

**PROPOSED LAND AND WATER REGIONAL PLAN  
EVIDENCE OF ELIZABETH JEAN GARSON PRESENTED FOR THE CHRISTCHURCH CITY  
COUNCIL**

**Introduction, Issues and Major Responses  
Definitions  
Region-wide Rules 5.143, 5.150**

**1.0 INTRODUCTION**

- 1.1 My full name is Elizabeth Jean Garson and I am employed as Principal Advisor Natural Environment in the Strategy and Planning Group of Christchurch City Council. My qualifications are Bachelor of Arts (Hons) Geography, Bachelor of Science Environmental Sciences and Master of Arts Town and Regional Planning. I am a Member of the Environment Institute of Australia and New Zealand. I have 24 years experience working in environmental policy and planning in New Zealand, Australia and Britain. I have worked for the Council for four years, during which time I have led a range of ecological planning and policy projects and led the implementation of the Council's Biodiversity Strategy. Over the last year I have primarily been employed to lead the Banks Peninsula Ecological Study in response to an Environment Court Consent Order issued in 2007.
- 1.2 This evidence is on ecological matters raised in the submission by the Christchurch City Council (Council). I support the Council submissions in relation to Introduction, Definitions and Region-wide Rules 5.143 and 5.150.
- 1.3 I confirm that I have read and agreed to comply with the Code of Conduct for expert witnesses (Environment Court Consolidated Practice Note 2006 and its November 2011 amendment). This evidence is within my area of expertise, except where I state that I am relying on facts or information provided by another person. I have not omitted to consider material facts known to me that might alter or detract from the opinions that I express.

1.4 The following table summaries the submissions which will be covered in this evidence.

Paragraph number in this evidence	Submission details		Page(s) in s. 42A report	S. 42A report recommendation (accept/reject)	Council position on s. 42A report recommendation (support/oppose)
	Submission number	LWRP Section			
3.0	106.13	1.2.3	52 / 59	partly accept	partly support
3.0	106.14	1.2.3	52 / 59	accept	support
4.0	106.17	2.10	120 / 121	accept	support
5.0	106.76	5.143	402	reject	oppose
6.0	106.80	5.150	414	reject	oppose
4.0	106.93	2.10	121	accept	support

## 2.0 KEY ISSUES ADDRESSED IN THIS EVIDENCE

2.1 This evidence covers three key issues for Christchurch City Council. These are:

1. Greater clarity of definitions and wording related to ecology;
2. Recognition of the threat to indigenous biodiversity of pest plants and pest animals; and
3. Protection of exotic vegetation that is habitat for significant indigenous fauna.

### Submission Numbers 106.13 and 106.14

#### 3.0 Subsection 1.2.3 - Introduction, Issues & Major Responses

3.1 Sub-section 1.2.3 includes the following statements:

*Significant modification of vegetation and habitats has occurred in Canterbury as a result of changing land use...*

*Wetlands, riparian margins and other areas of indigenous vegetation create habitats for indigenous fauna and have important natural character values. These areas are culturally significant to Ngāi Tahu, as well as being important in defining the uniqueness and identity of New Zealand for all.*

3.2 The Council's submission (number 106.13) sought recognition that humans still impact and modify the vegetation and habitats around us and that the introduction of pest animals and pest plants can be considered to be the greatest continuing impact upon indigenous ecology. This takes account of the fact that we have a continuing responsibility to manage human activities, and land use in particular, to protect enhance remaining indigenous vegetation and habitats.

3.3 The Section 42A Report seems to accept that submission, where it states (p52):

*CCC seeks recognition of human impacts, especially relating to vegetation changes and pest plants and animals and that exotic vegetation is also recognised for its ability to provide habitat for significant indigenous fauna.*

*This is appropriate, as it provides additional clarity to the issue and exotic vegetation is also commonly used for defences against flooding, soil conservation and erosion reduction.*

3.4 However, the officers' recommended changes to this section omit any reference to pest plants and pest animals (p59):

*Significant modification of vegetation and habitats has occurred and continues to occur in Canterbury as a result of changing land use. Polynesian fires converted large areas of the Canterbury Plains from forest to tussock grassland. The last 160 years of European settlement and development of land for farming, townships, and settlement has caused extensive changes in vegetation cover across the region, and loss of indigenous flora and fauna. (p59)*

- 3.5 I consider pest plants and pest animals to be the primary threat to indigenous habitats and vegetation; a matter which should be highlighted in this introductory section of the Land and Water Regional Plan. The New Zealand Biodiversity Strategy 2000<sup>1</sup> states:

*While ongoing habitat loss and modification continue to be a threat to indigenous biodiversity, an even more serious and pressing threat in terrestrial and freshwater ecosystems is from invasive introduced species which have become animal pests and weeds. (p6)*

The Canterbury Regional Policy Statement 2013, Issue 9.11 "The ongoing loss and degradation of ecosystems and indigenous biodiversity" states:

*Ongoing habitat loss and modification as a result of land-use and development, and the impact of animal and plant pests, remain the principal threats to ecosystems and indigenous biodiversity in Canterbury today.*

- 3.6 The Section 42A Report Recommendation partly addresses my concern but I consider that the LWRP ought to expressly refer to pests. I recommend inclusion of a reference to the ongoing threats of pest plants and pest animals to indigenous habitats and species. In order to demonstrate consistency between these documents and the Land and Water Regional Plan, I consider that the ongoing threat to biodiversity by pests should be made explicit in sub-section 1.2.3.

- 3.7 The Council's submission (number 106.14) also sought recognition that it is not only indigenous vegetation that can create habitats for indigenous fauna, but that some exotic vegetation plays a crucial role in this regard. This is recognised in the Canterbury Regional Policy Statement 2013 which states:

*Riparian vegetation, both indigenous and exotic, is important for mitigating the effects of non-point source discharges, moderating in-stream water temperature,*

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<sup>1</sup> <http://www.biodiversity.govt.nz/pdfs/picture/nzbs-whole.pdf>

*maintaining the stability of shorelines and stream banks, providing habitats for flora and fauna, and its contribution to the overall natural character of rivers and lakes.(Chapter 10 Introduction.)*

3.8 For example, crack willows *Salix x fragilis* along the banks of the Okana River by Little River are an essential part of the habitat for the nationally significant population of Southern Crested Grebe *Podiceps cristatus*. Whilst in most circumstances the removal of crack willow is considered desirable, this is one instance where managing and retaining the trees has greater ecological benefits than removing them.

3.9 To provide consistency between the Canterbury Regional Policy Statement and the Canterbury Land and Water Regional Plan, and to enable Territorial Authorities to protect and conserve significant indigenous fauna effectively, I consider that it is appropriate to include recognition of the value of exotic vegetation as habitat for significant indigenous fauna in the Land and Water Regional Plan.

3.10 The Section 42A Report accepts that submission (p52) and recommends the following change:

*Wetlands, riparian margins and other areas of indigenous vegetation create habitats for indigenous fauna and have important natural character values. These areas are culturally significant to Ngāi Tahu, as well as being important in defining the uniqueness and identity of New Zealand for all. It is recognised that some exotic vegetation also provides habitat value for significant indigenous fauna. (p59)*

3.11 I support the Section 42A Report recommendation.

**Submission Numbers 106.17, 106.93, 345.5, 273.15**

**4.0 Section 2.10: Definitions of “Ecosystem” and “Ecosystem services”**

4.1 The definition of “Ecosystem” proposed in the LWRP is:

*Ecosystem means a system of interacting terrestrial or aquatic living organisms within their natural and physical environment.*

- 4.2 I consider this to be an inaccurate definition as it precludes the interaction between terrestrial and aquatic living organisms. Neither does it take explicit account of the non-living environment which is elemental to an ecosystem. The Council's submission sought to change "or" to "and/or" and that there be explicit account of the non-living environment. The Section 42A Report agrees with that submission in part (p121), but notes that reference in the definition to "physical environment" is the equivalent of "non-living". The s42A report recommends the following change (p121):

*Ecosystem means a system of interacting terrestrial and/or aquatic living organisms within their natural and physical environment.*

- 4.3 I support the Section 42A recommendation as it addresses the principle concern raised in the Council's submission.

- 4.4 The definition of "Ecosystem services" proposed in the LWRP is:

*Ecosystem services means the physical functioning of a fresh water body that enables ecosystems, including people and communities to exist, and includes such things as flow variability, floodways, ponding and peak flow buffering.*

- 4.5 I consider this to be an incomplete definition of a concept which is difficult for most people to understand. Thus the accuracy of the definition should allow for consistent and simple interpretation of the concept by all those who may have need to refer to it.

- 4.6 Submissions 345.5 and 273.15 both comment on the narrow definition, with 273.15 specifically commenting that it should not be limited to freshwater bodies. I support these submissions. Ecosystem services are inclusive of all ecosystems.

- 4.7 The International Union for the Conservation of Nature and Natural Resources (IUCN) is a highly respected global network of professional conservationists and of which New

Zealand government is a member. It provides internationally-recognised definitions<sup>2</sup>, including one for ecosystem services, which I consider to be the most appropriate to use in the Land and Water Regional Plan:

*“the goods and services provided by healthy ecosystems, including medicinal plants, clean water and air, and protection from extreme natural events”.*

4.8 The s42A report accepts the benefit of adding that definition (p121). The officers' recommended amended definition is:

***Ecosystem services** means the physical functioning of a fresh water body that enables ecosystems, including people and communities to exist, and includes such things as flow variability, floodways, ponding and peak flow buffering and includes the goods and services provided by healthy ecosystems, including medicinal plants, clean water and air, and protection from extreme natural events.*

4.9 Whilst I consider the first part of the definition which is not included in the IUCN definition to be superfluous, as it does not actually describe ecosystem services, the inclusion of the IUCN definition in the second part of the definition is welcomed.

4.10 I support the Section 42A recommendation.

**Submission Number: 106.76**

**5.0 Rules: Vegetation in Lake and Riverbeds**

5.1 Rule 5.143 and condition 6 states:

*The introduction or planting of any plant, or the removal and disturbance of existing vegetation in, on or under the bed of a lake or river is a permitted activity, provided the following conditions are met:*

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<sup>2</sup> [http://cmsdata.iucn.org/downloads/en\\_iucn\\_glossary\\_definitions.pdf](http://cmsdata.iucn.org/downloads/en_iucn_glossary_definitions.pdf)

6. *The disturbance, removal, damage or destroying of any plant or vegetation in, on, or under the bed of any river or lake listed as a high naturalness lake or river in Sections 6-15 is only of species non-indigenous species*

5.2 As I have explained in part 3.0 of this evidence, I strongly recommend that the LWRP condition 6 acknowledges that there are times when exotic plants and vegetation can contribute or provide in entirety habitats for significant indigenous fauna. I provided the example of Southern Crested Grebes in part 3 of my evidence, where if the non-indigenous crack willow (whose roots extend beneath the waterways) were to be cleared from the margins of waterways around Lake Forsyth / Wairewa it would result in a threat to the population of a significant population of birds.

5.3 The Council submission is that this be amended to read:

*The disturbance, removal, damage or destroying of any plant or vegetation in, on, or under the bed of any river or lake listed as a high naturalness lake or river in Sections 6-15 is only of non-indigenous species which do not support significant indigenous fauna species.*

5.4 I consider that there would be some uncertainty should "significant indigenous fauna" be included in the Rule without further clarification. I therefore recommend that this be further amended to read:

*The disturbance, removal, damage or destroying of any plant or vegetation in, on, or under the bed of any river or lake listed as a high naturalness lake or river in Sections 6-15 is only of non-indigenous species which do not support significant indigenous fauna species, as identified in a Schedule of Sites of Ecological Significance, or which support threatened fauna species.*

5.5 The Section 42A Report does not adequately address this submission. The discussion of rule 5.143 in the s42A report (p401) does not comment on the Council's submission in this regard and the Officers' Recommendation does not reflect my recommendation. I strongly recommend that the additional wording is required to provide greater protection for those



significant indigenous species which rely upon exotic (or part-exotic) habitats. This has been accepted in the s42A report in relation to the changes to the Introduction in section 1.2.3. It should also be recognised in the policy.

5.6 I do not agree with the Section 42A recommendation.

**Submission Number: 106.80**

**6.0 Vegetation clearance in erosion prone areas**

6.1 Proposed Rule 5.150 condition 1 reads:

*1. Any cleared areas are stabilised and where it is not put to its final use shall be revegetated within 6 months from the date of the commencement of the vegetation clearance or earthworks*

6.2 I support this rule in general, however it misses the opportunity to encourage planting of indigenous species wherever practicable, which would be achieved by amending the wording to add:

*...shall be revegetated using locally sourced indigenous plants wherever practicable within 6 months...*

Although this does not require the planting of native species, it does signal that it should be a consideration.

6.3 The Section 42A Report does not comment on that submission by the Council (pp403-407). The Officers' Recommendation does not reflect my recommendation. I strongly recommend that the additional wording is required to provide greater encouragement to plant indigenous species.

6.4 I oppose the Section 42A recommendation.

## 7.0 SUMMARY

7.1 My evidence presented covers submissions to the Introduction, Definitions and Region-wide Rules about ecology. These are summarised in the table in section 1.3.

7.2 I agree with the Christchurch City Council's submission, which seeks to:

1. recognise that pest plants and pest animals are a major threat to indigenous ecosystems;
2. ensure that definitions relating to ecosystems and ecosystem services are accurate and unambiguous;
3. recognise that there are situations when exotic plants and vegetation should be protected as habitat for significant indigenous fauna; and
4. encourage the planting of indigenous vegetation whenever practicable.

Date: 4 February 2013

Elizabeth Jean Garson