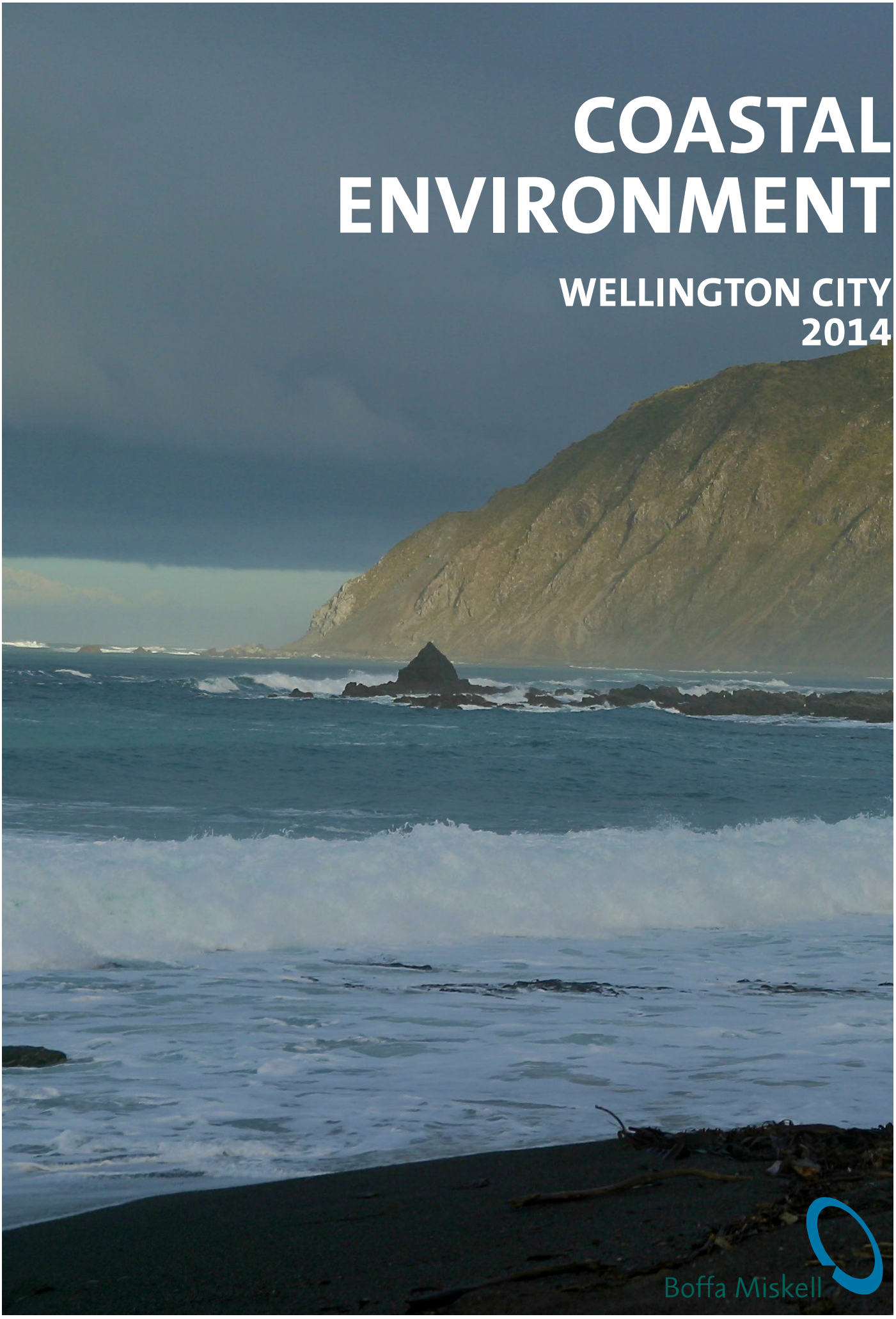
COASTAL
ENVIRONMENT
WELLINGTON CITY
2014
Boffa Miskell

Coastal Environment Wellington City

Prepared for

Wellington City Council

By

Boffa Miskell Limited

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DISCLAIMERS

This report was undertaken primarily as a desk-top exercise drawing on information from a range of landscape-related reports and other publications. It has also relied on aerial photography, Google Earth and GIS datasets and the study team's knowledge of the Wellington district, together with some ground-truthing.

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1.0 INTRODUCTION

1.1 The New Zealand Coastal Policy Statement 2010 (NZCPS) is a national policy statement under the Resource Management Act 1991 (RMA). The NZCPS sets out objectives and policies in relation to the coastal environment of New Zealand. Regional policy statements, regional plans and district plans must give effect to the NZCPS.

1.2 The RMA does not define the 'coastal environment.' The NZCPS acknowledges that the coastal environment has characteristics, qualities and uses *"that mean there are particular challenges in promoting sustainable management."* [2] The NZCPS also recognises that the coastal environment varies in nature and extent around the country. Policy 1 of the NZCPS acknowledges that the extent and characteristics of the coastal environment not only vary from region to region but also location to location, and that the issues that arise have different effects in different localities. Wellington City's coastal environment certainly exhibits significant variation and there are different issues along its approximately 100km of coastline.

1.3 Policy 1 of the NZCPS 2010 identifies nine characteristics which may be included in the coastal environment. In the context of this project, the Coastal Environment is defined as an environment in which the coast is a significant part or element and 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.

1.4 The above list of characteristics has assisted in defining what is included within the coastal environment. The list is not absolute and does not provide the answer on how to define the landward extent of this environment, particularly as there are 'grey areas' in relation to many of the characteristics that make it difficult to draw a 'hard line' in some situations. The line should be considered as a transition zone where those elements in Policy 1 become less dominant.

1.5 The Department of Conservation (DoC) has provided guidance material (2012) on implementing Policy 1, which reflects best practice. Environment Court decisions to date have also provided guidance. The DoC guidance note on Policy 1 (DoC, May 2013) outlines under its 'origins of the policy' section, several influential Environment Court decisions that have guided practitioners and decision makers in determining the inland extent of the coastal environment. In the case Mainpower NZ Ltd v Hurunui District Council (NZEnvC384) in 2011, the Environment Court found several factors that were important in defining the landward extent of the coastal environment:

> *"[320] ...where a dominant ridge maybe a useful means to identify a coastal environment boundary, such a boundary should be relevant to the coastline and coastal environment. There is no necessity to identify a dominant ridge in each case, particularly one that maybe kilometres away from the coast. In any event we are satisfied that the effects on natural character and landscape would not extend to that area which could properly be considered to be coastal environment of Hurunui.*
>
> *[321] ...By contending that the coastal environment has an extreme reach, we are concerned that attention could be drawn from the importance of the coastline and derogate from the focus of section 6(a)."*

1.6 While the list of characteristics in Policy 1 is helpful in establishing what is included within the coastal environment, it does not provide any specific guidance in defining the extent of the coastal environment for the purposes of assessment and mapping, as required by Policy 13 of the NZCPS.

1.7 Defining the extent or the inland boundary of Wellington's coastal environment is the focus of this report. Assessment and mapping of the natural character of the coastal environment (Policy 13) and the identification of natural features and natural landscapes, including seascapes (Policy 15), are aspects that Wellington City Council will subsequently address.

1.8 The nine characteristics in Policy 1 (2) provided the guide to identifying the inland extent of the coastal environment for Wellington City but particular consideration was given to item (c) of Policy 1 (2) in defining and mapping the inland extent of the coastal environment. Policy 1 (2) (c) states that the coastal environment includes areas where coastal processes, influences or qualities are not just present but are **significant** (emphasis added). This provides the clearest and strongest direction for interpreting the coastal extent. The term '**significant**' is however, not defined in the NZCPS 2010. The Oxford English Dictionary defines significant as *"sufficiently great or important to be worthy of attention; noteworthy"*.

1.9 Coastal processes, like wind-blown sand and salt-influenced vegetation, are evident over most of the country, including a considerable distances inland; often the influence of these processes are not

2 Page 5, *New Zealand Coastal Policy Statement 2010*, Department of Conservation, November 2010.

particularly visible or evident. Coastal processes such as wave action, wind movement of sand, and saltiness will reduce in significance moving inland. Consequently, in the context of Policy 1 it is where such processes are significant that is important.

1.10 Working with DoC, Boffa Miskell have developed a methodology for defining the inland extent of the coastal environment and for assessing the natural character of the coast. This methodology has been refined over a successive studies carried out for districts and regions in different parts of the country. The methodology recognises that the coastal environment is a dynamic system where the inland influence of coastal elements and processes on the environment gradually decreases with distance. Essentially, the coastal environment contains two zones of significance – the *Coastal Marine Area* and the *Coastal Significance Zone*.

1.11 The coastal marine area includes the seaward extent of the coastal environment and extends 12 nautical miles from Mean High Water Springs (MHWS) and is easy to define. For this particular exercise for Wellington, identifying the landward extent has relied on relevant and accessible data, together with a good knowledge of the district to inform judgements. The district's topography, the level of modification, the patterns and processes, including the relationship to the coast have been determining factors. The Wellington Landscape Characterisation study, which was undertaken concurrently with defining the coastal environment, identifies and describes landscape character areas, and this work has assisted in helping to define the inland extent of the coastal environment.

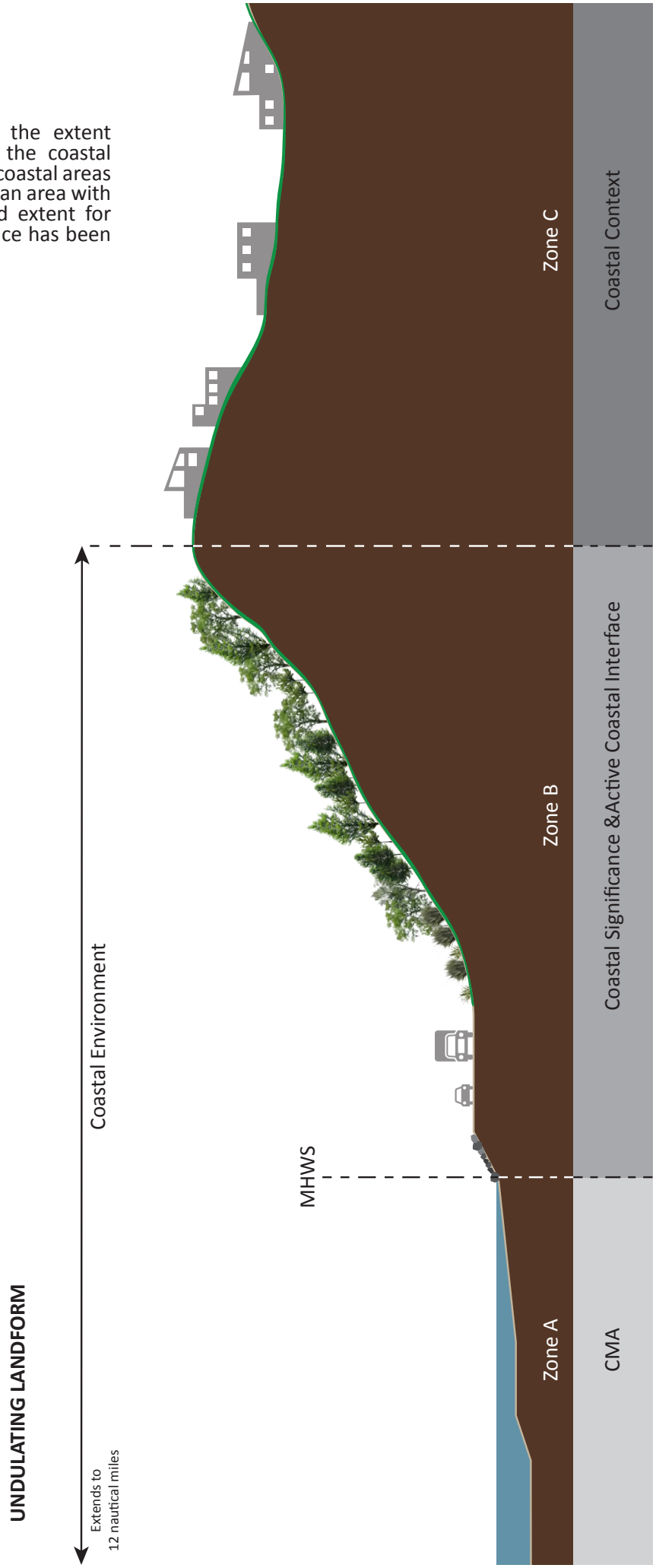
1.12 Inland, beyond the Coastal Environment, is a third area described as the *Coastal Context*. Here coastal processes, influences and qualities are not significant, but the area still forms part of the broader coastal landscape. As an integral part of the methodology developed by Boffa Miskell, the following Zones of Significance have been identified, as interpreted from Policy 1 of the NZCPS 2010.

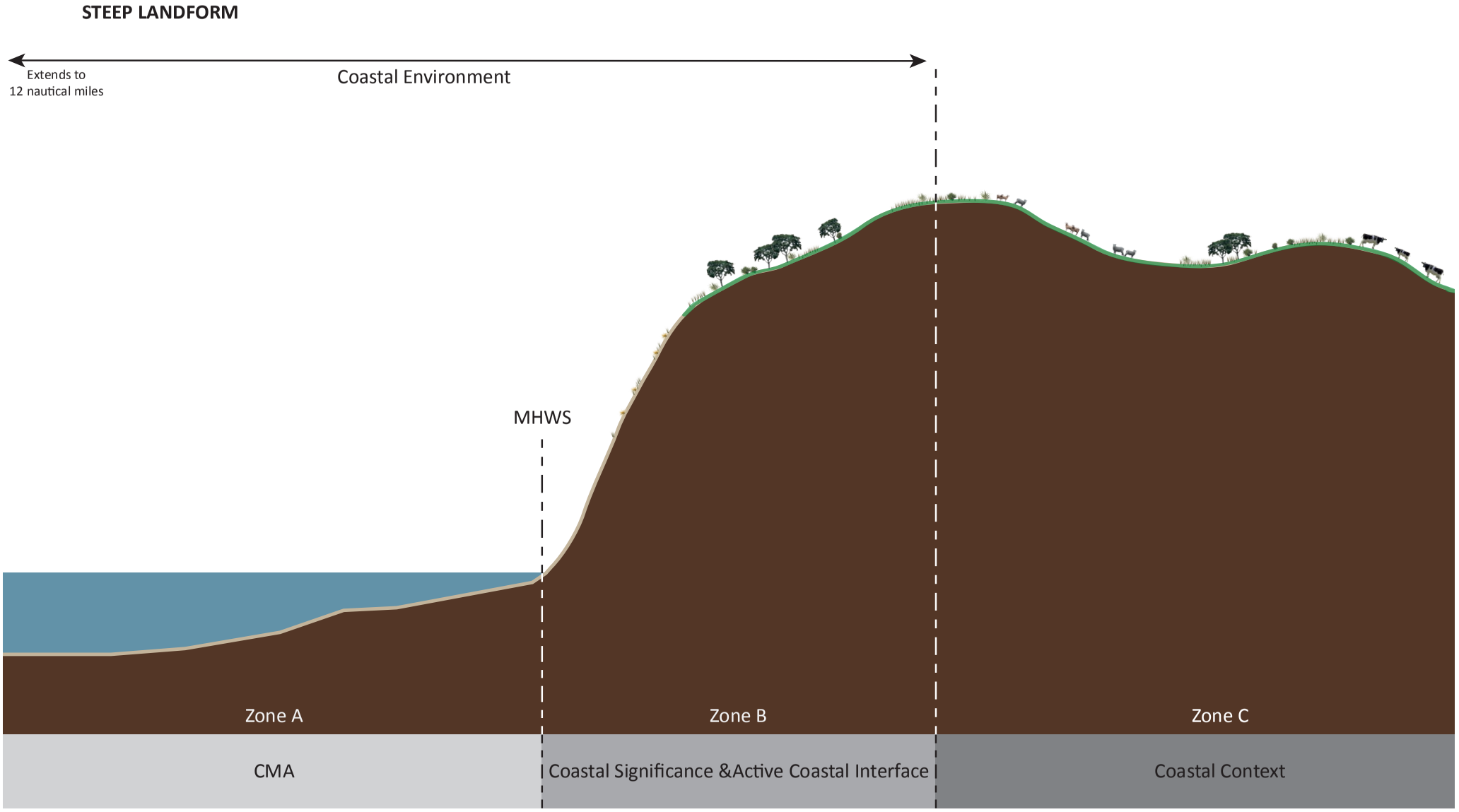
1.13 The table below illustrates the Zones of Significance framework to apply to the coastline to determine the extent of the Coastal Environment under Policy 1 of the NZCPS 2010. Figure 1 interprets the coastal environment to contain the following zones that, collectively, are called the Coastal Landscape:

- Zones A and B (the coastal marine area and the coastal significance zone), which make up the Coastal Environment, and
- Zone C, the Coastal Context.

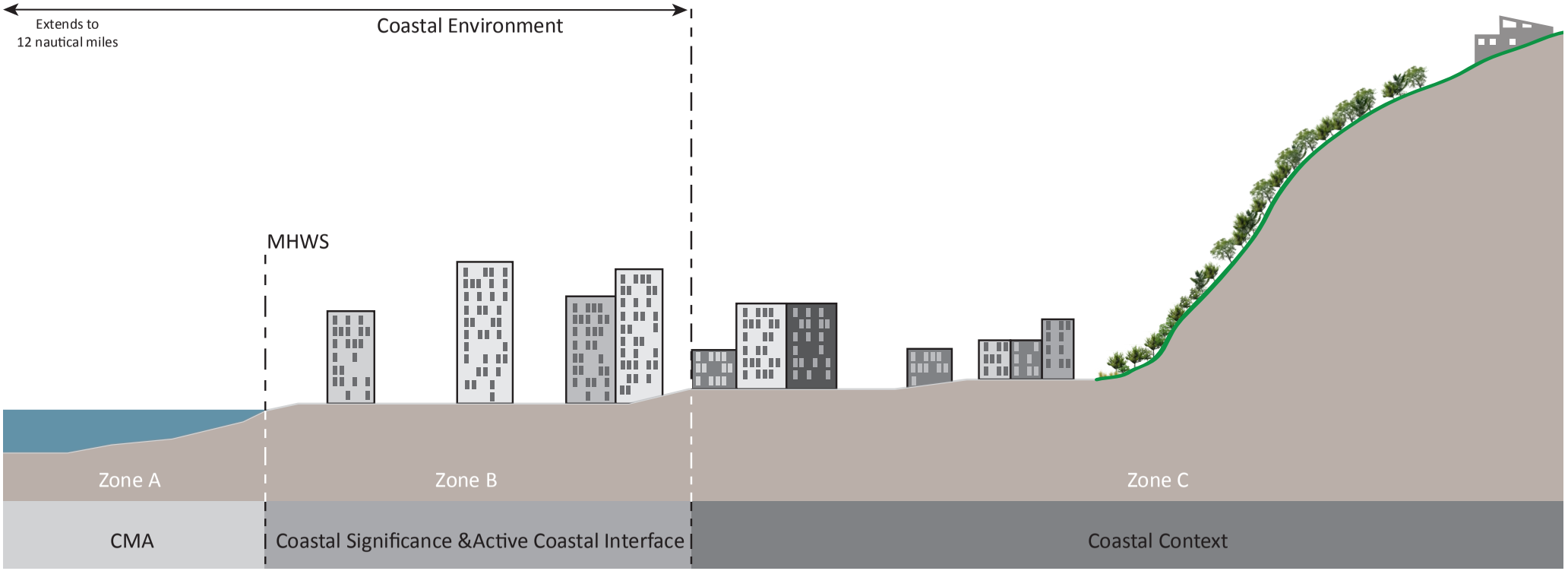
Coastal Landscape / Coastal environment	**Zone A**	This zone includes the **Coastal Marine Area (CMA)**. Within the statutory context the CMA means the foreshore, seabed and coastal water and the air above the water to twelve nautical miles (or the territorial sea boundary). Inland, the CMA extends to the mean high water spring (MHWS). The CMA includes the rock, beach, coastal lagoons and lakes below MHWS. The CMA extends approximately 1km upstream of a river or a point that is calculated by multiplying the width of the river mouth by five.
Coastal environment	**Zone B**	The **Coastal Significance Zone** includes the Active Coastal Interface (land above MHWS) and generally includes land up to the summit of the first coastal ridge/ crest or escarpment (with the width of this zone varying depending on the topographic environment). The Active Coastal Interface is generally a slender component of the Coastal Significance Zone, where the sea is the dominant element and the primary or significant influence on landform, vegetation and perception. This zone is where coastal processes are significant and may include cliffs, settled (or modified) dune lands, farm land, settlements and coastal forests.
Coastal Landscape / Coastal Context	**Zone C**	**Coastal Context**. This area is where coastal elements, patterns and processes have an influencing presence on the coastal landscape and would include developed dune ridges which no longer exhibit significant coastal processes plus coastal plains, and hill-slopes. This zone generally extends inland from Zone B to where coastal influences are sufficiently diminished. It is also recognised that some activities occurring within this zone can significantly affect the coastal environment (Zones A and B), either experientially or physically, to varying degrees. The inland extent of Zone C will not be identified, as it falls outside of the Coastal Environment.

These cross sections generically illustrate the extent of these zones and the inland extent of the coastal environment in three very different types of coastal areas – a steep coastal area, a flat coastal area and an area with urban development on the flat. The inland extent for the latter is more difficult to define and hence has been marked with a dashed line.




STEEP LANDFORM
Extends to
12 nautical miles
Coastal Environment
MHWS
Zone A
Zone B
Zone C
CMA
Coastal Significance &Active Coastal Interface
Coastal Context

URBAN ZONE LANDFORM



2.0 WELLINGTON COASTAL ENVIRONMENT

2.1 Wellington City's 100 plus km of coastline is an important and defining topographical element, forming much of the boundary of the district. Narrow shore platforms and steep escarpment and cliff faces are typical of the coastline, particularly around the south and west coasts where exposure to rigorous environmental conditions has helped shape rugged landforms. Port Nicholson (Te Whanganui a Tara/ Wellington Harbour) has approximately 60km of coastline, of which approximately 65% (38km) falls within the Wellington City boundary.

2.2 Wellington's coastline has been shaped by tectonic processes, some of which are relatively recent. The landscape has been subjected to periodic dramatic changes through land movements along numerous fault lines; the region is traversed by faults of at least two separate ages, both of which have had a significant influence on the landscape. West of the Wellington Fault, the land has been uplifted and east of the Fault downward movement formed a basin that is now Port Nicholson, enclosed by the more recently uplifted Miramar Peninsula and Rongatai flats.

2.3 Stevens in his book *Rugged Landscape* describes how Port Nicholson is the result of several interacting yet contrasting earth movements[2]. The country on the north-western side of the harbour *"has been pushed up along the Wellington fault to form hilly broken country. On the south-eastern side of the harbour the land has been generally submerged, but portions have been warped upwards to form the northern and southern boundaries of the harbour."* Within Port Nicholson, prominent step-like features are present on the major spurs adjoining the coastline; these together with several other topographic features are evidence of the significant earth movements that have occurred in both the distant and recent past.

2.4 On Wellington's south coast old beaches have been uplifted significantly, in places by hundreds of metres. For example, at Tongue Point on the south coast two marine terraces are readily distinguishable, a lower one 23-46masl and an upper one 76-91masl which have been reduced by erosion to a series of low hummocks.

2.5 Topography is the major defining element of Wellington's coastal environment. The original native vegetation cover would have also been a significant feature given that most of the district was covered in native forest until 150 years ago when it was cleared by European settlers and converted to pastoral farming and settlements. Very little of the original vegetation remains and most of the larger remnants are confined to the valleys and lower slopes of ridges and hills.

2.6 Further changes to land cover have occurred and will continue to occur, as tracts of farmland reverts from pasture to exotic scrub and secondary native vegetation. Climate has a significant influence on vegetation with the proximity of the coast and the strong salt-laden winds having a major influence on vegetation, especially in exposed situations.

2.7 For this study, the inland extent of the coastal environment has been delineated at a scale of 1:50,000. Google Earth was used to check and refine the line. In addition, the Coastal Hazard line was also referred to as part of this process.

2.8 A CD is included in a pocket at the back of this report that illustrates the Coastal Environment on both the 1:50,000 topographic map and on Google Earth files. As a reference, a map with the Coastal Hazard line is included separately on the enclosed CD.

2 Page 202, *Rugged Landscape: The Geology of Central New Zealand*, Graeme R. Stevens, AH & AW Reed, 1974