundwater level records	
Rainfall records	
Stream flow records	
Catchment vegetation: past/present/likely future	
Instream features of the stream draining the wetland:	
Bed material (e.g., cobble, fine gravel, sand, silt)	
Signs of algal or macrophyte growth	
Quality of water in relation to fish habitat, use for livestock, domestic or public supply	
Assess hydrological relationship of wetland to downstream catchment	
Flood attenuation	
Groundwater recharge	
Sediment retention	
Nutrient transformation	
Contaminant retention	

Continued on next page

Estimate sensitivity of wetland to change	
Interception of inflows/drainage of the wetland	
Stock access to the wetland	
Impact of plant or animal pests on the wetland	
Abstraction of water from the wetland's catchment	
Changed wetland water quality	

Part D: Assessing hydrological significance

The hydrological significance of a wetland includes both its water flows and its associated role in maintaining or improving downstream water quality.

In evaluating hydrological significance, field information gathered from each site will be integrated with existing catchment data to provide an assessment from two perspectives:

- (a) The significance of the current hydrological regime to the wetland itself.
- (b) The significance, hydrologically, of the wetland to water quantity and quality within the catchment.

In addition to the location and size of the wetland, notes will generally be made of the surface geology of the catchment, the nature of the main and any other sources of water. Some factors likely to indicate the degree of any vulnerability to changes will also be recorded.

Among these will be an estimate of any direct or indirect hydrological effects of changes in the vegetation cover of the contributing catchment. Particular note will be taken of alterations to the hydrological regime such as occur when water is intercepted before reaching the wetland or is drained from the wetland or the immediate vicinity.

The field record will include a general description of the past, present and likely future vegetation of the wetland itself, noting in this connection any effects of grazing animals. The notes will include an estimate from a water quantity and quality perspective of the effects of any changes to the wetland vegetation.

In making the hydrological significance assessment, attention will typically be paid to effects on the present ecology of the wetland and on the quantity and quality of water in hydraulically linked water bodies. Particular note will be taken of the significance of the wetland to instream values and any other purposes for which a linked water body is managed.

D.1.1 Significance of water quantity to the wetland

- (a) Wetland hydrology is of high significance if the wetland has moderate or higher ecological significance and the present hydrological regime cannot be altered without being likely to impact permanently on the ecology of the wetland.
- (b) Wetland hydrology is of moderate significance if the wetland has moderate or higher ecological significance and minor alterations to the present hydrological regime are unlikely to impact permanently on the ecology of the wetland.
- (c) Wetland hydrology is not significant if no foreseeable alterations to the current hydrological regime would impact permanently on the ecology of the wetland, whatever its ecological significance.

D.1.2 Significance of wetland water quantity and quality within the catchment

- (a) A wetland is significant within its catchment if any alteration to the present hydrological regime would be likely to have a significant adverse effect. Examples of significant adverse effects include:
 - (i) Reducing the flow from a wetland that contributes most of the low flow to a stream or other water body.
 - (ii) Reducing the flow from a moderate sized wetland (greater than two hectares) that contributes significant low flow to a stream or other water body.
 - (iii) Reducing water storage and/or flood attenuation over a wide area (high significance) or a localised area (moderate significance).
 - (iv) Reducing groundwater recharge from a wetland greater than two hectares.
 - (v) Reducing the effectiveness of water quality improving processes such as sediment filtration and retention, nutrient transformation and contaminant retention.

- (b) A wetland is not significant with regard to water quantity or quality in the downstream catchment if altering the present outflow regime would have little or no significant adverse effects. Examples of adverse effects that would not be significant in this respect include:
- (i) Reducing the flow from a wetland that makes a negligible contribution to any other water body.
 - (ii) Reducing water storage and/or flood attenuation within the boundaries of the property or properties on which the wetland is located.
 - (iii) Reducing groundwater recharge from a wetland of two hectares or less.
 - (iv) Increasing the outflow from a wetland while maintaining or improving the water quality of that outflow.

Part E: Recording wetland management factors

E.1.1 Historical information

The form reproduced below as Figure WTL8 provides a standardised field record of information relevant to the past, present and future progression of the site, including its relationship to ongoing management of the adjoining land. This provides a perspective beyond the wetland itself and may often provide an insight into its future outlook.

Figure WTL8: Wetland management factors

Purpose:

To provide historical background and guidance on the likely future management of the wetland and its surroundings.

Owner/occupier:

Wetland name:

Location:

Area of wetland (hectares):

Record historical information for wetland and catchment	
Historical drainage/diversion of water	
Historical abstraction of water	
Historical vegetation clearance within the wetland	
Historical vegetation clearance outside the wetland	
Historical changes in water clarity	
Historical changes in nutrient status	
History of plant and animal pest invasion	
Historical protection measures:	
- Fencing from stock	
- Grazing restrictions/types/intensity of grazing	
- Plant and animal pest management	
Historical introduction of native plants and/or fauna	
Historical introduction of exotic plants and/or fauna	

Record current environmental factors	
Current adjoining land use(s)	
Current pastoral management role if any:	
- summer grazing/type/intensity/duration	
- grazing at other periods/type/intensity/when	
- emergency grazing/type/intensity/duration/when	
- emergency water storage	
- stock shelter	
- other	
Current stock access: stock excluded /restricted*/unrestricted	
Established plant and animal pests	
Incipient plant and animal pests	

*Note type of restrictions

Continued on next page

Record projected future management	
Projected adjoining land use(s)	
Projected pastoral management role if any:	
- summer grazing/type/intensity/duration	
- grazing at other periods/type/intensity/when	
- emergency grazing/type/intensity/duration/what circumstances	
- emergency water storage	
- stock shelter	
- other	
Projected stock access: stock excluded/restricted*/unrestricted	
Projected plant and animal pest problems	
Projected introduction of plants and/or fish or wildlife	
Projected voluntary restoration to more natural state	

*Note type of restrictions

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Definition of terms for chapters 4 to 8 only.

This section provides the meanings of words and terms as they are to be applied, to NRRP **chapters 4 to 8 only**. They do not apply to chapters 1 to 3. Further, the definitions in chapters 1 to 3 do not apply to chapters 4 to 8.

Where wording is highlighted in italics, the wording has been taken directly from the RMA. Should there be any inconsistency in definitions in chapters 4 to 8 and those in the RMA, the RMA definitions will prevail.

Terms marked with * are taken directly from the Canterbury Regional Policy Statement, 1998.

Unless a direct source is specified in a footnote, all other terms have been developed specifically for the purposes of the NRRP chapters 4 to 8 only.

Abbreviations and symbols

BPO	best practicable option
CMA	coastal marine area
HSNO	Hazardous Substances and New Organisms Act 1996
L/s	litres per second
MALF	mean annual low flow
7DMALF	seven-day mean annual low flow
mg/kg	milligram per kilogram
g/m ³	milligrams per cubic metre
m ³ /d	cubic metres per day
MHWS	mean high water springs
NRRP	Canterbury Natural Resources Regional Plan
NTCSA	Ngāi Tahu Claims Settlement Act 1998
RCEP	Regional Coastal Environment Plan
RMA	Resource Management Act 1991
RPS	Canterbury Regional Policy Statement (26 June 1998)
LFPA	Low Flow Production Area

In NRRP chapters 4 to 8, unless the context otherwise requires:

Abstraction* in relation to a water body, means the taking of water from that water body.
Actual flow means the amount of water that is flowing instream at that actual point in time.
Aerobic means in terms of waste management processes the biological process that occurs in the presence of oxygen.
Aerodynamic roughness is a measure of how much the vegetation disturbs the near-ground air flow and causes it to blow through the canopy thereby providing a sink for evaporating moisture.
Aggradation means the build up in the level of the bed of a water body caused by the deposition of sediment.
Agrichemical means any substance, or mixtures of substances, whether inorganic or organic, man-made or naturally occurring, modified or in its original state that is used to eradicate, or control flora and fauna. It excludes oral nutrition compounds, vertebrate pest controls and fertilisers.
Allocation block is a given amount of water, either set as a flow rate or as an annual volume, that is set aside for abstraction, where all users allocated a proportion of that water will be subject to the same management controls.
Allocation regime means the provisions in this regional plan relating to the quantities or rates of flow of water available for abstraction above any limit set to protect instream values, groundwater

quality or the integrity of aquifers.
Allocative efficiency * is the allocation of resources to uses that make optimum use of them.
Alluvium is soil formed from the deposition of sediment transported by water.
Amenity values means those natural or physical qualities and characteristics of an area that contribute to people's appreciation of its pleasantness, aesthetic coherence, and cultural and recreational attributes.
Annual Exceedance Probability (AEP) means the chance of a natural hazard event of a given size or larger occurring in any one year. It is usually expressed as a percentage.
Annual volume or annual allocation volume means (i) in relation to a water permit, the total amount of water authorised via a water permit over a one year period (July to June): and (ii) in relation to an allocation block, the total amount of water that is available for allocation from that block.
Aquatic ecosystem means any system of interacting aquatic life within its natural and physical environment.
Arable land means all land suitable for cultivation and cropping, regardless of whether it is being used for this purpose.
Arable soils are those soils occurring on arable lands.
Archaeological site has the same meaning as in section 2 of the Historic Places Act 1993.
Artificial lake means a lake created by human action. It includes lakes created as a result of damming a river, constructing an impoundment on land, or excavating land, but in all circumstances excludes detention and retention basins for stormwater, oxidation ponds and other artificial water bodies used to treat human or animal waste, and ponds created from farm dams used primarily for irrigation storage or stock water supplies. ⁸
Artificial watercourse means a watercourse that is created by human action. It includes an irrigation canal, water supply race, canal for the supply of water for electricity power generation, and farm drainage canal. It does not include artificial swales, kerb and channelling or other watercourses designed to convey stormwater.
Augmentation means, in relation to water, the storage or addition of water to increase surface flows in a river or stream, to maintain higher groundwater levels in an aquifer, or to improve water availability, separately or in combination.
Backflow prevention is the prevention of backflow (a reversal of the normal direction of flow in a pipe) of unwanted and undesirable flow of non-potable water or other toxic substances.
Bed (a) <i>in relation to any river-</i> (i) <i>For the purpose of esplanade reserves, esplanade strips, and subdivision, the space of land which waters of the river cover at its annual fullest flow without overtopping its banks:</i> (ii) <i>In all other cases, the space of land which the waters of the river cover at its fullest flow without overtopping its bank.</i> (b) <i>In relation to any lake, except a lake controlled by artificial means,—</i> (i) <i>For the purposes of esplanade reserves, esplanade strips, and subdivision, the space of</i>

⁸ An artificial lake is encompassed by the RMA definition of lake.

<p><i>land which the waters of the lake cover at its annual highest level without exceeding its margin:</i></p> <p>(ii) <i>In all other cases, the space of land which the waters of the lake cover at its highest level without exceeding its margin.</i></p> <p>(c) <i>In relation to any lake controlled by artificial means, the space of land which the waters of the lake cover at its maximum permitted operating level.</i></p>
<p>Benefits and costs * includes benefits and costs of any kind, whether monetary or non-monetary.</p>
<p>Berm means the area of a riverbed that is usually dry and covered with vegetation, but subject to periodic inundation by the adjacent water body.</p>
<p>Best practicable option, <i>in relation to a discharge of a contaminant or an emission of noise, means the best method for preventing or minimising the adverse effects on the environment having regard, among other things, to—</i></p> <p>(a) <i>The nature of the discharge or emission and the sensitivity of the receiving environment to adverse effects; and</i></p> <p>(b) <i>The financial implications, and the effects on the environment, of that option when compared with other options; and</i></p> <p>(c) <i>The current state of technical knowledge and the likelihood that the option can be successfully applied.</i></p>
<p>Biodiversity * means the variability among living organisms from all sources including among other things, terrestrial, marine, and other aquatic ecosystems, and the ecological complexes of which they are a part. This includes diversity within species, between species, and of ecosystems.</p>
<p>Biomass * means the total dry weight of living organisms (or particular species or groups or organisms) in any given area.</p>
<p>Bore means a structure or hole in the ground, generally less than one metre in diameter, constructed for the purpose of:</p> <p>(a) investigating or monitoring conditions below the ground surface; or</p> <p>(b) abstracting liquid substances from the ground; or</p> <p>(c) discharging liquid substances into the ground.</p>
<p>Borefield means all bores located on a property, except those which are used in accordance with rules WQN9 and WQN10.</p>
<p>Braided river * means any river with multiple successively divergent and rejoining channels separated by gravel islands.</p>
<p>Canopy conductance is the ease with which moisture can move from plant tissues to the atmosphere.</p>
<p>Chlorinated hydrocarbons means any compound containing carbon, hydrogen and chlorine, and includes: trichloroethene, tetrachloroethene, 1,1,1-trichloroethane, tetrachloromethane, bromodichloromethane and trichloromethane.</p>
<p>Classified - an activity being classified "by, in or under" a rule where the activity is described as a permitted activity, controlled activity, restricted discretionary activity, discretionary activity, non complying activity or prohibited activity in the Activity column of the rule.</p>
<p>Cleanfill means a landfill that only accepts cleanfill material.</p>
<p>Cleanfill material means material that when buried will have no adverse effect on people or the environment. Cleanfill material includes virgin natural materials such as clay, soil and rock, and</p>

other inert materials such as concrete, including reinforcing steel embedded in the concrete, cured asphalt or brick that are free of:

- (a) combustible, putrescible, degradable or leachable components
- (b) hazardous substances
- (c) products or materials derived from hazardous waste treatment, hazardous waste stabilisation or hazardous waste disposal practices
- (d) materials that may present a risk to human or animal health such as medical and veterinary waste, asbestos or radioactive substances
- (e) liquid waste.

Coastal Confined Gravel Aquifer System means the confined gravel aquifer system located between the Ashley River/Rakahuri and the Rakaia River, as shown in Figures WQN2 and WQL2 and in the Map Volume Part 1 – Planning Maps.

Four principal aquifers, composed of water bearing gravels and separated by low permeability sediments, have been identified. These aquifers are numbered in descending order from the surface, from Aquifer 1 - the shallowest confined aquifer to the deepest recognised aquifer - Aquifer 4.

Deeper aquifers below Aquifer 4 have not been formally defined as a geological formation, but are grouped together and called Aquifer 5. Localised areas of groundwater may be present in the sediment that overlies Aquifer 1, and this formation may be called Aquifer 0.

Community drinking water supply protection zone is the area of land determined in accordance with Chapter 4, Schedule WQL2 around a well (including a water infiltration gallery) that provides water for a community drinking water supply listed in Table WQL18.

Community drinking water supply means a publicly or privately owned drinking water supply that serves 500 or more people at least 60 days of the year, but does not include a rural water scheme established solely to provide water for livestock.

Community stockwater supply means a public or privately owned water supply primarily providing drinking water for stock to two or more properties.

Community water supply means water taken primarily for group drinking water supply or community drinking water supply but that may also be used for other purposes such as supply to institutional, industrial, processing, stockwater, or amenity irrigation use and fire-fighting.

Community water supply intake means an intake on a river or lake that is used as a community drinking water supply listed in Table WQL19.

Conditions, *in relation to plans and resource consents, includes terms, standards, restrictions and prohibitions.*

Confined aquifer means an aquifer overlain by a low permeability or impermeable layer where the water in the aquifer is under pressure.

Consent authority *means the Minister of Conservation, a regional council, a territorial authority, or a local authority that is both a regional council and a territorial authority, whose permission is required to carry out an activity for which a resource consent is required under the RMA.*

Contact recreation means human recreation activity where people have direct contact with, or are partly or fully immersed in, the water of a river or lake. It includes activities such as boating, bathing, paddling, and fishing.

Contaminant *includes any substance (including gases, odorous compounds, liquids, solids, and micro-organisms) or energy (excluding noise) or heat, that either by itself or in combination with the same, similar, or other substances, energy, or heat—*

(a) *When discharged into water, changes or is likely to change the physical, chemical, or biological condition of water; or*

(b) *When discharged onto or into land or into air, changes or is likely to change the physical, chemical, or biological condition of the land or air onto or into which it is discharged.*

Contaminated land means land that has a hazardous substance in or on it that-

(a) *has significant adverse effects on the environment; or*

(b) *is reasonably likely to have significant adverse effects on the environment.*

Continuous rate of take in relation to groundwater allocation means the constant rate that water would be taken at without stopping in order to take the daily, weekly, seasonal or annual volume that has been allocated.

Controlled activity means an activity for which,-

(a) a resource consent is required for the activity, and the consent authority has no power to decline that resource consent; and

(b) the consent authority must specify in the plan or proposed plan matters over which it has reserved control; and

(c) the consent authority's power to impose conditions on the resource consent is restricted to the matters that have been specified under paragraph (b); and

(d) the activity must comply with the standards, terms, or conditions, if any, specified in the plan or proposed plan.

Dairy cattle includes all production dairy animals, such as dairy heifer calves, yearling and 2 year old heifers, in-milk herds, dry but predominantly pregnant dairy cattle, and calving cow herds.

Deep seated forms of erosion occur when there is a failure or movement of the regolith. This includes both mass movement forms of erosion (soil slip, earthflow, slump) and fluvial erosion (gully, tunnel gully).

Degradation, in Chapter 6 refers to removal of gravel and sediment from riverbeds by natural processes resulting in lowering of the riverbed.

Determinand means a constituent or property of the water which is determined, or estimated, in a sample.

Dewatering means the abstraction of groundwater so as to lower the water table for the period of time required to enable excavation, construction, and geotechnical work to proceed in the dewatered area, or to sustain a lower localised water table.

Discharge includes *emit, deposit, and allow to escape.*

Discharge permit means a consent to do something (other than in the coastal marine area) that otherwise would contravene s 15 of the RMA.

Discretionary activity means an activity for which,-

(a) a resource consent is required for the activity; and

(b) the consent authority may grant the resource consent with or without conditions or decline the resource consent; and

(c) the activity must comply with the standards, terms, or conditions, if any, specified in the plan or proposed plan.

Distance to the edge of a river or lake means the distance to:

(a) the nearest edge of a bank of a river or lake; or

<p>(b) where there is no bank:</p> <ul style="list-style-type: none"> (i) for any river, from the nearest edge of the bed covered by the waters of the river at its fullest flow; or (ii) for any lake not controlled by artificial means, from the nearest edge of the bed covered by waters of the lake at its highest water level; or (iii) for any lake, controlled by artificial means from the nearest edge of the bed covered by the waters of the lake at its maximum permitted operating level.
<p>District plan means an operative plan approved by a territorial authority under Schedule 1 to the RMA; and includes all operative changes to such a plan (whether arising from a review or otherwise).</p>
<p>District rule means a rule made as part of a district plan [or proposed district plan] in accordance with section 76 and 77A of the RMA.</p>
<p>Divert means to alter in any way the natural course of water flows, whether over or under the ground. It includes but is not limited to cases where all or some of the flow is returned to the same water body further downstream. Activities such as reclamation, infilling, dumping and drainage are considered to divert water where water is displaced as a consequence of the activity.</p>
<p>Downlands include all rolling foothill country below 600 metres altitude where the dominant slopes are greater than 7 degrees and less than 20 degrees.</p>
<p>Drain shall include any artificial watercourse that has been constructed for the purpose of land drainage of surface or subsurface water and can be a farm drainage channel, an open race or subsurface pipe, tile or mole drain.</p>
<p>Drainage system or land drainage system means a surface or subsurface pipe or channel or canal system for the collection, transfer and discharge elsewhere of surface or subsurface water.</p>
<p>Drained refers to a condition in which ground or surface water has been reduced or eliminated from an area by artificial means.</p>
<p>Drawdown means either:</p> <ul style="list-style-type: none"> (a) lowering of water levels stored behind a dam or other water control structure; or (b) localised decline of a water table or in water pressure due to pumping.
<p>"Drinking-Water Standards for New Zealand 2005" means the "Drinking-water Standards for New Zealand 2005, published by the Ministry of Health, Wellington. August 2005.</p>
<p>Dwelling means any permanent structure, that is occupied or intended to be occupied in whole or in part as a residence, and includes (but is not limited to) travellers' accommodation.</p>
<p>Earthworks means the excavation of, and/or filling with topsoil, subsoil, sediments, rock and/or other underlying materials on which the soil is formed. Earthworks include, but is not limited to, the construction of roads, tracks, firebreaks and landings, and ground shaping (recontouring), root raking and blading. Earthworks does not include cultivation of the soil for the establishment of crops.</p>
<p>Ecosystem * means plants, animals, their physical environment, and the dynamic processes that link them.</p>
<p>Effect: <i>unless the context otherwise requires, includes:</i></p> <ul style="list-style-type: none"> (a) Any positive or adverse effect; and (b) Any temporary or permanent effect; and (c) Any past, present, or future effect; and

<p>(d) <i>Any cumulative effect which arises over time or in combination with other effects: regardless of the scale, intensity, duration, or frequency of the effect, and also includes:</i></p> <p>(e) <i>Any potential effect of high probability; and</i></p> <p>(f) <i>Any potential effect of low probability which has a high potential impact.</i></p>
<p>Effective allocation is the total amount of water currently allocated from an allocation block.</p>
<p>Effluent means liquid waste from an industrial or trade process or of animal origin, but excludes sewage.</p>
<p>Endemic means those species of plants and animals naturally occurring only within the Canterbury region.</p>
<p>Environment Canterbury is the promotional name of the Canterbury Regional Council. Wherever the term Environment Canterbury or the Regional Council is referred to in this document, this is a reference to the Canterbury Regional Council as defined under the Local Government Act 1974.</p>
<p>Environment includes—</p> <p>(a) <i>Ecosystems and their constituent parts, including people and communities; and</i></p> <p>(b) <i>All natural and physical resources; and</i></p> <p>(c) <i>Amenity values; and</i></p> <p>(d) <i>The social, economic, aesthetic, and cultural conditions which affect the matters stated in paragraphs (a) to (c) of this definition or which are affected by those matters.</i></p>
<p>Environmental results anticipated * means the expected result or outcome on the environment as a consequence of implementing the policy or policies and methods of implementation. It provides a means of assessing the success of the objectives, policies and methods.</p>
<p>Essential domestic use means the water required only for household use (excluding garden use).</p>
<p>Essential institutional use means the water required for the safe functioning of hospitals, rest homes, educational services or for the core services of lifeline utilities (as defined in the Civil Defence Emergency Management Act 2002), but excludes entities that generate or distribute hydro-electric power, water for irrigation purposes or provide road networks.</p>
<p>Essential processing use means the use of water supplied via a community water supply for the processing of perishable crops, farm livestock, milk and fish.</p>
<p>Evapotranspiration is the return of water vapour to the air by evaporation from land and water surfaces and by the transpiration of water from vegetation.</p>
<p>Feral animals means introduced species of animals living in the wild that have reverted from domesticated animals, or that have not been domesticated. Does not include indigenous species of animals.</p>
<p>Fertiliser means</p> <p>(a) a solid or fluid substance or biological compound, or mix of substances or biological compounds that is described as, or held out to be for, or suitable for, sustaining or increasing the growth, productivity, or quality of plants or, indirectly, animals through the application to plants or soil of any of the following:</p> <p>(i) nitrogen, phosphorus, potassium, sulphur, magnesium, calcium, chlorine, or sodium as major nutrients; or</p> <p>(ii) manganese, iron, zinc, copper, boron, cobalt, molybdenum, iodine, or selenium as minor nutrients; or</p>

<ul style="list-style-type: none"> (iii) fertiliser additives to facilitate the uptake and use of nutrients; and (iv) soil conditioners to alter the physical characteristics of soil; and <p>(b) includes non-nutrient attributes of the materials used in fertiliser; but</p> <p>(c) does not include;</p> <ul style="list-style-type: none"> (i) substances that are plant growth regulators that modify the physiological functions of plants, or (ii) any raw or composted biological waste product that is not able to be registered under the Agricultural Compounds and Veterinary Medicines Act 1997.
<p>Field capacity means the moisture content of soil when the addition of further water would result in saturation and/or drainage of water from the soil.</p>
<p>Filamentous algae are algal species that form strands of cells generally greater than two centimetres in length and are attached to river bed substrate.</p>
<p>Flood carrying capacity * means the ability of a river to carry flood flows within its bed without overtopping its banks.</p>
<p>Flood control structure means any structures designed and built for the purpose of directing the passage of water away from land.</p>
<p>Flood control vegetation means trees or shrubs planted for the purpose of defending against erosion of a riverbank, berm, or structure.</p>
<p>Flow rate means the quantity of water flowing past a point over a given period of time.</p>
<p>Flow regime means rules that manage and maintain the range of flows in a river and can include the setting of minimum flows, and/or sharing and/or a cap on water able to be abstracted.</p>
<p>Flow-sensitive catchment means a catchment that is vulnerable to reductions in summer low flows as a result of a change in the vegetation cover from short to tall vegetation.</p>
<p>Fodder banks are reserves of crops stockpiled for stock food during drought periods.</p>
<p>Fragipan is a dense, compacted layer within the subsoil that restricts the movement of water and roots. This layer is generally composed of compacted fine, silty material often derived from loess.</p>
<p>Fresh means an increased flow, generally of short duration, which raises water levels and causes discolouration.</p>
<p>Freshwater/seawater interface is where seawater in a water body meets and begins to mix with fresh water.</p>
<p>Gleyed soils means waterlogged anaerobic layers within the B and C horizons (subsoil) where there is a lack of oxidation, producing a characteristic grey colouration of the soil.</p>
<p>Groundcover refers to the low-growing plants covering the surface of the ground.</p>
<p>Groundwater means all water beneath the surface of the earth contained within the saturated zone (but excludes the water chemically combined in minerals).</p>
<p>Groundwater pressure reversal means a situation where the natural upward pressure gradient in a confined aquifer is reversed as a result of pumping water from a well.</p>
<p>Groundwater recharge means the replenishment of groundwater by infiltration or seepage of water. Includes both rainfall and river recharge of groundwater, and in some areas may include losses through the soil of irrigation water.</p>
<p>Group drinking water supply is a water supply scheme providing drinking water to more than one property but to less than that supplied by a community drinking water supply.</p>

Habitat* means the particular type of environment occupied by a species of plant or animal. It includes biological and physical components which among other things may include water, rocks, soil, or vegetation.

Hand held application technique or method in relation to agrichemical use means using a total agrichemical unit that is able to be carried by a person and includes a knapsack sprayer, a handgun sprayer, a motorised knapsack sprayer, or a sprayer with a rate and volume of application no greater than these devices.

Hapū* means sub-tribe, clan, or section of a large tribe.

Hazardous facility is defined as sites where hazardous substances are used, stored, handled and disposed of.

Hazardous substance means a substance which, when present in concentrations in water, sediment or air

- (a) has one or more of the following intrinsic properties:
- (i) explosiveness;
 - (ii) flammability;
 - (iii) a capacity to oxidise;
 - (iv) corrosiveness;
 - (v) toxicity (including chronic toxicity);
 - (vi) ecotoxicity, with or without bioaccumulation; or
 - (vii) which on contact with air or water (other than air or water where the temperature or pressure has been artificially increased or decreased) generates a substance with any one or more of the properties specified in clauses (i) to (vi) of this definition; and
- (b) exceeds the minimum degree of hazard specified in the Hazardous Substances (Minimum Degrees of Hazard) Regulations 2001.

Hazardous waste * means waste that contains:

- (a) a hazardous substance; or
- (b) an infectious substance, or material known or reasonably expected to contain pathogens, including bacteria, viruses, rickettsia, parasites, fungi or recombinant micro-organisms (hybrid or mutant) that are known, or reasonably expected, to cause infectious disease in humans and animals that are exposed to them; or
- (c) radioactive material that meets the definition in Section 2 of the Radiation Protection Act 1965.

High country includes all land above 900 metres and may extend to hill country at lower altitudes in areas where the physical environment imposes similar limitations to land use as land above 900 metres.

Hill country land includes all non-arable land below 900 metres altitude that is:

- (a) greater than 20 degrees in slope; or
- (b) greater than 600 metres above sea level.

Hydrology means the science dealing with the properties, distribution, and circulation of water.

Hydrophytic vegetation means the sum total of macrophytic plant life growing in water, or on a substrate that is at least periodically deficient in oxygen as a result of excessive water content.

Indigenous flora and fauna means plants and animals which occur naturally in New Zealand and have established without the aid of human intervention. This includes migratory species, such as

<p>migratory birds, that spend only part of their life history in New Zealand.</p>
<p>Induced erosion is erosion that has been caused or exacerbated by the activities of people, or animals introduced by people.</p>
<p>Industrial or trade premises means—</p> <p>(a) <i>Any premises used for any industrial or trade purposes; or</i></p> <p>(b) <i>Any premises used for the storage, transfer, treatment, or disposal of waste materials or for other waste-management purposes, or used for composting organic materials; or</i></p> <p>(c) <i>Any other premises from which a contaminant is discharged in connection with any industrial or trade process—</i></p> <p><i>but does not include any production land.</i></p>
<p>Industrial or trade process includes every part of a process from the receipt of raw material to the dispatch or use in another process or disposal of any product or waste material, and any intervening storage of the raw material, partly processed matter, or product.</p>
<p>Instantaneous rate of take means the maximum rate of water that is authorised to be taken via a water permit measured as litres per second or cubic metres per second.</p>
<p>Instream values means non-consumptive values associated with a water body and includes aquatic ecosystem values, natural character and landscape values, Ngāi Tahu values and amenity and recreational values. In the NRRP this term excludes hydro-electricity generation and waste assimilation.</p>
<p>Interception in relation to rainfall, is the prevention of rainfall reaching the ground where it can contribute to stream flow or soil water storage. This is measured as the amount of total rainfall retained on the leaf surfaces and returned to the atmosphere by evaporation.</p>
<p>Interception capacity of vegetation in relation to rainfall is the maximum amount of water that the leaves can hold at any one time and evaporate back into the atmosphere.</p>
<p>Intermittently flowing river means a river with some reaches that cease to flow from time to time while other reaches continue to flow. Depressions and swales that do not have a defined bed and which only carry water after heavy or persistent rainfall events do not fall within this definition.</p>
<p>Intrinsic values in relation to ecosystems, means those aspects of ecosystems and their constituent parts which have value in their own right, including:</p> <p>(a) <i>their biological and genetic diversity; and</i></p> <p>(b) <i>the essential characteristics that determine an ecosystem's integrity, form, functioning, and resilience.</i></p>
<p>Introduced flora and fauna * includes all species of plants and animals that have been introduced to New Zealand by humans. Species that have arrived in New Zealand since human occupation, unaided by human intervention, are included as indigenous species.</p>
<p>Irrigated land is where the land is irrigated at any time during the year to sustain growth.</p>
<p>Irrigation application efficiency is a measure of the amount of applied water that is stored in the crop root zone, as a proportion of the average depth of the water applied to the crop.</p>
<p>Isohyds are lines on a map connecting points of equal discharge of water to surface flow, measured in litres per second per square kilometre.</p>
<p>Issue * means a matter of concern to the region's community in relation to some aspect of natural or physical resources and the environment of the region.</p>
<p>Iwi * means tribe or people.</p>

<p>Iwi authority means the authority which represents an iwi and which is recognised by that iwi as having authority to do so. In the Canterbury region, Te Rūnanga o Ngāi Tahu is the iwi authority.</p>
<p>Iwi plan* or Iwi management plan * means a management plan recognised by an iwi authority.</p>
<p>Jetty means a landing stage or small pier built out into the water from a lake or river bank.</p>
<p>Kaitiakitanga means the exercise of guardianship by tāngata whenua of an area in accordance with tikanga Māori in relation to natural and physical resources; and includes the ethic of stewardship.</p>
<p>Lake means a body of fresh water which is entirely or nearly surrounded by land.</p>
<p>Land includes land covered by water and the air space above land.</p>
<p>Land subsidence means a dropping or settling of the land surface that may occur as a result of groundwater being pumped.</p>
<p>Landfill means a site lawfully used for the deposition of solid and/or hazardous waste onto or into land.</p>
<p>Landholders refer to the person(s) in charge of the day-to-day management of the land, regardless of its tenure.</p>
<p>Landscapes * see Natural Features and Landscapes.</p>
<p>Lawfully established in the NRRP refers to the status of an activity with respect only to matters under the control of Environment Canterbury.</p>
<p>Leak testing means a process that is carried out by a person competent in using a proven hydrostatic method or equivalent method to determine if a pipe or container has a leak or maintains its integrity.</p>
<p>Level regime means rules that manage the range of levels of a water body in order to protect instream values, groundwater quality or the integrity of aquifers; and can include the setting of minimum or maximum levels, or trigger levels and may apply to lakes or groundwater.</p>
<p>Lifeline utility means an entity named or described in Part A of Schedule 1, or that carries on a business described in Part B of Schedule 1 of the Civil Defence Emergency Management Act 2002. Part A includes:⁹</p> <ol style="list-style-type: none"> 1. Radio New Zealand Limited and Television New Zealand Limited. 4. The airport company (as defined in section 2 of the Airport Authorities Act 1966) that operates Christchurch international airport. 6. The port company (as defined in section 2(1) of the Port Companies Act 1988) that carries out port-related commercial activities at Auckland, Bluff, Port Chalmers, Gisborne, Lyttleton, Napier, Nelson, Picton, Port Taranaki, Tauranga, Timaru, Wellington, Westport, or Whangarei. <p>Part B:</p> <ol style="list-style-type: none"> 1. An entity that produces, supplies, or distributes manufactured gas or natural gas (whether it is supplied or distributed through a network or in bottles of more than 20 kg of gas). 2. An entity that generates electricity for distribution through a network or distributes electricity through a network. 3. An entity that supplies or distributes water to the inhabitants of a city, district, or other place. 4. An entity that provides a wastewater or sewerage network or that disposes of sewage or storm water.

⁹ Entities relevant to the Canterbury region as at 1 November 2010

<p>5. An entity that provides a telecommunications network (within the meaning of the Telecommunications Act 1987).</p> <p>6. An entity that provides a road network (including state highways).</p> <p>7. An entity that produces, processes, or distributes to retail outlets and bulk customers any petroleum products used as an energy source or an essential lubricant or additive for motors for machinery.</p> <p>8. An entity that provides a rail network or service.</p>
<p>Littoral zone means the shallow shore area of a lake where light can usually penetrate to the bottom and it is often occupied by rooted aquatic plants.</p>
<p>Local authority means a regional council or territorial authority.</p>
<p>Loess is the accumulation of wind transported dust particles.</p>
<p>Macrophytes are larger multicellular, aquatic plants with differentiation of tissue to form distinct stems and leaves/pinnules. This category includes mosses, liverworts and true vascular aquatic plants, such as submerged oxygen weeds and emergents like water cress.</p>
<p>Mahinga kai* means food and other resources, the gathering of those resources and the areas that they are sourced from.</p>
<p>Mana-whenua means customary authority exercised by an iwi or hapū in an identified area.</p>
<p>Mass movement forms of erosion – see “deep-seated forms of erosion”.</p>
<p>Mauri means essential life force or principle; a metaphysical quality inherent in all things, both animate and inanimate.</p>
<p>Maximum Acceptable Value (MAV) has the same meaning as in the definitions of the Drinking Water Standards for New Zealand 2005, Ministry of Health, Wellington</p>
<p>Mean annual daily low flow (MALF) means the average, for a number of years, of the annual lowest daily flows. This is determined by selecting the lowest daily flow (average over 24 hours) for each year of record, summing those values and then dividing the total by the number of years of record.</p>
<p>Method of implementation * means a specific action, procedure, programme or technique adopted to carry out a policy.</p>
<p>Mineral extraction means to take, win, or extract material existing in its natural state in the land, for the purpose of obtaining that material or any part of that material, including:</p> <ul style="list-style-type: none"> (a) operations for the extraction, transport, treatment, processing and separation of that material; and (b) the removal of overburden by mechanical or other means; and (c) the stacking, deposit, storage and treatment of any substance considered to contain the material; and (d) other lawful acts incidental or conducive to any such operations when carried out at or near the site where the mineral extraction is carried out.
<p>Minimum flow means the flow at which abstractions from a water body must cease other than for an individual's reasonable domestic needs, the reasonable needs of individuals and animals for drinking water, and for fire fighting.</p>
<p>Minimum groundwater level means the groundwater level at a monitoring well, at which abstractions must cease other than for an individual's reasonable domestic needs, the reasonable needs of individuals and animals for drinking water, and for fire fighting.</p>

<p>Mitigate * in relation to an effect, means to lessen, offset or eliminate the severity or incidence of an effect.</p>
<p>Moderate or higher significance wetland means a wetland whose significance has been classified anywhere between moderate and high using the methods and criteria set out in Appendix WTL1.</p>
<p>Mouth, for the purpose of defining the landward boundary of the coastal marine area, means the mouth of the river as determined by the Regional Coastal Environment Plan.</p>
<p>Natural and physical resources includes land, water, air, soil, minerals, and energy, all forms of plants and animals (whether native to New Zealand or introduced), and all structures.</p>
<p>Natural features and landscapes * includes two terms that sometimes overlap. As a general rule, features tend to be smaller in extent and are experienced from the outside, while landscapes cover large areas and are experienced from within. Natural means a predomination of elements that are natural rather than made by people.</p>
<p>Network utility operator means a person who-</p> <ul style="list-style-type: none"> (a) Undertakes or proposes to undertake the distribution or transmission by pipeline of natural or manufactured gas, petroleum, or geothermal energy; or (b) operates or proposes to operate a network for the purpose of- <ul style="list-style-type: none"> (i) telecommunication as defined in section 5 of the Telecommunications Act 2001; or (ii) radiocommunication as defined in section 2(1) of the Radiocommunications Act 1989; or (c) Is an electricity operator or electricity distributor as defined in section 2 of the Electricity Act 1992 for the purpose of line function services as defined in that section; or (d) Undertakes or proposes to undertake the distribution of water for supply (including irrigation); or (e) Undertakes or proposes to undertake a drainage or sewerage system; or (f) Constructs, operates, or proposes to construct or operate, a road or railway line; or (g) Is an airport authority as defined by the Airport Authorities Act 1966 for the purposes of operating an airport as defined by that Act; or (h) Is a provider of any approach control service within the meaning of the Civil Aviation Act 1990; or (i) Undertakes or proposes to undertake a project or work prescribed as a network utility operation for the purposes of this definition by regulations made under this Act,- <p>and the words “network utility operation” have a corresponding meaning.</p>
<p>Ngāi Tahu* (Kai Tahu, when written in dialect form) the tribal group holding manawhenua in Te Waipounamu, the area from Kahuraki Point on the West Coast and Te Parinui-o-Whiti (Vernon Bluffs) on the east, and all places south “until the land turns white”.</p> <p>Note:</p> <ul style="list-style-type: none"> (a) Ngāi Tahu and Ngāi Tahu whānui each means the collective of individuals who descend from the primary hapū of Waitaha, Ngati Mamoe, and Ngāi Tahu, namely Kati Kuri, Kati Irakehu, Kati Huirapa, Ngāi Tūāhuriri, and Kai Te Ruahikihiki. (b) When used in chapters 4 to 8, “Ngāi Tahu” can refer to both the collective of Ngāi Tahu, or an individual rūnanga.
<p>Non-arable land is all land that is not suited to cultivation or cropping.</p>

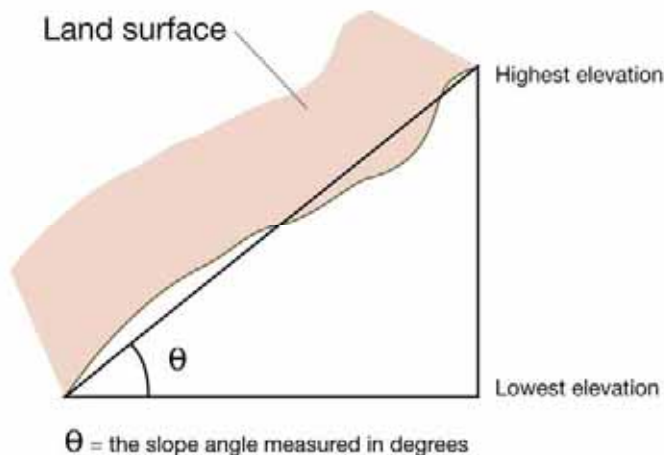
<p>Non-complying activity means an activity for which,-</p> <p>(a) <i>a resource consent is required for the activity; and</i></p> <p>(b) <i>the consent authority may grant the resource consent with or without conditions or decline the resource consent.</i></p> <p><i>Particular restrictions for non-complying activities are in section 104D of the RMA.</i></p>
<p>No-till techniques refer to cropping techniques that allow for seed to be implanted in the soil with minimal soil disturbance or incorporation of any surface vegetation or crop residues. This process does not involve cultivation in terms of its use in Chapter 8.</p>
<p>Objective * means a statement of a desired outcome.</p>
<p>Offsetting wetland means an area of wetland enhanced, restored or created to compensate for the permanent loss of an existing area of wetland.</p>
<p>Organic matter means all living and dead material derived from living organisms, or any compounds containing carbon as an essential component.</p> <p>Organic matter includes organic material from production land, industrial or trade premises, or industrial or trade process, such as dead vegetation, organic farm waste, organic freezing works waste and organic fish processing factory waste.</p>
<p>Passive reversion is the natural process of succession from grassland to woody scrub or shrubland species, and to forest. This process occurs through most of the hill country below the treeline.</p>
<p>Periphyton are a community of plants, including slimes, algal mats, and filamentous algae, and associated detritus adhering to and forming a surface coating on stones, plants and other submerged objects.</p>
<p>Permitted activity <i>is an activity for which a resource consent is not required for the activity if it complies with the standards, terms, or conditions, if any, specified in the plan or proposed plan.</i></p>
<p>Person <i>includes the Crown, a corporation sole and also a body of persons whether corporate or unincorporate.</i></p>
<p>Pest * has the same meaning as in the Biosecurity Act 1993, i.e. 'an organism specified as a pest in a pest management strategy.'</p>
<p>Plan means a regional plan unless the context provides otherwise.</p>
<p>Plant biomass refers to the total mass of plant material (including live, dead or decaying plant material) occurring over a given area.</p>
<p>Plant stature is the natural plant height associated with any species or physiognomic group (community) of plants.</p>
<p>Plant vigour refers to the intensity of growth of any plant or plant community.</p>
<p>Plantation forest includes all areas of trees grown for harvest with a density of 150 stems per hectare or more.</p>
<p>Point source discharge * means a discharge from a specific and identifiable outlet, onto or into land, air, a water body or the sea.</p>
<p>Policy * means a statement that guides or directs decision-making. A policy indicates a course of action, in working towards an objective.</p>
<p>Principal water supplier is a publicly or privately owned supplier that is the sole abstractor of water which is subsequently conveyed and distributed to component irrigation, community and/or stockwater schemes, hydro-electricity generators and/or other users of the water.</p>

<p>Production land:</p> <p>(a) <i>Means any land and auxiliary buildings used for the production (but not processing) of primary products (including agricultural, pastoral, horticultural, and forestry products).</i></p> <p>(b) <i>Does not include land or auxiliary buildings used or associated with prospecting, exploration, or mining for minerals;—</i> <i>and ‘production’ has a corresponding meaning.</i></p>
<p>Profile available water is the difference between field capacity and wilting point and represents the total water available to a depth of 1 metre expressed as millimetres of water.</p>
<p>Prohibited activity means no application may be made for that activity and a resource consent must not be granted for it.</p>
<p>Property means any contiguous area of land held in one, or more than one, ownership that is utilised as a single operating unit, and may include one or more titles.</p>
<p>Proposed Plan – (a) <i>means a proposed plan, a variation to a proposed plan or change, or a change to a plan proposed by a local authority that has been notified under clause 5 of Schedule 1 but has not become operative in terms of clause 20 of Schedule 1; and</i></p> <p>(b) <i>includes a proposed plan or change to a plan proposed by a person under Part 2 of Schedule 1 that has been adopted by the local authority under clause 25(2)(a) of the Schedule 1.</i></p>
<p>Public notice means a notice published in a newspaper circulating in the entire area likely to be affected by the proposal to which the notice relates.</p>
<p>Pumping test (also called aquifer test) means a test made by pumping a well for a period of time and observing the change in water level or pressure in the aquifer. A pumping test may be used to determine the capacity of the well and the hydraulic characteristic of the aquifer.</p>
<p>Range means (in relation to species) the geographical area in which a species is known to occur.</p>
<p>Reach in relation to rivers means a particular stretch or length of a river.</p>
<p>Reasonable use test (when applied to the taking, diverting or using of water for irrigation) means a test of the technical efficiency of water use in the particular circumstances of the applicant. It will include consideration of such matters as the water requirements for the intended land use activity; whether there are already existing consents for the use of water for the same area of land (either partially or totally); on-site physical factors such as soil water-holding capacity, and climatic factors such as rainfall and evaporation.</p>
<p>Reclamation means the infilling of land within the bed of a lake or river.</p>
<p>Reduced tillage involves using the minimum number of cultivation passes possible to achieve a seedbed suitable for the planting and maintenance of crops.</p>
<p>Region unless the context denotes otherwise means the region of the Canterbury Regional Council as determined in accordance with the Local Government Act 1974.</p>
<p>Regional rule means a rule made as part of a regional plan or proposed regional plan in accordance with section 68 and section 77A of the RMA.</p>
<p>Regolith is the topsoil, subsoil and unconsolidated weathered rock mantle resting on hard rock.</p>
<p>Resource consent * means a consent for an activity that would otherwise contravene the RMA.</p>

<p>Restricted discretionary activity means,-</p> <p>(a) <i>a resource consent is required for the activity; and</i></p> <p>(b) <i>the consent authority must specify in the plan or proposed plan matters to which it has restricted its discretion; and</i></p> <p>(c) <i>the consent authority's powers to decline a resource consent and to impose conditions are restricted to matters that have been specified under paragraph (b); and</i></p> <p>(d) <i>the activity must comply with the standards, terms, or conditions, if any, specified in the plan or proposed plan.</i></p>
<p>Rill erosion occurs on sloping land when exposed soil (often as a result of cultivation) is eroded in channels or rills as a result of surface water movement.</p>
<p>Riparian zone * includes the margin and the bank of a river or lake. This is the area where direct interaction occurs between land and water systems and is important for the management of water quality and ecological resources. Swamps and islands in a waterway are not strictly part of the riparian zone, but for practical management purposes are generally included in it.</p>
<p>River means <i>a continually or intermittently flowing body of fresh water; and includes a stream and modified watercourse; but does not include any artificial watercourse (including an irrigation canal, water supply race, canal for the supply of water for electricity power generation, and farm drainage canal).</i></p>
<p>Road has the same meaning as in section 315 of the Local Government Act 1974; and includes a motorway as defined in section 2(1) of the Transit New Zealand Act 1989.</p>
<p>Roadway means that portion of the road devoted particularly to the use of motor vehicles, inclusive of shoulders and auxiliary lanes.</p>
<p>Rohe see “takiwa”.</p>
<p>Rūnanga means Ngāi Tahu equivalent of local government formed to protect and defend the rangatiratanga, and the cultural and social values of their hapū.</p>
<p>Seasonal allocation or seasonal allocation volume means the maximum amount of water that is, or would be, recorded on a water permit to satisfy the demand of an activity during a specified period that is less than one year.</p>
<p>Semi-arid land occurs where the soil moisture levels are, on average, below field capacity for 12 months of the year, and below wilting point (no water available for plant uptake) for at least six months of the year. Annual rainfall is generally below 500mm per year. Includes parts of the inland basins and very limited coastal areas of the Canterbury region.</p>
<p>Semi-confined aquifer means an aquifer confined by a layer of sediment that is significantly less permeable than the aquifer itself but still sufficiently permeable to allow vertical leakage of water into or out of the aquifer.</p>
<p>Seven day mean annual low flow (7DMALF) is determined by adding the lowest seven day low flow for every year of record and dividing by the number of years of record (In any year the seven-day low flow is the lowest average flow sustained over seven consecutive days for every seven consecutive day period in the year).</p>
<p>Sewage means any human sewage in a primarily liquid form.</p>
<p>Significant habitats of indigenous fauna, in Chapter 7 means habitats that are significant following the assessment process depicted in Figure WTL5 and using the Criteria for Assessing Ecological Significance in Appendix WTL1.</p>
<p>Siltation means the degree that large sediment particles, boulders, cobbles or gravel in the surface substrate of the bed of a river or lake are surrounded or covered by fine sediment with a particle</p>

diameter size of 0.0625 millimetres or less, in any direction. Siltation of a substrate is measured as the percentage of silt that makes up the surface area of the bed.

Slope means the steepness of the land and when measured is expressed in degrees from the horizontal for a surface that connects the lowest elevation perpendicular to the highest elevation, as illustrated below:



Soil * means the loose material on the earth's surface in which terrestrial plants grow. Soil includes sand, silts, clays and any intermixed organic material.

Soil aggregate stability refers to the bonding within soil aggregates and depends strongly on the organic matter content.

Soil aggregates are collections of sand and silt particles bound together by clay, organic matter and organic glues.

Soil moisture deficit is the amount of water required to restore the soil to its field capacity.

Soil organic matter includes the remains of plant and animal material in varying states of decomposition occurring within the topsoil.

Soil structure refers to the size, shape and stability of soil aggregates. Good soil structure consists of stable aggregates that are of a size, shape and packing that maintains the optimum balance of air and water in the soil and also allows easy emergence of seedlings and growth of plants.

Solid animal waste means solid waste of animal origin, including manure, but does not include dead animals or animal parts.

Specific discharge of water is the amount of runoff generated from a specific part of a catchment.

Stock holding area means an area of land in which the construction of the holding area or stocking density precludes maintenance of pasture or vegetative groundcover, and is used for confining livestock on a regular basis.

For the avoidance of doubt, this definition includes; milking platforms, feedpads, wintering pads, and farm raceways used for stock holding purposes during milking.

Stopbanks are embankments, built along rivers to contain flood flows, and around lakes to contain elevated water levels.

Stormwater means runoff that has been channelled, diverted, intensified or accelerated by human modification of the land surface or runoff from the external surface of any structure as a result of

precipitation.
Stream depletion effect means the calculated rate of impact of groundwater abstraction on surface water flow.
Structure means any building, equipment, device, or other facility made by people and which is fixed to land; and includes any raft.
<p>Super Intensive farming includes any agricultural production:</p> <p>(a) where the predominant processes are carried out within buildings or closely fenced outdoor runs where the stocking density precludes the maintenance of pasture or vegetative groundcover; and</p> <p>(b) in which the primary purpose of the activity is for commercial purposes;</p> <p>but it excludes:</p> <p>(i) keeping of animals of quarantine or disease control purposes; or</p> <p>(ii) free range poultry farming or the keeping of fewer than 12 birds; or</p> <p>(iii) the farming of worms.</p> <p>Examples of super intensive farming include (but are not limited to) intensive poultry farming, rabbit or fitch farming, intensive pig farming or mushroom production.</p>
Surface water body means fresh water or geothermal water in a river, lake, stream, pond, wetland, or any part thereof.
Surface water means water that is found over the ground, generally in rivers, lakes, wetlands or artificial watercourses.
Swale means a shallow depression on the land surface, that is covered in grass or other vegetation, that is natural or man made and that serves to drain overland runoff.
<p>System capacity is the mean daily flow of water per irrigated area delivered by an irrigation system expressed as litres per second per hectare (L/s/ha) or the equivalent millimetres per day (mm/d). The mean daily flow of water shall be determined from the proposed or consented maximum rate, reduced where applicable by any restriction to the number of hours pumping per day and/or any return period restrictions. For example for a consent to take up to 50 L/s for 23 hrs per day, for 7 days per 11 day return period to irrigate 100 ha, the System capacity = $(23/24) \times (7/11) \times 50 \text{ L/s} / 100 \text{ ha} = 0.305 \text{ L/s/ha} = 2.63 \text{ mm/d}$.</p>
Take in relation to water in a water body means the authorisation for removing water subject to fulfilling any conditions required in a rule or water permit.
Takiwa (rohe) means boundary or area.
Tāngata Whenua means people of the land according to tribal and hapū custom.
Taonga * means treasured possessions, including both tangible and intangible treasures, for example, the Māori language.
Te Rūnanga o Ngāi Tahu means the body corporate of Ngāi Tahu Whānui as established under Section 6 of the Te Rūnanga O Ngāi Tahu Act (1996).
Technical efficiency * means using a resource in a way that any given output is produced at least cost, including avoiding waste. This contrasts with 'allocative efficiency' which means obtaining the

best use for the resource.
Territorial authority ¹⁰ means a city council or a district council.
Timber preservative means any chemical used to treat timber and includes: copper/chromium/arsenic formulations, boron, light organic solvent preservatives and anti-sapstain chemicals.
Topsoil means the upper layer or layers of soil.
Transpiration in vegetation is the loss of water vapour through the stomata on the leaves.
Trigger flow means a flow higher than the minimum flow at which abstractive uses may be required to reduce their take in order to share the water that is available and to sustain instream flows.
Trigger level means a specified groundwater level used to indicate capacity remaining in an aquifer or to indicate actions by users will be needed.
Unconfined aquifer means an aquifer that lacks an overlying layer of fine sediment, and is not under pressure. The water level in a well is the same as the water table outside the well.
Unitary authority means an authority with the functions of both a territorial authority and a regional council.
Unwanted aquatic organism means an aquatic organism included in the Biosecurity New Zealand Unwanted Organisms Register. (This register may be accessed online at http://www.biosecurity.govt.nz/commercial-imports/unwanted-organisms-register).
Upconing – process by which saline water underlying freshwater in an aquifer rises upward into the freshwater zone as a result of pumping water from the freshwater zone.
Vegetation clearance is the removal of vegetation by physical, mechanical, chemical or other means. Burning of vegetation in the hill and high country is subject to Part IV of the Land and Vegetation Management Regional Plan.
Vegetation includes all plants and the produce thereof, live or dead, standing, fallen, windblown, cut, broken, pulverised, sawn, or harvested, natural or disturbed.
Wāhi taonga * means places (wāhi) of special value.
Wāhi tapu * means a place of sacred and extreme importance.
Waste means materials which are unwanted or surplus to process requirements that the holder discards, or intends to, or is required to discard.
Waste minimisation means implementation of the waste management hierarchy to: reduce, reuse, recycle, recover and manage residual waste.
Water (a) <i>Means water in all its physical forms whether flowing or not and whether over or under the ground;</i> (b) <i>Includes fresh water, coastal water, and geothermal water;</i> (c) <i>Does not include water in any form while in any pipe, tank, or cistern.</i>
Water blasting means the use of high pressure water as the blasting medium to remove surface coatings or prepare surfaces.
Water body means fresh water or geothermal water in a river, lake, stream, pond, wetland, or

¹⁰ Section 2(1) Local Government Act 1974

<i>aquifer, or any part thereof, that is not located within the coastal marine area.</i>
Water conservation order has the meaning set out in section 200 of the RMA.
Water flow measuring device is a device used for measuring the rate of flow or quantity of water over a set period of time.
Water harvesting means the taking of water for storage and later use.
Water infiltration gallery is a device or structure placed in the ground to intercept shallow groundwater for water supply purposes.
Water management regime means in relation to water bodies, any mix of flow, level and allocation regimes.
Water race or water supply race means a type of artificial watercourse used for the managed conveyance of water often, but not exclusively, for stockwater or irrigation purposes. It is not a drain. ¹¹
Water restriction means a reduction in the authorised take during periods of low flow or water level in order to share the water that is available for abstraction and use, and is usually included as a condition of consent.
Water table means the water surface of the saturated zone of an unconfined aquifer; that surface of a body of unconfined groundwater at which the pressure is equal to that of the atmosphere.
Water users group is a group of users with existing authorization to take water, grouped to achieve beneficial management of the water resource collectively allocated to them.
Water yield means the amount of water run-off coming out of a catchment over a specific period of time.
Weir means a dam erected across a river to raise the level of the water.
Well (see definition for bore above).
Wetland boundary means the point in the transition from wetland to dryland where wetland plant species occur more than four times their ungrazed height apart. Wetland edge has a similar meaning.
Wetland creation is similar to wetland restoration, except that the site need not have been a natural wetland and may require a greater degree of engineering.
Wetland enhancement means to improve the natural qualities and/or extent of an existing wetland by such means as limiting access by domestic and feral animals, controlling pests, and providing for a more nearly original quality and quantity of water.
Wetland <i>includes permanently or intermittently wet areas, shallow water, and land water margins that support a natural ecosystem of plants and animals that are adapted to wet conditions.</i>
Wetland restoration has a similar meaning to wetland enhancement, but the starting point is a former rather than an existing functioning wetland and could include restoring the water regime and/or reintroducing appropriate plants and wildlife.
Whitebait stand means a temporary or permanent structure placed in the bed of a lake or river to aid the use of a whitebait net or to direct whitebait.

¹¹ Note the definition of drain.