



Nelson Coastal Study

**Pressures and Threats to Nelson's highly
valued parts of the Coastal Environment**

March 2015

 **Nelson City Council**
te kaunihera o whakatū

Boffa Miskell 

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1.0 Introduction

The Nelson Coastal Study has identified **and mapped** a number of **areas of high, very high and Outstanding Natural Character areas** within the coastal environment. The associated values ascertaining their highly rated status are listed adjacent to these mapped areas within The Nelson Coastal Study 2014.

Under RMA s6(a) it is necessary to determine the existing attributes and extent of natural character and assess how these may be affected by a specific planning regime or proposal. This approach is also required under the NZCPS 2010. However, Policy 13 of the NZCPS 2010 also specifically requires that an evaluation is made as to whether the natural character in the existing coastal environment is at least high - in order to then be able to determine whether Policy 13(1)(a) or 13(1)(b) is triggered. Policy 13(1) of the NZCPS 2010 states:

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

(a) avoid adverse effects of activities on natural character in areas of the coastal environment with outstanding natural character; and

(b) avoid significant adverse effects and avoid, remedy or mitigate other adverse effects of activities on natural character in all other areas of the coastal environment;"

Based on the above, any development within an area holding high (or very high) levels of natural character must avoid all significant adverse effects. Furthermore, there should be no adverse effects to areas holding outstanding natural character. A Supreme Court decision in April 2014 on two appeals in relation to salmon farms in the Marlborough Sounds focussed the attention on the underlying policies (in this case the NZCPS), particularly in relation to policies that state avoidance of effects. The essence of the decision clearly provides strong direction to avoid adverse effects on Outstanding Natural Character and Outstanding Natural Landscapes in the Coastal Environment. The decision states that where policy direction states 'avoid', essentially this is what should occur. This decision has yet to be fully determined and further guidance on this will develop over time.

As with changes within landscapes generally, change within the coastal environment can have the effect of devaluing an area's intrinsic values. Change on the other hand which improves the condition of an area can enhance values. It comes down to what type of change is occurring. Managing this change, especially to more sensitive areas is challenging, especially with increasing demands for lifestyle choices.

All of the highly rated areas of natural character are highly sensitive to change and should be managed in order to protect their intrinsic values.

The Nelson coastal environment is subject to differing pressures, a number of which are outlined and addressed in the next section of this report. At a generic level change within the coastal environment is often, but not always brought about by economic drivers. Traditional pastoral farming activities and conversion to dairy farming can change the appearance of farmland as can forestry. The growth of urban centers and infrastructure upgrades (i.e. Nelson Port, Nelson airport and wastewater treatment plants) as well as increased demands for suburban living threaten values that contribute to the naturalness of an area.

Generally, threats arise where:

- activities become larger in scale and therefore a more dominant and singular feature of the coastal environment e.g., large scale forestry compared with small scale tree planting interspersed with indigenous outcrops and open pasture;
- housing is developed in locations where it detracts from open and natural characteristics or in more intensive clusters that contrast with the mosaic pattern or open coastal character that currently exists;
- planting and/or structures obscure or alter the outline of natural landforms; earthworks alter natural contours;
- Threats also arise through cumulative change i.e., landscape change arising over time from incremental development or "creep" where an existing modification in the coastal environment is used to justify further change.

Climate change is another factor that can alter the physical and visual makeup of the coastal environment, with increased storms and rising sea levels, erosion prone and low lying areas are vulnerable to change. Attempts such as stop banks, bank stabilisation, reclamation and sea defenses provide temporary solutions, however longer term solutions ought to also be considered.

It is difficult to anticipate potential threats to the coastal environment in the future, as they are highly dependent of external drivers such as technological progress and economic factors. Therefore, there is a need to regularly review the Resource Management Plan in the light of external pressures and ongoing change in the coastal environment.

The growth of Nelson due to its close association with the coastal environment has presented many issues since the preparation of the last Resource Management Plan. Identifying future and current trends is a key determining factor in controlling change in the coastal environment. The following chapter outlines a range of predominantly land use changes that can impact upon an areas coastal natural character values.

More specifically, these effects are often related to only a few key activities, such as earthworks, loss of areas of significant indigenous vegetation, the placement of buildings, structures and tree plantings in the landscape and establishment of aquaculture, ports and marinas. These individual threats have been addressed separately below.

2.0 Potential Future Terrestrial and Marine Uses and Management Mechanisms

The vulnerability of the coastal environment to a variety of human activities is addressed as part of the suggested management mechanisms outlined below. Management mechanisms for the coastal environment would ideally be targeted specifically to each specific area that holds high, very high or outstanding natural character values as well as general mechanisms targeted at the remaining areas. However, a range of more generic aspects of landscape management that apply to all highly valued coastal areas are outlined below, purely to reflect the values of various areas identified. The list is not comprehensive and the future may hold a different range of uses that cannot be anticipated at the moment.

Earthworks

Earthworks can leave exposed and cut surfaces which contrast with surrounding vegetation and the natural contour. As a consequence they can be visually prominent and unsightly. Earthworks can potentially alter the shape and slope of the natural contour, particularly if straight/sharp lines are left which contrast with a more rounded topography. Cuttings on steep slopes which are prone to erosion can also create unnatural patterns which in turn amplify excessive scarring.

Earthworks associated with access roads or tracks can on some steep coastal sites often be more intrusive than the building or structure to which access is gained. When considering effects created by earthworks consideration should be given to the scale, volume, depth and location (visibility) of the area subject to the earthworks.

Land Based Structures

Buildings and structures have the potential to modify the coastal environment depending on their location in relation to the topography, size/ scale/ height, form, colour, materials/ finish as well as surrounding existing and proposed vegetation. For residential dwellings landscape change can also relate to other consequential modifications that lead to domestication, such as gardens, driveways, washing lines, etc.

It is unlikely that some parts of the identified highly rated areas of natural character in the coastal environment for Nelson would be developed for residential use due to their remoteness and often difficult access. The exceptions to this may be the continued intensification of the around Cable Bay and Kokorua on flatter land. Smaller settlements such as Glenduan might also experience an increase in residential development, although this area is outside any highly rated area for natural character. It may be appropriate to identify areas that are suitable to absorb residential or industrial development outside of these highly rated areas, such as Glenduan, to ensure future development is planned in a strategic rather than reactive manner.

Structures can also include telecommunication towers, electricity pylons, wind turbines, solar panels and farm buildings, such as sheds. Ridgelines are particularly sensitive to the locations of structures, since their appearance on the skyline is often visually prominent from a variety of viewpoints. The naturalness of particularly legible landforms may be modified by structures, if they visually dominate their surroundings.

When considering the adversity of effects of buildings and structures within areas rated highly for natural character, consideration should be given to:

- different types of buildings and structures; and
- the variation offered by topography and vegetation for location of buildings and structures;
- scale, form, finish including colour and materials;
- cumulative effects;
- visibility;
- associated earthworks

Water based Structures

Water based structures such as jetties, marinas and aquaculture can impact on the seascape and undermine the natural character values of the coastal marine environment. Terrestrial based activities such as reclamation, sea defenses and piped outfalls also can affect the natural qualities of the coastal marine environment.

When considering the effects of water based structures in a coastal environment consideration should be given to:

- Siting (location of structure in bay) and a good understanding of the area's natural character values;
- Bulk (intensity and size of structure proposed);
- Design (including number of buoys, cages, colour, materials etc.)
- The frequency the structure will be visited, serviced or maintained.

Removal of native vegetation

For many of areas of high, very high or outstanding natural character, the presence of indigenous vegetation within the coastal environment is an important contributing factor that adds to the biotic values of the areas. This can be the case for both Marine and Terrestrial Areas. The quality and quantity of native vegetation cover varies considerably between highly rated areas. The extent and species composition of vegetation cover/ remnants needs to be considered when effects of vegetation removal are to be assessed.

From a natural character perspective consideration should be given to the extent to which the loss of indigenous vegetation will adversely affect:

- The biotic values of an area highly rated, notably for its vegetation composition
- The overall natural character of an area, including its natural elements, patterns and processes;
- Indigenous ecosystem integrity, condition and function (including its altitudinal sequence from ridge to sea floor);
- Associated habitats and communities that are associated with the vegetation, such as wading or breeding birds;
- Important wetlands, marine reserves and other protected land (including QEII covenants).

Tree Planting

Tree planting can have a visual effect where the planting provides a stark contrast to the openness of a landscape. This contrast could result from the scale as well as the appearance of the planting. Tree planting for commercial purposes tends to be linear and ordered in its layout and consist of a singular species. Access tracks and areas of felling may be visually prominent, especially in steep terrain. This results in an “unnatural” appearance compared with indigenous vegetation which consists of a variety of plants of different scale, colour and texture and which generally conforms to the natural contour of the land.

When considering effects of tree planting consideration should be given to:

- the scale of the planting;
- its layout (spacing and pattern),
- the species and purpose of the planting,
- methods of harvest.

It is accepted that amenity planting and indigenous re-vegetation tends to avoid a large scale and uniform layout while shelterbelts are an anticipated part of the rural environment. It may therefore be inappropriate and unnecessary to impose controls on non-commercial planting.

Location and visibility are important considerations, notably in coastal areas where the land is often seen against the skyline (especially in a boat) and encroachment (physical and visual) on ridges or elevated and highly visible parts could result in obscuring of features. Consideration of cumulative effects when assessing scale may also assist in avoiding physical encroachment of trees within the coastal environment.

Erosion and Sea Level Rise

There are many factors associated with coastal erosion, many fall within two categories: An event (or storm) or long term erosion.

A single event (or sometimes multiple events) can vary a coastal area quite quickly within a short space of time. Sandy beaches and spits can often be highly variable during a storm surge and which can completely change the physical form of the area. Gravel beaches can also change, although due to the physical make up, can be slightly more stable than sandy beaches. Estuarine shores and cliffs can also change quite dramatically, although are highly dependent on their physical makeup and direction of the storm. Floods from inland rivers overflowing can also erode river mouths. Slips too can further weaken soils and structures close to the coast.

Longer term erosion rates are gradual and less dramatic, however can have consequences on the physical make-up of the coastal environment. Longshore drift can continually transport sediment and cause build up (accumulation) in a different location from where the sediment derived. Gradual sea-level rise can also affect the rate of erosion in areas.

Human intervention can markedly alter natural coastal sediment processes through

- catchment activities e.g. land-use practices, urbanisation, dams, water abstraction (affects sediment supply from land sources via rivers and streams)
- dredging of tidal entrances and harbour channels (affects sediment movements within coastal systems)
- sand or gravel extraction from the coastal marine area (removes sediment from the nearshore system)
- coastal protection works e.g. groynes, breakwaters, artificial reefs, seawalls (affects the natural movement and distribution of nearshore and beach sediments)
- beach nourishment (adds sediment to the beach and nearshore system)
- permanent modification of coastal margins e.g. dune removal, vegetation removal or change, reclamations, waterways, wharfs and marinas (affects the natural movement of beach and nearshore sediments). (Source: www.mfe.govt.nz/publications/climate-change-guidance-manual)

Reclamation, dredging and trawling activities

Land reclamation can completely alter the physical and visual aspects of the coastal environment. Due to the nature of the topography, and pressure for flat land, land reclamation can be required near places of habitation. Within the Nelson area, there has been much land reclamation. The majority is associated with the airport and Port Nelson, however there are other areas such as the waste water treatment plant and part of SH6. The extent and location of any new areas of reclaimed land will need to be fully assessed not only for its physical impact to the identified coastline, but also to the natural elements, patterns and processes that naturally occur. Secondary effects (indirect effects) of land reclamation can potentially affect other coastal areas and cause potential greater erosion in other locations. An example might include the expansion of a port, which changes the local tidal currents which in turn potentially could increase erosion of a nearby beach.

When considering land reclamation, consideration should be given to:

- Size, extent and nature of area;
- Location;
- Type of fill material;
- Natural Character aspects, including the elements, patterns and processes of both marine and terrestrial aspects;
- Potential indirect effects.

Dredging and trawling can also affect the naturalness of an area. Identified areas are required to ensure that the natural character of the marine environment is appropriately managed.

3.0 Specific sensitivities to Coastal Marine and Coastal Terrestrial Areas

The tables over the next few pages outlines the associated sensitivities and threats to areas holding high and very high levels of natural character at the Level 4 scale. The table also identifies those areas containing Outstanding Natural Character.

Where a particular Coastal Marine or Coastal Terrestrial Area does not contain any areas of 'high, very high or outstanding natural character' at the Level 4 scale, then general characteristics and values are identified for the Level 3 area and more general threats are identified.

Further information on Restoration potential within Nelson's Coastal Environment can be found within Appendix 6, Potential for Restoration of The Nelson Coastal Study [2014] Boffa Miskell

Table 1: Associated Sensitivities and Threats to areas of High and Outstanding Natural Character

Coastal Area	Level 4 NC Rating	Level 4 Area	Outstanding	Key Natural Character Values	Key sensitivities to the identified values	Likely Possible Threats	Comments
Coastal Marine Area A: Eastern Outer Te Tai-o-Aore/ Tasman Bay	Very High	Coastal waters from Cape Soucis to Horoirangi Marine Reserve, including Whangamoa Inlet, Delaware Inlet and Cable Bay.	Yes. Entire coastline out to approx. 2.5km	<p>- Intertidal and near shore, subtidal areas of inner Eastern Outer Tasman Bay retain very high natural values:</p> <ul style="list-style-type: none"> • Whangamoa Inlet • Delaware Inlet • Pepin Island • Cable Bay • Horoirangi Marine Reserve <p>- Reefs around Cape Soucis support cup corals and a range of uncommon species (e.g. ambush starfish, brachiopods)</p> <p>- Whangamoa and Delaware Inlets provide an important link for supplying nutrient rich waters for nourishing marine food web.</p> <p>- The main body of the Whangamoa estuary is relatively unmodified and forms a significant ecological site that remains relatively undeveloped compared to other river mouth dune systems.</p> <p>- Central part of an unmodified rocky shore biological continuum from Marlborough, through to eastern Tasman Bay to the Horoirangi Marine Reserve.</p>	Ecologically and visually sensitive due to remote and exposed openness. Greater sensitivities to enclosed estuaries.	<ul style="list-style-type: none"> - Removal of estuarine vegetation - Water contaminants - Dredging and trawling - All forms of aquaculture (including mussel farms, spat catching farms and salmon farms) 	Land based activities (such as agriculture, forestry and infrastructure) can affect marine biodiversity values.

Coastal Area	Level 4 NC Rating	Level 4 Area	Outstanding	Key Natural Character Values	Key sensitivities to the identified values	Likely Possible Threats	Comments
				<ul style="list-style-type: none"> - Ataata Point Reef supports large patches of common anemone, sponges and many uncommon species (including brachiopods, ambush starfish, window oysters) - Highest unmodified biodiversity within Te Tai-o-Aorere/ Tasman Bay coastal marine environment - Very high levels of perceived naturalness due to lack of modifications along the coastal edge and remoteness. 			
Coastal Marine Area B: Southern Te Tai-o-Aorere/ Tasman Bay	Very High	Southern part of Horoirangi Marine Reserve to exposed waters off Te Pokohiwi/ Boulder Bank	Yes. Entire coastline out to approx. 2.5km	<ul style="list-style-type: none"> - Southern part of Horoirangi Marine Reserve and intertidal and nearshore subtidal communities along much of the length of the Boulder Bank. - Complex sub-tidal reef system and important relationship with aquatic habitats protected in Horoirangi Marine Reserve. - Transient coastal processes and visibility over water from exposed locations on Te Pokohiwi/ Boulder Bank. - A legible land system derived from material eroded from Mackay Bluff to form a slender natural spit of cobbles and boulders - Sightings of seasonal visitors, including marine mammals amplify naturalness of area. 	Ecologically sensitive Horoirangi Marine Reserve	<ul style="list-style-type: none"> - Water containments (especially associated with port/ marina) - Dredging and trawling - Aquaculture 	Land based activities (such as agriculture, forestry and infrastructure) can affect marine biodiversity values.

Coastal Area	Level 4 NC Rating	Level 4 Area	Outstanding	Key Natural Character Values	Key sensitivities to the identified values	Likely Possible Threats	Comments
				- Limited modification along coastal waters amplify remote like characteristics.			
	High	Western part of Nelson Haven	No	- Western part of Nelson Haven is relatively unmodified and retains high abiotic and biotic values. - High experiential values due to the ebb and flow of the tidal and sense of isolation looking towards the boulder bank.	Nelson Haven holds a number of ecologically sensitive species. Modification to this western part could reduce this area's natural character.	- Expansion of marina - Dredging - Aquaculture - Outflow pipes	Whilst the eastern part of Nelson Haven is modified, the western part hold high abiotic, biotic and experiential values.
Coastal Marine Area C: Waimea	None	None (moderate for Level 3 rating)	No	- High biological importance. - ranked as an area of outstanding value to wildlife and the numbers of invertebrates, fish and birds using the estuary is relatively high compared with other New Zealand estuaries. - inlet is an important refuge and feeding area for juvenile flatfish and snapper. - variable oystercatchers with Waimea Inlet an area of international importance for this species. - Moderate to high perceived naturalness values due to ebb and flow of the tidal flats and tidal channels.	The inlet holds a number of ecologically sensitive species. Potential for restoration of coastal waters.	- Removal of estuarine vegetation - Water containments - Gravel extraction - Aquaculture - Aggressive Erosion control measures - Reclamation - Piped outfalls	Significant modification has occurred along the coastal edge of this area. This area is used for a number of recreational activities. The Bells Island sewage treatment plant discharges treated sewage into Waimea Inlet on the outgoing tide and thence into Te Tai-o-Aorere/ Tasman Bay. Bird culling associated with Nelson airport.

Coastal Area	Level 4 NC Rating	Level 4 Area	Outstanding	Key Natural Character Values	Key sensitivities to the identified values	Likely Possible Threats	Comments
						- Airport related activities (including bird culling)	
Coastal Terrestrial Area 1: Cape Soucis	Very High	Cape Soucis to Whangamoa River mouth	Yes. Extent follows the coastal environment around Oananga Bay to Charleys Head, then extends along the top of the steep coastal cliffs southwards to the mouth of the Whangamoa River. Areas of pine plantation and grazed land have been excluded.	<ul style="list-style-type: none"> - Steep, erosion prone cliff faces are unmodified; - Extent of intact indigenous forest and coastal cliff vegetation; - Distinctive vegetation occurs on Cape Soucis due to unusual geology; - High numbers of threatened and at-risk plant species, especially along the narrow band of coastal habitat; - Very low levels of modification; - Very high wilderness, remote and experiential values associated with exposed undeveloped coastline; - Very high levels of perceived naturalness due to dominance of coastal processes and absence of buildings - Rich association with transient coastal experiences due to shifting tidal and wave patterns, light conditions and presence of marine mammals - Infrequently visited. 	<p>Ecologically sensitive. Impacts on conservation values associated with native vegetation and vulnerable plant communities.</p> <p>Geomorphological sensitivities. Visual sensitivity of ridgeline and upper slopes.</p> <p>Currently characterised as an unmodified landscape with dramatic rugged and isolated coastal character and a coherent cover of native vegetation.</p>	<ul style="list-style-type: none"> - Introduction of subdivision - Expansion of forestry (and encroachment of weeds, including wilding pines) - Utility structures (including transmitter masts) - Scarring from earthworks for tracks, - Removal of indigenous vegetation for grazing 	<p>Part of this area is in public ownership and managed as part of the Conservation Estate within Mount Richmond Forest Park which lessens the threat of inappropriate development</p> <p>Removal of native vegetation can result in adverse visual and landscape effects.</p> <p>Commercial forestry within area has devalued the broader naturalness.</p> <p>Limited access with low levels of recreation use.</p>

Coastal Area	Level 4 NC Rating	Level 4 Area	Outstanding	Key Natural Character Values	Key sensitivities to the identified values	Likely Possible Threats	Comments
Coastal Terrestrial Area 2: Kokorua	Very High	Estuarine margins and sand spit	Yes. Includes the very highly rated terrestrial sand spit and the sheltered margins of the estuary (determined by the mean high water spring mark)	<ul style="list-style-type: none"> - Estuarine margins and enclosing dune to north are relatively unmodified. Small but very important valley-floor forest and wetland remnants. - The main body of the estuary is relatively unmodified and forms a significant ecological site that remains relatively undeveloped compared to other river mouth dune systems. - Experiential values includes remoteness and high levels of perceived naturalness - The Kokorua sand spit, contains remnant populations of a variety of regionally threatened plant species and is ecologically significant - Provides excellent feeding grounds for threatened and at risk waders 	Ecological sensitivity. Currently characterised as an unmodified estuary.	<ul style="list-style-type: none"> - Removal of estuarine vegetation - Expansion of Forestry - Subdivision and/or building development - Scarring from earthworks for tracks - Vegetation clearance or damage from pests or grazing - Encroachment of weeds (e.g. Wilding pines) 	<p>Only a small part of this of this area is public ownership which has potential to increase the threat of development</p> <p>Removal of native vegetation can result in adverse visual and landscape effects.</p> <p>Upstream landuse activities can affect the health of the estuary.</p> <p>Sandspit managed by Department of Conservation which lessens development activity.</p>
	Very High	Lowland alluvial forest	No	<ul style="list-style-type: none"> - Mature and regenerating coastal lowland alluvial forest 	Impact to area of indigenous forest	<ul style="list-style-type: none"> - Land drainage - Forestry and agriculture intensification - 	Upstream landuse activities can affect the health of the estuary (i.e. forestry and dairying).

Coastal Area	Level 4 NC Rating	Level 4 Area	Outstanding	Key Natural Character Values	Key sensitivities to the identified values	Likely Possible Threats	Comments
	High	Regenerating slopes flanking estuary	No	<ul style="list-style-type: none"> - Regenerating indigenous forest on coastal hill slopes. - Experiential values includes remoteness and high levels of perceived naturalness 	Impact to regenerating indigenous forest slopes	<ul style="list-style-type: none"> - Earthworks - Vegetation clearance - Prominent structures (i.e. utility or buildings) - Forestry 	Vegetation can assist in stabilizing hills.
Coastal Terrestrial Area 3: Whangamoa	Very High	West facing slopes of Gentle Annie and Maunganui	No	<ul style="list-style-type: none"> - Intact, large extent of original bush cover along slopes - Impressive steep coastal cliffs - No structures or building evident 	Ecological sensitivity. Visual sensitivity of ridgeline and upper slopes.	<ul style="list-style-type: none"> - Forestry - Utilities - Earthworks - Goats grazing increases erosion - Removal of indigenous vegetation - Wilding Pines 	<p>Visual unity of slopes. Slopes vulnerable to slips and erosion.</p> <p>Much of this is managed by the Department of Conservation</p>
	High	Cliffs and regenerating area around Hori Bay.	Yes. Very lower slopes and rocky margins immediately above mean	<ul style="list-style-type: none"> - Regenerating slopes of indigenous vegetation above Hori Bay contribute to perceived naturalness. - Dramatic rocky and remote beach access to Hori Bay area 	<p>Impacts to abiotic and biotic natural character values.</p> <p>Lower cliffs and rock area around Hori Bay.</p>	<ul style="list-style-type: none"> - Land use changes (including forestry and increased agriculture) 	<p>Pine plantation to higher elevations reduce naturalness.</p> <p>Much of this is managed by the</p>

Coastal Area	Level 4 NC Rating	Level 4 Area	Outstanding	Key Natural Character Values	Key sensitivities to the identified values	Likely Possible Threats	Comments
			high water springs mark			<ul style="list-style-type: none"> - Development of structures at Hori Bay - Earthworks associated with roading - Coastal erosion and runoff 	Department of Conservation.
Coastal Terrestrial Area 4: Delaware Bay	Very High	Estuarine fringes of Wakapuaka River	The sheltered margins of the estuary.	<ul style="list-style-type: none"> - Estuarine fringes and mouth of Wakapuaka River - Numerous seabirds are present including many threatened or at risk waders. 	<p>Impacts to abiotic and biotic natural character values.</p> <p>Ecological sensitivity</p>	<ul style="list-style-type: none"> - Wilding pines and forestry - Removal of estuarine vegetation - Goats grazing increases erosion - Utilities - Subdivision - Earthworks 	Upstream landuse activities can affect the health of the estuary (i.e. forestry and dairying).
	Very High	Bishop Peninsula	Yes	<ul style="list-style-type: none"> - Impressive remnant vegetation on Bishop Peninsula - Very high levels of perceived naturalness due to dominance 	Impact to area of indigenous forest	<ul style="list-style-type: none"> - Indigenous vegetation removal - Reduce management 	Any development would vastly decrease the natural character of the peninsula.

Coastal Area	Level 4 NC Rating	Level 4 Area	Outstanding	Key Natural Character Values	Key sensitivities to the identified values	Likely Possible Threats	Comments
				of coastal processes and absence of buildings;		and introduction of pests - Sea level change	Potential to increase natural character further via protection.
	High	Dune system on Delaware Spit and Pepin Island spit	Extreme western end of Delaware Spit included within larger ONC area.	<ul style="list-style-type: none"> - Regionally rare plant communities along Delaware Spit - Impressive landform features to estuary - Shifting coastal processes lead to high experiential values - Very high levels of perceived naturalness due to dominance of coastal processes and absence of buildings; 	<ul style="list-style-type: none"> Impacts from grazing on spits. Erosion of vegetation communities on spits 	<ul style="list-style-type: none"> - Grazing - Sea level rise - Coastal defenses - Development on spits (including prominent structures) 	<ul style="list-style-type: none"> Any development on the spits would vastly decrease their natural character. Potential to increase natural character further via further protection.
Coastal Terrestrial Area 5: Horoirangi/ Drumduan	Very High	Protected Indigenous area of forest and QEII (Drumduan)	No	<ul style="list-style-type: none"> - Notable areas of intact native forest present, with significant conservation value - Impressive views from Rotokura/Cable Bay walkway from within area. 	Impact to area of indigenous forest	<ul style="list-style-type: none"> - Indigenous vegetation removal - Earthworks - Goats grazing increases erosion 	<ul style="list-style-type: none"> Rotokura/Cable Bay track offers only real elevated walk in Nelsons coastal environment. Much of this area is covered by a QEII covenant reducing risk of development.

Coastal Area	Level 4 NC Rating	Level 4 Area	Outstanding	Key Natural Character Values	Key sensitivities to the identified values	Likely Possible Threats	Comments
	High	Lower west facing coastal cliffs of Horoirangi/ Drumduan	No	<ul style="list-style-type: none"> - Coastal erosion associated with Mackay Bluff expressive of formative abiotic process with Boulder Bank - Sense of remoteness due to its isolation and exposure to the coast. - Dramatic cliffs fronting beach with prominent bluffs 	Impacts to the coastal cliffs	<ul style="list-style-type: none"> - Wilding pines - Goats grazing increases erosion - Natural erosion and sea level changes 	<p>Much of this land is lightly grazed. Goats are also present.</p> <p>Due to the unstable topography, it is likely that there will limited structures/ development of this coastal interface.</p> <p>Establishment of native plants can assist in stabilizing cliffs and coastal interface</p>
Coastal Terrestrial Area 6: Wakapuaka	None	None (moderate – low for Level 3 rating)	No	<ul style="list-style-type: none"> - Low lying reclaimed landform including drained paddocks in the coastal environment. - Salt marsh vegetation protected by a DOC Reserve 	Impacts on abiotic and biotic values associated with geomorphology of the Boulder Bank and retained areas of salt marsh	<ul style="list-style-type: none"> - Intensification of landuse (introduction of prominent non-rural buildings and dairy conversion) - Urban intensification - Leaching associated with 	<p>The most sensitive areas are retained in public ownership which lessens the threat of inappropriate development in these areas.</p> <p>Maintaining the open rural character of this area</p>

Coastal Area	Level 4 NC Rating	Level 4 Area	Outstanding	Key Natural Character Values	Key sensitivities to the identified values	Likely Possible Threats	Comments
						intensification of landuse	
Coastal Terrestrial Area 7: Te Pokohiwi/ Boulder Bank	High	Te Pokohiwi/ Boulder Bank spit	No	<ul style="list-style-type: none"> - Internationally recognised landform with good associated gravel ridges. Best known boulder spit in New Zealand. - Important site for birds and lizards. - Very high experiential values due to exposure. 	<p>Impacts on abiotic and biotic values associated with legible coastal processes</p> <p>Impacts to visual exposure</p>	<ul style="list-style-type: none"> - Erosion and sea level rise and type of response to issue - Removal of boulders for roading/ gravel extraction (quarrying/ mining) and further 'cuts' - Port expansion - Further 'built' development on boulder bank. 	<p>Modifications such as some historic baches and a lighthouse are located within the southern part of the spit. Haulashore Island has also been 'severed' from the spit for shipping purposes.</p> <p>The Te Pokohiwi/ Boulder Bank and Haulashore Island are in public ownership which lessens the threat of inappropriate development</p>
Coastal Terrestrial Area 8: Malvern Hills	None	None (moderate – low for Level 3 rating)	No	<ul style="list-style-type: none"> - Elevated visual and auditory connection with the sea and primary hill backdrop to the north of Nelson. - Mosaic of vegetation including areas of regenerating native vegetation and forest. 	<p>Impacts to visual connection with the sea and wider context.</p> <p>Some native fish within Dodson Valley.</p>	<ul style="list-style-type: none"> - Apparent 'drifting' of subdivision along hillside - Increased earthworks 	<p>Much of the original natural character has been lost due to the urbanised nature of this Coastal Marine Area.</p> <p>Exotic vegetation dominates.</p>

Coastal Area	Level 4 NC Rating	Level 4 Area	Outstanding	Key Natural Character Values	Key sensitivities to the identified values	Likely Possible Threats	Comments
				<ul style="list-style-type: none"> - Low density rural character primarily contained along lower slopes providing a coherent transition between urban areas and a more elevated open backdrop along the Atawhai Hills. 	Impacts on landform from intensification of subdivision development.	(and 'scarring') <ul style="list-style-type: none"> - Land use practices upstream reduce biodiversity of rivers. 	Intensification of subdivision may impact further upon the natural character values of the 'Area' and broader Haven. Reduced levels of perceived naturalness.
Coastal Terrestrial Area 9: Nelson	None	None (very low for Level 3 rating)	No	<ul style="list-style-type: none"> - Whilst modified the Maitai River supports a significant indigenous fish fauna including several threatened species. - Visual and auditory connection with the sea. - In more elevated areas, panoramic views are obtained of wider Tasman Bay. 	Maitai River is ecologically sensitive. Impacts on conservation values associated with the river's native vegetation and vulnerable plant communities. Visual connection with the sea and wider context. Maintenance of access to the sea.	<ul style="list-style-type: none"> - Erosion of reclaimed land and type of protection applied; - Increased port activities - Land use practices upstream reduce biodiversity of rivers 	Much of the original natural character has been lost due to the urbanised nature of this Coastal Marine Area.
Coastal Terrestrial Area 10: Tahunanui	High	Saxton Island, Pig Island, Oyster Island	No	<ul style="list-style-type: none"> - All islands are formed from raised sand bars within the inlet. With the ebb and flow of the tide, the islands increase in size, promoting high levels of perceived naturalness. 	Impacts on abiotic and biotic values associated with islands.	<ul style="list-style-type: none"> - Erosion of beach/ dunes reclaimed land and type 	Much of the original natural character has been lost due to the urbanised edge of this Coastal Marine Area.

Coastal Area	Level 4 NC Rating	Level 4 Area	Outstanding	Key Natural Character Values	Key sensitivities to the identified values	Likely Possible Threats	Comments
				<ul style="list-style-type: none"> - Semi-remote and scenic values are obtained on all islands. - Saxton Island represents a biologically rich and relatively isolated island, an area seldom found in New Zealand estuaries. - The inlet is an important site for rare and important seabirds. - The small island of Pig Island supports some native flora. - Oyster Island is currently regenerating. 	Erosion control can impact upon natural character values.	<ul style="list-style-type: none"> - of protection applied; - Sea level rise - Growth of industry - Removal of estuarine vegetation - Water containments - Greater intensity of recreational pursuits - Airport expansion 	<p>Saxton Island has a restoration plan.</p> <p>Varying levels of modification on each island. Some regeneration has occurred on Oyster Island, including removal of wilding pines.</p> <p>Several structures are located on Saxton Island</p> <p>Loss of beach and dunes due to erosion.</p>