CHAPTER 9 - ECOSYSTEMS AND INDIGENOUS BIODIVERSITY

INTRODUCTION

This chapter addresses issues relating to exotic and indigenous ecosystems and indigenous biodiversity, including the impact of plant and animal pests. As well as wider issues relating to ecosystems and indigenous biodiversity generally, this chapter particularly addresses wetlands as important ecosystems. Whilst this chapter provides an overview of issues associated with land, water and the coastal marine area, the focus is on the requirements of Section 6(c) of the RMA in relation to the management of land use and its effects on ecosystems and indigenous biodiversity. Other chapters in this policy statement also address ecosystem matters specific to those chapters, including the protection of the natural character of the coastal environment (Chapter 8) and of rivers and lakes and their margins (Chapters 7 and 10), and the protection of the wider landscapes and natural features Chapter 12).

Ecosystem means a system of interacting terrestrial or aquatic living organisms within their natural and physical environment. In Section 2 of the Resource Management Act, ecosystems and their constituent parts are part of the environment and include people and communities.

However, in Chapter 9 **the focus for** "ecosystems" ~~are limited to natural ecosystems that do not include people and communities~~ **is their natural components and their contribution to the maintenance of indigenous biodiversity**." **(sub 48.139 Federate Farmers of NZ)**

Indigenous biodiversity includes all plants and animals that occur naturally in New Zealand and have evolved or arrived without any assistance from humans. Indigenous species include migratory species visiting New Zealand on a regular or irregular basis.

Ngāi Tahu as tangata whenua have a significant interest in the protection, management and restoration of indigenous ecosystems and biodiversity. This stems from their close interaction with Canterbury's indigenous biodiversity over centuries of occupation and the importance of it in Māori culture, including its significance as mahinga kai and taonga species. **Chapter 2 outlines in more detail the relationship of Ngai Tahu with the indigenous biodiversity of Canterbury. (sub 98.62 TRoNT)**

Despite the biodiversity and ecosystem losses that have occurred over time, there remains a range of indigenous habitats, ecosystems, and species that contribute to Canterbury's distinctive natural character. This highlights the importance of long-term initiatives to maintain and enhance the ecosystems and indigenous biodiversity of the region. **Some of** ~~T~~the most significant and ~~iconic~~**distinctive** ~~aspects of~~ ecosystems ~~and indigenous biodiversity~~ in Canterbury include the major braided river systems**, the network of culturally and ecologically significant river mouths, estuaries and lagoons, including (sub 12.47 CCC)** Lake Ellesmere/Te Waihora, the largely unmodified alpine environments, **extensive high country and intermontane basins, naturally rare limestone outcrops, coastal dune systems (sub 12.47 CCC)** and many ~~other~~ **(sub 12.47 CCC)** lakes and wetlands that provide nationally and internationally significant bird habitat. **The range of habitats associated with these ecosystems include alpine herbfields and scree communities, the sub-alpine and montane tall tussock grasslands, red, silver and mountain beech**

forests, induced short tussock grasslands of the intermontane basins, mixed podocarp/broadleaf forests of the foothills and Banks Peninsula, specialised plant communities adapted to the limestone outcrops, the highly depleted shrublands and savannah grasslands of the plains, and coastal dune vegetation including examples of the nationally rare native pingao. **(sub 12.47 CCC)** The **Canterbury** alpine environment ~~has~~ contains **many** unique **species and** vegetation **communities**, **(sub 12.47 CCC)** extensive screes, bare rock, permanent icefields and glaciers. The iconic high country landscapes ~~include~~ **are characterised by** extensive examples of **tall and short (sub 12.47 CCC)** tussock grasslands, native shrublands and beech forest communities. **The most significant losses in indigenous habitat and biodiversity have occurred in lowland and coastal environments where up to 90% of the original indigenous vegetation has been lost.** Indigenous vegetation and habitats **remaining** in ~~dryland~~ **these** areas**, including** ~~include the~~ **dryland kanuka and kowhai savannah vegetation, native** grasses, **and freshwater and coastal wetlands, are fragmented and under continued threat from land use intensification, edge effects and pest invasion.** ~~herbs and shrubs that still dominate large parts of Canterbury despite their extensive pastoral use.~~ **(sub 12.47 CCC)** Canterbury's coastal environment has distinctive and nationally important features including the natural beach dune vegetation of Kaitorete Spit and coastal river mouth wetlands.

Canterbury**'s ecosystems are** ~~is~~ **(sub 12.47 CCC)** home to **a number of (sub 12.47 CCC)** unique and rare fauna. The Canterbury mudfish/kowaro is endemic to the region. Acutely threatened birds such as wrybill/ngutu-pare, black-fronted tern/tara and black stilt/kakī have important habitat areas within the region. ~~It is also home to at~~ At least **(sub 12.47 CCC)** seven threatened lizard species **are found within the region. (sub 12.47 CCC)** The coastal environment is home to populations of **the rare (sub 12.47 CCC)** Hector's and other dolphins, penguins and other marine birds and seals. Resident and migrating whales are also present in regional waters. The region's indigenous species include a number of fish, birds, plants and marine mammals **specifically (sub 98.62 TRoNT)** recognised by the Crown in the Ngāi Tahu Claims Settlement Act 1998 (NTCSA) as taonga species."

The Biodiversity Strategy for the Canterbury Region was adopted, in 2008, by the regional council, together with most **territorial authorities (clause 16.2)** ~~district~~, Ngāi Tahu and a number of other government and private agencies. It is the basis for a more coordinated and cooperative approach to the protection of indigenous biodiversity and aims to provide guidance and a common focus for biodiversity management initiatives across the region. It has identified actions and targets that will be reviewed regularly. The strategy is a non-statutory document, intended to sit alongside, but not replace, Resource Management Act 1991 (RMA) provisions relating to biodiversity that can take a more regulatory approach. The strategy recognises that a combination of measures, both regulatory and voluntary, are required if biodiversity outcomes are to be achieved.

There is also a National Biodiversity Strategy, and a number of territorial authorities in Canterbury have adopted biodiversity strategies for their own districts. The district strategies can be more specific in terms of individual projects and protected areas in these districts.

Statement of local authority responsibilities

Section 62 of the RMA requires a regional policy statement to state the local authority responsible, in the whole or any part of the region, for specifying the objectives, policies, and methods for the control of the use of land to maintain indigenous biological diversity.

Joint responsibilities:

(1) The Canterbury Regional Council and territorial authorities will have shared responsibility for specifying the objectives, policies and methods for the control of the use of land in the beds of rivers and lakes and in wetlands for maintenance of indigenous biological diversity only where:

(a) a territorial authority has identified in a district plan an area of significant indigenous vegetation or a significant habitat of indigenous fauna, that includes a bed of a river or lake or a wetland; or

(b) there are indigenous vegetation clearance provisions in a district plan that apply to areas of the district that include a bed of a river or lake, or a wetland.

The Canterbury Regional Council:

(2) except as provided for in (1) above, will be solely responsible for specifying the objectives, policies and methods for the control of the use of land for the maintenance of indigenous biological diversity in the coastal marine area, in beds of rivers and lakes, and in wetlands.

Territorial authorities:

(3) will be solely responsible for specifying the objectives, policies and methods for the control of the use of land for the maintenance of indigenous biological diversity on all land outside of wetlands, the coastal marine area, and beds of rivers and lakes.

9.1 ISSUES

Issue 9.1.1 – The ongoing loss and degradation of ecosystems and indigenous biodiversity

~~Subdivision,~~ Land (sub 42.87 Meridian Energy, sub 77.25 Fish and Game New Zealand) use and development, and the introduction and spread of animal and plant pests, have contributed to the ongoing loss and degradation of Canterbury's ecosystems and indigenous biodiversity.

Explanation

Ongoing habitat loss and modification as a result of land-use and development, and the impact of animal and plant pests, remain the principal threats to ecosystems and indigenous biodiversity in Canterbury today. It is widely accepted that, since the arrival of humans in New Zealand, there has been a significant decline in indigenous biodiversity and this loss is continuing. In some areas, such as in the farmed areas of the Canterbury Plains, loss of the original indigenous vegetation is virtually complete. In lowland and coastal areas, remaining indigenous vegetation is in small, scattered fragments and waterways have been significantly

modified. Much of the region's freshwater and coastal wetlands have been drained and filled. The region's previously extensive wetlands have been greatly reduced in size, particularly in coastal and lowland areas, and increasingly, in drylands and inland basins. It is widely accepted that less than ten percent of Canterbury's original wetlands remain today.

In recent years, there has been a considerable increase in the level of understanding and recognition of the importance of indigenous biodiversity**, and the impacts of its loss and degradation on the values held by people and communities, including effects on Ngai Tahu culture, identity and wellbeing. (sub 98.65 TRoNT)** This has resulted in an increase in biodiversity-related initiatives at all levels, from individual landowners protecting streams, wetlands and areas of indigenous vegetation, to community groups supporting action in their area, to central and local government increasing resources and programmes related to biodiversity. However, Canterbury's ecosystems and indigenous biodiversity have continued to decline, mostly due to intensification of land-use and the ongoing effects of introduced species, including domestic stock. The majority of the most threatened ecosystems are situated in lowland environments and predominantly in private ownership. Achieving protection of these areas therefore relies heavily on the support of private landowners and will remain the most critical challenge for future biodiversity management.

Issue 9.1.2 - Challenges to the protection of significant indigenous vegetation and habitats

While knowledge and recording of areas of indigenous vegetation and habitats of indigenous fauna in Canterbury is improving and increasing, there remains uncertainty around the identification of ecosystem values and their significance, particularly where there are access issues. This can make the identification and protection of these areas from the adverse effects of ~~subdivision~~ land (sub 42.87 Meridian Energy) use and development, challenging.

Explanation

As well as the overall decline in our indigenous biodiversity, many remaining areas of significant indigenous vegetation and significant habitats of indigenous fauna are potentially threatened and are likely to be lost without ongoing maintenance and protection. Protection of such areas is a matter of national importance under Section 6(c) of the RMA, so the development of clear guidance **for the determination of significance will be essential** for their identification and protection ~~will be essential~~ **(sub 46.90 Environmental Defence Society Incorporated). Some of these areas may also have significant cultural heritage values for Ngāi Tahu and warrant protection under section 6(e) (sub 98.66 TRoNT)**

Lowland, coastal and montane environments have seen the greatest loss of indigenous vegetation and habitat and continue to face the greatest threats from the intensification of land use. As a consequence, remaining indigenous biodiversity in these locations has a correspondingly higher significance and is in greatest need of protection, and where possible, restoration. The majority of these lowland areas are found on freehold land, so the ability to access these areas for identification and assessment of their values and threats will be dependent on the cooperation and support of the landowner. Seeking this support continues to be one of the key challenges for achieving the objectives below.

9.2 OBJECTIVES

Objective 9.2.1 – Halting the decline of Canterbury's ecosystems and indigenous biodiversity

The decline in the quality and quantity of Canterbury's ecosystems and indigenous biodiversity is halted and their life-supporting capacity and mauri safeguarded.

The following policies implement this objective:

Policy 9.3.1, Policy 9.3.2, Policy 9.3.3, Policy 9.3.5, and Policy 9.3.6.

Principal reasons and explanation

Issue 9.1.1 identified that, despite an increase in biodiversity related initiatives, Canterbury's ecosystems and indigenous biodiversity continue to decline. Objective 9.2.1 sets a goal of halting this **decline which recognises the need for active management to occur (sub 32.14 Mainpower New Zealand, sub 42.91 Meridian Energy)**. This will depend on safeguarding the life-supporting capacity of these ecosystems. Many of Canterbury's indigenous plants and animals, and the landscapes and ecosystems that support them, are recognised nationally and, in some cases, internationally, so it is vital that their continuing decline be halted. Halting the decline is also important because Canterbury's ecosystems and indigenous biodiversity help define the region and also form a fundamental part of the cultural identity and heritage of the Canterbury community, including Ngāi Tahu as tangata whenua.

~~Ecosystems and indigenous biodiversity provide a range of benefits and ecosystem services that contribute to the social, cultural, environmental and economic well-being of Canterbury's people and communities. For example, halting the decline will enable the pursuit of a range of recreational, research and educational opportunities. Cultural benefits will also result, including being able to recognise and continue traditions, knowledge and customary uses for Ngāi Tahu as tangata whenua, including mahinga kai.~~ **(sub 32.14 Mainpower New Zealand, sub 42.91 Meridian Energy)**

~~**Ecosystem services** are the resources and processes of natural ecosystems that benefit people and communities. They include:~~

~~(1) producing raw materials (principally food and fibre),~~
~~(1) purifying water,~~
~~(2) flood mitigation,~~
~~(3) decomposing wastes,~~
~~(4) recycling nutrients,~~
~~(5) creating and maintaining soils,~~
~~(6) pollination and pest control,~~
~~(7) regulating local and global climate,~~
~~(8) tourism opportunities,~~
~~(9) marketing advantages of a clean, green environment, and~~
~~**(10)** both realised and potential commercial and medical uses.~~ **(sub 83.6 Landcare Research NZ, sub 32.14 Mainpower)**

~~There are also economic benefits from halting the decline in Canterbury's ecosystems and indigenous biodiversity, such as through tourism. Tourists to Canterbury are attracted by its indigenous biodiversity, particularly that of coastal and alpine environments, and the viability~~

~~of the tourism industry depends significantly on it.~~ **(sub 32.14 Mainpower New Zealand, sub 42.91 Meridian Energy)**

Objective 9.2.2 – Restoration or enhancement of ecosystems and indigenous biodiversity

Restoration or enhancement of ecosystem functioning and indigenous biodiversity, in appropriate locations, (sub 18.31 CIAL) particularly where it can contribute to Canterbury's distinctive natural character and identity and to the social, cultural, environmental and economic well-being of its people and communities.

The following policies implement this objective:

Policy 9.3.4, Policy 9.3.5 and Policy 9.3.6.

Principal reasons and explanation

In addition to the protection of Canterbury's ecosystems and indigenous biodiversity, their enhancement and restoration may also be desirable where this will contribute to sustaining the inherent biological diversity of these systems in the long term. The benefits of such enhancement or restoration can include reducing the edge effects from the surrounding environment, creating new habitats or ecosystems, and increasing connectivity. **Some restoration or enhancement projects may be incompatible with surrounding land uses or infrastructure if sited inappropriately, for example the expansion of bird habitat close to major airport flight paths, or the winter shading of strategic road corridors by tall, dense vegetation growth. (sub 18.29, sub 18.31 CIAL)** In some circumstances ecosystem functioning may rely on unusual factors, such as grazing regimes or isolation from surrounding habitats which may encourage pest or predator invasion. **The relationship of Maori with their culture and traditions is a matter of national importance under Section 6(e) that can be recognised and provided for through the identification of ecosystems and indigenous biodiversity of significance to Ngai Tahu, including those valued as mahinga kai or taonga species, and their protection in a manner consistent with Ngai Tahu cultural values and principles. Restoration or enhancement of indigenous vegetation or habitats can also contribute to the cultural well-being of Ngāi Tahu, including contributing to outcomes sought in relation to mahinga kai and taonga species. (sub 98.67 TRoNT)**

Many ecosystems and habitats are fragmented, and it is important to restore greater connectivity between them. Connectivity brings benefits for the functioning of ecosystems and the enhancement of indigenous biodiversity that are greater than the sum of the benefits of protecting individual areas. This is also reflected in the Ngāi Tahu concept of Ki Uta Ki Tai (from the mountains to the sea).

Ecosystems and indigenous biodiversity provide a range of benefits and ecosystem services that contribute to the social, cultural, environmental and economic well-being of Canterbury's people and communities. Restoration or enhancement of ecosystem functioning, and indigenous biodiversity will therefore contribute to sustaining the services provided by these ecosystems. For example, enabling the pursuit of a range of recreational, research and educational opportunities. Cultural benefits will also result, including being able to recognise and continue traditions, knowledge and

customary uses for Ngāi Tahu as tangata whenua, including mahinga kai. There are also economic benefits from the restoration and enhancement of Canterbury's ecosystems and indigenous biodiversity, such as through tourism, improvements to water quality and quantity, and marketing the 'clean, green environment' image. (sub 32.14 Mainpower New Zealand, sub 42.91 Meridian Energy)

Objective 9.2.3 – Protection of significant indigenous vegetation and habitats

Areas of significant indigenous vegetation and significant habitats of indigenous fauna are identified and their values and ecosystem functions protected.

The following policies implement this objective:

Policy 9.3.1, Policy 9.3.2, Policy 9.3.3, Policy 9.3.5 and Policy 9.3.6.

Principal reasons and explanation

The protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna are matters of national importance under Section 6(c) of the RMA that must be recognised and provided for. One of the major impediments to their protection is the limited information available for their identification and requirements for protection. Many areas are already protected but there are other areas of significant vegetation and habitats that remain at risk.

9.3 POLICIES

Policy 9.3.1 – Protecting significant natural areas

1) Significance, with respect to ecosystems and indigenous biodiversity, (sub 26.22 Trustpower) will be determined by assessing areas and habitats against the following matters:

a) Representativeness
b) Rarity or distinctive features
c) Diversity and pattern
~~d) Naturalness~~ (sub 26.30 Trustpower, sub 39.15, 39.18 Selwyn District Council, sub 42.96 Meridian Energy, sub 42.96, 42.208 Meridian Energy, Sub 89.1 P Gerbeaux, Sub 39.14 Selwyn District Council)
~~e)~~d) Ecological context
~~f) Cultural/spiritual~~ (Sub 71.11 Fulton Hogan, Sub 8.17, 8.18 Waitaki District Council, 23.48 Hurunui District Council, Sub 39.17 Selwyn District Council, Sub 46.94 EDS, Sub 55.91 LPC, Sub 52.11 Mackenzie District Council)

The assessment of each matter will be made using the criteria listed in Appendix 4.

2) Areas or habitats are considered to be significant if they meet one or more of the criteria in Appendix 4.

3) Areas identified as significant will be protected to ensure no net loss of indigenous biodiversity or indigenous biodiversity values as a result of land use activities ~~Areas identified as significant through (1) and (2) above will be~~

~~**protected to ensure no net loss of biodiversity or biodiversity values as a result of land use activities**~~**. (sub 33.7 NZWEA, sub 26.22 Trustpower)**

This policy implements the following objectives:

Objective 9.2.1 and Objective 9.2.3

9.3.1 Methods

The Canterbury Regional Council:

Will

(1) ~~Set out objectives, policies or methods~~ **Set out objectives and policies, and may include methods (Transpower Sub 37.1, 38.1)** in regional plans to provide for the identification and protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna in water bodies including wetlands, in the coastal marine area, and in river and lake beds.

~~Should~~ **(sub 39.19 Selwyn District Council, sub 5.23 R Little)**

(2) Provide guidelines applicable to Canterbury which will assist in the application of the matters to determine areas of significant indigenous vegetation and significant habitats of indigenous fauna that can be used by the Canterbury Regional Council, territorial authorities and others.

Territorial authorities:

Will

(3) ~~Set out objectives, policies or methods~~ **Set out objectives and policies, and may include methods (Transpower Sub 37.1, 38.1)** in district plans to provide for the **identification and (sub 26.24 Trustpower)** protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna.

~~These provisions will set appropriate district-wide indigenous vegetation clearance, rules, including standards for the assessment of the significance of areas of indigenous vegetation and significant habitats of indigenous fauna on a case-by-case basis~~. **District plan provisions will include appropriate rule(s) that manage the clearance of indigenous vegetation, so as to provide for the case-by-case assessment of whether an area of indigenous vegetation that is subject to the rule comprises a significant area of indigenous vegetation and / or a significant habitat of indigenous fauna that warrants protection.(Sub 8.19 Waitaki District Council, Sub 13.32 Waimakariri District Council, Sub 15.27 Ashburton District Council, Sub 26.24 Trustpower, Sub 39.20 Selwyn District Council)**

(4) Engage with Ngāi Tahu as tangata whenua, and use iwi management plans, to help identify areas and habitats that have particular significance to Ngāi Tahu and to protect them in a manner consistent with Ngāi Tahu cultural values and principles. (Sub 71.11 Fulton Hogan, 23.48 Hurunui District Council, Sub 39.17, 39.18 Selwyn District Council, Sub 55.91 LPC, 98.69 TRoNT, Sub 52.11 Mackenzie District Council)

Should

(5~~4~~) Continue to work with landowners to identify the location of significant indigenous vegetation and significant habitats of indigenous fauna for inclusion in district plans.

If other significance criteria are already set out in an existing district plan to achieve the same purpose, existing district plan criteria will apply until those criteria are reviewed.

Existing specified areas of significant indigenous vegetation, or significant habitats of indigenous fauna in a district plan, shall be deemed to be consistent with the significance matters set out in this policy.

(6~~5~~) Give consideration to controls or other provisions in district plans that require the fencing of areas of significant indigenous vegetation and significant habitats of indigenous fauna and the control or exclusion of animal and plant pests when subdivision occurs.

(7~~6~~) Consider the use of incentives in district plans for protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna in relation to subdivision.

Local authorities:

Should

~~(7) Engage with Ngāi Tahu as tangata whenua, and use iwi management plans, to help identify areas and habitats that have particular significance to Ngāi Tahu and to protect them in a manner consistent with Ngāi Tahu cultural values and principles.~~

(8) Protect areas of significant indigenous vegetation and significant habitats of indigenous fauna as they undertake their own activities and operations. This should apply unless the adverse effects on the areas or habitats cannot be avoided, because they are necessary for the maintenance of erosion or flood protection structures or for the prevention of damage to life or property by floods.

(9) Advocate, promote or provide targeted financial and other support or guidance for the appropriate establishment of:

(a) reserves

(b) covenants

(c) heritage orders

(d) bylaws

(e) community initiatives

(f) management agreements

(g) and physical works by private landowners and occupiers, Ngāi Tahu and environmental organisations, to protect areas of significant indigenous vegetation and significant habitats of indigenous fauna.

Principal reasons and explanation

Under Section 6(c) of the RMA, the policy statement and local authorities undertaking functions under the RMA have to recognise and provide for the protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna as matters of national importance. The relationship between Māori and their culture and traditions, and their ancestral lands, water, sites, wāhi tapu, and other taonga, also has to be recognised and provided for as a matter of national importance. **Achieving this statutory function will require local authorities to engage with Ngai Tahu to identify areas and habitats that have particular significance. Chapter 2, Issues of Resource Management Significance and Chapter 4, Provisions for Ngai Tahu and Their Relationship with Resources provide a cultural context and tools and processes for engaging with Ngai Tahu. (Sub 71.11 Fulton Hogan, Sub 8.17 Waitaki District Council, 23.48 Hurunui District Council, Sub 39.17, 39.18 Selwyn District Council, Sub 55.91 LPC, Sub 52.11 Mackenzie District Council)** The roles of regional councils and territorial authorities for the protection of areas of significant vegetation and habitat are outlined in the introduction section of this chapter.

The matters for determining significance of an area of indigenous vegetation, and a habitat of indigenous fauna, fall within the groupings of representativeness, rarity/distinctiveness, diversity and pattern, ~~naturalness,~~ **(Sub 26.30 TrustPower, Sub 42.96, 42.208 Meridian Energy, Sub 89.1 P Gerbeaux, Sub 39.14 Selwyn District Council) and** ecological context ~~and cultural~~. **(Sub 71.11 Fulton Hogan, Sub 8.17 Waitaki District Council, 23.48 Hurunui District Council, Sub 39.17, 39.18 Selwyn District Council, Sub 55.91 LPC, Sub 52.11 Mackenzie District Council)** Criteria are required for determining significant indigenous vegetation and significant habitats, particularly where there may be little information currently available and investigation is required.

The policy sets out the matters to be assessed when evaluating these areas. Vegetation or habitats may qualify as significant under one, or several of the matters listed, in determining whether the threshold of significance is met. Such assessments are likely to arise through the course of an application for resource consent, or a change to a district or regional plan. The policy gives guidance for local authorities, applicants and decision-makers.

While areas of significant indigenous vegetation and significant habitats of indigenous fauna are often identified in plans, it is difficult to ensure that all significant sites are included, because of issues with access and ecosystem information. The methods therefore seek that as a minimum, territorial authorities will include indigenous vegetation clearance rules that act as a trigger threshold for significance to be determined on a case-by-case basis.

Policy 9.3.2 – Priorities for protection

To recognise the following national priorities for protection:

(1) Indigenous vegetation in land environments where less than 20% of the original indigenous vegetation cover remains.

(2) Areas of indigenous vegetation associated with sand dunes and wetlands.

(3) Areas of indigenous vegetation located in "originally rare" terrestrial ecosystem types not covered under (1) and (2) above.

(4) Habitats of threatened and at risk indigenous species.

This policy implements the following objectives:

Objective 9.2.1 and Objective 9.2.3

9.3.2 Methods

The Canterbury Regional Council:

Will

(1) ~~Set out objectives, policies or methods~~ **Set out objectives and policies, and may include methods (Transpower Sub 37.1, 38.1)** in regional plans for the purpose of maintaining the indigenous vegetation and habitats of those areas that meet the priorities for protection. These may control the use of the coastal marine area, control the use of land in wetlands and in river and lake beds.

Should

(2) Investigate the range of effective options for the protection of areas that meet the priorities for protection, including controls, best management practices, codes of practice, covenants, incentives, subsidies and other forms of assistance to provide for the long-term ecologically sustainable management of these areas.

(3) Include provisions in a pest management strategy, prepared under the Biosecurity Act 1993, which gives priority to the control of pests located in areas and habitats that meet the priorities for protection.

Territorial authorities:

Should

(4) Recognise the national priorities for the protection of biodiversity through objectives, policies or methods in district plans.

Local authorities:

Should

(5) Maintain the indigenous vegetation of those areas or habitats, where they meet the priorities for protection, in undertaking their own operations and activities. This should apply except in those situations where vegetation removal cannot be avoided, and is necessary, for example, for the maintenance of erosion or flood protection structures or for the prevention of damage to human life, health or property by floods or fire.

(6) Work together with other local authorities, Ngāi Tahu, local communities and key stakeholder groups to identify those species/habitats/ecosystems that are most vulnerable to disturbance and need to be given legal protection to provide for their long-term survival.

Principal reasons and explanation

The policy recognises the national priorities established by the government in the National Priorities for Protecting Rare and Threatened Native Biodiversity on Private Land (2007). The government recognises that councils have the lead role in putting the statement of national priorities into practice in line with their functions under Sections 30 and 31 of the RMA. The government's expectation is that the priorities will be used to support and inform councils' responsibilities under the RMA through a co-operative framework.

The Land Environments of New Zealand (LENZ) land classification system provides a framework for identifying areas of indigenous vegetation at greatest risk. Environments with less than 30% of their original vegetation remaining and/or with less than 20% of their area protected are considered to be at risk. The 20% protection threshold has been chosen in the LENZ system because below 20% the momentum of decline of indigenous vegetation becomes much more difficult to reverse. A significant proportion of land environments in Canterbury fall below this threshold, in particular the Canterbury Plains. This increases the significance of any remaining areas of indigenous vegetation or habitat particularly on the plains.

Wetlands and dune vegetation are recognised as being of high national priority as ecosystems that have become uncommon due to human activity, and remain at a high risk of being lost due to continuing human intervention. The national priorities identify wetlands as ecosystems and habitats in most need of protection wherever they remain. The priorities are not intended to cover constructed dunes or wetlands where these did not previously exist.

"Originally rare" terrestrial ecosystems, as defined in the definitions, are a high priority as they encompass ecosystems that are of very limited extent, and are very unusual, and therefore important in terms of the proportion of rare and threatened species they support.

Policy 9.3.3 – Integrated management approach

To adopt an integrated and co-ordinated management approach to halting the decline in Canterbury's indigenous biodiversity through:

(1) working across catchments <u>and across the land / sea boundary</u> (sub 63.15 Ms Paula Smith) where connectivity is an issue for sustaining habitats and ecosystem functioning

(2) promoting collaboration between individuals and agencies with biodiversity responsibilities

(3) supporting the various statutory and non-statutory approaches adopted to improve biodiversity protection

(4) setting best practice guidelines for maintaining indigenous biodiversity values<u>, particularly maintaining conditions suitable for the survival of indigenous species within their habitats,</u> (sub 4.16 E David Le Cren) and safeguarding the life-supporting capacity and / or mauri of ecosystems

This policy implements the following objectives:

Objective 9.2.1 and Objective 9.2.3

9.3.3 Methods

The Canterbury Regional Council:

Will

(1) ~~Set out objectives, policies or methods~~ **Set out objectives and policies, and may include methods (Transpower Sub 37.1, 38.1)** in regional plans to provide for an integrated approach to biodiversity management across the Canterbury region.

(2) Promote and support collaboration between key agencies and individuals with responsibilities for the management of ecosystems and indigenous biodiversity.

Should

(3) Support the vision, goals and priorities of the Canterbury Biodiversity Strategy 2008 in protecting areas of indigenous vegetation and habitats of indigenous fauna through its own operations and activities.

Territorial authorities:

Will

(4) ~~Set out objectives, policies or methods~~ **Set out objectives and policies, and may include methods (Transpower Sub 37.1, 38.1)** in district plans to achieve the integrated management of the actual or potential effects of land use on the life-supporting capacity **and / or** mauri of ecosystems and the protection of indigenous biodiversity

Should

(5) Establish best practice guidelines **and monitoring systems (sub 98.75 TRoNT)** for land use activities that avoid**,** ~~or minimise~~ **remedy or mitigate (sub 44.37 Genesis Power)** adverse effects on the life-supporting capacity of ecosystems and contribute to the **effective (sub 98.75 TRoNT)** maintenance of indigenous biodiversity.

(6) Identify cross-boundary issues for the maintenance of indigenous biodiversity and establish protocols for inter-agency cooperation to address these issues.

Local authorities:

Will:

(7) Engage with Ngāi Tahu as tangata whenua, and use iwi management plans to help identify areas and habitats that have particular significance to Ngāi Tahu and to protect them in a manner consistent with Ngāi Tahu cultural values and principles. (sub 98.74 TRoNT)

Should

~~(7)~~**(8) (sub 98.74 TRoNT, consequential amendment)** In undertaking their own operations and activities, protect the life-supporting capacity **and / or** mauri of ecosystems. This should apply except in those situations where the adverse effects on ecosystems

cannot be avoided, and are necessary, for example, for the maintenance of erosion or flood protection structures or for the prevention of damage to human life~~, health~~ or property by floods or fire**, or for the safeguarding of public health. (sub 12.49 CCC)**

~~(8)~~**(9) (sub 98.74 TRoNT, consequential amendment)**Recognise potential effects of climate change on the life-supporting capacity **and / or** mauri of ecosystems and species distribution.

~~(9) Engage with Ngāi Tahu as tangata whenua, and use iwi management plans to help identify areas and habitats that have particular significance to Ngāi Tahu and to protect them in a manner consistent with Ngāi Tahu cultural values and principles.~~ **(sub 98.74 TRoNT)**

(10) When developing and implementing programmes to safeguard the life-supporting capacity of ecosystems, take into account the vision, goals, targets and outcomes of the Canterbury Water Management Strategy (2009)

(11) Through their Water Zone Committees take a strategic approach to the setting of priorities and targets for biodiversity improvement in the development of their Regional and Zone Implementation Programmes (RIPs and ZIPs).

Principal reasons and explanation

Halting the current decline in biodiversity will only be achieved by adopting an integrated and coordinated management approach. Such an approach will recognise that Canterbury's ecosystems and indigenous biodiversity must be managed within and across catchments so that the interconnectivity of species and habitats is provided for. The Ngāi Tahu philosophy of Ki Uta Ki Tai (from the mountains to the sea) will be an integral feature of this process.

Increased extreme weather (rainfall, drought) events, temperature changes and sea level rises as a result of global climate change will place greater natural stresses on Canterbury's ecosystems and indigenous biodiversity. Potential effects on biodiversity are expected to include gradual changes in the nature of existing habitats, changes in species distribution, and increased threats from pests and disease. Simply protecting habitats may not be sufficient if these habitats are going to change. As part of a more co-ordinated approach to biodiversity management, local authorities and others need to anticipate such possible changes to habitats and provide long-term protection to those areas where species are likely to relocate in response to these changes.

An integrated and coordinated management approach will also recognise that there is a need for cooperation between the many statutory and non-statutory agencies and organisations within the Canterbury region that have biodiversity related responsibilities and objectives. This will be complemented by the adoption of a collaborative relationship between the many communities, individuals and landowners across the region who have biodiversity related interests.

Various agencies are involved in maintaining, enhancing or restoring indigenous ecosystems and indigenous biodiversity or in funding such activities. They include Te Rūnanga o Ngāi Tahu and papatipu rūnanga, government and statutory agencies at national, regional and local levels and a wide range of voluntary organisations, professional groups, and biodiversity resource users. These include environmental and community trusts, environmental organisations, industry groups, private companies, landowners and occupiers, and individual citizens.

Ngāi Tahu as tangata whenua have a strong interest in the management of activities which affect ecosystems. This is both as traditional users of many indigenous species, including mahinga kai species, and as significant landowners and commercial fishers. It is important that in safeguarding the mauri (the spiritual life force) and life-supporting capacity of ecosystems, we identify the potential for activities to have adverse effects on ancestral lands, water, and sites, and on the relationship Ngāi Tahu as tangata whenua have with those lands, waters and sites.

To Ngāi Tahu as tangata whenua, indigenous vegetation and biodiversity provide a vast range of natural resources, important for mahinga kai and a wide range of natural remedies or rongoā. Mahinga kai refers to Ngāi Tahu interests in traditional food and other natural resources and the places where those resources are obtained. Rongoā is the Māori term for medicines that are produced from indigenous plants in New Zealand. The use of these medicines prevented and provided remedies for many sicknesses. Rongoā is still being practised and is used extensively by Māori today.

Canterbury Regional Council projects that support a collaborative approach to the protection of ecosystems and biodiversity include those under its “Living Streams”, “Improving Urban Waterways” and “Integrated Catchment Management” programmes, and work undertaken in establishing, maintaining and improving its regional parks.

Finally, the need for a strategic approach will be vital. Given the decline that has already occurred, the first priority must be protecting and sustaining those habitats and ecosystems that are the most threatened and significant. The second priority will be protecting a representative range of indigenous habitats and ecosystems characteristic of the Canterbury region, and encouraging the restoration of those habitats that have been lost or severely degraded. **While the protection of these habitats is the first step, the management of the habitat will also be crucial to the long-term survival of the component species. The development of best practice guidelines for maintaining indigenous biodiversity values, particularly for species that are threatened or at risk, within these habitats will enable landowners to make informed decisions on the future management of these areas. (sub 4.16 E David Le Cren)**

The Canterbury Water Management Strategy (2009) includes as a measure of its success, that “ecosystems, habitats and landscapes will be protected and progressively restored and indigenous biodiversity will show significant improvement” within 10 years. It sets a number of targets to maintain and improve the health of ecosystems associated with water bodies with local authorities taking a key role in its implementation through the development of regional and district plans. Putting these targets into a strategic framework through the development of Regional and Zone Implementation Plans (RIPs and ZIPs) will ensure that they complement the overall approach set for the region.

Policy 9.3.4 – Promote ecological enhancement and restoration

To promote the enhancement and restoration of Canterbury’s ecosystems and indigenous biodiversity, in appropriate locations, (sub 18.35 CIAL) where this will improve the functioning and long term sustainability of these ecosystems.

This policy implements the following objective:

Objective 9.2.2.

9.3.4 Methods

The Canterbury Regional Council:

Should

(1) Support the vision, goals and priorities of the Canterbury Biodiversity Strategy 2008 for the enhancement, restoration and protection of areas of indigenous vegetation and habitats of indigenous fauna when undertaking its own operations and activities.

Territorial authorities:

Should

(2) Consider the use in district plans of indigenous biodiversity enhancement or restoration incentives in relation to subdivision.

(3) Ensure that enhancement or restoration activities are managed so that they are compatible with adjacent existing and consented land use activities, including airports. (sub 18.29 CIAL)

Local authorities:

Should

(4) Advocate, promote or provide targeted financial and other support or guidance to improve or restore ecosystems and indigenous biodiversity, including the establishment of:

(a) reserves

(b) covenants

(c) heritage orders

(d) bylaws

(e) community initiatives

(f) management agreements

(g) and associated physical works by private land-owners and occupiers, Te Rūnanga o Ngāi Tahu and environmental organisations, to protect areas of significant indigenous vegetation and significant habitats of indigenous fauna

(h) best practice guidance and monitoring systems to improve the quality and effectiveness of restoration and enhancement outcomes (sub 12.50 CCC, sub 98.78 TRoNT)

(5) Support restoration programmes which implement the outcomes from the Canterbury Water Management Strategy (2009) and its implementation programmes.

(6) Engage with Ngāi Tahu as tangata whenua, and use iwi management plans to help identify areas and habitats that have particular significance to Ngāi Tahu and to protect, restore and enhance them in a manner consistent with Ngāi Tahu cultural values and principles

(7) Through Water Zone Committees and Regional and Zonal Implementation Programmes (RIPs and ZIPs) identify priority areas for environmental restoration and enhancement.

Principal reasons and explanation

Restoration and enhancement of indigenous biodiversity are major features of the national and regional biodiversity strategies. These strategies recognise that without proactive management, Canterbury's ecosystem and indigenous biodiversity values may continue to decline.

Remnant and re-established indigenous forest is most commonly found in gullies and alongside streams. Such strips are important refuges for indigenous biodiversity, but many are too small or isolated to sustain viable populations of rare or threatened species for very long. However, the forest remnants can provide temporary footholds, and can form the basis of permanent habitat if they are expanded and/or connected.

Fragmentation of natural areas through ongoing land-use change has produced many isolated remnants that are important for biodiversity but vulnerable to continuing degradation, including invasion by plant and animal pests and the loss of indigenous species. There is a need for action to restore fragmented, degraded or scarce natural habitat, to restore essential ecosystem functions, ecosystems and indigenous biodiversity in particular, and to extend the area of particular habitat types. Restoration is needed to provide connections between currently isolated fragments of natural ecosystems. This may be essential to maintain these ecosystems as a whole.

Restoration and enhancement of areas of indigenous vegetation and habitats can lead to both beneficial and adverse outcomes depending on the siting of the restored areas in relation to existing developments and infrastructure. Development of water retention ponds in new subdivisions can provide important habitat for wetland and game bird species. Some developments, however, may be incompatible with the encouragement of biodiversity expansion, for example the risk of bird strike resulting from the enhancement of bird habitat in the vicinity of the flight path areas for aircraft taking off or approaching major airports. Awareness of the likely consequences of habitat enhancement and restoration can provide a useful basis for designing "appropriately located" restoration programmes that will minimise conflicts between land uses. (sub 18.35 CIAL)

Policy 9.3.5 – Wetland protection and enhancement

In relation to wetlands:

(1) To assess an ecologically significant wetland against the matters set out in Policy 9.3.1 and the national priorities listed in Policy 9.3.2. For the purposes of this policy, ecologically significant wetlands do not include areas that are both predominately pasture and dominated by exotic plant species and where they are not significant habitats of indigenous fauna.

(2) To ensure that the natural, physical, cultural, amenity, recreational and historic heritage values of Canterbury's ecologically significant wetlands are protected.

(3) To generally promote the protection, enhancement and restoration of all of Canterbury's remaining wetlands.

(4) To encourage the formation of created wetlands that contribute to the restoration of indigenous biodiversity.

(5) To protect adjoining areas of indigenous and other vegetation which extend outside an ecologically significant wetland and are necessary for the ecological functioning of the wetland.

This policy implements the following objectives:

Objective 9.2.1, Objective 9.2.2 and Objective 9.2.3.

9.3.5 Methods

The Canterbury Regional Council:

Will

(1) ~~Set out objectives, policies or methods~~ **Set out objectives and policies, and may include methods (Transpower Sub 37.1, 38.1)** in regional plans to ensure that Canterbury's ecologically significant wetlands and their values are protected, to provide for the protection, enhancement and restoration of these and other wetlands. The provisions will provide for, where appropriate, the formation of new artificial or created wetlands where they provide biodiversity restoration benefits.

Should

(2) Continue to work with land owners, and coordinate with the investigations of other agencies, to identify and establish and maintain an inventory of ecologically significant wetlands in the region.

Territorial authorities:

Will

(3) ~~Set out objectives, policies or methods~~ **Set out objectives and policies, and may include methods (Transpower Sub 37.1, 38.1)** in district plans to control the effects of the subdivision, use, development, or protection of land to ensure that ecologically significant wetlands are protected.

Should

(4) ~~Set out objectives, policies or methods in district plans~~ **Set out objectives and policies, and may include methods (Transpower Sub 37.1, 38.1)** to provide for, where appropriate, the formation of created wetlands where they will provide biodiversity restoration benefits.

May

(5) Consider including standards in a district plan that remove the requirement for a resource consent from the territorial authority for the use of a wetland, if a resource consent is granted by the Canterbury Regional Council for the same purpose.

Local authorities:

Should

(6) In undertaking their own operations and activities, protect remaining ecologically significant wetlands. This should apply unless adverse effects on wetlands cannot be avoided because they are necessary for the maintenance of erosion or flood protection structures or for the prevention of damage to life or property by floods.

(7) Advocate, promote or provide targeted financial and other support or guidance for the appropriate establishment of:
   (a) reserves,
   (b) covenants,
   (c) heritage orders,
   (d) community initiatives,
   (e) management agreements, and associated physical works by private land-owners and occupiers, Ngāi Tahu and environmental organisations,
   (f) <u>best practice guidance for the design and implementation of programmes for wetland protection and enhancement</u> that will maintain, enhance and restore wetlands and create new wetlands**<u>, without impacting on the effective operation of critical services and infrastructure</u>. (sub 18.36 CIAL)**

(8) Use iwi management plans and engage with Ngāi Tahu as tangata whenua to identify the significant cultural values for wetlands/repo raupo and to protect, restore and enhance them in a manner consistent with those cultural values and their principles.

(9) When developing and implementing programmes for wetland protection or enhancement, take into account the vision, goals, targets and outcomes of the Canterbury Water Management Strategy (2009) and its implementation programmes.

Principal reasons and explanation

The term “wetland” encompasses both freshwater wetlands associated with rivers, lakes and land-bordered tarns and swamps; and brackish (saline) estuarine wetlands including coastal lagoons, marshes and estuaries. As a result of human activities, the total area of wetland within Canterbury has been greatly reduced from its former extent.

The future of ecologically significant wetlands as natural features and habitats can be made more secure. This can be achieved by protecting them from threats to their natural character, their existence or their ecological functioning that result from incompatible uses of land and water. It is also necessary to protect them from abstraction of water, diversion of inflows, or deliberate actions to degrade them.

The Canterbury Water Management Strategy (2009) has set an immediate goal for no further loss of wetlands, together with long term targets for improvements in the ecological functioning and habitat diversity of wetlands and an increase in the total area of wetlands through restoration and construction.

To protect wetlands and their ecological functioning, it is often necessary to protect adjoining areas of indigenous and other vegetation which extend outside the wetland. These provide buffering and contribute to the biological diversity, habitat values and integrity of wetland areas, as well as contributing to their natural character. Adverse effects may arise from earthworks, the presence of stock or domestic animals on adjacent land or within the wetland, burning, plant and animal pests, the excessive application or release of

contaminants or nutrients in a wetland or its catchment, the planting or removal of plants, and any drainage or irrigation of the adjacent land that could affect the water table within the wetland. In addition, it is also possible that in-stream water storage and the resulting modification of the flow regime may result in the dewatering of hydraulically connected riparian wetlands.

It may sometimes be appropriate to use created wetlands for the treatment of industrial discharges, including stormwater. Created wetlands are a useful means of buffering and treating waste and water runoff to protect adjacent natural waterways and wetlands. They can also provide natural habitats for indigenous species.

The risk of bird strike resulting from the enhancement or creation of wetlands in the vicinity of Christchurch International Airport is an example of the need for careful design and location of wetland enhancement projects. The location of wetland areas in relation to the airport approach flight paths and the habitat components of the wetland will influence the level of risk posed by such a project. The development of best practice guidelines for wetlands design will contribute to a better understanding of the outcomes of the enhancement of wetlands and the likely long-term beneficial and adverse effects on the surrounding environment. (sub 18.36 CIAL)

The long-term security of some species, such as the Canterbury mudfish/kowaro, can only be improved by increasing available areas of quality habitat, and to assist with this, the policy encourages restoration and enhancement where feasible. A greater range and area of wetland would also be an asset to the people of Canterbury, by enhancing cultural and recreational opportunities and amenity values. Regulation, as a method to implement the policy, may not be appropriate in all instances. Various forms of encouragement, education or incentives might be more effective.

The ecological value of wetlands/repo raupo (and specific indigenous plant species) is a matter of great importance to Ngāi Tahu as tangata whenua. Making use of the natural functions and cleansing abilities of wetland ecosystems is a recurring theme in iwi management plans. Some wetlands are culturally significant as mahinga kai or wāhi tapu sites.

Policy 9.3.6 – Limitations on the use of biodiversity offsets

~~To ensure that~~ The following criteria will apply to the use of biodiversity offsets ~~are only treated as appropriately mitigating adverse effects on indigenous biodiversity, the following criteria will apply~~ (Sub 13.33 Waimakariri District Council, Sub 16.15 Solid Energy NZ):

(1) the offset will only compensate for residual adverse effects that cannot otherwise be avoided, remedied or mitigated;

(2) the residual adverse (Clause 16(2)) effects on biodiversity are capable of being offset and will be fully compensated by the offset to ensure no net loss of biodiversity; (sub 13.33 Waimakariri District Council, sub 16.15 Solid Energy New Zealand)

(3) where the area to be offset is ~~not~~ identified as a national priority for protection under Policy 9.3.2, the offset must deliver a net gain for biodiversity; (sub 13.33 Waimakariri District Council, sub 16.15 Solid Energy New Zealand, sub 48.150 Federated Farmers of New Zealand)

(4) there is a strong likelihood that the offsets will be achieved in perpetuity; and

(5) where the offset involves the ongoing protection of a separate site, it will deliver no net loss, and preferably a net ~~benefit~~ gain for indigenous biodiversity conservation (sub 13.33 Waimakariri District Council, sub 66.44 Dairy NZ Lincoln)

Offsets should re-establish or protect the same type of ecosystem or habitat that is adversely affected, unless an alternative ecosystem or habitat will provide~~s~~ a ~~significantly better~~net gain for indigenous biodiversity ~~outcome~~. (sub 13.33 Waimakariri District Council, sub 15.28 Ashburton District Council)

This policy implements the following objectives:

Objective 9.2.1, Objective 9.2.2 and Objective 9.2.3.

9.3.6 Methods

The Canterbury Regional Council:

Should

(1) ~~Set out objectives, policies or methods~~ **Set out objectives and policies, and may include methods (Transpower Sub 37.1, 38.1)**in regional plans to ensure that biodiversity offsets are ~~only~~ **included as (sub 42.107 Meridian)** appropriate forms of mitigation in those circumstances set out in the policy.

Territorial authorities:

Should

(2) ~~Set out objectives, policies or methods~~ **Set out objectives and policies, and may include methods (Transpower Sub 37.1, 38.1)** in district plans to ensure that biodiversity offsets are ~~only~~ **included as (sub 42.107 Meridian)**appropriate mitigation in those circumstances set out in the policy.

Principal reasons and explanation

Biodiversity offsets are the final step in a hierarchical process in which adverse effects on indigenous biodiversity are best avoided, then remedied, and finally mitigated. Only in the latter case should off-site biodiversity offsets be considered to deal with residual unavoidable adverse effects.

The most desirable form of offsetting will be achieved in situ or adjacent to the area affected. Only this way will it be likely to minimise the impacts on ecosystem functioning and the complexity of the component biodiversity with respect to species composition, habitat structure and the context of the area within the wider landscape. Offsetting at a different location is unlikely to be able to replicate all such aspects of the original area. (sub 98.83 TRoNT)

There will be cases where the indigenous biodiversity at risk is so significant that it should not be significantly modified or destroyed under any circumstances (other than when necessary for avoiding risks to human health and safety). There are also situations where residual effects cannot be fully compensated because the biodiversity is highly vulnerable or irreplaceable, for example where the vegetation or habitat is so rare or reduced that there are few or no opportunities to deliver an offset. In such cases offsetting cannot be considered as a means of environmental compensation for adverse effects.

~~It is imperative that offsets are appropriate compensation~~. **The goal of a biodiversity offset is to achieve "no net loss" which means that the compensation provided by an offset should represent like for like in terms of the species or habitats that are adversely affected.** ~~An area of new forest or bush planting may not be a suitable offset for the loss of a wetland, for example~~. **In some circumstances the restoration of a degraded area or the creation of a new area that replicates the original habitat lost may provide appropriate compensation. (sub 13.35 Waimakariri District Council)** There is a preference for the re-establishment or protection of the same type of ecosystem or habitat to avoid the difficulty of assessing relative values of different ecosystems or habitats of different species. Trade-offs involving different species will not always adequately compensate for the loss of the originally threatened species. However, the policy does recognise that where significant indigenous biodiversity benefits can be achieved, **and where those significant benefits are considered to outweigh the adverse effects on the ecosystem or habitat, (sub 15.28 Ashburton District Council)** the protection of other habitats may be appropriate.

There also needs to be certainty that the proposed offsets will occur. Some offset measures such as indigenous planting will take a long time to establish and become useful in a biodiversity role. **The overall goal is that** ~~T~~**t**here should be **no net loss, and preferably** an overall **gain** ~~improvement~~ in ~~indigenous biodiversity~~**the state of indigenous biodiversity** as a result of the project and its biodiversity offsets. **(sub 13.35 Waimakariri District Council)**

Biodiversity offset means a measurable conservation outcome resulting from actions which are designed to compensate for significant residual adverse effects on biodiversity arising from human activities after all appropriate prevention and mitigation measures have been taken. The goal of a biodiversity offset is to achieve no net loss and preferably a net gain of biodiversity on the ground with respect to species composition, habitat structure and ecosystem function. They typically take the form of binding conditions associated with resource consents and can involve bonds, covenants financial contributions and biodiversity banking.

9.4 ANTICIPATED ENVIRONMENTAL RESULTS

(1) There are more areas of significant indigenous vegetation and significant habitats of indigenous fauna that are identified and protected.

(2) The overall functioning and intrinsic values of Canterbury's existing ecosystems and indigenous biodiversity are protected from the **adverse** effects of ~~subdivision,~~ **(sub 42.110 Meridian Energy)** land use and development activities.

(3) There is an overall improvement in the long-term sustainability of those ecosystems that are a priority for protection.

(4) There is an increase in the number and effectiveness of biodiversity-related initiatives in Canterbury that contribute to the protection and enhancement of indigenous biodiversity and to safeguarding the life-supporting capacity **and / or** mauri of ecosystems generally.

(5) There is no further loss of the area, diversity or functioning of ecologically significant wetlands in Canterbury.

(6) The relationship of Ngāi Tahu with their sites and habitats of cultural significance is enhanced.