

## Natural character Assessment Sheet

<b>Map Unit</b>	CNC1
<b>Description</b>	Henley



### Geomorphological and Hydrological naturalness

Criteria	Comments	Rating
The degree to which the landforms / seabed are the product of natural processes?	Semi-tidal with virtually nil coastal influence. Meanders adjacent to main channel. Wetlands modified by drainage, channels, causeways, and flood protection works.	Medium low
The degree to which natural geomorphological and hydrological processes are operating unconstrained?	Channel morphology and flows highly modified by drainage works and storm-water management structures.	Low
The degree to which water quality and quantity are unaffected by land use activities?	Highly modified by runoff from non-point agricultural sources.	Medium low

### Ecological naturalness

Criteria	Comments	Rating
The degree to which the vegetation patterns are a product	Low. Extensively modified by farming. Marshland extensively drained. Some areas of wetland being allowed	Low

of natural processes?	to regenerate.	
The degree to which the vegetation cover is indigenous to the area?	Moderate to low percentage cover of indigenous vegetation on wetlands, but extensive encroachment by exotic grasses. Includes two Regionally Significant Wetlands: Waipora Boot Swamp (no. 166) and (in part) the Waipori/Waiholā Wetland Complex (no. 167) which support a very high diversity of indigenous flora and fauna.	Medium low
The (apparent) health and level of modification of intertidal and aquatic habitats?	Impacted by sedimentation and runoff of nutrients from farmland.	Medium low
The degree to which wildlife is present and sustained?	High diversity of waterbirds, including Australasian bittern and marsh crake, and a major habitat for waterfowl. Breeding area for some waterfowl and wading species. Extensive spawning area for galaxiids.	High

### Influence of buildings / structures / earthworks

Criteria	Comments	Rating
The degree to which buildings, structures and earthworks (including dredging) influence the character of the landscape or seascape?	Roads, stop-banks reduce natural character. Bridges only structures.	Medium

### Experiential naturalness

Criteria	Comments	Rating
The degree to which there are wild and scenic qualities?	Little wildness of either type. Moderately high scenic value however (picturesque).	Medium

### Overall Natural character rating

Rating	Comments / Reasons	Outstanding?
Medium low	This unit has been significantly modified by human activity and has significantly diminished naturalness in all senses as a consequence. Some scenic value.	No

## Natural character Assessment Sheet

<b>Map Unit</b>	CNC2
<b>Description</b>	Taieri River Gorge (upper)



### Geomorphological and Hydrological naturalness

Criteria	Comments	Rating
The degree to which the landforms / seabed are the product of natural processes?	Low Breccia hill country. Tidal river. Holocene river deposits and associated wetlands in valleys. Modified by drainage, channels, causeways, and flood protection works.	Medium low
The degree to which natural geomorphological and hydrological processes are operating unconstrained?	Hydrologic processes including flow and sediment transport affected by development and landuse up stream. The above modifications restrict the inland influence of the saline tidal flow.	Medium low
The degree to which water quality and quantity are unaffected by land use activities?	Water quality adversely affected by point discharges, runoff and drainage up stream. Abstraction has reduced water quantity, albeit minimum flows are maintained.	Medium Low

### Ecological naturalness

Criteria	Comments	Rating
The degree to which the vegetation patterns are a product of natural processes?	Low. Extensive exotic forestry on both banks. Upper reaches modified by farming. Marshland extensively drained.	Low
The degree to which the vegetation cover is indigenous to the area?	Moderate to low percentage cover of indigenous vegetation on marshlands, but extensive encroachment by exotic grasses. Includes Regionally Significant Wetland no. 147, Takitooa Swamp which, whilst heavily modified, provides habitat for wetland birds including South Island fernbird.	Medium low
The (apparent) health and level of modification of intertidal and aquatic habitats?	Impacted by sedimentation and runoff of nutrients from farmland.	Medium
The degree to which wildlife is present and sustained?	Waterfowl and waders present. Extensive spawning area for galaxiids.	Medium

### Influence of buildings / structures / earthworks

Criteria	Comments	Rating
The degree to which buildings, structures and earthworks (including dredging) influence the character of the landscape or seascape?	Tracks, roads, drainage channels, causeways. Buildings and dwellings. All reduce the natural character to a degree (cumulatively).	Medium

### Experiential naturalness

Criteria	Comments	Rating
The degree to which there are wild and scenic qualities?	Some degree of undomesticated wildness. No tumultuous wildness. Some degree of scenic value.	Medium

### Overall Natural character rating

Rating	Comments / Reasons	Outstanding?
Medium low	This unit has been significantly modified by human activity and has significantly diminished naturalness in all senses as a consequence. Some scenic value.	No

### Natural character Assessment Sheet

<b>Map Unit</b>	CNC3
<b>Description</b>	Taieri River Gorge (lower)



#### Geomorphological and Hydrological naturalness

Criteria	Comments	Rating
The degree to which the landforms / seabed are the product of natural processes?	Tidal river through schist gorge. Relatively unmodified.	High
The degree to which natural geomorphological and hydrological processes are operating unconstrained?	Relatively unmodified albeit hydrologic processes including flow and sediment transport may be affected by development and landuse upstream.	Medium high

The degree to which water quality and quantity are unaffected by land use activities?	Water quality adversely affected by point discharges, runoff and drainage up stream. Abstraction has reduced water quantity, albeit minimum flows are maintained.	Medium low
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### Ecological naturalness

Criteria	Comments	Rating
The degree to which the vegetation patterns are a product of natural processes?	Moderate. Extensive indigenous bush on both banks. Lower reaches modified by residential development, roadway, and bridge.	Medium high
The degree to which the vegetation cover is indigenous to the area?	High percentage cover of indigenous vegetation upstream of bridge. Two small Regionally Significant Wetlands are present on the edges of the river: Governors Point Swamp (no. 54) and Rocky Hill Tidal Marshes (no. 131) both of which have diverse vegetation including kahikatea, totara, matai and miro.	Medium high
The (apparent) health and level of modification of intertidal and aquatic habitats?	Impacted by sedimentation and runoff from farmland.	Medium
The degree to which wildlife is present and sustained?	Habitat for various waterbirds. Spawning site for galaxiids.	Medium

### Influence of buildings / structures / earthworks

Criteria	Comments	Rating
The degree to which buildings, structures and earthworks (including dredging) influence the character of the landscape or seascape?	Small area of reclamation with a number of cribs adjacent to the bridge diminishes natural character to a small extent.	High

### Experiential naturalness

Criteria	Comments	Rating
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The degree to which there are wild and scenic qualities?	Undomesticated and wild in that sense. Not wild in the tumultuous sense. High scenic qualities.	High

**Overall Natural character rating**

Rating	Comments / Reasons	Outstanding?
High	A highly natural schist gorge with regenerating indigenous vegetation along both sides but with hydrological processes affected by upstream activities with a consequent reduction in the integrity of ecological processes within the river. Highly scenic.	No



### Natural character Assessment Sheet

<b>Map Unit</b>	CNC4
<b>Description</b>	Moturata



#### Geomorphological and Hydrological naturalness

Criteria	Comments	Rating
The degree to which the landforms / seabed are the product of natural processes?	Small schist island with subtidal reefs. Largely natural.	High
The degree to which natural geomorphological and hydrological processes are operating unconstrained?	Processes are predominantly erosional and relatively unmodified.	High
The degree to which water quality and quantity are unaffected by land use activities?	Unaffected in large part - offshore island in moderate-high energy sea. Possibly some minor contamination from Taieri River outflow.	High

### Ecological naturalness

Criteria	Comments	Rating
The degree to which the vegetation patterns are a product of natural processes?	Relatively natural	High
The degree to which the vegetation cover is indigenous to the area?	Almost exclusively indigenous vegetation. Some exotic grasses.	High
The (apparent) health and level of modification of intertidal and aquatic habitats?	High degree of naturalness of macroalgal beds on subtidal reefs. <i>Durvillaea</i> dominated community. Rocky intertidal zone natural. Under very low threat from human influence.	High
The degree to which wildlife is present and sustained?	Subtidal reefs valued as rich and diverse habitat. Feeding and spawning area for a variety of finfish. Paua, rock lobster and kina habitat. Community largely intact. Rich and diverse rocky intertidal epifauna typical of exposed southern coasts. Under occasional pressure from recreational fishers and very low threat from human land-based activities. Fur seals haul out. Seabirds roost on islet. Breeding area for sooty shearwater and little blue penguin.	High

### Influence of buildings / structures / earthworks

Criteria	Comments	Rating
The degree to which buildings, structures and earthworks (including dredging) influence the character of the landscape or seascape?	No structures, earthworks or buildings.	High

### Experiential naturalness

Criteria	Comments	Rating
The degree to which there are wild and scenic qualities?	Wild in the tumultuous sense and in the undomesticated sense. Highly scenic.	High

### Overall Natural character rating

Rating	Comments / Reasons	Outstanding?
High	The island ranks 'high' over all categories.	Yes

## Natural character Assessment Sheet

<b>Map Unit</b>	CNC5
<b>Description</b>	Taieri Mouth (south)



### Geomorphological and Hydrological naturalness

Criteria	Comments	Rating
The degree to which the landforms / seabed are the product of natural processes?	Late-Holocene foredune ridges, formed in association and modified by marram, seaward of a Holocene coastal plain and river terrace. Partial tombolo has formed in lee of Motorata Island. Offshore and intertidal reefs present. Outflow from the Coutts Gully wetland bisect the dunes at the centre of the unit. Modified by roading, houses and walking tracks.	Medium
The degree to which natural geomorphological and hydrological processes are operating unconstrained?	Active coastal sand-system (nearshore-beach-foredune sand exchange) intact, albeit dune processes are modified by marram. No sand transport inland.	Medium
The degree to which water quality	Moderate-high energy coastline with low turbidity. Some	Medium

and quantity are unaffected by land use activities?	minor reduction in water quality resulting from outflow from the Taieri River and Coutts Gully wetland is possible.	high
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### Ecological naturalness

Criteria	Comments	Rating
The degree to which the vegetation patterns are a product of natural processes?	Largely marram and lupin covered foreshore with extensive indigenous shrubs behind dunes and some exotic grasses. Modified with road and walking tracks.	Medium
The degree to which the vegetation cover is indigenous to the area?	Medium. Marram, ngaio, muehlenbeckia, lupins, exotic grasses. Moderately extensive regenerating indigenous vegetation on dunes further back from beach.	Medium
The (apparent) health and level of modification of intertidal and aquatic habitats?	Moderate health, medium low modification. Exposed sandy shoreline subject to disturbance from wave action and bar subject to change as a result of tide and river action. Moderate threat from sedimentation and farming runoff. Shellfish present on sandflats, albeit at low densities.	Medium
The degree to which wildlife is present and sustained?	Infaunal communities typical of disturbed sandy beaches of southern New Zealand are of relatively low diversity and low abundance. Sealions haul out here on occasion. Finfish are common offshore. Shellfish present on sandflats, albeit at low densities due to highly disturbed nature of sand bar. Very low pressure from recreational shellfish gatherers. Indigenous vegetation is likely to support indigenous terrestrial invertebrates, lizards and bush birds. Beach provides suitable habitat for shorebirds.	Medium high

### Influence of buildings / structures / earthworks

Criteria	Comments	Rating
The degree to which buildings, structures and earthworks (including dredging) influence the character of the landscape or seascape?	Cribs and roading diminish the natural character of the unit.	Medium low

### Experiential naturalness

Criteria	Comments	Rating
The degree to which there are wild and scenic qualities?	The beach and its margins retain some wildness in both the undomesticated and tumultuous senses, heightened by the offshore reefs. There is some scenic quality.	Medium

#### Overall Natural character rating

Rating	Comments / Reasons	Outstanding?
Medium	Modification of the geomorphological, hydrological and ecological systems is evident as a result of human activity. Moderately low perceptual naturalness but some wild and scenic quality.	No

## Natural character Assessment Sheet

<b>Map Unit</b>	CNC6
<b>Description</b>	Coutts Gully Wetland



### Geomorphological and Hydrological naturalness

Criteria	Comments	Rating
The degree to which the landforms / seabed are the product of natural processes?	Shallow lagoon and wetland system somewhat modified by reclamation, causeways and drainage channels. Outflow has probably been constrained beneath the road bridge, by housing and by accretion of marram. Mouth intermittently closed, probably more frequently since invasion of the sand dunes by marram.	Medium
The degree to which natural geomorphological and hydrological processes are operating unconstrained?	Undetermined post-European fluvial input, manifest as accelerated sedimentation and modification of hydrological processes. Episodic flooding and associated processes will have been limited by drainage and reclamation in places on the estuary margin. Inlet mouth processes likely to have	Medium

	been constrained by marram.	
The degree to which water quality and quantity are unaffected by land use activities?	Unknown but likely to be some water degradation due to nutrient and sediment runoff and, to a lesser extent, contamination from waterfowl, both non-native and the consequence of decreased tidal circulation and flushing of the unit. Limited outflow and intermittent closure of the estuary mouth limits flushing of the unit.	Medium

### Ecological naturalness

Criteria	Comments	Rating
The degree to which the vegetation patterns are a product of natural processes?	High degree of naturalness. Relatively high percentage of indigenous vegetation.	Medium high
The degree to which the vegetation cover is indigenous to the area?	Regionally significant wetland 87. Saltmarsh and rushland largely indigenous. Exotic grasses evident around perimeter.	Medium high
The (apparent) health and level of modification of intertidal and aquatic habitats?	Low degree of modification. Ecological health of estuary considered good. Under moderate threat from reclamation, farming runoff, introduced weeds, nutrient pollution and stock grazing.	Medium
The degree to which wildlife is present and sustained?	Valuable habitat for a diversity of waterbirds including Australasian bittern. Edge provide suitable habitat for terrestrial invertebrates and lizards. Likely spawning area for finfish such as flounder and galaxiids.	Medium high

### Influence of buildings / structures / earthworks

Criteria	Comments	Rating
The degree to which buildings, structures and earthworks (including dredging) influence the character of the landscape or seascape?	Roads and tracks around the margins diminish natural appearance slightly, and some dykes within the wetland are evident. There are cribs around the margin of much of the lagoon but outside of the unit, and a bridge over a narrow neck.	Medium

### Experiential naturalness

Criteria	Comments	Rating
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The degree to which there are wild and scenic qualities?	The lagoon has some undomesticated wildness but lower tumultuous wildness. It has some scenic value from a small catchment.	Medium

**Overall Natural character rating**

Rating	Comments / Reasons	Outstanding?
Medium high	Hydrological and geomorphological processes modified by human activity. Has moderately high ecological integrity but only moderate perceptual naturalness and wild and scenic value.	No

## Natural character Assessment Sheet

<b>Map Unit</b>	CNC7
<b>Description</b>	Taieri Beach



### Geomorphological and Hydrological naturalness

Criteria	Comments	Rating
The degree to which the landforms / seabed are the product of natural processes?	Late-Pleistocene terrace fronted by extensive intertidal and subtidal reefs and sandy pocket beaches, including beaches perched on rock platforms. Terrace is somewhat modified by farming activities. Low foredunes associated with marram present in places.	Medium high
The degree to which natural geomorphological and hydrological processes are operating unconstrained?	Intact nearshore-beach and alongshore (south to north) sand transport system where coastline is sandy. No sand transport to hinterland. Relatively unmodified.	Medium high
The degree to which water quality and quantity are unaffected by land use activities?	Moderate-high energy coastline. Some minor reduction in water quality resulting non-point source sediment and nutrient inputs associated with the surrounding land use is	Medium high

	possible.	
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### Ecological naturalness

Criteria	Comments	Rating
The degree to which the vegetation patterns are a product of natural processes?	Largely marram, gorse, ngaio and lupin covered dunes and low scarp with extensive exotic grasses both on foreshore and behind. Modified pasture from tops of scarp.	Medium low
The degree to which the vegetation cover is indigenous to the area?	Low. Marram, ngaio, muehlenbeckia, lupins, gorse, exotic grasses beyond beach. Largely pasture atop scarp.	Medium low
The (apparent) health and level of modification of intertidal and aquatic habitats?	Moderate health, medium low modification. Exposed sandy shoreline subject to disturbance from wave action. Moderately low threat from sedimentation and farming runoff. Intertidal and subtidal rocky reef platforms largely natural. High degree of fracturing and fissuring of rocky substrate provides excellent habitat for intertidal invertebrate fauna. High diversity of macroalgae.	Medium high
The degree to which wildlife is present and sustained?	Infaunal communities typical of disturbed sandy beaches of southern New Zealand are of relatively low diversity and low abundance. Intertidal and subtidal reefs harbour rich and diverse flora and fauna. Sealions and fur seals haul out here occasionally. Finfish are common offshore. Low pressure from recreational shellfish gatherers. Indigenous vegetation on cliffs behind beach is likely to support indigenous terrestrial invertebrates, lizards and bush birds. Beach and cliffs provide suitable habitat for shorebirds.	Medium high

### Influence of buildings / structures / earthworks

Criteria	Comments	Rating
The degree to which buildings, structures and earthworks (including dredging) influence the character of the landscape or seascape?	Unmodified along the seaward portion but roading and residential development present in the north western portion reducing the perceptual naturalness of the unit.	Medium high

### Experiential naturalness

Criteria	Comments	Rating
The degree to which there are wild and scenic qualities?	Moderately wild in the tumultuous sense along the sea margin but low in the undomesticated sense over the rest of the unit. Some scenic value.	Medium

#### Overall Natural character rating

Rating	Comments / Reasons	Outstanding?
Medium high	Geomorphological and hydrological processes are relatively intact. The landward ecology is modified by agriculture, but the marine ecology is relatively intact. Relatively high perceptual naturalness but only moderate wild and scenic value.	No

## Natural character Assessment Sheet

<b>Map Unit</b>	CNC8
<b>Description</b>	Akatore Gorge



### Geomorphological and Hydrological naturalness

<b>Criteria</b>	<b>Comments</b>	<b>Rating</b>
The degree to which the landforms / seabed are the product of natural processes?	Tidal river through schist gorge. Relatively unmodified.	High
The degree to which natural geomorphological and hydrological processes are operating unconstrained?	Relatively unmodified albeit hydrologic processes including flow and sediment transport may be affected by landuse upstream.	Medium high
The degree to which water quality and quantity are unaffected by land use activities?	Water quality may be somewhat reduced by runoff and landuse up stream.	Medium high

### Ecological naturalness

Criteria	Comments	Rating
The degree to which the vegetation patterns are a product of natural processes?	Medium. Extensive exotic scrub and exotic grasses on true right bank (TRB). True left bank (TLB) characterised by indigenous vegetation and some exotic grasses. Vehicle track along true left bank.	Medium
The degree to which the vegetation cover is indigenous to the area?	High degree of naturalness on TLB. Lowland indigenous scrub and bush. TRB largely grazed farmland, becoming indigenous and exotic scrub nearer the mouth of the gorge.	Medium
The (apparent) health and level of modification of intertidal and aquatic habitats?	Medium. Impacted by sedimentation and runoff from farmland. High tidal fluctuation. Highly disturbed sandbanks subject to constant change.	Medium
The degree to which wildlife is present and sustained?	Habitat for various waterbirds. Spawning site for galaxiids and flatfish. Intertidal infauna relatively sparse, but typical of highly disturbed sandy river mouths.	Medium

### Influence of buildings / structures / earthworks

Criteria	Comments	Rating
The degree to which buildings, structures and earthworks (including dredging) influence the character of the landscape or seascape?	No structures or earthworks. There are two small cribs on the true right of the river but neither has any formed access.	Medium high

### Experiential naturalness

Criteria	Comments	Rating
The degree to which there are wild and scenic qualities?	Lacks wildness in the tumultuous sense. Some wildness in the undomesticated sense. Some scenic quality.	Medium high

### Overall Natural character rating

Rating	Comments / Reasons	Outstanding?
Medium high	Some loss of hydrological and geomorphological integrity, and a notable loss of ecological integrity. Moderately high	No

	perceptual naturalness and wild and scenic value.	
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## Natural character Assessment Sheet

<b>Map Unit</b>	CNC9
<b>Description</b>	Akatore Wetlands



### Geomorphological and Hydrological naturalness

Criteria	Comments	Rating
The degree to which the landforms / seabed are the product of natural processes?	Wetland and estuary system somewhat modified by drainage channels, reclamation, causeways and roading, but large extents relatively natural.	Medium high
The degree to which natural geomorphological and hydrological processes are operating unconstrained?	Processes somewhat altered by the above modifications but essentially unconstrained due to the large amount of relatively natural wetland.	Medium high
The degree to which water quality and quantity are unaffected by land use activities?	Likely to be somewhat reduced due to non-point source sediment and nutrient inputs associated with the surrounding land use. Limited outflow and intermittent closure of the estuary mouth limits flushing of the unit.	Medium high



### Ecological naturalness

Criteria	Comments	Rating
The degree to which the vegetation patterns are a product of natural processes?	High degree of naturalness. Evidence of reclamation at extremities of wetland. Under moderate threat from reclamation, farm runoff and sedimentation.	Medium high
The degree to which the vegetation cover is indigenous to the area?	Regionally significant wetland 1. At least four wetland vegetation/habitat types dominated by indigenous species occur within the wetland: oioi rushland, rautahi sedgeland, <i>Juncus</i> spp./spagnum bog, and remuremu-glasswort saltmarsh.	Medium high
The (apparent) health and level of modification of intertidal and aquatic habitats?	Under moderate threat from reclamation, farm runoff and sedimentation. However, majority of wetland appears to be of medium high health.	Medium high
The degree to which wildlife is present and sustained?	Wetland values. Valuable habitat for a diversity of waterbirds including threatened species. Fernbirds present. Edge provide suitable habitat for terrestrial invertebrates and lizards. Likely spawning area for finfish such as flounder and galaxiids. Diverse and abundant invertebrate infauna present.	High

### Influence of buildings / structures / earthworks

Criteria	Comments	Rating
The degree to which buildings, structures and earthworks (including dredging) influence the character of the landscape or seascape?	No noticeable buildings. There is a road bridge at the gorge entrance. Some drainage works are present and farm tracks and roads around the margins.	Medium high

### Experiential naturalness

Criteria	Comments	Rating
The degree to which there are wild and scenic qualities?	Lacks wildness in the tumultuous sense. Some wildness in the undomesticated sense. Some scenic quality.	Medium high

### Overall Natural character rating

Rating	Comments / Reasons	Outstanding?
Medium high	Some impact of human activities on geomorphological and hydrological processes but still a high level of integrity. Moderately high level of ecological integrity and important habitat for wildlife. Moderately high perceptual naturalness and wild and scenic value.	No

## Natural character Assessment Sheet

<b>Map Unit</b>	CNC10
<b>Description</b>	Quoin Point



### Geomorphological and Hydrological naturalness

Criteria	Comments	Rating
The degree to which the landforms / seabed are the product of natural processes?	Late-Pleistocene terrace fronted by extensive intertidal reefs and sandy pocket beaches. Terrace is somewhat modified by farming activities. Low foredunes associated with and modified by marram present in places.	Medium high
The degree to which natural geomorphological and hydrological processes are operating	Intact nearshore-beach sand transport system where coastline is sandy. No sand transport to hinterland.	Medium high

unconstrained?	Relatively unmodified.	
The degree to which water quality and quantity are unaffected by land use activities?	Moderate energy coastline with moderate turbidity. Some minor reduction in water quality resulting from non-point source sediment and nutrient inputs associated with the surrounding land use is possible.	Medium high

### Ecological naturalness

Criteria	Comments	Rating
The degree to which the vegetation patterns are a product of natural processes?	Largely marram, gorse, ngaio and lupin covered dunes where they exist. Low scarp has exotic scrub with pockets of remnant indigenous vegetation becoming more common as one travels south. Extensive exotic grasses (pasture) both on foreshore and behind scarp.	Low
The degree to which the vegetation cover is indigenous to the area?	Medium low. Marram, ngaio, muehlenbeckia, lupins, gorse, exotic grasses beyond beach. Largely pasture atop scarp. Small patches of indigenous vegetation in gullies. Remnant and regenerating indigenous vegetation more common and more extensive in southernmost gullies.	Medium low
The (apparent) health and level of modification of intertidal and aquatic habitats?	Moderate health, medium modification. Exposed sandy shoreline subject to disturbance from wave action. Moderately low threat from sedimentation and farming runoff. Intertidal and subtidal rocky reef platforms largely natural. High degree of fracturing and fissuring of rocky substrate provides excellent habitat for intertidal invertebrate fauna. High diversity of macroalgae.	Medium
The degree to which wildlife is present and sustained?	Infaunal communities typical of disturbed sandy beaches of southern New Zealand are of relatively low diversity and low abundance. Intertidal and subtidal reefs harbour rich and diverse flora and fauna. Sealions and fur seals haul out here occasionally, with fur seals breeding at some locations. Finfish are common offshore. Low pressure from recreational shellfish gatherers. Indigenous vegetation on cliffs behind beach is likely to support indigenous terrestrial invertebrates, lizards and bush birds. Beach and cliffs provide suitable habitat for shorebirds. Likely pupping area for Sealions at Bull Creek.	High

### Influence of buildings / structures / earthworks

Criteria	Comments	Rating
The degree to which buildings, structures and earthworks (including dredging) influence the character of the landscape or seascape?	Few structures and buildings evident, more around Bull Creek. Occasional farm tracks.	High

### Experiential naturalness

Criteria	Comments	Rating
The degree to which there are wild and scenic qualities?	Moderately wild in the tumultuous sense and in the undomesticated sense. Some scenic value	Medium high

### Overall Natural character rating

Rating	Comments / Reasons	Outstanding?
Medium high	Geomorphological and hydrological processes are relatively intact. Landward ecology significantly modified by agriculture. Seaward ecology more intact and an important coastline for wildlife. High perceptual naturalness and moderately high wild and scenic value.	No

## Natural character Assessment Sheet

<b>Map Unit</b>	CNC11
<b>Description</b>	Chrystalls Beach



### Geomorphological and Hydrological naturalness

Criteria	Comments	Rating
The degree to which the landforms / seabed are the product of natural processes?	Late-Pleistocene coastal terrace fronted by a prograded Holocene coastal barrier. Holocene dune morphology and processes are modified by non-native marram grass. Inland landforms somewhat modified by farming activities but still identifiable.	Medium
The degree to which natural geomorphological and hydrological processes are operating	Active coastal sand-system intact, albeit dune processes are modified by marram and plantation forestry. No sand transport from beach to hinterland due to dune	Medium

unconstrained?	stabilization and exotic plant cover. Potential reduction in sand supply from Clutha river.	
The degree to which water quality and quantity are unaffected by land use activities?	Moderate-high energy coastline with moderate turbidity. Some reduction in water quality resulting from outflow from the Tokomairiro River and surrounding land use is likely	Medium

### Ecological naturalness

Criteria	Comments	Rating
The degree to which the vegetation patterns are a product of natural processes?	Largely marram and lupin covered dunes with extensive indigenous shrubs along scarp and exotic grasses behind. Modified with road, occasional car parks and walking tracks.	Medium low
The degree to which the vegetation cover is indigenous to the area?	Medium. Marram, ngaio, muehlenbeckia, lupins, exotic grasses. Moderately extensive regenerating indigenous vegetation on scarp.	Medium
The (apparent) health and level of modification of intertidal and aquatic habitats?	Moderate health, medium low modification. Exposed sandy shoreline subject to disturbance from wave action. Moderately low threat from sedimentation and farming runoff.	Medium high
The degree to which wildlife is present and sustained?	Infaunal communities typical of disturbed sandy beaches of southern New Zealand are of relatively low diversity and low abundance. Sealions haul out here occasionally. Finfish are common offshore. Indigenous vegetation is likely to support indigenous terrestrial invertebrates, lizards and bush birds. Beach provide suitable habitat for shorebirds.	Medium high

### Influence of buildings / structures / earthworks

Criteria	Comments	Rating

The degree to which buildings, structures and earthworks (including dredging) influence the character of the landscape or seascape?	Some dwellings and farm buildings. Earthworks evidenced by the road and by farm tracks.	Medium
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### Experiential naturalness

Criteria	Comments	Rating
The degree to which there are wild and scenic qualities?	The seaward portion of the unit retains some wildness in both the undomesticated and tumultuous senses but overall the unit is quite domesticated. There is some scenic quality.	Medium

### Overall Natural character rating

Rating	Comments / Reasons	Outstanding?
Medium	Geomorphological and hydrological processes are modified by human habitation, particularly by marram grass. Ecological processes are similarly modified although the unit has some importance for wildlife. Perceptual naturalness is diminished by buildings and roading and wild and scenic quality is moderate only.	No



## Natural character Assessment Sheet

<b>Map Unit</b>	CNC12
<b>Description</b>	Tokomairiro Wetland



### Geomorphological and Hydrological naturalness

Criteria	Comments	Rating
The degree to which the landforms / seabed are the product of natural processes?	Tidal river with extensive wetlands on margins. Modified by reclamation, drainage channels, flood protection works, WWII paddy fields.	Medium low
The degree to which natural geomorphological and hydrological processes are operating	Tidal processes are essentially natural although the above modifications restrict the inland influence of the saline tidal flow. Land use activities upstream have increased fine	Medium low

unconstrained?	sediment loads.	
The degree to which water quality and quantity are unaffected by land use activities?	Water quality adversely affected by point and non-point discharges upstream.	Medium low

### Ecological naturalness

Criteria	Comments	Rating
The degree to which the vegetation patterns are a product of natural processes?	Moderate degree of naturalness. Evidence of considerable reclamation of portions of wetlands. However, a little more than 50% of remaining wetland carries indigenous vegetation. Exotic forestry a feature of both banks beyond the floodplain. Under moderate threat from reclamation, farm runoff and sedimentation.	Medium
The degree to which the vegetation cover is indigenous to the area?	Extensive regionally significant wetlands (153) present with habitat for wide variety of water birds. Saltmarsh around borders.	Medium
The (apparent) health and level of modification of intertidal and aquatic habitats?	Under moderate threat from reclamation, farm runoff and sedimentation. However, majority of remaining wetland appears to be of medium high health.	Medium
The degree to which wildlife is present and sustained?	Wetland values. Valuable habitat for a diversity of waterbirds including threatened species. Edge provide suitable habitat for terrestrial invertebrates and lizards. Likely spawning area for finfish such as galaxiids and a variety of bullies.	Medium high

### Influence of buildings / structures / earthworks

Criteria	Comments	Rating

The degree to which buildings, structures and earthworks (including dredging) influence the character of the landscape or seascape?	There is a road in the western arm of the wetland and evidence of drainage works in both arms. There are no buildings or structures.	Medium high
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**Experiential naturalness**

Criteria	Comments	Rating
The degree to which there are wild and scenic qualities?	The wetland has some undomesticated wildness but lower tumultuous wildness. It has some scenic value.	Medium - high

**Overall Natural character rating**

Rating	Comments / Reasons	Outstanding?
Medium	While the wetland has moderately high perceptual naturalness and wild and scenic value its hydrological and geomorphological naturalness is significantly compromised. It has moderate ecological integrity and provides valuable habitat for wildlife.	No

## Natural character Assessment Sheet

<b>Map Unit</b>	CNC13
<b>Description</b>	Toko Mouth



### Geomorphological and Hydrological naturalness

Criteria	Comments	Rating
The degree to which the landforms / seabed are the product of natural processes?	Narrow margin of Late-Holocene foredunes, formed in association with marram, seaward of a Pleistocene coastal terrace. Terrace modified with roads, carparks and houses.	Medium
The degree to which natural geomorphological and hydrological processes are operating	Active coastal sand-system (nearshore-beach-foredune sand exchange) intact, albeit dune processes are modified by marram. No sand transport to hinterland. River largely	Medium

unconstrained?	unconstrained albeit relatively minor shore protection structures are present.	
The degree to which water quality and quantity are unaffected by land use activities?	Moderate-high energy coastline with moderate turbidity. Some reduction in water quality resulting from outflow from the Tokomairiro River and surrounding land use is likely	Medium

### Ecological naturalness

Criteria	Comments	Rating
The degree to which the vegetation patterns are a product of natural processes?	Largely marram and lupin covered foreshore with indigenous shrubs behind dunes and some exotic grasses. Modified with road and walking tracks.	Medium low
The degree to which the vegetation cover is indigenous to the area?	Medium. Marram, ngaio, muehlenbeckia, lupins, exotic grasses. Moderately extensive regenerating indigenous vegetation on dunes further back from beach. Small patches of indigenous saltmarsh.	Medium
The (apparent) health and level of modification of intertidal and aquatic habitats?	Moderate health, medium modification. Exposed sandy shoreline subject to disturbance from wave action and bar subject to change as a result of tide and river action. Moderate threat from sedimentation and farming runoff. Shellfish present on sandflats, albeit at low densities.	Medium
The degree to which wildlife is present and sustained?	Infaunal communities typical of disturbed sandy beaches of southern New Zealand are of relatively low diversity and low abundance. Sealions haul out here on occasion. Finfish are common offshore. Shellfish present on sandflats, albeit at low densities due to highly disturbed nature of sand bar. Very low pressure from recreational shellfish gatherers. Indigenous vegetation is likely to support indigenous terrestrial invertebrates, lizards and bush birds. Beach and saltmarsh provide suitable habitat for shorebirds.	Medium

### Influence of buildings / structures / earthworks

Criteria	Comments	Rating
The degree to which buildings, structures and earthworks (including dredging) influence the character of the landscape or seascape?	Dwellings and other buildings associated with the settlement reduce the naturalness of the location, as does the road and other modifications.	Medium

### Experiential naturalness

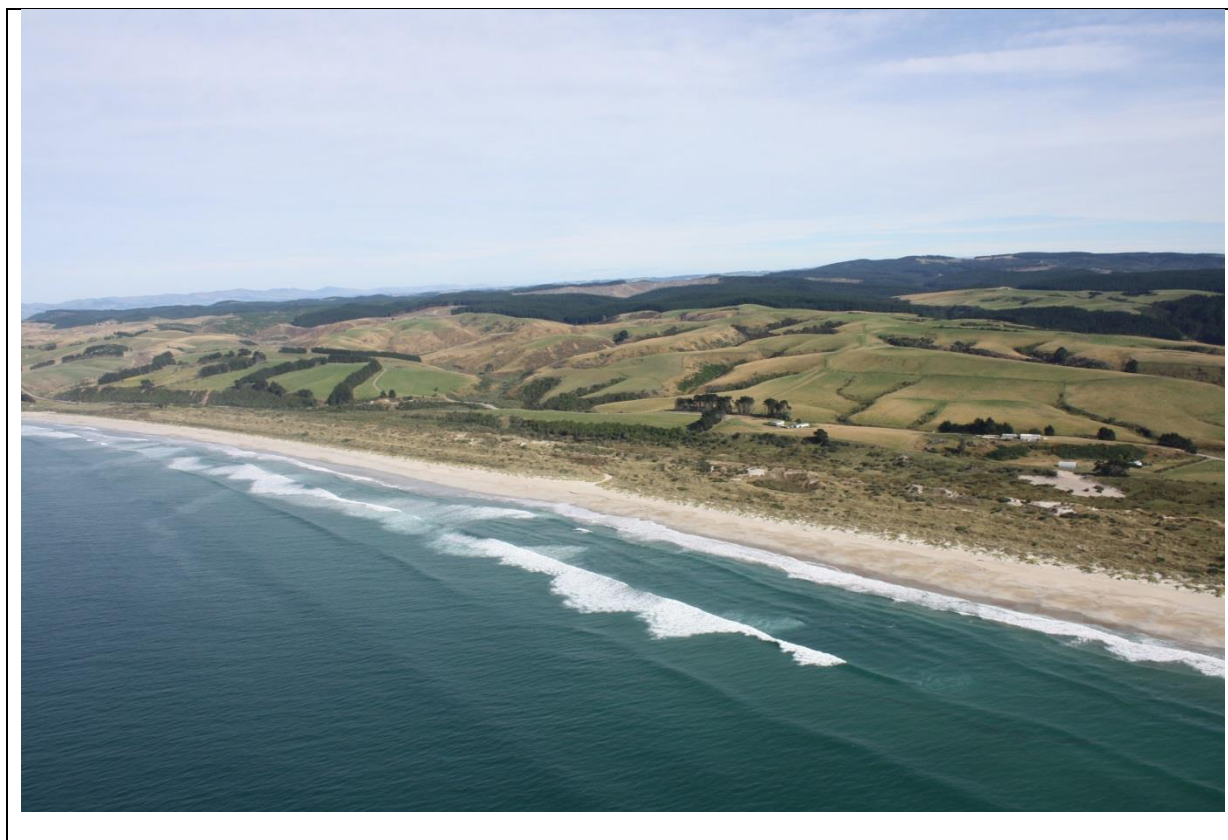
Criteria	Comments	Rating
The degree to which there are wild and scenic qualities?	Some wildness provided by the sea beach. Highly picturesque.	Medium high

### Overall Natural character rating

Rating	Comments / Reasons	Outstanding?
Medium	Hydrological, geomorphological and ecological systems all significantly compromised. Some wild and scenic value.	No

## Natural character Assessment Sheet

<b>Map Unit</b>	CNC14
<b>Description</b>	Measly Beach



### Geomorphological and Hydrological naturalness

Criteria	Comments	Rating
The degree to which the landforms / seabed are the product of natural processes?	Late-Holocene foredune ridges, formed in association with marram, seaward of a now largely stable transgressive dune system formed in associated with native dune species, but now dominated by marram. A Pleistocene coastal terrace separates inland hillslopes from recent dunes/beach. Several streams bisect the dunes. Houses at the southern end of the unit.	Medium-high

The degree to which natural geomorphological and hydrological processes are operating unconstrained?	Active coastal sand-system (nearshore-beach-foredune sand exchange) intact, albeit dune processes are modified by marram. The potential for aeolian sand movement remains in places at the northern end of the unit but has been lost from the remainder. Streams are likely to have been channelized by foredune development in association with marram.	Medium
The degree to which water quality and quantity are unaffected by land use activities?	Moderate-high energy coastline with moderate turbidity Some reduction in water quality from the Tokomairiro River and surrounding land use is likely	Medium high

### Ecological naturalness

Criteria	Comments	Rating
The degree to which the vegetation patterns are a product of natural processes?	Largely marram and lupin covered dunes with extensive indigenous shrubs along scarp and exotic grasses behind. Modified with road, occasional car parks and walking tracks. However, does contain complex of regionally significant wetlands (103). Relatively unmodified with indigenous swamp vegetation, including flax, carex and rushes.	Medium
The degree to which the vegetation cover is indigenous to the area?	Medium. Marram, ngaio, muehlenbeckia, lupins, exotic grasses. Moderately extensive regenerating indigenous vegetation on scarp. Scattered regionally significant wetlands largely natural and have high percentage of indigenous vegetation.	Medium
The (apparent) health and level of modification of intertidal and aquatic habitats?	Moderate health, medium low modification. Exposed sandy shoreline subject to disturbance from wave action. Moderate threat from sedimentation and farming runoff.	Medium high
The degree to which wildlife is present and sustained?	Infaunal communities typical of disturbed sandy beaches of southern New Zealand are of relatively low diversity and low abundance. Sealions haul out here occasionally. Finfish are common offshore. Indigenous vegetation is likely to support indigenous terrestrial invertebrates, lizards and bush birds. Beach provides suitable habitat for shorebirds and wetlands harbour fernbirds and water birds.	Medium high



### Influence of buildings / structures / earthworks

Criteria	Comments	Rating
The degree to which buildings, structures and earthworks (including dredging) influence the character of the landscape or seascape?	Some buildings and structures. Evident earthworks limited to the road.	Medium high

### Experiential naturalness

Criteria	Comments	Rating
The degree to which there are wild and scenic qualities?	Lacks wildness in the tumultuous sense. Some wildness in the undomesticated sense. Some scenic quality.	Medium high

### Overall Natural character rating

Rating	Comments / Reasons	Outstanding?
Medium high	Geomorphological and riverine hydrological processes affected by marram. Marine hydrology more intact. Ecological integrity compromised by exotic vegetation on land but the marine ecology is more intact. Important for wild life. Perceptual naturalness and wild and scenic value are moderately high.	No

## Natural character Assessment Sheet

<b>Map Unit</b>	CNC15
<b>Description</b>	Wangaloa to Matau Branch of the Clutha River



### Geomorphological and Hydrological naturalness

Criteria	Comments	Rating
The degree to which the landforms / seabed are the product of natural processes?	Predominately Late-Pleistocene terrace, very wide, with sandy beaches and intertidal and subtidal reefs. Most of the terrace is pasture. A scarp separates the beach from the terrace. Incipient foredunes present in places becoming more common and more established in the south of the unit. More extensive dune forms present at Smiths Beach. Relatively unmodified.	Medium high

The degree to which natural geomorphological and hydrological processes are operating unconstrained?	Intact nearshore-beach sand transport system. Relatively unmodified albeit sediment supply to this coastline reduced by Clutha River hydroelectric scheme. Dominant processes are erosional.	Medium high
The degree to which water quality and quantity are unaffected by land use activities?	Moderate-high energy coastline with moderate turbidity Some reduction in water quality from the Clutha River and surrounding land use is likely	Medium high

### Ecological naturalness

Criteria	Comments	Rating
The degree to which the vegetation patterns are a product of natural processes?	Largely marram and indigenous shrub covered dunes where they exist. Extensive indigenous shrubs along cliffs and exotic grasses behind. Modified with road, occasional car parks and walking tracks.	Medium low
The degree to which the vegetation cover is indigenous to the area?	Medium. Marram, ngaio, muehlenbeckia, lupins, exotic grasses. Moderately extensive regenerating indigenous vegetation on cliff faces.	Medium
The (apparent) health and level of modification of intertidal and aquatic habitats?	Moderate health, medium low modification. Exposed sandy shoreline subject to disturbance from wave action. Subtidal reefs largely natural. Moderately low threat from sedimentation and farming runoff.	Medium
The degree to which wildlife is present and sustained?	Infaunal communities typical of disturbed sandy beaches of southern New Zealand are of relatively low diversity and low abundance. Sealions haul out here occasionally. Subtidal reefs provide habitat for diverse fauna and flora. Finfish are common offshore. Indigenous vegetation is likely to support indigenous terrestrial invertebrates, lizards and bush birds. Beach provide suitable habitat for shorebirds.	Medium

### Influence of buildings / structures / earthworks

Criteria	Comments	Rating
The degree to which buildings, structures and earthworks (including dredging) influence the character of the landscape or seascape?	No noticeable buildings, structures or earthworks within the narrow coastal margin except close to the river mouth.	Medium high

### Experiential naturalness

Criteria	Comments	Rating
The degree to which there are wild and scenic qualities?	Some wildness in the tumultuous sense. Some wildness in the undomesticated sense. Some scenic quality.	Medium high

### Overall Natural character rating

Rating	Comments / Reasons	Outstanding?
Medium	While geomorphological and hydrological systems are reasonably intact, and perceptual naturalness and wild and scenic value moderately high, diminished ecological integrity degrades the overall ranking of the unit.	No

## Natural character Assessment Sheet

<b>Map Unit</b>	CNC16
<b>Description</b>	Inch Clutha



### Geomorphological and Hydrological naturalness

Criteria	Comments	Rating
The degree to which the landforms / seabed are the product of natural processes?	River channels modified by flood protection works, causeways and groynes. Dominant land use is pastoral. Now stable transgressive dune forms present along the coastal margin. Modified by marram.	Medium low
The degree to which natural geomorphological and hydrological processes are operating	The above modifications restrict geomorphic processes. Hydrologic processes including flow and sediment transport adversely affected landuse up stream (particularly	Medium - low

unconstrained?	hydroelectric schemes). Active coastal sand-system (nearshore-beach-foredune sand exchange) intact, albeit dune processes are modified by marram and agricultural landuse.	
The degree to which water quality and quantity are unaffected by land use activities?	Water quality adversely affected by point discharges, runoff and drainage up stream, particularly following rainfall. Abstraction and hydroelectric schemes has reduced water quantity.	Medium low

### Ecological naturalness

Criteria	Comments	Rating
The degree to which the vegetation patterns are a product of natural processes?	Extensively drained, reclaimed and modified. Small areas of remnant wetlands. Largely pasture with exotic grasses and trees beyond wetlands.	Low
The degree to which the vegetation cover is indigenous to the area?	Remaining wetlands contain indigenous vegetation, including rushes, flax and slatmarsh. Exotic trees and grasses predominant.	Low
The (apparent) health and level of modification of intertidal and aquatic habitats?	Much modified overall, but extensive areas of remaining wetlands are largely natural.	Medium
The degree to which wildlife is present and sustained?	Regionally significant wetlands (29) providing habitat for a wide variety of water birds, including pied stilt, banded dotterel, sandpipers, grey teals, little cormorant, black fronted tern and shovellers. Important habitat for eels and galaxiids.	Medium

### Influence of buildings / structures / earthworks

Criteria	Comments	Rating

The degree to which buildings, structures and earthworks (including dredging) influence the character of the landscape or seascape?	Some dwellings and farm buildings. Earthworks evidenced by farm tracks and flood banks.	Medium
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**Experiential naturalness**

Criteria	Comments	Rating
The degree to which there are wild and scenic qualities?	The seaward portion of the unit retains some wildness in both the undomesticated and tumultuous senses but overall the unit is quite domesticated. There is some scenic quality.	Medium

**Overall Natural character rating**

Rating	Comments / Reasons	Outstanding?
Medium low	The geomorphology and hydrology of the unit are significantly modified by the hydroelectric schemes up river. The ecology has been significantly modified by drainage, reclamation and farming, although it provides some habitat for wildlife. Perceptual naturalness is limited but some wild and scenic value remains.	No

## Natural character Assessment Sheet

<b>Map Unit</b>	CNC17
<b>Description</b>	Molyneux Bay



### Geomorphological and Hydrological naturalness

Criteria	Comments	Rating
The degree to which the landforms / seabed are the product of natural processes?	River mouth estuary separated from the open-coast by a narrow sandy barrier. Separated from the Clutha River by causeways. Outflow to the sea episodic during high flows. Channel morphology somewhat affected by drainage channels, but largely natural.	Medium
The degree to which natural geomorphological and hydrological processes are operating	Causeways limit connection between sea and estuary reducing the both tidal and fluvial processes. Fluvial inputs likely to be further reduced by channel modifications and	Medium-low



unconstrained?	water abstraction upstream.	
The degree to which water quality and quantity are unaffected by land use activities?	The predominant agricultural landuse surrounding and upstream of this unit combined with limited connections between the estuary and sea means that water quality is likely to be relatively poor.	Medium low

### Ecological naturalness

Criteria	Comments	Rating
The degree to which the vegetation patterns are a product of natural processes?	Extensively drained, reclaimed and modified. Remnant wetlands extensive along coast behind dunes. Largely pasture with exotic grasses and trees beyond wetlands.	Medium low
The degree to which the vegetation cover is indigenous to the area?	Significant areas of wetland (109) contain extensive cover of indigenous vegetation, including rushes, flax and saltmarsh. Indigenous vegetation more common and extensive along scarp to south.	Medium
The (apparent) health and level of modification of intertidal and aquatic habitats?	Much modified overall, but extensive areas of remaining wetlands are largely natural. Exposed beaches largely natural.	Medium
The degree to which wildlife is present and sustained?	Regionally significant wetlands (109) providing habitat for a wide variety of water birds, including pied stilt, banded dotterel, sandpipers, grey teals and shovellers. Fernbirds present. Diverse fish fauna, including eels, bullies, galaxiids and flatfish. Intertidal fauna typical of exposed sandy beaches of southern New Zealand.	Medium high

### Influence of buildings / structures / earthworks

Criteria	Comments	Rating
The degree to which buildings,	Flood bank on the landward side of the unit diminishes	Medium

structures and earthworks (including dredging) influence the character of the landscape or seascape?	naturalness to a small degree. Evidence of drainage. No structures or buildings are apparent.	high
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**Experiential naturalness**

Criteria	Comments	Rating
The degree to which there are wild and scenic qualities?	Moderately wild in both the tumultuous and undomesticated senses. Moderately high scenic quality.	Medium high

**Overall Natural character rating**

Rating	Comments / Reasons	Outstanding?
Medium	Hydrological and geomorphological integrity is significantly compromised. Some areas of significant indigenous vegetation and reasonably important habitat provided for fauna. Moderately high perceptual naturalness and wild and scenic value.	No

## Natural character Assessment Sheet

<b>Map Unit</b>	CNC18
<b>Description</b>	Kaka Point



### Geomorphological and Hydrological naturalness

Criteria	Comments	Rating
The degree to which the landforms / seabed are the product of natural processes?	Relatively narrow coastal plain. Sandy beaches separated by intertidal and subtidal reefs and headlands. Widespread albeit relatively minor modification by roads and houses, particularly in the vicinity of the Kaka point town. Narrow foredune ridges present along sandy beaches, much modified by marram.	Medium
The degree to which natural geomorphological and hydrological	Active coastal sand-system (nearshore-beach-foredune sand exchange) intact, albeit dune processes are modified	Medium

processes are operating unconstrained?	by marram and roading. Hydrologic processes relatively unconstrained.	
The degree to which water quality and quantity are unaffected by land use activities?	Water quality is generally good although contamination from stormwater and rural run-off can occur, commonly after rainfall.	Medium high

### Ecological naturalness

Criteria	Comments	Rating
The degree to which the vegetation patterns are a product of natural processes?	Largely indigenous vegetation along low scarp with scattered exotic grasses both on foreshore and behind scarp. Modified pasture from tops of scarp. Built up area encroaches on foreshore at Kaka Point.	Medium low
The degree to which the vegetation cover is indigenous to the area?	Medium low. Patches of indigenous shrubs along scarp. Largely pasture atop scarp.	Medium low
The (apparent) health and level of modification of intertidal and aquatic habitats?	Moderate health, medium modification. Exposed sandy shoreline subject to disturbance from wave action. Moderately low threat from sedimentation and farming runoff. Intertidal and subtidal rocky reef platforms largely natural. High degree of fracturing and fissuring of rocky substrate provides excellent habitat for intertidal invertebrate fauna. High diversity of macroalgae.	Medium high
The degree to which wildlife is present and sustained?	Infaunal communities typical of disturbed sandy beaches of southern New Zealand are of relatively low diversity and low abundance. Intertidal and subtidal reefs provide valued habitat that harbours a rich and diverse flora and fauna. Sealions and fur seals haul out here occasionally. Finfish are common offshore. Indigenous vegetation on scarp behind beach is likely to support indigenous terrestrial invertebrates, lizards and bush birds. Beach and scarp provide suitable habitat for shorebirds.	Medium high

### Influence of buildings / structures / earthworks

Criteria	Comments	Rating
The degree to which buildings, structures and earthworks (including dredging) influence the character of the landscape or seascape?	Road around the foreshore, including some large cuttings, is evidence of earthworks diminishing naturalness. The township also diminishes the naturalness of the unit.	Medium

### Experiential naturalness

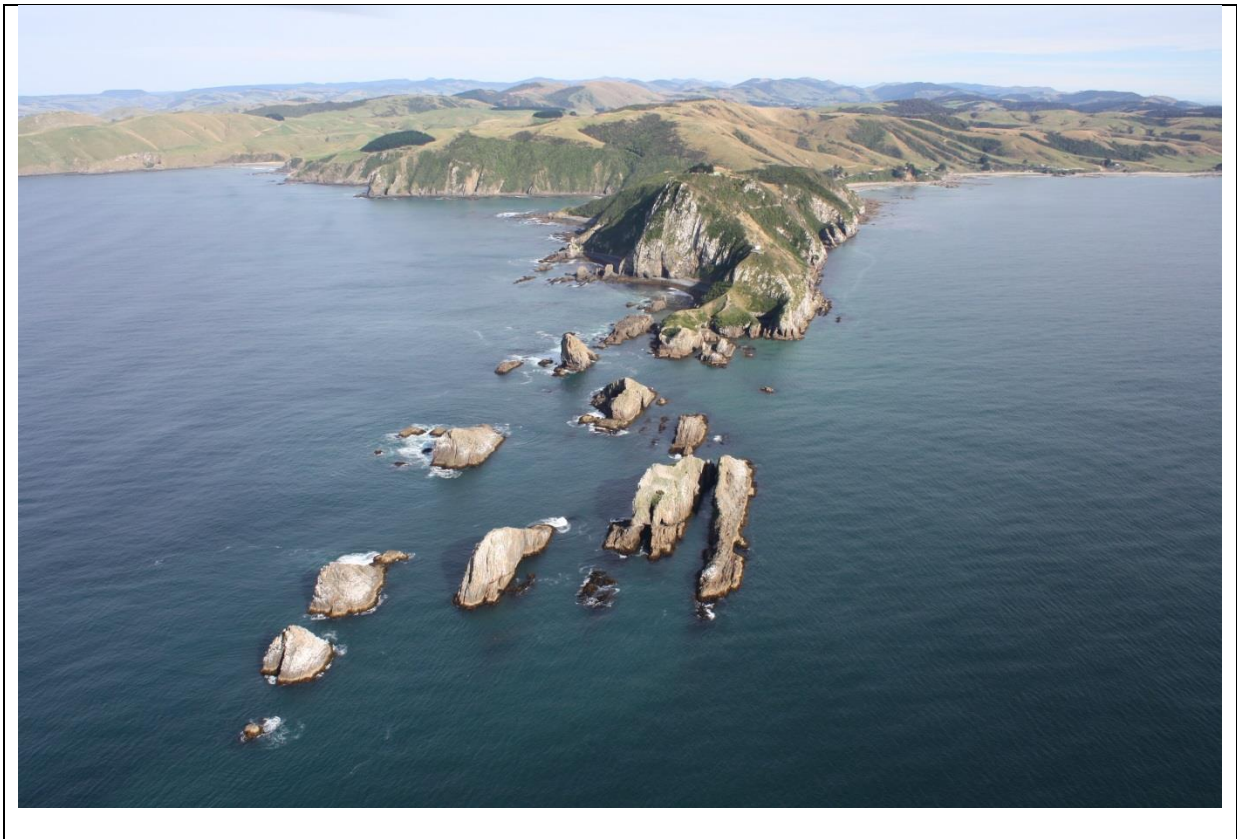
Criteria	Comments	Rating
The degree to which there are wild and scenic qualities?	Tumultuous wildness moderately high. Undomesticated wildness a bit lower. Moderately high scenic quality.	Medium high

### Overall Natural character rating

Rating	Comments / Reasons	Outstanding?
Medium	Geomorphological are modified by human habitation but hydrological processes are more intact. Terrestrial ecology is significantly modified by marine ecology is relatively intact and the unit provides important habitat for wildlife. Perceptual naturalness is diminished by township and associated development but wild and scenic value is still relatively high.	No

## Natural character Assessment Sheet

<b>Map Unit</b>	CNC19
<b>Description</b>	Nugget Point



### Geomorphological and Hydrological naturalness

Criteria	Comments	Rating
The degree to which the landforms / seabed are the product of natural processes?	Prominent headland with cliffs, coves, intertidal reefs, stacks, sea arches and islands. Some modification associated with buildings, lighthouse, roads, carparks, but essentially natural.	High
The degree to which natural geomorphological and hydrological processes are operating	Coastal processes are predominantly erosional and relatively unmodified.	High

unconstrained?		
The degree to which water quality and quantity are unaffected by land use activities?	Moderate-high energy coastline. Some minor reduction in water quality at times due to non-point source sediment and nutrient inputs associated with the surrounding land use is likely.	High

### Ecological naturalness

Criteria	Comments	Rating
The degree to which the vegetation patterns are a product of natural processes?	Largely natural.	High
The degree to which the vegetation cover is indigenous to the area?	Extensive indigenous vegetation on steeper slopes. Exotic grasses on remainder of headland.	Medium high
The (apparent) health and level of modification of intertidal and aquatic habitats?	High degree of naturalness of macroalgal beds on subtidal reefs. <i>Durvillaea</i> dominated community. Rocky intertidal zone natural. Under low threat from human influence.	High
The degree to which wildlife is present and sustained?	Diverse range of physical and biological features which include exposed and semi-sheltered habitats. Subtidal reefs valued as rich and diverse habitat. Haul out site for New Zealand fur seal, elephant seal and sealions. Visited by leopard seal. Breeding area for yellow-eyed penguin, little blue penguin, Australasian gannet and Stewart Island shag. Likely breeding area for spotted shag, sooty shearwater, large pied cormorant, red-billed gull, kelp gull and white fronted tern. Visited by erect- crested penguin, Fiordland crested penguin, Snares crested penguin, rockhopper penguin, reef heron and variable oyster catcher.	High

### Influence of buildings / structures / earthworks

Criteria	Comments	Rating
The degree to which buildings, structures and earthworks (including dredging) influence the character of the landscape or seascape?	Road and tracks evident, with some significant cuttings. Light house and dwelling plus related buildings apparent.	Medium high

### Experiential naturalness

Criteria	Comments	Rating
The degree to which there are wild and scenic qualities?	Soaring cliffs and reefs contribute to high tumultuous wildness. Slightly lower undomesticated wildness because of structures and tourism infrastructure. Highly scenic.	High

### Overall Natural character rating

Rating	Comments / Reasons	Outstanding?
High	Geomorphological and hydrological systems are more or less intact. High ecological integrity also, and a very important site for wildlife. Slightly compromised perceptual naturalness but high wild and scenic value.	Yes



## Natural character Assessment Sheet

<b>Map Unit</b>	CNC20
<b>Description</b>	Sandy Bay



### Geomorphological and Hydrological naturalness

Criteria	Comments	Rating
The degree to which the landforms / seabed are the product of natural processes?	Sandstone and siltstone headlands. Landforms comprise cliffs (many vegetated), gravel and sand beaches, and intertidal reefs. Essentially natural.	High
The degree to which natural geomorphological and hydrological processes are operating	Coastal processes are predominantly erosional and relatively unmodified.	High

unconstrained?		
The degree to which water quality and quantity are unaffected by land use activities?	Moderate energy coastline. Some minor reduction in water quality at times due to non-point source sediment and nutrient inputs associated with the surrounding land use is likely.	High

### Ecological naturalness

Criteria	Comments	Rating
The degree to which the vegetation patterns are a product of natural processes?	Largely natural along cliff faces. Pastoral land at top of cliffs.	Medium
The degree to which the vegetation cover is indigenous to the area?	Extensive indigenous vegetation on steeper slopes. Exotic grasses on remainder of cliffs with almost exclusively pasture along top of cliffs.	Medium
The (apparent) health and level of modification of intertidal and aquatic habitats?	High degree of naturalness of macroalgal beds on subtidal reefs. <i>Durvillaea</i> dominated community. Rocky intertidal zone natural. Under low threat from human influence. Sandy beach largely natural.	Medium high
The degree to which wildlife is present and sustained?	Subtidal reefs valued as rich and diverse habitat. Haul out site for New Zealand fur seal, elephant seal and sealions. Habitat for a wide variety of seabirds on cliffs. Likely visited by a variety of penguin species.	Medium high

### Influence of buildings / structures / earthworks

Criteria	Comments	Rating
The degree to which buildings, structures and earthworks (including dredging) influence the	No structures or buildings. One (subtle) farm track. Degree of diminishment of natural character very small.	High

character of the landscape or seascape?		
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**Experiential naturalness**

Criteria	Comments	Rating
The degree to which there are wild and scenic qualities?	Cliffs and reefs provide high degree of tumultuous wildness. High undomesticated wildness also. Highly scenic.	High

**Overall Natural character rating**

Rating	Comments / Reasons	Outstanding?
High	High geomorphological and hydrological integrity, but reduced ecological integrity, particularly on shore. Important area for wildlife. High perceptual naturalness and high wild and scenic value.	No

## Natural character Assessment Sheet

<b>Map Unit</b>	CNC21
<b>Description</b>	False Islet



### Geomorphological and Hydrological naturalness

Criteria	Comments	Rating
The degree to which the landforms / seabed are the product of natural processes?	Conglomerate headland connected to the Otago coastline by a tombolo. Landforms include cliffs, sea-arches, coves, intertidal and subtidal reefs. Landforms are essentially the product of the underlying geology and lithological control, and are largely unmodified.	High
The degree to which natural geomorphological and hydrological processes are operating	Predominately erosional and largely unmodified.	High

unconstrained?		
The degree to which water quality and quantity are unaffected by land use activities?	Moderate energy coast with moderate turbidity. Water quality is likely reduced due to outflow from the Catlins Estuary.	Medium high

### Ecological naturalness

Criteria	Comments	Rating
The degree to which the vegetation patterns are a product of natural processes?	Largely natural along cliff faces. Pastoral land at top of cliffs.	Medium
The degree to which the vegetation cover is indigenous to the area?	Extensive indigenous vegetation on cliff faces. Exotic grasses in patches on cliffs with pasture along top of cliffs. Small areas of regenerating indigenous scrub along top of northernmost cliffs.	Medium
The (apparent) health and level of modification of intertidal and aquatic habitats?	High degree of naturalness of macroalgal beds on subtidal reefs. <i>Durvillaea</i> dominated community. Rocky intertidal zone natural. Under low threat from human influence.	Medium high
The degree to which wildlife is present and sustained?	Subtidal reefs valued as rich and diverse habitat for variety of subtidal flora and fauna. Haul out site for New Zealand fur seal. Habitat for a wide variety of seabirds on cliffs.	Medium high

### Influence of buildings / structures / earthworks

Criteria	Comments	Rating
The degree to which buildings, structures and earthworks (including dredging) influence the	No structures, buildings or earthworks.	High

character of the landscape or seascape?		
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**Experiential naturalness**

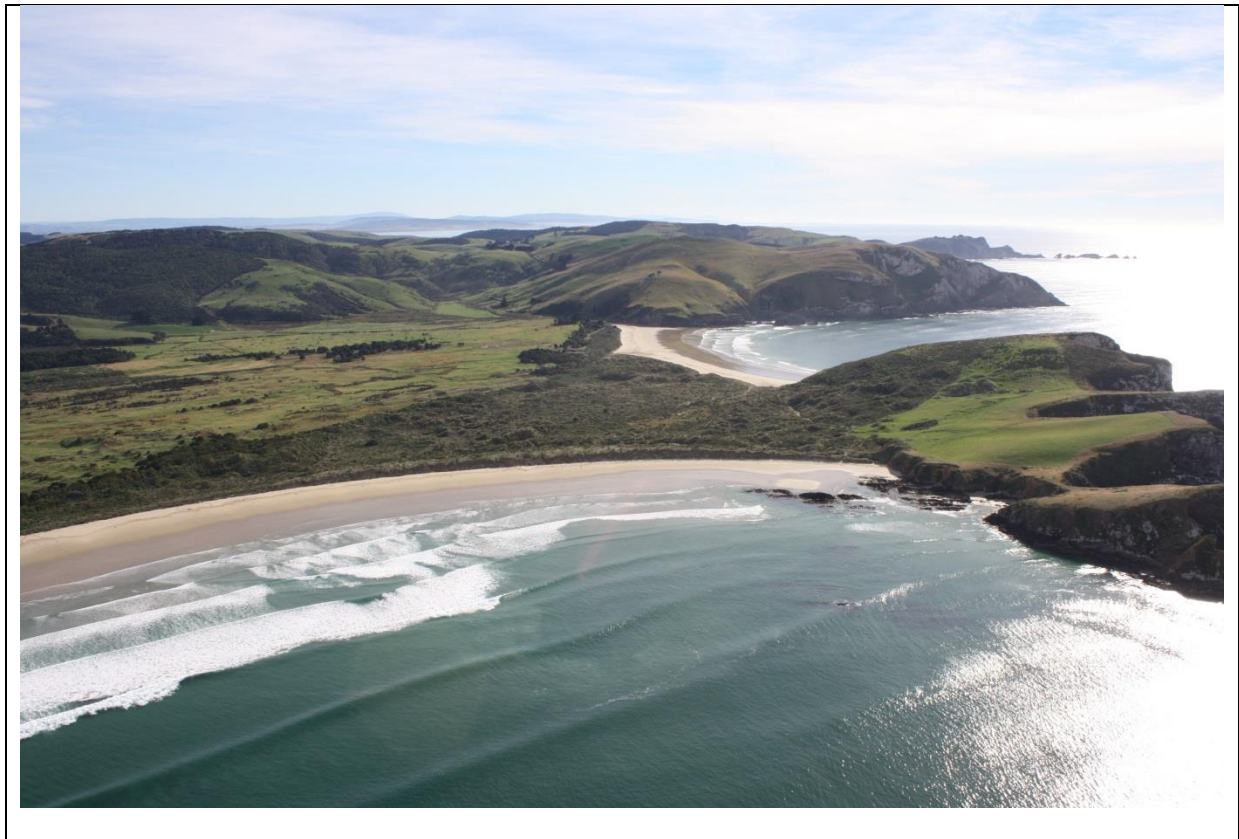
Criteria	Comments	Rating
The degree to which there are wild and scenic qualities?	Cliffs and reefs provide high tumultuous wildness. High undomesticated wildness also. Highly scenic.	High

**Overall Natural character rating**

Rating	Comments / Reasons	Outstanding?
High	This unit has high geomorphological integrity and moderately high hydrological integrity. Its terrestrial ecology is compromised but its marine ecology is more intact and the vicinity is important for wildlife. It has high perceptual naturalness and high wild and scenic value.	No

## Natural character Assessment Sheet

<b>Map Unit</b>	CNC22
<b>Description</b>	Cannibal / Surat Bay



### Geomorphological and Hydrological naturalness

Criteria	Comments	Rating
The degree to which the landforms / seabed are the product of natural processes?	Prograded barrier. An extensive coastal plain comprising foredune ridges inland. Parabolic dune forms orientated southwest/northeast transgress from Surat to Cannibal Bay. Inland dune forms have been somewhat modified by farming. The coastal margins and the tombolo connecting Surat and Cannibal Bay retain more naturalness, although is somewhat modified by marram.	Medium high

The degree to which natural geomorphological and hydrological processes are operating unconstrained?	The active coastal sand-system is intact, albeit dune processes are modified by marram. Sand transport from beach to hinterland is nil due to dune stabilisation and exotic plant cover.	Medium
The degree to which water quality and quantity are unaffected by land use activities?	Moderate energy coast with moderate turbidity. Water quality is likely reduced due to outflow from the Catlins Estuary.	Medium high

### Ecological naturalness

Criteria	Comments	Rating
The degree to which the vegetation patterns are a product of natural processes?	Although there are significant areas of indigenous scrub and forest and extensive areas of wetland, a high percentage of the area has been reclaimed and converted to farmland. However, there is evidence of regenerating indigenous vegetation in some areas.	Medium low
The degree to which the vegetation cover is indigenous to the area?	Regionally significant wetlands (21, 41). Indigenous vegetation includes mingimingi, carex toetoe, flax and swamp lancewood, and the threatened plant species <i>Mazus arenarius</i> and the insufficiently known species <i>Libertia peregrinans</i> .	Medium
The (apparent) health and level of modification of intertidal and aquatic habitats?	Much modified overall, but extensive areas of remaining wetlands are largely natural, with regeneration occurring. Exposed beaches largely natural.	Medium
The degree to which wildlife is present and sustained?	Regionally significant wetlands providing habitat for a wide variety of water birds. Freshwater fish fauna likely to include eels and galaxiids. Infaunal communities typical of disturbed sandy beaches of southern New Zealand are of relatively low diversity and low abundance. Likely that Stewart Island Shags breed on the Triplets off the coast. Haul out site for Hooker's sea-lion and likely pupping area.	High

### Influence of buildings / structures / earthworks



Criteria	Comments	Rating
The degree to which buildings, structures and earthworks (including dredging) influence the character of the landscape or seascape?	Scattered buildings and structures, including the New Haven settlement. Roads and tracks. A seawall has been built adjacent to New Haven. Together these diminish the naturalness of the area slightly.	Medium high

### Experiential naturalness

Criteria	Comments	Rating
The degree to which there are wild and scenic qualities?	Some tumultuous wildness on the seaward margins. Undomesticated wildness compromised by structures and roads to a degree. Moderately high scenic quality.	Medium high

### Overall Natural character rating

Rating	Comments / Reasons	Outstanding?
Medium high	Geomorphological and hydrological naturalness has been compromised by agriculture and the spread of marram. Terrestrial ecological integrity has also been compromised by agriculture but significant wetlands are present providing important wildlife habitat. Perceptual naturalness is moderately high as is wild and scenic value.	No

## Natural character Assessment Sheet

<b>Map Unit</b>	CNC23
<b>Description</b>	Catlins River



### Geomorphological and Hydrological naturalness

Criteria	Comments	Rating
The degree to which the landforms / seabed are the product of natural processes?	Tidal estuary with conspicuous flood-tide sand delta. Much in-filled with sediments of both fluvial and marine provenance. Fluvial input and accumulation was probably accelerated during forest clearance. Estuary margins much modified by roading and other structures, including seawalls, and reclamation. Small, but important, areas of wetland remain but are threatened by increased exposure to wave activity due to the loss of a protecting sand spit	Medium

	(Cabbage Point) following cattle grazing here in the 1960s.	
The degree to which natural geomorphological and hydrological processes are operating unconstrained?	Hydrological processes within the inlet are essentially unconstrained albeit the loss of Cabbage Point allows wave energy to propagate further into the estuary than would naturally occur. This has accelerated coastal erosion at Pounaweia. Processes have been further altered by the above modifications.	Medium
The degree to which water quality and quantity are unaffected by land use activities?	High degree of flushing with each tidal cycle. Water quality has been adversely affected by point and nonpoint discharges, particularly runoff and discharge from the Catlins and Owaka rivers	Medium

### Ecological naturalness

Criteria	Comments	Rating
The degree to which the vegetation patterns are a product of natural processes?	Regionally significant wetlands (63). Remnant areas of indigenous bush. Significant wetlands at Hungerford Point. Areas of reclaimed land have been converted to pasture, especially in embayments.	Medium
The degree to which the vegetation cover is indigenous to the area?	Patches of indigenous vegetation, including bush, scrub and marshlands. Vegetated area small in relation to overall area of estuary.	Medium
The (apparent) health and level of modification of intertidal and aquatic habitats?	Overall low modification, although there are areas of reclamation around the perimeter. Moderate threat from nutrient runoff, sedimentation and erosion.	Medium
The degree to which wildlife is present and sustained?	A largely unmodified estuary but with moderate development of the main feeder river (Owaka River). Includes Hungerford Point wetland. The estuary and associated wetlands provide important habitat for marine and freshwater fish such as giant bully, black flounder, brown trout, galaxiids, eels and shellfish. Wetlands and bush significant habitat for water birds and forest birds. Coastal habitat important for shore birds.	Medium high

### Influence of buildings / structures / earthworks

Criteria	Comments	Rating
The degree to which buildings, structures and earthworks (including dredging) influence the character of the landscape or seascape?	Natural character compromised by roads and associated seawalls around the margins, jetties, and the artificial sandbar. There are a number of dwellings and farm buildings within the unit.	Medium

### Experiential naturalness

Criteria	Comments	Rating
The degree to which there are wild and scenic qualities?	Little tumultuous wildness. Some undomesticated wildness but this is compromised. Moderately high scenic quality.	Medium

### Overall Natural character rating

Rating	Comments / Reasons	Outstanding?
Medium	The geomorphological and hydrological naturalness of the unit has been significantly compromised by agriculture, seawalls, human settlements and reclamation. These activities have also significantly compromised the terrestrial and aquatic ecology, although the unit still provides important habitat for fish and birds. It has moderate perceptual naturalness and moderate wild and scenic value.	No

## Natural character Assessment Sheet

<b>Map Unit</b>	CNC24
<b>Description</b>	Catlins Lake



### Geomorphological and Hydrological naturalness

Criteria	Comments	Rating
The degree to which the landforms / seabed are the product of natural processes?	Tidal river and estuary much in-filled with fluvial sediments. Fluvial input was probably enhanced during forest clearance. Estuary margins modified by drainage and conversion to pasture. Some fairly extensive, relatively unmodified wetlands remain, particularly at the head of the estuary.	Medium
The degree to which natural geomorphological and hydrological	Undetermined post-European fluvial input, manifest as accelerated sedimentation and modification of hydrologic	Medium

processes are operating unconstrained?	processes are likely. Otherwise essentially unmodified.	high
The degree to which water quality and quantity are unaffected by land use activities?	Water quality has been adversely affected by point and nonpoint discharges, particularly runoff and discharge from the Catlins River.	Medium

### Ecological naturalness

Criteria	Comments	Rating
The degree to which the vegetation patterns are a product of natural processes?	Regionally significant wetlands. Remnant areas of indigenous bush around perimeter. Significant wetlands at head of estuary and at Ratanui Swamp (22, 126). Areas of reclaimed land have been converted to pasture, especially in embayments.	Medium high
The degree to which the vegetation cover is indigenous to the area?	Patches of indigenous vegetation, including bush, scrub and flax/rush marshlands. Regenerating indigenous vegetation predominant in wetlands.	Medium high
The (apparent) health and level of modification of intertidal and aquatic habitats?	Overall low modification, although there are areas of reclamation around the perimeter. Moderate threat from nutrient runoff, sedimentation and erosion.	Medium
The degree to which wildlife is present and sustained?	A largely unmodified estuary with minimal development of the main feeder river (Catlins River). Regionally significant wetland at the head of the estuary and at Ratanui Swamp. The estuary and associated wetlands provide important habitat for marine and freshwater fish such as giant bully, black flounder, brown trout, galaxiids, eels and shellfish. Wetlands significant habitat for water birds.	Medium high

### Influence of buildings / structures / earthworks

Criteria	Comments	Rating
The degree to which buildings, structures and earthworks (including dredging) influence the character of the landscape or seascape?	Few buildings. Bridges are the main structures. Roading on margins evidences earthworks. Significant drainage works in western most reaches.	Medium

### Experiential naturalness

Criteria	Comments	Rating
The degree to which there are wild and scenic qualities?	Not wild in the tumultuous sense but wild in the undomesticated sense. Views across water to hills have high scenic value.	Medium high

### Overall Natural character rating

Rating	Comments / Reasons	Outstanding?
Medium high	Geomorphological processes have been modified by land clearance and agriculture but hydrological processes are more intact. Water quality is compromised, however. There are important wetlands and patches of indigenous vegetation with high ecological value present, but much of the margins have been reclaimed and turned into pasture. The estuary is important for freshwater and marine fish, and water birds. While the units perceptual naturalness is compromised, and it lacks wildness, it has relatively high scenic value.	No

## Natural character Assessment Sheet

<b>Map Unit</b>	CNC25
<b>Description</b>	Catlins Heads



### Geomorphological and Hydrological naturalness

Criteria	Comments	Rating
The degree to which the landforms / seabed are the product of natural processes?	Distinctive flat-topped sandstone headland with cliffs, intertidal and subtidal reefs. Dominant landuse is pastoral.	High
The degree to which natural geomorphological and hydrological processes are operating	The predominant processes are erosional and are largely unconstrained.	High



unconstrained?		
The degree to which water quality and quantity are unaffected by land use activities?	Moderate energy coast with moderate turbidity. Water quality is likely reduced due to outflow from the Catlins Estuary.	Medium high

### Ecological naturalness

Criteria	Comments	Rating
The degree to which the vegetation patterns are a product of natural processes?	Largely natural along cliff faces. Pastoral land at top of cliffs.	Medium
The degree to which the vegetation cover is indigenous to the area?	Largely indigenous vegetation on cliff faces. Exotic grasses in patches on cliffs with pasture along top of cliffs. Small area of regenerating indigenous scrub at top of north-eastern cliffs.	Medium
The (apparent) health and level of modification of intertidal and aquatic habitats?	High degree of naturalness of macroalgal beds on subtidal reefs. <i>Durvillaea</i> dominated community. Rocky intertidal zone natural. Under low threat from human influence.	Medium high
The degree to which wildlife is present and sustained?	Subtidal reefs valued as rich and diverse habitat for variety of subtidal flora and fauna. Haul out site for New Zealand fur seal. Habitat for a variety of seabirds on cliffs.	Medium high

### Influence of buildings / structures / earthworks

Criteria	Comments	Rating
The degree to which buildings, structures and earthworks (including dredging) influence the	No buildings, structures or earthworks apparent.	High

character of the landscape or seascape?		
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**Experiential naturalness**

Criteria	Comments	Rating
The degree to which there are wild and scenic qualities?	Cliffs and reefs provide moderately high tumultuous wildness. Some undomesticated wildness, although compromised by land use. Moderate scenic value.	Medium high

**Overall Natural character rating**

Rating	Comments / Reasons	Outstanding?
Medium high	While geomorphological and hydrological processes are largely intact in this unit, water quality is compromised by the Catlins River. The terrestrial ecology is compromised by the development of pasture but the marine ecology is largely intact, and it has moderately high importance to wildlife. It has high perceptual naturalness and moderately high wild and scenic value	No

## Natural character Assessment Sheet

<b>Map Unit</b>	CNC26
<b>Description</b>	Jacks Bay



### Geomorphological and Hydrological naturalness

Criteria	Comments	Rating
The degree to which the landforms / seabed are the product of natural processes?	Small sandy bay comprised of Holocene coastal deposits seaward of a defined post-glacial marine transgression scarp. Narrow foredune zone, modified by marram. Modified with road and houses.	Medium
The degree to which natural geomorphological and hydrological processes are operating	Active coastal sand-system (nearshore-beach-foredune sand exchange) intact, albeit dune processes are modified	Medium

unconstrained?	by marram. No sand transport to the hinterland.	
The degree to which water quality and quantity are unaffected by land use activities?	Moderate-high energy coastline. Some minor reduction in water quality resulting from runoff and septic tanks is possible.	Medium high

### Ecological naturalness

Criteria	Comments	Rating
The degree to which the vegetation patterns are a product of natural processes?	Largely marram, muehlenbeckia and lupin covered foredunes on beaches. Behind dunes vegetation patterns are dominated by a residential area and developed farmland with scattered exotic trees. Prominent patches of indigenous vegetation on scarp behind houses. High degree of naturalness of macroalgal beds on subtidal reefs.	Medium
The degree to which the vegetation cover is indigenous to the area?	Medium low. Marram, muehlenbeckia, lupins, on foredunes, backed by exotic grassland and trees. Strip of residual or regenerating indigenous vegetation along scarp. Small patches of forest are present. Intertidal and subtidal macroalgal flora indigenous.	Medium
The (apparent) health and level of modification of intertidal and aquatic habitats?	High health, moderate modification. Exposed sandy shoreline subject to disturbance from wave action. Moderately low threat from sedimentation and farming runoff. High degree of naturalness of macroalgal beds on subtidal reefs. Rocky intertidal zone largely natural, with minimal influenced by erosion.	Medium high
The degree to which wildlife is present and sustained?	Subtidal reefs valued as rich and diverse habitat. Feeding and spawning area for a variety of finfish. Likely paua, rock lobster and kina habitat. Community likely largely intact. Infaunal communities typical of disturbed sandy beaches of southern New Zealand are of relatively low diversity and low abundance. Sealions and furseals haul out here occasionally. Breeding habitat for yellow-eyed penguin. Finfish are common offshore.	High

### Influence of buildings / structures / earthworks

Criteria	Comments	Rating
The degree to which buildings, structures and earthworks (including dredging) influence the character of the landscape or seascape?	Presence of roading and cribs diminishes natural character significantly.	Medium

### Experiential naturalness

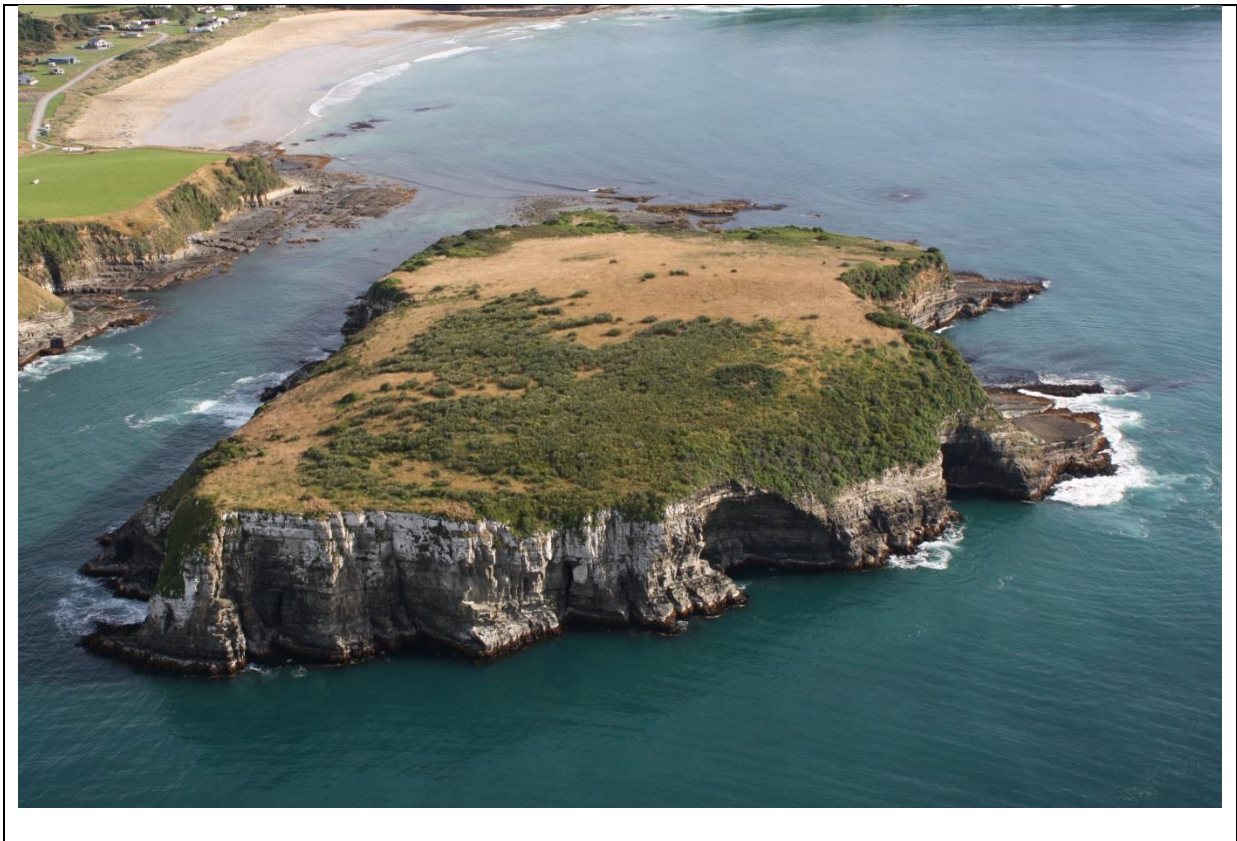
Criteria	Comments	Rating
The degree to which there are wild and scenic qualities?	Some tumultuous wildness. Little undomesticated wildness. Some scenic value.	Medium

### Overall Natural character rating

Rating	Comments / Reasons	Outstanding?
Medium	Geomorphological and hydrological processes are compromised. Water quality is moderately high. The terrestrial ecology is compromised but the marine ecology less so and the unit provides important habitat for wildlife. It has only moderate perceptual naturalness and moderate wild and scenic value.	

## Natural character Assessment Sheet

<b>Map Unit</b>	CNC27
<b>Description</b>	Tuhawaiki Island and Tunnel Rocks



### Geomorphological and Hydrological naturalness

Criteria	Comments	Rating
The degree to which the landforms / seabed are the product of natural processes?	Flat-topped conglomerate island with cliffs, intertidal and subtidal reefs, and sea-caves. Landforms essentially natural and unmodified.	High
The degree to which natural geomorphological and hydrological processes are operating	Processes are predominately erosional and unconstrained.	High

unconstrained?		
The degree to which water quality and quantity are unaffected by land use activities?	Moderate-high energy coastline. Some minor reduction in water quality from runoff is possible.	High

### Ecological naturalness

Criteria	Comments	Rating
The degree to which the vegetation patterns are a product of natural processes?	Largely natural along cliff faces. Regenerating indigenous scrub on top of island.	Medium
The degree to which the vegetation cover is indigenous to the area?	Extensive indigenous vegetation regenerating on top of island. Exotic grasses cover remaining flat land.	Medium
The (apparent) health and level of modification of intertidal and aquatic habitats?	High degree of naturalness of macroalgal beds on subtidal reefs. <i>Durvillaea</i> dominated community. Rocky intertidal zone natural. Subtidal reefs harbour rich and diverse flora and fauna. Under low threat from human influence.	Medium high
The degree to which wildlife is present and sustained?	Subtidal reefs valued as rich and diverse habitat for variety of subtidal flora and fauna. Haul out site for New Zealand fur seal. Habitat for a wide variety of seabirds on cliffs. Breeding area for sooty shearwater, yellow-eyed penguin and little blue penguin.	High

### Influence of buildings / structures / earthworks

Criteria	Comments	Rating
The degree to which buildings, structures and earthworks	No buildings, structures or earthworks discernible.	High

(including dredging) influence the character of the landscape or seascape?		
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### Experiential naturalness

Criteria	Comments	Rating
The degree to which there are wild and scenic qualities?	Cliffs and reefs provide high tumultuous wildness. High undomesticated wildness. Highly scenic.	High

### Overall Natural character rating

Rating	Comments / Reasons	Outstanding?
High	Geomorphological and hydrological systems intact. Exotic vegetation has replaced the indigenous vegetation but this is regenerating. The marine ecology is predominantly intact and the unit is important for wildlife. High perceptual naturalness and wild and scenic qualities.	No



## Natural character Assessment Sheet

<b>Map Unit</b>	CNC28
<b>Description</b>	Penguin Bay



### Geomorphological and Hydrological naturalness

Criteria	Comments	Rating
The degree to which the landforms / seabed are the product of natural processes?	Sandstone cliffs. Some semi vegetated, particularly in the south of the unit. Intertidal reefs, subtidal reefs, caves and coves, some with gravel beaches. Dominant land use is agricultural. Overall little modification.	High
The degree to which natural geomorphological and hydrological processes are operating	Processes are predominately erosion and largely unconstrained.	High

unconstrained?		
The degree to which water quality and quantity are unaffected by land use activities?	Moderate-high energy coastline. Some minor reduction in water quality from runoff is possible.	High

### Ecological naturalness

Criteria	Comments	Rating
The degree to which the vegetation patterns are a product of natural processes?	Largely natural along cliff faces. Extensive patches of remnant and regenerating indigenous vegetation along some cliff tops. Pastoral land further back from top of cliffs.	Medium
The degree to which the vegetation cover is indigenous to the area?	Largely indigenous vegetation on cliff faces and at top of many cliffs. Exotic grasses in patches on cliffs with pasture beyond top of cliffs. Extensive areas of remnant and regenerating indigenous scrub/forest at top of most cliffs.	Medium high
The (apparent) health and level of modification of intertidal and aquatic habitats?	High degree of naturalness of macroalgal beds on subtidal reefs. <i>Durvillaea</i> dominated community. Rocky intertidal zone natural. Subtidal reefs harbour rich and diverse flora and fauna. Under low threat from human influence.	Medium high
The degree to which wildlife is present and sustained?	Subtidal reefs valued as rich and diverse habitat for variety of subtidal flora and fauna. Haul out site for New Zealand fur seal. Habitat for a wide variety of seabirds on cliffs. Breeding area for sooty shearwater and yellow-eyed penguin.	High

### Influence of buildings / structures / earthworks

Criteria	Comments	Rating
The degree to which buildings, structures and earthworks	Farm fences are the only discernible structures in this unit. A walking track to Jacks Blowhole is present but hard to	High

(including dredging) influence the character of the landscape or seascape?	discern. There are no buildings.	
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**Experiential naturalness**

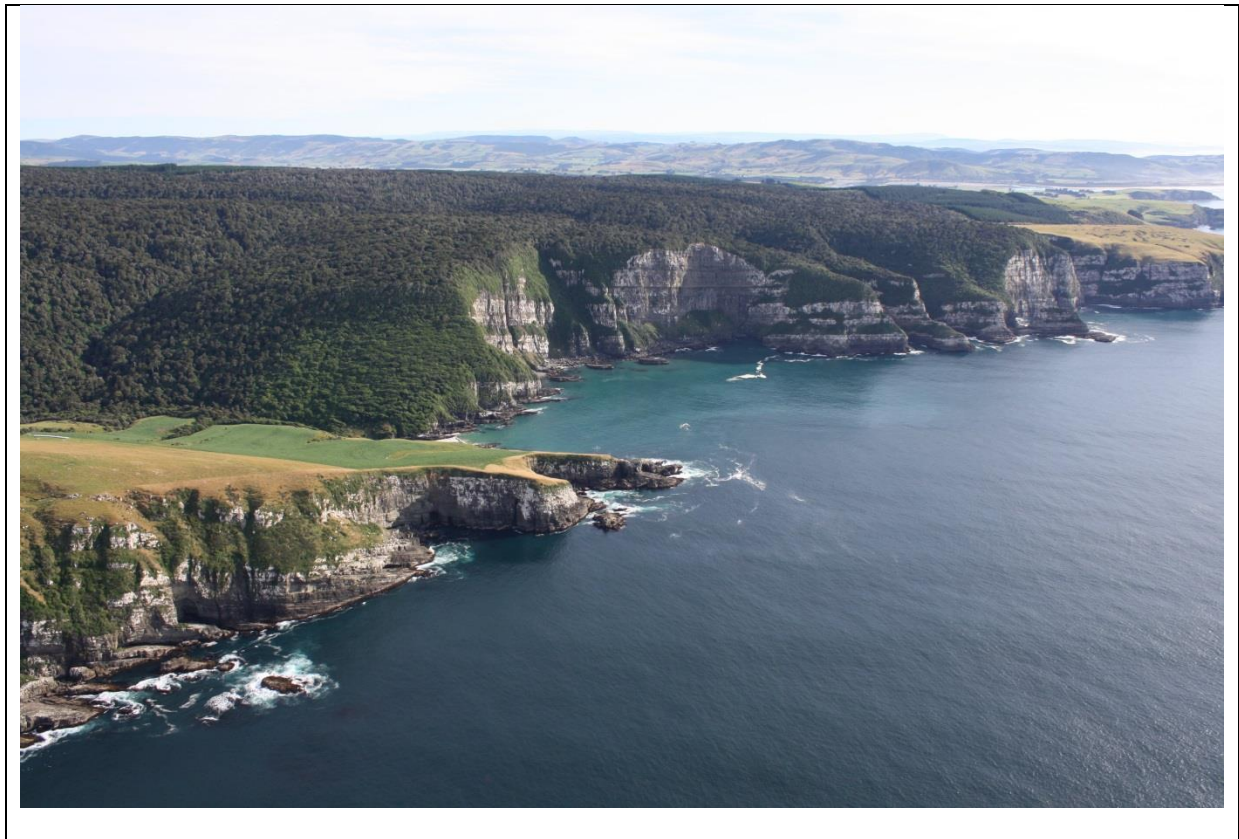
Criteria	Comments	Rating
The degree to which there are wild and scenic qualities?	Moderately high tumultuous wildness. Moderately high undomesticated wildness. Highly scenic.	Medium high

**Overall Natural character rating**

Rating	Comments / Reasons	Outstanding?
High	Geomorphological and hydrological processes are largely intact. Terrestrial ecology compromised by exotic vegetation associated with farming, but extensive areas of remnant and regenerating indigenous vegetation on cliff tops. Important unit for wildlife. High perceptual naturalness and moderately high wild and scenic qualities.	No

## Natural character Assessment Sheet

<b>Map Unit</b>	CNC29
<b>Description</b>	Hinahina Cove



### Geomorphological and Hydrological naturalness

Criteria	Comments	Rating
The degree to which the landforms / seabed are the product of natural processes?	Sandstone cliffs, many some semi-vegetated. Intertidal reefs, subtidal reefs, caves and coves, some with gravel beaches. Dominant land use is agricultural but with forest in the centre of the unit.	High
The degree to which natural geomorphological and hydrological processes are operating	Processes are predominately erosion and largely unconstrained.	High

unconstrained?		
The degree to which water quality and quantity are unaffected by land use activities?	Moderate-high energy coastline. Some minor reduction in water quality from runoff is possible at times.	High

### Ecological naturalness

Criteria	Comments	Rating
The degree to which the vegetation patterns are a product of natural processes?	Largely natural along cliff faces. Extensive remnant and regenerating indigenous vegetation along many cliff tops.	Medium high
The degree to which the vegetation cover is indigenous to the area?	Largely indigenous vegetation on cliff faces and at top of cliffs. Exotic grasses in small patches on some cliffs. Pasture along more southern cliff tops. Extensive area of remnant and regenerating indigenous scrub/forest at top of northern cliffs.	Medium high
The (apparent) health and level of modification of intertidal and aquatic habitats?	High degree of naturalness of macroalgal beds on subtidal reefs. <i>Durvillaea</i> dominated community. Rocky intertidal zone natural. Subtidal reefs harbour rich and diverse flora and fauna. Under low threat from human influence.	High
The degree to which wildlife is present and sustained?	Subtidal reefs valued as rich and diverse habitat for variety of subtidal flora and fauna. Haul out site for New Zealand fur seal. Habitat for a wide variety of seabirds on cliffs. Breeding area for sooty shearwater and yellow-eyed penguin.	High

### Influence of buildings / structures / earthworks

Criteria	Comments	Rating
The degree to which buildings,	No buildings discernible. Farm fences the only discernible	High

structures and earthworks (including dredging) influence the character of the landscape or seascape?	structures. No earthworks.	
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**Experiential naturalness**

Criteria	Comments	Rating
The degree to which there are wild and scenic qualities?	High tumultuous wildness. High undomesticated wildness. Highly scenic.	High

**Overall Natural character rating**

Rating	Comments / Reasons	Outstanding?
High	Geomorphological and hydrological processes predominantly intact. Terrestrial ecology has been compromised by land clearance and exotic vegetation but remnant and regenerating bush is significant in this unit. Aquatic ecology is predominantly intact and the unit is important for wildlife. High perceptual naturalness and high wild and scenic quality	Yes

### Natural character Assessment Sheet

<b>Map Unit</b>	CNC30
<b>Description</b>	Purakaunui Bay



#### Geomorphological and Hydrological naturalness

Criteria	Comments	Rating
The degree to which the landforms / seabed are the product of natural processes?	Holocene bay-head barrier comprised of relict foredunes or beach ridges now modified by agriculture and dominated by pasture grasses. Narrow dune margin along seaward margin of the barrier, dominated and modified by marram grass. Barrier bisected by stream. Gravel road present along southern margin of the unit but few other structures.	Medium high

The degree to which natural geomorphological and hydrological processes are operating unconstrained?	The active coastal sand-system is intact, albeit dune processes are modified by marram. Sand transport from beach to hinterland is nil due to dune stabilisation and exotic plant cover.	Medium
The degree to which water quality and quantity are unaffected by land use activities?	Moderate-high energy coastline. Some minor reduction in water quality from runoff and contamination from stream outflow is possible at times.	Medium high

### Ecological naturalness

Criteria	Comments	Rating
The degree to which the vegetation patterns are a product of natural processes?	Largely marram covered foredunes on beach. Behind dunes vegetation patterns are dominated by exotic grasses with indigenous forest beyond. High degree of naturalness of macroalgal beds on subtidal reefs.	Medium
The degree to which the vegetation cover is indigenous to the area?	Medium. Marram on foredunes, backed by exotic grassland. Relatively extensive patches of indigenous forest are present. Intertidal and subtidal macroalgal flora indigenous.	Medium
The (apparent) health and level of modification of intertidal and aquatic habitats?	High health, moderate modification. Exposed sandy shoreline subject to disturbance from wave action. Moderately low threat from sedimentation and farming runoff. High degree of naturalness of macroalgal beds on offshore subtidal reefs. Sandy intertidal zone largely natural.	Medium high
The degree to which wildlife is present and sustained?	Subtidal reefs valued as rich and diverse habitat. Feeding and spawning area for a variety of finfish. Likely paua, rock lobster and kina habitat. Community likely largely intact. Infaunal communities typical of disturbed sandy beaches of southern New Zealand are of relatively low diversity and low abundance. Sealions and furseals haul out here occasionally. Breeding habitat for yellow-eyed penguin, little blue penguin and sooty shearwater. Finfish are common offshore.	High



### Influence of buildings / structures / earthworks

Criteria	Comments	Rating
The degree to which buildings, structures and earthworks (including dredging) influence the character of the landscape or seascape?	The road is the only discernible earthworks in the bay. There are two small structures. Together these have only a very small effect on the character of the landscape	High

### Experiential naturalness

Criteria	Comments	Rating
The degree to which there are wild and scenic qualities?	Some tumultuous wildness. High undomesticated wildness. Highly scenic.	High

### Overall Natural character rating

Rating	Comments / Reasons	Outstanding?
Medium high	Geomorphological and hydrological processes compromised by human constructions and marram which also compromises the terrestrial ecology of the unit. The aquatic ecology is relatively intake, and the unit is important for wildlife. It has high perceptual naturalness and high wild and, particularly, scenic value.	No

## Natural character Assessment Sheet

<b>Map Unit</b>	CNC31
<b>Description</b>	Cosgrove Island



### Geomorphological and Hydrological naturalness

Criteria	Comments	Rating
The degree to which the landforms / seabed are the product of natural processes?	Sandstone island with cliffs, intertidal and subtidal reefs. Landforms essentially natural.	High
The degree to which natural geomorphological and hydrological processes are operating	Processes are predominately erosion and largely unconstrained.	High

unconstrained?		
The degree to which water quality and quantity are unaffected by land use activities?	Moderate-high energy coastline. Some minor reduction in water quality from runoff is possible at times.	High

### Ecological naturalness

Criteria	Comments	Rating
The degree to which the vegetation patterns are a product of natural processes?	Largely natural	High
The degree to which the vegetation cover is indigenous to the area?	Almost exclusively indigenous vegetation. Some exotic grasses in small patches.	High
The (apparent) health and level of modification of intertidal and aquatic habitats?	High degree of naturalness of macroalgal beds on subtidal reefs. <i>Durvillaea</i> dominated community. Rocky intertidal zone natural. Under very low threat from human influence.	High
The degree to which wildlife is present and sustained?	Subtidal reefs valued as rich and diverse habitat. Feeding and spawning area for a variety of finfish. Paua, rock lobster and kina habitat. Community largely intact. Rich and diverse rocky intertidal epifauna typical of exposed southern coasts. Under occasional pressure from recreational fishers and very low threat from human land-based activities. Cosgrove Island is a predator-free breeding area for little blue penguin, sooty shearwater and fairy prion. Seabirds roost on island. Fur seals haul out.	High

### Influence of buildings / structures / earthworks

Criteria	Comments	Rating
The degree to which buildings, structures and earthworks (including dredging) influence the character of the landscape or seascape?	No structures, buildings or discernible earthworks.	High

### Experiential naturalness

Criteria	Comments	Rating
The degree to which there are wild and scenic qualities?	Tumultuous and undomesticated wildness both high. Highly scenic.	High

### Overall Natural character rating

Rating	Comments / Reasons	Outstanding?
High	This unit is largely unmodified and thus has a high degree of geomorphological, hydrological and ecological intactness. It is important to wildlife. It has high perceptual naturalness and high wild and scenic value.	Yes

## Natural character Assessment Sheet

<b>Map Unit</b>	CNC32
<b>Description</b>	Chasm Island / Long Point



### Geomorphological and Hydrological naturalness

Criteria	Comments	Rating
The degree to which the landforms / seabed are the product of natural processes?	Sandstone cliffs, intertidal reefs, subtidal reefs, caves and coves, some with gravel and sand beaches. Dominant land use is agricultural but overall little modification to landforms.	High
The degree to which natural geomorphological and hydrological processes are operating	Processes are predominately erosion and largely unmodified.	High

unconstrained?		
The degree to which water quality and quantity are unaffected by land use activities?	Moderate-high energy coastline. Some minor reduction in water quality from runoff is possible at times.	High

### Ecological naturalness

Criteria	Comments	Rating
The degree to which the vegetation patterns are a product of natural processes?	Largely natural along cliff faces. Patches of remnant and regenerating indigenous vegetation along some cliff tops. Pastoral land along remaining cliff tops.	Medium low
The degree to which the vegetation cover is indigenous to the area?	Largely indigenous vegetation on cliff faces, but extensive exotic grasses (pasture) beyond top of cliffs.	Medium low
The (apparent) health and level of modification of intertidal and aquatic habitats?	High degree of naturalness of macroalgal beds on subtidal reefs. <i>Durvillaea</i> dominated community. Rocky intertidal zone natural. Subtidal reefs harbour rich and diverse flora and fauna. Under low threat from human influence.	Medium high
The degree to which wildlife is present and sustained?	Subtidal reefs valued as rich and diverse habitat for variety of subtidal flora and fauna. Haul out site for New Zealand fur seal. Habitat for a wide variety of seabirds on cliffs. Breeding area for sooty shearwater and yellow-eyed penguin.	High

### Influence of buildings / structures / earthworks

Criteria	Comments	Rating
The degree to which buildings, structures and earthworks	No discernible earthworks. One small dwelling and a number of farm buildings are present, and these reduce the	High

(including dredging) influence the character of the landscape or seascape?	natural character slightly.	
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**Experiential naturalness**

Criteria	Comments	Rating
The degree to which there are wild and scenic qualities?	Cliffs and reefs provide high tumultuous wildness. Undomesticated wildness significantly lower. High scenic quality.	Medium high

**Overall Natural character rating**

Rating	Comments / Reasons	Outstanding?
High	The geomorphological and hydrological processes of this unit are largely intact. Its terrestrial ecology has been compromised by farming, but its aquatic ecology is more intact. It is important for wildlife. It has high perceptual naturalness and while somewhat domesticated it has high scenic quality.	No

## Natural character Assessment Sheet

<b>Map Unit</b>	CNC33
<b>Description</b>	Haywards Point



### Geomorphological and Hydrological naturalness

Criteria	Comments	Rating
The degree to which the landforms / seabed are the product of natural processes?	Sandstone headlands with cliffs, intertidal and subtidal reefs, chasms and caves, separated by sandy beaches. Some small dune forms present in the vicinity of streams. Much modified by marram and/or agriculture	Medium high
The degree to which natural geomorphological and hydrological processes are operating	The active coastal sand-system is intact, albeit sand transport from beach to hinterland is limited due to dune stabilisation and exotic plant cover. Headlands are actively	Medium high



unconstrained?	eroding and relatively unmodified.	
The degree to which water quality and quantity are unaffected by land use activities?	Moderate-high energy coastline. Some minor reduction in water quality from runoff is possible at times.	Medium high

### Ecological naturalness

Criteria	Comments	Rating
The degree to which the vegetation patterns are a product of natural processes?	Largely natural along cliff faces. Small patches of remnant and regenerating indigenous vegetation along some cliff tops and on cliff faces. Pastoral land along remaining cliff tops.	Medium low
The degree to which the vegetation cover is indigenous to the area?	Extensive exotic grasses (pasture) beyond top of cliffs. Small patches of remnant and regenerating indigenous vegetation in gullies.	Medium low
The (apparent) health and level of modification of intertidal and aquatic habitats?	High degree of naturalness of macroalgal beds on subtidal reefs. <i>Durvillaea</i> dominated community. Rocky intertidal zone natural. Subtidal reefs harbour rich and diverse flora and fauna. Under low threat from human influence. Sandy shores largely natural.	Medium high
The degree to which wildlife is present and sustained?	Subtidal reefs valued as rich and diverse habitat for variety of subtidal flora and fauna. Haul out site for sea lions and fur seals. Sandy shore infauna typical of exposed southern sandy shores. Habitat for a wide variety of seabirds on cliffs. Likely breeding area for yellow-eyed penguin.	Medium high

### Influence of buildings / structures / earthworks

Criteria	Comments	Rating
The degree to which buildings,	No discernible earthworks. No buildings. Only structures	High

structures and earthworks (including dredging) influence the character of the landscape or seascape?	are occasional farm fences which have little impact on the naturalness of the landscape.	
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### Experiential naturalness

Criteria	Comments	Rating
The degree to which there are wild and scenic qualities?	Tumultuous wildness moderately high. Undomesticated wildness high. Highly scenic.	High

### Overall Natural character rating

Rating	Comments / Reasons	Outstanding?
Medium high	This unit exhibits some modifications to its geomorphological and hydrological processes as a result of agriculture and the spread of marram. These have compromised the terrestrial ecology and also, to a degree, the marine ecology. It remains reasonably important for wildlife. The unit has high perceptual naturalness and high wild and scenic value.	No

## Natural character Assessment Sheet

<b>Map Unit</b>	CNC34
<b>Description</b>	Pillans Head



### Geomorphological and Hydrological naturalness

Criteria	Comments	Rating
The degree to which the landforms / seabed are the product of natural processes?	Sandstone headland with cliffs, offshore and intertidal reefs. Relatively unmodified.	High
The degree to which natural geomorphological and hydrological processes are operating	Coastal processes are predominantly erosional and relatively unconstrained.	High

unconstrained?		
The degree to which water quality and quantity are unaffected by land use activities?	Water quality in the lower Catlins is generally good due to the high percentage of native bush cover upstream. Some relatively minor reduction in water quality due to runoff from agriculture land, particularly after rainfall, can be expected.	High

### Ecological naturalness

Criteria	Comments	Rating
The degree to which the vegetation patterns are a product of natural processes?	Largely natural along cliff faces. Patches of remnant and regenerating indigenous vegetation along some cliff tops. Pastoral land along remaining cliff tops.	Medium low
The degree to which the vegetation cover is indigenous to the area?	Largely indigenous vegetation on cliff faces, but extensive exotic grasses (pasture) beyond top of cliffs.	Medium low
The (apparent) health and level of modification of intertidal and aquatic habitats?	High degree of naturalness of macroalgal beds on subtidal reefs. <i>Durvillaea</i> dominated community. Rocky intertidal zone natural. Subtidal reefs harbour rich and diverse flora and fauna. Under low threat from human influence.	Medium high
The degree to which wildlife is present and sustained?	Subtidal reefs valued as rich and diverse habitat for variety of subtidal flora and fauna. Haul out site for New Zealand fur seal. Habitat for a wide variety of seabirds on cliffs. Breeding area for yellow-eyed penguin.	Medium high

### Influence of buildings / structures / earthworks

Criteria	Comments	Rating
The degree to which buildings, structures and earthworks	No earthworks, structures or buildings evident.	High

(including dredging) influence the character of the landscape or seascape?		
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### Experiential naturalness

Criteria	Comments	Rating
The degree to which there are wild and scenic qualities?	High tumultuous and undomesticated wildness. Highly scenic.	High

### Overall Natural character rating

Rating	Comments / Reasons	Outstanding?
Medium high	This unit exhibits largely intact hydrological and geomorphological processes. The terrestrial ecology is compromised by pastoral farming, however, and the aquatic ecology is also compromised to a degree. It is of moderately high importance for wildlife. It has high perceptual naturalness and high wild and scenic value.	No.

## Natural character Assessment Sheet

<b>Map Unit</b>	CNC35
<b>Description</b>	Tahakopa Bay



### Geomorphological and Hydrological naturalness

Criteria	Comments	Rating
The degree to which the landforms / seabed are the product of natural processes?	Prograded Holocene barrier between relic sea-cliffs to north and Tahakopa River to south. Narrow margin of recently (early 20 <sup>th</sup> century) active sand dunes on the seaward margin, now stabilised and modified with marram. Overall landform largely unmodified.	High
The degree to which natural geomorphological and hydrological processes are operating	Active coastal sand-system intact, albeit dune processes are somewhat modified by marram. Natural processes largely	High

unconstrained?	unconstrained.	
The degree to which water quality and quantity are unaffected by land use activities?	Moderate high energy coast with low turbidity. Water quality possible slightly reduced from outflow from the Tahakopa River, but overall likely to be good.	High

### Ecological naturalness

Criteria	Comments	Rating
The degree to which the vegetation patterns are a product of natural processes?	Largely natural.	High
The degree to which the vegetation cover is indigenous to the area?	Almost exclusively indigenous vegetation with small patches of marram on the dunes. Important lowland podocarp forest containing regionally significant wetland (144) comprising podocarp, carex and mingimingi.	High
The (apparent) health and level of modification of intertidal and aquatic habitats?	Largely natural. Infauna typical of exposed southern beaches. Finfish offshore. Sealions haul out.	Medium high
The degree to which wildlife is present and sustained?	Invertebrate infauna common to exposed southern beaches. Sealion haul out on beach. Indigenous forest likely habitat for native bush birds, invertebrates, lizards and amphibians.	Medium high

### Influence of buildings / structures / earthworks

Criteria	Comments	Rating
The degree to which buildings, structures and earthworks (including dredging) influence the	No buildings or structures evident. No apparent earthworks.	High

character of the landscape or seascape?		
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**Experiential naturalness**

Criteria	Comments	Rating
The degree to which there are wild and scenic qualities?	High undomesticated wildness and moderately high tumultuous wildness. Highly scenic.	High

**Overall Natural character rating**

Rating	Comments / Reasons	Outstanding?
High	Essentially unmodified hydrological and geomorphological processes, and terrestrial ecology. Some modification to the aquatic ecology but the unit remains important to wildlife. It has high perceptual naturalness and high wild and scenic value.	Yes



## Natural character Assessment Sheet

<b>Map Unit</b>	CNC36
<b>Description</b>	Tahakopa River



### Geomorphological and Hydrological naturalness

Criteria	Comments	Rating
The degree to which the landforms / seabed are the product of natural processes?	Tidal river and estuary with conspicuous flood-tide sand delta. Much in-filled with sediments of both fluvial and marine provenance. Fluvial input and accumulation was probably accelerated during forest clearance, but to a lesser extent than other Otago Estuaries. Estuary margins modified by roading and reclamation, but extensive areas of wetland remain.	Medium high
The degree to which natural	Essentially unconstrained albeit somewhat altered by the	Medium

geomorphological and hydrological processes are operating unconstrained?	above modifications.	high
The degree to which water quality and quantity are unaffected by land use activities?	Water quality in the Tahakopa estuary is better than most estuaries in the Otago region due to the high native bush cover in the upper catchment. Runoff from agriculture lands combined with the relatively poor flushing of the upper reaches of this estuary will reduce water quality at times.	Medium high

### Ecological naturalness

Criteria	Comments	Rating
The degree to which the vegetation patterns are a product of natural processes?	Regionally significant wetlands (92, 140, 145, 146), including podocarp swamp, rush and sedge swamp, and carex. Some reclamation has occurred, especially on the true left bank.	Medium high
The degree to which the vegetation cover is indigenous to the area?	Largely natural, although some farmland borders the upper estuary. Patches of exotic grassland present associated with farming.	Medium high
The (apparent) health and level of modification of intertidal and aquatic habitats?	Overall low modification. Moderate threat from nutrient runoff and sedimentation.	Medium high
The degree to which wildlife is present and sustained?	The estuary is considered pristine and has outstanding biological significance. The estuary presently supports the regionally threatened South Island fernbird and lamprey ( <i>Geotria australis</i> ). Habitat for water birds, including white faced heron and shags (large pied cormorant, great cormorant).	High

### Influence of buildings / structures / earthworks

Criteria	Comments	Rating
The degree to which buildings, structures and earthworks (including dredging) influence the character of the landscape or seascape?	Roads evidence of some earthworks. Bridges only structures. No buildings. No evidence of drainage works.	High

### Experiential naturalness

Criteria	Comments	Rating
The degree to which there are wild and scenic qualities?	High undomesticated wildness. Some tumultuous wildness. Highly scenic.	Medium High

### Overall Natural character rating

Rating	Comments / Reasons	Outstanding?
Medium high	Geomorphological and hydrological processes slightly modified by human activity including reclamation and agriculture. The terrestrial ecology is largely intact, as is the marine ecology. The unit is considered very important for wildlife. It has high perceptual naturalness and moderately high wildness, and is highly scenic.	No

## Natural character Assessment Sheet

<b>Map Unit</b>	CNC37
<b>Description</b>	Mahaka Point



### Geomorphological and Hydrological naturalness

Criteria	Comments	Rating
The degree to which the landforms / seabed are the product of natural processes?	Sandstone and siltstone headland with cliffs, intertidal and offshore reefs, sandy coves and islands, most notably Rainbow Isles. Little modification.	High
The degree to which natural geomorphological and hydrological processes are operating	Coastal processes are predominantly erosional and relatively unconstrained.	High

unconstrained?		
The degree to which water quality and quantity are unaffected by land use activities?	Some relatively minor reduction in water quality due to runoff from agriculture land, particularly after rainfall, can be expected.	High

### Ecological naturalness

Criteria	Comments	Rating
The degree to which the vegetation patterns are a product of natural processes?	Largely natural along cliff faces and on top of Rainbow Isles. Patches of remnant and regenerating indigenous vegetation along northern facing cliff tops. Pastoral land along remaining cliff tops.	Medium
The degree to which the vegetation cover is indigenous to the area?	Largely indigenous vegetation on cliff faces and islets, but extensive exotic grasses (pasture) beyond top of cliffs.	Medium
The (apparent) health and level of modification of intertidal and aquatic habitats?	High degree of naturalness of macroalgal beds on subtidal reefs. <i>Durvillaea</i> dominated community. Rocky intertidal zone natural. Subtidal reefs harbour rich and diverse flora and fauna. Under low threat from human influence.	Medium high
The degree to which wildlife is present and sustained?	Subtidal reefs valued as rich and diverse habitat for variety of subtidal flora and fauna. Haul out site for New Zealand fur seal. Habitat for a wide variety of seabirds on cliffs. Breeding area for yellow-eyed penguin, sooty shearwater and little blue penguin.	High

### Influence of buildings / structures / earthworks

Criteria	Comments	Rating
The degree to which buildings, structures and earthworks	No buildings, structures or apparent earthworks.	High

(including dredging) influence the character of the landscape or seascape?		
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**Experiential naturalness**

Criteria	Comments	Rating
The degree to which there are wild and scenic qualities?	Cliffs and reefs provide high tumultuous wildness. High undomesticated wildness. High scenic value.	High

**Overall Natural character rating**

Rating	Comments / Reasons	Outstanding?
High	Hydrological and geomorphological processes are largely intact. The terrestrial ecology has been modified by land clearance, but the marine ecology is more intact. The unit is important for wildlife. The unit has high perceptual naturalness and high wild and scenic value.	No

## Natural character Assessment Sheet

<b>Map Unit</b>	CNC38
<b>Description</b>	Tautuku Bay



### Geomorphological and Hydrological naturalness

Criteria	Comments	Rating
The degree to which the landforms / seabed are the product of natural processes?	Prograded Holocene barrier. Narrow margin of previously active sand dunes on the seaward margin, now stabilised and modified with marram. Dune lakes present. Overall essential natural.	High
The degree to which natural geomorphological and hydrological processes are operating	Active coastal sand-system intact, albeit dune processes are somewhat modified by marram. Natural processes largely	High

unconstrained?	unconstrained.	
The degree to which water quality and quantity are unaffected by land use activities?	Moderate energy coast with low turbidity. Water quality possible slightly reduced from outflow from the Tautuku River, but overall likely to be good.	High

### Ecological naturalness

Criteria	Comments	Rating
The degree to which the vegetation patterns are a product of natural processes?	Largely natural. Contains regionally significant Lake Wilkie Wetland (78), which comprises lowland lake, flax and podocarp swamp.	High
The degree to which the vegetation cover is indigenous to the area?	Almost exclusively indigenous vegetation with patches of marram on the dunes. Important lowland podocarp forest containing regionally significant wetland comprising podocarp, carex and mingimingi.	High
The (apparent) health and level of modification of intertidal and aquatic habitats?	Largely natural. Infauna typical of exposed southern beaches. Finfish offshore. Sealions haul out.	Medium high
The degree to which wildlife is present and sustained?	Invertebrate infauna common to exposed southern beaches. Sealion haul out on beach. Indigenous forest likely habitat for native bush birds, invertebrates, lizards and amphibians.	Medium high

### Influence of buildings / structures / earthworks

Criteria	Comments	Rating
The degree to which buildings, structures and earthworks (including dredging) influence the	No buildings or structures evident within the unit. No apparent earthworks.	High



character of the landscape or seascape?		
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**Experiential naturalness**

Criteria	Comments	Rating
The degree to which there are wild and scenic qualities?	High tumultuous and high undomesticated wildness. Very high scenic quality.	High

**Overall Natural character rating**

Rating	Comments / Reasons	Outstanding?
High	Geomorphological and hydrological processes largely intact. The terrestrial ecology has a high degree of naturalness, but the marine ecology slightly less so. It is relatively highly important for wildlife. The unit has high wild and scenic value.	Yes

## Natural character Assessment Sheet

<b>Map Unit</b>	CNC39
<b>Description</b>	Tautuku River



### Geomorphological and Hydrological naturalness

Criteria	Comments	Rating
The degree to which the landforms / seabed are the product of natural processes?	Tidal river and estuary with sandflats and multiple channels. Much in-filled with sediments of both fluvial and marine provenance. Fluvial input and accumulation was probably accelerated during forest clearance, but to a lesser extent than other Otago Estuaries. Little modified by human structures although evidence of logging activities remain.	High
The degree to which natural geomorphological and hydrological	Essentially unconstrained. Hydrological processes, particularly tidal flows in and out of the estuary may be	High

processes are operating unconstrained?	constrained by marram at the mouth of the estuary.	
The degree to which water quality and quantity are unaffected by land use activities?	Water quality in the Tahakopa estuary is better than most estuaries in the Otago region due to the high native bush cover in the upper catchment.	High

### Ecological naturalness

Criteria	Comments	Rating
The degree to which the vegetation patterns are a product of natural processes?	Pristine saltmarsh and estuarine communities. Features a peat dome. Regionally significant wetlands (81, 148). Habitat for a wide variety of forest birds and waterfowl. It also provides an important habitat for regionally threatened fernbirds. The marshland nearer the river mouth hosts high numbers of fernbirds and comprises largely unmodified indigenous vegetation.	High
The degree to which the vegetation cover is indigenous to the area?	Largely natural, although some exotic grassland borders the true right bank near the mouth.	Medium high
The (apparent) health and level of modification of intertidal and aquatic habitats?	Overall low modification. Low threat from nutrient runoff and sedimentation.	High
The degree to which wildlife is present and sustained?	The estuary is considered pristine and has outstanding biological significance. It is an important breeding ground for black and yellow-belly flounder. Habitat for wide variety of water birds.	High

### Influence of buildings / structures / earthworks

Criteria	Comments	Rating
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The degree to which buildings, structures and earthworks (including dredging) influence the character of the landscape or seascape?	Only evident structure is the road bridge. No buildings or discernible earthworks.	High

**Experiential naturalness**

Criteria	Comments	Rating
The degree to which there are wild and scenic qualities?	High undomesticated wildness. Some degree of tumultuous wildness. Highly scenic.	High

**Overall Natural character rating**

Rating	Comments / Reasons	Outstanding?
High	Geomorphological and hydrological processes are largely intact. Some exotic grasses around the river mouth compromise the terrestrial ecology to a small degree. The marine ecology is largely intact and the unit is very important for wildlife. It has high perceptual naturalness and high wild and scenic value.	Yes

## Natural character Assessment Sheet

<b>Map Unit</b>	CNC40
<b>Description</b>	Tautuku Peninsula



### Geomorphological and Hydrological naturalness

Criteria	Comments	Rating
The degree to which the landforms / seabed are the product of natural processes?	Sandstone peninsula connected to the mainland by a narrow neck. Previously active sand dunes, now stable, transgressed the peninsular at its narrowest point. Small dunes also present at the mouth of the Tautuku River but dominant landforms are cliffs, intertidal reefs and small coves associated with rocky coasts. Some minor modification associated with cribs and farmtracks, and possible historic landuse (whaling station, port), but overall	Medium-high

	natural.	
The degree to which natural geomorphological and hydrological processes are operating unconstrained?	Intact nearshore-beach-dune sand transport system where coastline is sandy, albeit dune processes are modified by marram. Dominant processes are erosional and relatively unmodified.	Medium - high
The degree to which water quality and quantity are unaffected by land use activities?	Moderate high energy coast with low turbidity. Runoff from agriculture lands will reduce water quality at times.	High

### Ecological naturalness

Criteria	Comments	Rating
The degree to which the vegetation patterns are a product of natural processes?	Large patch of remnant and regenerating indigenous vegetation on peninsula. Pastoral land with exotic grasses along remaining cliff tops.	Medium
The degree to which the vegetation cover is indigenous to the area?	Largely indigenous vegetation on centre portion of peninsula. Indigenous scrub and herbfields at south of peninsula. Extensive exotic grasses (pasture) surround indigenous vegetation on top of cliffs.	Medium
The (apparent) health and level of modification of intertidal and aquatic habitats?	High degree of naturalness of macroalgal beds on subtidal reefs. <i>Durvillaea</i> dominated community. Rocky intertidal zone natural. Subtidal reefs harbour rich and diverse flora and fauna. Under low threat from human influence.	Medium high
The degree to which wildlife is present and sustained?	Subtidal reefs valued as rich and diverse habitat for variety of subtidal flora and fauna. Haul out site for New Zealand fur seal. Habitat for a wide variety of seabirds on cliffs. Breeding area for yellow-eyed penguin.	Medium high

### Influence of buildings / structures / earthworks

Criteria	Comments	Rating
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The degree to which buildings, structures and earthworks (including dredging) influence the character of the landscape or seascape?	Some evidence of tracks and roads. Quite a number of cribs on the northern side which are clustered to a degree. They detract from the naturalness to a degree.	Medium high

### Experiential naturalness

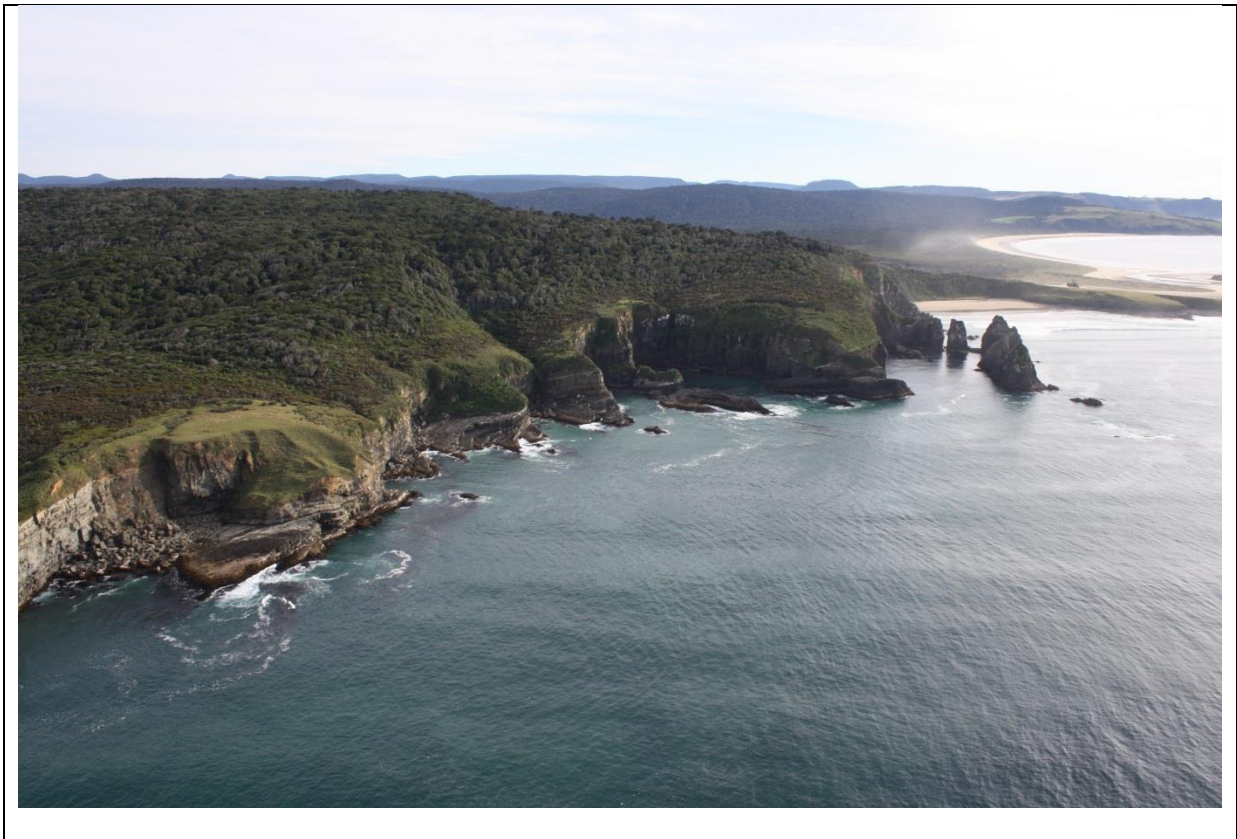
Criteria	Comments	Rating
The degree to which there are wild and scenic qualities?	Over the whole peninsula there is high tumultuous wildness and moderately high undomesticated wildness. There is high scenic quality.	Medium high

### Overall Natural character rating

Rating	Comments / Reasons	Outstanding?
Medium high	Geomorphological and hydrological processes are compromised to a small degree by the occupation of the headland. Water quality is not considered to be affected, however. The terrestrial ecology is similarly compromised by the occupation of the headland, and the aquatic ecology is slightly affected. The peninsula is still reasonably important for wildlife. The perceptual naturalness of the peninsula is compromised to a degree by the presence of cribs and tracks, and this domestication diminishes its wildness. It remains highly scenic, however.	No

## Natural character Assessment Sheet

<b>Map Unit</b>	CNC41
<b>Description</b>	Frances Pillars – Cathedral Caves



### Geomorphological and Hydrological naturalness

Criteria	Comments	Rating
The degree to which the landforms / seabed are the product of natural processes?	Sandstone and conglomerate cliffs with arches, sea-stacks, intertidal platforms and caves. A sandy beach is present at the southern end of the unit. Very little modification.	High
The degree to which natural geomorphological and hydrological processes are operating	Intact nearshore-beach-dune sand transport system where coastline is sandy. Dominant processes are erosional and	High



unconstrained?	relatively unmodified.	
The degree to which water quality and quantity are unaffected by land use activities?	Moderate energy coast with low turbidity. Hillslopes above unit are clad in regenerating forest so runoff is likely to be minimal.	High

### Ecological naturalness

Criteria	Comments	Rating
The degree to which the vegetation patterns are a product of natural processes?	Largely natural. Small patches of exotic grassland along some cliff tops.	Medium high
The degree to which the vegetation cover is indigenous to the area?	Largely indigenous vegetation on cliff tops.	Medium high
The (apparent) health and level of modification of intertidal and aquatic habitats?	High degree of naturalness of macroalgal beds on subtidal reefs. <i>Durvillaea</i> dominated community. Rocky intertidal zone natural. Subtidal reefs harbour rich and diverse flora and fauna. Under very low threat from human influence.	Medium high
The degree to which wildlife is present and sustained?	Subtidal reefs valued as rich and diverse habitat for variety of subtidal flora and fauna. Haul out site for New Zealand fur seal. Habitat for a wide variety of seabirds on cliffs. Likely breeding area for little blue penguin.	High

### Influence of buildings / structures / earthworks

Criteria	Comments	Rating
The degree to which buildings, structures and earthworks (including dredging) influence the	No earthworks. No structures. No buildings.	High

character of the landscape or seascape?		
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**Experiential naturalness**

Criteria	Comments	Rating
The degree to which there are wild and scenic qualities?	High tumultuous wildness. High undomesticated wildness. High scenic quality.	High

**Overall Natural character rating**

Rating	Comments / Reasons	Outstanding?
High	The geomorphological and hydrological processes within this unit are largely intact. The terrestrial ecology is slightly compromised by exotic vegetation along the cliff tops, and the aquatic ecology is also slightly compromised. The unit remains highly important to wildlife. It has high perceptual naturalness and high wild and scenic value.	Yes

## Natural character Assessment Sheet

<b>Map Unit</b>	CNC42
<b>Description</b>	Waipati Beach



### Geomorphological and Hydrological naturalness

Criteria	Comments	Rating
The degree to which the landforms / seabed are the product of natural processes?	Prograded Holocene barrier. Narrow margin of previously active sand dunes on the seaward margin, now largely stabilised and modified by marram. Transgressive dune forms present along estuary.	High
The degree to which natural geomorphological and hydrological processes are operating	Active coastal sand-system intact, albeit dune processes are somewhat modified by marram. Natural processes largely	High

unconstrained?	unconstrained.	
The degree to which water quality and quantity are unaffected by land use activities?	Moderate energy coast with low turbidity. Water quality possible slightly reduced from outflow from the Waipati Estuary, but overall likely to be good.	High

### Ecological naturalness

Criteria	Comments	Rating
The degree to which the vegetation patterns are a product of natural processes?	Largely natural. Contains regionally significant Hukihuki swamp wetland (62) comprising a rush and sedge swamp, shrub bog and heathland/podocarp swamp.	High
The degree to which the vegetation cover is indigenous to the area?	Almost exclusively indigenous vegetation with very small patches of marram on the dunes. Important lowland podocarp forest containing regionally significant wetland.	High
The (apparent) health and level of modification of intertidal and aquatic habitats?	Largely natural.	High
The degree to which wildlife is present and sustained?	Hukihuki swamp wetland is a regionally significant wetland that forms part of the largely unmodified stream/estuary of Waipati. Haul out site for sea-lion. Breeding area for Stewart Island shag (Kinakina Island). Fairy prion likely breed on Kinakina Island. Invertebrate infauna common to exposed southern beaches. Sealion haul out on beach and likely pupping area. Indigenous forest likely habitat for native bush birds, invertebrates, lizards and amphibians.	High

### Influence of buildings / structures / earthworks

Criteria	Comments	Rating
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The degree to which buildings, structures and earthworks (including dredging) influence the character of the landscape or seascape?	No buildings. No structures. No earthworks.	High

**Experiential naturalness**

Criteria	Comments	Rating
The degree to which there are wild and scenic qualities?	High tumultuous wildness. High undomesticated wildness. High scenic value.	High

**Overall Natural character rating**

Rating	Comments / Reasons	Outstanding?
High	Hydrological and geomorphological processes are largely intact within this unit. Terrestrial and marine ecologies are largely intact also. The unit has high perceptual naturalness and high wild and scenic value. Appears pristine.	Yes

## Natural character Assessment Sheet

<b>Map Unit</b>	CNC43
<b>Description</b>	Waipati Estuary



### Geomorphological and Hydrological naturalness

Criteria	Comments	Rating
The degree to which the landforms / seabed are the product of natural processes?	Tidal river and estuary with sandflats and multiple channels. Much in-filled with sediments of both fluvial and marine provenance, but due to natural processes to a greater extent than other Otago Estuaries.	High
The degree to which natural geomorphological and hydrological processes are operating	Essentially unconstrained. Hydrological processes, particularly tidal flows in and out of the estuary may be	High

unconstrained?	constrained by marram at the mouth of the estuary.	
The degree to which water quality and quantity are unaffected by land use activities?	Unknown but water quality is likely to be better than most estuaries in the Otago region due to the high native bush cover in the upper catchment. The relatively poor flushing of the upper reaches of this estuary will reduce water quality.	High

### Ecological naturalness

Criteria	Comments	Rating
The degree to which the vegetation patterns are a product of natural processes?	Almost pristine estuary with estuarine values such as saltmarsh communities with outstanding biological communities. Habitat for a wide variety of forest birds and waterfowl.	High
The degree to which the vegetation cover is indigenous to the area?	Largely natural. Very small patches of exotic grasses on true right bank near mouth.	High
The (apparent) health and level of modification of intertidal and aquatic habitats?	Overall low modification. Low threat from nutrient runoff and sedimentation.	High
The degree to which wildlife is present and sustained?	The estuary is considered pristine and has outstanding biological significance. Likely breeding ground for black and yellow-belly flounder. Habitat for wide variety of water birds.	High

### Influence of buildings / structures / earthworks

Criteria	Comments	Rating
The degree to which buildings, structures and earthworks	No earthworks. No structures. No buildings.	High

(including dredging) influence the character of the landscape or seascape?		
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**Experiential naturalness**

Criteria	Comments	Rating
The degree to which there are wild and scenic qualities?	High undomesticated wildness. Some tumultuous wildness. High scenic value.	High

**Overall Natural character rating**

Rating	Comments / Reasons	Outstanding?
High	Geomorphological and hydrological process largely intact. Terrestrial ecology is largely natural and the estuary is described as almost pristine. The aquatic ecology is also predominantly intact and the unit is important for wildlife. It has high perceptual naturalness and high wild and scenic value. Appears pristine.	Yes



## Natural character Assessment Sheet

<b>Map Unit</b>	CNC44
<b>Description</b>	Makati



### Geomorphological and Hydrological naturalness

Criteria	Comments	Rating
The degree to which the landforms / seabed are the product of natural processes?	Sandstone cliffs with caves, seastacks, intertidal reefs and coves some with sandy beaches. Little modification.	High
The degree to which natural geomorphological and hydrological processes are operating	Processes are predominately erosional and unconstrained.	High

unconstrained?		
The degree to which water quality and quantity are unaffected by land use activities?	Moderate high energy coast with low turbidity. Water quality likely to be slightly reduced at times due to runoff from agriculture land.	High

### Ecological naturalness

Criteria	Comments	Rating
The degree to which the vegetation patterns are a product of natural processes?	Extensive area of remnant and regenerating indigenous vegetation on headland. Pastoral land along remaining cliff tops.	Medium
The degree to which the vegetation cover is indigenous to the area?	Largely indigenous vegetation on northern portion of headland. Indigenous scrub and herbfields in patches throughout exotic grasses (pasture) on remaining cliff tops.	Medium
The (apparent) health and level of modification of intertidal and aquatic habitats?	High degree of naturalness of macroalgal beds on subtidal reefs. <i>Durvillaea</i> dominated community. Rocky intertidal zone natural. Subtidal reefs harbour rich and diverse flora and fauna. Under low threat from human influence.	Medium high
The degree to which wildlife is present and sustained?	Subtidal reefs valued as rich and diverse habitat for variety of subtidal flora and fauna. Haul out site for New Zealand fur seal. Habitat for a wide variety of seabirds on cliffs.	Medium high

### Influence of buildings / structures / earthworks

Criteria	Comments	Rating
The degree to which buildings, structures and earthworks (including dredging) influence the	There is a small crib with associated structures, a small jetty and a rough track within this unit. These reduce the natural	High

character of the landscape or seascape?	character very slightly.	
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**Experiential naturalness**

Criteria	Comments	Rating
The degree to which there are wild and scenic qualities?	High tumultuous wildness provided by cliffs. High undomesticated wildness. High scenic quality.	High

**Overall Natural character rating**

Rating	Comments / Reasons	Outstanding?
High	While the hydrological and geomorphological processes within this unit are largely intact, vegetation clearance for agriculture has compromised the terrestrial ecology. The marine ecology is more intact, however, and the unit is important for wildlife. It has high perceptual naturalness and high wild and scenic value.	No

