







Acknowledgments

This Coastal Environment Study Report has been prepared by Isthmus Group Ltd for the Kapiti Coast District Council, October 2012.

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Disclaimers

This purpose of the coastal environment study is to provide a professional assessment of the Kapiti Coast's coastal environment and areas of high natural character under Part II of the Resource Management Act 1991 (RMA) and the New Zealand Coastal Policy Statement 2010. The assessment will be used to inform the District Plan review and other strategic coastal environment initiatives.

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Overview

The Coastal Environment Study provides a professional assessment of the inland extent of the Kapiti Coast District's coastal environment and associated areas of high natural character under Part II of the Resource Management Act 1991 (RMA) and the New Zealand Coastal Policy Statement 2010 (NZCPS).

Field work and relevant digital and printed data were used to identify physical, perceptual and associative factors in this assessment; as is consistent with the matters to be considered in coastal environment assessment in the NZCPS, the Greater Wellington proposed Regional Policy Statement May 2010 (RPS) and Environment Court and other best practice guidance.

The assessment identifies the inland boundary of the coastal environment at a varying distance from the coastal edge encompassing areas of tidal wash, coastal dominance and coastal influence including the Paekakariki, Mataihuka, Nikau and Otaihanga and Hemi Matenga escarpments. Sixteen areas of high natural character are identified, predominantly along the marine and inland extent of the coastal environment including:

- Kapiti Island/s
- Mainland, beach areas and foredunes where vehicle and pedestrian access is limited;
- Stream and river mouths that are part of the Open Space or Conservation Zone or are in less populated areas;
- Unmodified coastal dunes in the regional park and less populated areas;
- Substantive areas of wetland and coastal forest that have been retained on private land or by a community trust; and
- Areas along the coastal escarpments where a coherent pattern of indigenous vegetation can be identified

This document forms part of a series of landscape studies undertaken during the first half of 2011¹ and provides the basis for the Coastal Environment recommendations included in the Planning Approach Recommendation Report² that follows on from these studies.

The findings of this study, along with and the Planning Approach Recommendation Report, will be used to inform the District Plan review and to assist in the development of other planning initiatives that support Council's wider role in the best practice management of natural character in the coastal environment.

¹ Isthmus (2011, Final Draft) Kapiti Coast District Landscape Study and Kapiti Coast District Rural Subdivision Policy Area Review.

² Isthmus (2011, Final Draft) Kapiti Coast District Planning Approach Recommendation Report.

Introduction

Purpose

This purpose of the Coastal Environment Study is to provide a professional assessment of the inland boundary of the Kapiti Coast District's coastal environment and associated areas of high natural character under Part II of the RMA and the NZCPS. The assessment will be used to inform the District Plan review and the development of other planning initiatives that support Council's wider role in the best practice management of natural character in the coastal environment.

This study has been carried out in parallel to a district wide landscape assessment of outstanding natural features and landscapes and significant amenity features and landscapes and a review of the rural subdivision policy areas³. A further report⁴ provides planning approach recommendations that relate to all three landscape studies.

Assessment Context

The Resource Management Act (1991)

Coastal environment assessments are carried out to assist Councils in carrying out their responsibilities under the RMA.

Methods used to identify the extent of the coastal environment and areas of high natural character in a district assist Council's to address Section 6a) of the RMA and give effect to the New Zealand Coastal Policy Statement (2010) and Greater Wellington's Proposed Regional Policy Statement (RPS).

RMA Section 6a)

"In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall recognise and provide for the following matters of national importance:

- (a) the preservation of the natural character of the coastal environment (including the coastal marine area), wetlands, and lakes and rivers and their margins, and the protection of them from inappropriate subdivision, use, and development:"
- New Zealand Coastal Policy Statement (2010)

Policy 13: Preservation of natural character in the coastal environment and to protect it from inappropriate subdivision, use and development:

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;

³ Isthmus (2011, Final Draft) Kapiti Coast District Landscape Study and Kapiti Coast District Rural Subdivision Policy Area Review

⁴ Isthmus (2011, Final Draft) Kapiti Coast District Landscape Planning Approaches: Recommendation Report

Greater Wellington Regional Council proposed Regional Policy Statement (May, 2010).

Policy 4: Identifying the landward extent of the coastal environment-district plans.

Policy 34: Preserving the natural character of the coastal environment-consideration.

The District

The Kapiti Coast District Landscape Study⁵ provides a detailed description of the natural and cultural elements, patterns and processes that underpin and continue to shape the landscapes of the Kapiti Coast including the coastal environment. The Character Assessment in that study identified areas in the District with distinct patterns of landform, landcover and landuse from which physical, perceptual and associative values are identified. A brief overview of the natural and cultural patterns described in the Landscape Study is included here, to provide a summary of the physical context that is relevant to the assessment of the coastal environment and areas of high natural character.

Kapiti Coast District covers some 731,000 ha, supports a population of 46,200 and is one of the fastest growing districts in New Zealand (2006 Census). With over 40km of mainland and island coastline, and the majority of its residents living in the lowland areas to the west of the Tararua and Akatarawa Ranges, coastal processes have had a significant impact on patterns of landform, landcover and landuse in the District (see Figure 1). On Kapiti Island and the nearby islets, coastal influences are a strong determinant of existing patterns of flora and fauna and unique landforms. On the mainland, coastal processes have resulted in an extensive dune land sequence and, along with the alluvial plains, comprise the predominant landforms of the lowland areas. Unique patterns of hydrology, soils and vegetation can also be traced back to this coastal geomorphology. Historically, much of the lowland areas would have been forested and featured an extensive network of lakes, lakelets and peat based swamps between the dunes. Coastal influences have also had a significant effect on the District's climate, with the predominant nor-westerly extending the effects of strong salt laden winds on vegetation patterns and microclimates at a considerable distance from the coast.

Landuse and settlement patterns across the District provide further cues as to the nature and extent of coastal influences that are relevant to this assessment. Settlement patterns on Kapiti Island followed the migration of Ngati Toa into the District and reflect both its strategic location 5km off the mainland, and access to coastal resources. Kapiti island's setting is also fundamental to its current role as a Department of Conservation (DoC) Nature Reserve, and one of the most important bird recovery sites in New Zealand. On the mainland, past and present settlement patterns have taken advantage of the easy terrain and abundant resources linked to the coast. Pa sites, established by Muaupoko and then Ngati Toa, Raukawa and Ati Awa, were typically located close to stream mouths and rivers, providing easy access to both land and sea resources. European settlements were closely connected to the coast, linked to whaling, early productive landuse and coastal transportation routes. The main settlements of Paraparaumu, Waikanae and Otaki were set out, initially in close proximity to the river and beach transportation routes and then moved inland to span the main rail and road network. Today, the main settlements of Paraparaumu and Waikanae are confined by the backdrop of the Mataihuka, Nikau/Otaihanga and Hemi Matenga escarpments and mark the edge of the coastal plain. Beach side settlements such as Raumati and Waikanae Beach are now popular holiday destinations and places of permanent residence. Paekakariki, an important node in the rail network is located along the edge

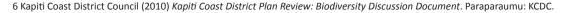
⁵ Isthmus (2011, Final Draft) Kapiti Coast District Landscape Study.

of the coastal escarpment. In addition, where most residents live in close proximity to the coast and the District is less than an hours drive from Wellington, the beach, foredune and river mouth areas of the lowland have become an important recreation and tourism resource. Living close to the coast also presents particular challenges; with current patterns of coastal erosion impacting most significantly on areas to the south of Paraparaumu leading to the construction of sea walls and other protective measures. Concerns about climate change and sea level rise along with flood hazards add a further dynamic to the management of coastal areas.

Substantive modification to both landform and landcover has been the inevitable result of settlement patterns on both the islands and the mainland. On Kapiti Island and the adjacent islets, much of the original vegetation has been cleared by fire and farming efforts. Regenerating coastal forest is now the predominant landcover, following gazetting of the main island as a public reserve in the late 1800s and majority inclusion in the DoC conservation estate. Rich patterns of indigenous fauna are a further feature, supported by active breeding programmes, pest control and re-introduction of native species. Conservation values extend beyond the boundary of the reserve where hapu of Ngati Toa still live on the island and maintain a role as kaitiaki and much of the immediate coastal waters are protected as a marine reserve.

On the lowland and foothills of the mainland, much of the indigenous coastal vegetation has been cleared by fire, milling and efforts to drain the land for farming and settlement. Today, less than 1.8% of the original cover⁶ remains in these areas and qualify them as a Ministry for the Environment 'category 1' threatened environment. Majority loss of indigenous vegetation and modification to both landform and patterns of hydrology have had a significant impact on sea and land habitats that are influenced by coastal processes. The effects of development and landuse on fresh water values also have important roles to play in the coastal environment, where the richest habitat areas are typically located at the mouths of streams and rivers.

Notwithstanding this history of change and development, the remaining areas of indigenous vegetation and unmodified landforms and waterways in the lowlands and foothills contribute important landscape values to the District. In particular, they form important ecological linkages between the mountains, sea and Kapiti island and provide habitat for a wide range of indigenous species. These areas also contribute to valued recreational opportunities as well as features and landscapes that help define the District's identity, including those identified as outstanding natural features and landscapes and significant amenity features and landscapes.





Waitohu Stream mouth, north of Otaki Beach



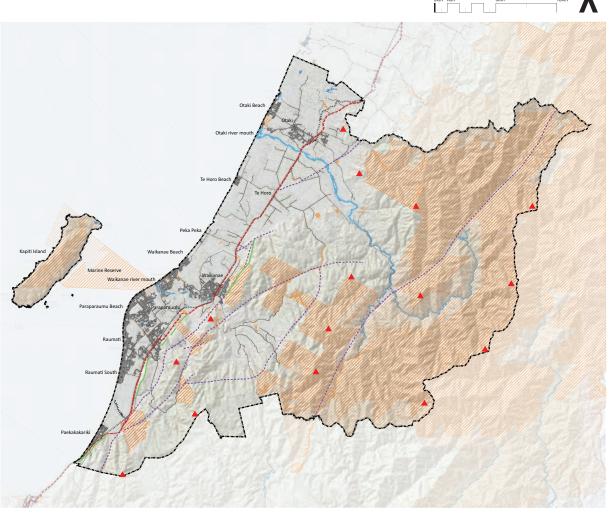


Figure 1 Key natural and cultural patterns of the Kapiti Coast District.

Part 1 Identifying and Mapping the Coastal Environment

The extent of the coastal environment in the Kapiti Coast District has been identified and mapped (in Part 3) in this study through a consideration of national and regional statutory provisions and best practice assessment guidance. In particular:

The New Zealand Coastal Policy Statement 2010 (NZCPS)

"Policy 1: Extent and characteristics of the coastal environment

- (1) Recognise that the extent and characteristics of the coastal environment vary from region to region and locality to locality; and the issues that arise may have different effects in different localities.
- (2) Recognise that the coastal environment includes:
- (a) the coastal marine area;
- (b) islands within the coastal marine area;
- (c) areas where coastal processes, influences or qualities are significant, including coastal lakes, lagoons, tidal estuaries, saltmarshes, coastal wetlands, and the margins of these;
- (d) areas at risk from coastal hazards;
- (e) coastal vegetation and the habitat of indigenous coastal species including migratory birds;
- (f) elements and features that contribute to the natural character, landscape, visual qualities or amenity values;
- (g) items of cultural and historic heritage in the coastal marine area or on the coast;
- (h) inter-related coastal marine and terrestrial systems, including the intertidal zone; and
- (i) physical resources and built facilities, including infrastructure, that have modified the coastal environment".

Greater Wellington Regional Council proposed Regional Policy Statement, May 2010 (RPS)

"Policy 4: Identifying the landward extent of the coastal environment-district plans

District plans shall include policies and/or rules to identify the landward extent of the coastal environment using the following criteria:

- (a) any area or landform dominated by coastal vegetation or habitat;
- (b) any landform affected by active coastal processes, excluding tsunami;
- (c) any landscapes or features, including coastal escarpments, that contribute to the natural character, visual quality or amenity value of the coast; and
- (d) any site, structure, place or area of historic heritage value adjacent to, or connected with, the coastal marine area, which derives its heritage value from a coastal location."

Environment Court and best practice guidance

In addition, this assessment takes into account the definition of the coastal environment developed in the Environmental Indicator Program (EIP) initiated by the Ministry for the Environment which although not Government policy is generally accepted by the Environment Court.

"There are four layers to the coastal environment:

- a) Marine (i.e. the seascape from the 12 mile limit to MHWS). Note the marine environment is not mapped in this assessment.
- b) Intertidal (i.e. the wave wash area)
- c) Coastal Dominance (i.e. land derived from coastal processes)
- d) Coastal Influence (i.e. the landward backdrop in the inland extent of the coastal environment; in some landscape types [without an obvious backdrop] this would be delineated by distance.

Beyond this is a further area which could be termed the Coastal Hinterland and may include the hydrological catchment."7

Importantly, this policy framework establishes a tripartite definition for the coastal environment in which physical attributes are considered along with perceptual and associative dimensions. That is: where the coastal environment can be identified by the consideration of patterns of landform, landcover and landuse; how they are perceived and experienced by people and from associations, the meanings and stories that are connected with them.

Mapping the extent of the coastal environment

In practical terms, this framework establishes the need for a contextual response, in which the inland boundary of the coastal environment [tidal wash, coastal dominance and coastal influence] will vary and may be identified several kilometers from the edge of the coast where either the physical, perceptual and/or associative dimensions of coastal influence are evident.

In keeping with this policy context, the extent of the coastal environment in the Kapiti Coast District has been mapped (see Part 3) through the combined analysis of landform, landcover and landuse data using a series of aerial photographs, topographic maps and GIS data including detailed contour data. Field work was used to test the mapping process from locations able to be accessed by public roads.

Physical, perceptual and associative (or cultural) matters have led to identification of the broad coastal environment, and then the refinement of the inland boundary. Where the impact of physical coastal processes may not be significant beyond the immediate foredunes, coastal influences and qualities are significant across a much broader area and contribute to the heritage values, visual qualities and amenity values of the coast. Physical, perceptual and associative matters relate to the coastal and cultural processes that have formed and shaped the lowland areas in the district. The ongoing influence and qualities established by active coastal processes first attracted settlement by Maori across the coastal plain, provided for some of the first commercial interests through flax harvesting utilising

⁷ MfE. (2002). Ministry for the environment environmental performance indicators: landscape aspect of natural character. Final Draft: Not Government Policy. MfE, Wellington.

the resources of the inter-dunal wetlands, determined where and how the area could be converted to farming and identified the best place for towns and transportation routes to be established. The less pronounced dune lands around Paraparaumu are an obvious example of this, where the coastal processes of erosion and deposition were impacted by the sheltering effects of Kapiti Island resulting in a broader lowland area with more subdued dune landforms that were easier to develop. Significant coastal qualities (in close proximity to a metropolitan area) have arguably continued to attract new residents to in the District.

Weather patterns and remaining areas of native vegetation through to the escarpments provide further rationale to the identification of a broad coastal environment. Predominant and often salt laden nor westerly winds determine the seasonal and daily climatic influence across the coastal plains to the escarpments. Remaining areas of native vegetation are dominated by species that are tolerant of duneland soils, often show the influence of strong coastal winds salt spray and feature wetland plant communities and habitats. For example, typical coastal species, or species which occur within the Kapiti coastal environment due to the effects of coastal processes, include kohekohe, nikau, and muehlenbeckia.

Coastal processes and their ongoing influence or qualities have significantly impacted on a range of landscapes that are evident in the lowlands. Although modified by development, and regularly intercepted streams and rivers, it is the varying pattern or formations of the dunes and the way in which these have determined hydrological and vegetation patterns that have established the underlying character of the lowland landscapes; even though they are at a considerable distance from the coast. For example, along the southern and northern boundaries to the District, the lowland landscapes are characterised by the larger parabolic dunes and remnant interdunal wetlands and lakes and near the foreland by the more moderate sand 'plain' and its confluence with the Waikanae River. Between Peka Peka and the Otaki River it is a linear sequence of dunes and distinct sea cliffs that sets up the underlying landscape framework.

Direct visual links contribute to the perception of the extent of the coastal environment including views to the coast, from private properties as well as public roads and lookouts. The escarpments of Paekakariki, Matahuika, Otaihanga and Hemi Matenga provide a distinct 'landward backdrop' to the coast and a marked ridgeline that define the physical area of the Kapiti Coast. Further north, beyond the boundary to the Hemi Matenga escarpment, the boundary to the coastal environment is less distinct but is generally aligned with the inland extent of significant dune landforms and inland sea cliffs.

Individual heritage and archaeological features that relate to coastal processes and activities have also been considered in the assessment. Use of ecological and landscape fieldwork and the eco site register has further complemented the study and helped to confirm the presence and inland extent of coastal values.

Limitations

In recognising "that the extent and characteristics of the coastal environment vary from region to region and locality to locality..." (Policy 1 of the NZCPS) it is important to address two key limitations of the mapping process.

The first relates to the district- wide scale of the assessment which resulted in a reliance on a desktop analysis complemented by fieldwork. That is: some refinement of the inland boundary (of a number of metres) may occur at a finer grain of assessment and through further fieldwork. This may be complemented by project related assessment but arguably needs to consider the broader scope of physical, perceptual and associative matters than is able to be distinguished on a site by site basis. Given that the purpose of identifying the extent of the coastal environment is related to the management of natural character values under Section 6(a), once the extent of the coastal environment has been confirmed through District Plan processes, it is more useful for project related assessment to focus on the nature and extent of the existing natural character values and their management

The second limitation relates to boundary blur or a zone of transition. For the purpose of the study a definite line has been drawn that identifies the extent of the coastal environment. However, in practical terms, the shift from coastal to non coastal environment is unlikely to be that clear on the ground, where patterns of landform, landcover, landuse often change gradually and seasonal/daily weather conditions will influence perceptions of its extent.

Part 2: Identifying and Mapping Areas of High Natural Character

Areas of high natural character in the coastal environment of the Kapiti Coast District have been identified and mapped in this report (see Part 3) after a consideration of national and regional statutory provisions and best practice assessment guidelines accepted by the Environment Court. In particular, where the definition of natural character and its degree or extent has been addressed by:

The New Zealand Coastal Policy Statement 2010 (NZCPS)

"Policy 13: Preservation of natural character

- 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.

Greater Wellington Regional Council proposed Regional Policy Statement May 2010 (RPS)

Policy 3 addresses factors to be considered when identifying areas of high natural character.

"Policy 3: Protecting high natural character in the coastal environment —[through] district and regional plans

District and regional plans shall include policies, rules and/or methods to: protect high natural character in the coastal environment from inappropriate (a) subdivision, development; and/or use. Natural character should be assessed considering the following matters, with a site determined as



Kapiti Island from the Otaki River mouth

having high natural character when the landscape is slightly modified or unmodified, the land-cover is dominated by indigenous vegetation and/or the vegetation cover is natural and there are no apparent buildings, structures or infrastructure:

- (a) The extent to which natural elements, patterns and processes occur, including:
- (i) natural elements: the products of natural processes such as landforms, water forms, vegetation and land cover;
- (ii) natural processes: the ecological, climatic and geophysical processes that underlie the expression and character of the place, site or area;
- (iii) natural patterns: the visual expression or spatial distribution of natural elements which are, or which appear to be, a product of natural processes; and/or
- (iv) surroundings: the setting or context, such that the place, site or area contributes to an understanding of the natural history of the wider area.
- (b) The nature and extent of modifications to the place, site or area, including, but not limited to:
- (i) physical alterations by people to the landscape, its landforms, waterforms, vegetation, land cover and to the natural patterns associated with these elements;
- (ii) the presence, location, scale and density of buildings and structures, including infrastructure, whether appearing to be interconnected or isolated, and the degree of intrusiveness of these structures on the natural character of the place;
- (iii) the temporal character of the modification such as, whether it is fleeting or temporary, transitory, transitional or a permanent alteration to the character of the place, site or area; and/or
- (iv) any existing influences or pressures on the dynamic ecological and geophysical processes contributing to the presence and patterns of natural elements, such that these may change and the natural elements and/or patterns may become threatened over time.
- (c) Social values: the place, site or area has meaning for a particular community or communities, including:
- (i) sentimental: the natural character of a place, site or area has a strong or special association with a



Otaki River mouth

particular community; and/or

(ii) recognition: the place, site or area is held in high public esteem for its natural character value, or its contribution to the sense of identity of a particular community.

Consideration for the factors contributing to natural character is also addressed in:

"Policy 34: Preserving the natural character of the coastal environment – consideration

When considering an application for a resource consent, notice of requirement, or a change, variation or review of a district or regional plan, particular regard shall be given to preserving the natural character of the coastal environment by:

- (a) minimising any adverse effects from point source and non-point source discharges, so that aquatic ecosystem health is safeguarded;
- (b) protecting the values associated with estuaries and bays, beaches and dune systems, including the unique physical processes that occur within and between them, so that healthy ecosystems are maintained;
- (c) maintaining or enhancing amenity such as, open space and scenic values and opportunities for recreation and the enjoyment of the coast by the public;
- (d) minimising any significant adverse effects from use and enjoyment of the coast by the public;
- (e) safeguarding the life supporting capacity of coastal and marine ecosystems;
- (f) maintaining or enhancing biodiversity and the functioning of ecosystems; and
- (g) protecting scientific and geological features."

Environment Court and best practice guidance

Following commonly accepted best practice, this assessment utilises natural character criteria (criteria of naturalness) included in the recent interim Decision of the Environment Court in Long Bay Okura Great Parks Society Inc v North Shore City Council:

"We consider that the list becomes more useful; if it is modified and extended so that the list of criteria of naturalness under section 6(b) of the RMA then includes:

- -relatively unmodified and legible physical landform and relief
- -the landscape being uncluttered by structures and/or 'obvious' human influence
- -the presence of water (lakes, rivers, sea)
- -the presence of vegetation (especially native vegetation) and other ecological patterns.

The absence or compromised presence of one or more of these criteria does not mean that the landscape is non-natural, just that it is less natural. There is a spectrum of naturalness from a pristine natural landscape to a cityscape, and a 'cultured nature' landscape may still be an outstanding natural landscape."8

⁸ Long Bay-Okura Great Parks Society Incorporated v North Shore City Council (A78/08) at para [135].

This assessment also takes into account the subsequent Environmental Indicator Program (EIP) initiated by the Ministry for the Environment and generally accepted by the Environment Court.

"Natural character is a term used to describe the naturalness of all coastal environments. The degree or level of natural character within an area depends on: (1) the extent to which natural elements, patterns and processes occur (2) The nature and extent of modifications to the ecosystems and landscape/ seascape. The highest degree of natural character (greatest naturalness) occurs where there is least modification. The effects of different types of modification upon the natural character of an area vary with the context, and may be perceived differently by different parts of the community." 9

And, as a further point of reference, the recently consented Hauauru ma Raki (HMR) Wind Farm decision¹⁰ in which the Board of Inquiry stated that natural character cannot be assessed objectively, but is a matter of biophysical, perceptual and associative aspects and that an assessment of effects on natural character should address:

- "-Biophysical aspects
- Perceptual and experiential
- Values and relationships" (paragraph 627)

In addition, in relation to Section 6(a) of the RMA and the test of 'appropriateness' this assessment takes into account the decision of the Board in relation to the preservation of natural character:

"Preservation of natural character requires the natural features to remain intact and natural processes to occur as well as the perception of naturalness to continue...

Where preservation of natural character is not achieved the question arises as to whether the particular development is inappropriate. This is a broad test involving value judgements, perceptions and questions of degree. The use of the word inappropriate itself signals that there may be change to natural character but that there is change which is acceptable and unacceptable. (para 630-631)

"We note that preservation is a high threshold. We also note that preservation may be a matter of degree and particular aspects of natural character may be preserved but others not. That is, there may be no effect on the natural processes of the coast, but visual effects on part of the coastal environment may occur. "(para 626)

Perception studies

Perception studies have also been used as a guide where they provide useful information relating to the concepts of pristine versus cultured nature which are relevant to productive landscapes of the Kapiti Coast. In particular, Swaffield and Fairweather's 2004 Q sort study in the Auckland Region identified key elements of [outstanding] natural landscapes that are also relevant to the assessment of natural character; medium to high relief, water, tall vegetation, beach or rocky shorelines, absence of human artefacts and the key qualities as; legible and coherent landscape structure and patterns, variety, sense of tranquillity, indigenous New Zealand identity and sense of openness and visual access. However, this

⁹ MfE. (2002). Ministry for the environment environmental performance indicators: landscape aspect of natural character. Final Draft: Not Government Policy. MfE, Wellington.

¹⁰ MfE, Board of Inquiry (2011) Draft Report and Decision of the Board of Inquiry into the Hauāuru mā Raki Wind Farm and Infrastructure Connection to Grid. Accessed at http://www.mfe.govt.nz/rma/call-in-hmr/report-and-decision/draft/volume-1/hauauru-ma-raki-draftdecision-report.pdf

study also identified:

"some structural shifts in public preference [in contrast to their 1984 study]. Coastal landscapes, mixed pasture and bush hill country, and lowland wetlands have gone up in relative value."

The study also concluded:

"the increase in value of lowland wetlands reflects a growing appreciation of indigenous ecology, and awareness of the increasing rarity of these landscapes, due to drainage and agricultural intensification. The increased value attached to agricultural landscapes with pasture may also reflect the growing demand from urban commuters for rural lifestyle, and the consequential pressure on the more picturesque inland landscapes."

Where the cultured nature paradigm is accepted by an individual the perception study also asserts:

"there is much greater acceptance of slightly modified to modified environments as being outstanding. The presence of humans undertaking recreational activity or other forms of low intensity productivity remain consistent with a landscape being 'natural' and may complement or even enhance its outstanding values" ¹¹

In the Swaffield and Fairweather 1999 Coromandel study it was also noted that:

"those [surveyed with a] 'loading' on this [cultured nature] factor are not very discriminating about differences between what is endemic (e.g. native forest) and exotic or introduced (e.g. pine forest) with generally neutral reactions to the latter." ¹²

Importantly, this policy framework recognises that natural character values exist along a continuum in all areas of the coastal environment and, that while the degree or level of natural character within an area depends on the extent to which natural elements, patterns and processes occur and are modified, this is in part a matter of perception, and influenced by context and association. That is: whilst an in-depth analysis of biophysical indicators (patterns of landform, hydrology, flora and fauna and landuse) are important, and formed the basis of this assessment, an overall assessment of natural character needs to consider the way in which an areas physical attributes are perceived by people and the stories or meanings that are associated with them. This also means that the physical, perceptual and associative factors used to distinguish or qualify an area as having high natural character in the Kapiti Coast District may or may not be relevant to another district. This tripartite and contextual definition of natural character also poses important limitations on the findings of a professional or expert assessment. These limitations relate to:

- the district-wide scale of the assessment and the limitations this presents in terms of the scale or subtlety of the natural character values that can be identified.
- the scope of this assessment, which is restricted to the identification of areas of high natural character; those areas which represent the greatest (physical, perceptual and associative) expression of natural elements, patterns and processes in the coastal environment of the Kapiti Coast District. Areas with a lesser degree of natural character, for example on a 5 point scale of

¹¹ Fairweather, J. R. & Swaffield, S. (2004). *Public perceptions of outstanding natural landscapes in the Auckland Region: Research Report* 273. Agribusiness and Economics Research Unit, Lincoln University. p 45-48

¹² Fairweather, J. R. & Swaffield, S. (1999). Public perceptions of natural and modified landscapes of the Coromandel Peninsula, NZ.: Research Report 241. Agribusiness and Economics Research Unit, Lincoln University.

high, moderate-high, moderate, low-moderate and low (as utilised in the landscape study) have not been identified and would further complement Council initiatives in relation to the management of all natural character values in the coastal environment.

- the predominant use of desktop analysis (including a wide range of relevant digital and printed sources of information) to determine natural character values and areas of high natural character. Field work complemented this process where potential areas of high natural character were identified that could be readily accessed by public roads. This included field survey associated with an in-depth study¹³ by a specialist ecologist (NaturalTEXTures) of areas with high 'indigenous ecological character value' in close proximity (within 1km) of the mainland coastline.
- the subjective components (perception, association and context) of natural character values and the extent with which these can be adequately reflected in a professional assessment and where considerable value will be added to this process by subsequent consultation with key stakeholders and the wider community.

Mapping areas of high natural character

The areas of high natural character identified in this study have been mapped (in Part 3) through the combined analysis of landform, landcover and landuse data using a series of aerial photographs, topographic maps and GIS data including the data layers developed in the specialist ecologist survey¹⁴ described below.

The limitations of this mapping process are similar to that addressed in the mapping of the coastal environment. That is: at a finer grain of assessment, such as would occur in response to a site specific proposal, the extent of the areas of high natural character may be further distinguished. In practical terms, while a line is drawn around each area, the shift from high natural character to non high natural character is unlikely to be that distinct, where patterns of landform, landcover and landuse often change gradually and seasonal/daily weather conditions can influence perceptions of extent.

^{13 +13} The study area for the specialist ecologist survey is taken to be approximately 1km from the MHWS inland, or to an altitude of approximately 120m. Land formation/old physical process, wildlife, old native vegetation and new native vegetation values were assessed using a qualitative 'decision tree' and a three point scale: low; low-moderate to moderate; and moderate-high to high in 56 areas along the coast with 26 areas identified as having high indigenous ecological character values on one or more counts. These areas were then mapped using high resolution aerial photographs and the boundaries converted to shape-files for further analysis in GIS.

PART 3: Maps of the Coastal Environment and Areas of High Natural Character

The extent of the coastal environment and areas of high natural character identified in this study are presented in this section of the report on a district wide map and a series of smaller scale maps.

In line with the adopted methodology (see Part 1), the extent of the coastal environment has been identified to include areas of tidal wash, coastal dominance and coastal influence. The area identified includes much of the lowland areas in the District and the westerly slopes of Paekakariki, Mataihuka and Hemi Matenga escarpments. The assessment incorporates an analysis of the physical, perceptual and associative factors that contribute to the coastal environment. In particular, a broader coastal environment extent is in keeping with the factors addressed in Policy 1 of the NZCPS (2010):

"(f) elements and features that contribute to the natural character, landscape, visual qualities or amenity values [of the coast],

And, Policy 4 of the proposed RPS:

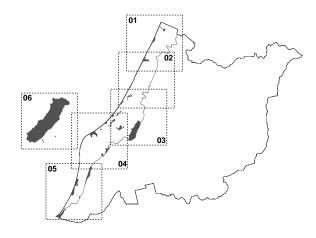
"(c) any landscapes or features, including coastal escarpments, that contribute to the natural character, visual quality or amenity value of the coast"

d) Coastal Influence (i.e. the landward backdrop in the inland extent of the coastal environment; in some landscape types [without an obvious backdrop] this would be delineated by distance. "

However, as the area identified extends more than 5km from the coast in some locations, it will be important to consider the varying resource management issues and threats to natural character values that exist when developing best practice planning approaches to the management of natural character. For example, where ridgeline development will be an important consideration in the management of escarpment areas and unmodified dune lands and fresh water value management an important consideration for wetland and estuarine areas.

In keeping with this responsive approach, areas of high natural character identified in this assessment have been mapped and numbered (see Figures 2.1 to 2.6) with a brief description of the factors contributing to their identification included in the assessment record sheets (Appendix 1). Interestingly, most are located along either the sea or inland edge of the coastal environment, and are predominantly associated with:

- Kapiti Island/s
- Mainland beach areas and foredunes where vehicle and pedestrian access is limited;
- Stream and river mouths that are protected or are in less populated areas;
- Unmodified coastal dunes in reserve or less populated areas;
- Substantive areas of wetland and coastal forest that have been retained on private land or by a community trust; and
- Areas along the coastal escarpments where a coherent pattern of indigenous vegetation can be identified



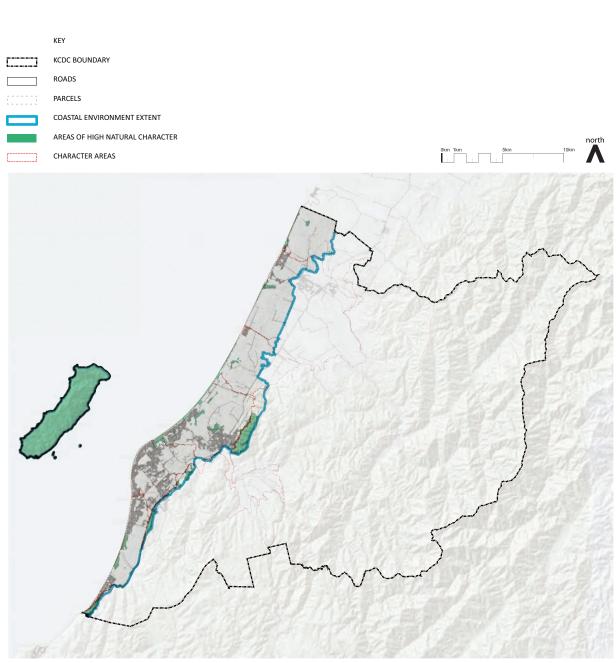


Figure 2 Kapiti Coast District Areas of High Natural Character within the Coastal Environment

Areas of High Natural Character in the Kapiti Coast District (as shown on maps 1-6 below).

- Beach, stream mouths and selected areas of foredune from Otaki Beach Settlement to the **1**a northern boundary of the District
- **2**a Beach, stream mouths and selected areas of foredune from Te Hapua to Otaki Beach settlement
- 2b Te Hapua wetland areas
- **3**a Beach and selected areas of foredune from Pharyzn Reserve to Te Hapua
- 3b Pharazyn wetlands, north
- 3с Coastal forest areas within Nga Manu Reserve and Jacks Bush
- 3d Hemi Matenga escarpment
- Selected beach and foredune areas, river and stream mouths from Raumati to Pharazyn 4a Reserve
- 4b Ngarara wetland
- 4c Waimeha lagoon
- Coastal forest areas on the Otaihanga foothills and Nikau escarpment 4d
- Selected beach and foredune from Raumati to the southern boundary of the District 5a
- 5b Mataihuka escarpment coastal vegetation areas
- Whareroa wetlands-QEII and Mackays 5c
- 5d Paekakariki escarpment and foredune coastal vegetation
- 6a Kapiti Islands

Note: For practical purposes areas of high natural character along the immediate coastal edge (beach, stream and river mouths and selected areas of fore dune) have been considered in five sections (1a, 2a, 3a, 4a, 5a), as delineated in the detailed maps below. Separate worksheets have also been prepared for each of these sections to help distinguish the different factors that contribute to natural character.



Figure 2.1 Kapiti Coast District Areas of High Natural Character within the Coastal Environment

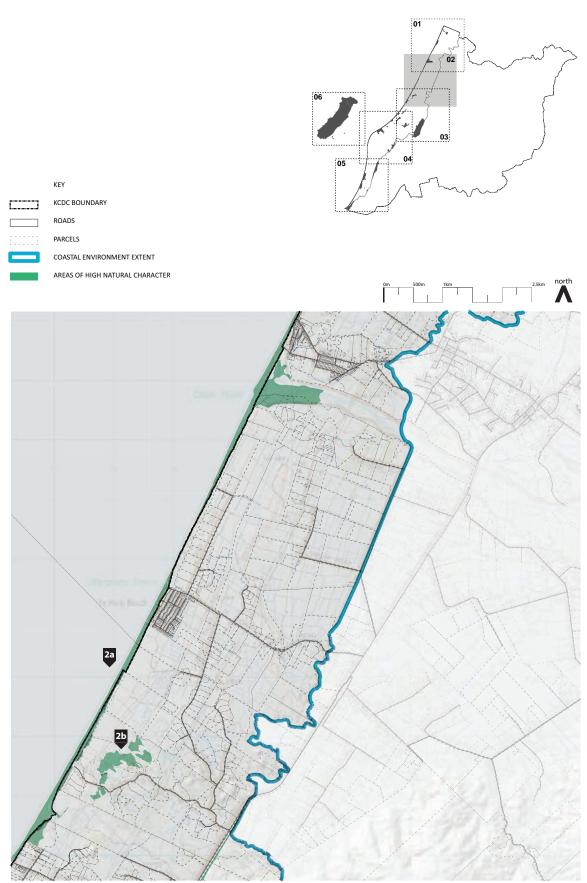


Figure 2.2 Kapiti Coast District Areas of High Natural Character within the Coastal Environment

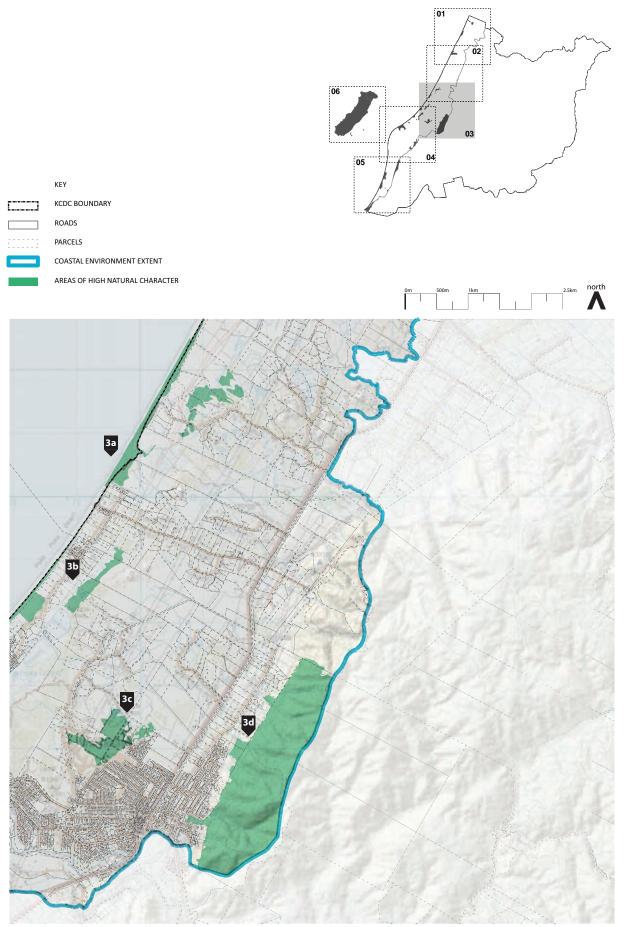


Figure 2.3 Kapiti Coast District Areas of High Natural Character within the Coastal Environment

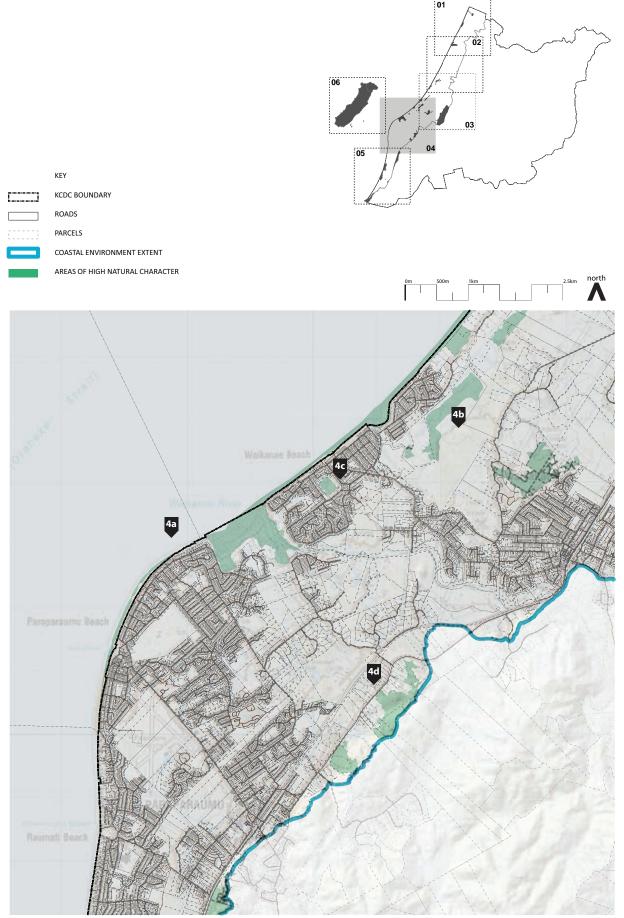


Figure 2.4 Kapiti Coast District Areas of High Natural Character within the Coastal Environment



Figure 2.5 Kapiti Coast District Areas of High Natural Character within the Coastal Environment

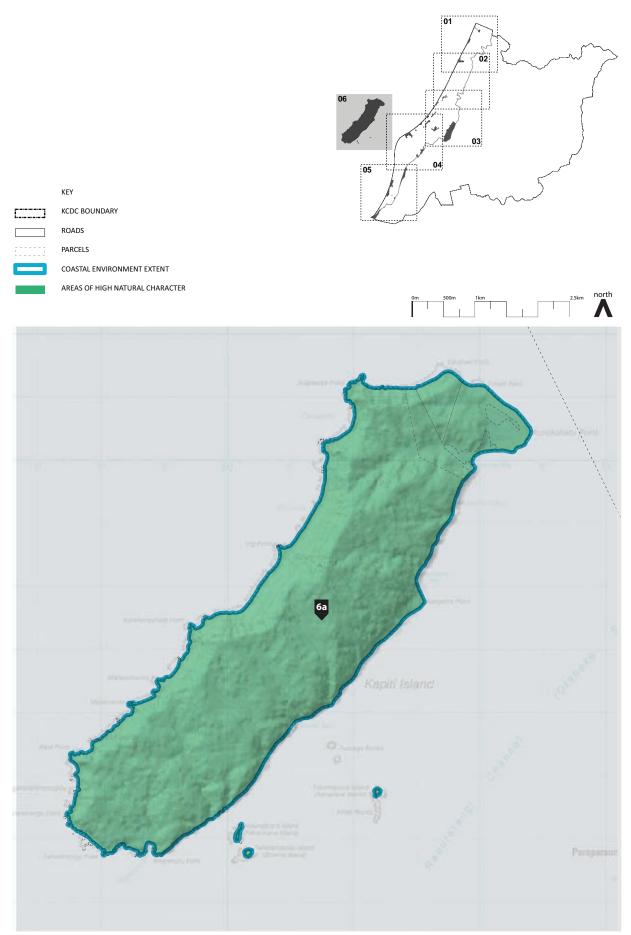


Figure 2.6 Kapiti Coast District Areas of High Natural Character within the Coastal Environment

Appendix 1 Assessment Record Sheets

A description of the physical, perceptual and associative factors contributing to natural character values identified in each of the areas of high natural character is summarized in the assessment record sheets below.

Area 1a	Beach, stream mouths and selected areas of foredune from Otaki Beach Settlement north
Location:	NZ Topo 50 Map BN32
Factors	Description
Physical	Relatively unmodified beach, (Waiorongomai) dune and stream mouth landforms. Wildlife habitats associated with the beach, Lake Waiorongomai and Waitohu Stream mouth have high wildlife ecological values and include estuarine and wetland areas and indigenous colonising and dry dune plant species. Fresh water values contribute to natural character values (although degraded by runoff and grazing).
Perceptual	Perception of natural character enhanced by dynamic qualities of fresh and sea water, exposed climatic conditions, wilderness qualities and limited vehicle traffic/public road access, rural and exotic forestry backdrop and absence of built structures (in marked contrast to nearby beach settlement). Expansive views of the Tararuas, coastal marine area and of Kapiti Island also contribute.
Associative	Natural character values acknowledged and enhanced by the community; through the Waitohu Stream community group and where areas are zoned as Open Space or are recognised as ecosites in the District Plan. Natural character values also linked to the wide range of informal 'coastal' activities that occur in this area. Important food gathering area historically with recreational fisheries still supported.

Area 2a	Beach, stream mouths and selected areas of foredune from Te Hapua to Otaki Beach settlement
Location:	NZ Topo 50 Map BN32
Factors	Description
Physical	Relatively unmodified landforms of the beach, immediate foredunes and stream and river mouths and fresh water values (although impacted by surrounding landuse) contribute to important wildlife habitats associated with Otaki River including estaurine and wetland areas and recognisable patterns of indigenous colonising and dry dune plant species.
Perceputal	Perception of natural character enhanced by dynamic qualities of sea and fresh water, exposed climatic conditions, wilderness qualities and limited vehicle traffic, predominant rural backdrop, expansive views of the Tararuas, Kapiti Island and coastal marine area through to the Taranaki foreland.
Associative	Natural character values enhanced by community group involvement; (Otaki River mouth) and where areas are zoned Open Space, are recognised as ecosites in the District Plan and as DoC RAP sites and form the context for a wide range of informal 'coastal activities'. Important food gathering area historically with recreational fisheries still supported.

Area 2b	Te Hapua wetland areas
Location	NZ Topo 50 Map BP32
Factors	Description
Physical	Dune land hydrological patterns largely intact, indigenous wetland vegetation pattern and sequence of lakelets over more than 50ha provide an important wildlife habitat.
Perceptual	Natural character enhanced by presence of water/lakelets and fresh water values (although impacted by surrounding landuse and grazing in some areas), predominant rural backdrop and local roads.
Associative	Natural character values linked to local resident efforts to enhance wetland areas; planting/fencing and where areas are recognised as ecosites in District Plan/QEII covenant/DoC RAP sites. Important mahinga kai historically.

Area 3a	Beach and selected areas of foredune from the Waikanae Beach settlement to Te Hapua
Location	NZ Topo Map 50 BP32
Factors	Description
Physcial	Landforms of the beach and immediate foredunes largely unmodified with minor pattern of colonising indigenous species on the foredunes. Kowhai Stream mouth including estuarine and weland areas and recognisable pattern of indigenous colonising and dry dune plant species.
Perceptual	Perception of natural character enhanced by presence of dynamic coastal processes/climatic conditions and predominant rural-residential backdrop with buildings often obscured behind dunes (contrasts strongly with adjacent urban areas). Further contributors include: limited road access points, expansive views of Hemi Matenga escarpment, Kapiti Island and coastal marine area.
Associative	Natural character values enhanced where areas are zoned Open Space, are ecosites in the District Plan and as a result of association with a wide range of informal 'coastal' activities including seasonal fisheries.

Area 3b	Pharazyn wetlands, north
Location	NZ Topo 50 Map BP32
Factors	Description
Physical	Dune land hydrological patterns largely intact (wetland area reduced by sewage pond now decommissioned), fresh water values (although impacted on by surrounding landuse), sequence of water/lakelets, successional and facultative wetland indigenous plant species providing important wildlife habitat for a wide range of species.
Perceptual	Perception of natural character enhanced by existing rural residential setting, prominent dune landforms and mixed landuse/plantation forestry, enclosed views and limited public access.
Associative	Values enhanced where areas are recognised as ecosites in the District Plan/QEII covenant/DoC RAP site. Important mahinga kai historically.

3c	Coastal forest areas within Nga Manu Reserve and Jacks Bush
Location	NZ Topo 50 Map BP32
Factors	Description
Physical	One of the largest remaining areas of kahikatea-pukatea/swamp maire-tawa swamp forest including sequence of lakelet and wetland areas that contribute to the Ngarara catchment. An important habitat for a range of indigenous species and benefited by research programmes; provides a stepping stone between the mountains and the sea with rare species represented.
Perceptual	Perception of natural character enhanced by setting against the prominent backdrop of Hemi Matenga, adjacent rural residential landuse with views of buildings and other structures often obscured by landform.
Associative	Values enhanced where areas are protected and managed within the public trust reserve and are recognised as an ecosite in the District Plan, as a DoC RAP site or by QEII covenant. Guided educational tours and research programme contribute further to associative values. Important food gathering area historically.

Area 3d	Hemi Matenga escarpment
Location	NZ Topo Map BP32
Factors	Description
Physical	Unmodified and prominent escarpment landform, distinct 'cone-like' gravel deposits; unique geomorphological feature and large areas of regenerating forest with clear altitudinal patterns supporting important wildlife links between the mountains and the sea.
Perceptual	Clear and dramatic backdrop to the lowland-dune areas in the southern half of the District. Values enhanced by lack of built development along the extent and contrast with surrounding urban/residential areas/infrastructure network. Expansive views of coastal plain and coastal marine area afforded from escarpment also a contributing factor.
Associative	Values enhanced where area is zoned as Conservation land and is recognised as an ecosite in the District Plan including public walkways/ contribution to informal recreation resource.

4a	Selected beach and foredune areas, river and stream mouths from Raumati to Pharazyn Reserve
Location	NZ Topo Map BP32
Factors	Description
Physical	Relatively unmodified landforms on the beach and stream mouths excluding high use vehicle areas (boat launching sites) and minor areas of the immediate foredunes where public access is limited to private residences (north of Paraparaumu). Minor areas of colonising indigenous plant species on less disturbed foredune areas. Vegetation patterns, fresh water values (although impacted by surrounding landuse) and wetland and estuarine habitats contribute to important wildlife values at the Waikanae River mouth complemented by protected habitats of the marine reserve.
Perceptual	Qualities enhanced by dynamic qualities of sea and fresh water, exposed climatic conditions along with expansive views of the coastal marine area, Kapiti island in closest proximity and the prominent backdrop of Hemi Matenga escarpment. Values enhanced where Open Space areas provide marked contrast with adjacent built environment (Waikanae Estuary) and provide a buffer/obscure views of built development (esplanades) along the beach.
Associative	Values enhanced by community group involvement (Waikanae Estuary care group) and where areas are zoned as Open Space or are recognised as ecosites in the District Plan/Greater Wellington Regional Council 'areas of significant conservation value'/ DoC RAP sites and form the context for a wide range of informal 'coastal activities' including the District Cycleway/Walkway/Bridleway network. Important mahinga kai historically with recreational fisheries still supported.

Area 4b	Ngarara wetland
Location	NZ Topo Map BP32
Factors	Description
Physical	Dune land hydrological patterns largely intact (although impacted by modification to drainage patterns in the wider catchment). Sequence of lakelets/wetland areas and successional and older wetland indigenous plant species and fresh water values (impacted by surrounding landuse) providing important wildlife habitat for wide range of fresh water species.
Perceptual	Perceptions of natural character enhanced by existing rural-residential setting, prominent dune landforms and mixed landuse/plantation forestry, enclosed views along with limited public access and rural-residential development in surrounding landsape (with buildings often obscured by intervening landform and vegetation). Prominent bush clad backdrop visible from lookout points, a further contributor.
Associative	Values enhanced where areas are recognised ecosites in the District Plan/as DoC RAP site/by QEII covenant. Important mahinga kai historically.

Area 4c	Waimeha lagoon
Location	NZ Topo Map BP32
Factors	Description
Physical	Lakelet and relatively unmodified interdunal patterns of hydrology, fresh water values (although impacted by surrounding landuse) original and regenerating wetland vegetation patterns providing important wildlife habitat for fresh water species.
Perceptual	Perception of natural character enhanced by scale of the lakelet, public access, contrast with surrounding urban areas/built environment and enclosed views.
Associative	Values enhanced by Open Space zoning and informal recreational use/recognition as an ecosite in the District Plan. Important mahinga kai historically with continued occasional flax harvest.

Area 4d	Coastal forest areas on the Otaihanga foothills and Nikau escarpment
Location	NZ Topo Map BP32
Factors	Description
Physical	Substantive areas of regenerating kohekohe-nikau-tawa dominated forest across uplifted landforms marking the edge of the coastal plains. Vegetation forms important links with inland forest areas that and coastal plain remnants.
Perceptual	Perceptual qualities enhanced where area forms part of series of coastal forest remnants along the backdrop to Paraparaumu and Waikanae. Visibility from SH1 and public access are further contributing factors along with an absence of structures that is in marked contrast to adjacent rural residential-urban areas.
Associative	Values enhanced by Open Space zoning and informal recreational use/ recognition as an ecosite in the District Plan and areas protected by QEII covenant. Natural character values can also be linked to the Nikau reserve as it is a popular rest stop along SH1.

Area 5a	Selected beach and foredune from Raumati to the southern boundary of the District
Location	NZ Topo Map BP32
Factors	Description
Physical	Relatively unmodified landforms of the stream mouths and beach (excluding those impacted by high use vehicle) and areas of the immediate foredunes where built development is limited (including the prominent Whareroa dunes in QEII park). Unique rocky shore to the south expressive of coastal processes. Minor areas of natural successional vegetation representing dry dune land species. Important wildlife values associated with QEII foreshore and Whareroa and Wainui Stream mouth, where fresh water values are enhanced by riparian planting.
Perceptual	Perceptions of natural character enhanced by exposed climatic conditions and dynamic qualities of sea and streams, lack of built development along immediate foreshore outside of Raumati and Paekakariki settlements. Expansive views of coastal areas and escarpment backdrop and 'wilderness' areas of the beach also contribute.
Associative	Values enhanced by community group involvement, where areas are zoned as Open Space and are recognised as ecosites in the District Plan / as as DoC RAP sites. Associative values relate to a wide range of informal 'coastal activities' and role as a regional park. Important mahinga kai historically.

Area 5b	Mataihuka escarpment coastal vegetation areas
Location	NZ Topo Map BP32
Factors	Description
Physical	Unmodified and prominent escarpment landform with extensive kohe kohe dominant regenerating areas providing seasonal habitat.
Perceptual	Distinct backdrop to the wider coastal plain. Perceptual values enhanced by lack of built development along the extent that contrast strongly with surrounding urban-residential areas and infrastructure network, expansive views of coastal plain and coastal marine area afforded from escarpment, also a contributing factor.
Associative	Natural character associations relate to Open Space zoning including public walkway /coastal environment lookout and recognition as an ecosite in the District Plan.

Area 5c	Whareroa wetlands-QE Park and Mackays
Location	NZ Topo Map BP32
Factors	Description
Physical	Remnant and rare kahikatea forest with original and regenerating wetland areas and natural hydrological patterns (although impacted on by surrounding drainage systems)
Perceptual	Perceputal qualities enhanced where wetland areas are in marked contrast to surrounding rural landscape and are visible from public roads/accessible within the QE Park.
Associative	Natural character values enhanced where areas are zoned as Open Space and DoC Reserve and are recognised as ecosites in the District Plan.

Area 5d	Paekakariki escarpment and foredune coastal vegetation
Location	NZ Topo Map BP32
Factors	Description
Physical	Prominent landform in close proximity to the coast, original and regenerating patterns of vegetation clearly expressive of coastal processes on vegetation patterns,
Perceptual	Perceptual qualities enhanced where escarpment forms a clear and dramatic backdrop to narrow coastal plain for the settlement of Paekakariki and regional infrastructure. Lack of built development along the extent contributes to values and contrasts strongly with nearby residential/urban area/infrastructure network. 'Wilderness' experience along the beach also a feature along with expansive views of the coastal environment afforded from the escarpment. Transient values linked to coastal processes such as salt spray/ exposed climatic conditions.
Associative	Natural character values enhanced where areas are zoned as Open Space and recognised as ecosites in the District Plan/by QEII covenant. Values recognised and enhanced by local community care group planting and pest control programmes. Beach areas associated with a range of informal coastal activities.

Area 6a	Kapiti Islands
Location	NZ Topo Map BN32-BP32
Factors	Description
Physical	Unmodified prominent landform with unique geomorphological features including coastal lagoons and sea caves. Coherent patterns of regenerating indigenous vegetation support important habitats for a wide range of native fauna. Patterns of vegetation and land formation strongly influenced by coastal processes. Marine reserve provides important habitat for a range of coastal marine species. Note: Built forms associated with existing residences on Kapiti Island at Waiorua Bay and Motungarara impact on values to the extent that the immediate area would not be considered to be of high natural character.
Perceptual	Perceptual qualities enhanced by sense of scale and setting off the coast along with the islands contribution to important views throughout the District. Non vehicular (and at times limited and difficult) access is a further contributor to perceptions of natural character as well as existing patterns of settlement and the 'island' vernacular of built structures.
Associative	Values enhanced by past associations with coastal activities and food gathering, including whaling. Further contributing factors relate to majority inclusion in the Conservation estate as a Nature Reserve and important bird recovery site along with educational tours/public access, recognition as an ecosite in the District Plan. Marine reserve identified as an area of significant conservation value by the Greater Wellington Regional Council.