STAGE 3 - SECTION 32

CHAPTER 9

NATURAL AND CULTURAL HERITAGE

APPENDIX 2 - TECHNICAL REPORT FOR SITES OF ECOLOGICAL SIGNIFICANCE

Notified 25 July 2015

Christchurch City Council

CONTENTS

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June 2015

1. INTRODUCTION

The identification and assessment of Sites of Ecological Significance has been underway for several years. On Banks Peninsula work commenced in 2008, following a Consent Order in 20071 which required the Council to "identify areas of significant indigenous vegetation and significant habitat of indigenous fauna." In the City work commenced in 2013 to review and add to the existing Ecological Heritage Sites listed in the operative Christchurch City Plan (1995). Both of these areas of work have combined to develop the Schedule of Sites of Ecological Significance.

During the process the Council has liaised and collaborated with many people; landowners, ecologists, conservation groups, Runanga, statutory agencies and community groups. There has been an emphasis upon collaboration throughout, in recognition that the protection of ecosystems and biodiversity is primarily about people. The Council has invested considerable time and resources to ensure that the owners and managers of Sites of Ecological Significance have been – and will continue to be – at the core of biodiversity protection.

The Canterbury Regional Policy Statement (CRPS) sets out criteria for identification and evaluation of ecological significance. The Council has engaged with local ecologists to develop a local interpretation of the criteria making the assessment more relevant and robust.

The resulting Schedule of Sites of Ecological Significance does not identify all areas (particularly on Banks Peninsula) that are acknowledged (by Council ecologists and members of the Specialist Ecologist Groups) to have high ecological values. Time and resource constraints limited the number of ecological surveys that could be commissioned to provide up to date information and also limited the number of areas that could be assessed against the significance criteria and mapped. A list has been drawn up of areas for priority survey and assessment in the coming years, with a view to adding further Sites of Ecological Significance to the Schedule through a future Plan Change.

[1] Signed off by the Environment Court 27 September 2007.

2. HISTORICAL CONTEXT:

2.1. The Draft Banks Peninsula District Plan 1997

a. In the Draft Banks Peninsula District Plan 1997, the Banks Peninsula District Council identified and mapped high value ecological sites selected by the Department of Conservation as "Recommended Areas for Protection" (RAPs). These sites were based on botanical surveys undertaken by Hugh Wilson in the 1980s. Boundaries around RAPs encapsulated the ecological values, but were broad enough to also include roads, coastal waters, farm houses and exotic pasture. Landowners were left with uncertainty about precisely where the ecological values were located. This led to appeals followed by 10 years of discussion and mediation between conservation interests, landowners, agencies and community representatives. The Environment Court issued a Consent Order (dated 27 September 2007) in which Christchurch City Council[2] was given direction regarding:

   I. Ecological criteria to identify sites of significant indigenous vegetation and significant habitats of indigenous fauna;

   II. Review of the relevant Rules;

   III. List of non-regulatory methods for consideration;

   IV. Engagement with landowners; and

   V. Establishment of a Steering Group.

b. In response to the Consent Order, the Council initiated The Banks Peninsula Ecological Study.

c. Hugh Wilson's PNAP records are now between 27 and 32 years old and they were collected for a different purpose (Wildland Consultants 2010). The criteria Wilson used for ranking sites and for selecting RAPs (refer to Wilson 1992) are different from those used to assess ecological significance for District Plan purposes today. Wilson's survey data is largely comprised of lists of plant species and incidental fauna observations. It does not provide the precise geographical locations of species and vegetation communities required for accurately identifying the boundaries of Sites of Ecological Significance. Boundaries around RAPs and the sites identified by Wilson were broad, included areas of lower ecological value between RAPs and were based largely on botanical values. Whilst the majority of sites identified by Wilson are likely to have retained the values for which they were identified, some sites have degraded while others have improved as a result of differing land management practices. Thus while Wilson provided a record of high values in the 1980s there is insufficient information to enable all of the site identified by Wilson to be identified and defined as Sites of Ecological Significance based solely on his records.

d. In 2010 Wildland Consultants completed a desktop study for the Council to indicate which sites in Hugh Wilson's comprehensive botanical survey (undertaken for the Protected Natural Areas Programme (PNAP) from 1983 to 1988) could be clearly identified as being significant using the Consent Order criteria. Ecological surveys were subsequently undertaken in areas where it was deemed that ecological significance was not easily determined and where landowners agreed to the surveys taking place.

e. A list of potential Sites of Ecological Significance was drawn up in 2012, with the acknowledgement that more work was required to confirm ecological values and to clarify the site boundaries. Further surveys and further research into all available data and records were subsequently undertaken, resulting in the current Schedule of Sites of Ecological Significance.

f. A review of the relevant rules in the Banks Peninsula District Plan was undertaken in 2012 in consultation with the Steering Group, by Jane Whyte of ResponsePlanning (contracted to the

[2] Amalgamation of Banks Peninsula District Council and Christchurch City Council took place in 2006.

Council). Her work has been considered in drafting provisions for the District Plan Review (see Section 32 Report).

g. Non-regulatory methods to protect Sites of Ecological Significance and to raise awareness about biodiversity and ecosystems generally were developed by Council staff. Some of the non-regulatory methods now make up the Sites of Ecological Significance Landowner Support Package discussed in section 11 of this report.

h. Engagement with the owners of actual and potential Sites of Ecological Significance helps them to understand the importance of the ecological values and enables them to be involved in the decision-making about the protection of those Sites. Landowners have protected many sites without assistance from the Council and their efforts should be supported wherever possible. To this end, the non-regulatory package focussed on support for private landowners with significant ecological values on their properties, and the process to identify Sites of Ecological Significance was designed to enable discussion between landowners and the Council.

i. An open invitation was issued for membership of the Banks Peninsula Ecological Study Steering Group inaugurated in September 2008. Most of the organisations and individuals who had been involved in the mediation process which resulted in the 2007 Consent Order became members of the Steering Group. Thus there has been consistent representation in the process from the Peninsula community for many years.

In 2013, the Banks Peninsula Ecological Study became part of the Christchurch District Plan Review[3]. The work that had been undertaken previously was adapted to meet the requirements of the CRPS. Stakeholder and landowner engagement continued with the same emphasis, but with amended timeframes and expectations.

2.2. Christchurch City Plan's Ecological Heritage Sites.

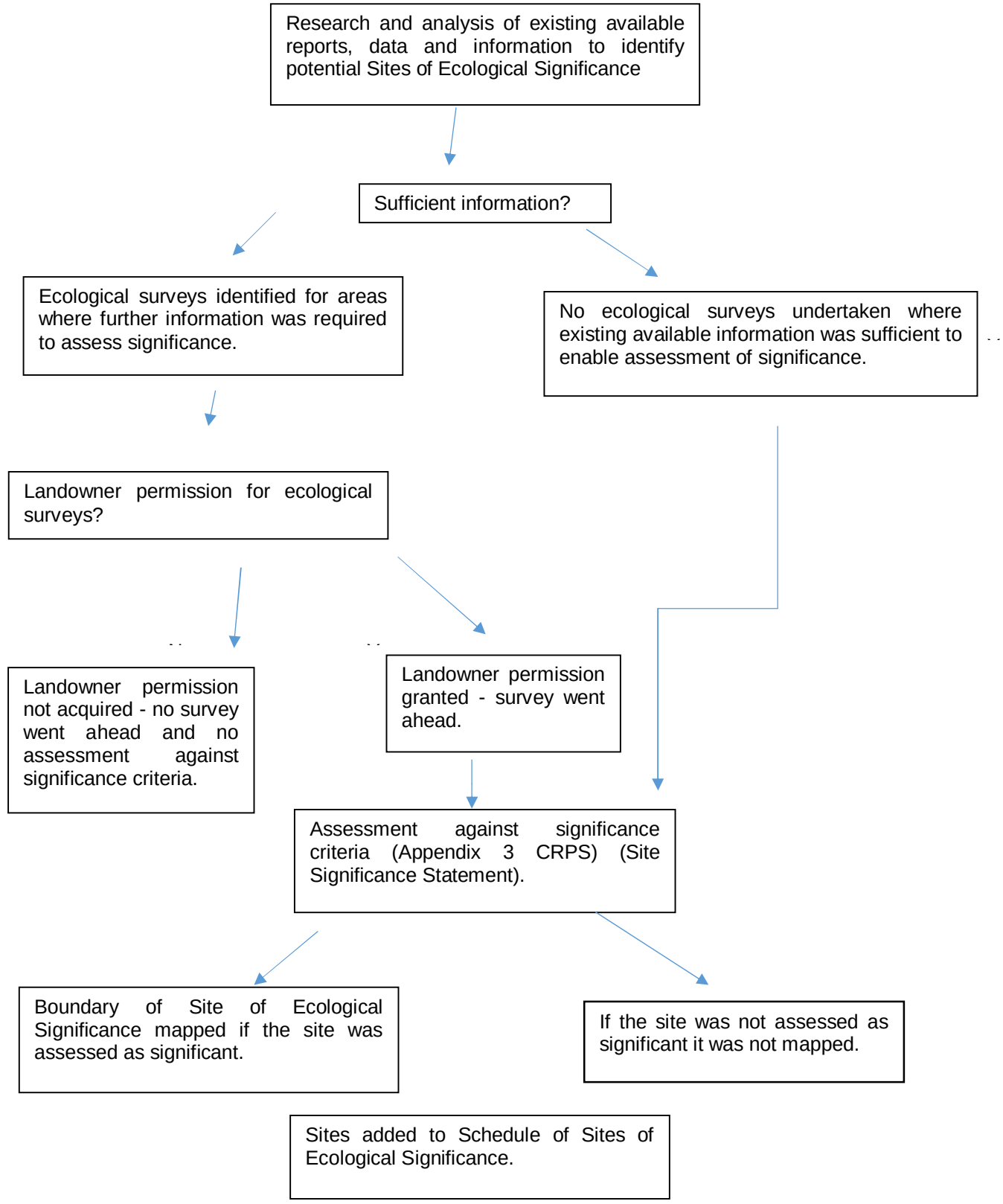
The Christchurch City area is dominated by urban development and has fewer areas of indigenous ecological interest than does Banks Peninsula. However the Christchurch City Plan (1995) included 49 Ecological Heritage Sites, which were identified following botanical survey work undertaken by Meurk et al in 1993. Most were on public land and a number of Plan Rules were applicable to each one. Some Sites have deteriorated or been damaged during the lifetime of the City Plan.

The District Plan Review provides the opportunity to review the Ecological Heritage Sites in the City, as well as to identify new Sites, using a consistent process and consistent assessment of ecological significance.

[3] Christchurch City Council complied with the 2007 Consent Order when the terms were written into the Banks Peninsula District Plan which became operative in 2012.

3. THE PROCESS

The process to identify and assess Sites of Ecological Significance



In assessing the ecological significance of sites, the Council has used the Significance Criteria set out in Appendix 3 of the CRPS, and the associated Guidelines for the application of those criteria (Wildland Consultants 2013). Some adaptation and additions to the Guidelines were agreed with the Specialist Ecologist Groups (refer to section 7 below). The criteria from the CRPS supersede those set out in the 2007 Consent Order.

The Council engaged the following technical experts to undertake the site assessments in accordance with the criteria of the CRPS:

- For the Banks Ecological Region, Kaitorete Spit and part of Lake Ellesmere/Te Waihora (part of the Ellesmere Ecological District) Scott Hooson (Boffa Miskell Limited) was employed as Project Ecologist in June 2014; and

- For the Low Plains Ecological District within which the City lies, Dr. Antony Shadbolt was seconded part time from Council's Assets and Network Unit as Project Ecologist in January 2014.

In order to maintain the confidence of all parties interested in the identification, assessment and management of Sites of Ecological Significance, and to facilitate wide ownership of the work, the Council has engaged with interested and affected groups and individuals whenever possible.

An extensive literature search and analysis (which is explained further in section 4) identified data and records which informed the significance assessment process. Specialist Ecologist Groups were invited to add to the literature already sourced, and their expert opinion was also sought to interpret and advise Council ecologists about the application of the criteria. In some cases this informed where ecological surveys were required to provide sufficient information to enable robust ecological assessments.

On Banks Peninsula, for many sites where Wilson recorded high ecological values in the 1980s and 1990s (such as stands of old-growth forest) it is clear from recent aerial photographs that these values have persisted and these sites are likely to be significant under the CRPS criteria. However the values need to be verified by more recent records in order for the Council to be able to include the sites in the Schedule of Sites of Ecological Significance. Further surveys were therefore commissioned on Banks Peninsula, and research into more recent records was undertaken. The results of these surveys informed the assessment of significance of those areas and Site Significance Statements were written by the Project Ecologists.

During the ecological surveys any obvious threats to the ecological values were noted for each Site. These were used to inform the Site Management section of the Site Significance Statements, ensuring that the Council's Sites of Ecological Significance Landowner Support Package could be targeted at those Sites which are under the greatest threat. The Council's Internal Ecologists Group also contributed to the section.

Once assessment was completed, all the Site Significance Statements were peer reviewed by the Liz Garson (Principal Advisor Natural Environment, Strategy and Planning Group, Christchurch City Council).

A selection of Site Significance Statements were also peer reviewed by Dr Kelvin Lloyd of Wildland Consultants, one of the co-authors of the Guidelines for the application of the CRPS criteria.

The Schedule of Sites of Ecological Significance in the Plan is organised by Ecological District as several of the significance criteria refer to Ecological District. Appendix 11 of this report attaches a map of the Ecological Districts in the Replacement District Plan area.

Each Site on the Schedule of Sites of Ecological Significance will be identified on the Replacement District Plan Maps. A Site Significance Statement has been prepared for each Site of Ecological Significance. Those statements describe the site and provide the assessment against the Significance Criteria.

4. LITERATURE SEARCH AND DATA EXTRACTION

A comprehensive literature search was undertaken by Elise Arnst, Dr Melissa Hutchison and Brian Patrick, who were specifically employed to identify and collate existing information (published and unpublished reports and data) on ecosystems and biodiversity within Christchurch City and Banks Peninsula. The following attributes were recorded in a Microsoft Excel spreadsheet for each information source:

- Author
- Date
- Title
- Location (Banks Peninsula Ecological Region, Ellesmere Ecological District or Low Plains Ecological District)
- Site
- Group (e.g. birds, invertebrates, wetlands)
- Reference to where document/information is saved
- Land tenure (public, private)

The collated information was then reviewed and key information of relevance to assessing ecological significance was summarised by site. The following attributes were recorded for each information source:

- Site number
- Site name
- Vegetation/botanical
- Birds
- Lizards
- Terrestrial invertebrates
- Freshwater fish
- Aquatic invertebrates
- Management issues
- Other information
- Geospatial data and format (cadastral boundary, polygon, point)
- Mapped (geospatial layer available in CCC GIS)
- Boundary of site clear?
- Sufficient information for significance assessment?
- Site survey required?
- Type of information/survey required?

The date of the reference and the date the information was collected was recorded and the usefulness of the information was ranked as being high, medium or low. The information was used to assess significance of Sites, and to identify those areas which required further research before assessment can be undertaken.

5. PRIORITISATION OF SITES FOR ASSESSMENT

5.1. Christchurch City / Low Plains Ecological District

Sites were prioritised for assessment based on:

- Whether they were within an existing Ecological Heritage Site (EHS) in the operative City Plan;
- Whether they were ranked as either a Primary Conservation Evaluation A or B site in Meurk *et al.* (1993);
- Whether a site had ecological values known to the Specialist Ecologist Groups and / or Council ecologists;
- Actual or perceived threats to ecological values (such as recreational pressure, changes in land management, pest incursions) as identified by Council ecologists and / or Specialist Ecologist Groups;

5.2. Banks Ecological Region

From the existing information (including Hugh Wilson's sites) and consultation with the Specialist Ecologist Groups a list of potential sites for assessment was prepared. Over 630 sites were identified[4] and it is likely that there are still others that were not identified. Sites were prioritised for assessment based on:

- Ecological value, determined by results of the literature search and / or advice from Specialist Ecologist Groups;
- Lack of legal protection;
- Actual or perceived threats to ecological values;
- Hugh Wilson's site ranking (where applicable)[5];
- Whether the site was identified as a Recommended Area for Protection by the Department of Conservation (Wilson 1992);
- Sites on Acutely or Chronically threatened land environments (where < 20% indigenous vegetation cover remains);
- Availability of information.

Given the short timeframe to complete the Schedule, there remains a high number of priority sites for which no assessment has been completed.

[4] The actual number of sites depends on how they are spatially defined, for example during the site assessment and mapping process several adjoining sites may be combined into a single larger site or a single site may be divided into several smaller sites.

[5] Hugh Wilson undertook surveys within the Banks Ecological Region for the Protected Natural Areas Programme between 1983 and 1990. Sites were ranked from A to E. The criteria for ranking natural areas and the ranking categories are described in (Wilson 1992). These rankings were used as a guide only and need to be interpreted with caution.

6. SITE SURVEYS

Where sufficiently recent, reliable and robust information was available to determine whether a site was significant or not *and* to accurately map site boundaries, significance assessments were completed without a site survey.

Site surveys were necessary where there was insufficient recent, reliable and robust information available to determine whether a site was significant or not, and to accurately map site boundaries. Depending on the existing information available on a site, and the vegetation communities and/or habitats of indigenous fauna present or likely to be present (based on examination of aerial photographs) one or both of the following surveys was commissioned to collect the information required to assess the ecological significance:

- Botanical (vegetation communities and plants); or
- Entomological (terrestrial invertebrates).

Several sites were identified for herpetological (lizard) and ornithological (bird) surveys in 2014, but landowner permission to undertake the surveys could not be obtained in the time available.

6.1. Survey Methodologies

Botanical surveys: the following information was recorded at each site:

i) The vegetation communities present following the Atkinson Classification system (Atkinson 1985);

ii) The extent of each vegetation community – drawn on hard copy aerial maps provided by the Council;

iii) Features of note such as areas of exotic trees, biodiversity pest plant infestations, remnant podocarp trees etc. – annotated on maps;

iv) Indigenous and exotic vascular plant species (mosses/lichens optional) and their abundance in each of the vegetation communities using the DAFOR[6] scale;

v) The status of the indigenous species recorded (i.e. nationally Threatened or At Risk, uncommon within the ecological region or district, endemic or at distributional limits);

vi) Native and exotic fauna incidentally observed during survey period;

vii) Any issues that would benefit from different management;

viii) Photographs.

Entomological (terrestrial invertebrate) surveys: At each site entomologists used the following sampling methodology:

i) Beating and/or sweeping vegetation and hand netting of day flying insects;

ii) Timed hand searches (turning rocks/logs, looking under bark, breaking up rotten wood, looking under tussocks, examining foliage;

iii) Pit fall trapping (refer to Appendix 6 for more detail);

iv) Light trapping (refer to Appendix 7 for more detail).

[6] **D** = Dominant, **A** = Abundant, **F** = Frequent, **O** = Occasional, **R** = Rare.

The following additional information was also recorded at each site:

i) Weather conditions (temperature, wind, precipation type and intensity, cloud cover);

ii) Time (hours and minutes) spent surveying using each method;

iii) The habitat types and plant species surveyed using each method;

iv) GPS locations of the areas surveyed;

v) GPS locations of other notable observations;

vi) Any issues that would benefit from different management.

Samples were processed by experts and invertebrates were identified to species level where possible. The status of the indigenous species (i.e. Nationally Threatened or At Risk, uncommon within the ecological region or district, endemic or at distributional limits) was recorded in the report for each site.

Aquatic surveys: The Council has been undertaking detailed aquatic ecology surveys to monitor ecological values and water quality within the majority of Christchurch City waterways for a number of years. There was sufficient information available to assess the potential Sites of Significance on the Low Plains and no additional surveys were undertaken.

Aquatic surveys were undertaken on Banks Peninsula with the intention that waterway SESs would be listed in the Schedule. However lack of time to discuss the implications with all affected landowners led to the decision to omit potential SESs which were identified solely for aquatic habitat values from the Schedule. These sites will be considered in a future Plan Change.

6.2. Survey administration

a. For each site the area for survey was identified on a map by the Project Ecologists, without reference to property boundaries;

b. The type of survey(s) required for each site (botanical, entomological, aquatic, ornithological or herpetological) were identified;

c. Property boundaries were drawn on the maps and the owners were then contacted for permission (refer to section 9);

d. If landowners did not agree to an ecological survey, it did not take place. However it should be noted that Council staff continue to engage with those landowners whenever possible and hope to be able to undertake survey work in future;

e. Contracted field ecologists from a Council panel were commissioned to undertake the work. They were instructed to contact the landowners to agree a date and time for the survey and that landowners may be in attendance;

f. Survey results were provided to the Project Ecologists, and all of the information for the sites was assessed to evaluate significance.

7. INTERPRETATION AND APPLICATION OF ECOLOGICAL SIGNIFICANCE CRITERIA

Policy 9.3.1 of the CRPS sets out the matters to be assessed when evaluating the significance of indigenous vegetation and significant habitats of indigenous fauna. Significance was determined by assessing areas and habitats against the following four matters:

a. Representativeness

b. Rarity or distinctive features

c. Diversity and pattern

d. Ecological context

The assessment of each matter was made using the criteria listed in Appendix 3 of the CRPS. Under Policy 9.3.1 areas or habitats are considered to be significant if they meet one or more of the criteria.

It should be noted that as a result of the site assessment prioritisation process (explained in section 5) all sites that were assessed by the Project Ecologists met at least one criterion, i.e. there are no sites which were assessed as not significant.

Guidelines for the application of ecological significance criteria for indigenous vegetation and habitats of indigenous fauna in the Canterbury Region (Wildland Consultants 2013) were used to assist the site significance assessments. Specific aspects of some criteria were subject to interpretation over and above that provided in Wildland Consultants (2013) using the expertise of the Specialist Ecologist Groups.

Where the information was available each site was evaluated against each criterion and assessed as being either significant for that criterion or not significant for that criterion, i.e. "meets threshold/does not meet threshold" (refer section 4.10 of Wildland Consultants Guidelines (2013)).

For each site a Site Significance Statement was prepared using a standardised report template (see Appendix 1) to ensure that each statement was consistent. This report template lists each of the CRPS criteria for determining significant indigenous vegetation and significant habitat of indigenous fauna (Appendix 3 of the CRPS).

Site boundaries were drawn following the guidelines in Section 4.7 of Wildland Consultants (2013):

"A significant site should include the significant features[7], and connecting habitat and key ecological processes that help to maintain the significant features. The significant site would normally include all vegetation/habitat units that contain or constitute significant features, and any intervening or buffering indigenous habitat that helps to connect these units and form a more cohesive or compact site. Mosaics of indigenous vegetation may be included in the significant area because an assemblage of small areas, overall, can comprise a significant area."

Site boundaries were mapped on aerial photographs by the Project Ecologists and subsequently digitised in a Geographic Information System (GIS) using the Council's 2010 aerial photographs and Google Earth imagery.

Further Interpretation of Ecological Significance Criteria

Discussions about the criteria took place between Council ecologists and with the Specialist Ecologist Groups. The following additional interpretations for a number of the CRPS criteria were agreed as appropriate for the Christchurch District Plan area by the majority of those party to the discussions and were adopted by the Project Ecologists.

[7] As identified in site surveys and/or from other data and information available.

Representativeness, Criterion 1:

i) Ecological restoration sites for vegetation in the Low Plains Ecological District (within Christchurch City) were considered to meet the threshold for criterion 1 (representativeness) where the planted species were locally sourced, had a representative species composition based on an appropriate naturally occurring reference plant community and were being managed primarily for their biodiversity/ecological values.

ii) The representativeness of bird assemblages at a site was assessed by comparing lists of species that are residents or regular visitors to a given habitat type with the species recorded from the site. These lists were compiled by Crossland (2014) and reviewed by the Bird Specialist Group (see Appendix 2). A site met this criterion if a high proportion of the species expected in that habitat had been recorded at the site.

Rarity and Distinctiveness, Criterion 4:

iii) Nationally threatened, at risk or uncommon species are those listed in the most recent New Zealand Threat Classification Series, commonly used in undertaking assessments in accordance with Section 6 of the Resource Management Act 1991.

Table 1: Referenced New Zealand Threat Classification Series.

Group	Reference(s)
Birds	Robertson *et al.* (2012)
Vascular plants	de Lange *et al.* (2013)
Reptiles	Hitchmough *et al.* (2013)
Freshwater fish	Goodman *et al.* (2014)
Freshwater invertebrates	Grainger *et al.* (2014)
Terrestrial invertebrates	Andrew *et al.* (2012) Buckley *et al.* (2012) Grainger *et al.* (2013) Hitchmough *et al.* (2014) Leschen *et al.* (2012) Mahlfeld *et al.* (2012) Sirvid *et al.* (2012) Trewick *et al.* (2012) Ward *et al.* (2012)

iv) Species that are uncommon within the relevant ecological districts were determined with input from the Specialist Ecologist Groups (see Appendix 3). The exception to this was aquatic macroinvertebrates, where it was decided by the aquatic specialist group that there was insufficient information to determine which species were uncommon in the ecological districts.

v) The list of uncommon plant species on Banks Peninsula was derived from the work undertaken by Wilson (2013 and 1992). Wilson (1992) lists species that were identified as uncommon, rare or very rare in the ecological district or ecological region during the Protected Natural Areas Programme Survey. Checklist A of Wilson (2013) lists the native vascular plant species within the Banks Ecological Region that are 'uncommon to rare or very local'. Minor amendments to this list were made with consensus from the Botanical Specialist Group (Appendix 4).

vi) For the Low Plains Ecological District, given that less than 1% of the extent of the former indigenous vegetation cover remains, most native plant species; with the exception of some more common species (e.g. *Coprosma robusta, Cordyline australis, Carex secta*), were considered uncommon.

vii) Species were considered to trigger the threshold for significance if they were endemic to Canterbury (following the example in Wildland Consultants (2013)) or a smaller geographical area, for example Banks Ecological Region, an ecological district or a single catchment or site.

Rarity and Distinctiveness, Criterion 5:

viii) A site was considered to meet the threshold for significance under this criterion where species occurred at the site that were at their national or regional distributional limits. (See Appendix 3 and Appendix 5)

ix) There are no fish or lizards at their distributional limits in Christchurch and the Aquatic Specialist Group reached the consensus that there was insufficient information to determine the distributional limit of aquatic macroinvertebrates.

Rarity and Distinctiveness, Criterion 6:

x) For aquatic habitats, the Aquatic Specialist Group decided that this was best identified at the ecosystem level (i.e. estuaries, seepages and flushes etc.) rather than attempting to identify distinctive assemblages of macro-invertebrates.

Ecological Context, Criterion 8:

xi) For aquatic ecosystems, the upper limit of the presence of any indigenous migratory fish species resulted in the lower reaches of the waterway down to the sea being included as part of the Site of Ecological Significance because the ecological linkage between the coast and the catchment is essential for these fish.

Ecological Context, Criterion 10:

xii) For aquatic ecosystems, this criterion was considered to be met if inanga spawning sites were located, as inanga were the only native species recorded that were known to spawn in specific locations within the waterways (i.e. at the tidal wedge).

8. ENGAGEMENT WITH SPECIALIST ECOLOGIST GROUPS AND PEER REVIEW

Five Specialist Ecologist Groups were convened:

a. Botanists (plants and vegetation)

b. Entomologists (invertebrates)

c. Aquatic ecologists (fish and aquatic invertebrates)

d. Ornithologists (birds)

e. Herpetologists (lizards).

Each group was made up of local experts (the list of whom is at Appendix 8 of this document). The role of these groups was "to provide advice and guidance to CCC on the location and delineation of significant indigenous vegetation and significant habitat of indigenous fauna to inform the identification of Sites of Ecological Significance (SESs) across the Council area."

The specialist ecologist group members engaged with the Council on the following understanding:

"Your assistance with this process does not preclude you from making submissions to the District Plan Review [next year]. The final decisions about SES identification are the Council's [sic], and whilst we will be taking on board all the views and advice that are provided, there may be occasions when you disagree with our decisions. Your right to make submissions is therefore not compromised by your involvement in the process." (Liz Garson by email, various dates 2014.)

Several meetings were convened with each Specialist Group. The purpose of these meetings was to:

a. Discuss the interpretation of the CRPS significance criteria and reach consensus on the interpretation of more subjective areas of the criteria and guidelines as appropriate;

b. Prepare and review lists of species that trigger criteria 4 and 5 (nationally Threatened or At Risk, uncommon within the ecological region or district, endemic or at distributional limits);

c. Identify priority sites for assessment.

It should be noted that with the agreement of the Herpetologists' Group the Council did not hold any information about lizard habitat, other than that which is in the public domain. This is due to the sensitivity of unpublished information being used for purposes other than protection of the habitats and species (such as poaching). Thus the Herpetologists' Group intended to review all the completed Site Significance Statements and to advise the Council about anomalies with site boundaries in relation to lizard habitat. For example, a boundary which, whilst being accurate for significant indigenous vegetation, could be amended to encapsulate additional significant habitat for indigenous lizards on the advice of the Specialist Group.

Each completed Site Significance Statement was peer reviewed by Liz Garson, providing feedback to the Project Ecologists about the consistency of application of the criteria between Sites, on the provision of / evidence for robust data to support each assessment and about the practicability of management recommendations and landowner support package options.

It was intended that the Specialist Ecologist Groups would then peer review and provide scientific feedback on the draft Site Significance Statements.

However following discussion between Council staff about the impact of the truncated District Plan Review stage two timetable announced in January 2015, it was concluded that there was insufficient time for a peer review process by the Specialist Ecologist Groups, nor was there time for the Herpetologists' Group to comment on the coverage of lizard habitat to take place. Instead, Dr Kelvin Lloyd (Wildland Consultants, who had not been a member of a Specialist Ecologist Group) undertook a peer review of 20 Site Significance Statements.

9. ENGAGEMENT WITH LANDOWNERS

Most Sites of Ecological Significance on Banks Peninsula are located on private land. In the Low Plains, most are on public land. It has therefore been on Banks Peninsula that emphasis has been placed on engagement with private landowners.

It is recognised that the identification of Sites of Ecological Significance could be regarded as an unwelcome constraint by landowners. It is also recognised that regulation can serve to protect ecosystems and biodiversity where landowners know about the regulations, where they understand the values and how they may cause damage (often unwittingly). Therefore working in collaboration with landowners can be a more effective way to protect areas of high ecological value.

The Council, with the support of the Banks Peninsula Ecological Study Steering Group, undertook an extensive programme of landowner engagement on Banks Peninsula between August 2011 and December 2014, to provide opportunities for awareness-raising, information-sharing and to discuss concerns that landowners may have had about the identification and scheduling of Sites of Ecological Significance. Liz Garson and Paul Devlin (Head Regional Parks Ranger Banks Peninsula, Operations Group) met landowners face to face on their properties to facilitate greater understanding and acceptance of the Sites of Ecological Significance amongst the community of the Peninsula.

The discussions were constructive, and formed the start of a positive collaborative relationship between the Council and landowners. The Council aims to maintain these relationships in future, in order to ensure that Council and landowners can work together to protect Sites of Ecological Significance and other important areas of indigenous vegetation.

Prior to ecological surveys:

Ecological surveys were only undertaken with the permission of landowners, therefore the Council undertook to contact every landowner where a survey was desirable, and to talk face to face whenever possible.

a. Each landowner of property where an ecological survey was requested was sent an introductory letter, an aerial map showing the area of interest on their land and on Banks Peninsula they also received an Information Sheet about the work (Appendix 9). These documents were developed in collaboration with the Ecological Study Steering Group, who advised and contributed to the wording, images and map formats.

b. A follow-up telephone call was made a week or two after the letter was sent, to arrange either a face-to-face discussion between the landowner/s and Council staff, or to agree on the phone that the surveys could go ahead. In cases where the landowners were already well known by Council staff face-to-face discussions were usually not required.

c. In some cases telephone numbers could not be found (overseas landowners, Trusts etc.) and in some cases landowners declined to meet Council staff. Where further contact could not be made, surveys did not take place. Three-quarters of letters resulted in a meeting.

d. Face-to-face discussions normally took place at the landowner's house. A note was made of each discussion, which was sent to the landowners afterwards as a record. 160 landowners held face to face discussions with Council staff about the Sites of Ecological Significance process between August 2011 and December 2014.

e. Prior to any ecological survey, the field ecologists who were contracted by the Council, contacted the landowner/s to discuss access, date and time of surveys.

f. Once the survey was completed and reported, Council staff sent the landowners a copy of the results.

g. Where survey access was not possible, the areas were put onto a list for future discussions with the landowner/s and future assessment using the CRPS Significance Criteria.

Prior to publication of draft Schedule and Statements of Sites of Ecological Significance:

The original intention of the process was to give every landowner with all or part of a Site of Ecological Significance on their property a copy of the relevant draft Site Significance Statement, including an aerial map showing the proposed extent of the Site, prior to any of the information being made available to anybody else. They would have been offered the opportunity at that stage to discuss the implications with Council staff.

However the truncated process of the stage two chapters of the District Plan Review announced in January 2015 did not allow for consultation prior to formal notification. Landowners will, however have received copy/ies of Site Significance Statement/s about the Site/s of Ecological Significance affecting their property for information, prior to public notification of the Natural and Cultural Heritage chapter.

Although the Council is conscious that the truncated process has the potential to impact on landowners and the community on Banks Peninsula in particular, it will continue to engage with them to identify and protect Sites of Ecological Significance.

10. ENGAGEMENT WITH STAKEHOLDERS

10.1. Banks Peninsula Ecological Study Steering Group

The 2007 Consent Order provided the direction that the Council should undertake the: “Establishment of a broad based community steering group to oversee the study and assist the Council with input and advice. This is intended to ensure, among other things, that the process of identification is well understood and has wide community acceptance.”

Accordingly the Banks Peninsula Ecological Study Steering Group was set up in 2008.

Representation on the Steering Group was similar to that which was involved in the process from 1997 onwards following the Draft Banks Peninsula District Plan and reflected a broad range of interests. It was made up of the following organisations / representation:

- Federated Farmers
- Landowners
- Banks Peninsula Conservation Trust
- QEII National Trust
- Summit Road Society
- Residents of Governors Bay
- Lyttelton-Mt Herbert Community Board
- Akaroa-Wairewa Community Board
- Mahaanui Kuratoa Limited (MKT)
- The Royal Forest and Bird Protection Society of New Zealand
- Environment Canterbury
- Department of Conservation
- Christchurch City Councillor for Banks Peninsula
- Christchurch City Council Regional Parks Rangers

The Steering Group worked in a positive and collaborative manner. Many of the Steering Group members attended meetings and gave their time voluntarily. Discussions were at times robust and challenging for all participants, but a mutual respect developed and through this process the Council was provided invaluable advice and guidance. In particular this guidance was in relation to the process of engaging with landowners, determining areas which could be considered as priorities for ecological assessment, the approach that could be taken to plan provisions and the proposed Sites of Ecological Significance Landowner Support Package.

10.2. Low Plains / Christchurch City

Work to identify Sites of Ecological Significance on the Low Plains / Christchurch City commenced in 2013. It is proposed that collaboration will take place with the Christchurch Biodiversity Group to monitor, report and manage (where appropriate) Sites of Ecological Significance once the District Plan is notified. The Group is in the process of being established, led by Dr Colin Meurk from Landcare Research, and the detail of engagement will be developed once the Group is fully established. Many of the parties interested in the Christchurch Biodiversity Group were part of the Specialist Ecologist Groups.

10.3. Council's Internal Ecologists' Group

Within Christchurch City Council there are a number of ecologists and other staff working to protect and enhance ecosystems and biodiversity. These staff made up the Internal Ecologists Group and most have also contributed to the Specialist Ecologists Groups. The Internal Ecologists Group helped to direct the Project Ecologists and Project Leader regarding the interpretation of the significance criteria. They made management recommendations for inclusion in the Site Significance Statements. The Group also ensured that knowledge of the work to identify Sites of Ecological Significance has been understood and supported across the Council.

10.4. Runanga / Mahaanui Kurataiao Limited

Engagement with Runanga was via Mahaanui Kurataiao (MKT) which was represented on the Banks Peninsula Steering Group. Liz Garson also gave presentations to Hui of Banks Peninsula Runanga representatives on two occasions (September 2011 and March 2012) to explain the process of identifying Sites of Ecological Significance. The result of the Hui was an agreement between MKT and the Council's project staff that Runanga would like to have further discussions about Sites of Ecological Significance once they were on the Schedule, specifically to consider management of those Sites to take account of Runanga interests (Appendix 10).

Further consultation took place with the Runanga Focus Working Group during drafting of the proposed Replacement District Plan, as described in the section 32 report.

11. SITES OF ECOLOGICAL SIGNIFICANCE LANDOWNER SUPPORT PACKAGE

The Support Package was initially driven by the 2007 Consent Order for Banks Peninsula and the associated Non-Regulatory Methods referred to in that document. There are no Non-Regulatory Methods for Sites of Ecological Significance in the Christchurch District Plan and provision for the Support Package is proposed in the draft 2015-2025 Christchurch City Council Long Term Plan.

Experience across the world demonstrates that Rules alone do not protect (and seldom enhance) areas of high ecological significance. It is the landowner or land manager who has the greatest influence, and regulations only tend to come into play once damage or destruction has occurred. Often damage takes place due to lack of understanding about the values. The Support Package aims to increase understanding and awareness amongst landowners and the wider community about the implications of land management practices on ecological values.

There was extensive discussion amongst the Internal Ecologists Group and the Banks Peninsula Steering Group about the relative advantages / disadvantages of a Council-managed Support Package Programme versus a contestable grant to landowners. A Council-managed Programme was favoured as it enables Council staff to engage with and assist landowners of Sites which are under the greatest risk to the ecological values. A contestable grant would tend to attract applications from landowners already interested and aware of the ecological values on their Sites of Ecological Significance.

The Support Package responds to the challenges identified by landowners during discussions with Council staff, and the recommendations of ecologists about how best to protect Sites. It should be noted that the ecologists and landowners suggested the same types of assistance, although not necessarily in the same priority order.

The Support Package provides landowners with Sites of Ecological Significance on their properties with practical advice, guidance and assistance where it is most needed. It demonstrates that the Council is committed to working in partnership with landowners to safeguard the ecological values identified in the District Plan, providing positive incentives to undertake work to protect those values.

The Support Package would be implemented by the Council's Regional Park Rangers Team and is proposed to be funded through the 2015-2015 Long Term Plan.

11.1. Operational Matters

a. The Regional Parks Rangers Team will provide guidance and support directly to landowners with SESs on their properties, based on the assessment and prioritisation process for SESs outlined below.

b. The Regional Parks Rangers have the skills and expertise to undertake guidance and practical assistance where appropriate. It is an extension of the work that they already undertake on land which is owned and/or managed by the Council. The work on SESs will complement that which is already being done. This has particular benefits in relation to coordinated pest plant and pest animal control.

c. In terms of costs and effectiveness it is considered advantageous to Council for the Regional Park Ranger team to undertake the suggested work, rather than either contracting the work out or adding to the role of the Banks Peninsula Conservation Trust and / or other such external bodies. The Rangers are known and respected by the community and can offer resources and economies of scale which are probably unique to the Council in this area.

d. Additional budget is necessary in order for the Support Package to be implemented by the Regional Park Rangers.

11.2. The Landowner Support Package

The Regional Park Rangers will offer landowners the following support for the appropriate protection of SESs on their properties.

Advice and guidance on:

- pest animal control;
    - pest plant control;
    - fencing;
    - stock watering options;
    - public access issues;
    - planting;
    - interpretation / education opportunities;
    - monitoring (ecological condition, species etc.).

Practical assistance where efficiencies are possible with:

- pest animal control (traps, monitoring);
- pest plant control (treatment, monitoring);
- fencing (materials and / or labour, maintenance);
- stock watering (materials and / or labour);
- signage;
- monitoring the effectiveness of assistance provided.

In order that the resources of the Regional Park Ranger Team are used effectively and they are not overwhelmed with expectations to provide advice and assistance, a robust methodology for prioritisation of work is proposed as follows:

a. Only SESs (and the immediate environs where appropriate) will be considered for assistance;

b. Each SES has a Site Significance Statement in which are identified risks and / or threats to its ecological significance (e.g. from pest animals, pest plants, stock incursion, public access). The associated management recommendations will be prioritised and worked up in more detail for those sites which are considered priorities for support;

c. Once b. has been completed and the relevant priorities for support have been determined, costs will be drawn up and draft annual work programmes drawn up accordingly;

d. Once a draft programme is developed it is the intent that assistance from the landowner, volunteers, community and agency support will be sought on a willing landowner/agency basis.

12. FUTURE WORK REQUIRED

This is only the beginning of the assessment of Sites of Ecological Significance, for Banks Peninsula in particular. A 'comprehensive' Schedule will be achieved only after a further two or three years' work of ecological surveys and assessment for significance[8]. It is therefore the intention of the Council to undertake a Plan Change in due course to add to the Schedule.

The progress and timing of the Plan Change will be dependent upon the resources that the Council commits to the process. As a minimum, continued Project Ecologist expertise will be required to undertake significance assessments. There will also be a need for continued staff time to engage with affected landowners and stakeholders. Contracts will also be required for field ecologists to undertake ecological surveys.

Landowner engagement will continue on three levels:

a. to discuss possible ecological surveys and the subsequent assessment of Sites of Ecological Significance in future years, to be led by Strategy and Planning Group staff with support from Regional Park Rangers;

b. to discuss the implications of the waterways SESs with all affected landowners, to be led by Strategy and Planning Group staff with support from Regional Park Rangers; and

c. to discuss assistance to landowners with Sites of Ecological Significance from the SES Landowners' Support Package, to be led by Regional Park Rangers.

There is also the intention to continue the engagement with stakeholders to facilitate collaborative approaches to the protection of Sites of Ecological Significance. This will include liaison with the Banks Peninsula Ecological Steering Group, the Christchurch Biodiversity Group, Universities, statutory agencies, Runanga, Trusts, conservation groups, residents and other interest groups.

After the Plan Change it is anticipated that a few ecological surveys will continue each spring and summer in order to gather information about areas previously not identified as possibly significant, as well as to re-survey areas subject to change such as human disturbance, biodiversity pest plants and animals, ongoing grazing pressures, sea level rise, fires, landslips, floods and other natural occurrences. This will enable a more effective review of the Schedule in future District Plan Reviews.

[8] In the first instance to address those areas already identified as priorities for ecological survey and assessment and for which there was insufficient time to complete.

13. SIGNIFICANT INDIGENOUS VEGETATION AND SIGNIFICANT HABITAT FOR INDIGENOUS FAUNA THAT HAS NOT YET BEEN ASSESSED AND IDENTIFIED AS A SITE OF ECOLOGICAL SIGNIFICANCE.

The Schedule of Sites of Ecological Significance is the beginning of the process to formally assess, identify, map and protect sites. There are many areas of indigenous vegetation and habitat of indigenous fauna, on Banks Peninsula in particular, which have not yet been assessed, identified and mapped as Sites of Ecological Significance, but which are likely to meet the significance criteria once they are assessed. These areas should not be considered as being of lesser ecological significance than those in the Schedule simply because they have not been formally assessed and mapped.

It is the intention of the Council to undertake further assessments and identification of Sites of Ecological Significance following the same methodology and process as detailed in sections 6, 7, 8 and 9 of this report, for a Plan Change that will add to the Schedule.

Time and resources will continue to dictate the speed at which all areas of possible significance can be assessed and identified and in the interim the Council will safeguard those areas of possible significance that are not on the Schedule wherever possible[9]. Areas of possible significance not yet listed on the Schedule should be considered an integral part of the biodiversity and ecosystems of the Council area and should be protected from threats to their ecological integrity.

There are two categories of sites for consideration:

a) Those sites (with associated mapped boundaries) that have been assessed and identified as meeting the significance criteria in Appendix 3 of the CRPS (following the same methodology and process as detailed in sections 6, 7, 8 and 9 of this report) which are not yet Scheduled, and will be part of the Plan Change.

   Council should be in a position to offer the landowner/s advice, guidance and assistance as appropriate to look after the biodiversity of these sites via the Sites of Ecological Significance Landowner Support Package before the site is added to the Schedule in the proposed Plan Change.

b) Those areas of indigenous vegetation that have not yet been assessed and identified as meeting the significance criteria in the CRPS.

Where there is a reported risk of damage to potentially significant ecological values, areas of indigenous vegetation will be subject to survey and assessment by a qualified ecologist on a case by case basis, using the significance criteria in Appendix 3 of the CRPS and following the same methodology and process as detailed in sections 6, 7, 8 and 9 of this report.

If the criteria are met, the site will then be included in the proposed Plan Change and Council should be in a position to offer the landowner/s advice, guidance and assistance as appropriate to look after the biodiversity of the area via the Sites of Ecological Significance Landowner Support Package before the site is added to the Schedule in the proposed Plan Change.

If none of the significance criteria are met, the area will not be assessed as being significant and will not be added to the Schedule in the proposed Plan Change.

In addition to areas of indigenous vegetation and habitat of indigenous fauna which may meet the significance criteria, there will also always be other areas of indigenous vegetation and habitat of indigenous fauna that are important to the overall functioning of the ecosystem. These areas need some level of protection in terms of outcomes for biodiversity.

[9] Refer to Section 32 Planning report re. objectives, policies and rules affecting these areas.

Where these areas are in public ownership, protection can be provided via appropriate management plans (which may also take account of landscape and recreational values). Broad community awareness and understanding of the value of such areas outside public ownership can help with their protection. To this end the Council will continue to engage with the community and support organisations such as the Banks Peninsula Conservation Trust and the Avon-Heathcote Estuary Ihutai Trust.

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[10] www.ecan.govt.nz/publications/Plans/ecological-significance-indigenous-vege-canterbury.pdf

15. APPENDIX 1 - TEMPLATE FOR STATEMENT OF ECOLOGICAL SIGNIFICANCE

Christchurch District Plan

Site of Ecological Significance

Site Significance Statement

Site name: XXX

Site number: XXX

Physical address of site: XXX

Summary of Significance:

XXX

Site Map

Additional Site Information

Ecological District: XXX

Central point (NZTM): XXX

Area of SES (ha): XXX

Site Description

XXX

Extent of Site of Ecological Significance

XXX

Assessment Summary

The XX name Site has been evaluated against the criteria for determining significant indigenous vegetation and significant habitats of indigenous fauna listed in Appendix 3 of the Canterbury Regional Policy Statement (Environment Canterbury, 2013) (see below) referring also to the Wildland Consultants (2013) Guidelines and advice from the relevant Specialist Ecologist Groups. Under these criteria the site is/is not ecologically significant because….

(Delete/amend) as appropriate:

It meets the representativeness (criteria XX), rarity/distinctiveness (criteria XX), diversity and pattern (criterion X) and ecological context criteria (criteria XX).

or:

it does not meet any of the criteria in Appendix 3 of the CRPS.

Assessment against Significance Criteria

Representativeness

1 Indigenous vegetation or habitat of indigenous fauna that is representative, typical or characteristic of the natural diversity of the relevant ecological district. This can include degraded examples where they are some of the best remaining examples of their type, or represent all that remains of indigenous biodiversity in some areas.

XXX

2 Indigenous vegetation or habitat of indigenous fauna that is a relatively large example of its type within the relevant ecological district.

XXX

Rarity/Distinctiveness

3 Indigenous vegetation or habitat of indigenous fauna that has been reduced to less than 20% of its former extent in the Region, or relevant land environment, ecological district, or freshwater environment.

XXX

4 Indigenous vegetation or habitat of indigenous fauna that supports an indigenous species that is threatened, at risk, or uncommon, nationally or within the relevant ecological district.

XXX

5 The site contains indigenous vegetation or an indigenous species at its distribution limit within Canterbury Region or nationally.

XXX

6 Indigenous vegetation or an association of indigenous species that is distinctive, of restricted occurrence, occurs within an originally rare ecosystem, or has developed as a result of an unusual environmental factor or combinations of factors.

XXX

Diversity and Pattern

7 Indigenous vegetation or habitat of indigenous fauna that contains a high diversity of indigenous ecosystem or habitat types, indigenous taxa, or has changes in species composition reflecting the existence of diverse natural features or ecological gradients.

XXX

Ecological Context

8 Vegetation or habitat of indigenous fauna that provides or contributes to an important ecological linkage or network, or provides an important buffering function.

XXX

9 A wetland which plays an important hydrological, biological or ecological role in the natural functioning of a river or coastal system.

XXX

10 Indigenous vegetation or habitat of indigenous fauna that provides important habitat (including refuges from predation, or key habitat for feeding, breeding, or resting) for indigenous species, either seasonally or permanently.

XXX

Site Management

Existing Protection Status

XXX

Threats and risks	Management recommendations	Support package options
.	.	.
.	.	.
.	.	.
.	.	.

References

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Assessment completed by: XXX

Date: XXX

Statement completed by: XXX

Date: XXX

Statement updated by: XXX

Date: XXX

Please note this statement is based on information available at the time of writing. Due to the dynamic nature of ecosystems, future reassessment of the site may be necessary to reflect any changes in knowledge of its ecological significance.

16. APPENDIX 2 - BIRD ASSEMBLAGES

"Association of Indigenous Species"

All species that are Residents or Regular Visitors to a given habitat type in Christchurch/Banks Peninsula

Andrew Crossland

Regional Parks Team

Transport & Greenspace Unit

Christchurch City Council

Updated 14 October 2014

1. Banks Peninsula Outer Coastline
2. Pegasus Bay Estuaries/Coastal wetlands
3. Banks Peninsula Estuaries/Coastal wetlands
4. Coastal Lakes
5. Freshwater Lakes and Ponds
6. Freshwater Rivers and Streams
7. Freshwater Wetlands (swamps)
8. Willow Woodlands
9. Braided Rivers
10. Port Hills Native Bush
11. Banks Peninsula Native Bush
12. Lowland Plains Native Bush
13. Dry grasslands
14. Coastal Wet grassland
15. Inland Wet grassland
16. Definition:

Resident = species occurs year-round (with or without breeding)

Regular Visitor = occurs regularly but not present 12 months/year.

16.1. Banks Peninsula Outer Coastline

Residents and Regular Visitors

- **Sooty Shearwater** *Puffinus grieseus*
- **Fairy Prion** Pachyptila turtur
- **White-flippered Penguin** Eudyptula minor albosignata
- **Yellow-eyed Penguin** *Megadyptes antipodes*
- Australasian Gannet *Morus serrator*
- **Black Cormorant** Phalacrocorax carbo novaehollandiae
- **Pied Cormorant** Phalacrocorax varius varius
- **Little Cormorant** Phalacrocorax melanoleucos brevirostris
- **Spotted Shag** Stictocarbo punctatus
- **White-faced Heron** Ardea novaehollandiae novaehollandiae
- **Reef Heron** Egretta sacra sacra
- Variable Oystercatcher *Haematopus unicolor*
- **South Island Pied Oystercatcher** *Haematopus ostralegus finschi*
- **Arctic Skua** Stercorarius parasiticus
- **Black-backed Gull** Larus dominicanus dominicanus
- **Red-billed Gull** Larus novaehollandiae scopulinus
- Black-billed Gull *Larus bulleri*
- **Caspian Tern** *Sterna caspia*
- White-fronted Tern *Sterna striata*
- **Black-fronted Tern** *Sterna albostriata*
- **Welcome Swallow** Hirundo tahitica neoxena
- **New Zealand Kingfisher** *Halcyon sancta vagans*

16.2. Pegasus Bay Estuaries/Coastal Wetlands

Residents and Regular Visitors

- Australasian Gannet Morus serrator
- Black Cormorant Phalacrocorax carbo novaehollandiae
- Pied Cormorant Phalacrocorax varius varius
- Little Cormorant Phalacrocorax melanoleucos brevirostris
- Little Black Cormorant Phalacrocorax sulcirostrisSpotted Shag Stictocarbo punctatus
- White Heron Egretta alba modesta
- White-faced Heron Ardea novaehollandiae novaehollandiae
- Cattle Egret Bubulcus ibis coromandus
- Australasian Bittern Botaurus poiciloptilus
- Royal Spoonbill Platalea regia
- Black Swan Cygnus atratus
- Paradise Shelduck Tadorna variegata
- Grey Duck Anas superciliosa superciliosa
- Grey Teal Anas gracilis
- New Zealand Shoveler Anas rhynchotis
- **New Zealand Scaup** Aythya novaeseelandiae
- Australasian Harrier Circus approximans
- Pukeko Porphyrio porphyrio melanotus
- Marsh Crake Porzana pusilla affinis
- Spotless Crake Porzana tabuensis plumbea
- Variable Oystercatcher Haematopus unicolor
- South Island Pied Oystercatcher Haematopus ostralegus finschi
- Pied Stilt Himantopus himantopus leucocephalus
- Spur-winged Plover Vanellus miles
- Banded Dotterel Charadrius bicinctus bicinctus
- Black-fronted Dotterel Charadrius melanops

- Wrybill Anarhynchus frontalis
- Eastern Bar-tailed Godwit Limosa lapponica baueri
- Asiatic Whimbrel Numenius phaeopus variegatus
- Turnstone Arenaria interpres
- Red Knot Calidris canutus canutus
- Arctic Skua Stercorarius parasiticus
- Pomarine Skua Stercorarius pomarinus
- Black-backed Gull Larus dominicanus dominicanus
- Red-billed Gull Larus novaehollandiae scopulinus
- Black-billed Gull Larus bulleri
- Caspian Tern Sterna caspia
- White-fronted Tern Sterna striata
- Black-fronted Tern Sterna albostriata
- New Zealand Kingfisher Halcyon sancta vagans
- Welcome Swallow Hirundo tahitica neoxena
- **New Zealand Pipit** Anthus novaeseelandiae novaeseelandiae

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16.3. Banks Peninsula Estuaries/Coastal Wetlands

Residents and Regular Visitors

- Australasian Gannet Morus serrator
- Black Cormorant Phalacrocorax carbo novaehollandiae
- Pied Cormorant Phalacrocorax varius varius
- Little Cormorant Phalacrocorax melanoleucos brevirostris
- Little Black Cormorant Phalacrocorax sulcirostris
- Spotted Shag Stictocarbo punctatus
- White-faced Heron Ardea novaehollandiae novaehollandiae
- Reef Heron Egretta sacra sacra
- Black Swan Cygnus atratus
- Paradise Shelduck Tadorna variegata

- Grey Duck Anas superciliosa superciliosa
- Grey Teal Anas gracilis
- New Zealand Shoveler Anas rhynchotis
- Australasian Harrier Circus approximans
- Pukeko Porphyrio porphyrio melanotus
- Marsh Crake Porzana pusilla affinis
- Variable Oystercatcher Haematopus unicolor
- South Island Pied Oystercatcher Haematopus ostralegus finschi
- Pied Stilt Himantopus himantopus leucocephalus
- Spur-winged Plover Vanellus miles
- Eastern Bar-tailed Godwit Limosa lapponica baueri
- Arctic Skua Stercorarius parasiticus
- Pomarine Skua Stercorarius pomarinus
- Black-backed Gull Larus dominicanus dominicanus
- Red-billed Gull Larus novaehollandiae scopulinus
- Black-billed Gull Larus bulleri
- Caspian Tern Sterna caspia
- White-fronted Tern Sterna striata
- Black-fronted Tern Sterna albostriata
- Welcome Swallow Hirundo tahitica neoxena
- New Zealand Kingfisher Halcyon sancta vagans
- **New Zealand Pipit** Anthus novaeseelandiae novaeseelandiae

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16.4. Coastal Lakes

Residents and Regular Visitors

- Black Cormorant Phalacrocorax carbo novaehollandiae
- Pied Cormorant Phalacrocorax varius varius
- Little Cormorant Phalacrocorax melanoleucos brevirostris
- Little Black Cormorant Phalacrocorax sulcirostris

- Spotted Shag Stictocarbo punctatus
- White Heron Egretta alba modesta
- Cattle Egret Bubulcus ibis coromandus
- White-faced Heron Ardea novaehollandiae novaehollandiae
- Australasian Bittern Botaurus poiciloptilus
- Royal Spoonbill Platalea regia
- Black Swan Cygnus atratus
- Paradise Shelduck Tadorna variegata
- Grey Duck Anas superciliosa superciliosa
- Grey Teal Anas gracilis
- New Zealand Shoveler Anas rhynchotis
- New Zealand Scaup Aythya novaeseelandiae
- Australasian Harrier Circus approximans
- Pukeko Porphyrio porphyrio melanotus
- Marsh Crake Porzana pusilla affinis
- Spotless Crake Porzana tabuensis plumbea
- Variable Oystercatcher Haematopus unicolor
- South Island Pied Oystercatcher Haematopus ostralegus finschi
- Pied Stilt Himantopus himantopus leucocephalus
- Spur-winged Plover Vanellus miles
- Pacific Golden Plover Pluvialis fulva
- Banded Dotterel Charadrius bicinctus bicinctus
- Black-fronted Dotterel Charadrius melanops
- Wrybill Anarhynchus frontalis
- Eastern Bar-tailed Godwit Limosa lapponica baueri
- Turnstone Arenaria interpres
- Red Knot Calidris canutus canutus
- Curlew Sandpiper Calidris ferruginea
- Sharp-tailed Sandpiper Calidris acuminata

- Pectoral Sandpiper Calidris melanotos
- Red-necked Stint Calidris rufficollis
- Arctic Skua Stercorarius parasiticus
- Pomarine Skua Stercorarius pomarinus
- Southern Black-backed Gull Larus dominicanus dominicanus
- Red-billed Gull Larus novaehollandiae scopulinus
- Black-billed Gull Larus bulleri
- Caspian Tern Sterna caspia
- Gull-billed Tern Gelochelidon nilotica
- White-fronted Tern Sterna striata
- Black-fronted Tern Sterna albostriata
- White-winged Black Tern Chlidonias leucopterus
- New Zealand Kingfisher Halcyon sancta vagans
- Welcome Swallow Hirundo tahitica neoxena
- **New Zealand Pipit** Anthus novaeseelandiae novaeseelandiae

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16.5. Freshwater Lakes and Ponds

Residents and Regular Visitors

- Australasian Crested Grebe Podiceps cristatus australis
- Black Cormorant Phalacrocorax carbo novaehollandiae
- Little Cormorant Phalacrocorax melanoleucos brevirostris
- Little Black Cormorant Phalacrocorax sulcirostris
- White Heron Egretta alba modesta
- White-faced Heron Ardea novaehollandiae novaehollandiae
- Australasian Bittern Botaurus poiciloptilus
- Black Swan Cygnus atratus
- Paradise Shelduck Tadorna variegata
- Grey Duck Anas superciliosa superciliosa
- Grey Teal Anas gracilis

- New Zealand Shoveler Anas rhynchotis
- New Zealand Scaup Aythya novaeseelandiae
- Australasian Harrier Circus approximans
- Pukeko Porphyrio porphyrio melanotus
- Australasian Coot Fulica atra australis
- Marsh Crake Porzana pusilla affinis
- Pied Stilt Himantopus himantopus leucocephalus
- Spur-winged Plover Vanellus miles
- Southern Black-backed Gull Larus dominicanus dominicanus
- Red-billed Gull Larus novaehollandiae scopulinus
- Black-billed Gull Larus bulleri
- New Zealand Kingfisher Halcyon sancta vagans
- **Welcome Swallow** Hirundo tahitica neoxena

16.6. Freshwater Rivers and Streams

Residents and Regular Visitors

- Black Cormorant Phalacrocorax carbo novaehollandiae
- Pied Cormorant Phalacrocorax varius varius
- Little Cormorant Phalacrocorax melanoleucos brevirostris
- Little Black Cormorant Phalacrocorax sulcirostris
- White Heron Egretta alba modesta
- White-faced Heron Ardea novaehollandiae novaehollandiae
- Black Swan Cygnus atratus
- Paradise Shelduck Tadorna variegate
- Grey Duck Anas superciliosa superciliosa
- Grey Teal Anas gracilis
- New Zealand Shoveler Anas rhynchotis
- New Zealand Scaup Aythya novaeseelandiae
- Australasian Harrier Circus approximans

- Pukeko Porphyrio porphyrio melanotus
- Australasian Coot Fulica atra australis
- Marsh Crake Porzana pusilla affinis
- Spur-winged Plover Vanellus miles
- Pied Stilt Himantopus himantopus leucocephalus
- Southern Black-backed Gull Larus dominicanus dominicanus
- Red-billed Gull Larus novaehollandiae scopulinus
- Black-billed Gull Larus bulleri
- New Zealand Kingfisher Halcyon sancta vagans
- **Welcome Swallow** Hirundo tahitica neoxena

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16.7. Freshwater Wetlands (swamps)

Residents and Regular Visitors

- Black Cormorant Phalacrocorax carbo novaehollandiae
- Little Cormorant Phalacrocorax melanoleucos brevirostris
- White Heron Egretta alba modesta
- White-faced Heron Ardea novaehollandiae novaehollandiae
- Australasian Bittern Botaurus poiciloptilus
- Black Swan Cygnus atratus
- Paradise Shelduck Tadorna variegate
- Grey Duck Anas superciliosa superciliosa
- New Zealand Shoveler Anas rhynchotis
- New Zealand Scaup Aythya novaeseelandiae
- Grey Teal Anas gracilis
- Harrier Circus approximans
- Pukeko Porphyrio porphyrio melanotus
- Marsh Crake Porzana pusilla affinis
- Spotless Crake Porzana tabuensis plumbea

- Spur-winged Plover Vanellus miles
- Pied Stilt Himantopus himantopus leucocephalus
- Southern Black-backed Gull Larus dominicanus dominicanus
- Red-billed Gull Larus novaehollandiae scopulinus
- Black-billed Gull Larus bulleri
- Shining Cuckoo Chrysococcyx lucidus
- Bellbird Anthornis melanura melanura
- Grey Warbler Gerygone igata
- South Island Fantail Rhipidura fuliginosa fuliginosa
- Silvereye Zosterops lateralis lateralis
- New Zealand Kingfisher Halcyon sancta vagans
- **Welcome Swallow** Hirundo tahitica neoxena

16.8. Willow Woodlands

Residents and Regular Visitors

- Black Cormorant Phalacrocorax carbo novaehollandiae
- Little Cormorant Phalacrocorax melanoleucos brevirostris
- White-faced Heron Ardea novaehollandiae novaehollandiae
- Australasian Bittern Botaurus poiciloptilus
- Black Swan Cygnus atratus
- Paradise Shelduck Tadorna variegate
- Grey Duck Anas superciliosa superciliosa
- New Zealand Shoveler Anas rhynchotis
- New Zealand Scaup Aythya novaeseelandiae
- Grey Teal Anas gracilis
- Harrier Circus approximans
- Pukeko Porphyrio porphyrio melanotus
- Marsh Crake Porzana pusilla affinis
- Spotless Crake Porzana tabuensis plumbea

- Shining Cuckoo Chrysococcyx lucidus
- Bellbird Anthornis melanura melanura
- Grey Warbler Gerygone igata
- South Island Fantail Rhipidura fuliginosa fuliginosa
- Silvereye Zosterops lateralis lateralis
- New Zealand Kingfisher Halcyon sancta vagans
- **Welcome Swallow** Hirundo tahitica neoxena

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16.9. Braided Rivers

Residents and Regular Visitors

- Black Cormorant Phalacrocorax carbo novaehollandiae
- Little Cormorant Phalacrocorax melanoleucos brevirostris
- White-faced Heron Ardea novaehollandiae novaehollandiae
- Paradise Shelduck Tadorna variegata
- Grey Duck Anas superciliosa superciliosa
- Grey Teal Anas gracilis
- New Zealand Shoveler Anas rhynchotis
- New Zealand Scaup Aythya novaeseelandiae
- Australian Harrier Circus approximans
- South Island Pied Oystercatcher Haematopus ostralegus finschi
- Spur-winged Plover Vanellus miles
- Banded Dotterel Charadrius bicinctus bicinctus
- Wrybill Anarhynchus frontalis
- Black Stilt Himantopus novaezelandiae
- Pied Stilt Himantopus himantopus leucocephalus
- Southern Black-backed Gull Larus dominicanus dominicanus
- Black-billed Gull Larus bulleri
- Red-billed Gull Larus novaehollandiae scopulinus

- Caspian Tern Sterna caspia
- White-fronted Tern Sterna striata
- Black-fronted Tern Sterna albostriata
- Kingfisher Halcyon sancta vagans
- Welcome Swallow Hirundo tahitica neoxena
- **New Zealand Pipit** Anthus novaeseelandiae novaeseelandiae

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16.10. Port Hills Native Bush

Residents and Regular Visitors

- Australasian Harrier Circus approximans
- New Zealand Falcon Falco novaeseelandiae
- New Zealand Pigeon Hemiphaga novaeseelandiae novaeseelandiae
- Shining Cuckoo Chrysococcyx lucidus lucidus
- Morepork Ninox novaeseelandiae novaeseelandiae
- Bellbird Anthornis melanura melanura
- Grey Warbler Gerygone igata
- South Island Fantail Rhipidura fuliginosa fuliginosa
- Silvereye Zosterops lateralis lateralis
- South Island Tomtit Petroica macrocephala macrocephala
- New Zealand Kingfisher Halcyon sancta vagans
- **Welcome Swallow** Hirundo tahitica neoxen

16.11. Banks Peninsula Native Bush

Residents and Regular Visitors

- Australasian Harrier Circus approximans
- New Zealand Falcon Falco novaeseelandiae
- New Zealand Pigeon Hemiphaga novaeseelandiae novaeseelandiae
- Shining Cuckoo Chrysococcyx lucidus lucidus

- Morepork Ninox novaeseelandiae novaeseelandiae
- Tui Prosthemadera novaeseelandiae novaeseelandiae
- Bellbird Anthornis melanura melanura
- Grey Warbler Gerygone igata
- South Island Fantail Rhipidura fuliginosa fuliginosa
- Silvereye Zosterops lateralis lateralis
- South Island Tomtit Petroica macrocephala macrocephala
- Brown Creeper Mohua novaeseelandiae
- South Island Rifleman Acanthisitta chloris chloris
- New Zealand Kingfisher Halcyon sancta vagans
- **Welcome Swallow** Hirundo tahitica neoxena

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16.12. Lowland Plains Native Bush

Residents and Regular Visitors

- Australasian Harrier Circus approximans
- New Zealand Pigeon Hemiphaga novaeseelandiae novaeseelandiae
- Shining Cuckoo Chrysococcyx lucidus lucidus
- Bellbird Anthornis melanura melanura
- Grey Warbler Gerygone igata
- South Island Fantail Rhipidura fuliginosa fuliginosa
- Silvereye Zosterops lateralis lateralis
- New Zealand Kingfisher Halcyon sancta vagans
- **Welcome Swallow** Hirundo tahitica neoxena

16.13. Dry Grasslands

Residents and Regular Visitors

- White-faced Heron Ardea novaehollandiae novaehollandiae
- Paradise Shelduck Tadorna variegata

- Australian Harrier Circus approximans
- South Island Pied Oystercatcher Haematopus ostralegus finschi
- Spur-winged Plover Vanellus miles
- Banded Dotterel Charadrius bicinctus bicinctus
- Southern Black-backed Gull Larus dominicanus dominicanus
- Black-billed Gull Larus bulleri
- Black-fronted Tern Sterna albostriata
- **Welcome Swallow** Hirundo tahitica neoxena
- **New Zealand Pipit** Anthus novaeseelandiae novaeseelandiae

16.14. Coastal Wet Grasslands

Residents and Regular Visitors

- White-faced Heron Ardea novaehollandiae novaehollandiae
- Cattle Egret Bubulcus ibis coromandus
- Black Swan Cygnus atratus
- Paradise Shelduck Tadorna variegata
- Australasian Harrier Circus approximans
- Pukeko Porphyrio porphyrio melanotus
- Variable Oystercatcher Haematopus unicolor
- South Island Pied Oystercatcher Haematopus ostralegus finschi
- Pied Stilt Himantopus himantopus leucocephalus
- Spur-winged Plover Vanellus miles
- Banded Dotterel Charadrius bicinctus bicinctus
- Wrybill Anarhynchus frontalis
- Eastern Bar-tailed Godwit Limosa lapponica baueri
- Black-backed Gull Larus dominicanus dominicanus
- Red-billed Gull Larus novaehollandiae scopulinus
- Black-billed Gull Larus bulleri
- Black-fronted Tern Sterna albostriata

- New Zealand Kingfisher Halcyon sancta vagans
- Welcome Swallow Hirundo tahitica neoxena
- **New Zealand Pipit** Anthus novaeseelandiae novaeseelandiae

16.15. Inland Wet Grasslands

Residents and Regular Visitors

- White-faced Heron Ardea novaehollandiae novaehollandiae
- Cattle Egret Bubulcus ibis coromandus
- Black Swan Cygnus atratus
- Paradise Shelduck Tadorna variegata
- Australasian Harrier Circus approximans
- Pukeko Porphyrio porphyrio melanotus
- South Island Pied Oystercatcher Haematopus ostralegus finschi
- Pied Stilt Himantopus himantopus leucocephalus
- Spur-winged Plover Vanellus miles
- Banded Dotterel Charadrius bicinctus bicinctus
- Black-backed Gull Larus dominicanus dominicanus
- Red-billed Gull Larus novaehollandiae scopulinus
- Black-billed Gull Larus bulleri
- Black-fronted Tern Sterna albostriata
- New Zealand Kingfisher Halcyon sancta vagans
- Welcome Swallow Hirundo tahitica neoxena
- **New Zealand Pipit** Anthus novaeseelandiae novaeseelandiae

17. APPENDIX 3 - SPECIES THAT ARE THREATENED, AT RISK, UNCOMMON OR AT THEIR DISTRIBUTIONAL LIMITS WITHIN THE RELEVANT ECOLOGICAL DISTRICTS.

Plants

Scientific Name	National Threat Status (de Lange et al. 2013)	Uncommon (Wilson 2013)	Endemic (Wilson 2013)	Distributional Limit (Wilson 2013, with amendments)	Port Hills ED (Wilson 1992)	Herbert ED (Wilson 1992)	Akaroa ED (Wilson 1992)	Notes
Acaena caesiiglauca		Uncommon					Uncommon in Region	
Acaena dumicola		Uncommon						
Aciphylla aurea		Uncommon						
Aciphylla subflabellata	At Risk - Declining							
Adiantum cunninghamii		Uncommon						
Adiantum fulvum				Southern national limit				Extinct on BP?
Agrostis personata		Uncommon						
Alectryon excelsus				Southern national limit				
Alepis flavida	At Risk - Declining	Uncommon						Extinct on BP?
Alseuosmia turneri		Uncommon						
Alternanthera nahui		Uncommon						was Alternanthera sessilis
Anemanthele lessoniana	Threatened - Nationally Vulnerable	Uncommon				Rare in District and Region	Rare in Region	
Anisotome aromatica		Uncommon						
Anogramma leptophylla	Threatened - Nationally Vulnerable							
Apodasmia similis		Uncommon						
Aporostylis bifolia		Uncommon						Not in Hugh's list
Aristotelia fruticosa		Uncommon						
Arthropodium cirratum		Uncommon						Extinct on BP?
Arthropteris tenella		Uncommon		Southern national limit				
Asplenium appendiculatum subsp. maritimum		Uncommon		Southern national limit				
Asplenium lyallii		Uncommon						
Asplenium oblongifolium				Southern national limit				
Asplenium obtusatum		Uncommon						
Asplenium polyodon		Uncommon					Very rare in Region	
Asplenium richardii		Uncommon				Rare in District and Region		
Asplenium trichomanes		Uncommon				Rare in District and Region		
Australina pusilla		Uncommon						
Azolla rubra		Uncommon						
Blechnum blechnoides		Uncommon						
Blechnum colensoi		Uncommon						
Blechnum montanum		Uncommon						
Blechnum novae-zelandiae		Uncommon						
Blechnum vulcanicum		Uncommon						
Bolboschoenus caldwellii		Uncommon						
Bolboschoenus fluviatilis		Uncommon						Extinct on BP?
Botrychium australe	At Risk - Naturally Uncommon	Uncommon						
Botrychium biforme		Uncommon				Probably rare in Region	Probably rare in Region	

Scientific Name	National Threat Status (de Lange et al. 2013)	Uncommon (Wilson 2013)	Endemic (Wilson 2013)	Distributional Limit (Wilson 2013, with amendments)	Port Hills ED (Wilson 1992)	Herbert ED (Wilson 1992)	Akaroa ED (Wilson 1992)	Notes
Brachyglottis bellidioides		Uncommon				Rare in Region where restricted to one locality in District		
Brachyglottis sciadophila	At Risk - Declining				Rare in Canterbury	Rare in Canterbury	Rare in Canterbury	
Brachyscome radicata		Uncommon						
Bulbinella angustifolia		Uncommon					Very rare in Region	
Caladenia aff. carnea "pink flower"		Uncommon						
Caladenia chlorostyla		Uncommon						
Caladenia lyallii		Uncommon					Very rare in Region	
Calystegia soldanella		Uncommon						
Cardamine corymbosa		Uncommon						
Carex appressa		Uncommon			Rare in Canterbury	Rare in Canterbury		
Carex buchananii		Uncommon						
Carex comans		Uncommon						
Carex dissita		Uncommon						
Carex flagellifera		Uncommon						
Carex flaviformis		Uncommon						
Carex goyenii		Uncommon						Not in Hugh's list
Carex inopinata	Threatened - Nationally Vulnerable	Uncommon						
Carex inversa		Uncommon						
Carex kirkii		Uncommon						
Carex litorosa	At Risk - Declining	Uncommon						
Carex pumila		Uncommon						
Carex raoulii		Uncommon						
Carex secta		Uncommon						Questionable whether uncommon on BP?
Carex sinclairii		Uncommon						
Carex solandri		Uncommon						
Carex tenuiculmis						Rare in District and Region		Listed as Carex sp. tenuiculmis in Wilson (1992)
Carex testacea		Uncommon						
Carex trifida		Uncommon		Northern regional limit			Rare in Region and in Canterbury	
Carex virgata		Uncommon						Not in Hugh's list
Carex wakatipu		Uncommon						
Carmichaelia appressa	At Risk - Naturally Uncommon			Northern national limit				

Scientific Name	National Threat Status (de Lange et al. 2013)	Uncommon (Wilson 2013)	Endemic (Wilson 2013)	Distributional Limit (Wilson 2013, with amendments)	Port Hills ED (Wilson 1992)	Herbert ED (Wilson 1992)	Akaroa ED (Wilson 1992)	Notes
Carmichaelia kirkii	At Risk - Declining	Uncommon				Very rare in District and nowhere else in Region		
Celmisia gracilenta		Uncommon						
Celmisia lyallii		Uncommon						
Celmisia mackaui	At Risk - Naturally Uncommon	Uncommon	Endemic to BP				District endemic, uncommon	
Celmisia sp. "rhizomatous"		Uncommon						
Centipeda aotearoana		Uncommon						
Chaerophyllum novae-zelandiae		Uncommon						was Oreomyrrhis rigida
Chaerophyllum ramosum		Uncommon						was Oreomyrrhis ramosa
Cheilanthes distans		Uncommon		Southern national limit				Declining on Banks Peninsula?
Chenopodium allanii	At Risk - Naturally Uncommon							was Einadia allanii
Chenopodium glaucum subsp. ambiguum		Uncommon						
Chiloglottis cornuta		Uncommon						
Chionochloa conspicua		Uncommon						
Chionochloa rigida				Northern regional limit				
Clematis marata		Uncommon				Very rare in District and nowhere else in Region, but common elsewhere		
Colobanthus apetalus		Uncommon						
Colobanthus brevisepalus	At Risk - Naturally Uncommon	Uncommon						
Colobanthus muelleri		Uncommon						
Colobanthus strictus		Uncommon						
Connorochloa tenuis	At Risk - Declining							
Coprosma acerosa	At Risk - Declining	Uncommon					Rare in Region	
Coprosma ciliata		Uncommon						
Coprosma rugosa		Uncommon					Rare in Region	
Coprosma virescens	At Risk - Declining							
Coprosma wallii	At Risk - Declining							
Cordyline indivisa		Uncommon				Rare in District and Region	Rare in Region	
Coriaria cf. angustissima		Uncommon						Extinct on BP?
Coriaria sarmentosa		Uncommon						
Craspedia (Kaitorete Spit)	Threatened - Nationally Endangered							
Crassula moschata		Uncommon					Uncommon in Region	
Crassula sinclairii		Uncommon						

Scientific Name	National Threat Status (de Lange et al. 2013)	Uncommon (Wilson 2013)	Endemic (Wilson 2013)	Distributional Limit (Wilson 2013, with amendments)	Port Hills ED (Wilson 1992)	Herbert ED (Wilson 1992)	Akaroa ED (Wilson 1992)	Notes
Cyathea medullaris		Uncommon		Southern regional limit			Rare in Region and in Canterbury	
Cyperus ustulatus		Uncommon		Southern regional limit		Uncommon in District and Region, southern limit in Region	Uncommon and at southern limit in District	
Cystopteris tasmanica		Uncommon						
Dacrycarpus dacrydioides					Uncommon in District			Not in Hugh's list but uncommon in the Port Hills ED
Dacrydium cupressinum		Uncommon				Very rare in District and nowhere else in Region		
Daucus glochidiatus	Threatened - Nationally Vulnerable							
Deschampsia caespitosa	At Risk - Declining	Uncommon						Extinct on BP?
Deschampsia chapmanii		Uncommon						
Deschampsia tenella		Uncommon						
Deyeuxia youngii	At Risk - Naturally Uncommon	Uncommon						
Dianella nigra		Uncommon						
Dicksonia fibrosa		Uncommon				Rare in District and Region	Rare in Region	
Diplodium alobulum		Uncommon		Southern national limit			Rare in Region	was Pterostylis alobula
Dodonaea viscosa				Southern national limit				
Dolichoglottis lyallii		Uncommon						
Dracophyllum acerosum				Southern national limit				
Earina autumnalis		Uncommon						
Earina mucronata		Uncommon					Very rare in Region	
Elaeocarpus hookerianus		Uncommon						
Eleocharis gracilis		Uncommon						
Elymus multiflorus		Uncommon		Southern national limit				
Epilobium billardiereanum		Uncommon						
Epilobium brunnescens		Uncommon						
Epilobium cinereum		Uncommon						
Epilobium insulare	At Risk - Data Deficient	Uncommon						
Epilobium komarovianum		Uncommon						
Epilobium macropus		Uncommon						
Epilobium nerteroides		Uncommon						
Epilobium pallidiflorum		Uncommon						
Epilobium pedunculare		Uncommon						Listed by Hugh, but widespread - M. Hutchison pers. comm
Epilobium pictum		Uncommon						Extinct on BP?
Epilobium rotundifolium		Uncommon						Listed by Hugh, but widespread - M. Hutchison pers. comm

Scientific Name	National Threat Status (de Lange et al. 2013)	Uncommon (Wilson 2013)	Endemic (Wilson 2013)	Distributional Limit (Wilson 2013, with amendments)	Port Hills ED (Wilson 1992)	Herbert ED (Wilson 1992)	Akaroa ED (Wilson 1992)	Notes
Epilobium tenuipes		Uncommon						
Eryngium vesiculosum	At Risk - Declining	Uncommon						
Euchiton gynocephalus				Southern national limit				
Euchiton lateralis		Uncommon						
Euchiton polylepis		Uncommon						
Euchiton sphaericus		Uncommon						
Euchiton traversii		Uncommon						
Euphorbia glauca	At Risk - Declining	Uncommon						Extinct on BP? Supposedly found at Birdlings Flat in 2013, but record doubtful (M. Hutchison pers. comm.)
Euphrasia zelandica		Uncommon						
Festuca actae	At Risk - Naturally Uncommon		Endemic to BP					
Ficinia spiralis	At Risk - Declining	Uncommon					Very rare in Region	Referred to as Desmoschoenus spiralis in Wilson (1992)
Forstera tenella		Uncommon						
Fuchsia perscandens		Uncommon						Not in Hugh's list
Fuscospora fusca		Uncommon					Uncommon in Region	was Nothofagus fusca
Gastrodia cunninghamii		Uncommon						
Gaultheria crassa		Uncommon						
Gentianella grisebachii		Uncommon					Rare in Region	
Gentianella serotina		Uncommon					Rare in Region	
Geranium retrorsum	Threatened - Nationally Vulnerable	Uncommon						
Geranium solanderi		Uncommon						
Geum cockaynei		Uncommon						
Gingidia enysii var. peninsulare	At Risk - Naturally Uncommon	Uncommon	Endemic to BP					Listed as endemic to BP on NZPCN website
Gingidia montana		Uncommon						
Gonocarpus aggregatus		Uncommon						Not in Hugh's list
Gonocarpus incanus		Uncommon						Not in Hugh's list
Gonocarpus montanus		Uncommon						
Gratiola nana		Uncommon						
Griselinia lucida		Uncommon		Southern regional		Uncommon in Region and at southern limit	Uncommon in Region and at southern limit	
Hebe odora		Uncommon				Rare and local in District, nowhere else in Region		
Hebe strictissima	At Risk - Naturally Uncommon		Endemic to BP					
Hedycarya arborea				Southern regional				
Heliohebe lavaudiana	At Risk - Declining		Endemic to BP					

Scientific Name	National Threat Status (de Lange et al. 2013)	Uncommon (Wilson 2013)	Endemic (Wilson 2013)	Distributional Limit (Wilson 2013, with amendments)	Port Hills ED (Wilson 1992)	Herbert ED (Wilson 1992)	Akaroa ED (Wilson 1992)	Notes
Histiopteris incisa		Uncommon						
Huperzia australiana		Uncommon				Very rare in District, and not known elsewhere in Region		
Hydrocotyle cf. sulcata		Uncommon						
Hydrocotyle elongata		Uncommon						
Hydrocotyle novae-zeelandiae		Uncommon						
Hydrocotyle sulcata		Uncommon						
Hymenochilus tanypodus	At Risk - Declining	Uncommon						was Pterostylis tanypoda
Hymenochilus tristis	At Risk - Declining	Uncommon					Rare in Region	was Pterostylis tristus. Referred to as Pterostylis mutica in Wilson (1992)
Hymenophyllum australe	At Risk - Naturally Uncommon	Uncommon			Rare in Banks Region		Rare in Region	was Hymenophyllum atrovirens
Hymenophyllum bivalve		Uncommon					Rare in Region	
Hymenophyllum cupressiforme		Uncommon						
Hymenophyllum demissum		Uncommon						
Hymenophyllum dilatatum		Uncommon			Rare in Canterbury		Rare in Region	
Hymenophyllum flabellatum		Uncommon						
Hymenophyllum flexuosum		Uncommon						
Hymenophyllum malingii								Extinct on BP?
Hymenophyllum minimum		Uncommon					Rare in Region	
Hymenophyllum multifidum		Uncommon						
Hymenophyllum rarum		Uncommon			Rare in Canterbury		Rare in Region	
Hymenophyllum revolutum		Uncommon						
Hymenophyllum sanguinolentum 'Canterbury'		Uncommon						
Hymenophyllum villosum		Uncommon						
Hypericum involutum	At Risk - Declining	Uncommon						Not in Hugh's list
Hypericum pusillum		Uncommon						
Hypolepis distans								Extinct on BP?
Hypolepis lactea		Uncommon					Rare in Region	
Hypoxis 'new species'	Possibly threatened	Uncommon						Known as Hypoxis hookeri but likely to be recognised as a new native species (Peter Heenan & Brian Patrick), which would be uncommon on Banks Peninsula.
Iphigenia novae-zelandiae	Threatened - Nationally Endangered	Uncommon						Extinct on BP?
Isolepis basilaris	Threatened - Nationally Vulnerable	Uncommon						
Isolepis cernua		Uncommon						
Isolepis distigmatosa		Uncommon						

Plants

Banks Peninsula and Christchurch City Ecological Study Spreadsheet Species Lists

Scientific Name	National Threat Status (de Lange et al. 2013)	Uncommon (Wilson 2013)	Endemic (Wilson 2013)	Distributional Limit (Wilson 2013, with amendments)	Port Hills ED (Wilson 1992)	Herbert ED (Wilson 1992)	Akaroa ED (Wilson 1992)	Notes
Histiopteris incisa		Uncommon						
Huperzia australiana		Uncommon				Very rare in District, and not known elsewhere in Region		
Hydrocotyle cf. sulcata		Uncommon						
Hydrocotyle elongata		Uncommon						
Hydrocotyle novae-zeelandiae		Uncommon						
Hydrocotyle sulcata		Uncommon						
Hymenochilus tanypodus	At Risk - Declining	Uncommon						was Pterostylis tanypoda
Hymenochilus tristis	At Risk - Declining	Uncommon					Rare in Region	was Pterostylis tristus. Referred to as Pterostylis mutica in Wilson (1992)
Hymenophyllum australe	At Risk - Naturally Uncommon	Uncommon			Rare in Banks Region		Rare in Region	was Hymenophyllum atrovirens
Hymenophyllum bivalve		Uncommon					Rare in Region	
Hymenophyllum cupressiforme		Uncommon						
Hymenophyllum demissum		Uncommon						
Hymenophyllum dilatatum		Uncommon			Rare in Canterbury		Rare in Region	
Hymenophyllum flabellatum		Uncommon						
Hymenophyllum flexuosum		Uncommon						
Hymenophyllum malingii								Extinct on BP?
Hymenophyllum minimum		Uncommon					Rare in Region	
Hymenophyllum multifidum		Uncommon						
Hymenophyllum rarum		Uncommon			Rare in Canterbury		Rare in Region	
Hymenophyllum revolutum		Uncommon						
Hymenophyllum sanguinolentum 'Canterbury'		Uncommon						
Hymenophyllum villosum		Uncommon						
Hypericum involutum	At Risk - Declining	Uncommon						Not in Hugh's list
Hypericum pusillum		Uncommon						
Hypolepis distans								Extinct on BP?
Hypolepis lactea		Uncommon					Rare in Region	
Hypoxis 'new species'	Possibly threatened	Uncommon						Known as Hypoxis hookeri but likely to be recognised as a new native species (Peter Heenan & Brian Patrick), which would be uncommon on Banks Peninsula.
Iphigenia novae-zelandiae	Threatened - Nationally Endangered	Uncommon						Extinct on BP?
Isolepis basilaris	Threatened - Nationally Vulnerable	Uncommon						
Isolepis cernua		Uncommon						
Isolepis distigmatosa		Uncommon						

Plants

Banks Peninsula and Christchurch City Ecological Study Spreadsheet Species Lists

Scientific Name	National Threat Status (de Lange et al. 2013)	Uncommon (Wilson 2013)	Endemic (Wilson 2013)	Distributional Limit (Wilson 2013, with amendments)	Port Hills ED (Wilson 1992)	Herbert ED (Wilson 1992)	Akaroa ED (Wilson 1992)	Notes
Isolepis habra		Uncommon						Not in Hugh's list
Isolepis inundata		Uncommon						
Isolepis pottsii		Uncommon						
Juncus caespiticius		Uncommon						Extinct on BP?
Juncus kraussii var. australiensis		Uncommon						
Juncus novae-zelandiae		Uncommon						
Juncus pallidus		Uncommon						
Juncus planifolius		Uncommon						
Juncus sarophorus		Uncommon						
Kelleria dieffenbachii		Uncommon						
Koeleria novozelandica		Uncommon						
Korthalsella clavata	At Risk - Naturally Uncommon	Uncommon						Not in Hugh's list but Brian Molloy identified a specimen from Stony Beach (M. Hutchison pers. comm.).
Korthalsella salicornioides	At Risk - Naturally Uncommon	Uncommon						
Lachnagrostis billardierei		Uncommon						
Lachnagrostis filiformis		Uncommon						
Lachnagrostis littoralis		Uncommon						
Lachnagrostis lyallii		Uncommon						
Lachnagrostis pilosa		Uncommon						
Lachnagrostis tenuis	Threatened - Nationally Vulnerable	Uncommon						
Lastreopsis glabella		Uncommon						
Lastreopsis hispida		Uncommon					Rare in Region	
Lastreopsis microsora		Uncommon						
Lastreopsis velutina		Uncommon					Uncommon in Region	
Lemna minor		Uncommon						
Lepidium aegrum (L.oleraceum)	Threatened - Nationally Critical	Uncommon	Endemic to BP					
Lepilaena bilocularis	Threatened - Nationally Vulnerable	Uncommon						
Leptecophylla juniperina		Uncommon						
Leptinella minor	At Risk - Naturally Uncommon		Endemic to BP					
Leptinella nana	Threatened - Nationally Critical	Uncommon						
Leptinella pusilla		Uncommon						
Leptinella squalida subsp. mediana		Uncommon						Hugh does not list Leptinella squalida subsp. squalida
Leptolepia novae-zelandiae		Uncommon						
Leptospermum scoparium		Uncommon						Not in Hugh's list
Leptostigma setulosum		Uncommon						Not in Hugh's list
Leucopogon fasciculatus		Uncommon		Southern national limit				
Libocedrus bidwillii		Uncommon				Vulnerable in Region	Endangered in Region	

Scientific Name	National Threat Status (de Lange et al. 2013)	Uncommon (Wilson 2013)	Endemic (Wilson 2013)	Distributional Limit (Wilson 2013, with amendments)	Port Hills ED (Wilson 1992)	Herbert ED (Wilson 1992)	Akaroa ED (Wilson 1992)	Notes
Lilaeopsis novae-zelandiae		Uncommon						Not in Hugh's list
Limosella lineata		Uncommon						
Lobelia anceps		Uncommon						
Lobelia angulata		Uncommon						Was Pratia angulata
Lobelia perpusilla		Uncommon						Was Pratia perpusilla
Loxogramme dictyopteris		Uncommon		Southern national limit			Rare and at southern limit in District	Referred to as Arthropteris lanceolata in Wilson (1992)
Luzula cf. subclavata		Uncommon						
Luzula picta		Uncommon						
Lycopodium fastigiatum		Uncommon						
Lycopodium scariosum		Uncommon						
Lycopodium volubile		Uncommon						
Machaerina juncea		Uncommon						Extinct on BP?
Machaerina rubiginosa		Uncommon			Rare in Canterbury	Rare in Canterbury		
Melicytus micranthus		Uncommon						
Melicytus sp. aff alpinus		Uncommon						
Mentha cunninghamii	At Risk - Declining	Uncommon						Not in Hugh's list
Microlaena avenacea		Uncommon						
Microlaena polynoda		Uncommon				Uncommon in Region and in Canterbury	Uncommon in Region	
Microseris scapigera		Uncommon						
Microsorum scandens		Uncommon		Southern regional				
Microtis oligantha		Uncommon						Not in Hugh's list
Mimulus repens	At Risk - Naturally Uncommon	Uncommon						
Muehlenbeckia astonii	Threatened - Nationally Endangered	Uncommon		Southern national limit			Rare in Region	
Muehlenbeckia axillaris		Uncommon						
Muehlenbeckia ephedroides	At Risk - Declining	Uncommon						
Myosotis forsteri		Uncommon						Extinct on BP?
Myosotis lytteltonensis	Threatened - Nationally Critical	Uncommon	Endemic to BP		Rare Banks Region Endemic	Rare Banks Region endemic	Rare regional endemic	
Myosotis pygmaea complex	At Risk - Declining	Uncommon						
Myosotis spathulata	At Risk - Naturally Uncommon	Uncommon						
Myosurus minimus subsp. novae-zelandiae		Uncommon						Extinct on BP?
Myriophyllum propinquum		Uncommon						
Myriophyllum triphyllum		Uncommon						
Myrsine nummularia		Uncommon					Rare in Region	
Nematoceras aff. trilobus "Trotters"		Uncommon						was Corybas aff. trilobus "Trotters"
Nematoceras macranthum		Uncommon						was Corybas macranthus
Nematoceras orbiculatus		Uncommon						was Corybas orbiculatus
Nematoceras trilobus		Uncommon						Not in Hugh's list

Plants

Banks Peninsula and Christchurch City Ecological Study Spreadsheet Species Lists

Scientific Name	National Threat Status (de Lange et al. 2013)	Uncommon (Wilson 2013)	Endemic (Wilson 2013)	Distributional Limit (Wilson 2013, with amendments)	Port Hills ED (Wilson 1992)	Herbert ED (Wilson 1992)	Akaroa ED (Wilson 1992)	Notes
Neomyrtus pedunculata		Uncommon			Uncommon in Banks Region		Uncommon in Region	
Nertera depressa		Uncommon						
Notogrammitis angustifolia subsp. nothofageti		Uncommon						
Notogrammitis billardierei		Uncommon						
Notogrammitis ciliata		Uncommon		Southern national limit	Rare in Banks Region, southern limit	Rare in region and at southern limit		
Notogrammitis crassior		Uncommon						was Grammitis poepiggiana
Notogrammitis givenii		Uncommon						
Notogrammitis heterophylla		Uncommon						
Notogrammitis patagonica		Uncommon						
Olearia arborescens		Uncommon				Restricted to District within Region, common elsewhere		
Olearia avicenniifolia		Uncommon					Local in Region	
Olearia bullata		Uncommon				Rare in District and Region	Rare in Region	
Olearia fimbriata	Threatened - Nationally Vulnerable	Uncommon				Very rare in District, not elsewhere in Region		Referred to as Olearia odorata in Wilson (1992)
Olearia fragrantissima	At Risk - Declining	Uncommon		Northern national limit	Uncommon in District and Region, northern limit	Uncommon in District and Region, northern limit	Uncommon in Region and at northern limit	
Olearia ilicifolia		Uncommon						
Olearia nummulariifolia		Uncommon						
Ourisia macrophylla subsp. lactea		Uncommon						
Oxalis magellanica		Uncommon						
Ozothamnus leptophyllus		Uncommon						
Pachycladon cheesemanii	Threatened - Nationally Vulnerable	Uncommon						Extinct on BP?
Paesia scaberula		Uncommon						
Parahebe canescens		Uncommon						Extinct on BP?
Parahebe lyallii		Uncommon				Rare in District and Region	Rare in Region	
Passiflora tetrandra				Southern national limit				
Pelargonium inodorum		Uncommon						Not in Hugh's list
Pellaea calidirupium		Uncommon				Rare in District and Region		
Pentachondra pumila		Uncommon					Rare in Region	

Scientific Name	National Threat Status (de Lange et al. 2013)	Uncommon (Wilson 2013)	Endemic (Wilson 2013)	Distributional Limit (Wilson 2013, with amendments)	Port Hills ED (Wilson 1992)	Herbert ED (Wilson 1992)	Akaroa ED (Wilson 1992)	Notes
Persicaria decipiens		Uncommon						
Phlegmariurus varius		Uncommon						was Huperzia varia
Pimelea urvilleana		Uncommon						
Pimelea villosa subsp. villosa		Uncommon						Extinct on BP?
Piper excelsum				Southern national limit				was Macropiper excelsum
Pittosporum obcordatum	Threatened - Nationally Vulnerable	Uncommon						
Plantago raoulii		Uncommon						
Pleurosorus rutifolius	At Risk - Naturally Uncommon	Uncommon				Rare in District and Region		
Poa astonii		Uncommon		Northern national limit			Rare in Region and at northern limit	
Poa billardierei	At Risk - Declining	Uncommon						Extinct on BP? present on Kaitorete Spit
Poa breviglumis		Uncommon						
Poa cf. pusilla		Uncommon						
Poa colensoi		Uncommon						
Poa kirkii		Uncommon						
Poa lindsayi		Uncommon						
Polystichum neozelandicum subsp. zerophyllum		Uncommon						Not in Hugh's list (Uncommon - S. Tripp pers. comm 2014)
Potamogeton cheesemanii		Uncommon						
Potentilla anserinoides		Uncommon					Rare in Region	
Prumnopitys ferruginea		Uncommon				Rare in District, not elsewhere in Region		
Pseudopanax ferox	At Risk - Naturally Uncommon					Quite common in Region and especially in District	Local but quite common in Region	
Pteris macilenta		Uncommon		Southern national limit	Rare in Canterbury			
Pteris tremula		Uncommon		Southern national limit		Rare in District, uncommon in Region, southern limit	Uncommon in Region and at southern limit	
Pterostylis banksii		Uncommon					Uncommon in Region	
Pterostylis foliata	At Risk - Naturally Uncommon	Uncommon					Uncommon in Region	
Pterostylis silvicultrix		Uncommon						
Puccinellia walkeri	At Risk - Naturally Uncommon	Uncommon						
Pyrrosia eleagnifolia		Uncommon						
Ranunculus acaulis		Uncommon					Rare in Region	
Ranunculus glabrifolius		Uncommon						

Plants

Banks Peninsula and Christchurch City Ecological Study Spreadsheet Species Lists

Scientific Name	National Threat Status (de Lange et al. 2013)	Uncommon (Wilson 2013)	Endemic (Wilson 2013)	Distributional Limit (Wilson 2013, with amendments)	Port Hills ED (Wilson 1992)	Herbert ED (Wilson 1992)	Akaroa ED (Wilson 1992)	Notes
Ranunculus limosella		Uncommon						Not threatened in 2012 but was At Risk - Declining in 2008.
Ranunculus macropus	At Risk - Data Deficient	Uncommon					Rare in Region	
Raoulia australis		Uncommon			Very rare in Banks Region			
Raoulia hookeri		Uncommon					Rare in Region	
Raoulia monroi	At Risk - Declining							
Raoulia tenuicaulis		Uncommon				Very rare in District, not known elsewhere in Region, but common nationally		
Raukaua anomalus		Uncommon						Not in Hugh's list
Raukaua edgerleyi		Uncommon					Rare in Region	Was Pseudopanax edgerleyi
Rhopalostylis sapida		Uncommon		Southern regional			Uncommon in District and at southern limit	
Rorippa palustris		Uncommon						
Rumex flexuosus		Uncommon						Not in Hugh's list
Rumohra adiantiformis		Uncommon			Rare in Banks Region	Rare in Banks Region	Rare in Region	
Ruppia megacarpa		Uncommon						
Ruppia polycarpa		Uncommon						
Rytidosperma buchananii		Uncommon						
Rytidosperma corinum		Uncommon		Northern regional limit				
Rytidosperma exiguum	Data Deficient	Uncommon						Not in Hugh's list
Rytidosperma merum	Threatened - Nationally Vulnerable							Was At Risk - Data deficient in 2008.
Rytidosperma thomsonii		Uncommon?						Alice thinks this species is uncommon on Banks Peninsula
Samolus repens		Uncommon						
Schizeilema trifoliolatum		Uncommon						Not in Hugh's list
Schoenoplectus tabernaemontani		Uncommon		Southern national limit	Local in District and Region	Local in District and Region	Uncommon in Region	Referred to as Schoenoplectus validus in Wilson (1992)
Schoenus pauciflorus		Uncommon					Uncommon in Region	
Scleranthus biflorus		Uncommon						
Scleranthus brockiei		Uncommon						
Scleranthus uniflorus		Uncommon						
Sebaea ovata	Threatened - Nationally Critical	Uncommon						Extinct on BP?
Selliera radicans		Uncommon						
Senecio carnosulus	At Risk - Naturally Uncommon	Uncommon					Uncommon in Region	

Plants

Banks Peninsula and Christchurch City Ecological Study Spreadsheet Species Lists

Scientific Name	National Threat Status (de Lange et al. 2013)	Uncommon (Wilson 2013)	Endemic (Wilson 2013)	Distributional Limit (Wilson 2013, with amendments)	Port Hills ED (Wilson 1992)	Herbert ED (Wilson 1992)	Akaroa ED (Wilson 1992)	Notes
Senecio dunedinesis	Threatened - Nationally Vulnerable	Uncommon						Not in Hugh's list
Senecio glaucophyllus subsp. basinudus	At Risk - Naturally Uncommon							
Senecio hispidulus		Uncommon						
Senecio lautus		Uncommon						
Senecio wairauensis		Uncommon						
Solanum aviculare	At Risk - Declining			Southern national limit				
Sonchus kirkii	At Risk - Declining	Uncommon					Uncommon in Region	was At Risk - Relict in 2008.
Spinifex sericeus				Southern national limit				
Stackhousia minima		Uncommon					Uncommon in Region	
Stellaria decipiens	At Risk - Naturally Uncommon							
Stenostachys gracilis		Uncommon						
Sticherus cunninghamii		Uncommon				Rare and local in District and Region	Rare in Region	
Stuckenia pectinata	At Risk - Naturally Uncommon	Uncommon						
Suaeda novae-zelandiae		Uncommon						
Taraxacum magellanicum		Uncommon						Extinct on BP?
Tetragonia implexicoma		Uncommon						
Tetragonia tetragonioides	At Risk - Naturally Uncommon	Uncommon						
Teucridium parvifolium	At Risk - Declining	Uncommon						
Thelymitra nervosa		Uncommon				Rare and local in District, not known elsewhere in Region		Referred to as Thelymitra decora in Wilson (1992)
Thelymitra pauciflora		Uncommon						
Tmesipteris elongata		Uncommon					Uncommon in region, possibly regionally endemic	Recorded from a small number of other localities within Canterbury (NZPCN)
Tmesipteris horomaka	Threatened - Nationally Critical	Uncommon	Endemic to BP					
Tmesipteris tannensis		Uncommon				Rare in Canterbury	Uncommon in Region	
Trichomanes endlicherianum		Uncommon					Rare in Region	
Trisetum lepidum		Uncommon						
Tupeia antarctica	At Risk - Declining							
Typha orientalis		Uncommon						
Uncinia affinis		Uncommon						
Uncinia banksii		Uncommon						
Uncinia caespitosa		Uncommon						
Uncinia clavata		Uncommon						

Plants

Banks Peninsula and Christchurch City Ecological Study Spreadsheet Species Lists

Scientific Name	National Threat Status (de Lange et al. 2013)	Uncommon (Wilson 2013)	Endemic (Wilson 2013)	Distributional Limit (Wilson 2013, with amendments)	Port Hills ED (Wilson 1992)	Herbert ED (Wilson 1992)	Akaroa ED (Wilson 1992)	Notes
Uncinia ferruginea		Uncommon						
Uncinia rupestris		Uncommon						
Uncinia scabra		Uncommon						
Uncinia silvestris		Uncommon						
Viola filicaulis		Uncommon						
Wahlenbergia akaroa	At Risk - Naturally Uncommon		Endemic to BP				Uncommon in District and possibly a District endemic	Regarded as a variant of W. gracilis by Hugh Wilson
Wahlenbergia albomarginata		Uncommon						
Wolffia australiana		Uncommon						
Zannichellia palustris		Uncommon						
Zostera muelleri		Uncommon						

Non-vascular species								
Sphagnum (cristatum)		Uncommon						Sphagnum is “extremely rare” on Banks Peninsula (Wilson 2013)

Birds

Common name	Scientific Name	Threat Status (Robertson et al. 2012)	Threatened, At Risk or Uncommon in ED					Endemic	Distributional Limit	Comments
			Low Plains	Ellesmere	Port Hills	Herbert	Akaroa			
Arctic Skua	Stercorarius parasiticus	Migrant	UC	UC	UC	UC	UC			
Asiatic Whimbrel	Numenius phaeopus variegatus	Migrant	UC	UC						
Australasian Bittern	Botaurus poiciloptilus	Nationally Endangered	TH, UC	TH, UC		TH, UC	TH, UC			
Australasian Coot	Fulica atra australis	Coloniser	UC	UC		UC				
Australasian Crested Grebe	Podiceps cristatus australis	Nationally Vulnerable	AR, UC	AR, UC		AR, UC	AR, UC			
Banded Dotterel	Charadrius bicinctus bicinctus	Nationally Vulnerable	*	*		*	UC			
Bellbird	Anthornis melanura melanura	Not Threatened	UC	UC	*	*	*			
Black Cormorant	Phalacrocorax carbo novaehollandiae	Naturally Uncommon	*	*	UC	UC	UC			
Black Stilt	Himantopus novaezelandiae	Nationally Critical	TH, UC	TH, UC						
Black-billed Gull	Larus bulleri	Nationally Critical	AR	AR	UC	UC	UC			
Black-fronted Dotterel	Charadrius melanops	Coloniser	UC	UC						
Black-fronted Tern	Sterna albostriata	Nationally Endangered	TH, UC	TH, UC	UC	UC	UC			
Brown Creeper	Mohoua novaeseelandiae	Not Threatened			UC	*	*			
Brown Teal	Anas aucklandica chlorotis	Recovering	TH, UC							
Caspian Tern	Sterna caspia	Nationally Vulnerable	AR, UC	AR	UC	UC	UC			
Cattle Egret	Bubulcus ibis coromandus	Migrant	UC	UC						
Curlew Sandpiper	Calidris ferruginea	Vagrant	UC	UC					Southern annual national limit	Occurs as a straggler further south but is not an annual migrant
Eastern Bar-tailed Godwit	Limosa lapponica baueri	Declining	*	*	*	*	UC			
Fairy Prion	Pachyptila turtur	Relict				TH, UC	TH, UC		Southern regional breeding	Mainland colony in Flea Bay and multiple colonies on rock stacks and islets around BP
Far-Eastern Curlew	Numenius madagascariensis	Migrant	UC	UC						
Fiordland Crested Penguin	Eudyptes pachyrhynchus	Nationally endangered								
Glossy Ibis	Plegadis falcinellus	Vagrant	UC	UC						
Grey Duck	Anas superciliosa superciliosa	Nationally Critical	TH, UC	TH, UC	TH, UC	TH, UC	TH, UC			
Grey Teal	Anas gracilis	Not Threatened	*	*	UC	*	*			
Gull-billed Tern	Gelochelidon nilotica	Vagrant	UC	UC		UC	UC			
Little Black Cormorant	Phalacrocorax sulcirostris	Naturally Uncommon	UC	UC	UC	UC	UC		Southern national breeding	Bromley Oxidation Ponds is the southern limit of national breeding range and only breeding site in South Island
Southern Blue Penguin	Eudyptula minor minor	Declining								
Long-tailed Cuckoo	Eudynamys taitensis	Naturally Uncommon	UC		UC	UC	UC			
Marsh Crake	Porzana pusilla affinis	Relict	AR, UC	AR, UC		TH, UC	TH, UC			
Morepork	Ninox novaeseelandiae novaeseelandiae	Not Threatened	TH, UC	TH, UC	TH, UC	TH, UC	AR, UC			
New Zealand (Eastern) Falcon	Falco novaeseelandiae	Recovering	UC	UC	UC	UC	UC			
New Zealand Kingfisher	Halcyon sancta vagans	Not Threatened	UC	*	*	*	*			

Common name	Scientific Name	Threat Status (Robertson et al. 2012)	Threatened, At Risk or Uncommon in ED					Endemic	Distributional Limit	Comments
			Low Plains	Ellesmere	Port Hills	Herbert	Akaroa			
New Zealand Pigeon	Hemiphaga novaeseelandiae novaeseelandiae	Not Threatened	AR, UC	AR, UC	UC	*	*			
New Zealand Pipit	Anthus novaeseelandiae novaeseelandiae	Declining	UC	UC	*	*	*			
New Zealand Scaup	Aythya novaeseelandiae	Not Threatened	*	*		*	*			
New Zealand Shoveler	Anas rhynchotis variegata	Not Threatened	*	*	UC	*	*			
Pacific Golden Plover	Pluvialis fulva	Migrant	UC	UC						
Pectoral Sandpiper	Calidris melanotos	Vagrant	UC	UC						
Pied Cormorant	Phalacrocorax varius varius	Nationally Vulnerable	*	*	*	*	*			
Pied Stilt	Himantopus himantopus leucocephalus	Declining	*	*	*	*	UC			
Red Knot	Calidris canutus canutus	Nationally Vulnerable	UC	UC						
Red-billed Gull	Larus scopulinus	Nationally Vulnerable	*	*	AR	AR	UC			
Red-necked Stint	Calidris rufficollis	Migrant	UC	UC						
Reef Heron	Egretta sacra sacra	Nationally Endangered			TH, UC	TH, UC	TH, UC		Southern regional breeding	Port Levy/Baleine/Beacon Rock area is southern limit of breeding range in Canterbury
Royal Spoonbill	Platalea regia	Naturally Uncommon	*	*		UC	UC			
Sharp-tailed Sandpiper	Calidris acuminata	Migrant	UC	UC						
Shining Cuckoo	Chrysococcyx lucidus lucidus	Not Threatened	UC	*	*	*	*			
Sooty Shearwater	Puffinus grieseus	Declining				TH, UC	TH, UC		Southern regional breeding	Only surviving mainland colony(ies) and southern-most colony in Canterbury are at Stony Bay and Flea Bay
South Island Pied Oystercatcher	Haematopus unicolor	Declining	*	*	*	*	*			
South Island Rifleman	Acanthisitta chloris chloris	Not Threatened				UC	UC			
South Island Tomtit	Petroica macrocephala macrocephala	Not Threatened	UC		AR, UC	*	*			
Spotless Crake	Porzana tabuensis plumbea	Relict	TH, UC	AR, UC		TH, UC	TH, UC		Southern regional breeding	Lake Ellesmere shoreline is known southern regional breeding limit
Stewart Island Shag	Leucocarbo chalconotus	Nationally vulnerable							Northern national non-breeding	Northern limit of non-breeding range nationally
Tui	Prosthemadera novaeseelandiae novaeseelandiae	Not Threatened	UC	UC	UC	UC	AR, UC			
Turnstone	Arenaria interpres	Migrant	UC	UC						
Variable Oystercatcher	Haematopus unicolor	Recovering	*	UC	UC	UC	*			
White Heron	Egretta alba modesta	Nationally Critical	UC, AR	UC, AR	UC	UC, AR	UC			
White-flippered Penguin	Eudyptula minor albosignata	Nationally Vulnerable	AR, UC	UC	AR	AR	AR	Canterbury	Southern national breeding	South side of Banks Peninsula is the southern limit of breeding range nationally
White-fronted Tern	Sterna striata	Declining	AR	AR	AR	AR	AR			

Birds

Banks Peninsula and Christchurch City Ecological Study Spreadsheet Species Lists

Common name	Scientific Name	Threat Status (Robertson et al. 2012)	Threatened, At Risk or Uncommon in ED					Endemic	Distributional Limit	Comments
			Low Plains	Ellesmere	Port Hills	Herbert	Akaroa			
White-winged Black Tern	Chlidonias leucopterus	Migrant	UC	UC					Southern annual national limit	Southern limit of annual range nationally
Wrybill	Anarhynchus frontalis	Nationally Vulnerable	AR, UC	AR						
Yellow-eyed Penguin	Megadyptes antipodes	Nationally Vulnerable					TH, UC		Northern national breeding	Only breeding population in Canterbury is found dispersed between several bays on BP.

Terrestrial invertebrates

Taxanomic Group	Scientific Name	Common Name	Threat Status	Reference	Uncommon (ED)	Endemic	Distributional Limit	BP Only/ Chch Only	Comments
Updated 13 November 2014									
ANNELIDA									
Oligochaeta: Megascolecidae	Plutellus parvus	earthworm	Data Deficient	Buckley et al. 2012	Akaroa	Akaroa		BP	
Oligochaeta: Megascolecidae	Maoridrilus purusa	earthworm			Port Hills			BP	
Oligochaeta: Megascolecidae	Maoridrilus suteri	earthworm	Data Deficient	Buckley et al. 2012	Low Plains			CH	only known from Type locality of Christchurch (Pawson & Emberson 2000)
Oligochaeta: Megascolecidae	new genus & species (14)	earthworm				Akaroa, Herbert		BP	Bowie et al 2011, Boyer, 2013
Oligochaeta: Megascolecidae	new genus & species	earthworm				Herbert		BP	Quail Island only (Bowie et al 2011, Boyer, 2013)
ARANEIDA									
Araneae: Theridiidae	Latrodectus katipo	katipo	At Risk Declining	Sirvid et al. 2012				BP	Locally very rare in New Brighton dunes; Kaitorete Spit is a national stronghold (B.Patrick pers comm. 2014)
Araneae: Periegopidae	Periegops suterii	six-eyed spider	At Risk Relict	Sirvid et al. 2012		Low Plains, Port Hills, Herbert, Akaroa			Riccarton Bush only in Low Plains ED and has not been found there since 1994 (C.Vink pers comm. 2014); Bowie et al. 2011
Araneae: Idiopidae	Cantuaria dendyi	trapdoor spider				Low Plains, Port Hills, Herbert, Akaroa			Type locality Christchurch; unlikely record from Springfield (C Vink pers comm. 2014)
Araneae: Idiopidae	Cantuaria borealis	trapdoor spider	Naturally Uncommon	Sirvid et al. 2012	Herbert	Herbert		BP	Type locality Prices Bush (Johns, 1986). Also found at Kaituna Valley (Forster 1968)
Araneae: Migidae	Migas secundus	spider	Data Deficient	Sirvid et al. 2012	Herbert	Herbert		BP	Kaituna SR only (C.Vink pers comm. 2014)
Araneae: Migidae	Migas goyeni	spider	Data Deficient	Sirvid et al. 2012	Herbert	Herbert		BP	Kaituna SR only (C.Vink pers comm. 2014)
Araneae: Migidae	Migas cambridgei	spider	Data Deficient	Sirvid et al. 2012		Port Hills		BP	Type locality, Lyttelton, (Forster 1968)
Araneae: Migidae	Migas saxatilis	spider	Naturally Uncommon	Sirvid et al. 2012	Port Hills & Ellesmere	Port Hills, Ellesmere		BP	Birdlings Flat (Type Locality) & Sumner only (C.Vink pers comm. 2014)
Araneae: Nemesiidae	Stanwellia kaituna	spider	Naturally Uncommon	Sirvid et al. 2012	Port Hills & Herbert	Port Hills, Herbert		BP	Prices Bush, Kaituna SR, Kennedys Bush SR (C.Vink pers comm. 2014)
Araneae: Agelenidae	Neoramia setosa	spider	Data Deficient	Sirvid et al. 2012	Port Hills, Herbert, Akaroa	Port Hills, Herbert, Akaroa		BP	Type Locality Port Hills (Johns, 1986)
Araneae: Agelenidae	Orepukia grisea	spider	Data Deficient	Sirvid et al. 2012		Akaroa		BP	Kaituna Valley, Okuti Valley
Araneae: Agelenidae	Ahua kaituna	spider	Data Deficient	Sirvid et al. 2012		Herbert		BP	Head of Kaituna Valley, Pigeon Bay
Araneae: Amphinectidae	Maniho ngaitahu	spider				Port Hills, Herbert, Akaroa		BP	widespread on Banks Peninsula (C.Vink pers comm. 2014)
Araneae: Amphinectidae	Makora detrita	spider	Data Deficient	Sirvid et al. 2012		Herbert		BP	Known only from Kaituna Valley
Araneae: Amaurobiidae	Muritaia kaituna	spider	Data Deficient	Sirvid et al. 2012		Herbert		BP	Known only from Kaituna Valley

Taxanomic Group	Scientific Name	Common Name	Threat Status	Reference	Uncommon (ED)	Endemic	Distributional Limit	BP Only/ Chch Only	Comments
Araneae: Amaurobiidae	Mamoea pilosa	spider	Naturally Uncommon	Sirvid et al. 2012		Port Hills		BP	Several Banks Peninsula locations
Araneae: Amphinectidae	Aorangia isolata	spider	Data Deficient	Sirvid et al. 2012		Akaroa		BP	Known only from Akaroa; formerly in Neolanidae
Araneae: Cyclocteniidae	Plectophanes archeyi	spider	Data Deficient	Sirvid et al. 2012		Port Hills		BP	Kennedys Bush SR, Kaituna Valley; unlikely to be caught in pitfall traps as they live in insect holes in branches.
Araneae: Lyniphiidae	Haplinis banksi	spider				Herbert		BP	Known only from Kaituna Valley
Araneae: Synotaxidae	Pahora kaituna	spider			Herbert			BP	Only Kaituna Valley & Quail Island Bowie et al. 2013; possibly a synonym of Pahora cantuaria, which occurs throughout Canterbury
Acari: Erythraeidae	Erythrites atamahua	mite				Herbert		BP	Clark, 2013
OPILIONES									
Laniatores: Triaenonychidae	Cenefia adaeiformis	harvestman				Akaroa		BP	
Laniatores: Triaenonychidae	Sorensenella bicornis	harvestman				Low Plains		CH	Type locality Christchurch and possibly and endemic subspecies there (Johns, 1986)
NEMERTINEA									
Nemertini	Antiponemertes allisonae	nemertine worm	Nationally Critical	Buckley et al. 2012				BP	at Menzies Bay; checked several times over many years without success (Peter Johns pers comm 2014)
Phthiraptera: Philopteridae	Quadraceps novaeseelandiae	bird louse	Nationally Vulnerable	Buckley et al. 2012	Ellesmere			BP	on wrybill (Buckley et al. 2012)
Phthiraptera: Philopteridae	Austragoniodes waterstoni	bird louse			Low Plains, Herbert, Akaroa	?			on white-flippered penguin only (Pawson & Emberson 2000)
MOLLUSCA									
Stylommatophora: Punctidae	Dellopsis "peninsularis".	snail	Naturally Uncommon	Mahlfeld et al 2012				BP	
Stylommatophora: Punctidae	Laoma "peraki"	snail	Naturally Uncommon	Mahlfeld et al 2012	Akaroa	Akaroa		BP	
Stylommatophora: Punctidae	Powellaoma "peninsularis"	snail	Naturally Uncommon	Mahlfeld et al 2012				BP	
Stylommatophora: Charopidae	Rotadiscus insularis	snail	Naturally Uncommon	Mahlfeld et al 2012					
Stylommatophora: Charopidae	Charopa pseudocome	snail			Herbert			BP	Bowie et al. 2003
Stylommatophora: Endodontidae	Therasia nsp.	snail	Naturally Uncommon	Mahlfeld et al 2012					

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DIPLOPODA									
Schedotrigonidae	Schedotrigona nsp.	millipede				Herbert, Akaroa		BP	
Dalodesmidae	Icosidesmus schenkeli	millipede				Port Hills, Herbert, Akaroa		BP	Bowie, 2003; Ward et al. 2007
Dalodesmidae	Icosidesmus nsp.1	millipede				Port Hills		BP	Ahuriri SR only (Johns, 1986)
Dalodesmidae	Icosidesmus nsp.2	millipede				Akaroa		BP	Bowie et al. 2011
Dalodesmidae	new genus & species 1	millipede				Port Hills, Herbert, Akaroa		BP	Bowie et al. 2011
Dalodesmidae	Pseudoprionopeltis nsp.	millipede				Herbert, Akaroa		BP	Bowie et al. 2011
Dalodesmidae	new genus & species 2	millipede				Herbert, Akaroa		BP	
Dalodesmidae	Dityloura ditylognatha	millipede				Herbert, Akaroa		BP	Bowie et al. 2011
Cryptodesmidae/ Habrodesmidae	new genus & species 3	millipede				Herbert, Akaroa		BP	Bowie et al. 2011
INSECTA									
Orrthoptera: Anastostomatidae	Hemideina ricta	tree weta	Naturally Uncommon	Trewick et al. 2012		Herbert, Akaroa		BP	stronghold in Akaroa ED (Townsend et al 1997); Bowie et al. 2014
Orrthoptera: Anastostomatidae	Hemiandrus "horomaka"	ground weta	Naturally Uncommon	Trewick et al. 2012		Herbert, Akaroa		BP	Bowie et al. 2003
Orrthoptera: Rhaphidophoridae	Talitropsis crassicruris	cave weta	Naturally Uncommon	Trewick et al. 2012		Akaroa		BP	possibly a mis-identified juvenile of H. ricta (Peter Johns pers comm. 2014)
Orthoptera: Acrididae	Locusta migratoria	locust					southern	BP	southern limit of worldwide species. Locally common on dry ridges above Sumner and Motukarara (Patrick 2014)
Hemiptera: Aphididae	Aphis cottieri	aphid			Ellesmere			BP	recorded twice from Muehlenbeckia on Kaitorete Spit (Pawson & Emberson 2000); Bowie et al. 2003 for Quail Island
Hemiptera: Aphididae	Paradoxaphis nsp.	aphid			Low Plains	Low Plains		CH	discovered and only known from Plagianthus regius in Christchurch Botanic Gardens (Pawson & Emberson 2000)
Hemiptera: Cicadellidae	Paradorydium westwoodi	cicadellid			Low Plains, Port Hills, Herbert, Akaroa	Low Plains, Port Hills, Herbert, Akaroa			reported as rare back in 1890s - on Poa cita (Pawson & Emberson 2000)
Hemiptera: Coccoidea	Eriococcus detectus	scale insect			Low Plains	Low Plains		CH	Type locality Christchurch on beech - beech not natural here! (Pawson & Emberson 2000)
Hemiptera: Coccoidea	Eriococcus kowhai	scale insect			Port Hills	Port Hills		BP	Only known at Kenndys Bush (Pawson & Emberson 2000)
Hemiptera: Coccoidea	Aphenochiton inconspicuous	scale insect			Ellesmere	Ellesmere		BP	Only known from small area of Kaitorete Spit on Coprosma propinqua near "Aerial Reserve" (Pawson & Emberson 2000)
Hemiptera: Coccoidea	Crystallotesta fuscus	scale insect			Port Hillls, Akaroa	Port Hills, Akaroa		BP	Okuti Valley & Lyttelton are only known localities; on ngaio and whiteywood (Pawson & Emberson 2000)

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Hemiptera: Tibicinidae	Kikihia nsp.	cicada				Port Hills, Herbert, Akaroa		BP	widespread in forest and shrubland edge (B.Patrick pers comm. 2014)
Hemiptera: Tibicinidae	Rhodopsalta microdora	cicada			Herbert			BP	rare at Decanter Bay only (B,Patrick pers comm. 2014)
Hemiptera: Tibicinidae	Amphipsalta strepitans	cicada			Herbert, Akaroa			BP	rocky sites (B.Patrick pers comm. 2014)
Mantodea	Orthodera novaezealandiae	praying mantis	At Risk Declining	Buckley et al. 2012					locally common (B.Patrick pers comm. 2014)
Diptera: Therevidae	Anabarhyncus brevicornis	thervid fly				Port Hills		BP	Mount Evans
Diptera: Therevidae	Anabarhyncus exiguus	thervid fly				Low Plains, Ellesmere			Birdlings Flat & Christchurch
Diptera: Therevidae	Anabarhyncus simplex	thervid fly	Data Deficient	Andrew et al. 2012	Port Hills	Port Hills		BP	single male from 1919 Port Hills (Pawson & Emberson 2000)
Diptera: Dolichopodidae	Parentia nova	fly	Naturally Uncommon	Andrew et al. 2012	Port Hills, Herbert	Port Hills, Herbert		BP	Rhodes SR & Purau Creek only (Pawson & Emberson 2000)
Diptera: Dolichopodidae	Sympycnus alchymicus	fly	Data Deficient	Andrew et al. 2012	Low Plains	Low Plains		CH	Christchurch only (Pawson & Emberson 2000)
Diptera: Syrphidae	Melanostoma apertum	fly			Low Plains	Low Plains		CH	Christchurch only (Pawson & Emberson 2000)
Diptera: Tipulidae	Discobola dicycla	cranefly			Low Plains	Low Plains		CH	Described from Christchurch - little known (Pawson & Emberson 2000)
Diptera: Tipulidae	Leptotarsus hudsonianus	cranefly				Herbert, Akaroa		BP	female brachypterous
Diptera: Tipulidae	Gynoplistia heighwayi	cranefly				Akaroa		BP	
Diptera: Tipulidae	Dicranota nsp.	cranefly			Akaroa	Akaroa		BP	brachypterous - possibly endemic to Akaroa - known from 2 specimens, 2 sites (Peter Johns pers comm. 2014)
Diptera: Tipulidae	Gonomyia banksiana	cranefly			Port Hills, Herbert	Port Hills, Herbert		BP	
Diptera: Tipulidae	Metalimnophila banksiana	cranefly				Port Hills, Herbert, Akaroa		BP	
Diptera: Tipulidae	Molophilus banksianus	cranefly			Port Hills, Herbert, Akaroa	Port Hills, Herbert, Akaroa		BP	very small species - seldom seen.(Peter Johns pers comm. 2014)
Diptera: Tipulidae	Molophilus gladiator	cranefly			Port Hills, Herbert, Akaroa	Port Hills, Herbert, Akaroa		BP	endemic - very small species - not seen since 1921 (Peter Johns pers comm. 2014)
Diptera: Tipulidae	Zelandotipula nsp.	cranefly				Akaroa		BP	Okains Bay (Bowie et al. 2011)
Diptera: Tephritidae	Austrotephritis nsp.	fruit fly			Ellesmere	Ellesmere		BP	Kaitorete Spit endemic (H. Patrick 2014)
Coleoptera: Carabidae	Selenochilus hinewai	ground beetle				Akaroa		BP	
Coleoptera: Carabidae	Selenochilus piceus	ground beetle				Herbert, Akaroa		BP	
Coleoptera: Carabidae	Mecodema oregoides	ground beetle				Port Hills, Herbert, Akaroa		BP	

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Coleoptera: Carabidae	Mecodema howitti	ground beetle	At Risk Declining	Leschen et al. 2012		Akaroa, Herbert		BP	large carabid of forest, shrubland and grassland sites (Anderson et al. 2003)
Coleoptera: Carabidae	Megadromus guerinii	ground beetle				Akaroa, Herbert		BP	Bowie, 2010; Bowie et al. 2011
Coleoptera: Carabidae	Onawea pantomelas	carabid beetle			Port Hills, Herbert. Akaroa	Port Hills, Herbert. Akaroa		BP	Bowie, 2007; Bowie et al. 2011
Coleoptera: Carabidae	Holcaspis suteri	carabid beetle				Port Hills, Herbert. Akaroa		BP	Bowie & Vink, 2006; Bowie et al. 2011
Coleoptera: Carabidae	Holcaspis nsp.	carabid beetle			Akaroa	Akaroa, Herbert		BP	Bowie et al. 2011
Coleoptera: Carabidae	Agonum nsp.	carabid beetle			Port Hills	Port Hills		BP	
Coleoptera: Carabidae	Dicrochile atrata	carabid beetle				Port Hills, Herbert. Akaroa		BP	
Coleoptera: Hydraenidae	Orchymontia banksiana	water beetle	Nationally Endangered	Grainger et al. 2013	Herbert	Herbert		BP	Known only from Kaituna Valley in stream (Pawson & Emberson 2000)
Coleoptera: Curculionidae	Megacolabus sculpturatus	Akaroa weevil	Extinct	Leschen et al. 2012	Akaroa	Akaroa		BP	collected only once at Akaroa in 1890s; not found since; probably on ferns (Pawson & Emberson 2000)
Coleoptera: Curculionidae	Hadramphus tuberculatus	knobbled weevil	Nationally Critical	Leschen et al. 2012	Low Plains			CH	extinct on Canterbury Plains but re-discovered at Burkes Pass ten years ago (B.Patrick pers comm. 2014)
Coleoptera: Curculionidae	Epitimetes nsp.	weevil				Port Hills, Herbert, Akaroa		BP	forest reserves and higher altitude (Sam Brown pers comm. 2014)
Coleoptera: Curculionidae	Crisius nsp.	weevil				Port Hills, Herbert, Akaroa		BP	forest reserves and higher altitude (Sam Brown pers comm. 2014)
Coleoptera: Curculionidae	Protolobus nsp.	weevil				Port Hills, Herbert, Akaroa		BP	forest reserves and higher altitude (Sam Brown pers comm. 2014)
Coleoptera: Curculionidae	Eugnominae: new genus & species	weevil				Port Hills, Herbert, Akaroa		BP	forest reserves and higher altitude (Sam Brown pers comm. 2014)
Coleoptera: Curculionidae	Entiminae: new genus & species	weevil				Port Hills, Herbert, Akaroa		BP	forest reserves and higher altitude (Sam Brown pers comm. 2014)
Coleoptera: Curculionidae	Colabotelus dealbatus	weevil					northern	BP	otherwise Central Otago & Mackenzie Basin (Sam Brown pers comm. 2014)
Coleoptera: Curculionidae	Nicaeana nsp.	weevil				Ellesmere		BP	Probably endemic to Kaitorete Spit (Sam Brown pers comm. 2014)
Coleoptera: Curculionidae	Colobotelus nsp.	weevil			Low Plains		northern	CH	savannah grasslands; otherwise only known from Dunedin (Sam Brown pers comm. 2014)
Coleoptera: Curculionidae	Epitimetes lutosus	weevil			Low Plains	Low Plains		CH	Styx Mill (Sam Brown pers comm. 2014)
Coleoptera: Curculionidae	Irenimus parilis	weevil			Low Plains	Low Plains (almost)		CH	Described from Christchurch; almost endemic to savannah grasslands but also Waikuku (Sam Brown pers comm. 2014)
Coleoptera Scarabaeidae	Costelytra nsp.	chafer beetle				Port Hills, Akaroa, Ellesmere		BP	known from specimens from Port Hills from October 1931 (Pawson & Emberson 2000) and more recent collections
Coleoptera: Tenebrionidae	Mimopeus nsp.	darkling beetle			Herbert	Herbert		BP	north coast only (Peter Johns pers comm. 2014)

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Coleoptera: Tenebrionidae	Mimopeus granulosus	darkling beetle				Low Plains, Port Hills, Herbert, Ellesmere			Bowie et al. 2013
Lepidoptera: Nepticulidae	Stigmella kaimanua	moth			Low Plains, Herbert		northern		larvae mine Parsonsia leaves; rare in Prices Valley & Riccarton Bush (B.Patrick pers comm. 2014)
Lepidoptera: Psychidae	Grypotheca pertinax	moth			Low Plains	Low Plains		CH	endemic to Riccarton Bush; flightless female (Muir et al 1995)
Lepidoptera: Psychidae	Mallobathra metrosema	moth			Low Plains	Low Plains		CH	endemic to Riccarton Bush; flightless female (Muir et al 1995)
Lepidoptera: Psychidae	Reductoderces microphanes	moth			Low Plains	Low Plains		CH	endemic to Riccarton Bush; flightless female (Muir et al 1995)
Lepidoptera: Psychidae	Reductoderces nsp.	moth			Akaroa	Akaroa		BP	summit of Te Oka only flightless female (B.Patrick pers comm. 2014)
Lepidoptera: Gracillariidae	New genus & species"Teucridium"	moth	Nationally Vulnerable	Hitchmough et al 2014	Low Plains, Port Hills, Herbert		southern		larvae leaf mine Teucridium; adults first discovered in Christchurch Botanic Gardens (B.Patrick pers. comm. 2014)
Lepidoptera: Scythrididae	Scythris niphozela	moth	Naturally Uncommon	Hitchmough et al 2014	Ellesmere	Ellesmere		BP	Kaitorete Spit only; larvae on Carmichaelia appressa (Patrick 2012)
Lepidoptera: Scythrididae	Scythris "stripe"	moth	Nationally Critical	Hitchmough et al 2014	Ellesmere	Ellesmere		BP	one distinct individual known from Birdlings Flat from 1989 (Patrick 2014)
Lepidoptera: Blastodacnidae	Circoxena ditrocha	moth	Naturally Uncommon	Hitchmough et al 2014	Low Plains, Akaroa				one only record here near Te Oka 500m; old records Riccarton Bush (Muir et al 1995)
Lepidoptera: Choreutidae	Asterivora nsp.	moth				Port Hills, Herbert, Akaroa		BP	larvae on Brachyglottis lagopus (B.Patrick pers comm 2014)
Lepidoptera: Choreutidae	Asterivora chatuidea	moth			Herbert		northern	BP	larvae on Helichrysum lanceolatum at Decanter Bay only (B.Patrick pers comm 2014)
Lepidoptera: Tortricidae	Epichorista lindsayi	moth	Nationally Endangered	Hitchmough et al 2014	Akaroa	Akaroa		BP	rediscovered Wairewa Forest 2014 (Patrick 2014); larvae on Microlaena polynoda
Lepidoptera: Tortricidae	Ericodesma aerodana	moth	At Risk Declining	Hitchmough et al 2014	Ellesmere		southern	BP	larvae on coastal Pimelea (B.Patrick pers. comm. 2014)
Lepidoptera: Tortricidae	Cnephasia paterna	moth	Nationally Endangered	Hitchmough et al 2014	Akaroa	Akaroa		BP	rediscovered in 2012 on Saddle Hill in Chionochloa rigida grassland (Patrick 2014)
Lepidoptera: Tortricidae	Eurythecta robusta	moth	Naturally Uncommon	Hitchmough et al 2014	Ellesmere, Low Plains		northern		female short-winged and flightless; open areas of cushionfield (B.Patrick pers. comm. 2014)
Lepidoptera: Tortricidae	Philocryptica polypodii	moth			Herbert			BP	larvae make distinctive mine on Pyrrosia fern leaves; one record only (B.Patrick pers. comm. 2014)
Lepidoptera: Tortricidae	Maoritenes cyclobathra	moth			Akaroa			BP	larvae on Pseudowintera colorata (B.Patrick pers. comm 2014)
Lepidoptera: Tortricidae	"Cnephasia" incessana	moth			Herbert		southern	BP	
Lepidoptera: Elachistidae	Elachista helonoma	moth	At Risk Relict	Hitchmough et al 2014	Port Hills, Herbert		northern	BP	tiny grass moth (B.Patrick pers. comm. 2014)
Lepidoptera: Copromorphidae	Phycomorpha metachrysa	moth			Herbert			BP	larvae in fruit of Streblus; Decanter Bay only (B.Patrick pers comm. 2014)
Lepidoptera: Carposinidae	Heterocrossa maculosa	moth	Data Deficient	Hitchmough et al 2014	Port Hills, Akaroa		northern	BP	Type Locality Coopers Knob - only one other record in area (B.Patrick pers comm. 2014)

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Lepidoptera: Glyphipterigidae	Glyphipterix aulogramma	moth			Low Plains		northern	CH	Travis Wetland - locally abundant in Carex spp. (B.Patrick pers comm. 2014)
Lepidoptera: Glyphipterigidae	Glyphipterix euastera	moth	Naturally Uncommon	Hitchmough et al 2014	Port Hills, Ellesmere				tiny elegant grass/ sedge moth (B.Patrick pers. comm. 2014)
Lepidoptera: Yponomeutidae	Zelleria sphenota	moth	At Risk Declining	Hitchmough et al 2014	Low Plains, Port Hills, Herbert, Akaroa				tiny leaf miner in Ileostylus leaves; locally extinct in Christchurch (Riccarton Bush) (Muir et al 1995)
Lepidoptera: Stathmopodae	Stathmopoda albimaculata	moth	Nationally Endangered	Hitchmough et al 2014	Ellesmere, Akaroa		northern	BP	
Lepidoptera: Stathmopodae	Stathmopoda endotherma	moth	Naturally Uncommon	Hitchmough et al 2014	Low Plains, Herbert		northern		larvae probably on scale insects (Patrick 2014)
Lepidoptera: Stathmopodae	Calicotis crucifera	moth			Herbert				larvae on spores of fern Pyrrosia in damp places; one record only (B.Patrick pers. comm. 2014)
Lepidoptera: Oecophoridae	Hierodoris torrida	moth	At Risk Relict	Hitchmough et al 2014	Low Plains, Herbert				day-flying in and just outside Riccarton Bush & Prices Valley (Hoare 2005)
Lepidoptera: Oecophoridae	Gymnobathra thetodes	moth	At Risk Relict	Hitchmough et al 2014	Low Plains, Port Hills, Herbert, Akaroa		southern		Type locality Akaroa = G. ambigua Type Locality Horseshoe Lake (Patrick 2014)
Lep[idoptera: Oecophoridae	Izatha psychra	moth	Nationally Endangered	Hitchmough et al 2014	Akaroa		northern	BP	one record here 500m Saddle Hill (B.Patrick pers comm 2014)
Lepidoptera: Gelechiidae	Kiwaia thyraula	moth			Low Plains			CH	mossy sites in savannah grasslands (B Patrick pers comm 2014)
Lepidoptera: Gelechiidae	Kiwaia pumila	moth	Nationally Vulnerable	Hitchmough et al 2014	Low Plains		northern	CH	Type Locality Yaldhurst - not seen recently (B.Patrick pers. comm. 2014)
Lepidoptera: Gelechiidae	Kiwaia jeanae	moth	Naturally Uncommon	Hitchmough et al 2014	Ellesmere	Ellesmere		BP	male & female short-winged and flightless (B.Patrick pers. comm. 2014)
Lepidoptera: Gelechiidae	Kiwaia "plains jumper"	moth	Nationally Endangered	Hitchmough et al 2014	Low Plains, Ellesmere		northern		female short-winged and flightless; also Rakaia Island (B.Patrick pers. comm. 2014)
Lepidoptera: Pterophoridae	Stenoptilia celidota	moth			Ellesmere			BP	larvae on Vittadinia australis; Kaitorete Spit only (B.Patrick 2012)
Lepidoptera: Crambidae	Gadira leucophthalma	moth	Nationally Vulnerable	Hitchmough et al 2014	Port Hills, Akaroa, Ellesmere		southern	BP	
Lepidoptera: Crambidae	Gadira petraula	moth	Naturally Uncommon	Hitchmough et al 2014	Port Hills, Herbert, Akaroa		southern	BP	female short-winged and flightless; on rock faces (B.Patrick pers. comm. 2014)
Lepidoptera: Crambidae	Sporophyla oenospora	moth	Nationally Critical	Hitchmough et al 2014	Ellesmere		northern	BP	not seen recently on Kaitorete Spit (B.Patrick pers. comm. 2014)
Lepidoptera: Crambidae	Kupea electilis	moth	Nationally Vulnerable	Hitchmough et al 2014	Ellesmere	Ellesmere		BP	female short-winged and flightless; feeds on Zoysia; ten colonies found on Kaitorete Spit (Patrick 2012)
Lepidoptera: Crambidae	Orocrambus ordishi	moth			Low Plains			CH	flightless female; uncommon in savannah grasslands and present Kaitorete Spit (B Patrick pers comm 2014)
Lepidoptera: Geometridae	Xanthorhoe bulbulata	moth	Extinct	Hitchmough et al 2014	Low Plains, Port Hills				not seen recently but Type locality Christchurch (Patrick 2000)
Lepidoptera: Geometridae	Samana acutata	moth	At Risk Relict	Hitchmough et al 2014	Low Plains, Herbert, Akaroa, Ellesmere				larvae on Carmichaelia species; Christchurch is Type locality but not seen there recently (Patrick 2012)

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Lepidoptera: Geometridae	Theoxena scissaria	moth	Nationally Vulnerable	Hitchmough et al 2014	Low Plains			CH	Christchurch is Type locality but not seen there recently; probably locally extinct (B.Patrick pers. comm. 2014)
Lepidoptera: Geometridae	Dasyuris partheniata	moth	At Risk Recovering	Hitchmough et al 2014	Low Plains, Port Hills, Herbert, Akaroa				larvae on Aciphylla subflabellata; probably extinct on plains (B.Patrick pers. comm. 2014)
Lepidoptera: Geometridae	Helastia nsp.	moth			Herbert, Akaroa			BP	Bowie et al. 2011
Lepidoptera: Geometridae	Paranotoreas new species	moth	Nationally Endangered	Hitchmough et al 2014	Herbert	Herbert		BP	Mount Herbert tops only; day-flying (B.Patrick pers. comm. 2014)
Lepidoptera: Geometridae	Asaphodes obarata	moth	Nationally Critical	Hitchmough et al 2014	Low Plains, Akaroa				not seen recently in these areas (Akaroa, Riccarton Bush (Muir et al 1995)
Lepidoptera: Geometridae	Asaphodes stinaria	moth	Nationally Vulnerable	Hitchmough et al 2014	Low Plains			CH	Canterbury is Type locality & New Brighton is early record; but not seen recently here (Patrick 2000)
Lepidoptera: Geometridae	Dichromodes cynica	moth				Port Hills, Herbert, Akaroa		BP	larvae on lichens on rock faces (B.Patrick pers comm. 2014)
Lepidoptera: Geometridae	Pasiphila heighwayi	moth			Port Hills	Port Hills		BP	not found recently anywhere (B.Patrick pers. comm. 2014)
Lepidoptera: Geometridae	Pasiphila rivalis	moth			Herbert			BP	larvae on Hebe; two records only: 200m Mount Herbert & Prices Valley (B.Patrick pers. comm. 2014)
Lepidoptera: Geometridae	Declana toreuta (grey pops)	moth	Nationally Vulnerable	Hitchmough et al 2014	Akaroa			BP	one site only; Stony Beach where larvae on Olearia fimbriata (B.Patrick pers. comm. 2014)
Lepidoptera: Geometridae	Declana griseata	moth	At Risk Declining	Hitchmough et al 2014	Port Hills, Herbert, Akaroa			BP	larvae on Ileostylus foliage (B.Patrick pers. comm. 2014)
Lepidoptera: Geometridae	Tatosoma agrionata	moth	At Risk Declining	Hitchmough et al 2014	Low Plains, Port Hills, Herbert, Akaroa				larvae on Ileostylus foliage; locally extinct Riccarton Bush (Muir et al 1995)
Lepidoptera: Geometridae	Notoreas simplex	moth			Ellesmere		southeastern	BP	Kaitorete Spit; very local with larvae on Pimelea; spectacular day-flying species (Patrick 2012)
Lepidoptera: Geometridae	Pseudocoremia cineracia	moth	Nationally Vulnerable	Hitchmough et al 2014	Akaroa			BP	one site only; Stony Beach where larvae on Olearia fimbriata (B.Patrick pers. comm. 2014)
Lepidoptera: Geometridae	Chrysolarentia subrectaria	moth			Herbert			BP	one site only - Wairewa Forest (Breitmeyers) (B.Patrick pers comm. 2014)
Lepidoptera: Geometridae	Arctesthes catapyrrha	moth			Low Plains, Ellesmere				western end of Kaitorete Spit & savannah grasslands (B Patrick pers comm 2014)
Lepidoptera: Noctuidae	Meterana exquisita	moth	At Risk Relict	Hitchmough et al 2014	Akaroa			BP	one site only; Stony Beach where larvae on Olearia fimbriata (B.Patrick pers. comm. 2014)
Lepidoptera: Noctuidae	Meterana inchoata	moth			Port Hills, Herbert, Akaroa			BP	larvae on Urtica ferox (B.Patrick pers. comm. 2014)
Lepidoptera: Noctuidae	Meterana octans	moth			Port Hills, Herbert, Akaroa			BP	larvae on Streblus (B.Patrick pers. comm. 2014)
Lepidoptera: Noctuidae	Meterana pansicolor	moth	Naturally Uncommon	Hitchmough et al 2014	Port Hills			BP	larvae on Hoheria (B.Patrick pers. comm. 2014)

Terrestrial Invertebrates

Banks Peninsula and Christchurch City Ecological Study Spreadsheet Species Lists

Taxanomic Group	Scientific Name	Common Name	Threat Status	Reference	Uncommon (ED)	Endemic	Distributional Limit	BP Only/ Chch Only	Comments
Lepidoptera: Noctuidae	Graphania tetrachroa	moth	Nationally Vulnerable	Hitchmough et al 2014	Herbert			BP	larvae on Olearia species; Prices Valley only here (B.Patrick pers. comm. 2014)
Lepidoptera: Noctuidae	Agrotis ceropachoides	moth			Low Plains, Ellesmere				foredune specialist emerging in winter as adults; female flightless (Patrick 2013)
Lepidoptera: Noctuidae	Bityla sericea	moth	Naturally Uncommon	Hitchmough et al 2014	Ellesmere			BP	
Lepidoptera: Noctuidae	Ectopatria aspera	moth			Herbert, Ellesmere			BP	larvae on Sarcocornia quinqueflora; rare here at Onawe and Birdlings Flat (B.Patrick pers comm 2014)
Lepidoptera: Noctuidae	Euxoa admirationis	moth			Akaroa., Ellesmere			BP	foredunes; Hikuraki Bay & Kaitorete Spit (B.Patrick pers comm. 2014)
Lepidoptera: Nolidae	Nola parvitis	moth			Port Hills, Herbert, Akaroa			BP	larvae on Helichrysum lanceolatum; national stronghold here (B.Patrick pers. comm. 2014)
Hymenoptera: Diapriidae	Pantolytomyia polita	wasp	Data Deficient	Ward et al 2012	Akaroa			BP	swept from ferns in forest at Akaroa (Pawson & Emberson 2000)
Hymenoptera: New Family	New Genus & species	wasp			Herbert			BP	Known from Prices Valley here only (Pawson & Emberson 2000)
Blattodea: Blattidae	Celatoblatta peninsularis	cockroach				Port Hills, Herbert, Akaroa		BP	
Ephemeroptera: Nesameletidae	Nesameletus vulcanus	mayfly	Nationally Vulnerable	Grainger et al. 2013		Herbert, Akaroa		BP	
Ephemeroptera: Nesameletidae	Nesameletus ornatus	mayfly			Low Plains (Christchurch)			CH	Type locality Christchurch but not been found there for long time (Hitchings & Staniczek 2003)
Plecoptera: Antarctoperlidae	Zelandobius wardi	stonefly	Naturally Uncommon	Grainger et al. 2013	Herbert, Akaroa	Herbert, Akaroa		BP	Type locality Hinewai (Pawson & Emberson 2000)
Trichoptera: Hydrobiosidae	Edpercivalia banksiensis	caddisfly	Nationally Endangered	Grainger et al. 2013		Port Hills, Herbert, Akaroa		BP	
Trichoptera: Hydrobiosidae	Costachorema peninsulae	caddisfly	Nationally Vulnerable	Grainger et al. 2013		Herbert, Akaroa		BP	Bowie et al. 2010
Trichoptera: Hydrobiosidae	Hydrobiosis styx	caddisfly	Nationally Vulnerable	Grainger et al. 2013	Low Plains	Low Plains, Port Hills, Herbert, Akaroa			Type locality “Brooklands - Styx River” - not found there recently (J.Ward pers comm. 2014)
Trichoptera: Hydrobiosidae	Tiphobiosis childella	caddisfly	Nationally Critical	Grainger et al. 2013	Akaroa	Akaroa		BP	Quiet Stream, Hinewai only (J.Ward pers comm. 2014)
Trichoptera: Hydrobiosidae	Tiphobiosis hinewai	caddisfly	Nationally Critical	Grainger et al. 2013	Akaroa	Akaroa		BP	Quiet Stream, Hinewai only (J.Ward pers comm. 2014)

Freshwater Invertebrates

Grouping	Taxanomic Group	Scientific Name	Common Name	Threat Status	Reference	Endemic	Distributional Limit	BP Only/ Chch Only	Comments from Grainger et al. 2013
Crustacea	Decapoda Parastacidae	Paranephrops zealandicus (White, 1847)	Koura	Declining	Grainger et al. 2013, Chapman et al. 2011				Eastern and southern South Island. Water quality and abstraction issues, aquaculture and commercialisation.
Crustacea	Cladocera: Daphniidae	Daphnia carinata King, 1852	Waterflea	Declining	Grainger et al. 2013, Chapman et al. 2011				Being displaced by North American adventive species.
Crustacea	Branchiopoda: Triopsidae	Lepidurus apus viridus (Baird, 1850)	Tadpole shrimp	Naturally Uncommon	Grainger et al. 2013, Chapman et al. 2011				Ephemeral pools, Central Otago, Ashburton Lakes, Godley Head, Taranaki. Temporary ponds - habitat modification predation, fragmentation. Also found in Australia.
Insecta	Diptera: Blephariceridae	Neocurupira chiltoni (Campbell, 1921)	Net-winged midge	-	Grainger et al. 2013	Endemic BP		BP	Ranked by Diptera Group, see Andrews et al 2012.
Insecta	Trichoptera: Hydrobiosidae	Tiphobiosis childella Ward, 1995	Caddisfly	Nationally Critical	Grainger et al. 2013	Endemic BP		BP	Hinewai Reserve only, c. 15 specimens. Last collection 1997. Possibly seepage specialist.
Insecta	Trichoptera: Hydrobiosidae	Tiphobiosis hinewai Ward, 1995	Caddisfly	Nationally Critical	Grainger et al. 2013	Endemic BP		BP	Hinewai Reserve, Banks Peninsula endemic - 2 catchments in reserve. Very rare even at those sites. Seepage species. Last collection 1991.
Insecta	Coleoptera: Hydraenidae	Orchymontia banksiana Ordish, 1984	Beetle	Nationally Endangered	Grainger et al. 2013, Ordish R. G. 1984	Endemic BP		BP	Banks Peninsula endemic - 3-4 catchments; not seen in last couple of years at known sites.
Insecta	Trichoptera: Hydrobiosidae	Edpercivalia banksiensis McFarlane, 1939	Caddisfly	Nationally Endangered	Grainger et al. 2013	Endemic BP		BP	Only found in Banks Peninsula. Larvae found in seepages. Habitat limited and possibly threatened.
Insecta	Ephemeroptera: Nesameletidae	Nesameletus vulcanus Hitchings & Staniczek, 2003	Mayfly	Nationally Vulnerable	Grainger et al. 2013	Endemic BP		BP	Known from c. 10 streams; nowhere common. Only on Banks Peninsula.
Insecta	Trichoptera: Hydrobiosidae	Costachorema peninsulae Ward, 1995	Caddisfly	Nationally Vulnerable	Grainger et al. 2013	Endemic BP		BP	Lowland forest streams, scattered records of few individuals on Banks Peninsula.
Insecta	Trichoptera: Hydrobiosidae	Hydrobiosis styx McFarlane, 1951b	Caddisfly	Nationally Vulnerable	Grainger et al. 2013	Endemic BP?		BP?	Streams in forest fragments on Banks Peninsula - gone from Styx River type locality. Type locality not likely current habitat.similar distribution to C. peninsulae and E. banksiensis. Type locality perhaps abberant record?
Insecta	Plecoptera: Gripopterygidae	Zelandobius wardi McLellan, 1993	Stonefly	Naturally Uncommon	Grainger et al. 2013	Endemic BP		BP	Only found in Banks Peninsula, in 6+ streams.
Mollusca	Bivalvia: Hyriidae	Echyridella menziesii (Dieffenbach, 1843)	Mussel	Declining	Grainger et al. 2013				Widespread in both islands, often abundant in lakes but decline inferred from larval dispersal impacts in declining fish populations and degradation of lowland lakes and waterways.
Worm	Platyhelminthes: Prorhynchidae	Porhynchus haswelli Steinboeck & Reisinger, 1924	Flatworm	Declining	Grainger et al. 2013				Historically widerspread, recent sampling only found near Kingston, Lake Wakatipu.

Freshwater Fish

Common name	Scientific Name	Threat Status (Goodman et al. 2014)	Uncommon (ED)	Endemic	Distributional Limit	BP Only/ Chch Only	Comments
Banded kokopu	Galaxias fasciatus	Not Threatened	Low Plains, Port Hills, Herbert			BP	Not found in Christchurch (although niwa distribution maps indicate there may be a few records in chch they may be old and so no longer present - certainly i have never heard of them in the chch area and wouldnt expect the waterways to be suitable anyway). Uncommon in other Low Plains areas, more common on BP, but mostly in the Akaroa ED (less so in Herbert and Port Hills).
Bluegill bully	Gobiomorphus hubbsi	At Risk - Declining	Low Plains, Port Hills				Found in fast flowing riffles in the Avon River and some tributaries (No 2 Drain), Heathcote River and some tribs (Cashmere Stream). Found in a good number of BP streams and found in large braided rivers of lowland Canterbury.
Canterbury galaxias	Galaxias vulgaris	At Risk - Declining					Not found in chch (alhtough maybe found in the Waimak?) or BP, but found in the wider 'low plains' and 'high plains'
Canterbury mudfish	Neochanna burrowsius	Threatened - Nationally Critical	Low Plains			CHCH	Populations have been introduced to the Botanic Gardens and Peacock Springs. There are other small populations in ponds around Christchurch. Not found on BP or Port Hills that we know of.
Giant bully	Gobiomorphus gobioides	Not Threatened	Low Plains, Port Hills, Herbert, Akaroa				Found in a number of waterways in Christchurch and BP, but not in large numbers. This may be due to mis-identification with common bully, particularly for juveniles (Ref - NIWA website).
Giant kokopu	Galaxias argenteus	At Risk - Declining	Low Plains				Has not been recorded from the Christchurch area or BP. Two records from Canterbury (near the coast just north of the Waimak and at the southernlimit of the Low Plains ED - would need to look at the records to see how old and to check validity of data....).
Inanga	Galaxias maculatus	At Risk - Declining					Found in many Christchurch waterways and lower reaches of BP waterways, however spawning habitat is at risk.
Koaro	Galaxias brevipinnis	At Risk - Declining	Low Plains, Port Hills			BP	Common in the steeper reaches of BP streams (including the Port Hills on on the Lyttleton side). Not found in chch. Not found in Ellesmere.
Lamprey	Geotria australis	Threatened - Nationally Vulnerable	Low Plains, Port Hills				In Christchurch and BP waterways, but not caught in large numbers. Unlikely to be many in the Port Hills ED given waterways on chch side are ephemeral so limited to a few possible ones on the lyttleton side.
Longfin eel	Anguilla dieffenbachii	At Risk - Declining					Reasonably common in Christchurch waterways, common on BP.
Redfin bully	Gobiomorphus huttoni	At Risk - Declining	Low Plains, Port Hills, Herbert & Akaroa			BP	Found in a number of the steeper reaches of BP streams but not in large numbers, would be uncommon in the Port Hills streams and would only be on the lyttleton side. Not recorded in Christchurch.
Stokell's Smelt	Stokellia anisodon	At Risk - Naturally Uncommon	Low Plains			CHCH	Found in the lower reaches of major rivers (Waimakariri, Rakaia, etc.). No recorded in Waimakariri River recently.Not found on BP or Port Hills
Torrentfish	Cheimarrichthys fosteri	At Risk - Declining	Port Hills				Reasonably common in the steeper reaches of BP streams, and found in Port Hills Streams although probably only on the Lyttleton side given chch side of port hills are ephemeral). Only one record from chch (we caught one in Cashmere Stream of all places!) - but definitely an outlier and unlikely to still be there....

Lizards

Scientific_Name	Common_Name	National_Threat_Classification_2012	Endemic
Oligosoma aff. lineoocellatum "central Canterbury"	Central Canterbury spotted skink	Threatened - Nationally Vulnerable	
Oligosoma aff. polychroma Clade 5	Common skink clade 5	At Risk - Declining	
Oligosoma maccanni	McCann's skink	Not Threatened	
Naultinus gemmeus	Jewelled gecko	At Risk - Declining	
Woodworthia cf. brunnea	Canterbury gecko	At Risk - Declining	Canterbury

18. APPENDIX 4 – NOTES FROM BOTANISTS' SPECIALIST GROUP

Botanists' Specialist Group

Meeting: 10.00 – 12.00, Thursday 30th October 2014

Beckenham Service Centre Board Room.

Role: To provide advice and guidance to CCC on the location and delineation of significant indigenous vegetation to inform the identification of Sites of Ecological Significance (SESs) across the Council area.

Present:

Nick Head

Scott Hooson

Antony Shadbolt

Melissa Hutchison

Jason Butt

Liz Garson

Paul Devlin

Di Carter

Kate McCombs

Alice Shanks

Phil Grove

Sally Tripp

Carol Jensen

Geoff Walls

Colin Meurk

Manfred van Tippelskirch

Apologies:

Jon Sullivan

Note of main discussion points:

1. Scott explained the purpose of the meeting was:

- For Anthony to briefly discuss the list of Low Plains sites for assessment and explain the process for providing comment/additional sites
- Scott to explain the process for providing comment/additional sites to the list of Banks Peninsula priority sites for assessment.
- Discuss and review the list of indigenous plant species that trigger criteria 4 and 5, and in particular species that uncommon at the ecological district level.

2. Anthony showed a spreadsheet with a list of the proposed SESs on the Low Plains ED that are within the city boundary. He explained that for simplicity, for purpose of this meeting, he has lumped a number of sites together. There was discussion around dryland grassland sites at McLeans Island. If information from other surveys of these sites can be made available this would be very useful (see action points).

3. Carol emphasised that the timing of surveys was important for some species such as spring annuals in dryland communities.

4. Sally asked for clarification around her comment at the last meeting of clustering sites. Scott and Anthony explained that for the District Plan purposes individual sites had to be identified individually, but where areas are connected these can be grouped into a single site.

5. Colin noted that for the Low Plains PNA survey? he produced a list of species that were very uncommon within that context. He will see if he can source this and provide it to Anthony.

6. Scott explained the purpose of the main part of the meeting was to run through the list of indigenous plant species present on Banks Peninsula and determine which are uncommon by Ecological District/Region. This assists with the CRPS significance criteria 4 and 5. Hugh Wilson's 2013 lists are being used as the basis, with some additions suggested by Melissa Hutchison and some species identified by Susan Wiser during her rocky outcrops research. The objective of discussing this list is to get consensus from the Group that this list is appropriate.

7. Some species will be uncommon because their habitats are scarce, such as wetland plants. So uncommon plants may either be:

    a) naturally uncommon (i.e. of habitat)

    b) uncommon because of habitat degradation.

        · Geoff commented that he defines uncommonness as "noteworthy".

        · Scott added that these should be species that are worth protecting sites for.

8. With a few exceptions the list does not include Kaitorete Spit. Scott explained that there was sufficient information on the values of Kaitorete Spit that lists of uncommon plant species were not required. It was agreed that all indigenous species there are likely to be considered uncommon (at least) because the entire habitat is so special.

9. Line by line in the Banks Peninsula plant species spreadsheet (row numbers for reference)

16: *Apodasmia similis*. Colin wondered why this is uncommon, as it is common in the city. Jason - on Banks Peninsula it is uncommon because saltmarsh is an uncommon habitat.

17: *Aporostylis bifolia*. Orchids are uncommon generally. Alice sees this under kanuka and considers it exciting / uncommon.

26: *Asplenium richardii*. Sally considers this uncommon: it only occurs at high altitudes and she's only seen one.

54: *Carex goyenii* . Nobody has seen this on Banks Peninsula.

61 and 62: *Carex resectans* and *C. secta*. Yes - no comments

68: *Carex virgata*. Scott: not is Hugh's list but more uncommon that *C. secta* so warrants inclusion

80: *Cheilanthes distans*. Sally, Carol and Melissa agree this is uncommon

106: *Dacrycarpus dacrydioides*. Yes. Lack of recruitment an issue.

122: *Eleocharis acuta*. Common in wetland flushes, therefore recommended it be removed.

133 and 135: *Epilobium pedunculare* and *Epilobium rotundifolium*. Melissa: frequent on stream margins, and in wet areas, but if *Carex secta* is left in as uncommon, these should be too.

143: *Euphorbia glauca*. Extinct on Banks Peninsula but leave in case found.

148: *Fuchsia perscandens*. Carol, Melissa – this has not been often found, although a hybrid has turned up.

159 and 160: *Gonocarpus aggregatus* and *Gonocarpus incanus*. Susan Wiser finds – yes uncommon

190: *Hypericum involutum*. At Risk - Declining anyway, so it is taken account of in the significance criteria

194: *Hypoxis* 'new species'. Uncommon on Kaitorete Spit. Hypoxis also present on Port Hills?

199: *Isolepis habra*. Yes uncommon

210: *Korthalsella clavata*. Brian Molloy, one record.

231: Leptospermum scoparium. Yes uncommon

232: *Leptostigma setulosum*. Yes – found at high altitude on damp sites, Port Hills grasslands.

235: Lilaeopsis novae-zelandiae. Yes uncommon

250: *Mentha cunninghamii*. Yes uncommon

255: *Microtis oligantha*. Yes uncommon

271: Nematoceras trilobus. Yes uncommon

296*: Pelargonium inodorum*. Yes – found in loess by roadsides, some questioned whether native though.

Added: *Polystichum neozelandicum* subsp*. zerophyllum* – Sally considers this is uncommon. Melissa commented that identification is difficult as similar to *Polystichum oculatum*.

334: *Raukaua anomalus*. Alice is not sure this is uncommon, but there was general agreement it is and should stay in the list.

338: *Rumex flexuosus*. Yes uncommon

343: *Rytidosperma clavatum*. Remove not uncommon.

Added: *Rytidosperma exiguum* found on Peninsula by Jason. Uncommon.

Added: *Rytidosperma thomsonii* (Data Deficient). Alice says it occurs on Banks Peninsula and is uncommon.

349: Schizeilema trifoliolatum. Yes uncommon

358: *Senecio dunedinesis*. Yes uncommon

395: *Wahlenbergia rupestris*. Remove. Not present on Peninsula. Referred to as *Wahlenbergia gracilis* which is not uncommon.

10. At the end of the meeting Nick tabled photos one of Hugh's 'D' sites showing montane thin-barked totara that is clearly of high ecological value. He made a plea for the consideration of sites which Hugh may not have ranked highly, but which may have high values, or may now have higher values. He also tabled photos of vegetation clearance within sites in Peraki and Okuti Valleys. Particularly important sites for identification are those which are under threat from human intervention, such as Peraki, the north side of Lake Forsyth, saltmarshes (i.e. at Teddington). Nick feels that rocky outcrops are less threatened because of their inaccessibility.

19. APPENDIX 5 - LIST OF BIRD SPECIES AT THEIR DISTRIBUTION LIMIT IN CHRISTCHURCH AND BANKS PENINSULA

For the purposes of SES criterion 5: "The site contains an indigenous species at its distribution limit within Canterbury of nationally"

Andrew Crossland

Regional Parks Team

CCC

Updated 6/8/2014 by AC

1. Sooty Shearwater

Puffinus grieseus

- Only surviving mainland colony(ies) and southern-most colony in Canterbury are at Stony Bay and Flea Bay on BP. Other mainland colonies may exist and more survey work is required (Particulary at historical colonies such as near Birdlings Flat, Tumbledown Bay and Godley Head).

2. Fairy Prion

Pachyptila turtur

- One recently discovered colony at a mainland site in Flea bay and multiple colonies on rock stacks and islets around coastline of BP are the southern-most populations in Canterbury.

3. Yellow-eyed Penguin

Megadyptes antipodes

- Northern-most breeding population nationally. Only breeding population in Canterbury is found dispersed between several bays on BP.

4. White-flippered Penguin

Eudyptula minor albosignata

- South side of Banks Peninsula is the southern limit of breeding range nationally. (The full range is BP, South New Brighton beach (and possibly other points in the Pegasus bay dune belt, and Motonau Island).

5. Little Black Cormorant

Phalacrocorax sulcirostris

- The breeding site in the Bromley oxidation Ponds is the southern limit of national/global breeding range, and only breeding site in South island. Regular feeding area used by this species at Brooklands Lagoon, Lake Kate Sheppard, Lower Avon R, Bexley Wetland, Avon-Heathcote Estuary, Linwood Avenue Canal and Lyttelton Harbour comprise a cluster of sites at the southern range limit of this species. Reference: **Crossland, A.C.** 2013. First record of little black

cormorant (*Phalacrocorax sulcirostris)* nesting in Canterbury and presumed first breeding for the South Island. Notornis 60: 191-193.

6. Stewart Island Shag

Leucocarbo chalcontus

- Northern limit of non-breeding range nationally. Two confirmed records on BP and the likelihood that this species occurs more often but is overlooked.

Reference: **Crossland, A.C.** 2012. A review of the current range of Stewart Island shag *(Leucocarbo chalconotus)* and two records from Lake Ellesmere, Canterbury. Notornis 59: 71-73. See also Anon. 2005. Report of rare birds committee, 9 February 2005. Southern Bird 21:5 which documents a "Leucocarbo" shag sighting at Godley Head in Dec 2003.

7. Reef Heron

Egretta sacra sacra

- The only birds seen regularly in the CHCH/BP area are a pair in the Port Levy/Baleine/Beacon Rock area. This represents the southern limit of breeding range in Canterbury.

8. Spotless Crake

Porzana tabuensis plumbea

- With the status of this species within the tiny area of suitable habitat at the Rakaia Rivermouth not determined (it is more likely a vagrant/winter visitor than a resident there), the southern breeding range limit in Canterbury is the shores of Lake Ellesmere. Survey work is required to determine if this species is present at Lake Forsyth, BP and at other wetlands in the CHCH area.

9. Curlew Sandpiper

Calidris ferruginea

- Southern limit of annual range in Canterbury and nationally. This species has been recorded here annually over 100+ years of ornithological records (see **Stead, E.F.** 1923. Notes on the migratory plovers of New Zealand, with records of some additional species. Trans. & Proc. NZ Institute 54: 490-495). It occasionally occurs as a straggler further south but is not an annual migrant).

10. White-winged Black Tern

Childonias leucopterus

- Southern limit of annual range in Canterbury, nationally and globally. This species has been recorded here annually over 100+ years of ornithological records. Reference: **Stead, E.F.** 1927. The native and introduced birds of Canterbury. In: Speight, R., Wall A. and R.M. Laing (Eds.). Natural History of Canterbury. Simpson & Williams, Christchurch.

20. APPENDIX 6 - PITFALL TRAP METHODOLOGY – MIKE BOWIE

- Twelve 350 ml honey pots (6628NA, Stowers, Christchurch) are to be used as pitfall traps at sites where possible at intervals of >10 m apart between traps.

- Sites should be GPSed and marked with flagging tap. Where possible chosen trap sites should be based on native vegetation, logs and leaf litter present.

- Sites should be on fairly level ground and not in gullies where pits will fill with significant rainfall.

- Stony or rooty areas should be avoided where possible as holes are time consuming and difficult to dig clean-fitting holes for pitfall cup.

- Soil corers the correct diameter will give the best holes especially where the soil lacks stones and is moister.

- Once the hole is dug deep enough, about 100mls of antifreeze is used as a preservative and pitfall cup is placed in the hole so that the top is level with the soil surface (or slightly lower, but NOT higher).

- Each trap need a roof over it (either a galvanised iron, ice cream container lid or the like) and is pushed to within 2cm of the ground so as not to stop the larger beetles. This reduces rain and vegetative debris entering the traps and stops the removal of trapped invertebrates by birds or hedgehogs.

- After two weeks traps can be removed and sealed with lid.

- In the lab the pitfall contents are sieved using a tea strainer (0.35 x 0.35 mm holes), and stored in 70% ethanol and a pencil label for analysis later.

21. APPENDIX 7 - LIGHT TRAPPING METHODOLOGY – BRIAN PATRICK

Equipment:

1 kilowatt generator, white double sheet, Perspex holder for light bulb with four triangular Perspex interceptors; 160 watt, self-ballasted, mercury vapour light bulb emitting uv light; collecting vials of different sizes and plastic bag; helps to have fridge/ freezer unit in vehicle to keep samples cool on way home to freezer.

Conditions required:

Cloudy nights from first hint of darkness for 2-3 hours are best; avoid cold windy or clear cool nights or nights with full moon

Method:

- Set up equipment with bulb in centre of sheet and sit comfortably around edge of sheet with back to the wind if any (moths fly up-wind), identifying and counting species as they arrive and collecting samples where necessary;
- Regularly check just beyond sheet as many species are shy to come right to the light;
- There is a predictable pattern or order to the procession of groups of insect that arrive at the sheet so vigilance is required for all of the 3 hours to not miss anything.

22. APPENDIX 8 - SPECIALIST ECOLOGIST GROUP MEMBERSHIPS

Birds

Andrew Crossland

Niall Mugan

Jan Walker

Phil Crutchley

Lizards

Marieke Lettink

Chris McClure

Anita Spencer

Terrestrial Invertebrates

Brian Patrick

Mike Bowie

Rowan Emberson

Denise Ford

Peter Johns

Jon Sullivan

Aquatic Fauna

Shelley McMurtrie

Sjaan Bowie

Amber Sinton

Zoe Dewson

Belinda Margetts

Jon Harding

Duncan Gray

Tanya Blakely

Botanists

Nick Head

Judith Roper-Lindsay

Jason Butt

Carol Jensen

Miles Giller

Alice Shanks

Phil Grove

Kate McCombs

Markus Davis

Melissa Hutchison

Geoff Walls

Colin Meurk

Sally Trip

David Norton

Manfred von Tippelskirch

Joe Cartman

Di Carter

Jon Sullivan

In addition to these specialists, the meetings are also attended by Antony Shadbolt, Scott Hooson, Paul Devlin and Liz Garson.

23. APPENDIX 9 - SES INFORMATION SHEET FOR BANKS PENINSULA LANDOWNERS

Banks Peninsula Ecological Study

…to identify and protect potential Sites of Ecological Significance on Banks Peninsula.

Working in partnership

Christchurch City Council is undertaking a review of the District Plan including the identification of a Schedule of Sites of Ecological Significance throughout the Council area. On Banks Peninsula this is called the Banks Peninsula Ecological Study.

In a nutshell the City Council is required to identify *significant indigenous vegetation and significant habitats of indigenous fauna* using a set of Significance Criteria which are to be found in Chapter 9 of the Canterbury Regional Policy Statement 2013 (CRPS).

The Council recognises that a lot of time and effort is already being spent by landowners to protect the biodiversity of Banks Peninsula with increasing success. Nevertheless, we are required to undertake the work as part of the RMA process.

The Study has evolved from a 2007 Consent Order to now being part of the review of the District Plan. One of the requirements of the Consent Order was for *the establishment of a broad-based community steering group to oversee the study and to assist the Council with input and advice. This is intended to ensure, among other things, that the process of identification [of sites] is well understood and has wide community acceptance.* The Steering Group was set up in 2008 and will continue to assist the Council. It includes representation from interested parties across Banks Peninsula (see details overleaf).

The elements of the Banks Peninsula Ecological Study are:

1. Using criteria provided in the CRPS, identify a Schedule of sites of significant indigenous vegetation and significant habitats of indigenous fauna (known as Sites of Ecological Significance);

2. Develop a Council-led support package for the protection of such sites;

3. Develop methods for the protection of such sites via a set of rules, if they are deemed necessary;

4. A Section 32 report will be written: an assessment of the impacts of any rules and support package, and an explanation why the rules have been chosen.

The work will form part of the City Council's Natural and Cultural Heritage Chapter in the District Plan. You will be able to review and comment on the draft Natural and Cultural Heritage chapter when it is released early next year for pre-notification consultation. You will also be able to make a formal submission on this, or any part of the District Plan Review stage two chapters when they are publicly notified in mid-2015.

A work in progress

- Identification of potential Sites of Ecological Significance
    - Assessment of where ecological surveys would be useful this summer
    - Analysis of existing data and surveys, then applying the CRPS criteria by the Council's Project Ecologist
    - A draft Schedule and maps of proposed Sites of Ecological Significance (SESs) will be drawn up
    - Discussions will take place with landowners of proposed SESs before the list is finalised
- Investigation to develop a package of support (practical assistance, labour, assistance with grant applications etc.) for landowners to protect and enhance sites of significance. Options are being assessed for practicability by the Council.
- Discussions to identify a whether any new District Plan rules may be necessary to protect SESs.

Still to come – headlines…

- On the ground aquatic, botanical and entomological (bug) surveys where ecological significance needs to be clarified.
- Discussions with landowners about how the Council might best help with the protection of proposed sites, leading to a Support Package for the owners of Sites of Ecological Significance.
- Development of draft objectives, policies and rules as deemed necessary in the Natural and Cultural Heritage Chapter of the District Plan.
- Draft Schedule of Sites of Ecological Significance completed at the end of March 2015.

If you would like more information, please contact one of the Banks Peninsula Ecological Steering Group members:

Edward Aitken	Landowner	eaitken@xtra.co.nz	03 304 6802
Anna Cameron	DOC	acameron@doc.govt.nz	027 660 2536
Helen Chambers	Residents rep.	helen.trevor@clear.net.nz	
Paul Devlin	CCC Ranger	paul.devlin@ccc.govt.nz	03 941 7570
Janis Haley	Akaroa-Wairewa Community Board	janis.haley@ccc.govt.nz	
Philip Helps	Landowner	PD_JC_Helps@xtra.co.nz	03 329 4696
David Miller	Banks Peninsula Conservation Trust	decanterbay@gmail.com	
Jen Miller	Forest and Bird	j.miller@forestandbird.org.nz	021 651 778
Michael Rachlin	ECan	michael.rachlin@ecan.govt.nz	

Pam Richardson	Fed Farmers	iprichardson@xtra.co.nz	03 304 6825
Alice Shanks	QE2 Trust	alice@caverock.net.nz	
Jill Simpson	Landowner	fishermansbay@xtra.co.nz	
Paula Smith	Lyttelton-Mt Herbert Community Board	famvanbeynen@snap.net.nz	
Sally Tripp	Conservation group rep.	sally.tripp@xtra.co.nz	03 329 9752
Kate Whyte	Banks Peninsula Conservation Trust	kate.whyte@email.net.nz	

Or contact the Project Leader for CCC:

Liz Garson	liz.garson@ccc.govt.nz	03 941 5053 / 027 824 4589

24. APPENDIX 10 - MKT DISCUSSION WITH LIZ GARSON, PROJECT LEADER CCC

(Applicable to Low Plains sites, as well as to Banks Peninsula)

Banks Peninsula Ecological Study

Discussion between CCC and MKT – 2nd August 2012

Liz Garson

Jane Whyte

Iean Cranwell

Shane Orchard

Yvette Couch-Lewis

It was agreed that the main Runanga input can most usefully be made when it comes to management recommendations about SESs, rather than at this stage when CCC is still in the process of identifying SESs and drafting the Plan Change. This is because it is considered that the SESs do not threaten the Runanga values per se. When work is being recommended for SESs in due course – particularly in relation to waterways, runanga and MKT should be approached for information/advice.

Re. specific proposed SESs – dependent upon boundary of final mapping –

- 136 and 137 (old numbers) – likely to be Rapaki Runanga interest/ownership
- 110 (old number) – Wairewa Runanga interest (contact Iean)
- 95 (old number) - check to see if Maori reserve is part of site – Wairewa Runanga if so.

25. APPENDIX 11 - MAP OF ECOLOGICAL DISTRICTS

Christchurch City Council | The proposed Christchurch Replacement District Plan	Christchurch Ecological Districts	WorkSpace: EcologicalBoundaries.gws Layout: A3-1 Scale: 1:250,000 @ A3 Date: 27/August/2014

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