



SECTION F: APPENDICES

Appendix 1: Bibliography and References

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Appendix 2: Glossary

Name	Description
Active Coastal Interface	<i>Part of the Coastal Significance Zone (CSZ) (or Coastal Terrestrial Zone) that is generally a slender component of the CSZ where the sea is the dominant element and the primary or significant influence on landform, vegetation and perception.</i>
aggradational	<i>Is the term used in geology for the increase in land elevation due to the deposition of sediment. Aggradation occurs in areas in which the supply of sediment is greater than the amount of material that the system is able to transport. The mass balance between sediment being transported and sediment in the bed is described by the Exner equation. (Wikipedia)</i>
alluvium / alluvial	<i>Sediments such as sand, silt or gravel that have been deposited by streams, rivers and other running waters</i>
ascidians	<i>Sessile filter-feeding invertebrates. Also known as sea squirts or tunicates. May be solitary or colony forming.</i>
backswamp	<i>backswamps are wetlands, at or near mean sea level, that form part of the coastal floodplains</i>
barrier spit	<i>A long elongate sand and gravel ridge above the high tide and connected at one end to the mainland, extending generally parallel with the shore but separated from it by a lagoon</i>
benthic	<i>The surface of the seabed</i>
brachiopods	<i>Small clam-like animals which superficially look like bivalve molluscs</i>
brackish	<i>Water which is a mix of freshwater and saltwater; e.g. estuarine water</i>
basal	<i>Base as in basement rock</i>
bryozoans	<i>Colonial mound-forming animals which superficially look like corals but which belong to a totally different group of animals</i>
Carpophyllum	<i>Large brown macroalgae, also known as flapjack</i>
coastal environment	<i>An environment in which the coast is a significant part or element taking account of an assessment of Policy 1 of the NZCPS 2010 and includes:</i> <i>The coastal marine area;</i> <i>-Islands within the coastal marine area;</i> <i>-Areas where coastal processes, influences or qualities are significant, including coastal lakes, lagoons, tidal estuaries, saltmarshes, -coastal wetlands and the margins of these; (Study Team emphasis)</i> <i>-Areas at risk from coastal hazards;</i> <i>-Coastal vegetation and the habitat of indigenous coastal species including migratory birds;</i> <i>-Elements and features that contribute to the natural character, landscape, visual qualities or amenity values;</i> <i>-Items of cultural and historic heritage in the coastal marine area or on the coast;</i> <i>-Inter-related coastal marine and terrestrial systems, including the intertidal zone; and</i> <i>-Physical resources and built facilities, including infrastructure, that have modified the coastal environment</i>

Name	Description
colluvium / colluvial	<i>A general term for weathered soil and rock material mantling slopes which has been transported primarily by gravity and sheet wash.</i>
cuestas	<i>Hill or ridge with a steep slope on one side and a gentle slope on the other – an asymmetric ridge</i>
Cuspate Forelands	<i>The largest sharp, seaward-projecting point of beach material, built up by wave action, occurring as a cape or as a broadly triangular point of sand or shingle</i>
Cystophora	<i>Large brown seaweed</i>
dendritic (drainage pattern)	<i>A drainage pattern in which the streams branch randomly in all directions and at almost any angle, resembling in plan the branching habit of certain trees</i>
depauperate	<i>An ecosystem that is lacking in numbers or variety of species, often because it lacks enough stored chemical elements required for life.</i>
dunes	<i>Dunes: An accumulation of sand built by wind or water.</i> <i>Foredune: The more active part of dunes located closest to the sea.</i> <i>Backdune: the backshore areas of a beach.</i>
Eelgrass	<i>Marine plant that primarily grows in the intertidal zone. Also known as seagrass.</i>
echinoderms	<i>Includes species like starfish, brittle stars, urchins and sea cucumbers</i>
ephemeral	<i>Water ways or waterbodies that are not permanent. Their surface expression changes depending on rainfall events or groundwater levels.</i>
<i>ecological naturalness (also indigenous nature)</i>	<i>In relation to the understanding of the term ‘natural character’ and separate but complementary to landscape naturalness. Ecological naturalness is an understanding of naturalness based on the level of intactness of indigenous ecosystems. Refer to Section B.</i>
estuarine	<i>Pertaining to or formed or living in an estuary, especially said of deposits and the sedimentary or biological environment of an estuary</i>
eutrophication	<i>The process of excessively increasing nutrient levels in water bodies through natural or artificial means. Artificial elevation of natural nutrient levels may be caused by human activities- e.g. livestock defecating on river banks, septic tank discharges.</i>
fans	<i>Gently sloping, fan-shaped masses of material formed along the margins of hills and mountain ranges by streams that drain their slopes. A fan commonly occurs where there is a marked decrease in gradient, for example where a stream meets the gentler floodplain or river terrace</i>
fetch	<i>(Also called Fetch length) is the length of water over which a given wind has blown.</i>
foliation	<i>The planar arrangement of textural or structural features, especially that which results from the flattening of constituent grains of metamorphic rocks</i>
Geopreservation Inventory	<i>Inventory and Maps of Important Geological Sites and Landforms in the Nelson and Marlborough Regions, including the Kaikoura District. Compiled by the Joint Earth Sciences’ Societies Working Group on the New Zealand Geopreservation Inventory. Lists the best examples of the wide diversity of natural and physical features and processes that characterise each part of New Zealand.</i>
galaxiids	<i>Native fishes belonging to the family Galaxiidae-consisting of migratory (whitebait species such as inanga, kokopu’s) and non migratory species (e.g. dwarf galaxias)</i>
herbfields	<i>A plant community where herbs are the dominant life-form. Herbs are defined as non-woody plants other than grasses, sedges and rushes and are usually small-leaved and prostrate.</i>

Name	Description
Holocene	<i>An epoch of the Quaternary period, from the end of the Pleistocene, approximately 8000 years ago, to the present time; also, the corresponding series of rocks and deposits.</i>
hydroids or hydroid trees	<i>Colonial animals related to jelly fish that form upright feather-like structures.</i>
Intertidal	<i>The area of the shore which is covered and uncovered by the rise and fall of the tide</i>
indurated	<i>To make harden (i.e. soils that had been indurated by extremes of climate.</i>
Lagoon	<i>A shallow body of water separated from a larger body of water by a barrier.</i>
Laminae	<i>The thinnest recognisable layers in a rock, differing from each other in colour, composition and/or particle size</i>
Landscape	<i>The cumulative expression of natural and cultural features, patterns and processes in a geographical area, including human perceptions and associations.</i>
landscape naturalness	<i>Also referred to as 'perceptions of nature' within the understanding of the term 'natural character'. Landscape naturalness refers to the experiential/ perceptual component of natural character (as interpreted by the study team). Essentially it is an understanding of naturalness based on the degree of visible human modification which is present in the landscape (i.e. the perception and appearance of naturalness rather than the more specific interpretation of indigenous). The remaining, yet complementary term 'ecological naturalness' is the (natural science) component of natural character. Refer to Section B of this study.</i>
Land Types systems	<i>Land types distinguish major physiographical landform units and are based on a range of data sources including published scientific papers, geological and topographical maps, joint earth science inventories and expert scientific knowledge.</i>
Lithology	<i>The nature and composition of rocks</i>
macroalgae	<i>Large seaweeds.</i>
macrocystis	<i>A very large brown seaweed also known as giant kelp or giant bladder kelp</i>
Mica	<i>A mineral group consisting of phyllosilicates with sheet-like structures and characterised by very perfect basal cleavage</i>
natural character	<i>Is the term used to describe the natural elements of all coastal environments within the NZCPS. Refer to Section A of this report.</i>
naturalness	<i>A measure of the degree of human modification of a landscape/ seascape or ecosystem expressed in terms of:</i> <i>i) ecological naturalness (indigenous nature); and</i> <i>ii) landscape naturalness (perceptions of nature).</i>
offshore reef	<i>A ridge of rock with the top just below or just above the water surface which is located at some distance from the shore.</i>
outstanding natural character	<i>An area of outstanding natural character must be: 'those areas that exhibit a combination of natural elements, patterns and processes that are exceptional in their extent, intactness, integrity and lack of built structures (the 'clutter' factor) and other modifications compared to other areas in the Waikato Region'. (BML statement)</i>
Pleistocene	<i>An epoch of the Quaternary period, after the Pliocene of the Tertiary and before the Holocene. It began 2 to 3 million years ago and lasted until the start of the Holocene some 8000 years ago</i>
Phyllite	<i>A metamorphic rock, intermediate in grade between a slate and a schist, in which minute grains of sericite and chlorite impart a silky sheen to cleavage and schistosity surfaces</i>
phyllosilicates	<i>Silicate structures in which the SiO₄ tetrahedra occur linked together in infinite two-dimensional sheets. An example is mica</i>

Name	Description
Prograding (Progradation)	<i>The building forward or outward toward the sea of a shoreline or coastline (as a beach, delta, or fan) by near-shore deposition of river-borne sediments or by continuous accumulation of beach material thrown up by waves or moved by long-shore drifting</i>
Regression	<i>Is a geological process occurring when areas of submerged seafloor are exposed above the sea level. The opposite event, marine transgression, occurs when flooding from the sea covers previously exposed land. (Physical Geology: Exploring the Earth)</i>
relictual	<i>Of a natural area, community, vegetation type or population of species which is now remnant but which once had a wider, more continuous distribution and/or greater numbers.</i>
rhodoliths	<i>Unattached, branching, benthic red algae that superficially resemble coral.</i>
rocklands	<i>A plant community where exposed rock is the main cover over which plants are sparsely scattered, such as bluff faces and escarpments.</i>
segregation	<i>Compositional banding derived from an originally more homogeneous rock.</i>
Serpentine	<i>An ultramafic rock consisting almost wholly of 'serpentine' minerals which are formed by the metamorphic alteration of olivine and similar minerals.</i>
shrublands	<i>A plant community where shrubs are the dominant life-form. Shrubs are defined as woody plants less than 5m high and are usually multi-stemmed. Dense shrubland is also called scrub.</i>
Schist	<i>A strongly foliated regionally metamorphosed rock that can be readily split into slabs and coarser grained than slate or phyllite; applies to t.z.III and IV subzones</i>
Schistosity	<i>The foliation ('fissility') in schist, often due to the parallel planar arrangement of micas</i>
Semi-schist	<i>An informal term applied to a foliated metamorphic rock intermediate in textural development between a sediment and a schist; applies to t.z.IIA and IIB textural subzones.</i>
Spartina	<i>An exotic saltmarsh grass.</i>
Subtidal	<i>The area below the intertidal zone which remains permanently covered in water.</i>
supratidal zone	<i>Pertaining to the shore immediately marginal to and above high-tide level.</i>
tombolo	<i>A deposition landform in which an island is attached to the mainland by a narrow piece of land, such as a spit or bar.</i>
turbidity	<i>Discolouration of water caused typically by suspended sediment load.</i>
tombolo	<i>A sand or gravel bar or barrier that connects an island with the mainland or with another island.</i>
ultrabasic	<i>Relates to igneous rocks with very high contents of dark-coloured minerals containing iron and magnesium and less than 44% silica. The term is frequently used interchangeably with ultramafic.</i>
ultramafic	<i>Igneous rocks composed chiefly of mafic minerals.</i>
Ulva	<i>A type of green seaweed, common in areas with elevated nutrients.</i>
wave-cut platform	<i>Narrow flat area of rock often found at the base of a sea cliff, created by the erosion of waves.</i>
Wave-dominated beaches	<i>Beaches exposed to persistent ocean swell and waves and low tides (range <2m). Consist of 3 types; Reflective, Intermediate (longshore bar and trough, rhythmic bar and beach, transverse bar and rip, low tide terrace) and Dissipative.</i>
Wave swash	<i>A turbulent layer of water that washes up on the beach after an incoming wave is broken.</i>

