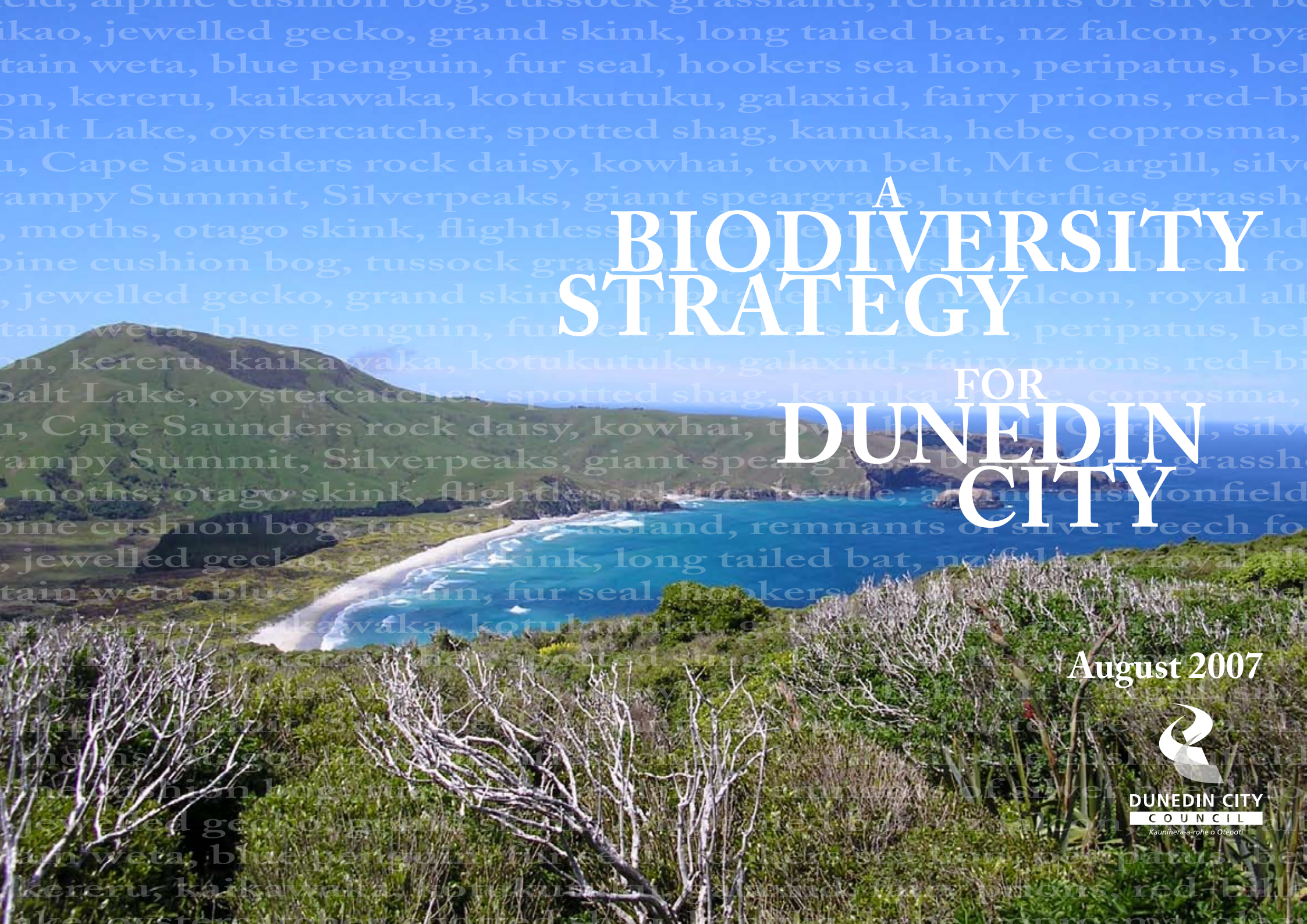

A BIODIVERSITY STRATEGY FOR DUNEDIN CITY

August 2007

DUNEDIN CITY COUNCIL

Kaunihera-a-rohe o Otepoti

Vision for Biodiversity in Dunedin

Dunedin is a city where:

The community works together to understand, enhance and celebrate the value of biodiversity in Dunedin for the benefit of current and future generations.

Dunedin is a city that:

Maintains a network of viable habitats and ecosystems extending from the alpine zone of the inland Rock and Pillar Ranges to the harbour, coast and islands.

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All photography courtesy of the Department of Conservation and the Dunedin City Council

FOREWORD

One of the great benefits of living in Dunedin is the ability to enjoy and access a natural environment with a diversity of plants, animals and habitats. This is an environment that is well known internationally for its landscape and wildlife. As the city continues to grow and develop we must ensure that this biodiversity is maintained and managed.

The Biodiversity Strategy formally recognises the importance of biodiversity to the city, its residents and visitors. The vision, goals and actions of the strategy will ensure that biodiversity is maintained, enhanced and its value continues to be appreciated.

In implementing the adopted strategy, the Council looks forward to working together with landowners, the community, organisations and those with an interest in conservation, to achieve the vision and restore the city, once again, as the wildlife capital of New Zealand.

Peter Chin

MAYOR

PART A: THE STRATEGY

Introduction

Why Dunedin needs a biodiversity strategy

With its distinctive and accessible natural landscapes, and diverse wildlife, the natural environment makes an important contribution towards the identity, character and quality of life in Dunedin city. As residents of Dunedin, we are fortunate to live within such a diverse natural environment. This close association is reflected in the promotion of Dunedin as the wildlife centre of New Zealand and the important role of the eco-tourism sector in our city's economy, focused upon the internationally recognised wildlife of the Otago Peninsula and increasingly in the Strath Taieri with the Otago Rail Trail.

Biodiversity is an integral part of our natural environment, providing a number of 'essential services' to ensure that life on earth continues. Biodiversity provides the air we breathe, the water we drink and the soils that provide food, fibre and timber.

As a large geographic area Dunedin City has a range of indigenous biodiversity that is of great scientific, cultural and economic value and interest to the city. There are several plant and animal species found in Dunedin that are not found anywhere else within the world. It is likely that there will be more that have yet to be discovered.

On-going management of Dunedin's biodiversity faces a number of challenges such as the spread of invasive pest plants and animals, urban and rural development and changing land use practices. The impact of climate change also presents unknown threats and challenges, which must be recognised and monitored.

Sustainable management of natural resources requires that we understand how biodiversity can be protected, maintained and, where possible, enhanced for future generations. This requires access to good information and an understanding of biodiversity, and co-ordination of opportunities to work together as a community to effectively maintain and enhance biodiversity in Dunedin.

Purpose of Strategy

This strategy sets out the vision and goals for sustainable management of Dunedin's biodiversity. It also provides the framework to guide the Council's future work programmes and initiatives for biodiversity, which will involve working with landowners, conservation groups and government organisations involved in biodiversity management.

The strategy recognises that collectively the city and its residents have a shared responsibility to ensure that the benefits biodiversity provide to the city and the community are maintained and enhanced for future generations. This requires action extending beyond the limitations of statutory controls, such as the District Plan. Community involvement and buy-in is the key to effective biodiversity management.

The strategy is structured in two parts:

- Part A establishes the challenges and role of Council, and the vision, goals and actions to meet these challenges.
- Part B provides a brief introduction to what is special about Dunedin's biodiversity and a summary of local resources for conservation action.

While the focus of this strategy is upon indigenous biodiversity, it is recognised that exotic biodiversity has become an accepted part of Dunedin's total biodiversity, that can have positive and negative effects upon indigenous species.

The strategy is intended to be an evolving document that will be regularly reviewed and monitored.

What is Biodiversity?

Biodiversity is short for biological diversity and describes the variety of all biological life (living things) – plants, animals, fungi and microorganisms – the genes they contain and the ecosystems on land or in water where they live. It is the diversity of life on earth.

Although the concept of biodiversity is relatively simple to describe, it encompasses a range of aspects. Biodiversity is usually explored at three levels critical to understanding the interconnections that support life on earth:

- *Ecological Diversity*
  The variety of different habitats or ecosystems, the biological communities within them, and the ecological processes and functions they perform.
- *Species Diversity*
  The variety of different species in a given area. This might include the range of types of the birds, fish, insects, bacteria and plants that live in a particular ecosystem such as a wetland.
- *Genetic Diversity*
  The variety of genes among individuals of a single species, or that distinguish one species from another. These provide species with the ability to adapt to changing environments.

Biodiversity is essential for the functioning of ecosystems, and it is these ecosystems that underpin the natural services vital for continued human existence and well-being. This includes the air we breathe, the water we drink, soils that provide food, fibre and timber. While the focus of this strategy is on indigenous biodiversity in Dunedin, ecosystem services are provided by both exotic and indigenous systems. These services can be grouped as follows:

Provisioning Services
Products obtained from ecosystems such as food, fuel, fibre, timber, pharmaceuticals, fresh water, and genetic resources.

Supporting Services
These are necessary for the production of all other ecosystem services, such as primary production, production of oxygen and soil formation.

Regulating Services
Benefits obtained from the regulation of ecosystem processes, that include air quality, climate regulation, erosion control, regulation of human diseases, and water purification.

Cultural Services
Are non-material benefits obtained from ecosystems through spiritual enrichment, sense of place, recreation, education, and aesthetic experiences.

Kai Tahu Philosophy of Biodiversity

The natural environment and relationship to it is central to the culture of Kai Tahu ki Otago, the manawhenua of Otago.

The Kai Tahu ki Otago philosophy of natural resource management is reflected in the concept "Ki Uta Ki Tai" ("Mountains to Sea"). This philosophy emphasises holistic management of the inter-related elements within and between catchments, from the air and atmosphere to the land and the coastal environment. Ki Uta Ki Tai management requires a collaborative approach.

The cultural, spiritual, historic and traditional relationship that Kai Tahu ki Otago has with indigenous species is recognised in the Ngai Tahu Claim Settlement Act 1998. Taoka (treasure) species are listed within this Act, including birds, plants, marine mammals, fish and shellfish species. The philosophy and values of Kai Tahu are expressed within the Kai Tahu ki Otago Natural Resource Management Plan 2005.

The Biodiversity Strategy seeks to reflect the concept of "Ki Uta Ki Tai" and a collaborative approach to biodiversity management.

Community Outcomes

The Community Plan is based around seven outcomes that the Dunedin community has identified will contribute to its well-being and quality of life. One of the priorities identified for outcome 'sustainable city and environment' is that the community values the natural environment, biodiversity and landscapes. Maintaining biodiversity is one of the main measures of sustainability. The challenge is to ensure that biodiversity is sustained as part of Dunedin's natural environment for future prosperity and the needs of future generations.

The following community outcomes are relevant to the vision and goals of the Biodiversity Strategy:

Community Outcome & Vision	Contribution of Strategy Towards the Community Outcome	Achieved by the Strategy Vision & Following Goals:
SUSTAINABLE CITY & ENVIRONMENT "a city that makes the most of its natural and built environment"	» Retention of biodiversity is an important part of the natural environment in Dunedin. » Retention and enhancement of biodiversity for future generations is sustainable	Goal 1: Community involvement Goal 3: Reverse the decline
SAFE & HEALTHY PEOPLE "a city where residents feel safe and enjoy a healthy lifestyle"	» Vegetated water catchments provide a healthy drinking water source » Biodiversity helps to maintain air quality	Goal 3: Reverse the decline
CULTURE & LEARNING "a city that celebrates and supports culture and excellence in the arts and education"	» Biodiversity provides opportunities for research » Retention of biodiversity enables recognition and maintenance of Kai Tahu values » Biodiversity provides learning opportunities for all ages	Goal 1: Community involvement Goal 2: State of biodiversity
ACTIVE CITY "a city that provides and encourages participation in a broad range of sporting, recreational and leisure activities"	» Reserves continue to be provided, maintained and developed for recreational and leisure activities	Goal 3: Reverse the decline
WEALTHY COMMUNITY "a city that encourages strong local business growth and employment growth, and attracts increasing numbers of new businesses and tourists"	» Enhancement of Dunedin as a wildlife centre supports continued growth in eco-tourism » Biodiversity provides opportunities for Bio-technology business	Goal 1: Community involvement Goal 2: State of biodiversity Goal 3: Reverse the decline
SUPPORTIVE COMMUNITY "a city where residents feel included and connected with their wider community"	» Opportunities are provided for participation in biodiversity projects in the city and the ability to work together as a community.	Goal 1: Community involvement

The Role of the Council

The Council will adopt the following roles to deliver its response to achieve the sustainable management of biodiversity assets within Dunedin:

Promoter and Facilitator

- Provide information, guidance and act as an advocate to maintain and enhance Dunedin's biodiversity resources
  (refer to Actions 1.1-1.6, 3.1, 3.4-3.7)
- Promote public awareness and appreciation of the city's indigenous biodiversity and working with landowners
  (refer to Actions 1.1-1.6, 2.7-2.9, 3.4-3.7)
- Promote, partner and facilitate co-operation and co-ordination between agencies (both governmental and non-governmental), landowners and business
  (refer to Actions 1.1, 2.8, 2.9, 3.1)

Provider

- Lead by example by protecting, maintaining and enhancing indigenous biodiversity on Council managed assets
  (refer to Action 3.8)
- Provide a network of protected areas for important species and habitats eg. reserves, water catchment land
  (refer to Actions 1.5, 3.8)
- Guardian of significant biodiversity resources for the community
  (refer to Action 3.8)

Regulator

- Identify and protect significant indigenous vegetation and habitats for indigenous species
  (refer to Action 3.1)
- Manage the effects of land use activities upon indigenous biodiversity and ensure sustainable management
  (refer to Actions 3.1)
- Monitor the state of the biodiversity within Dunedin
  (refer to Actions 2.1-2.10)

Funder

- Provide incentives to landowners and seek funding to manage the city's biodiversity resources
  (refer to Actions 1.3, 3.2 - 3.4)
- Provide resources and staff and maintain a budget to implement biodiversity management activities
  (refer to Actions 3.8)

Challenges to Management of Biodiversity in Dunedin

A number of challenges face the protection and maintenance of biodiversity in Dunedin City. The response to these challenges will require integrated planning and input from a range of sectors in the community to achieve the vision.

Challenge 1 »

Establishing the extent and condition of indigenous biodiversity

It is obvious that from the geographical extent of Dunedin there will be an array of species diversity. While some of Dunedin's more significant and iconic species and habitats are known and monitored, such as the yellow-eyed penguin and the albatross, many areas in Dunedin have not been surveyed by ecologists. Further species diversity may therefore exist in the city that we are not currently aware of.

It is important that, as a city, we establish how much indigenous flora and fauna remains, whether biodiversity is increasing or decreasing, the ecological condition of the remaining areas and the interactions between different ecosystems. Such information is vital for establishing targets for protection, setting management priorities, restoration and enhancement programmes, opportunities for community participation and providing accessible information to landowners.

This information is also necessary to establish a baseline to enable the unknown impact of climate change upon biodiversity to be monitored. This will be of particular importance to understanding the implications upon the coastal values of Dunedin, which provides habitat and breeding areas for increased populations of marine mammals such as seals and yellow-eyed penguins.

In the absence of information on the state of biodiversity we can only assume that, based on the experiences elsewhere in New Zealand, biodiversity will decline if we do nothing. A clear understanding of the status and change in the ecological condition of remaining areas of indigenous flora and fauna is important to ensure its continued viability.

(Challenge to be met by Goal 2)

Challenge 2 »

Retaining and enhancing our indigenous biodiversity

Maintaining biodiversity is more than just ensuring the survival of rare and endangered species. It is important that the whole range of species and ecosystems that naturally exist in Dunedin are retained, from forest shrublands, coastal vegetation and coastal dunes to wetlands, rivers, streams, alpine, sub-alpine and tussockland.

The remaining areas of indigenous vegetation and habitats are generally fragmented throughout the city in a variety of ecosystems on both public and private land. It is important that these areas are retained for their ecological, social, cultural, economic and intrinsic value to Dunedin. Some of the more significant and extensive areas of indigenous habitats and ecosystems in Dunedin are protected through public ownership as reserves and water catchments, under the ownership of Council, and for conservation purposes, under the Department of Conservation. For areas that exist on private land it is important to recognise their biodiversity values, encouraging landowners to retain and maintain these areas by providing a range of incentives and regulatory mechanisms.

Exotic biodiversity, from working pine forests and riparian margins through to private gardens and amenity planting, can play an important role in the retention and enhancement of indigenous species. This can include identifying opportunities to enhance biodiversity within urban habitats that complement the more natural areas and link vegetation fragments within and outside the urban area.

The continued retention and maintenance of Dunedin's biodiversity resource is at risk through:

- Changing land use resulting in clearance or modification (eg. drainage of wetlands, development for subdivision)
- Introduction and spread of animal and plant pests
- Fragmentation of remnant vegetation and animal populations, particularly invertebrates
- Loss of habitat through other human effects (eg. pollution)
- The effects of climate change on ecosystems

(Challenge to be met by Goal 3)

Challenge 3 »

Educating and informing

The community is best placed to be the most effective at conserving indigenous biodiversity within Dunedin. To do so requires awareness of the importance of biodiversity through guidance, improved access to information, continuous support, opportunities to participate in community biodiversity enhancement projects and encouragement to consider biodiversity as part of daily decisions, such as planting local native species to provide stepping stones for birds. Awareness of biodiversity conservation and opportunities to participate needs to extend city wide, from landowners with significant areas of biodiversity on their land, to landowners with suburban gardens to business owners.

(Challenge to be met by Goals 1, 2 & 3)

Challenge 4 »

Sharing responsibility

There is a shared responsibility and commitment for biodiversity management to ensure its continued existence, because of the benefits biodiversity has for all the community. In Dunedin this responsibility would be shared amongst landowners, iwi, Dunedin City Council, Otago Regional Council, central government departments (such as the Department of Conservation, Ministry of Agriculture and Forestry), environmental organisations – locally and nationally, research organisations (such as the University of Otago, Landcare Research) and industry groups (such as Federated Farmers of New Zealand Inc., New Zealand Forest Owners Association).

Establishing networks can lead to more effective information sharing and resource efficiency, co-ordinating conservation efforts. This could lead to a range of different working relationships, agreements and partnerships for funding work (i.e. external sponsorship).

(Challenge to be met by Goals 1 & 3)

Vision for Biodiversity in Dunedin

Dunedin is a city where:

The community works together to understand, enhance and celebrate the value of biodiversity in Dunedin for the benefit of current and future generations.

To be achieved by Goals 1 and 2

Dunedin is a city that:

Maintains a network of viable habitats and ecosystems extending from the alpine zone of the inland Rock and Pillar Ranges to the harbour, coast and islands.

To be achieved by Goals 2 and 3

Goals and Actions

Fulfilling the vision will involve commitment by the Dunedin City Council, its partners, community groups and residents of Dunedin. The vision for biodiversity in Dunedin will be achieved through the following goals and actions.

Goal 1 »

Increase community involvement and responsibility in biodiversity conservation.

Indicators for Goal 1 include:

- Number of participants involved in conservation activities organised by the Council
- Increased number of schools that participate in the Enviroschools programme

The Council will undertake the following actions to achieve Goal 1:

Action	Role of Council	Initial Target for Completion	Implementation (Budget & Work Programme)	Who else may have a role
1.1 Establish networks to share biodiversity information and resources by:				
1.1.1 Convening a Dunedin Biodiversity Forum	Promoter & Facilitator	December 2007	Staff time - City Planning	Central Government Organisations, University of Otago, Conservation Groups, Iwi, Landowners, Industry Groups, Otago Regional Council
1.1.2 Strengthen existing arrangements with key stakeholders and create new ones to encourage people to participate in supporting biodiversity	Promoter & Facilitator	On-going	Staff time - City Planning, Community & Recreation Services	Central Government Organisations, University of Otago, Conservation Groups, Otago Regional Council, Iwi, Landowners, Industry Groups
1.2 Actively seek opportunities to inform and educate the community about the value of biodiversity conservation within Dunedin by:				
1.2.1 Developing a web site to provide a one stop shop for information on biodiversity in Dunedin, biodiversity management and other resources (The estimated costs involved in setting up a web site are dependent upon the level of complexity and functions of the web site. A simple website can be set up for a low cost, which can be built upon. It may be possible to investigate cost sharing opportunities.)	Promoter & Facilitator	December 2008	$10,000 estimated cost for content and graphics Staff time for on-going maintenance – City Planning, Web Administrator,	Dunedin Biodiversity Forum (when established), Central Government Organisations, University of Otago, Conservation Groups, Iwi, Industry Groups

Action	Role of Council	Initial Target for Completion	Implementation (Budget & Work Programme)	Who else may have a role
1.2.2 Providing interpretation boards on biodiversity values in important scenic, scientific and wildlife reserves under Council management.	Promoter & Facilitator	Two reserves per annum	$10,000 per annum – Community & Recreation Services	Central Government Organisations, Conservation Groups, Iwi
1.2.3 Continuing to support and expand the Enviroschools education programme	Promoter & Facilitator	On-going	Staff time – Community & Recreation Services, Water & Waste	Schools, Ministry of Education (through Otago University College of Education), Enviroschools Foundation (National Office), DEC Community Gardens and Nursery
1.2.4 Strengthening the awareness of biodiversity for consideration when processing resource consent applications for new developments	Promoter & Facilitator	April 2008	Staff time – City Planning Brochure printing costs $1,000	Dunedin Biodiversity Forum (when established), Central Government Organisations, University of Otago, Conservation Groups, Iwi, Industry Groups
1.2.5 Developing local planting guides	Promoter & Facilitator	December 2008	Staff time – Community & Recreation Services, City Planning Guide printing costs $5,000	Conservation Groups, Department of Conservation, University of Otago, Iwi, Local Community
1.2.6 Continuing to facilitate and support the Sustainable Living programme	Promoter & Facilitator	On-going	Staff time – Water and Waste, (Facilitator Funding #)	Local Community
1.2.7 Coordinating an annual field day for local community conservation groups to look at biodiversity conservation and restoration issues	Promoter & Facilitator	June 2008	Staff time – City Planning, Community & Recreation Services, Water and Waste	Conservation Groups, Department of Conservation, Otago Regional Council, University of Otago, Iwi, Landowners, Local Community
1.3 Facilitate opportunities for the community to participate in supporting biodiversity by:				
1.3.1 Continuing to support and participate in the Pikao Recovery Group.	Funder, Promoter & Facilitator	On-going	$5,000 per annum # - Community & Recreation Services	
1.3.2 Participating in regional biodiversity discussions	Promoter & Facilitator	On-going	Staff time – Community & Recreation Services, City Planning	Otago Regional Council, other Local Authorities in Otago, Department of Conservation, Iwi, Local Community

Action	Role of Council	Initial Target for Completion	Implementation (Budget & Work Programme)	Who else may have a role
1.3.3 Continuing to provide assistance and encouraging initiatives for local community conservation groups, including encouraging local conservation groups to work together where projects have similar geographic areas and outcomes, share resources, overheads and expertise	Promoter & Facilitator	On-going	Staff time – Community & Recreation Services, City Planning	Conservation Groups, Community groups, Landowners, Iwi, Industry Groups
1.3.4 Investigate opportunities for urban biodiversity enhancement projects	Promoter & Facilitator	December 2008	Staff time – Community & Recreation Services, City Planning	Community Groups, Landowners, Department of Conservation, University of Otago, Iwi, Industry Groups
1.4 Provide advocacy support for other agencies funding bids.	Promoter & Facilitator	On-going	Staff time – Community & Recreation Services, City Planning	
1.5 Continue to provide opportunities for the community to access biodiversity on reserves and water catchment areas	Provider	On-going	Staff time - Community & Recreation Services	Community Groups , Conservation Groups, Local Community, University of Otago, Iwi
1.6 Investigate and illustrate the value of biodiversity and ecosystem services by:				
1.6.1 Investigating and, if appropriate, establishing an audit process for the value of biodiversity and ecosystem services to Dunedin City. Results would be published every three years in the Community Plan/Annual Plan.	Promoter & Facilitator	December 2008 and on-going	Staff time – Economic Development Unit, Community and Recreation Services, Water and Waste	Community Groups, Landowners, Department of conservation, University of Otago, Iwi, Industry Groups
1.6.2 Undertaking a case study of one or more willing landowners, and other key stakeholders, to document, illustrate and disseminate the economic value of biodiversity conservation and ecosystem services to landowners, which may include wider sustainability issues and management options	Promoter & Facilitator	June 2009	Staff time – Economic Development Unit, City Planning, Community and Recreation Services, Water and Waste	Community Groups, Landowners, Department of conservation, University of Otago, Iwi, Industry Groups

Note: # refers to items that are already included in existing budgets. The remaining costs are estimates only and are subject to the Council's annual budget process, which includes public consultation through the annual plan.

Goal 2 »

Establish and monitor the state of biodiversity in Dunedin

Indicators for Goal 2 include:

» 80% of indigenous vegetation and habitats for indigenous fauna known to exist in Dunedin are recorded in a centralised database

» 75% of Areas of Significant Conservation Value identified in the Dunedin City District Plan have established monitoring programmes

The Council will undertake the following actions to achieve Goal 2:

Action	Role of Council	Initial Target for Completion	Implementation (Budget and Work Programme)	Who else may have a role
2.1 Collate and summarise existing information to establish a centralised database of the significant areas of remaining indigenous biodiversity in the City.	Regulator, Promoter & Facilitator	December 2008	Staff time – City Planning	Central Government Organisations, University of Otago Conservation Groups, Landowners , Iwi, Industry Groups
2.2 Establish a set of indicators to monitor indigenous biodiversity within Dunedin	Regulator, Promoter & Facilitator	December 2008	Staff time – City Planning, Policy Analysts	Central Government Organisations, University of Otago Conservation Groups, Landowners , Iwi, Industry Groups
2.3 Establish a set of indicators to monitor urban biodiversity	Regulator, Promoter & Facilitator	December 2008	Staff time – City Planning, Policy Analysts, Community & Recreation Services	Central Government Organisations, University of Otago Conservation Groups, Landowners , Iwi, Industry Groups
2.4 Establish robust monitoring procedures for resource consents involving biodiversity conditions	Regulator	December 2008	Staff time – City Planning	
2.5 Establish monitoring procedures in partnership with landowners of Areas of Significant Conservation Value identified in the District Plan to ensure good management	Regulator, Promoter & Facilitator	December 2008	Staff time – City Planning	Landowners
2.6 Regularly report the results of monitoring and research to the public in a manner that will encourage further debate and involvement.	Regulator, Promoter & Facilitator	December 2008	Staff time – City Planning	

Action	Role of Council	Initial Target for Completion	Implementation (Budget and Work Programme)	Who else may have a role
2.7 Establish and support community participation monitoring programmes	Promoter & Facilitator	December 2008	Staff time – City Planning, Policy Analysts, Community & Recreation Services	Schools, Local Community, Central Government Organisations, Research Organisations, Conservation Groups, Iwi, Industry Groups
2.8 Encourage and partially-fund (where appropriate) collaborative research for greater understanding on the biodiversity of Council owned land	Promoter & Facilitator	On-going	Staff time – City Planning, Community & Recreation Services, Waste & Water	Central Government Organisations, University of Otago, Conservation Groups, Iwi
2.9 Encourage associated research and biodiversity surveys on private land	Promoter & Facilitator	On-going	Staff time – City Planning	Landowners, Research Organisations, Conservation Groups, Iwi, Industry Groups
2.10 Provide baseline information to gauge the effectiveness of biodiversity conservation incentives provided by the Council	Promoter & Facilitator	December 2009	Staff time – City Planning	Landowners, Research Organisations, Conservation Groups, Iwi, Industry Groups

Note: # refers to items that are already included in existing budgets. The remaining costs are estimates only and are subject to the Council's annual budget process, which includes public consultation through the annual plan.

Goal 3 »

Reverse the decline and enhance Dunedin's unique indigenous biodiversity

Indicators for Goal 3 include:

- Increase the area of significant indigenous vegetation and significant habitats for indigenous fauna that are formally protected
- No new weed and animal pest species are detected on Dunedin City Council managed land
- No loss of acutely and chronically threatened indigenous species is recorded within Dunedin City
- Increase area of reserves in Council, DOC and private QEII covenant (hectares) (also a Community Plan City Indicator)
- Increased abundance of fantails and bellbirds are recorded within all urban habitats

The Council will undertake the following actions to achieve Goal 3:

Action	Role of Council	Initial Target for Completion	Implementation (Budget and Work Programme)	Who else may have a role
3.1 Work with landowners to enhance the network of protected areas within Dunedin on both public and private land by:				
3.1.1 Enhancing Schedule 25.4 Areas of Significant Conservation Value of the Dunedin City District Plan to include a full range of representative habitats across the city. This is pursuant to the consent order agreed to in relation to the schedule.	Regulator	June 2009	Staff time – City Planning Consultant ecologist $150,000 over 3 years from 2007/08-09/10. Publicity $10,000 over 3 years from 2007/08-09/10	Landowners, Conservation Groups, Research Organisations, Iwi, Industry Groups, Department of Conservation
3.1.2 Actively promote the QEII National Trust Covenant scheme to landowners	Promoter & Facilitator	On-going	Staff time – City Planning	Landowners, QEII National Trust, Otago Regional Council
3.1.3 Work in partnership with private landowners, to encourage and provide opportunities for good land management practices that maintain and enhance indigenous biodiversity. This may include the development of good practice guidelines.	Promoter & Facilitator	On-going	Staff time – City Planning	Landowners, Conservation Groups, Research Organisations, Central Government Organisations, Industry Groups, Iwi
3.2 Examine and implement a range of financial and non-financial incentives to landowners to maintain and enhance biodiversity	Funder, Promoter & Facilitator	On-going	Staff time – City Planning An initial $40,000 per annum has been set aside to establish a contestable fund#	Industry Groups, Department of Conservation, Conservation Groups, Landowners, Iwi
3.3 Investigate the use of Task Force Green to assist landowners of Areas of Significant Conservation Value (ASCV) with management or maintenance of biodiversity values	Funder, Promoter & Facilitator	June 2008	Staff time – Community and Recreation Services, City Planning	Landowners

Action	Role of Council	Initial Target for Completion	Implementation (Budget and Work Programme)	Who else may have a role
3.4 Review and publicise the Council policy on remission of rates on land voluntarily protected for conservation purposes to ensure that it continues to be an effective incentive to landowners	Funder	June 2008	Staff time – City Planning, Finance	
3.5 Investigate and identify opportunities for ecological corridors and linkages throughout the city and means of implementation, if appropriate	Promoter & Facilitator, Funder	June 2008	Staff time initially – Community & Recreation Services, City Planning	Central Government Organisations, Conservation Groups, Landowners, Research Organisations, Iwi, Industry Groups
3.6 Encourage opportunities for regeneration and re-establishment of species lost from the city, including species of regional importance to Kai Tahu	Promoter & Facilitator	On-going	Staff time initially - Community & Recreation Services	Conservation Groups, Landowners, Research Organisations, Central Government Organisations, Iwi
3.7 Investigate and develop an ecological restoration plan for Dunedin City, which may include Actions 3.5 and 3.6	Promoter & Facilitator, Funder	December 2008	Staff time - City Planning, Community and Recreation Services, Water and Waste, Consultant costs if necessary	Central Government Organisations, Conservation Groups, Landowners, Local Community, University of Otago, Iwi
3.8 Ensure land management practices are adopted for Council assets to achieve good biodiversity outcomes:				
3.8.1 Identify and prioritise all Council-owned land that could make a positive contribution to biodiversity. Examine options for future management of these areas to enhance biodiversity.	Provider, Promoter & Facilitator	June 2008	Staff time – City Planning, Community & Recreation Services, Roading, Water & Waste	Central Government Organisations, Conservation Groups, Local Community, University of Otago, Iwi
3.8.2 If required, produce management plans for important areas of biodiversity not already covered by existing management plans	Provider	December 2009	Staff time - City Planning, Community & Recreation Services, Roading, Water & Waste Consultant costs if necessary	Central Government Organisations, Conservation Groups, Iwi, Research Organisations
3.8.3 Continue to maintain and enhance reserve assets	Provider	On-going	Staff time – Community & Recreation Services Town Belt - $80,000 (2006/07-08/09)# Coastal reserves - $1,230,00 (2006/07-2011/12)#	Conservation Groups, Schools, Iwi, Local Community, University of Otago, Central Government Organisations

Action		Role of Council	Initial Target for Completion	Implementation (Budget and Work Programme)	Who else may have a role
3.8.4	When preparing or reviewing reserve management plans ensure biodiversity is recognised and provided for	Provider	On-going	Staff time – Community & Recreation Services	Conservation Groups, Iwi, Local Community, University of Otago, Central Government Organisations
3.8.5	Develop a weed and pest management policy for Dunedin City Council assets	Provider	December 2008	Staff time - Community & Recreation Services, Roading, Water & Waste	Iwi, Local Community, University of Otago, Central Government Organisations, Otago Regional Council
3.8.6	Promote eco-sourcing of planting used in Council projects	Provider	December 2008	Staff time – Community & Recreation Services	Iwi, Local Community, University of Otago, Central Government Organisations
3.8.7	Promote biodiversity considerations in across-Council activity management plans and operations.	Promoter & Facilitator	2008/09 Asset Management Plans	Staff time - Corporate	Iwi, University of Otago, Central Government Organisations
3.8.8	Integrate biodiversity as a consideration in the environmental component of Council decision-making (Local Government Act 2002 processes).	Promoter & Facilitator	June 2008	Staff time - Corporate	Iwi, Central Government Organisations
3.8.9	Examine the possibility of using external partnerships to enhance biodiversity on Council land.	Provider	December 2008	Staff time - Community & Recreation Services, Roading, Water & Waste	Conservation Groups, Research Organisations, Industry Groups

Note: # refers to items that are already included in existing budgets. The remaining costs are estimates only and are subject to the Council's annual budget process, which includes public consultation through the annual plan.

Implementation, Monitoring and Review

This Biodiversity Strategy will be implemented through various methods, which include the Council's planning tools, education and collaborative initiatives with organisations, land owners and the wider community. Implementation will include incorporating the list of actions into Council work programmes with budgets subject to the Annual Plan/Community Plan process. It is intended that the list of actions will be regularly reviewed.

It is intended to review the strategy three years after its adoption by Council to monitor its effectiveness in working towards the vision. The indicators for each goal will be used to measure performance towards achieving the goals and vision of the strategy.

Appendix 1: Glossary of Common Terms Used

Ecosystem	An interacting system of living and non-living parts such as sunlight, air, water, minerals and nutrients. Ecosystems can be small and short-lived, for example, water-filled tree holes or rotting logs on a forest floor, or large and long-lived such as forests or lakes. (New Zealand Biodiversity Strategy)
Endemic Species	an indigenous species which breeds only within a specified region or locality and is unique to that area. (New Zealand Biodiversity Strategy)
Habitat	The place or type of area in which an organism natural occurs.
Indigenous or Native Species	A plant or animal species which occurs naturally in New Zealand.
Intrinsic values	In relation to ecosystems, means those aspects of ecosystems and their constituent parts which have value in their own right, including: (a) Their biological and genetic diversity; and (b) The essential characteristics that determine an ecosystem's integrity, form, functioning and resilience.
Introduced or Exotic Species	A plant or animal species which has been brought to New Zealand by humans, either by accident or design.
Manawhenua	Means an iwi or hapu who exercise customary authority in an identified area.
Naturalised species	Introduced plant or animal that has become established in the wild without human assistance.
Species	A group of organisms capable of interbreeding freely with each other but not with members of other species.
Vascular Plants	Include ferns, flowering plants and trees, but do not include mosses and liverworts.

APPENDIX 2:
POLICY & LEGISLATION RELATING TO BIODIVERSITY

The economic, social and cultural importance of biodiversity is recognised through legislation and is reflected in policy documents at national, regional and local levels.

National Level

The New Zealand Biodiversity Strategy

The New Zealand Biodiversity Strategy Our Chance to Turn the Tide was published in February 2000 to halt the decline in indigenous biodiversity at the national level. The strategy is led by central government as part of the international response to a global decline in biodiversity, fulfilling in part New Zealand's requirement as a signatory to the Convention on Biological Diversity, a global agreement resulting from the 1992 Earth Summit in Rio de Janeiro. The strategy aims to halt the decline in biodiversity through a vision, goals and principles for the conservation and sustainable use and management of New Zealand's biodiversity. The approach is based upon recognising that it is the on the ground decisions made by land managers and resource users that directly affects biodiversity.

The Dunedin City Biodiversity Strategy will contribute at the local level towards achieving the goals of the New Zealand Biodiversity Strategy.

Statement of National Priorities for Protecting Rare and Threatened Native Biodiversity on Private Land

In April 2007 the Minister of Conservation and the Minister for the Environment released a statement of national priorities for protecting rare and threatened native biodiversity on private land. This statement provides local authorities, communities and private landowners with information about the types of ecosystems and habitats on private land that, from a national perspective, are most threatened and in need of protection. The information about the national priorities can be used by local and central government agencies and landowners to coordinate their decisions and on-the-ground actions in relation to biodiversity.

Biosecurity Act 1993

The act deals with the exclusion, eradication, and effective management of pests and unwanted organisms. The Otago Regional Council Pest Management strategy is prepared under this Act.

Biosecurity Strategy for New Zealand 2003

The strategy covers all activities aimed at managing the introduction of new species to New Zealand and managing their impacts once here, ensuring that our plants and animals are kept safe and secure from damaging pests and diseases. The strategy covers the management of weeds and animal pests by central and local government agencies, industry and individual landowners.

Resource Management Act 1991

The Resource Management Act 1991 charges the Council with a statutory obligation to control any actual or potential effects of the use, development or protection of land for the purpose of the maintenance of indigenous biological diversity. In exercising this function the Council must recognise and provide for the protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna, which is a matter of national importance under Section 6(c) of the Act. The Council must also have regard to the intrinsic value of ecosystems under Section 7(d) of the Act.

New Zealand Coastal Policy Statement

The New Zealand Coastal Policy Statement (NZCPS) is the only mandatory National Policy Statement under the Resource Management Act 1991 (RMA) The NZCPS sets out policies regarding the management of natural and physical resources in the coastal environment. Local authorities are required by the RMA to give effect to the NZCPS through their plans and policy statements. Resource consent decision-makers must also have regard to relevant NZCPS policies.

Local Government Act 2002

The Act provides for local authorities to play a broad role in promoting the social, economic, environmental and cultural well-being of communities, taking a sustainable development approach. Maintaining biodiversity is one of the critical measures of sustainability. Along with environmental benefits, the retention of biodiversity also has social, economic and cultural benefits.

Regional Level

Department of Conservation Otago Conservation Management Strategy

The Conservation Management Strategy for the Otago Conservancy of the Department of Conservation (DOC) is a 10-year regional strategy that provides an overview of conservation issues and gives direction for the management of public conservation land, waters, and species in Otago for which DOC has responsibility. The purpose of the strategy is to implement general policies and establish objectives for the integrated management of natural and historic resources, and for recreation, tourism and any other conservation purposes.

Otago Regional Council

Otago Regional Council is responsible for sustainable management of the region's air, soil and water resources, including the coastal marine area, and has a role in managing regionally important biodiversity and biosecurity through the following documents:

Regional Policy Statement

The Otago Regional Policy Statement seeks to maintain and enhance the life-supporting capacity and diversity of Otago's biota; protect Otago's natural ecosystems and primary production from significant biological and natural threats; and maintain and enhance the natural character of areas with significant indigenous vegetation and significant habitats of indigenous fauna.

Regional Plan: Water

The Regional Water Plan manages the effects of use and development on Otago's lakes, rivers and wetlands. The Water Plan identifies thirteen regionally significant wetlands within Dunedin City.

Regional Plan: Coast

The Regional Coastal Plan manages the effects of use and development on Otago's coastal marine area, which is the part of the coast between the mean high water spring and 12 nautical miles seaward. The land above mean high water springs, adjacent to the coastal marine area is managed by the Dunedin City Council.

Local Level

Dunedin City Community Plan 2007/08-2016/17

The Council's community plan has been prepared under the Local Government Act 2002. The Community Plan document identifies seven "outcomes" the community wants and shows how the Council will contribute towards achieving these outcomes. The Council is committed to improving the economic, social and cultural, and environmental well-being of the people of Dunedin.

Dunedin City District Plan

The Council uses the District Plan as the main method to achieve its statutory obligations under the Resource Management Act 1991. The District Plan identifies areas of significant indigenous vegetation and significant habitats of indigenous fauna as Areas of Significant Conservation Value (ASCVs). These areas are identified within Schedule 25.4 of the Plan with rules to control activities undertaken within an ASCV. The District Plan also recognises the importance of biodiversity through Objective 16.2.1:

> *Enhance the indigenous biodiversity, ecosystem integrity, natural character and amenity values of the City through the retention of remaining areas of indigenous vegetation and habitats of indigenous fauna.*

Reserve Management Plans

Reserve management plans are prepared under the Reserves Act 1977 for reserves under Council management within the City to ensure they are managed consistently with their reserve values.

Part B:
Biodiversity in Dunedin
What makes Dunedin so special?

Dunedin City Profile

Area:
3,340km2

Population:
122,400 (as at July 2005)

Climate:
Rainfall - 800mm per annum
Average temperature - Summer 15°C, Winter 8°C

Ecological Districts:
Seven including Waikouaiti, Dunedin, Tokomairiro, Waipori, Macraes, Maniototo, and Rock and Pillar

Endemic Species ie. occur nowhere else:
Plants (5), Fish (2), Moths (10), Caddis (3), Beetles (6), Snails (1), Harvestman (2), Peripatus (2)

Formally Protected Areas:
118 sites identified as Areas of Significant Conservation Value (ASCV) within the Dunedin City District Plan, covering a total area of 1500 hectares and 91 kilometres of coastline

Total Reserve Area under DCC Management:
The Dunedin City Council has a total of 320 parks and reserves with a total of 3,150 hecatres of bush, coastal reserve and amenity areas

Broad Land Cover Types:

Built up area and other artificial surfaces	1.9%
Pasture and crop land	65.6%
Exotic Forestry	6.3%
Tussock Grassland	13.2%
Coastal dunes and vegetation	0.7%
Alpine and sub-alpine	0.7%
Indigenous shrubland	7.5%
Indigenous Forest	1.3%
Exotic Shrubland	1.5%
Inland Wetland	0.6%

(Information summarised from Land Cover Database 2)

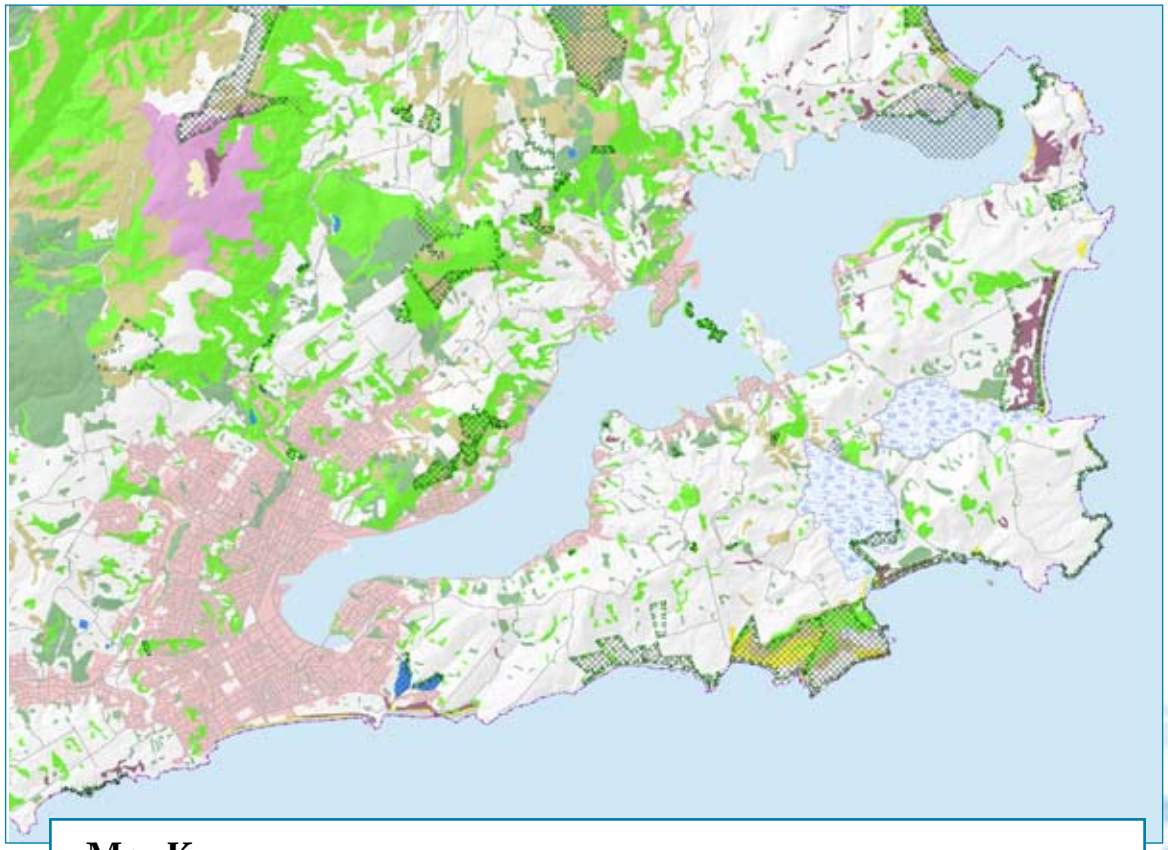
Dunedin today is vastly different to when Europeans arrived. Prior to 1840, coastal Dunedin was clad in dense forest and shrubland extending from sea level to the sub-alpine zone. Tall podocarps, such as Rimu, Matai, Kahikatea and Totara, would have dominated the area surrounding what is now urban Dunedin. On higher slopes, such as Mt Cargill and Flagstaff, and at inland areas, silver beech was more likely to dominate the forest. The lowland areas such as South Dunedin and the Taieri Plain supported a mosaic of swamp, fernland, shrubland and forest. There were native flowering plants and ferns, bats, lizards and forest birds were still abundant around the city, and seabirds nested on the mainland coast.

As forest, shrubland and swampland was converted for the development of agriculture and urban Dunedin, habitats were lost and indigenous birds and plants disappeared. The loss of indigenous species increased with competition and predation from introduced pest species. Today approximately three-quarters of Dunedin is covered in artificial surfaces (built up area, transport infrastructure) and exotic vegetation (pasture, pine forest, gorse and broom).

Despite the substantial loss of biodiversity the city still retains a diversity of ecosystems and indigenous species that should be retained and maintained.

The maps on the following pages illustrate the broad land cover types that exist in Dunedin today, areas currently protected under the District Plan and public conservation land owned by the Department of Conservation. The land cover types use the Land Cover Database 2 and are grouped for illustrative purposes.

Otago Peninsula, Otago Harbour and Urban Dunedin



Map Key

DCC Boundary

Areas of Significant Conservation Value

Land Cover Types

- Pasture and Crop Land
- Exotic Forest
- Alpine and Sub Alpine
- Built-up Area
- Coastal
- Estuarine
- Herbaceous Freshwater Vegetation
- Indigenous Forest
- Water Bodies
- Indigenous Shrubland
- Exotic Shrubland
- Tussock Grassland
- DoC Public Conservation Land

» The Otago Peninsula is the wildlife flagship for Dunedin with its extensive coastline providing breeding grounds for albatross, blue penguins, yellow-eyed penguins, fur seals, sea lions and a variety of seabirds. Largely dominated by pasture, the remaining fragments of indigenous vegetation represent a diverse range and provide homes for a variety of flora and fauna, including the chronically threatened jewelled geckos. The tidal inlets of Hoopers and Papanui serve as feeding grounds for wading birds.

» Aramoana saltmarsh, at the entrance to the Otago Harbour, is one of the best examples on the east coast of the South Island, providing habitat for a range of salt-tolerant plants and food for sea and coastal birds.

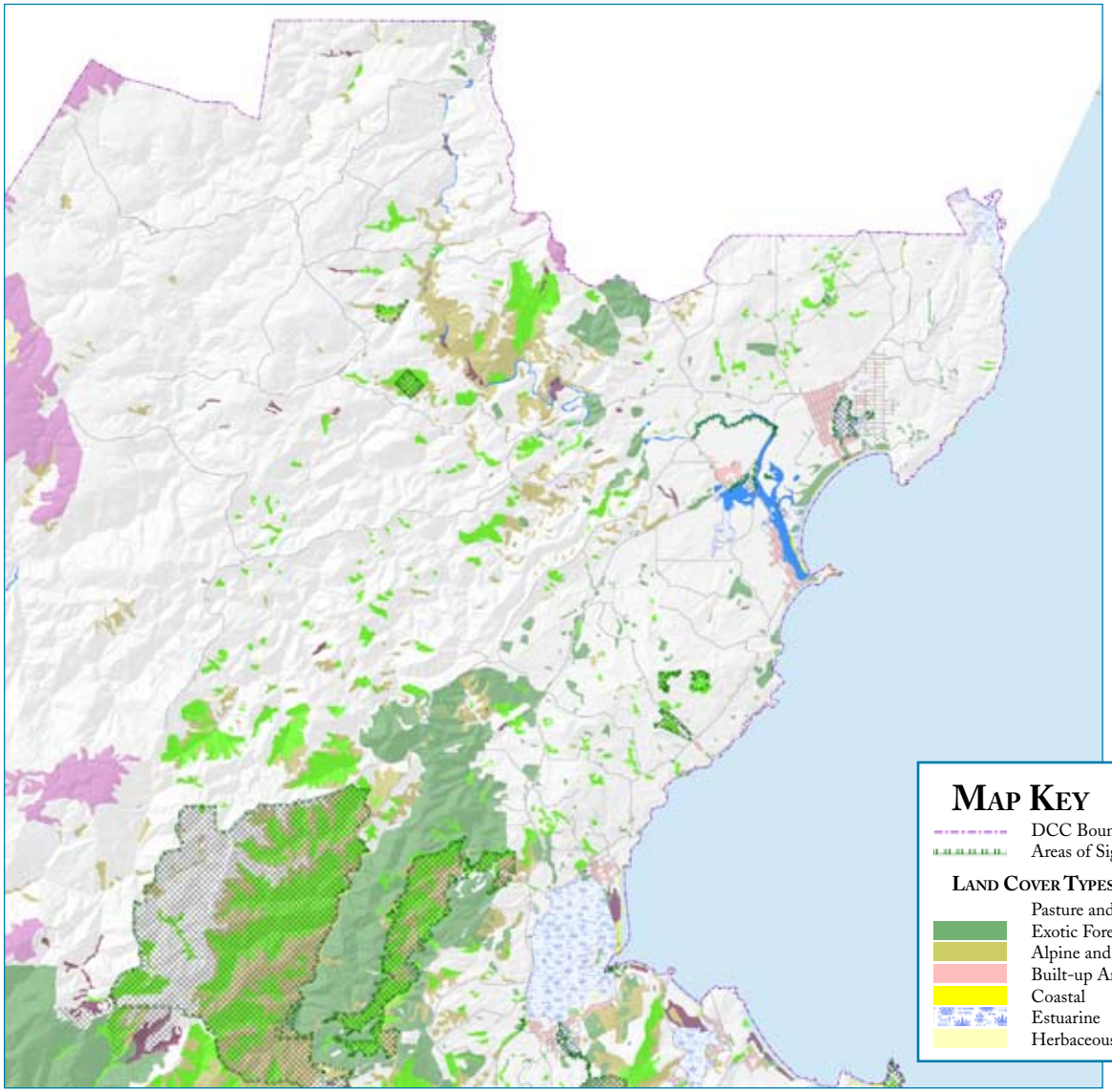
» The islands of the Otago Harbour, Quarantine Island (Kamautaurua) and Goat Island (Rangiri), provide important havens for flora and fauna.

» The Dunedin Town Belt is important to urban Dunedin, providing significant habitat for bush native birds including bellbirds, fantails, tui, grey warblers, kereru and silvereyes. The town belt incorporates the remnant swamp at Woodhaugh Gardens and the peripatus reserve in Caversham.

» The peripatus of Caversham is a small velvety caterpillar-like creature growing to over 3cm in length and is a voracious carnivore. The Caversham peripatus is of international significance being one of approximately 100 species belonging to an ancient group of invertebrates.

» Mt Cargill and Bethunes Gully Scenic Reserves contain important vegetation sequences extending from the low valley to sub alpine. The reserve complex includes the largest and most coastal example of montane coniferous-broadleaved forest in the Otago Ecological Regions, the best example of montane scrub and one of the few remaining stands of primary silver beech forest in the Dunedin Ecological District.

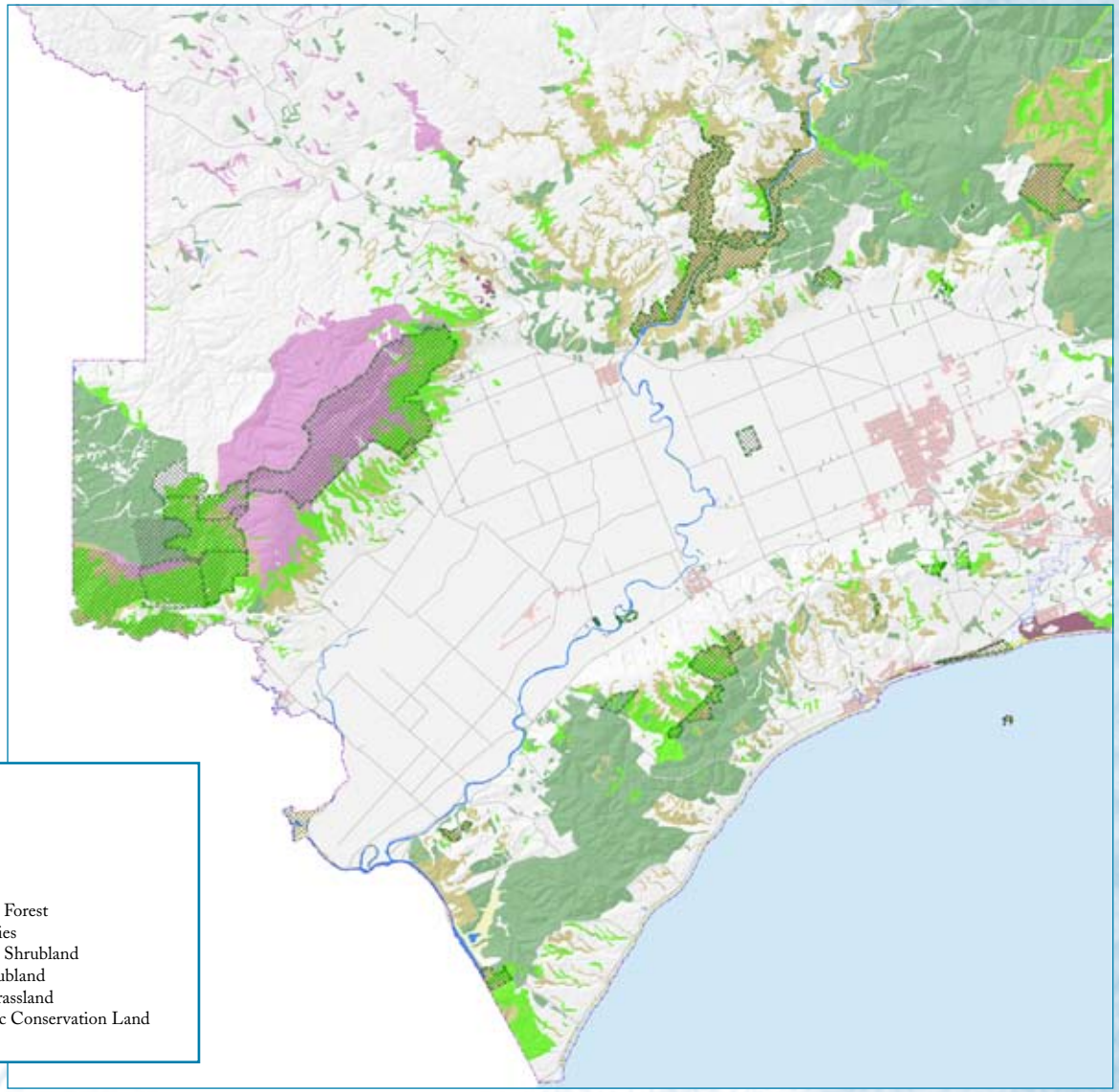
North Coast and Inland Forested Valley Systems



- The headland points, rocky cliffs and beaches of the north coast provide important coastal habitat for seals and sea birds. The tidal estuaries of the Pleasant River, Hawksbury, Blueskin Bay and Purakaunui, are important breeding and feeding grounds for wading birds and productive wetland and saltmarsh areas.
- The slopes of Mt Watkin, a volcanic hill located 8km west of Waikouaiti, are host to some rare and peculiar plants, including several species of speargrass and the newly described and showy native aniseed (*Gingidia grisea*) which is endemic to east Otago. Mt Watkin is the most recent addition to the reserve network and is 650ha in size.
- Orokonui Ecosanctuary is being established in the Orokonui Conservation Reserve and provides a vegetated corridor into Mt Cargill, across the cloud forests of Leith Saddle, which is an outpost for native cedar (*Libocedrus bidwillii*), into Flagstaff and the Silverpeaks.
- The plantation forests in Flagstaff and Silverpeaks provide habitat for South Island bush robins, falcons and other native birds.
- The Silverstream catchment was initially protected in 1878 to ensure conservation of water supply for Dunedin. As a result of this protection the majority of the 5,500ha catchment has been preserved without significant removal of vegetation or habitat.

Taieri Plain and South Coast

- The Taieri Plain is dominated by pasture with only a few remnants of original vegetation. The Taieri River continues its journey to the sea from the Taieri Gorge south towards Lake Waihola. The gorge contains a variety of indigenous shrubland with Kohukohu, Kowhai and Coprosma. The New Zealand Falcon is found in and around the gorge. Areas of remnant indigenous vegetation occurs along the Maungatua Ranges and Saddle Hill.
- The South Coast with its long expanse of sandy beaches, coastal dune vegetation, headlands and rocky shelves provide habitat for a variety of seabirds and seals, while the gullies extending inland from the coast contain remnant forest and scrub vegetation.
- Pikao (*Desmoshoenus spiralis*) is a culturally and ecologically important sand dune plant that has been widely supplanted by the introduced marram grass, but still occurs on some Dunedin sand dunes and is being enhanced by a planting programme.
- The islands off the south coast include Green Island (Okaihae) and White Island (Pounuiahine). These islands support a variety of birdlife, both native and introduced species. Green Island is a nature reserve that supports a variety of seabirds, while shrubland provides food and shelter for a population of common gecko.



Map Key

DCC Boundary
Areas of Significant Conservation Value

Land Cover Types

- Pasture and Crop Land
- Exotic Forest
- Alpine and Sub Alpine
- Built-up Area
- Coastal
- Estuarine
- Herbaceous Freshwater Vegetation
- Indigenous Forest
- Water Bodies
- Indigenous Shrubland
- Exotic Shrubland
- Tussock Grassland
- DoC Public Conservation Land

Strath Taieri, Rock and Pillar, Lammermoors

- The mountain weta of the Rock and Pillar ranges, the Otago skink and the Grand skink of Strath Taieri, galaxiids (native freshwater fish) of the Taieri Gorge and the flightless chafer beetle of the Rock and Pillar and Lammermoor Ranges.
- Te Papanui Conservation Park in the Lammerlaw and Lammermoor ranges, west of Dunedin, is an area of intact indigenous tussock grassland that provides protection for sixty percent of Dunedin's water catchment area. The park contains a variety of species including a large number of native insects and extends over 11,000 hectares within Dunedin City.
- The tussock grassland and alpine herbfields and cushionfields extend along the Rock and Pillar ranges.
- Sutton Salt Lake is New Zealand's only inland salt lake, protected as a conservation area since 1991. The lake contains a variety of salt tolerant plants and habitat for a variety of birds.

Map Key

DCC Boundary

Areas of Significant Conservation Value

Land Cover Types

- Pasture and Crop Land
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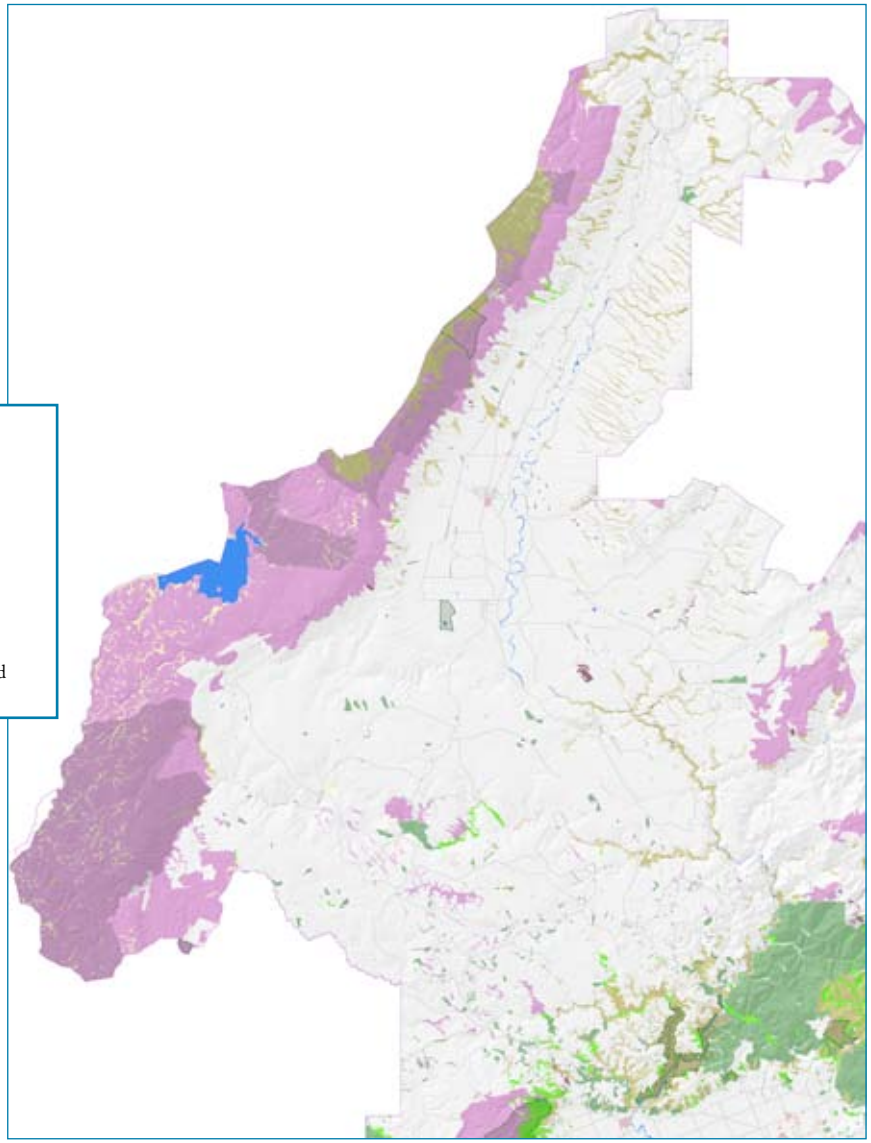

Resources for Local Conservation Action

Support the efforts of local conservation groups

There are a number of groups and trusts that actively work to protect biodiversity within Dunedin, including the following:

The Yellow-eyed Penguin Trust (YEPT)

Was formed in 1987 by Dunedin conservationists with the aim of saving the penguin by restoring coastal forest and controlling predators. The penguin is the focus but the Trust's efforts also benefit other native species of plant and animal. The Trust manages a number of reserves and works with landowners. www.yept.org.nz

The Dunedin Branch of Forest and Bird

Has a range of conservation projects around the City including Moores Bush in Leith Valley and on Quarantine Island in Otago Harbour. The Branch has also helped restore native forest vegetation to the Council's Caversham Valley peripatus reserve. www.dunedinforestandbird.org.nz

River-Estuary Care Waikouaiti-Karitane

Works to maintain and enhance the health of the river and estuary ecosystems and inform, educate and involve the local community.

The TAIERI Trust

Is a Landcare Group that supports a number of community-based projects around the catchment that are aimed at improving or protecting the health of the Taieri river and its tributaries at specific locations. www.taieri.net.nz

The Otago Natural History Trust

Is developing the Orokonui Ecosanctuary on the 230 hectare Orokonui Conservation Area, just 20km north of the Dunedin City Centre. The vision is to establish a mainland island, restoring biodiversity and to return native species to the area such as kiwi, saddleback, kaka, kakariki, native bats, tuatara, geckos and skinks. The ecosanctuary will play an important educational role. www.orokonui.org.nz

Save the Otago Peninsula (STOP)

Have a number of restoration projects on the Otago Peninsula: The Pyramids (a flattish area adjacent to large Pyramid), Styles Creek (native bush remnant above Broad Bay), Slip Site (adjacent to Treatment Station, Broad Bay), Portobello Peninsula (Road Reserve southwest shoreline). Members assist DOC, DCC, YEPT, and other local groups with their conservation efforts.

Dunedin Environment Centre (DEC)

Supports and manages several restoration projects. DEC operate and organic garden and conservation nursery at the Shetland Street Community Gardens. Plants are grown for conservation projects both on publicly and privately owned land.

Plant local species

Visit the Dunedin Botanic Garden to see what local species grow in Dunedin or talk to the staff at your local garden centre for advice on local species

Manage pests and weeds

Control unwanted pests and weeds in your garden and deposit them safely at the landfill. Refer to www.weedbusters.org.nz for useful suggestions on weed control.

Formally protect biodiversity areas on your land

The QEII National Trust

Helps landowners protect significant natural and cultural features on their land. The Trust use open space covenants as a legally binding protection agreement registered on the title of the land. Open space covenants are generally in perpetuity. While each covenant varies they generally contain a purpose, development of management statements and stipulate what activities can be undertaken within the covenanted area. www.openspace.org.nz.

The Otago Regional Council

Has a biodiversity fund to assist private landowners in Otago with the voluntary protection of areas of biodiversity, using QEII covenants. The projects include fencing, re-vegetation, weed and pest control and interpretation.

Books on Biodiversity in Dunedin

Wild Dunedin; Enjoying the Natural History of New Zealand's Wildlife Capital, Neville Peat & Brian Patrick (2002) University of Otago Press

Native Plants of Dunedin and its Environs, Ralph Allen Revising William Martin's original text for the Dunedin Naturalists' Field Club (1994) Otago Heritage Books

Useful websites

Some useful websites are listed below. This is not an exhaustive list.

www.biodiversity.govt.nz	provides information on New Zealand's native biodiversity, various national programmes and the New Zealand Biodiversity Strategy
www.nzpcn.org.nz	NZ Plant Conservation Network website provides information on native plants and their conservation
www.doc.govt.nz	Department of Conservation
www.whatbird.co.nz	helps to identify exotic and native birds
www.landcareresearch.co.nz	environmental research organisation
www.weedbusters.org.nz	information about weeds and actions to control weeds
www.bush.org.nz	NZ ecological restoration network is a non-profit, community-driven organisation dedicated to sharing knowledge and experiences about native habitat protection, management and ecological restoration in New Zealand.