

## Implementing NZCPS 2010<sup>1</sup> re Natural Character, Features and Landscapes

This country is largely defined by its coasts. Our islands have been variously sculpted by coastal processes through time. For the size of the land area, the coastline is very extensive.<sup>2</sup> All regions of Aotearoa New Zealand have substantial lengths of coastline. Therefore each regional (or unitary) council has to address and apply the NZCPS 2010 in the application and review of policies and plans, and in consideration of resource consent applications.

Most districts also have considerable lengths of coast. Few districts have no coast, but many of these have extensive lakes, 'inland seas' – e.g. Queenstown Lakes, Mackenzie, Taupo and Rotorua Districts – where application of the natural character protection methods can be guided by the NZCPS, as can ONFL<sup>3</sup> protection methods. For each of these Districts belong in a region having to apply the NZCPS to the coastal environments of other districts in their rohe, so a planning framework will be available to address natural character, natural features and natural landscapes.

Whilst NZCPS 2010 Policies 13 (natural character) and 15 (natural features and natural landscapes) are specifically for management of the coastal environment, their methods provide guidance for wider application for addressing natural character, natural landscapes and natural features across entire regions and districts (see at Appendix 1).

### A. What is Analysed & Evaluated

#### SEAWARD - SEASCAPE

Natural character, natural features and natural landscapes all involve both terrestrial and aquatic areas. They all address both the land and the sea. "Landscape" does not stop at the coastal edge but includes the CMA, the coastal marine area. Many existing landscape studies have not addressed the sea. NZCPS Policy 15 makes this requirement explicit by "including seascapes", and I interpret this as allowing for above-water as well as subsurface dimensions to be addressed. I have at times included sub-surface assessments in my natural character and landscape assessments.

#### LANDWARD - DEFINING THE COASTAL ENVIRONMENT

The extent of the coastal environment needs to be decided for application of the NZCPS. As physiographic studies have shown, the coastal environment inland of MHWS<sup>4</sup> varies in extent, varying between kilometres and some hundreds of metres in width.

The collection of islands that form Aotearoa NZ could, at the very broad scale, be considered as entirely coastal environment. However, for day to day implementation, a practical and pragmatic selection of scale or scales is necessary to contribute to sustainable management.

Experience around the country has shown that no simple spatial formula is appropriate for coastal environment delineation. For example a distance from MHWS, a contour, or, visibility from inshore waters, are each inadequate as the sole measure. However these measures may all contribute to pragmatic delineations in particular places, such as those lacking landform containment. The guidance from the report accompanying the 1994 NZCPS resulted in a rule of thumb that the coastal environment extends inland to the first ridgeline: the ridgeline that contains the coastal environment.

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<sup>1</sup> NZCPS = New Zealand Coastal Policy Statement 2010, which came into effect in December 2010

<sup>2</sup> e.g. New Zealand has a longer coastline than mainland USA.

<sup>3</sup> ONFL = outstanding natural features and landscapes (RMA s. 6 (b) )

<sup>4</sup> MHWS = Mean High Water Springs

Toward MHWS coastal processes are more evidently dominant. The watersheds to coastal catchments can be useful physical and perceptual inland delineators. Such catchment delineation should be accompanied by data on the distribution of coastal influences, particularly hydrological and ecological influences.

The coastal environment has sometimes been usefully addressed to include both a “*coastal dominance zone*” and a more inland “*coastal influence zone*”. Similarly, based on indicator plant species, a Coastal Zone and a Semi-Coastal Zone can be identified, mapped and modelled. The role of landform in defining the coastal environment is thus demonstrated. As delineated for Bay of Plenty (W. B. Shaw 1988), where there are not confining ridges the Coastal Zone extends 1 km inland and the Semi-Coastal Zone may extend some 20 km inland (Appendix 2 A - B)<sup>5</sup>.

To spatially define the coastal environment, it is useful to utilise land typing as the base mapping and modelling for identification of the extent of coastal influences, and on which to delineate ridgelines and catchments.

Note that “land” and “landscape” are addressed separately below, being overlapping but not equivalent resources.

## LANDSCAPE ASSESSMENT

“Landscape” is a large subset of the environment.<sup>6</sup> Coastal landscapes are a large subset of the coastal environment. Landscapes assist in defining the coastal environment. The coastal environment may be considered to spatially equate to the coastal landscape, containing varying areas of physical, perceptual and associative coastal influence. For “landscape” involves both natural and physical resources as well as factors relating to participants’ perceptions of the resources. Landscape is a link between individual (natural and physical) resources and the environment as a whole, as well as peoples’ attitudes to those resources as affected by social, economic, aesthetic and cultural conditions.

Landscape is understood to encompass dimensions of physical environment (ones we are generally able to describe and measure) as well as the ‘*social, economic, aesthetic and cultural conditions*’ through which we are conditioned to perceive and experience it.<sup>7</sup> As well as the visual expression of the various landscape processes identified, ‘*the human experience is a factor to take into account*’<sup>8</sup> and this is clarified in Policy 15.

Everyone’s landscape is somewhat different as the experience of a particular landscape depends on the characteristics of the observer.<sup>9</sup> People have different world views. People’s experience, education and role affect what they perceive, what they value, and, thus what they consider of greater or lesser appropriateness.<sup>10</sup>

The complexity does not mean that landscape is too hard to be addressed: there is substantial common ground within the profession, within communities, together with guidance from research,

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<sup>5</sup> A Framework for Monitoring Ecological Integrity in the Bay of Plenty Region. Lucas Associates. with Ian Lynn, Landcare Research & Wildland Consultants. 1998. page 12

<sup>6</sup> WESI v QLDC C180/99 paragraphs 45-6.

<sup>7</sup> Claire Findlay 2004 “*Protecting the Landscape*” Chapter 20 in Handbook of Environmental Law, RFBPS Wellington.

<sup>8</sup> *Campbell & Ors v Southland District Council* W114/94.

<sup>9</sup> Kenneth H. Craik. 1986. Psychological Reflections on Landscape. Ch. 4. “Landscape Meanings and Values” eds. E.C. Penning-Rowsell; D. Lowenthal. London: Allen & Unwin.

<sup>10</sup> Diane Lucas 1988 *Assessing Landscape Experience - techniques for the high country*. MLA research project, Lincoln College. page 30

practice and case law. Policy 15 (c) clarifies the more holistic approach needed to be taken to address landscapes.

## COMPREHENSIVE LANDSCAPE ANALYSIS

Recognising international trends and local professional guidance, Policy 15 (c) requires that natural features and natural landscapes of the coastal environment be identified and assessed by land typing, soil characterisation and landscape characterisation. That is, the **entire coastal environment is to be assessed**.

Previously many landscape studies have not involved landscape characterisation of the entire coastal environment, but have only addressed areas assessed to be outstanding. Now the entire coastal environment is to be analysed comprehensively – based on the ‘modified Pigeon Bay factors’ landscape assessment approach (Appendix 3). The factors are listed in Policy 15 (c) (i), (iii), (iv), (vi), (vii), (viii – with expanded explanation) and (ix) in addition to some other physical and perceptual factors re (ii) water, (v) vegetation, and (x) wild and scenic values. Together these factors clearly address **physical, perceptual and associative dimensions**.

No longer can there be merely visual effects assessments, for the visual is only part of the landscape. Nor can there be just identification of outstanding bits of landscapes. **For the first time in a statutory document with nationwide implications, the NZCPS formalises the basis for landscape assessment in terms of the comprehensiveness required in assessments for councils’ policies and plans, and for resource consents, within the coastal environment.**

## PHYSICAL CHARACTER

S.6(a) and the NZCPS require protection of natural “**character**”, and, “**characterisation**” is a method required for protecting natural features and landscapes as per Policy 15. Physical or tangible dimensions of “character” contribute to natural character, to natural features and to natural landscapes. The physical character can be described and measured as to its degree of naturalness. Quantitative and qualitative assessment of the physical naturalness of an area at any scale may be undertaken.

However, the physical character is only part of what constitutes natural character. It is also only part of what constitutes natural features and landscapes. Assessment methodologies addressing only the physical character in terms of the degree of naturalness are therefore useful, but alone they are not adequate. Alone, the physical or tangible dimensions of naturalness are not adequate for assessment of natural character, natural features or natural landscapes.

## PERCEPTUAL & ASSOCIATIVE CHARACTER

“**Natural character**” involves both the **physical character** of an area AND the **perception** of that character. “**Natural landscape**” involves the **physical character** of an area, the **perception** of that character AND the **associations** with that area. So too does “**natural feature**”. Whilst natural character, natural feature and natural landscape have all been addressed as matters of national importance for 20 years, NZCPS 2010 Policies 13 (2) and 15 (c) very usefully clarifies this distinction. Natural character is shown to address different but overlapping resources from those of natural features and natural landscapes. The **associative** dimensions of cultural, spiritual, historic and heritage are addressed within natural features and natural landscapes, but are not dimensions of natural character.

## B. How to Structure Analyses

### Characterisation

The need to address characterisation in evaluating natural 'character' is implicit for Policy 13. Also 'land characterisation' and 'landscape characterisation' are both explicitly referenced through Policy 15. Land typing is defined "*as the basis for land characterisation*". Landscape characterisation is also defined in the NZCPS Glossary to utilise the land typing base. Thus whilst land and landscape characterisation share common ground, **care is needed to distinguish land from landscape** in any analysis.

To assess the **state of natural character**, a bio-physical base framework is necessary that can address the coastal environment at broad scale or down to small sectors of the coast, and through time. A nested hierarchy is, therefore, appropriate that allows people to window down, or aggregate up, depending on the scale of interest. It is considered crucial that the approach is able to be applied, interpreted and monitored at the detail scale (Appendices 5 – 6).

The usefulness of the base should not be vulnerable to land use change, as has happened with methods based on land use and land cover. With changes such as afforestation or clearance, such methods failed as they became suddenly outdated. The geomorphological basis to land typing is thus more useful (Appendix 4).

Field tested in New Zealand for two decades, variously referred to as land types / land systems / ecosystems, the land typing method continues to demonstrate a means to provide a basis for nationally consistent land and landscape characterisation that is applicable at a range of scales and for a range of purposes, and is robust through time. To date various regions, districts, areas and locations have been addressed, but not the whole. The geomorphic-based timeless characterisation framework provides an appropriate base on which to layer current landcover information to enable both natural character and landscape assessments to be undertaken.

The land typing approach using mapping, description, charting and 3-D modelling enables planning at broad mapping scales to recognise localised values, as has been demonstrated in various studies. Thus even at the broad 1:250,000 mapping scale, because of identification of landform components through 3-D modelling and charting, very small land units can be recognised (Appendix 5 A – B).

### Landscape Characterisation

Use of a land type framework provides the basis, the first information layer, for more or less holistic landscape assessments to be undertaken. For various purposes and at various scales, catchments, landscape units, character and/or identity areas, they can be identified across and within the various landscape types. These can be based on landform, but can also respond to the overlay of vegetation and land use patterns.

Whilst a variety of landscape and visual assessments have been undertaken since the 1991 RMA enactment, a land typing basis would provide a framework onto which any of these can be overlain. Thus at a national or regional scale, volcanic country, for example, is easily distinguishable from sedimentary ranges through their particular natural and physical characteristics. At a district or local scale, the bedrock hills and headlands are easily distinguishable from the gravel plains and dunelands due to their differing natural and physical characteristics.

The landscape profession in NZ has repeatedly sought development of a national landscape characterisation approach. As used for the Landscape Map of England (Appendix 7), landscape characterisation undertaken to overlay on a land type framework for the length of the coastal

environment will assist in providing a consistent factual and language foundation in Aotearoa NZ. The scientifically delineated and described land types form the basis over which land cover, land use and association information is then draped to identify landscape character. Landscape characterisation based on land typing as now is required will assist in seeking to address the diversity of landscape and natural character that occurs through the coastal lands.

As defined in the NZPS 2010 Glossary, "*Landscape characterisation*": "*Utilises the land typing base and overlay with land cover, land use and associations affecting or affected by coastal processes.*" To achieve adequate management for all landscapes, it is essential that an overall landscape character framework be developed, and that would appropriately be underpinned by land typing

## CHARACTERISATION of LAND & SEA

Assessing the physical character of an area in terms of its naturalness must address not merely what exists but how it exists in space and time. That is, the **spatial patterning** and the temporal patterning, the **processes**, which occur, must be taken into account. This means that mere measuring of how much of certain types of landcover occur, is not adequate.

Land typing, as land systems, provides a method of making sense of natural patterns, processes and elements at all scales, from broad to detailed. It provides a timeless method to make sense of the patterning of land form, the patterning that underlies any and every place, wild, rural or urban. Land typing is not a mere mapping of types of country at a fixed scale, as has occurred in some assessments. It involves a spatial and temporal nested hierarchy analysis to address natural patterns, processes and elements.

From use in practice through the life of the RMA for addressing the basis to the character of lands and waters, land typing has now been usefully formalised as the basis for assessment in NZCPS Policy 15 (c). As defined in the NZCPS Glossary, Land typing "*describes land types which form the basis over which land cover, land use and association information are addressed as the basis for land characterisation.*" It appropriately provides a timeless base framework for implementation of both Policies 13 and 15. If not already available, a land type framework can first be undertaken for a region or district's coastal environment at a broad scale with windowing in where and as required to address attributes, values and issues.

**To assess the state of natural character**, a bio-physical base framework is necessary that can address the coastal environment at broad scale, from whole regions down to small sectors of the coast within a district. A nested hierarchy is therefore appropriate as it is considered crucial that the approach is able to be applied, interpreted and monitored at the detail scale.

Because of the fundamental importance of context, of iconic places, of people's perceptions, and of very site specific land-water inter-play, limiting an approach to aggregations of data at broader scales is not seen as adequate for addressing the natural character of the coast.

A substantial input of lithology, landform and landform component, and, exposure data, and, the influence of dominant offshore circulation patterns, is needed. As in our Akaroa Harbour study (2000), a coastal landform typology will be necessary. Again, their perceived naturalness and significance will depend on their context.

The land typing framework can thus underpin the methods to address Policy 13 (natural character) and Policy 15 (natural features and natural landscapes) as described in the previous section.

To view examples of coastal land typing at various scales, see excerpts at <http://lucas-associates.co.nz/resources/coastal-land-types/coastal-land-types-of-new-zealand/>

## C. How to Evaluate the Resources

In accordance with practice and case law, and now shown by the new policies, natural character analysis must be in relation to the context. This is both a bio-physical and a socio-cultural context. Whilst the biota and substrate of a site may be assessed somewhat in isolation in terms of identifying what exists, and its condition, the relationship of a site to surrounding lands, waters and peoples must be part of any assessment. Therefore, an objective assessment scale, for measuring the degree of naturalness on any coast, is not achievable.

### PERCEPTION STUDIES

To address how communities value natural character, natural landscapes and natural features, it is not adequate to undertake preference testing using placeless photos. To address perception is to address a place so that what is known and understood of the place is factored in. The research by Swaffield and Fairweather, with Q-sort testing of photographs by the public, has frequently been misused in coastal landscape and natural character assessments.

### PERCEIVED NATURALNESS

As natural character involves both the physical character and the perception of that character, the degree of naturalness is context dependent. How the physical character is perceived depends on where it is. Therefore there can be no formulaic measurement of natural character as a consistent nationwide approach.

Prior to this policy, to address the “natural” dimensions for consideration under section 6(a) or (b), “naturalness” has been identified to be expressed through:

- relatively unmodified and legible physical landform and relief;
  - vegetation (especially native vegetation) and other ecological patterns;
  - the presence and extent of water (rivers, sea); and,
  - the landscape being uncluttered by structures and/or obvious human influence.
- (Long Bay Okura Great Park Society v North Shore City Council A078/2008 para.135)*

This practitioner and case law interpretation and the new policy allow for recognition that there is a diversity of world views in our society. The naturalness of the coast for various people differs markedly depending on their experience, knowledge, association and role. Any monitoring programme that purports to monitor “natural character” has to recognise the varied perceptions. For assessing naturalness in terms of S.6(a), 4 broad groups of values form key triggers for determining the degree of naturalness:

- historic natural - evidence for underlying natural indigenous values, and their sustainability.
- ecosystem processes - involving recovery of indigenous biodiversity.
- status quo - pastoral, tidy and productive vegetation, picturesque values.
- unobtrusive (or historic) development - replicating and subordinate to natural patterns or elements.

From the direction provided in the NZCPS, these should be recognised hierarchically. That is, that remnant nature has greatest protection, and the significance of the remnant be recognised, particularly with regard to representativeness, rarity and community significance. Thus a natural science assessment alone is not adequate.

Many people will respond to more than one of the value sets noted above. Knowledge will often affect their perception. Knowledge of the scientific significance of a remnant, or the significance of processes in what may superficially appear rather scruffy, will often change people from a negative to a positive view. Thus I consider increasing knowledge of natural values to be a crucial mechanism in achieving the protection required by the act and by policy. Therefore it is very important that techniques to identify the state and change in natural character are people friendly, not in technical, numeric, coded or other less than accessible language.

## THRESHOLDS

RMA s.6a sets no threshold. The natural character of the coastal environment is to be preserved. However in studies such as those by Stephen Brown for Whangarei and Coromandel (2008), “outstanding” and “significant or high” “natural character areas” have been assessed in recent years, and such recognition was recommended for the NZCPS. He suggested “Outstanding Natural Character Areas” as those parts that ‘tick most of the criteria boxes’ being:

- *Abiotic factors (essentially landform);*
- *Vegetation type (native / endemic to exotic)*
- *Vegetation cover & patterns*
- *Land Uses / Activities: Buildings & Structures (their presence / absence)*
- *Seascapes & Water Areas, and,*
- *Natural processes.*

*Plus “more experiential values, related to the perception of the likes of ‘wildness’, ‘wilderness’ and ‘remoteness’.*

In response the NZCPS now requires areas of “**high** natural character” be identified, and adverse effects on areas of “**outstanding** natural character” be avoided. (Policy 13 (1) (a)). Stephen Brown had sought a High Natural Character Area threshold, where the boxes are ticked, which are not pristine but “*still have value*”. He recognised that such values are often about context, in adjoining areas of coastal settlement or other modification. That is both the physical and the perceptual dimensions of naturalness must both be addressed.

Policy 13 (1) (c) requires councils to identify “*at least areas of high natural character*” by mapping or otherwise. That is, rather than a full mapping exercise, the types of natural character could be identified for a district or region that would be considered high natural character in terms of their physical character. The natural character value could thus be usefully modelled in part. Land typing provides a useful model framework for addressing the physical dimensions of naturalness, which would be efficient for addressing extensive wild and rural coastlines. However to address the perceptual aspects of naturalness would also require place-based assessments.

Due to the context-dependence of the degree of natural character, areas of high naturalness may have low indigenoussness. Practice has shown that extensive pasture may have “*high natural character*” in some coastal environments but moderate or low natural character in others. Thus no formulaic approach is appropriate for application across NZ. A nationally-set fixed scale for addressing perceived naturalness would not be appropriate.

As shown in ONL studies, it is not necessary to “tick” or to be exceptional in each criterion to reach the threshold for outstanding natural character, outstanding natural features or landscapes. To have high values in one or more factors may trip the outstanding threshold.

Also, an area need not be publicly visible to have high or outstanding natural character, or, to be an ONFL.

## SCALE

Assessing natural character as required by Policy 13 (c) and natural features and landscapes as required by Policy 15 (c) can be undertaken at a range of scales. As has previously been recognised by practitioners and variously supported in case law, some grand coastal landforms, such as the whole of Banks Peninsula, of Marlborough Sounds, of Golden Bay and of Coromandel Peninsula, have each been identified as an outstanding natural landscape or feature (ONFL) in total. Within each, assessments have been undertaken at a finer scale that identify at a local scale ONFL within these coastal landforms.

As is recognised in other multi-scale assessments, such as for ecology and heritage, if a landscape is outstanding at any scale, then it is a matter of national importance. Outstandingness is recognised at all scales. A range of scales is also appropriate in considering the thresholds set in Policy 15 (a) regarding avoiding adverse effects on outstanding natural features and outstanding natural landscapes. In the Boffa Miskell Banks Peninsula Study (2007), a Banks Peninsula-wide assessment was undertaken, plus a catchment assessment and a local feature assessment.

Also, a range of scales is appropriate for consideration of Policy 13 (1) (a) for avoiding adverse effects on areas with outstanding natural character. It is not adequate to assess coastal landscapes on a catchment basis alone, as these under-value the promontories that define the perceptual and associative values. The headlands and ridges miss being addressed as local features in their own right if they are addressed only as the watershed to several catchments.

## D. Addressing Adverse Effects

Effects on the natural character of the coastal environment can result from activities within or inland of the coastal environment. These effects may be on the physical character, such as through changes in the quality or quantity of water being discharged into the coastal environment. Or the effect may be on the perception of the naturalness through activities beyond – such as large structures or works inland that are experienced from within or in association with the coast so as to change the perception of the naturalness of that coastal environment (Appendix 8).

NZCPS 2010 formalises approaches developed in professional practice over the last two decades, which have been variously endorsed in case law, and usefully extends from these to assist assessment and implementation. Planners, councils, landscape architects and others previously sought clarification of appropriate methodologies to minimise wasted effort and enable consistency in assessment and implementation to apply s.6 (a) and s.6 (b) as matters of national importance. This has now been provided by the NZCPS. Whilst the NZCPS addresses only the coastal environment, the guidance provided in Policies 13 and 15 regarding assessing natural character, natural features and landscapes form a basis for such assessment throughout Aotearoa New Zealand.

## Di Lucas

Registered FNZILA landscape architect



**Policy 13. Preservation of Natural Character**

(1) *To preserve the natural character of the coastal environment and to protect it from inappropriate subdivision, use and development:*

- (a) *avoid adverse effects of activities on natural character in areas of the coastal environment with outstanding natural character<sup>11</sup>; and*
- (b) *avoid significant adverse effects and avoid, remedy or mitigate other adverse effects of activities on natural character in all other areas of the coastal environment;*

*including by:*

- (c) *assessing the natural character of the coastal environment of the region or district, by mapping or otherwise identifying at least areas of high natural; character; and*
- (d) *Ensuring that regional policy statements, and plans, identify areas where preserving natural character requires objectives, policies and rules, and include those provisions.*

(2) *Recognise that natural character is not the same as natural features and landscapes or amenity values and may include matters such as:*

- (a) *natural elements, processes and patterns;*
- (b) *biophysical, ecological, geological and geomorphological aspects;*
- (c) *natural landforms such as headlands, peninsulas, cliffs, dunes, wetlands, reefs, freshwater springs and surf breaks;*
- (d) *the natural movement of water and sediment;*
- (e) *the natural darkness of the night sky;*
- (f) *places or areas that are wild or scenic;*
- (g) *a range of natural character from pristine to modified; and*
- (h) *experiential attributes, including the sounds and smell of the sea; and their context or setting.*

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<sup>11</sup> outstanding natural character = ONC

**Policy 15. Natural features and natural landscapes**

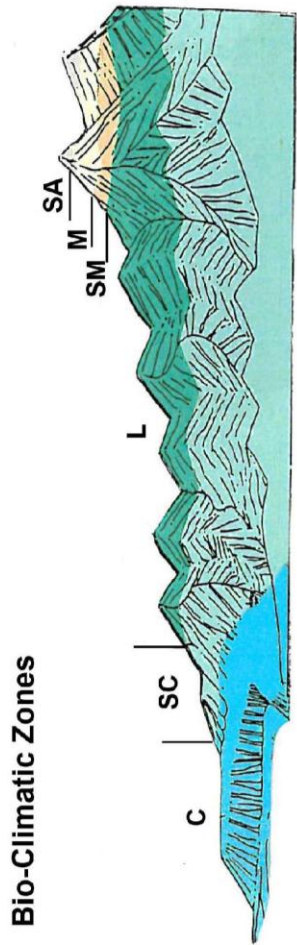
*To protect the natural features and natural landscapes (including seascapes) of the coastal environment from inappropriate subdivision, use, and development:*

- a. avoid adverse effects of activities on outstanding natural features and outstanding natural landscapes in the coastal environment; and*
- b. avoid significant adverse effects and avoid, remedy, or mitigate other adverse effects of activities on other natural features and natural landscapes in the coastal environment;*

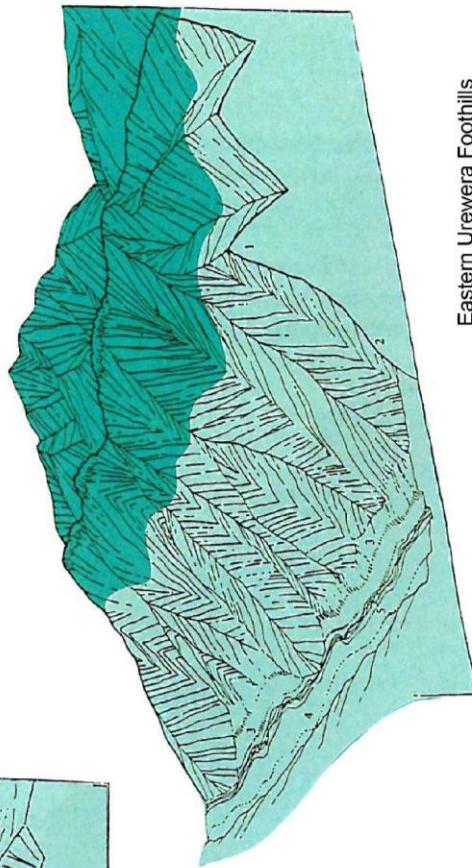
*including by:*

- c. identifying and assessing the natural features and natural landscapes of the coastal environment of the region or district, at minimum by land typing, soil characterisation and landscape characterisation and having regard to:
  - i. natural science factors, including geological, topographical, ecological and dynamic components;*
  - ii. the presence of water including in seas, lakes, rivers and streams;*
  - iii. legibility or expressiveness – how obviously the feature or landscape demonstrates its formative processes;*
  - iv. aesthetic values including memorability and naturalness;*
  - v. vegetation (native and exotic);*
  - vi. transient values, including presence of wildlife or other values at certain times of the day or year;*
  - vii. whether the values are shared and recognised;*
  - viii. cultural and spiritual values for tangata whenua, identified by working, as far as practicable, in accordance with tikanga Māori; including their expression as cultural landscapes and features;*
  - ix. historical and heritage associations; and*
  - x. wild or scenic value;**
- d. ensuring that regional policy statements, and plans, map or otherwise identify areas where protection of natural features and natural landscapes requires objectives, policies and rules; and*
- e. including the objectives, policies and rules required b (d) in plans.*

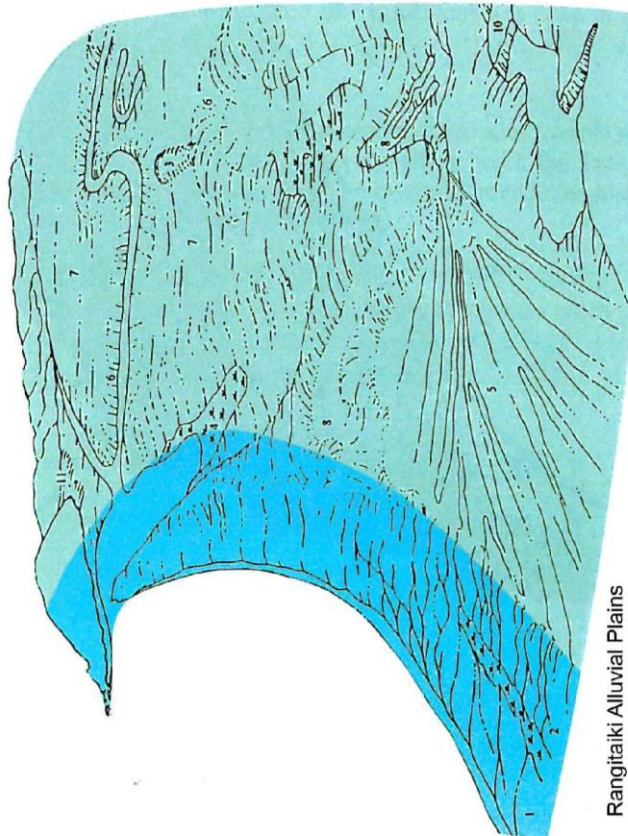
- 
 Coastal (C)
- 
 Semi-Coastal (SC)
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 Lowland (L)
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 Sub-montane (SM)
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 Montane (M)
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 Sub-alpine (SA)



Indicative Bio-climatic Zones

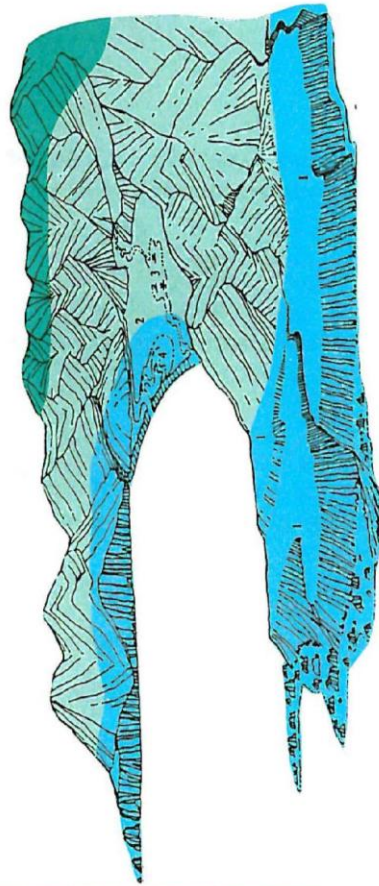


Eastern Urewera Foothills  
Land System/Ecosystem

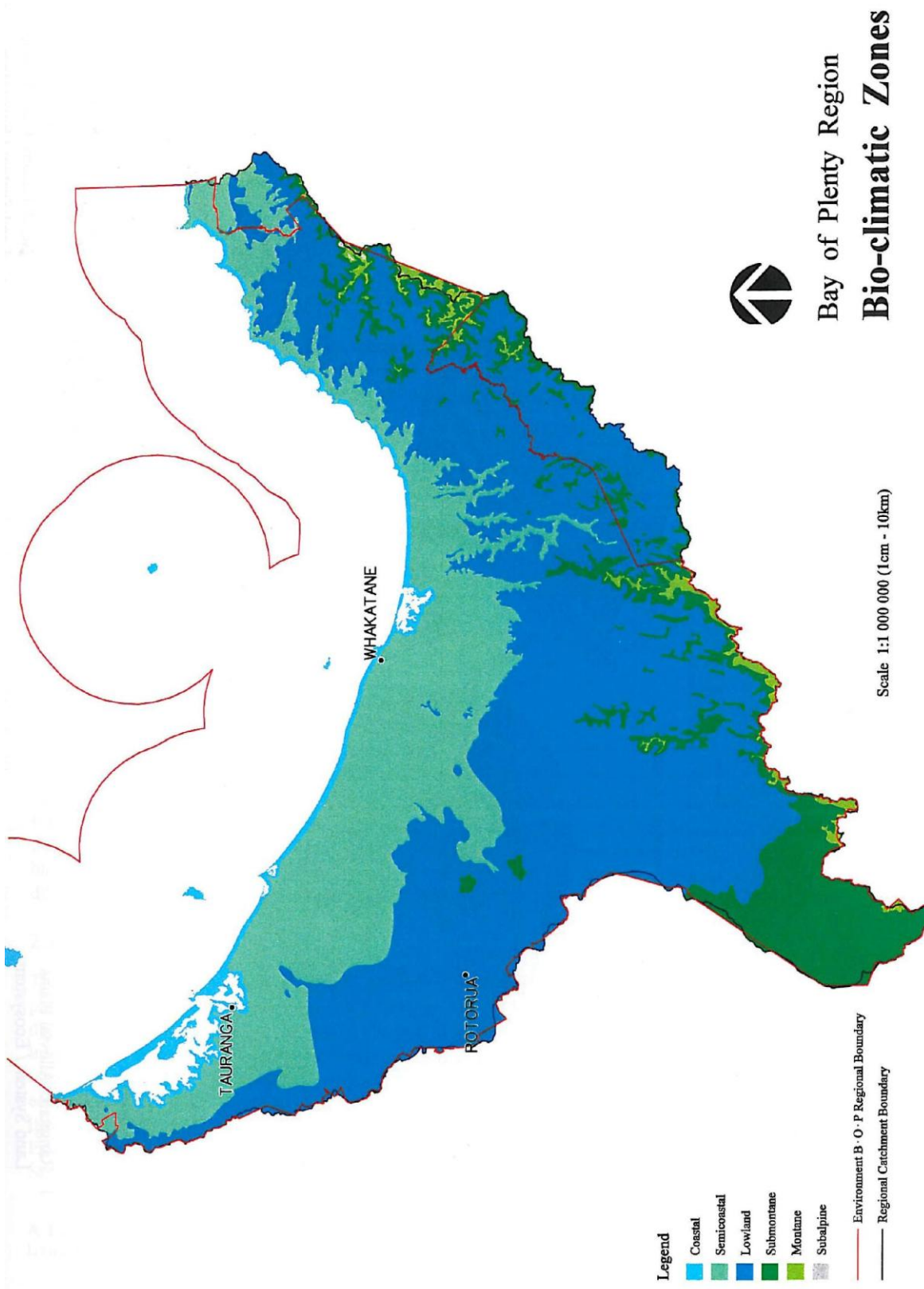


Rangitāiki Alluvial Plains  
Land System/Ecosystem

Source: Lucas Associates with Ian Lynn, Landcare Research & Wildland Consultants 1998  
*A Framework for Monitoring Ecological Integrity in the Bay of Plenty Region*



North Eastern Coastal Strip  
Land System/Ecosystem



Source: Lucas Associates with Ian Lynn, Landcare Research & Wildland Consultants 1998  
A Framework for Monitoring Ecological Integrity in the Bay of Plenty Region

### APPENDIX 3 'PIGEON BAY FACTOR' ORIGIN

Just two years after the enactment of the RMA, Boffa Miskell and Lucas Associates together developed a suite of landscape assessment criteria for interpretation of section 6(b), and undertook a rapid assessment of the Canterbury Region in 1993 to identify regionally outstanding and significant landscapes. I then interpreted these criteria for a district scale assessment in 1995. The landscape criteria developed were:

*In the context of the Region/District, for identification as "outstanding", a landscape would need to have exceptional characteristics or values with regard to at least one of these criteria:*

*NATURAL SCIENCE - Natural features and landscapes of at least region/district importance for reasons of the rarity or representativeness of their particular landform and landcover. A natural feature may be a landscape feature or an element/component of the landscape. Under s. 6(b), geology and soils are elements of particular focus, as flora and fauna values are also considered elsewhere in the Act.*

*LEGIBILITY - The landscape (or natural feature) of region/district significance should clearly express past natural and/or cultural processes. Some may have strong historical connotations and a distinctive sense of place.*

*TRANSIENT - The natural feature or landscape of regional/district significance providing predictable or regular experience of dimensions of nature other than landform or landcover e.g. concentrations of wildlife.*

*AESTHETIC - Landscapes (and natural features where applicable) that are of high aesthetic value determined on how memorable they are, on their naturalness, on their composition (coherence) and on other important aesthetic factors.*

*SHARED & RECOGNISED - There should be a substantial measure of agreement between professional and public opinion as to the value of natural features and landscapes, for example as reflected through writings and paintings or through favourite locations to cite or visit. The presence of existing protected sites is also likely to reflect shared and recognised values.*

*TANGATA WHENUA - The natural feature or landscape identified as having particular regional/district importance to tangata whenua.*

I quoted these criteria in my landscape assessment for an Environment Court hearing.<sup>12</sup> In that decision the Court referred to them as the 'Pigeon Bay criteria' and introduced them with slight modification to the Queenstown Lakes District Plan.<sup>13</sup> Historic associations were added. Also, ecological factors were added to the natural science criterion, as 'double counting' of values under section 6(b) and (c) was identified as not being an issue. The Court stated that "*this list is not frozen – it may be improved with further use and understanding*".

With minor modification, this list was included in Policy 32 of the Proposed NZCPS. A considerable number of Council, power company, professional and NGO submissions supported this list of landscape criteria. These assessment factors based on our 1993 study, widely (but not totally) supported in practice and decisions since, are now formalised in NZCPS 2010 Policy 15.

<sup>12</sup> *Pigeon Bay Aquaculture v. Canterbury Regional Council* C32/99.

<sup>13</sup> *WESI v QLDC* C180/99 paragraph 80

## APPENDIX 3 Land Typing<sup>14</sup>

### Land Typing References:

Ian Lynn. 1993. *Land Types of the Canterbury Region*. Landcare Research Report LC9394/2. Ch.2 in Canterbury Regional Landscape Study. Vol. 2. Boffa Miskell & Lucas Associates.

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See graphic examples at a range of scales at <http://www.lucas-associates.co.nz/resources/>

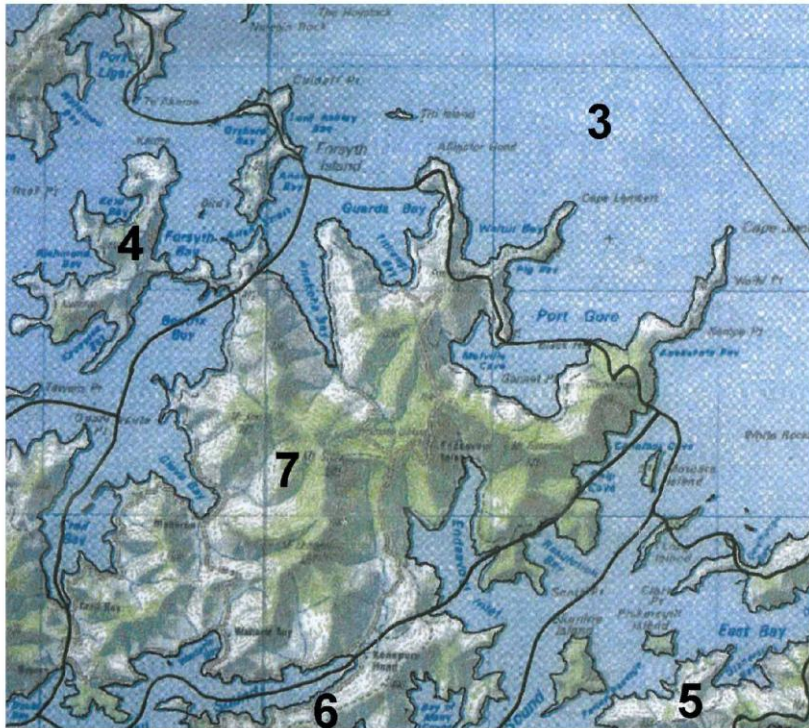
& <http://lucas-associates.co.nz/resources/coastal-land-types/coastal-land-types-of-new-zealand/>

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<sup>14</sup> NZCPS 2010 Glossary page 27. *Land Typing – Describes land types which form the basis over which land cover, land use and association information are addressed as the basis for land characterisation*.

APPENDIX 5 A

Marlborough Sounds . Land Types – mapped in 1997

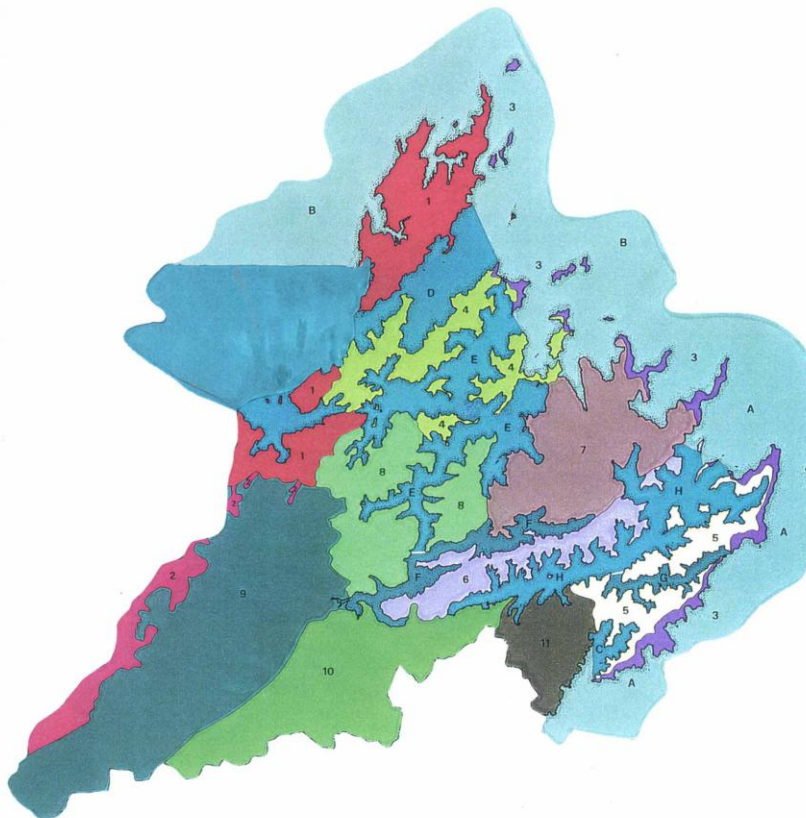


Excerpt - Marlborough Sounds Landtypes

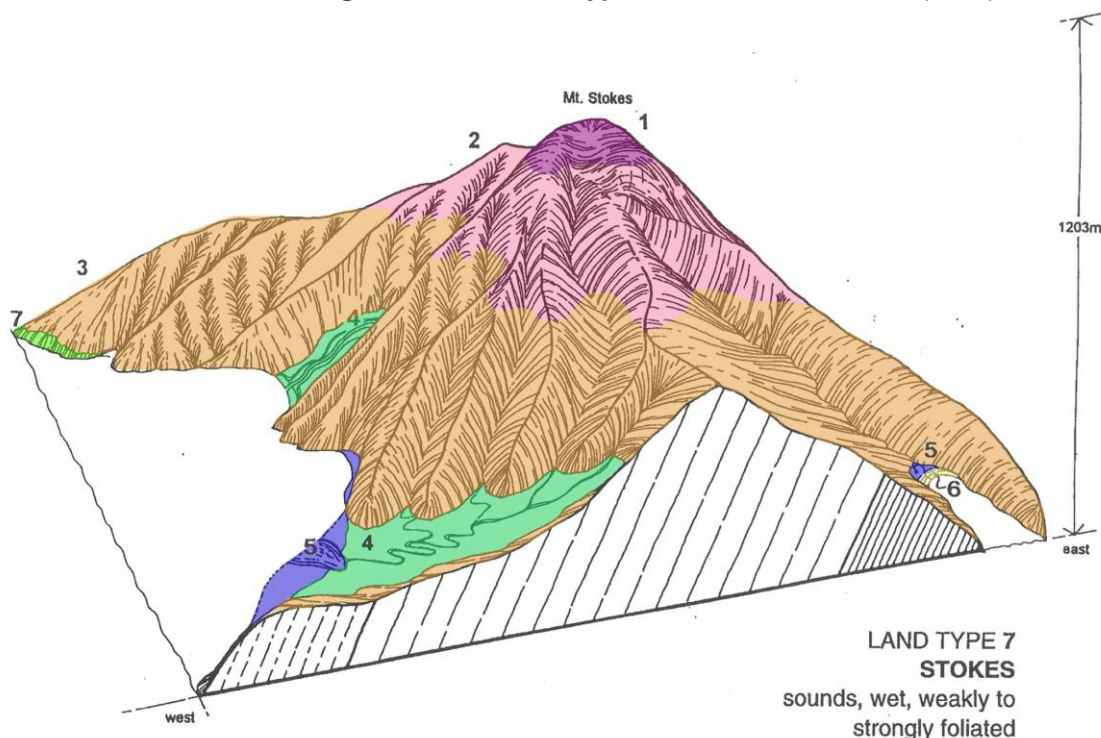
Source - Ian Lynn , Landcare Research, 1997

Key

- 3 Cook Strait
- 7 Stokes



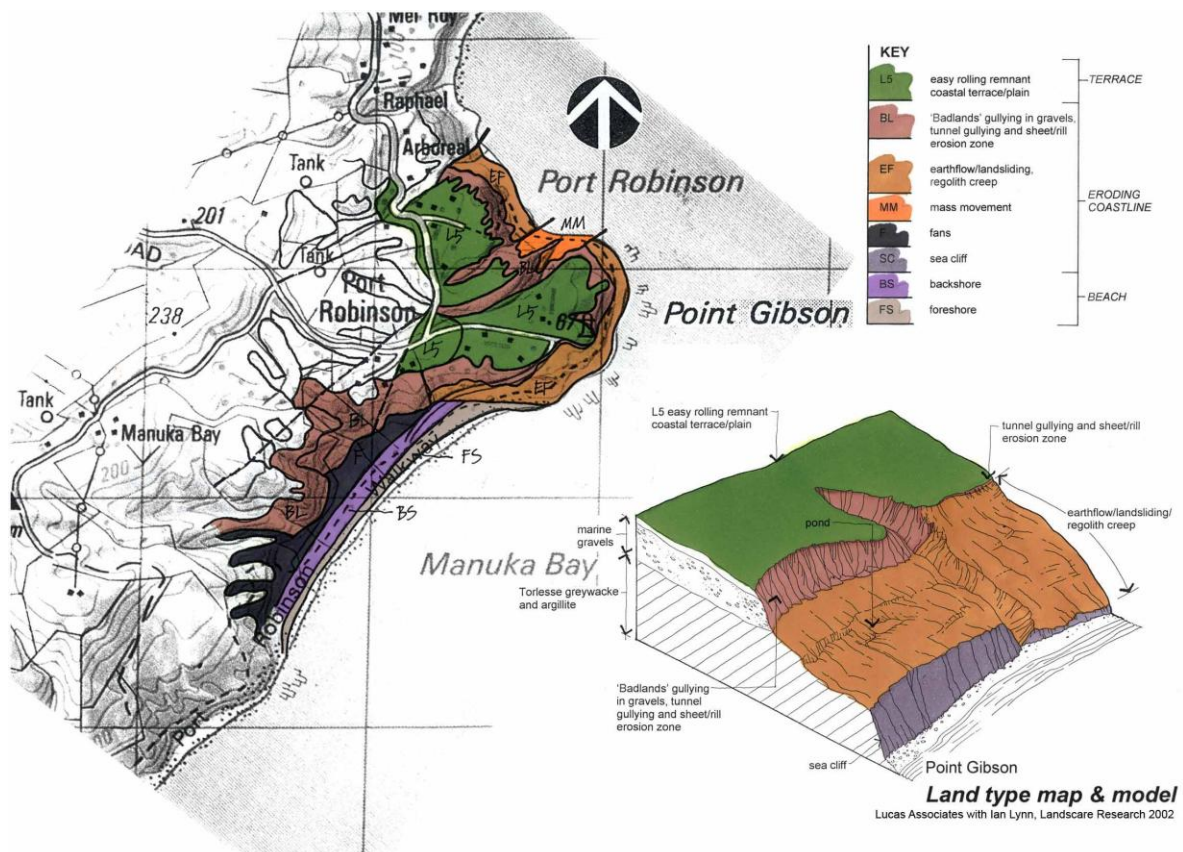
APPENDIX 5 B Marlborough Sounds . Land Types – Modelled & Charted (1997)



landform component	geological formation	elevation m	remnant native vegetation	present land use	potential land use	land use impacts
1. strongly rolling to moderately steep broad mountain summits and upland ridge crests	siliceous, foliated t.z. 11A to t.z. 111A schist of the Marlborough Schist	1000 - 1203	silver beech, tussock grasslands, herbfields, and cushion bog above 1100 m	conservation land, protected native forest, recreation	conservation land, recreation	recreation, tracking, buildings etc.
2. steep to very steep upper hill and mountain slopes	siliceous, foliated t.z. 11A to t.z. 111A schist of the Marlborough Schist	600-1100	red beech-kāmahi forest, with southern rātā and Hall's tōtara, silver beech above 700 m	conservation land, protected native forest, semi extensive grazing, recreation	conservation land, extensive grazing, recreation	recreation, tracking, buildings etc.
3. moderately steep to steep lower hill slopes	siliceous, foliated t.z. 11A to t.z. 111A schist of the Marlborough Schist	0-600	hard beech-kāmahi forest, with some rimu, tawa, hīnau, and kohekohe; reverted scrubland with mānuka - kānuka scrub and bracken fern with regenerating broadleaves	conservation land, semi extensive grazing, exotic forestry, recreation	conservation land, semi intensive grazing, exotic forestry, recreation	increase in exotic pasture and weed species, exotic forest, tracking, fencing, recreation
4. undulating terraces, floodplains, fans and associated wetlands and deltas [P27/980050, 970098]	recent alluvium from predominantly schistose rocks	0-20	podocarp-broadleaved forest, kahikatea, rimu, mataī, miro	intensive grazing	intensive grazing, feed cropping, intensive cropping	intensified land use, drainage, windbreaks, subdivision
5. minor prograding inlet heads and fans, eg [P26/980110, 030165]	recent alluvium from predominantly schistose rocks, minor swamp deposits	0-20	podocarp-broadleaved forest, kahikatea, rimu, mataī, miro	intensive grazing	intensive grazing, feed cropping, intensive cropping	intensified land use, drainage, windbreaks, subdivision
6. beach ridges and dunes, eg [P26/056202]	recent marine sand and gravel	0-20	Spinifex, dune slack, rushes, sedges, low scrub	extensive grazing, conservation land, wildlife habitat	extensive grazing, conservation land, wildlife habitat	loss of native and increase in exotic species, recreational impacts
7. minor steep to precipitous eroding sea cliffs	siliceous, foliated t.z. 11A to t.z. 111A schist of the Marlborough Schist	0-100	sparse shrub-herbfield, flax	conservation land, protected native forest-scrub, wildlife habitat	conservation land, protected native forest-scrub, wildlife habitat	habitat destruction, fire, wild animal grazing - goats



Appendix 6 – Hurunui District, Canterbury - Land Types – mapped & modelled (1993; 2003)



## APPENDIX 7

When UK landscape architecture Professor Carys Swanwick was on sabbatical at Lincoln University, she and Professor Swaffield issued an opinion piece, which included the following excerpt:

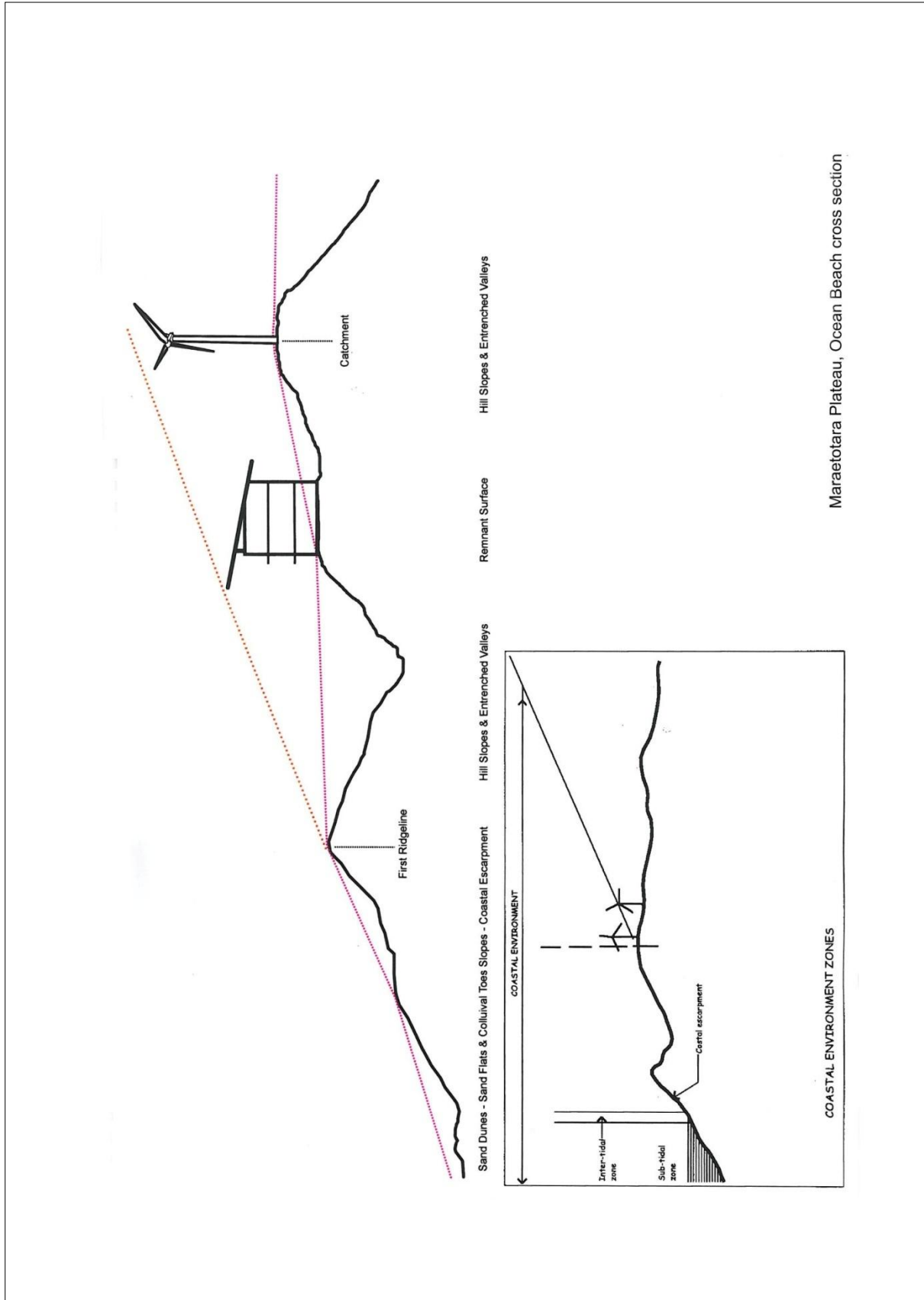
*“The UK has historically used a similar approach to current practice in NZ, focusing upon identification and designation of ‘outstanding’ or ‘special’ landscapes. In recent years however there has been a significant shift towards understanding the distinctive character of all landscapes, with emphasis on what makes them different from each other, rather than better or worse, or more or less important. This allows planning strategies to be devised that address the needs and opportunities of different landscapes, from conservation of valued features in some areas, to restoration of landscape systems or even creating new landscape structures in other areas.*

*In the UK, central government advice documents have established a more consistent approach, and there is now an accepted framework of character assessment. Although there is still debate about what strategies are appropriate in different areas, conflicts over basic principles have largely disappeared.*

*While the circumstances are inevitably different, New Zealand could also benefit from an approach that pays more attention to understanding what makes all of our landscapes distinctive, rather than just attempting to ‘red line’ certain areas. The results of these types of ‘character’ assessment could inform councils, communities and landowners about how landscapes are changing and where development would best be undertaken, what factors it should take into account, as well as indicating where development will be less appropriate. This is hardly revolutionary and indeed some consultants are already moving to such an approach. But a much broader consensus is needed among communities, landowners, council planners and landscape specialists about possible ways forward, if we are to move beyond the current atmosphere of conflict.”*

‘Recognising and managing landscape values’, Simon Swaffield and Carys Swanwick, Lincoln University, 26 May 2006

APPENDIX 8 Effects on the Coastal Environment



Maraetotara Plateau, Ocean Beach cross section