

Are covenants working?

**Biodiversity protection through the Thames-
Coromandel District Council District Plan**

August 2010



Are covenants working? Biodiversity protection through the Thames-Coromandel District Council District Plan

Report prepared for:

Leigh Robcke
District Plan Manager
Thames-Coromandel District Council
Private Bag
THAMES

Report prepared by:

Hamish Kendal PGDip P,R&T (Ecology)
Natural Solutions – Marine and Terrestrial Ecologists Ltd
RD 2
COROMANDEL 3582
Ph: (07) 866 0770
Email: natural.solutions@wave.co.nz
Website: www.ecologist.co.nz

Patrick Stewart
Red Admiral Ecology
383 Kapanga Road
COROMANDEL 3506
Ph (07) 866 8111
Email: paddy.outside@xtra.co.nz

Report submitted:

20th August 2010

Reference:

Natural Solutions Contract Report 10/093

Acknowledgements:

We would like to acknowledge the advice and support for this project received from Thames-Coromandel District Council planning staff and the QEII National Trust.

Disclaimer:

While every effort has been made to ensure the accuracy of information in this report, no liability is accepted for errors of fact or opinion, or for any loss or damage resulting from reliance on, or the use of, the information it contains. This report has been prepared for Thames-Coromandel District Council and may only be disclosed to third parties with the prior consent of Thames-Coromandel District Council.

CONTENTS

EXECUTIVE SUMMARY	2
1. INTRODUCTION	3
1.1. COUNCIL POLICY	3
1.2. REPORT OBJECTIVE	3
2. ANALYSIS	4
2.1. COVENANT OVERVIEW	4
2.2. COVENANT MONITORING	5
2.3. BIODIVERSITY CONTEXT	7
2.4. PLAN LOGIC MAPPING	12
3. DISCUSSION AND RECOMMENDATIONS	15
3.1. COVENANT DESIGN	15
3.2. COVENANT MANAGEMENT	22
3.3. DISTRICT PLAN REVIEW	27
4. BIBLIOGRAPHY	33
APPENDICES	35
APPENDIX A: DISTRICT POLICY	35
APPENDIX B: DATA SOURCES	37
APPENDIX C: SPECIES-AREA RELATIONSHIP	38
APPENDIX D: NATIONAL POLICY	39

TABLE OF FIGURES

Figure 1: Biodiversity condition in Development Covenants (QEII covenants, June 2010)	5
Figure 2: Biodiversity condition in Development Covenants (TCDC covenants, June 2010).....	5
Figure 3: Development Covenants (white hash) and Other Protection (yellow hash) with existing indigenous vegetation (green) from BIOVEG, in the Whitianga Harbour catchment	9
Figure 4: Development Covenants (white hash) and Other Protection (yellow hash) with Threatened Environments 1-5 (orange), in the Whitianga Harbour catchment	9
Figure 5: Indigenous vegetation cover and legal protection of Threatened Environments (national analysis) within the district.....	10

LIST OF TABLES

Table 1: Nationally threatened species presence in Development Covenants (DC) (2009)	6
Table 2: The six Threatened Environment categories (from Walker <i>et al.</i> 2008)	8
Table 3: On-the-ground assessment alongside the Plan Logic Mapping assessment of Section 211 – Biodiversity (Day, 2009).....	13
Table 4: Key differences between QEII and TCDC Development Covenants.....	17

Executive Summary

This report provides an analysis of the extent that biodiversity values are protected by covenants (Development Covenants) that have been generated through the Thames-Coromandel District Plan. The role of these covenants is discussed, and recommendations are provided for how biodiversity benefits from covenants can be maximised.

The key findings are:

- 337 Development Covenants covering 3,373 ha have been generated over 20 years through District Council policy.
- Half of the Development Covenants encompass ecosystems that are already well protected within the district.
- Many of the TCDC covenants are in poor condition, often because the restoration planting of a natural feature had failed, although this has improved with more recent covenants.
- 22 nationally threatened species have been observed in Development Covenants and others have yet to be detected. All covenants provide habitat for threatened species.
- Covenant objectives need to plainly outline how district biodiversity objectives are to be achieved so that adherence can be clearly monitored and enforced.
- Enforcement can be assisted by revising the fines for breaches of covenants, and integrating rates relief into a system of monitoring covenant objectives.
- A TCDC Biodiversity Representative is essential to monitor covenants and support covenantors as well as advocate for biodiversity generally.
- The District Plan has fallen short of its 'limited to moderate' capability to sustainably manage natural resources with respect to the legal protection that has been provided.
- Many of the threats to biodiversity values that Development Covenants protect can be addressed by improving planning and design of subdivisions, particularly the fragmentation of natural features.
- Transferable Development Rights policy would allow better identification of appropriate land use and natural feature protection on a wider scale than property boundaries.
- Threatened Environments (i.e. those environments with less than 30% representation and 20% protection) occur principally outside of the DoC estate in the developed coastal zone.
- More effective biodiversity management can be achieved by targeting the restoration and protection of under-represented ecosystems in the District Plan.
- District-wide biodiversity datasets are now available to assist with prioritising biodiversity restoration and protection.

1. Introduction

This report has been commissioned by Thames-Coromandel District Council (TCDC). It is an analysis of the current legal protection over biodiversity values in the district, with a focus on the covenants that have been generated through District Plan policy. The role that these covenants have in relation to wider biodiversity policy is discussed, and recommendations are provided for how biodiversity values can be improved including considerations for the District Plan review.

1.1. Council policy

TCDC has promoted the legal protection of biodiversity values through policies of the District Scheme (publicly notified in 1986, operative 1990) and the subsequent and current District Plan (notified in 1997, operative April 2010). The District Plan promotes protection of biodiversity values (Section 211), and has a specific policy in relation to subdivision that requires legal protection of natural features (Rule 752 Conservation Lots). Other features (archaeological, landscape etc.) can also be put forward for protection under Rule 752 but these areas have been left out of this analysis.

The following are legal protection mechanisms that may be employed under the current District Plan policy:

- Reserves Act covenant with Council;
- QE II National Trust open space covenant;
- Public reserve under the Reserves Act.

This report focuses on the TCDC and QEII covenants generated through the conservation lot policies of the District Scheme and District Plan as well as covenants generated via the approval of non-complying resource consent applications (See Appendix A for biodiversity and conservation lot policies). These covenants are referred to as '*Development Covenants*' in this report. Development Covenants were first registered against property titles in 1989 and they represent all of the private land protected through council policies.

1.2. Report objective

The objectives of this report are to:

- a) analyse to what extent TCDC and QEII covenants generated by the District Scheme and District Plan have achieved positive outcomes for biodiversity values; and
- b) provide recommendations for the future planning and management of covenants including the revision of policy in the District Plan.

2. Analysis

This analysis of biodiversity values within covenants is based on the information held by TCDC and QEII Trust, as well as the writers' experience in monitoring and managing these covenants. National and district assessments of biodiversity values are used to examine the biodiversity protection that covenants provide for the district. This analysis also draws on the writers' experience of undertaking ecological assessments for subdivision proposals under the current District Plan, and the assessment and management of a wide variety of other biodiversity-related projects within the district.

All area calculations have been made in a Manifold GIS. See Appendix B for a list of the datasets utilised.

2.1. Covenant overview

The Thames-Coromandel District covers 219,594ha. A total of 337 Development Covenants covering 3,373 ha in the district have been generated through the District Scheme and District Plan. The covenant areas offered for protection within the district have often been split amongst the newly subdivided titles of the developments, thus generating many separate covenants per subdivision.

In summary:

- Development Covenants cover 3,373ha in the district.
- Between 1 to 25 Development Covenants have been generated from each subdivision.
- The covenants have a size range of less than 1ha and up to 382ha.
- 78 QEII covenants cover 1,875 ha (at June 2009).
- 259 TCDC covenants cover 1,498 ha (at June 2009).
- 52 Development Covenants (TCDC covenants only) have restoration areas which cover ~ 108ha (i.e. 3.2% of the total Development Covenant area).

The 'Other' legally protected areas of biodiversity value in the district are:

- voluntary QEII covenants (1,929ha);
- the Department of Conservation (DoC) estate (91,119ha);
- TCDC Scenic Reserves (224ha); and
- Nga Whenua Rahui kawenata (2,277ha).

In total, these Other Protected areas cover 95,549ha. There are no TCDC covenants that have been generated voluntarily. The total protected land area in combination with Development Covenants in the district is 98,922ha (45% of the district area).

2.2. Covenant monitoring

The monitoring and enforcement of QEII and TCDC covenants is undertaken by their respective agencies. All of the district's QEII covenants have been visited in the last two years and most of the TCDC covenants have been visited since 2006 to monitor compliance (ecological condition) with respect to their covenant management conditions.

2.2.1. Compliance

The extent to which Development Covenant owners are complying with their covenant objectives is sometimes difficult to assess when the covenant objectives are broad (e.g. *“to manage the area in a husband-like manner”*). Although the ecological monitoring within covenants is not comprehensive, the pattern of ecosystem completeness and indicators of threats to ecological process are relatively straightforward to assess. For monitoring purposes, biodiversity values of covenants have been judged as Good, Average or Poor. These monitoring results are represented in Figure 1 (QEII) and Figure 2 (TCDC).

Most of the covenants in poor condition were of TCDC origin and many of these were because the restoration planting of a natural feature had failed, triggering non-compliance. Some of the Poor or Average monitoring results will improve with time and little intervention (e.g. tall gorse eventually being superseded by native forest). There are others that will need some encouragement and support to achieve covenant compliance and ensure that biodiversity values are in Good condition. Enforcement is required with landowners who will not fix Poor condition covenants under their own motivation, which is currently the situation with approximately 21 covenants.

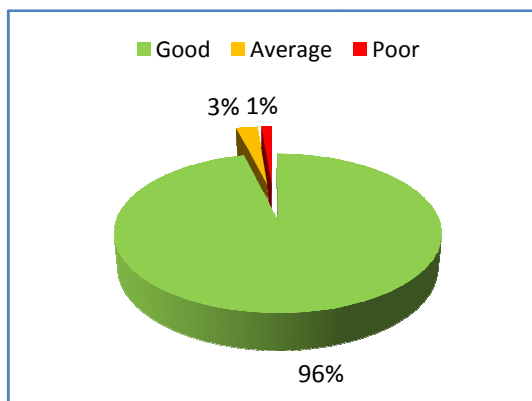


Figure 1: Biodiversity condition in Development Covenants (QEII covenants, June 2010)

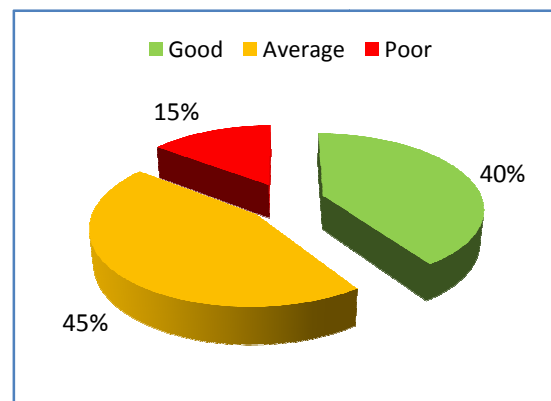


Figure 2: Biodiversity condition in Development Covenants (TCDC covenants, June 2010)

2.2.2. Threatened species

Species are given ‘threatened’ status due to a combination of the pressures from habitat loss, predation and competition. Therefore an important contribution of Development Covenants is the provision of protected habitat for threatened species. As at 2009 there have been 22 nationally threatened species (Table 1) observed or considered to be present on 70 TCDC and 57 QEII Development Covenants (although two areas contain 50 QEII covenants between them with the threatened species occurring somewhere within that greater area). This is a conservative estimate as there will be many covenants that will have threatened species that are yet to be recorded. Also, all Development Covenants provide habitat that a threatened species could potentially utilise, and therefore are important for securing species’ populations in the future.

Table 1: Nationally threatened species presence in Development Covenants (DC) (2009)

Threatened species	Status	TCDC	QEII DC's	Total DC's
Archey's frog	Vulnerable		1	1
Auckland green gecko	Gradual decline		1	1
Australasian bittern	Endangered	1	2	3
banded rail	Naturally uncommon	1	1	2
<i>Brachyglottis kirkii</i> var. <i>kirkii</i>	Declining		1	1
Coromandel brown kiwi	Vulnerable	57	4	61
giant kokopu	Gradual Decline		1	1
Hochstetter frog	Declining	2	3	5
king fern	Declining	2		2
<i>Korthalsella salicornioides</i>	Naturally uncommon	2		2
koura	Gradual Decline		2	2
long-finned eel	Gradual Decline		1	1
New Zealand pipit	Declining		1	1
North Island fernbird	At risk	3	3	6
North Island kaka	Vulnerable	4	2	6
Northern New Zealand dotterel	Vulnerable		1	1
pied stilt	Declining		1	1
<i>Pittosporum virgatum</i>	Naturally uncommon	1	1	2
shortjaw kokopu	Sparse		1	1
spotless crane	Relict		1	1
<i>Streblus banksii</i>	Relict		3	3
variable oystercatcher	Recovering		1	1

2.3. Biodiversity context

There are now several district-wide geospatial datasets of natural features available for the Thames-Coromandel District. These datasets comprehensively map the pattern of existing biodiversity values and provide a context in which to interpret the legal protection of these values.

2.3.1. Land Cover Data Base and BIOVEG

The Land Cover Data Base (LCDB) is a Ministry for the Environment national dataset that maps different vegetation types or features on the land. The LCDB2 dataset has been field checked and updated by Environment Waikato for the Thames-Coromandel District and is known as BIOVEG 2007. Indigenous vegetation types can be selected from BIOVEG to portray the extent of indigenous ecosystem cover. Overlaying the dataset of legal protection enables an analysis of the area of indigenous ecosystem protection within the district.

The indigenous vegetation cover in the district includes large areas of publicly owned lowland forests predominantly administered by the DoC estate along the steep peninsula range; patches of privately and publicly owned forest and scrubland in the lowland and coastal zones, as well as freshwater wetlands and sand dunes. BIOVEG calculates that there is 134,374ha of indigenous vegetation cover in the district, of which:

- 3,373ha (2.5%) is protected by Development Covenants; and
- 98,922ha (73.6%) is protected in total.

See Figure 3 for an example of BIOVEG indigenous vegetation cover in relation to protection.

2.3.2. Threatened Environments of New Zealand

A national classification system of Threatened Environments has been developed by Walker *et al.* (2008). This uses the Land Environments of New Zealand (LENZ) and Land Cover Data Base (LCDB) datasets to define the extent of indigenous vegetation cover, overlaid with protected public land managed by DoC and private land under covenants with DoC, Nga Whenua Rahui and QEII National Trust.

LENZ is a system of ecosystem classification across New Zealand's landscape using climate, landform and soil variables. The classification is used to identify and map areas that have similar environmental character regardless of where they occur. A Land Environment is considered a surrogate for an ecosystem type.

Overlaying LENZ with the LCDB enables an analysis of how much indigenous vegetation cover each Land Environment has. This indicates the extent of representation of indigenous ecosystems across the landscape (i.e. ecosystem representativeness).

Overlaying LENZ and LCDB with legal protection datasets allows a calculation of the area of indigenous vegetation on each Land Environment which is under protection.

The Threatened Environments analysis combines Land Environments nationally that have similar amounts of remaining indigenous vegetation cover. This allows an objective analysis and ranking of the representativeness of ecosystems. The Threatened Environments classification system is used to identify areas for the restoration of indigenous vegetation to a target of 30% and the legal protection of at least 20% of each Land Environment (i.e. ecosystem). This is based on the ‘slippery slope’ ecological theory of species-area relationship (see Appendix C), that states “*as the area of indigenous habitat decreases, each increment of further loss results in a greater magnitude of loss of remaining biodiversity*” (Walker *et al.* 2008, p12). For example, more species are expected to become extinct if an ecosystem with 20% remaining indigenous cover is reduced to 15% remaining indigenous cover, than if an ecosystem with 80% remaining indigenous cover is reduced to 75%.

There are six categories of Threatened Environments which are defined by the extent of indigenous vegetation cover remaining and legal protection (see Table 2). Categories 1-5 are those Land Environments that are under-represented nationally. There is 98,208ha of categories 1-5 in the district, of which:

- 1,648ha (1.7%) is protected by 49% of the area of Development Covenants; and
- 16,313ha (16.6%) is protected in total.

See Figure 4 for an example area of protection in relation to the combined Threatened Environment categories 1-5. Note that the majority of the existing protection and indigenous vegetation (from Figure 3) is outside of the ecosystems that are most threatened. The developed coastal zone contains a high proportion of the Threatened Environments within the district yet has a relative lack of protected native vegetation.

Table 2: The six Threatened Environment categories (from Walker *et al.* 2008)

No.	Category	Criteria
1	Acutely Threatened	< 10% indigenous cover remaining
2	Chronically Threatened	10-20% indigenous cover remaining
3	At Risk	20-30% indigenous cover remaining
4	Critically Underprotected	>30% indigenous cover remaining, <10% legally protected
5	Underprotected	>30% indigenous cover remaining, 10-20% legally protected
6	Less Reduced & Better Protected	>30% indigenous cover remaining, >20% legally protected



Figure 3: Development Covenants (white hash) and Other Protection (yellow hash) with existing indigenous vegetation (green) from BIOVEG, in the Whitianga Harbour catchment

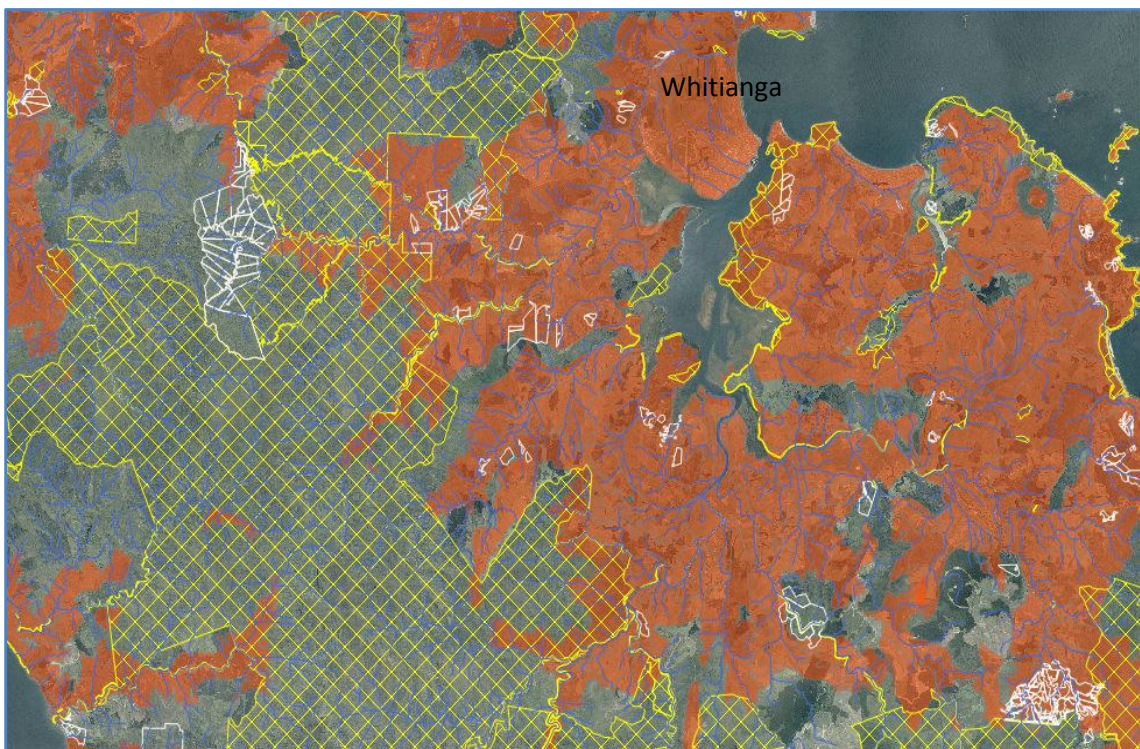


Figure 4: Development Covenants (white hash) and Other Protection (yellow hash) with Threatened Environments 1-5 (orange), in the Whitianga Harbour catchment

Figure 5 shows the percentage of existing indigenous vegetation cover and legal protection for each nationally Threatened Environment category within the Thames Coromandel District. Development Covenants provide a relatively small part of the total protected area, and the restoration areas within these are too small to be shown. In relation to achieving the national target of 30% indigenous cover and 20% protection for each Land Environment present within the District (see criteria from Table 1):

- Threatened Environments 1 and 2 within the district have indigenous vegetation cover and protection equal to the criteria (i.e. these Land Environments require large amounts of restoration and protection within the district);
- Threatened Environment 3 within the district has indigenous vegetation cover greater than the national target and protection equal to the criteria (i.e. increased protection is required within the district to meet the 20% protection target);
- Threatened Environments 4 and 5 within the district have indigenous vegetation cover greater than the national target and protection greater than the criteria (but need to focus on meeting the 20% protection target for Threatened Environment 4); and
- Threatened Environment 6 has indigenous vegetation cover and protection greater than the national target (i.e. no further restoration or protection required).

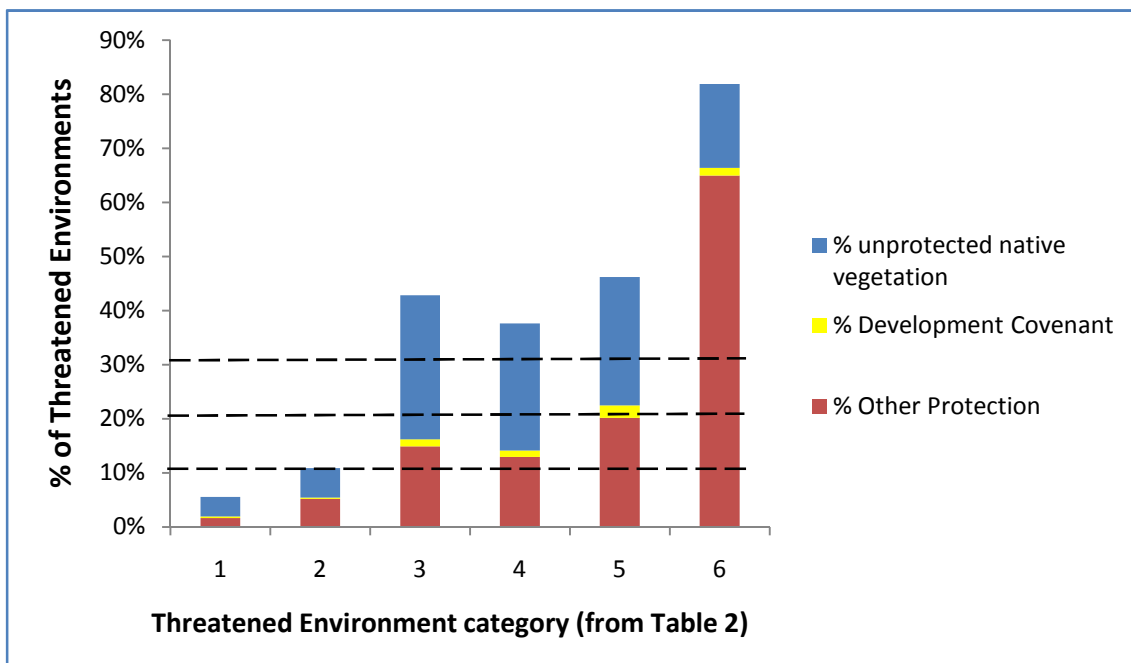


Figure 5: Indigenous vegetation cover and legal protection of Threatened Environments (national analysis) within the district.

2.3.3. Significant Natural Areas

The Significant Natural Areas (SNA) assessment for the district determines 'significance' from the ecological significance and management ranking criteria within the Regional Policy Statement (Environment Waikato, 2000). It is a comprehensive geospatial dataset of the existing significant natural features of the district. Most of the Development Covenant areas were included as SNA's in the assessment, although some covenants had pine canopy, archaeological sites on pasture, or were plantings or scrubland that did not fit the criteria.

The BIOVEG layer was used to help determine SNA boundaries in a primarily desktop analysis. However, SNA's include 456ha of exotic forest (334ha), herbaceous saline (99ha), gorse and broom (18ha), and deciduous hardwoods (5ha), all of which were excluded from the BIOVEG layer for this covenant analysis.

SNA's cover 134,657ha of the district. Of this total, 3,209ha (2%) is within Development Covenants, 85,795ha (64%) is within Other Protection, and the remaining 45,653ha (34%) is unprotected. Development Covenants protect SNA's mostly within the developed landscape of the lowland and coastal areas of the district which is also where most of the unprotected SNA's occur. A large majority of the SNA's with Other Protection is the DoC estate along the spine of the Coromandel Range.

2.3.4. Ecological Natural Character

The Ecological Assessment of Natural Character for the Thames-Coromandel district (Graeme *et al* 2010) is a geospatial analysis of existing functioning ecosystems. This is a dataset of defined coastal and river ecosystems with high natural character. The dataset was created from a desktop exercise and followed up with some field checks. The Ecological Natural Character layers utilised both BIOVEG and SNA data.

The Ecological Natural Character layers have the majority of their area in common with the SNA dataset, although with a different focus. Areas of high Ecological Natural Character cover 125,881ha of the district. The area and proportion of protection afforded by each group of protection mechanisms is similar to SNA's, with 2,586ha (2%) protected by Development Covenant, 80,737ha (64%) with Other Protection, and the balance 42,556ha (34%) with no protection.

2.4. Plan logic mapping

The Plan Logic Mapping (PLM) report (Day 2009) evaluates the extent to which the TCDC District Plan is capable of achieving the stated Environmental Results Anticipated and Objectives of the plan. The report does not assess the implementation or actual environmental results on-the-ground.

The on-the-ground performance of Development Covenants can be measured to some extent against the biodiversity protection objectives of the District Plan. Table 3 provides an on-the-ground assessment alongside the PLM assessment of Section 211 - Biodiversity with respect to the Environmental Results Anticipated and Objectives. The same scoring system has been adopted from the PLM assessment, and comments have been added to clarify reasons for the score.

The following comments are in reference to the summary of the Plan Logic Mapping assessment as it relates to the role of Development Covenants:

- The Environmental Results Anticipated and Objectives are written in a broad manner, and it is therefore difficult to associate them to biodiversity protection outcomes on-the-ground. There is not a clear framework of policy which leads to the objectives for biodiversity.
- Cross-boundary issues are relevant to the planning of biodiversity protection due to ecosystems and species not relating to property boundaries.
- Earthworks are a factor contributing to fragmentation of ecosystem processes and this needs to be considered in the planning of biodiversity protection.

The PLM report considers that overall there is good internal consistency between objectives, policies and rules in the District Plan, although there is no recording of 'strong' consistency in the tables between Environmental Result Anticipated and Objectives. The on-the-ground evaluation expects that there has been a loss of biodiversity values in the district, therefore the objectives of the District Plan have not been achieved to the potential capability assessed by the PLM report. There has been a growth in the recognition and appreciation of biodiversity values in the district, and advances in large scale animal pest control. However, overall the District Plan has fallen short of its limited to moderate capability to sustainably manage natural resources.

Table 3: On-the-ground assessment alongside the Plan Logic Mapping assessment of Section 211 – Biodiversity (Day, 2009).

Objective 211.3 Biodiversity	Environmental Result Anticipated	Plan Logic Mapping capability assessment	On-the-ground assessment	Comment
.1 To protect areas of significant indigenous vegetation and significant habitats of indigenous fauna and where appropriate enhance the quality, extent and biological diversity of indigenous vegetation and fauna in the District.	.1 No further loss of significant indigenous vegetation or significant habitats of indigenous fauna.	☆☆	☆	There has not been a baseline SNA survey at the creation of the District Plan to compare the current SNA assessment with. Expect that there has been some loss, but the Rules on vegetation clearance have limited this. Remnant wetlands have continued to be drained and/or infilled.
	.2 Growth in people's appreciation of all natural resources indigenous vegetation and fauna.	⊘	☆☆	Difficult to ascertain, although the Community Outcomes process confirmed that people appreciated the natural values of the district highly. Also the number of community conservation groups in the district and articles in the local papers indicates a growing appreciation.
	.3 Increased planting, re of indigenous vegetation.	☆	☆	This has occurred, but in a limited way in terms of the potential.
.2 To safeguard the life-supporting capacity of ecosystems	.1 No further loss of significant indigenous vegetation or significant habitats of indigenous fauna.	☆☆	☆	There has not been a baseline SNA or ecological natural character survey at the creation of the District Plan to compare an assessment with. Expect that there has been some loss, but the Rules on vegetation clearance have limited this. Poor land management contributes sediment and nutrient pollution which can severely reduce the life-supporting capacity of aquatic ecosystems.
.3 To promote the sustainable management of natural resources	2 Growth in people's appreciation of all natural resources indigenous vegetation and fauna.	⊘	☆☆	Difficult to ascertain, although the Community Outcomes process confirmed that people appreciated the natural values of the district highly. Also the number of community conservation groups in the district and articles in the local papers indicates a

				growing appreciation.
	.3 Increased planting, re of indigenous vegetation.	★	★	This has occurred, but in a limited way in terms of the potential.
	.4 From Policy 211.4.2: a. National recognition of the District's indigenous vegetation and fauna;	⊘	★★★	The SNA assessment recognises sites of national significance. The national Threatened Environments analysis recognises the under-representativeness of ecosystems in the district.
	b. Decreased number of pests and weeds in areas of significant indigenous vegetation or fauna habitat;	★	★ Weeds ★★ Animal pests	Environmental weeds have not been controlled in any comprehensive programme in the district, and continue to spread, although there is some control through subdivision consents and reserve management. TCDC has supported DoC/EW in pest control through the Peninsula Project.
	c. Biodiversity maintained and enhanced;	★★	★	Overall, the plan has addressed habitat protection only, and has not targeted the most Threatened Environments. The continued loss of native vegetation in Threatened Environments is a significant negative. Biodiversity values continue to be degraded by weeds and animal pests whether there is protection or not.
	d. Natural resources managed sustainably.	★★	★	Natural resources (e.g. water, soils, wetlands) are monitored to varying degrees. Many TCDC covenants are in average to poor condition.



No regulatory path to Environmental Result.



Limited, moderate or strong internal consistency.

3. Discussion and Recommendations

Development Covenants have been monitored with respect to their covenant objectives and for biodiversity condition. The results of covenant monitoring and this analysis suggest that Development Covenants have not contributed strongly towards achieving the biodiversity objectives of the District Plan. This is due to the lack of capability within the policy of the District Plan and the poor biodiversity condition of the covenants on the ground.

The District Plan review provides an opportunity to improve biodiversity policy to ensure Development Covenants achieve the best possible biodiversity protection on the ground with appropriate planning and management.

The reasons why Development Covenants are not contributing to biodiversity protection as well as they could are covered in the following sections: covenant design; covenant management; and District Plan review. Recommendations suggest how they can be more successfully designed and managed to promote a better outcome for biodiversity protection in the district.

3.1. Covenant design

Development Covenants in general have been offered in a shape and format that has suited a consent applicant more than it best suits the management of biodiversity values within the district and national context. The effect of this has been that in some cases areas of less biodiversity value have been chosen for protection over other more worthy areas (e.g. choosing lowland scrub over wetlands).

In some instances, restoration has occurred to achieve the minimum covenant size required, at a lot of effort and expense, and even on good arable land; whilst other areas of under-represented ecosystems on a property remain neglected. There are also examples of the minimum-required area of covenant being excised exactly from much larger natural features on a property, which complicates management of the greater feature. Ironically, some of the best examples of covenanting have come from the approval of subdivision applications which have been non-complying with the subdivision policies in the District Plan, as these proposals align with the intent of the plan whilst not being constrained by the structure of the rules.

The lack of provision to target the highest quality natural features within a property has also meant that there is no incentive to involve an ecologist at the initial planning stage of a subdivision. More often than not, a subdivision scheme plan is presented to an ecologist seeking their support for protecting a natural feature as predetermined by a resource management planner or surveyor. This approach often results in suboptimal subdivision design for biodiversity values.

3.1.1. Minimum area

The District Plan prescribes minimum areas for protecting natural features. A minimum area provides little consideration for biodiversity value. Certainly larger areas provide more habitat for threatened species, and reduce edge and fragmentation effects. However, significant biodiversity values can be found on relatively small areas, and some areas have proportionally greater ecological value than other similar sized areas (e.g. alluvial podocarp forest compared to lowland broadleaf forest). There can also be value in restoring relatively small areas to buffer or link natural features.

3.1.2. Legal protection mechanisms

Covenants need to be considered alongside other legal protection mechanisms to determine which is the most appropriate for each situation. For instance, where public access is valued and does not clash with biodiversity objectives for an area a public reserve may be more appropriate. Conversely, covenants can be used when public access may be detrimental to maintenance of biodiversity values. Esplanade reserves and marginal strips are often suitable for connections along streams.

The consistency of legal protection conditions across a natural feature helps with the management of that feature. It is worthwhile considering the coordination of legal conditions between covenants and other mechanisms. Multi-property re-developments can provide the opportunity to reassess legal protection across a landscape to ensure the best management set up as possible.

COVENANT DIFFERENCES

There are some fundamental differences between QEII and TCDC covenants which are summarised in Table 4. Both covenant types are suitable for providing legal protection mechanisms to protect biodiversity values on private land in the district. However, both covenant documents need to be adjusted to better achieve district and national objectives for biodiversity protection.

Recommendation 1:

- **Ensure that the legal protection mechanisms chosen are the most appropriate for the biodiversity management situation in the wider landscape**

Table 4: Key differences between QEII and TCDC Development Covenants

Features	QEII	TCDC
Legislation	QEII National Trust Act 1977	Reserves Act 1977 (s.77)
Covenant mechanism	Open space covenant	Memorandum of Encumbrance or Consent Notice
Average size in district	24.0ha	6.2ha
Restoration planting	0ha	108ha
Monitored	Biennially	Only recently, and for non-compliance
Enforcement provisions	Fine. Amount currently being revised.	Cumulative rent of \$2,500 pa, or RMA fines
TCDC rates relief	Eligible, with public access	Not eligible
Mining	Not possible – included under S.52 and Schedule 4 of the Crown Minerals Act 1991	Possible

3.1.3. Covenant objectives

Covenant documents vary widely in the way that they are composed, and this ultimately affects the management of the natural features they aim to protect. Covenant biodiversity objectives are often too broad and relatively meaningless in relation to what is expected to be achieved. Generally, the most unambiguous aspect of covenant objectives is that the vegetation should not be cleared which is an essential function of the protection.

Covenant objectives need to reflect the objectives of district, regional and national policy. Covenant objectives then need to be reduced to a list of activities that can and cannot be undertaken. This provides a framework that can be monitored to know when the objectives are being achieved, and what needs to be done when they aren't. An explicit covenant objective will enable enforcement and corrective actions to be undertaken.

In some cases there can be a clash between the management necessary to maintain biodiversity values and that of other values on a site. For example, on pa sites sheep grazing is considered the best management tool although a fence would be necessary to keep sheep from any adjacent forest, but the fence posts and any benching required can be detrimental to the archaeological site values. In these cases it is a matter of having experts in both fields to provide advice on the most appropriate objectives and management framework.

It is generally accepted that covenants provide legal protection in perpetuity. This is commonly the case for QEII covenants although time frames can be set. For Nga Whenua Rahui kawenata there is a review every 25 years (i.e. approximately every family generation). Recent TCDC covenants are generally in perpetuity; however there are earlier TCDC covenants that were set up with a set timeframe for protection, so these may need to be reviewed as they will soon expire.

Recommendation 2:

- **Design covenants to be clearly accountable to the district and national objectives for biodiversity protection**
- **Maintain covenant flexibility to align with unique biodiversity protection situations to achieve the best outcomes**
- **Consider the surrounding context (biodiversity values and protection) for covenant conditions to ensure consistency of protection across the landscape**
- **Ensure covenant objectives are specific to the situation and measurable so that it is clear that they are being achieved**
- **Consider having specific Management Objectives that provide a link between the covenant objectives and the activities on the ground**
- **Use a ‘no subdivision clause’ in covenant documents where it is appropriate for natural feature management to limit further subdivision of the feature**
- **In general, survey houses out of covenants but ensure that a consent notice covers conditions for the whole property (e.g. landscape effects of buildings, pet restrictions).**

3.1.4. Fragmentation and connectivity

Physical fragmentation of a natural feature increases ‘edge effects’ and widens the source of weed and predatory pet invasion. Where house sites with their associated roading and yards are scattered throughout a natural feature the effects of fragmentation are intensified. Often, straight lines have been drawn for lot boundaries through a natural feature without any reference to the terrain or catchments.

Management fragmentation of natural areas is also an issue. Rules 751 and 752 have been used in a way to maximise subdivision titles from an area, which encourages natural feature fragmentation. Rule 751 has been used to create lots just greater than 20ha, which is then immediately followed by utilising Rule 752 for each new lot to create two further lots per title. This has complicated the future management of natural features in the areas where it has been implemented. There are often opportunities to cluster housing with minimal landscape effect but these opportunities can be overlooked when there is no imperative to cluster.

The division of covenant areas into separate lots of a subdivision has produced a significantly larger number of covenants to be administered relative to the overall size of a natural feature which they protect. This complicates the ability to manage threats efficiently over time, as there are more people to organise and agree on management methods. It can be considered as positive for the biodiversity values to have more people responsible for a natural feature, but overall it is often balanced by the detrimental effects of fragmentation and peoples activities. There are examples in the district of successful pest control project involving only a couple of major landowners and the wider community. The single or common (e.g. body corporate) ownership of large covenant areas are considered to be the most sustainable models for efficient and effective management of natural features.

CONNECTIVITY

The developed coastal zone contains a high proportion of the Threatened Environments within the district yet has a relative lack of protected areas, let alone connections between them. Covenants play a critical role in directly connecting other protected areas, and connecting ecological sequences (e.g. 'mountains to the sea'). Protected and unprotected natural feature remnants and waterways provide direct links and stepping stones for wildlife across developed landscapes.

Recommendation 3:

- **Require cluster housing and reduce the extent of road access into natural features to minimise adverse fragmentation effects**
- **Minimise ownership of covenanted natural features, and encourage Body Corporate models for multi-ownership of covenants in subdivisions**
- **Ensure that covenants promote connectivity across the developed landscape**

3.1.5. Pests

Weeds are a burgeoning problem for natural areas, particularly with climate change and new species spreading. They are a continuing threat to all covenants, especially when a house is built within or near a natural area (Sullivan *et al.* 2005). Weeds are the biggest threat to indigenous vegetation over the longer term, as they are pernicious in the wider environment, particularly where there is no landscape programme of control. Weed eradication (i.e. getting the last one and preventing reinvasion) is often not a feasible option. Covenants can include a responsibility to control weeds either generally or specifically, but it is often an ongoing issue.

Feral animal pests are also an ongoing issue for covenants. Legal protection itself cannot necessarily guard against pest threats to indigenous ecological processes, and covenant objectives may not necessarily require animal pest control. In most cases animal pest control can only be encouraged in covenants. Where animal pest control is undertaken there can be a noticeable improvement in the indicators of biodiversity value (foliar browse, seedling counts, bird fledgling counts etc). The relationship between biodiversity loss and introduced species has been well documented in the district in recent years. There are community and agency (e.g. Peninsula Project) led pest control operations which have a significant positive effect for biodiversity over a large scale and have often included covenanted land.

Domestic cats and dogs have been banned from certain subdivisions because of the threat that they would introduce to existing native wildlife in the covenant. Cats prey on small birds, lizards, weta and other invertebrates. Dogs are a significant threat to kiwi and a number of wetland birds including the threatened banded rail and Australasian bittern. Often this requirement is put into a consent notice on the property title, but in some cases it has been put onto the covenants alone, which does not prevent cats and dogs being kept at the neighbouring house sites. This defeats the purpose of the predatory pet restriction.

Some subdivisions have kiwi-aversion training for dogs as a technique to protect kiwi. This however relies on owners undertaking repeat aversion training, and is an administrative nightmare for council and QEII to monitor. Kiwi are known to be very vulnerable to dogs (Holzapfel *et al*, 2009) and are known to spend a large proportion of days roosting on the surface (Forbes 2009, cited in Stewart 2010) making them very vulnerable to predation. Nesting birds are also vulnerable to disturbance, therefore allowing any dogs adjacent to subdivided kiwi habitat will ultimately lead to a poor outcome for the sustainability of local kiwi populations. Where the introduction domestic pets would increase the disturbance/predation of threatened species there needs to be consideration of avoiding this effect by declining consent for housing in areas where this is justified. Identifying 'wildlife friendly' zones would give guidance to where the effects of predatory pets are not acceptable.

Recommendation 4:

- **Ban domestic cats and dogs in rural subdivision unless their effects can prove to be less than minor**
- **Consider the creation of a 'wildlife friendly' planning zone**

3.1.6. Consent processing

The processing of subdivision consents has in part contributed to the poor condition of many covenants that had been approved through Rule 752. To address this issue a report was commissioned (Graeme & Kendal 2009) to provide council with the expected requirements of consent applications that would ensure that natural features could be assessed more objectively and that the intended ecological outcomes could be achieved. There has been a noticeable improvement in more recent restoration plantings in TCDC development covenants, and this has reduced the enforcement monitoring required by council.

Covenant establishment activities such as fencing, restoration planting and initial weed control are finite tasks, which set up a covenant to the point where it can be left alone and expected to maintain its biodiversity value (with the exception of ongoing weed surveillance). Feral animal pest control however is prone to failure as it is complicated to arrange as a consent condition and to monitor and enforce this. For developments with multiple covenants, pest control can be encouraged by ensuring that there is an administrative body (e.g. body corporate) set up that can manage pest control initiatives. Then with the support and encouragement from council (i.e. Biodiversity Representative and rates relief) and the wider community the area will more likely achieve good pest control outcomes over time.

Recommendation 5:

- **Ensure that subdivisions with biodiversity covenants are set up with the immediate threats addressed, and in a way that future management of threats can be undertaken most effectively.**

3.1.7. Voluntary covenants

There are 44 QEII covenants that cover 1,929ha in the district that have been registered voluntarily to protect natural features on private land. They contribute to the protection of some very significant natural features. There are no voluntary TCDC covenants. Whilst incentive-driven protection in the District Plan may reduce the motivation to voluntarily covenant, it can offer a more targeted and comprehensive approach to protecting biodiversity values where it is most needed because:

- incentives can encourage restoration and protection of biodiversity where it otherwise may not have occurred;
- protection will be targeted to the ecosystems that are under-represented;
- restoration of under-represented ecosystems will occur and be resourced by development;
- covenant planning can be coordinated to best complement the local environment, including the working landscape;
- there is more potential for extending biodiversity protection across property boundaries, which offers better covenant design that is easier to manage sustainably;
- specialist expertise will be included in the planning process;
- plant pest control will be managed under the guidance of planning policy;
- there will be less financial burden on the landowner, QEII Trust and other agencies to fund the covenant setup when it can be financed through development.

The manner in which a covenant is created is irrelevant beyond the original owner. Voluntary covenants and Development Covenants are all monitored and managed in the same way once they are established. However, the process of establishing covenants through the policies of the District Plan can have an enormous positive effect in determining how future covenants can be sustainably managed for their biodiversity values over time.

The QEII National Trust is wary of subdivision-generated covenant proposals when they have been poorly designed through council policy that limits covenant design parameters. The Trust also consider that it is necessary that QEII covenants remain a choice amongst other legal protection mechanisms, so that it is never a specific requirement of any resource consent to have a QEII covenant. The voluntary nature of landowners choosing a QEII covenant forms a fundamental cornerstone of the excellent relationship the Trust has with landowners.

Recommendation 6:

- **Support voluntary covenanting by providing meaningful rates relief for covenants**

3.2. Covenant management

Management of covenants is the responsibility of the landowner, but monitoring the adherence to covenant objectives is the responsibility of the administrative agency.

3.2.1. Covenant monitoring

TCDC covenants were initially set up to be regularly monitored however this ceased after a few years (Graeme Lawrence *pers comm*). These early TCDC covenants that had not been monitored since are often in less than Good condition (see Figure 2). The re-introduction of monitoring visits of TCDC covenants over the last few years highlights that the council presence has a positive effect on landowner motivation to comply with their covenant requirements. Monitoring is vital to the success of covenant protection because monitoring visits not only allow a check against covenant conditions, but more importantly they provide an opportunity to encourage and support covenantors.

It is important to maintain accurate records of covenants so that progress towards the desired district outcomes can be measured. The experience with monitoring TCDC covenants is that there has been periods where a large proportion of covenant files have not been available (15% in 2009) which has undermined the ability to ensure these covenants are compliant. Geospatial database management provides a comprehensive method to monitor the progress towards protection of biodiversity objectives, with the ability to compare the protection with contextual biodiversity data such as SNA's, areas with high ecological natural character and Threatened Environments.

The commitment of covenant owners is often difficult to assess when many owners are absentees and onsite meetings are not possible. Covenant owners are often not the original owner of the property, and can be unaware of their commitments to the maintenance of plantings. This is where problems can arise, especially when the planning process has not ensured that the planting has become an established natural feature under the original owner.

The current LTCCP suggests increasing TCDC covenant commitment by only 5% over 10 years, but the district community's expectation of biodiversity protection and enhancement is clearly much greater than this. Assessing owner commitment is very subjective, therefore the recommendations of Stewart (2006) to aim for >90% of TCDC covenants to be in Good condition within 5 years is a more appropriate target.

Recommendation 7:

- **Undertake covenant monitoring biennially, or earlier if there is a current issue or project, and maintain a geospatial database of covenant information**
- **Visit covenants when they are first registered and when there is a change of ownership**
- **Set LTCCP target for >90% of TCDC covenants to be in Good condition within 5 years**

3.2.2. Enforcement

The QEII Trust model for ensuring compliance with covenants is to proactively manage poor adherence by liaising with owners to help determine how the issue is to be resolved, rather than an early use of enforcement. The QEII National Trust Act 1977 has the ability to enforce with fines if this becomes necessary.

The fine system for TCDC Memorandum of Encumbrances and QEII covenants is becoming cheaper with inflation; particularly in the last decade as the fines have become relatively insignificant relative to the rapid inflation of property values in the district. The consequences of non-compliance need to be meaningful as a deterrent to covenant owners and therefore the enforcement provisions of both QEII and TCDC need to be reviewed.

To assist enforcement of some covenants with significant issues TCDC has placed a consent notice on the property title recognising the breach in covenant. This makes it difficult to raise a mortgage against the property when it is sold and so provides motivation for the owner to resolve the covenant issues. Over time this enforcement method should provide significant leverage to lift the condition of poor covenants.

A model for covenant monitoring and enforcement has been developed for the Auckland City Council (Kendal 2009). This recommends a set of maintenance objectives tailored to each covenant which aligns the covenant objectives more pragmatically with the biodiversity objectives of the District Plan. This gives more objectivity for the monitoring of covenants and allows for more effective enforcement. A covenant is awarded rates relief only when the maintenance objectives are being achieved. This provides council with more leverage to ensure that the covenants stay in good condition. In this way the remission of rates on covenants are directly accountable to the maintenance of the protected biodiversity values that are appreciated by the district's community.

Recommendation 8:

- **Review the enforcement provisions of Development Covenants to ensure that they are meaningful to covenant owners**
- **Establish covenant maintenance objectives and link the achievement of these with the provision of rates relief**

3.2.3. Current management

TCDC and the QEII Trust are responsible to ensure that the objectives of their respective covenants are being met, but the land owners are responsible for the management on their covenants that is necessary to meet these objectives. The most significant threats that can be clearly defined and restricted by a covenant are vegetation clearance, earthworks and stock browsing. The maintenance of stock fencing is the most common management obligation of a

landowner, otherwise there is often little active management required of an established covenant to meet its objectives.

The management of particular ongoing threats to indigenous ecosystem health are not often specified in covenant objectives. Covenant objectives usually remain broad and focussed on the outcome - such as '*protection of indigenous flora and fauna*'. Sub-clauses referring to the control of environmental weeds are common but not necessarily specific, and there is often no explicit reference to feral animal pest control. Therefore covenants do not necessarily provide legal protection against the threat of ongoing and pervasive ecosystem degradation by environmental pests. Nor do they protect from other threats such as fire, flooding, and pollutants which require controls beyond the covenant boundary. It is important then that subdivisions which afford biodiversity protection are designed in a way that enables the most effective management of pests and other threats into the future.

It has recently been confirmed (Innes *et al.* 2010) that when stock are excluded from forest fragments a larger rat population can be sustained because they have increased resources. Rats then have a proportionately greater affect on the resident wildlife population. Therefore it is paramount to consider the effects that habitat protection could have on indigenous wildlife when designing subdivisions.

Approximately half of the current Development Covenants are yet to have adjacent house sites developed and occupied, and many others are only recently developed but not permanently occupied. Therefore the potential effects of people living beside Development Covenants have yet to occur in many cases. The eventual occupation of houses will bring threats to the biodiversity values of the natural features including site clearing, weeds and predatory pets.

Recommendation 9:

- **Ensure that the objectives of covenants are being met**
- **Assist the management of ongoing threats to covenant values by ensuring good covenant design and by providing advice and support to covenantors**

3.2.4. Assisting covenant management

There are a variety of actions that TCDC could undertake that would complement the restoration and protection of biodiversity being achieved by covenants. The most helpful of these are discussed below.

TCDC BIODIVERSITY REPRESENTATIVE

The TCDC Biodiversity Strategy recommends regular monitoring of TCDC covenants. The establishment of good working relationships with covenant owners is paramount to the ability for breaches of covenants to be addressed, and the full biodiversity potential of these areas to be realised.

The QEII Trust Representative role provides a suitable model for a TCDC Biodiversity Representative. The TCDC role would principally be to regularly monitor covenants. This will provide the opportunity to coordinate biodiversity goals and activities of neighbouring covenantors. The monitoring is important to measure the performance of covenants against district objectives, but engaging covenant owners in a positive way will ultimately reduce the necessity to enforce covenant issues as owners become more informed, involved with and appreciative of their covenants. This approach has also been promoted to Waikato District Council in response to monitoring results showing poor adherence and condition in council covenants (Kessels 2004).

To date subdivision communities of covenant owners have been set up with no collective goals for biodiversity, and they are left to their own devices to figure out what comes next. More often than not, people who purchase properties with covenants have an appreciation of the natural values protected, and understand the need to manage animal and plant pests. The support of a TCDC Biodiversity Representative would be effective in providing support and advice to help these beneficial activities get successfully implemented.

A TCDC Biodiversity Representative would provide a more cost-effective benefit to the District's biodiversity than offering direct financial incentives to landowners. The Representative would provide advice, encourage and coordinate covenantors, and assist with funding applications to other agencies.

Recommendation 10:

- **Create a TCDC Biodiversity Representative position to monitor and support TCDC covenants and help advise TCDC on biodiversity matters**

RATES RELIEF

The current LTCCP has a policy for rates relief which gives little financial recognition for QEII covenants and excludes TCDC covenants. The policy is not very encouraging as covenant owners must apply for the rates relief each year, and they are required to give the public access to their covenant. There are few QEII covenantors in the district that have actually taken up the rates relief offer and none have been motivated to covenant because of the policy.

The owner of a covenant has the legal responsibility to maintain the values of a covenant with no opportunity to develop it. Covenants secure a variety of values that are appreciated by the district community. Covenants protect biodiversity values onsite, and are appreciated beyond the covenant boundary by linking other natural features and protecting natural landscapes, water quality and other ecosystem services (e.g. clean air, erosion and flood control).

The financial contribution from rates relief needs to be a meaningful amount to acknowledge the covenant owners commitment to managing the protected values. The covenants have significant value to the community without the requirement for public access, which would often be detrimental to the natural values of covenants. There are plenty of natural areas in

the DoC estate that already provide for public access. Adjusting the rates relief policy would encourage other landowners to voluntarily consider a covenant for natural features on their property.

Recommendation 11:

- **Provide automatic and meaningful rates relief for QEII and TCDC covenants**
- **Do not require public access to covenants**

CARBON CREDITS

There is potential that TCDC covenant and reserve lands meet the criteria for carbon credits. There could be an administrative efficiency in managing these lands together for this purpose. The TCDC Biodiversity Representative role could undertake this task and then use the income to fund further biodiversity gains such as pest control in covenants and reserves.

Recommendation 12:

- **Consider the potential to combine the administration of all covenants and council reserves which meet the criteria for carbon credits**
- **Use any income from carbon credits to help fund further biodiversity gains such as animal and plant pest control**

THREATENED PLANT MANAGEMENT

The most cost-effective management action that would benefit biodiversity conservation in the district is to create opportunities to manage Coromandel-endemic threatened plant species. A population network of the plants could be established in areas where they can be better protected from their threats and better appreciated by the community. The most suitable places are covenants, reserves, schools and traffic islands. This would help ensure that a plant species did not become extinct and increase public awareness.

Recommendation 13:

- **Promote opportunities for Coromandel-endemic threatened plant species management in covenants, schools, reserves and traffic islands**

3.3. District Plan review

The Plan Logic Mapping evaluation shows a lack of capability for the biodiversity objectives to be met in the current District Plan, and this lack of capability is supported by the on-the-ground assessment. The District Plan offers the opportunity to encourage the coordinated restoration and legal protection of the ecosystems of highest value, and to weave a network of under-represented ecosystems into the developed landscape. Other broader aspects of biodiversity management such as threatened species management, pest control and community participation are not so easily addressed by the Plan but will be greatly assisted by protected areas being well set up through the Plan.

There are a variety of national policies that guide the maintenance, restoration and protection targets for biodiversity in the district (Appendix D). The District Plan review provides an opportunity to reassess the role of Development Covenants in the context of the most relevant national and district biodiversity planning documents.

The following discusses issues relevant to the District Plan review and provides recommendations for biodiversity protection provisions.

3.3.1. New Zealand Biodiversity Strategy 2000

“The Convention on Biological Diversity emphasises the need to conserve biodiversity in situ, in its natural surroundings. While New Zealand needs to set national priorities and targets, biodiversity exists locally; once priorities have been set, it is local management effort that will determine successful outcomes. The challenge regionally and locally is to translate national priorities and targets into regional and local plans and programmes, promoting the effective participation of communities and resource managers.” (NZBS, 2000. p 10).

The New Zealand Biodiversity Strategy (NZBS) provides guidance for district councils to devise and implement local biodiversity strategies. The current District Plan does not focus on encouraging the restoration and protection of biodiversity in the areas which the NZBS defines as a priority. TCDC can most effectively contribute to the objectives of the NZBS by promoting the maintenance, restoration and legal protection of under-represented ecosystems and threatened species habitat through the District Plan.

Recommendation 14:

Ensure that District Plan biodiversity policy objectives are aligned with the New Zealand Biodiversity Strategy

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

The “Statement of National Priorities for Protecting Rare and Threatened Native Biodiversity on Private Land” (MfE 2007) is a response to the review of the NZBS (Green and Clarkson 2006), and provides four national priorities for action (See Appendix D). At present these national priorities are not the focus of action by the Thames-Coromandel District Council.

National Priority 1:

The District Plan does not prioritise protection of ecosystem representation. The under-representation and protection of indigenous vegetation cover in the district is highlighted in Figure 5 of this analysis. Only 2% (69ha) of Development Covenants cover areas in Threatened Environments 1 and 2. This priority helps focus the promotion of ecosystems restoration and protection to where it would be most valuable.

National Priority 1 focuses on the protection of only existing indigenous vegetation in Land Environments that have 20% or less cover. Walker et.al. (2008) suggest that 20% representation and protection is desirable to retain a full range of biodiversity, but are aware of the other processes acting on these under-represented ecosystems, such as fragmentation, isolation, edge effects, co-extinctions and increased susceptibility to exotic pests and weeds. This suggests that as a precautionary approach, it would be prudent to aim to restore and protect indigenous cover to 30% in under-represented Land Environments.

National Priority 2:

There have not been any Development Covenants put over sand dunes in the district. Where village developments have occurred on dunes, the remaining area has mostly been secured as reserves for recreation and amenity values as well as limited biodiversity values. There are still many opportunities for sand dune restoration and protection in the district.

There is 43.5ha of wetland area within Development Covenants in the district. Wetlands provide water quality protection as well as wildlife habitat. Legal protection of wetlands often provides a good opportunity to restore buffers and links along streams and into forests. Wetlands are habitat for several threatened species in the district, many of which have been observed in Development Covenants. Wetlands are one of the most under-represented and under-protected ecosystems and there are many opportunities for wetland restoration and protection in the district.

National Priority 3:

There are not many ‘originally rare’ terrestrial ecosystems represented in the district, other than the coastal systems which are often outside TCDC jurisdiction: dune deflation hollows, stony beach ridges and shingle beaches. However, parts of these coastal ecosystems are likely to occur on private land. In the Colville area there is also some karst landscape which is a rare geologic formation for the Coromandel Peninsula, and there are 5 TCDC covenants totalling 38.9ha in this area.

National Priority 4:

All of the Development Covenants provide protected habitat for a variety of threatened animal and plant species. There are many covenants where threatened species have been observed, and many others in which they will also certainly be present.

There is a known correlation between threatened species and Threatened Environments (Walker 2008), indeed many species are threatened because of a lack of habitat. Private land holds most of the opportunity for restoration and protection of Threatened Environments in the district, which would contribute to the area of habitat necessary to enable many threatened species' to reach a sustainable population. Hence, Development Covenants are positioned to provide protection for the existing and future-restored habitat of threatened species. Clusters of covenanted areas can provide good opportunities for coordinated pest control over areas where threatened animal and plant species occur.

Recommendation 15:

- **Ensure that the National Priorities (MfE 2007) contribute to a framework of minimum requirements for developing District Plan biodiversity objectives**
- **Consider a restoration and protection target of 30% for Threatened Environments**

3.3.3. TCDC Biodiversity Strategy

TCDC developed its Biodiversity Strategy in 2008 to better define its key goals and approach to improving biodiversity values in the district. The strategy was prepared in the context of the NZBS, the RMA and the Waikato Regional Policy Statement 2000 to help guide Council's Long-term Council Community Plan (LTCCP), and will also be useful to direct the District Plan review.

The TCDC Biodiversity Strategy mission statement (p. 26):

"The Council will support the wider community and contribute to the protection, maintenance and enhancement of biodiversity, particularly native species and their habitats, which are special to the Coromandel Peninsula."

The strategy provides 5 Goals in which it aims to deliver this mission (see Appendix A):

Goal 1 has been achieved through the SNA and Ecological Natural Character assessments, and this report.

Goals 2 & 3 would be most effectively achieved by incorporating incentive provisions in the District Plan which encourage biodiversity enhancement and protection.

Goals 2-5 would be most effectively assisted by having a TCDC Biodiversity Representative position. This would not incur many of the costs and staff time projected in the Section 8.0 table of the strategy.

The strategy states that these are what the goals ‘could be’ (p26), and is therefore not limited to these goals. There is opportunity to consider other goals to incorporate into the strategy that could be more appropriate for the district.

FINANCIAL INCENTIVES

The strategy (p. 24), in considering financial incentives, does not recognise the significance of ensuring that all ecosystems are adequately represented in the district. It is agreed that the DoC estate “already provides significant biodiversity values...”, however most of the highly Threatened Environments are outside of the DoC estate in the developed coastal area. Their adequate representation can be encouraged through financial incentives embedded in policy of the District Plan, and incorporated into other financial mechanisms such as rates relief and support for funding applications from a Biodiversity Representative.

COVENANT MONITORING

The strategy (p.17) recommends that TCDC covenants are monitored every three years, and suggests that monitoring fees are retrieved from covenant owners for covenant monitoring visits. This is an aggressive approach to funding the maintenance of biodiversity values which are identified by the community as a priority for the district to protect (see TCDC, 2009 p. 248). A more positive, fair and persuasive method is to follow the approach considered by Auckland City Council (Kendal, 2009) which is to set up a meaningful rates relief system for covenant owners, but withdraw rates relief when a covenant is non-compliant. This system in combination with a Biodiversity Representative role will avoid many of the enforcement issues and costs that are inevitable with an antagonistic approach to covenant monitoring.

Recommendation 16:

- **Review the TCDC Biodiversity Strategy to provide more positive encouragement for biodiversity protection on private land, and ensure that it aligns with the New Zealand Biodiversity Strategy.**
- **Ensure that District Plan biodiversity policy objectives are clearly aligned with the reviewed TCDC Biodiversity Strategy.**

3.3.4. Biodiversity policy objectives

The setting of objectives to ‘protect biodiversity’ in the District Plan needs to consider the objectives of national and district strategies (as outlined above), and the biodiversity-related data that highlights the characteristics that most need attention in the district. District-wide biodiversity datasets (e.g. BIOVEG, SNA, and Ecological Natural Character) are now available to assist with prioritising biodiversity restoration and protection, and other datasets can help determine parameters of interest (e.g. soils, steepness, and property title boundaries).

LOCAL ANALYSIS OF THREATENED ENVIRONMENTS

An analysis of Threatened Environments at a district scale would provide ecosystem representativeness information that is more appropriate for setting district biodiversity objectives. Also an analysis of each Ecological District would allow comparisons at this landscape unit scale which is a national standard. These analyses would highlight the local variations in vegetation cover and protection relative to the area of each Land Environment within the district, which would complement the national Threatened Environments analysis.

Recommendation 17:

- **Determine specific, measurable and realistic objectives for biodiversity restoration and protection within the life of the District Plan.**
- **Undertake a district analysis and Ecological District analysis of Threatened Environments.**

3.3.5. Biodiversity protection methods

The District Plan could more effectively utilise the opportunities with property development to ensure the long term sustainable management of natural and human resources in the district. The District Plan could play a significant role in the advancement of biodiversity restoration and protection by providing development incentives to encourage this.

The vegetation clearance rule in the District Plan (Rule 420) provides only a backstop to the decline of indigenous canopy and not the complete ecosystem (e.g. stock fencing is not required). Application can still be made for consent to clear indigenous vegetation under Rule 420, which a legal protection mechanism provides a significant barrier to getting approved. Specific biodiversity protection policy can provide a variety of advantages to proactively coordinating biodiversity protection and management, as outlined below.

TRANSFERABLE DEVELOPMENT RIGHTS (TDR)

TDR opens up the possibilities of multi-title redevelopment by making the best use of natural features and development potential beyond property boundaries. TDR policy that focuses on restoring and protecting the most valuable indigenous ecological assets of the district will give the most 'bang for buck' within the life of a District Plan. When housing development is concentrated away from covenants houses don't fragment natural features at all, and therefore the numbers do not need to be necessarily capped for this reason. The Coromandel Peninsula Blueprint project identifies three agreed development hubs in the district, and confirms the district community's desire to avoid activities that damage natural ecosystems.

The District Plan currently promotes a degree of TDR by allowing covenants and subdivided lots to be transferred out of their parent title into adjacent contiguous titles. These rules could be relaxed to allow transfer of subdivided lots between non-contiguous parent titles but

restricted to within a major catchment, Community Board area or Ecological District to maintain a degree of connection between the development and protection sites.

Multi-title redevelopment also presents opportunities to set up sympathetic and complementary land-uses and practices for biodiversity values. This is especially important to help address the connectivity of ecosystems across the developed landscape, and the negative effects of adjacent activities on protected areas. The encouragement of indigenous forestry establishment and the promotion of good farming practices are two examples.

ECOSYSTEM RESTORATION

Green and Clarkson (2006, p 20) highlight:

“Priorities for future protection should continue to be to identify and protect representative habitats and ecosystems that are poorly represented in the present network of protected areas.”

Clear guidelines and standards are required for undertaking restoration and monitoring the success of restoration efforts. Only half (49%) of the Development Covenants area cover Threatened Environments 1-5. Restoration sites need to also be clearly highlighted within Threatened Environments and aim for 30% representation of each ecosystem.

There are 52 Development Covenants (all TCDC) that have been partly or wholly created from retiring an area in active primary production and revegetating it towards native forest or wetland by planting or assisting natural processes. These Development Covenants have provided council with a disproportionate amount of issues relative to the gain in biodiversity value and area that they have provided (only 3.2% of the Development Covenant area). However, restoration is the key element of securing Threatened Environments in future planning for the District, and with better policy and controls over restoration projects the issues can be overcome. This has been acknowledged by TCDC and resulted in recent tightening of restoration requirements and closer monitoring of planting establishment to ensure successful biodiversity outcomes.

The techniques for undertaking restoration on a larger scale have advanced in recent years, especially with assisting natural re-vegetation of areas. There are many examples of successful wetland restorations which focus on re-flooding the area and allowing the native wetland plants to naturally recover. Also, with careful planning ecosystem restoration can also fit well with other activities on the land. Therefore the policies for the restoration of ecosystems do not need to be limited to small areas or outside of productive areas in the developed landscape.

Recommendation 18:

- **Prioritise restoration and protection of Threatened Environments in the District Plan**
- **Consider Transferable Development Right policy mechanisms in the District Plan**
- **Encourage multi-title redevelopment in the District Plan**

4. Bibliography

Coromandel Peninsula Blueprint: <http://www.coroblueprint.govt.nz/>

Day, M. 2009. Plan Logic Mapping Report. An Assessment of the Internal Consistency of the Thames-Coromandel District Plan (Operative in Part).

Department of Conservation, 2000. New Zealand Biodiversity Strategy: <http://www.biodiversity.govt.nz/picture/doing/nzbs/index.html>

Department of Conservation & Ministry for the Environment, 2007: Protecting Our Places: Information about the Statement of National Priorities for Protecting Rare and Threatened Biodiversity on Private Land. Ministry for the Environment, Publication number ME 805, Wellington.

Environment Waikato 2000: Waikato Regional Policy Statement. Appendix 3: Criteria for Determining Significant Indigenous Vegetation and Significant Habitats of Indigenous Fauna (Updated November 2002). Waikato Regional Council, Hamilton East, New Zealand.

Graeme, M., Dahm, J. and Kendal, H. 2010. *Coromandel Peninsula - Ecological Assessment of Natural Character*. Contract report for Thames – Coromandel District Council. Natural Solutions Contract Report 09/087. Prepared by Focus – Resource Management Group.

Graeme & Kendal, 2009. *A checklist for natural ecological feature certification and management. Rule 752 Thames-Coromandel District Plan*. Contract report for Thames – Coromandel District Council. Natural Solutions Contract Report 08/080.

Green W, Clarkson B. 2006. Review of the New Zealand biodiversity strategy themes. Report to Department of Conservation, pp1-238.

Holzapfel, S; Robertson, H.A; McLennan J.A; Sporle, W; Kevin Hackwell, K; Impey, M. 2008. Kiwi (*Apteryx* spp) recovery plan 2008 - 2018. Threatened species recovery plan 60, Department of Conservation, Wellington. ISBN 978-0-478-14523-6.

Hitchmough, R., Leigh Bull, L., & Cromarty, P. (compilers) 2007: New Zealand Threat Classification System lists - 2005. Science & Technical Publishing, Department of Conservation, Wellington.

Innes, J. King, C.M., Bridgman, L., Fitzgerald, N., Arnold, G. and Cox, N. 2010. Effect of grazing on ship rat density in forest fragments of lowland Waikato, New Zealand. *New Zealand Journal of Ecology* 34(2): 227-232.

- Kendal, H. 2009. Auckland City Council, Implementation of policy for rates remission on covenants. Report prepared for Auckland City Council. Natural Solutions Contract Report 09/084.
- Kessels, G. 2004. Action Bio Community. In Search Of The Right Mix. An investigation of tools for biodiversity management.
- Lawrence, Graeme. Planner – Lawrence, Cross and Chapman Ltd. Phone conversation 12th August 2010.
- Leathwick, J. R.; Morgan, F.; Wilson, G.; Rutledge, D.; McLeod, M. & Johnston, K. 2002: Land Environments of New Zealand: Nga Taio o Aotearoa. A Technical Guide. Ministry for the Environment.
- Ministry for the Environment 2007 “Statement of National Priorities for Protecting Rare and Threatened Native Biodiversity on Private Land”
- Ministry for the Environment, 2008. Land Cover Data Base:
<http://www.mfe.govt.nz/issues/land/land-cover-dbase/index.html>
- Miskelly CM, Dowding JE, Elliot GP, Hitchmough RA, Powlesland RG, Robertson HA, Sagar PM, Scofield RP, Taylor GA 2008. Conservation status of New Zealand birds, 2008. *Notornis* 55: 117-135.
- Stewart, P. 2008. TCDC file notes.
- Stewart, P. 2009. TCDC File notes.
- Stewart, P. 2010. The response of kiwi of kiwi to predator control and advocacy, Moehau 2000 – 2009. Unpublished report for the Department of Conservation, Thames.
- Stewart, P., Stewart, R. 2006. Review of Thames Coromandel District Council Conservation Covenants 1989 – 2006. Unpublished Report for Thames Coromandel District Council, Thames.
- Sullivan, J., Timmins, S., & Williams, P. 2005: Movement of exotic plants into coastal native forests from gardens in northern New Zealand. *New Zealand Journal of Ecology* 29(1): 1-10.
- TCDC, 2008. TCDC Biodiversity Strategy, adopted April 2008.
- TCDC, 2009. Long-term Council Community Plan. Adopted 2009, amended 2010.
- Walker, S., Price, R. and Rutledge, D. 2008: New Zealand’s remaining indigenous cover: recent changes and biodiversity protection needs. Science for Conservation 284. Published by the Department of Conservation, Wellington.

Appendix A: District policy

TCDC Operative District Plan

211 BIODIVERSITY

211.3 OBJECTIVES

- .1 To protect areas of significant indigenous vegetation and significant habitats of indigenous fauna and where appropriate enhance the quality, extent and biological diversity of indigenous vegetation and fauna in the District.
- .2 To safeguard the life-supporting capacity of ecosystems;
- .3 To promote the sustainable management of natural resources

752 CONSERVATION LOTS

752.1 ACTIVITY STATUS

Subject to the requirements set out hereunder:

- .1 subdivision creating one additional lot under the rule is a controlled activity, unless the land is in the Coastal Zone in which case the subdivision shall be a discretionary activity unless a land use consent to erect a building associated with the residential use of the land is obtained prior to or concurrently in which case rule 701 applies;
- .2 subdivision creating two additional lots under this rule is a discretionary activity.

752.2 LIMITATION

This rule shall not apply to land which has been the subject of previous subdivision under this rule unless when viewed together as one composite application the previous subdivision and the proposed subdivision comply with Clause 752.6 hereunder. In any such case the proposed subdivision shall be a discretionary activity.

752.3 QUALIFYING STANDARDS

- .1 Rural conservation lots may be created in the following circumstances:
 - 1.1 where at least 5 ha of existing contiguous native bush having a closed canopy is to be legally protected in perpetuity, or
 - 1.2 where an existing natural feature which is at least 5 ha in area and which has other environmental value (e.g. landscape, heritage, wetland, esplanade or estuarine area) is to be legally protected in perpetuity, or
 - 1.3 where at least 5 ha of land is to be legally retired from active primary production and is to be planted in indigenous vegetation and managed in accordance with an approved land retirement management plan or other rehabilitation and preservation programme, or
 - 1.4 where at least 5 ha of land containing an area, site or structure of archaeological, historical or cultural significance is to be set aside and legally protected and managed in accordance with an approved management plan or other rehabilitation or preservation programme.
- .2 In addition to the foregoing, where the proposed subdivision is a discretionary activity regard shall also be had to the criteria set out in rule 751.5 (Rural Lots).

752.4 CERTIFICATION

- .1 Certification shall be provided from an appropriately qualified independent person that:
 - 1.1 in the case of existing native bush the vegetation is of such quality and maturity as to be worthy of preservation and be self-sustaining;
 - 1.2 in the case of any other natural feature or an area to be retired from active farming, the feature or area is able to be managed in such a way as to preserve and enhance its existing potential conservation value;
 - 1.3 in the case of features of archaeological, historical or cultural significance the area, site or structure in question is of such significance to the community as to warrant its preservation in the public interest and will retain and enhance the feature in its landscape context.
- .2 Certification shall be accompanied by a report prepared by the certifier detailing the attributes of the area recommended for protection and including an ongoing management programme detailing any protective, enhancement or other measures deemed appropriate.

752.5 LEGAL PROTECTION

Legal protection of the feature or area shall be achieved by way of a consent notice or other legal instrument to be registered on the title of the land concerned. All costs associated with compliance with this requirement shall be met by the applicant. Legal protection may be by way of QE II National Trust Covenant, covenant with Council or by vesting in a public authority as a public reserve.

752.6 NUMBER OF LOTS PERMITTED

Two additional lots per existing parent title may be created under this rule provided that:

- .1 there is at least 20 ha of qualifying area to be protected, or
- .2 there is at least one discrete feature of the type referred to in rule 752.3 to be protected per lot.

752.7 LOCATION OF LOTS BEING CREATED

Any additional lot to be created under this rule need not contain nor be contiguous with the feature to which its creation relates. Such lot and any balance area or residual lot shall however comply with the relevant provisions of Rule 702 (Development Suitability etc.).

TCDC Biodiversity Strategy

7.3 GOALS FOR THE THAMES-COROMANDEL DISTRICT COUNCIL'S CONTRIBUTION TO BIODIVERSITY

The Council aims to deliver this mission through achieving the following goals:

- GOAL 1: Determine the state of the Coromandel Peninsula's biodiversity.
- GOAL 2: Contribute to the maintenance and enhancement of the District's native biodiversity.
- GOAL 3: Promote the restoration of native species to the District.
- GOAL 4: Advocate for, collaborate with and support the wider community in the protection and enhancement of native biodiversity.
- GOAL 5: Provide ongoing monitoring of the Council's contribution to biodiversity management.

Appendix B: Data sources

(Source in brackets)

Development Covenants

QEII open space covenants (QEII National Trust) up to June 2009. Covenants that were created voluntarily were separated from those created through the District Plan.

TCDC covenants (Thames-Coromandel District Council) up to June 2009.

Other Protection

DoC - administered land (Department of Conservation). Protected areas from the Conservation Act (1987): Conservation Park, Marginal Strips, Private/Crown Land agreements, and Stewardship Areas; and from the Reserves Act (1977): Historic Reserves, Local Purpose Reserves, Nature Reserves, Recreation Reserves and Scenic Reserves. Some of these reserve types do not have biodiversity-related objectives, although they are often relatively small areas, and they can have biodiversity values, but an analysis of this was not undertaken. The Conservation Park forms most of the protective area managed by DoC.

TCDC Reserves (Thames-Coromandel District Council). Scenic Reserves only.

Nga Whenua Rahui (Department of Conservation). Kawenata within TCDC boundary.

Biodiversity data

TCDC Significant Natural Areas (Environment Waikato). The sites that were assessed as not being significant were deleted from the dataset for this analysis.

TCDC Ecological Natural Character (Thames-Coromandel District Council). Ecosystems mapped in this dataset: sand dunes, gravel and boulder beaches, coastal wetlands, coastal forest, rivers and inland wetlands. Coastal wetlands are outside the TCDC boundary.

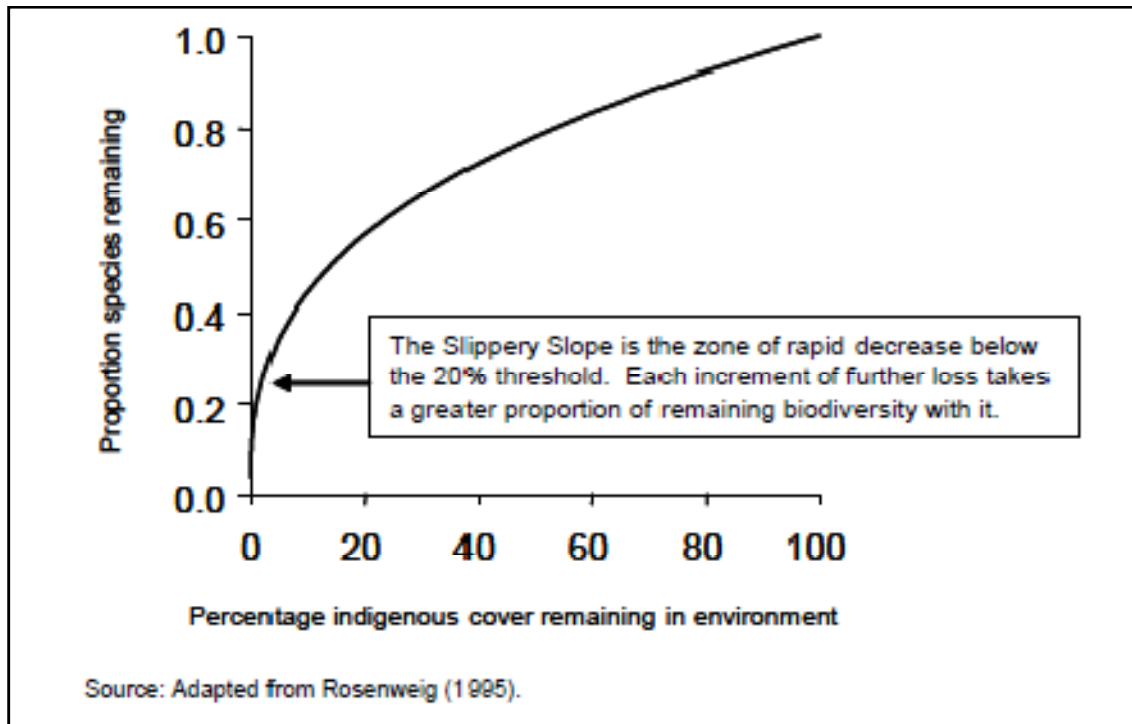
LCDB2 (Landcare Research). Provides land cover data from satellite analysis.

Biodiversity Vegetation (BIOVEG 2007) (Environment Waikato). Derived from LCDB2. The following indigenous vegetation types were selected from the dataset (this is the same dataset as used by the Natural Character analysis: Herbaceous Freshwater Vegetation, Indigenous Forest, Manuka and/or Kanuka, Broadleaved Indigenous Hardwoods, and Fernland.

Threatened Environments (Landcare Research). The six Threatened Environment categories are derived from LENZ Level IV data and LCDB2.

Appendix C: Species-area relationship

'Slippery Slope' graph (DoC/MfE 2007: p6).



Appendix D: National policy

New Zealand Biodiversity Strategy 2000

The New Zealand government ratified the International Convention on Biological Diversity in 1993, which was created in response to global biodiversity decline. This placed an international responsibility on the government to set national goals to conserve and sustainably use biodiversity. The New Zealand Biodiversity Strategy (NZBS) fulfils in part that responsibility by establishing a strategic framework for action, with a primary focus on indigenous biodiversity. The Minister of Conservation and Minister of Local Government have overall responsibility for implementing this strategy.

The NZBS has a broad Vision, with Principles and four Goals which have a 20 year timeframe (2000-2020). There are ten Themes each with a set of Desired Outcomes, and each Theme has an Action Plan with a set of Objectives and Actions to achieve this. Territorial authorities are identified as key players in many of the Actions. Theme 1 (Biodiversity on Land) and Theme 2 (Freshwater Biodiversity) are the most relevant to the legal protection of biodiversity by covenant at the district level, although the other Themes are important in their supporting roles.

All of the objectives in the NZBS are relevant to TCDC's overall management of biodiversity, but the key objectives in relation to legal protection of indigenous biodiversity are:

Objective 1.1 Protecting indigenous habitats and ecosystems

- a) Enhance the existing network of protected areas to secure a full range of remaining indigenous habitats and ecosystems.***
- b) Promote and encourage initiatives to protect, maintain and restore habitats and ecosystems that are important for indigenous biodiversity on land outside of protected areas.***

Relevant Actions of Objective 1.1 include identifying important indigenous habitats and ecosystems, and encouraging the protection of these through public and private legal mechanisms via a range of voluntary and economic incentives.

Objective 1.4 Terrestrial habitat restoration

Restore areas of degraded or scarce habitats and ecological processes that are priorities for indigenous biodiversity.

Relevant Actions of Objective 1.4 include the restoration of scarce and under-represented indigenous habitats ecosystems to a healthy functioning state.

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

The “Statement of National Priorities for Protecting Rare and Threatened Native Biodiversity on Private Land” (DoC/MfE 2007) was initiated through the New Zealand Biodiversity Strategy and provides territorial authorities with a useful basis from which to form biodiversity policy. There are four priorities:

National Priority 1:

To protect indigenous vegetation associated with land environments (defined by Land Environments of New Zealand at Level IV), that have 20% or less remaining in indigenous cover.

National Priority 2:

To protect indigenous vegetation associated with sand dunes and wetlands; ecosystem types that have become uncommon due to human activity.

National Priority 3:

To protect indigenous vegetation associated with ‘originally rare’ terrestrial ecosystem types not already covered by priorities 1 and 2.

National Priority 4:

To protect habitats of acutely and chronically threatened indigenous species.

Other relevant legislation and policy.

As a territorial authority TCDC is directed by a framework of legislation and national and regional policy objectives which promote biodiversity protection.

Resource Management Act 1991

Sets out the functions of regional and local authorities in administering the Act. This includes the development of regional and district plans, and the processing of resource consents.

New Zealand Coastal Policy Statement 2000

The only current mandatory national policy statement under the RMA. Regional and local authorities are required to give effect to this policy statement which has reference to the biodiversity of the coastal environment.

Hauraki Gulf Marine Park Act 2000

District plans are required to be consistent with this Act, which has a focus on biodiversity restoration.

QEII National Trust Act 1977

Sets out the functions of the Trust and enables open space covenants.

Conservation Act 1987

Establishes the Department of Conservation. Provides for National Parks and other types of reserves, private covenants and Nga Whenua Rahui kawenata.

Reserves Act 1977

Provides for protection of recreational, biodiversity, landscape or amenity values as reserves or private covenants.

Biosecurity Act 1993

Sets out national and regional pest management strategies, under which regional and local authorities can manage pests.

Local Government Act 2002

Establishes LTCCP's and consultation through the Community Outcomes process.

Local Government (Rating) Act 2002

The provisions recommend that local authorities provide rates relief on particularly land protected for conservation purposes.