

SECTION C: WAIKATO'S EAST COAST MARINE AND TERRESTRIAL AREAS

Thames Coast

COASTAL TERRESTRIAL AREA 3:



Coastal Characteristics, Coastal Environment Extent and Coastal Context Area

This Coastal Terrestrial Area extends from Thames in the south to the southern hills associated with Manaia Harbour in the north, and forms the only area that flanks the eastern coastline of the Firth of Thames. This Coastal Terrestrial Area incorporates the steeply sloping, western-facing foothills associated with the Coromandel Peninsula's rugged interior and includes many small bays and streams. These slopes are typically covered in indigenous shrubland or forest, with rural production land and pine plantations on the easier accessible country. From the Tapu settlement north, the Area has comparatively more rural production land than between Tapu and Thames.

The Thames Coast Road extends along the entire length of this Coastal Terrestrial Area, connecting numerous small settlements that pepper this coastal extent.

Key coastal characteristics include: relatively straight, narrow stretch of coastline accessed by State Highway 25; deeply incised, forest-clad gullies; numerous small settlements located along the main highway, located on small alluvial plains at river mouths; pockets of cleared land and commercial forestry interspersed along the foreslopes of this coastline, with larger areas of pastoral farming extending eastwards up larger river valleys such as the Waikawau River Valley to the north.

The western facing slopes of the rugged Coromandel Range form a highly legible peninsula landform when viewed against the flat cultivated Hauraki Plains to the south.

Beyond this coastal environment area the Coromandel Range extends to the east, taking in the Coromandel Forest Park and the many rugged peaks of the Coromandel Peninsula.

Below: Forested slopes north of Thames



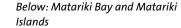
Abiotic

The Thames Coast Coastal Terrestrial Area includes the steep and very steep hill footslopes of the Coromandel Range to the east, rising to 594 metres above sea level at Te Ipuomoehau which forms the backdrop to Ngarimu Bay. The coastline is reasonably straight (as opposed to the more indented coastline of the remainder of the Coromandel Peninsula), however there are local variances where steep sided watercourses have created small alluvial pockets in between the larger protruding foothills. The landform of the Coromandel Ranges remains relatively unmodified.

The geology is principally greywacke overlain by volcanic deposits, into which unmodified streams have deeply incised numerous gullies along the entire length of the Area. The Thames Coast Road has created a steeper coastal face where headlands have been truncated to allow road access, but the larger landform of the Peninsula remains intact. There is a Geopreservation Site within the Te Mata Valley and represents a good example of golden orange and red carnelian.

The shoreline is typically very narrow comprising predominately rocks with areas of cobbles and grey sand.

Streams typically maintain a natural meandering course through the landscape. These watercourses have very steep gradients and are relatively short. The water quality of most streams is likely to be high due to the extensive riparian cover and predominantly forested catchments within the Coromandel Forest Park. Watercourses in the northern half of the Area may have poorer water quality due to depleted riparian vegetation, erosion and inputs from rural and forestry land use, but channel modification is likely to be relatively minor.





Most of the small coastal settlements are located on debris fans and alluvial fans at the outlet of larger streams. The landform of these fans has been modified to allow urban development and most of the streams are also modified by channelization, diversions and river training structures.

Where they exist, beaches are dominated by boulders and gravel, rocky headlands, with isolated areas of mud and sand associated with the alluvial fans at stream outlets. However, along much of the coastline there is no real beach and the steep coastal faces drop directly down to relatively deep water at the interface with the Coastal Marine Area.

The area has a windy, strongly maritime climate with warm summers and mild winters.

Below: Whakatete Bay



SECTION C: WAIKATO'S EAST COAST MARINE AND TERRESTRIAL AREAS

Biotic

Land cover analysis: The total land area of the Thames Coast Coastal Terrestrial Area is 6,176ha. This includes 0.5ha of islands. Of this, 44% of the land cover is indigenous forest, 25% is rural production land and 22% is indigenous shrubland. Of the remainder, almost 4% is artificial surfaces, 3% is exotic treeland and very small areas (<1% each) of bare surfaces, exotic scrub, mangroves and waterbodies, in aggregate covering only 1.05%. There is no indigenous wetland cover. The total indigenous land cover is 67%.

The entire Coastal Terrestrial Area would originally have been completely covered in indigenous forest. Several shrubland assemblages would have occurred on the alluvial fans and debris fans at stream outlets to the coast. Wetlands would have been naturally uncommon due to the fall towards the coast, although forested riparian wetlands would have been a minor feature of stream floodplains at lower elevations (e.g. Waikawau Stream) and small perched wetlands would have existed on poorly drained gully floors.

Around a quarter of this Coastal Terrestrial Area is now in rural production land, most located north of Tapu. Within this northern half of the area indigenous shrubland and coastal forest, much of it without formal legal protection, occupies the coastal cliffs, steep slopes and stream gullies. The indigenous shrubland is a notable but not dominant feature of the northern half, with rural land uses having more prominence. In the southern half of the Area, indigenous shrubland and forest dominates the landscape, with a high proportion having legal protection as Forest Park, reserves or QEII covenant.

All of this forest and shrubland can be expected to be modified by past logging, clearance, grazing and weed and pest impacts, but will retain moderate to very high ecological values for its biodiversity and habitat.

Watercourses typically have steep short gradients until they reach the alluvial fans, where a flatter gradient and channelizing is more common. Highly modified riparian vegetation is common across most of the rural production land north of Tapu, particularly where the gully systems are more deeply incised. From Tapu south, the riparian forest vegetation is generally intact and extends inland across entire stream catchments. Freshwater fish populations can be expected to be diverse and containing relatively unmodified species assemblages. Native frog populations are also present here.

Freshwater macroinvertebrate communities will vary depending on location. From Tapu south, the streams will contain diverse communities of sensitive species, whereas from Tapu north, the macroinvertebrate communities will vary based on dominant land use transitioning to less diverse pollution-tolerant communities where land drainage is more common, riparian vegetation depleted and rural production is more intensive.



Below: Mudflats associated with the Tararu Stream at Tararu Boat access is gained from Tararu, Ngarimu Bay, Te Puru, Waiomu, Ruamahunga and Waikawau. Small settlements extend along the immediate coastal edge with the steep coastal ranges extending behind. Pockets of Pohutukawa extends along rocky coastline with sandy beaches often coinciding with small residential settlements. Boat access is also gained from Te Kouma Harbour, Waipapa Bay, Wharf Road (Coromandel), Wyuna Bay, Long Bay and Oamaru Bay. Further north along this area the open grazed farmland extends to meet the coastal edge. Matariki Bay Islands, despite their predominantly grassy landform, retain high perceptions of naturalness due to their limited modification, eroded form and the presence of a few mature pohutukawa trees.

State Highway 25 follows the coastal edge closely winding amongst the settlements and intervening pockets of native vegetation cover. Pine plantations are evident on the steeper slopes and are an indication of human modification of the once natural vegetation cover.

The extent of modification is balanced with the natural patterns of landform and vegetation. SH25 is a busy highway that services the Coromandel Peninsula and in turn minimising any sense of isolation.

Rating at Level 3				
Degree of Natural	Natural Character Attributes			
Character	Abiotic	Biotic	Experiential	
Very High				
High	\checkmark	\checkmark		
Moderate to High			\checkmark	
Moderate				
Moderate to Low				
Low				
Very Low				
	Overall Characte	High		

Below: The coast road (SH25) predominantly follows the coastline



Coastal Terrestrial Area 3: Thames Coast Specific Characteristics at Level 4

These are mapped with reference to Map 8

Area	Rating	Key Values	Additional Comments
Forested slopes and gullies	High	 Intact indigenous shrubland and coastal forest dominate the southern part of this area, whilst significant areas are noted in the north. Much of this land is protected. Enhances the perceived naturalness due to the lack of modification to these vegetated areas. High experiential values as the area forms a forested eastern backdrop to the Firth of Thames. 	 Excludes modified lands, including pasture and those areas retaining concentrations of housing and structures, notably around Thames. May include the road, power lines and tracks where the indigenous vegetation extends to the coastline. The vegetation forms part of the western extent of the broader inland Coromandel Forest Park and the many rugged terrain of central Coromandel Peninusla.
Matariki Bay Islands	High	 High experiential values due to separation from mainland, distinctive eroded rock outcrops with limited modification. No abiotic modifications 	• Includes areas of pasture on islands.

Forested Slopes and gullies close to Ruamahunga



Coromandel Harbour

COASTAL TERRESTRIAL AREA 4:



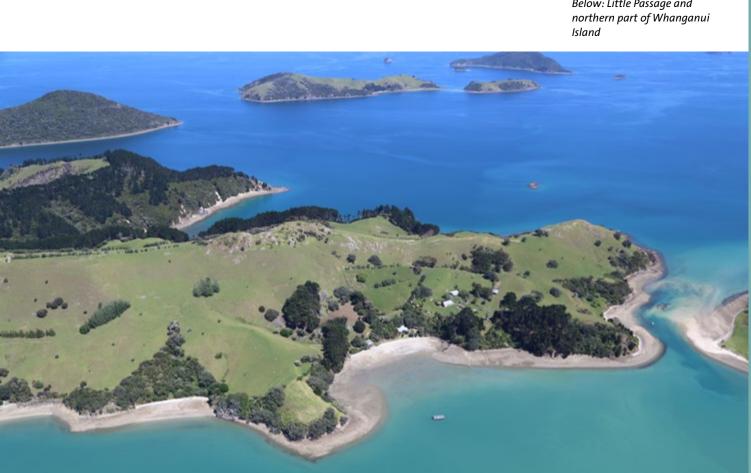
Coastal Characteristics, Coastal Environment Extent and Coastal Context Area

This Coastal Terrestrial Area is located on the western side of the Coromandel Peninsula and encompasses the lower elevation foothills of the Coromandel Ranges surrounding Manaia Harbour, Coromandel Harbour and the bays to the north. The area comprises three main landforms. The steep to rolling coastal peninsulas jutting out into the harbour and islands have variable cover of either indigenous shrubland or rural production land and access is relatively limited. The eastern extent of the Area abutting the Coastal Context Area consists of steep to rolling Coromandel Range foothills that slope down towards the coast and end at, or close to, the coastal margin. These foothills are covered in indigenous shrubland, indigenous forest or plantation forests on steeper slopes and gullies and isolated pockets of rural production land on the easier country. Between the foothills and the coast, the relatively narrow rolling to flat coastal plains around Coromandel Harbour are dominated by rural production land, lifestyle properties and coastal wetlands/saltmarsh.

Key coastal characteristics include: the steep narrow peninsulas and large islands creating the enclosed harbour environments, the prominent headlands (north of Manaia harbour, Koputauaki east of Oamaru Bay and east of Ngohitanu Bay) covered in indigenous shrubland, the smaller islands covered in indigenous shrubland and the extensive mudflats, saltmarsh and estuary margin areas.

Beyond this Coastal Terrestrial Area, the Coastal Context land rises into the Coromandel Ranges. This elevated and steep land is predominantly covered in indigenous shrubland and forest within the Forest Park and is managed by the Department of Conservation. Large areas east of Te Kouma and northeast of Kikowhakarere Bay are in plantation forestry and the harvesting rotation is visible from the coast.

Below: Little Passage and



Abiotic

The overall landform of the Coromandel Ranges remains relatively unmodified and the lower elevation peninsulas, islands and foothills retain natural topography. The terrain is dominated by the underlying volcanic rock, but the lower elevation means streams gullies are not so deeply incised as occurs to the south. Coastal erosion processes have carved headlands and created beaches and bays. On the plains, there is a moderate level of modification of the flatter land for settlement and rural productive land. In a few places the coast road has created a steeper coastal face where headlands have been truncated to allow road access, but other roads typically follow the landform.

The coastline is severely indented, where long, narrow peninsulas extend seaward, with many islets/ rocks also evident. Large alluvial deposits are concentrated around the mouths of local rivers and are often the most settled areas (the town of Coromandel for instance). The topography is steep to very steep in places and rises to 394 metres above sea level at the Pukewhakataratara rock pillars, which straddle the boundary between the Coastal Terrestrial Area to the south. This prominent hilltop is also a Geopreservation Site. Composed of old lahar deposits this landform represents one of the best examples of rock pillars in the Coromandel Peninsula.

Streams typically maintain a natural meandering course through the landscape. These watercourses have moderate gradients and are relatively short, though the streams exiting over the Plains will have flatter gradients at their outlets. The water quality of streams is likely to be quite variable, reflecting the dominant land use of the catchment. Small streams with catchments located entirely in indigenous shrubland are likely to have very good water quality, diverse fish and macroinvertebrate fauna. Streams with a large proportion of their catchment in rural productive land or plantation forestry are likely to have moderate or poor water quality due to depleted riparian vegetation, erosion and inputs from rural and forestry land use, with moderate diversity of fish and macroinvertebrate fauna. Channel modification occurs where river training works and channelization has been undertaken to enable settlements and productive land development.

Beaches are limited to small bays between rocky headlands, sometimes with sand, but typically with gravel and boulders and rocky outcrops. Where the larger streams discharge onto a coastline with a flatter gradient, there are large areas of mudflats featuring saltmarsh vegetation. However, along much of the coastline, there is no real beach and the steep coastal faces drop directly down to relatively deep water at the interface with the Coastal Marine Area.

Below: Papakarahi Bay

The area has a windy, strongly maritime climate with warm summers and mild winters.



Biotic

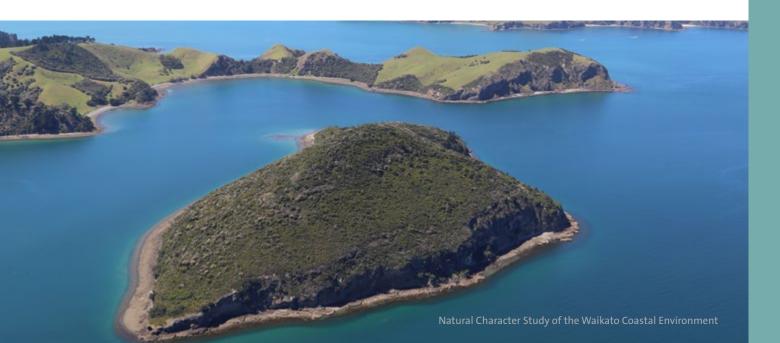
Land cover analysis: The total land area of the Coromandel Harbour Coastal Terrestrial Area is 6,667ha. This includes 510ha of islands. Of this, 36% of the land cover is indigenous shrubland, 34% is rural production land, 12% is exotic treeland and 11% is indigenous forest. Of the remainder, 3% is artificial surfaces, with very small areas (<1% each) of bare surfaces, exotic scrub, mangroves, indigenous wetland and water bodies, in aggregate covering only 1%. The total indigenous land cover is 48%.

The entire Coastal Terrestrial Area would originally have been completely covered in indigenous forest. Several shrubland assemblages would have occurred on the steeper faces following slips and in association with natural river erosion processes. Wetlands would have been naturally uncommon due to the fall towards the coast, although forested gully floor wetlands would have been a feature of streams at lower elevations with poorly drained sediments.

Around half this Coastal Terrestrial Area is in rural production land and plantation forestry and half is in indigenous shrubland and forest, with very small areas associated with stream gully systems. This is also true of the islands included in the Area, with some being managed as rural production land for livestock grazing and others regenerating in indigenous shrubland. The Coromandel Ranges are a more distant backdrop in this Area than along the Thames Coast. Despite the relatively high proportion of indigenous vegetation cover, only small areas have formal protection in reserves or QEII covenants.

Watercourses tend to have steep short gradients, except across short areas of the plains where a flatter gradient occurs. Riparian vegetation remains across more than half of the stream reaches, with more substantial riparian vegetation associated with the larger patches of indigenous vegetation. Freshwater fish populations can be expected to be relatively diverse. The streams on the Plains will provide a conduit for migratory species to move to and from the sea and to allow species that prefer cool mountain streams with good water quality to move upstream to the Coromandel Ranges. Freshwater macroinvertebrate communities will vary depending on location, with diverse communities of sensitive species occurring where riparian vegetation is more extensive, transitioning to less diverse pollution-tolerant communities where riparian vegetation is depleted and rural production is more intensive.

Below: Motutapere Island



Experiential

State Highway 25 follows the coastal edge, closely winding amongst the settlements before heading steeply inland toward Manaia. The extent of modification is balanced with the natural patterns of landform and vegetation, but is evident throughout the area. SH25 is a busy highway that services the Coromandel Peninsula and in turn minimising any sense of isolation.

Pockets of native vegetation cover extend along the coastal edge and within valleys, providing a sense of what the unmodified landscape may have once been. Small areas of native vegetation extend along the valleys and coastal edge highlighting the natural landform. Interspersed is the agricultural farmland that covers much of this unit.

Between Manaia and Te Kouma Harbour the State Highway extends through native bush cover. The remainder of the coastal unit is largely modified with forestry and agricultural land use, with similar native bush cover at the northern end of the area, by Koputauaki Bay. Coastal settlements and associated roading dominate Coromandel harbour's coastline with pockets of native vegetation. The backdrop to Coromandel township includes a mix of native bush vegetation and forestry blocks.

The islands surrounding Coromandel harbour are largely modified with those less modified islands extending north of Waimate Island. The largest island, Whanganui Island, supports grazing farmland and housing with tracks throughout the island. The harbour and beaches are occupied regularly for recreational activities by locals and visitors to the area.

Either side of Coromandel township settlement extends in pockets of rural residential housing and residential subdivision. Ruffin peninsula is heavily inhabited and modified along its shoreline with boat access points.



Below: Wharf at Te Kouma

Rating at Level 3				
Degree of Natural	Natural Character Attributes			
Character	Abiotic	Biotic	Experiential	
Very High				
High				
Moderate to High	\checkmark	\checkmark	\checkmark	
Moderate				
Moderate to Low				
Low				
Very Low				
	Overall Natural Character Rating		Moderate to High	

Below: Preece Point

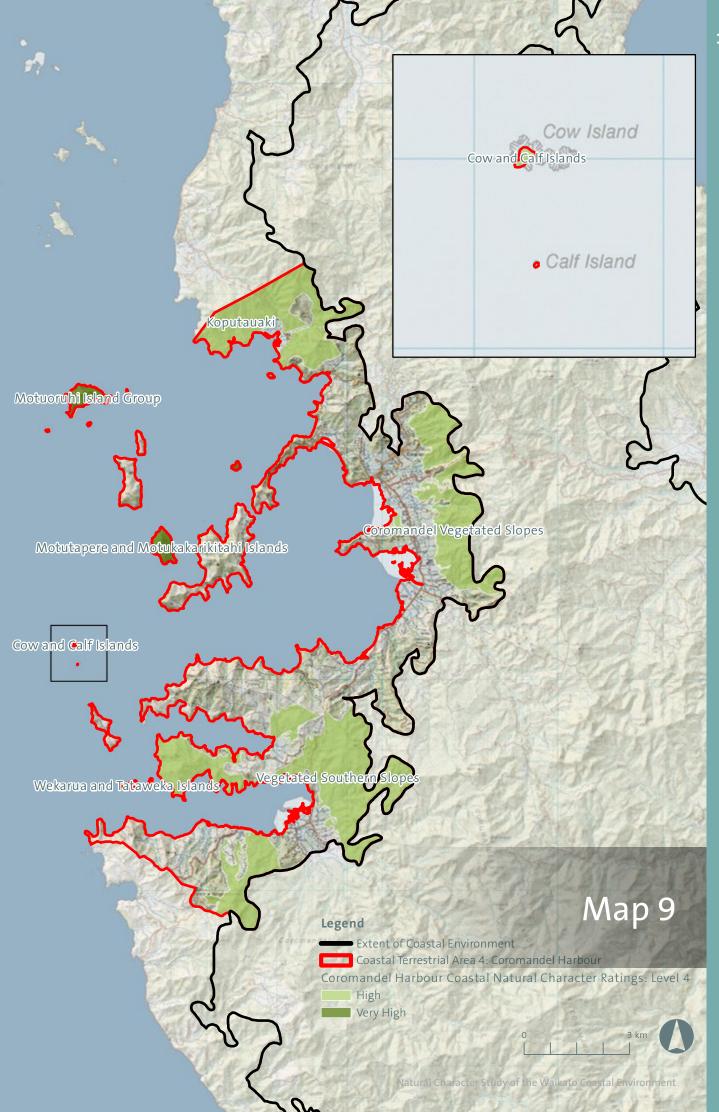


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Coastal Terrestrial Area 4: Coromandel Harbour Specific Characteristics at Level 4

These are mapped with reference to Map 9

Area	Rating	Key Values	Additional Comments	
Motuoruhi Island Group	Very High	 Unmodified island group. Intact indigenous forest and manuka/ kanuka shrublands cover these islands. High levels of perceived naturalness 	 Total of four islands: Motuoruhi Island (Goat Island); Motuokino Island (Shag Rock); Motukaramea Island (Kaikai Island) and Motumorirau Island (Pauls Island). Also includes Hautapu Rocks. 	
Motutapere and Matukakarikitahi Islands	Very High	 Protected Islands. Steep faces feature intact native forest and rock shores. Abiotically, unmodified. High experiential values with no perceived modification on either island. 	 Total of two islands: Motutapere Island and Matukakarikitahi Island (Rat Island). Excludes marine farms off Rat Island. 	
Cow and Calf Islands	Very High	 Unmodified islands containing very high abiotic, biotic and experiential levels of naturalness due to their rocky exposed character and the intact vegetation on the larger Cow Island. 	• Total of two islands: Cow Island and Calf Island.	
Koputauaki	High	 Indigenous kanuka manuka shrubland dominates much of the lower slopes terminating at the water's edge. Upper eastern slopes are largely indigenous forest in DOC ownership. High experiential naturalness. 	 Excludes highly modified coastal flats at Koputauaki Bay and exotic forest. Includes part of road, power lines and occasional house. Connected to broader inland indigenous forest associated with the central peninsula 	
Vegetated southern slopes	High	 Prominent dome shaped headland, the majority of which is manuka kanuka. Scattered exotic wilding pines also present. Forested backdrop to Manaia Harbour amplifies perceived levels of naturalness to bay 	 Excludes areas of forestry and pastoral land. Includes part of SH25. Forms part of broader inland indigenous forest associated with central peninsula. 	
Wekarua and Tataweka Islands	High	 Regenerating indigenous scrub with no abiotic modification. High levels of perceived naturalness 	 Total two islands: Wekarua and Tataweka Islands. Aqauculture is present off shore. Refer to Coastal Marine Area B. 	
Coromandel Vegetated Slopes	High	 Indigenous vegetated lower slopes of forest clad hills east of Coromandel settlement. Forested backdrop amplifies perceived naturalness 	 Excludes modified pastoral land and house at lower elevations. Forms part of broader inland indigenous forest associated with central peninsula. 	

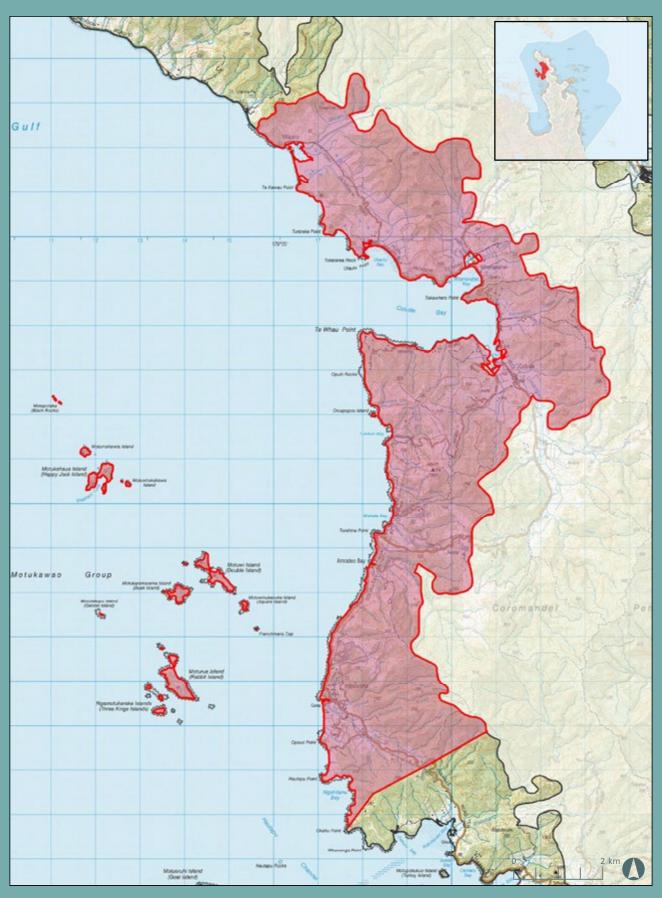


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SECTION C: WAIKATO'S EAST COAST MARINE AND TERRESTRIAL AREAS

Colville

COASTAL TERRESTRIAL AREA 5:



Coastal Characteristics, Coastal Environment Extent and Coastal Context Area

The Colville Coastal Terrestrial Area is a slightly concave, curved section of gently sloping to steep coastline at the north-western edge of the Coromandel Peninsula, extending northwards from the northern extent of the Coromandel Harbour in the south, to the southern base of the steep Moehau Range in the north. This Coastal Terrestrial Area also includes the Motukawao Group, a group of rugged volcanic islands located some two to seven kilometres offshore.

Key coastal characteristics include: narrow, relatively concave stretch of coastline, small sloping highly modified coastal margin and valleys, includes a portion of the steep forested fore slopes of the Coromandel Range; in places manuka and kanuka extends from ridge tops to the coast; islands associated with the rugged Motukawao Group; rocky coastline of Amodeo Bay; the enclosed Colville Bay.

Eastwards of the coastal environment, the coastal context includes the Colville Road, which extends inland from Amodeo Bay to connect with the head of the Colville Valley. Further east the mountainous interior of Coromandel Range extends to the eastern coast at Coromandel Peninsula. This elevated and steep land is predominantly covered in indigenous shrubland and forest within the conservation land and is managed by the Department of Conservation, though not all appears to have formal protection.

Above: Turipeka Point





Above: Otautu Bay

Abiotic

The Colville Coastal Terrestrial Area includes the steep and moderately steep foothills of the higher range to the west, rising to 511 metres above sea level, above Ngohitanu Bay. Similar to other Coastal Terrestrial Area's, the geology of this Coastal Terrestrial Area is principally greywacke, overlain by prolific volcanic material. The coastline is reasonably straight, with Colville Bay being the principal inlet of this Coastal Terrestrial Area. This Coastal Terrestrial Area also includes the cluster of conspicuous and prominent volcanic island landforms.

A Geopreservation Site of Waitete Bay Oligocene sediments represents the best exposure of the Te Kuiti Group sequence on the Coromandel Peninsula.

River valleys extend inland behind the volcanic headlands to a longer distance on the western coast of the peninsula. The principal river is the Umangawha Stream which flows in a northerly direction to Colville Bay. At its mouth are extensive alluvial deposits, much of which have been converted to farmland and is the location for the small settlement of Colville. Wetlands would have been originally associated with these poorly drained river valleys. Other watercourses tend to be short and steep and drain directly into the sea.

The coast in this area is characterised by a rocky coastal interface and in places rock platforms with a rapid decent in depth. Flatter gradient beaches associated with coastal plains are muddy with little sand.

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Biotic

Land cover analysis: The total land area of the Colville Coastal Terrestrial Area is 4,517ha. This includes 79ha of islands. Of this, 38% of the land cover is indigenous shrubland, 34% is rural production land, 16% is indigenous forest and 10% is exotic treeland. Of the remainder, there are very small areas (<1% each) of artificial surfaces, bare surfaces, exotic scrub, mangroves, indigenous wetlands and waterbodies, in aggregate covering only 1.4%. The total indigenous land cover is 55%.

The entire area would have once been completely covered in Indigenous forest with shrubland occurring on steeper faces where erosion would have occurred. Indigenous shrubland now covers steeper land and in gully headwaters with the remaining land forming rural production land of either pasture or exotic pine forestry.

The catchment is steep and water courses have created deeply incised gullies that support fingers of native shrubland species with Colville's southern peninsula support regenerating native shrubland.

Valley floors support productive pasture with modified drainage patterns supporting minimal indigenous vegetation. The streams on the Plains will provide a conduit for migratory species to move to and from the sea and to allow species that prefer cool mountain streams with good water quality to move upstream to the Coromandel Ranges.

The estuarine reaches of Colville Bay and Waiaro have drained wetlands with some remnants of saltmarsh near Colville. There continues to be a small amount of saltmarsh with good sequences that transition through to shrubland at higher elevations.

Motukaramarama Island is one of the Motukawao Islands group. It lies some 3.5 km off the coast and is uninhabited. It provides a nesting site for about 3500 pairs of Australasian Gannets along with its neighbouring islands in the cluster.

Some of the indigenous shrubland in the ranges is protected in Conservation area and by QEII Covenants.

Above: Motukaramarama Island (Bush Island), part of the Motukawao Island Group



Experiential

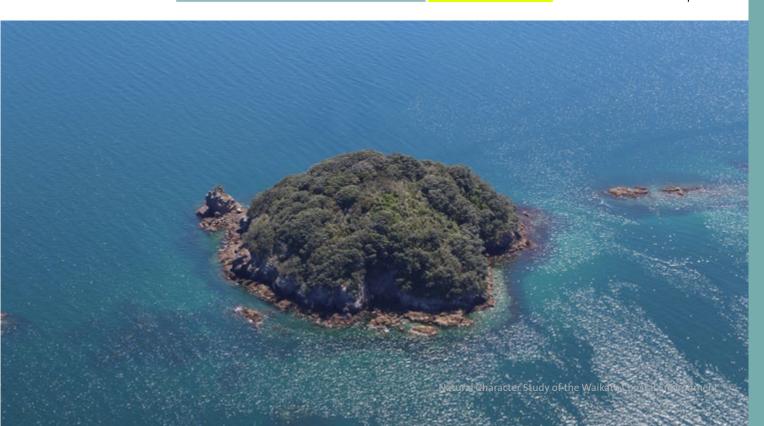
Boat access is gained from Papaaroha, Amodeo Bay, Waitete Bay and Otautu Bay. Settlements are sited around these areas and are largely devoid of native vegetation cover. Fingers of native vegetation cover extend up the valleys behind the settlements and along the Colville Peninsula. A large portion of the coastal land is rolling and steep farmland, with steeper slopes still containing within native bush vegetation. The estuaries of Colville Bay and Waiaro are remote and largely unoccupied along the margins. Beyond Colville access is more remote along the coastline with less occupation and visitors, creating a strong sense of isolation.

This Coastal Terrestrial Area includes the Motukawao Island Group, a remote and intact group of rugged and exposed islands. These islands are uninhabited and retain very high levels of perceived naturalness through their wild and rugged nature.

Rating at Level 3				
Degree of Natural	Natural Character Attributes			
Character	Abiotic	Biotic	Experiential	
Very High				
High				
Moderate to High	\checkmark	\checkmark	\checkmark	
Moderate				
Moderate to Low				
Low				
Very Low				
	Overall Natural Character Rating		ModerateHigh	

Left: Colville Bay

Below: Motumakareta Island, north of Elephant Cove, Motukawao Island Group



Coastal Terrestrial Area 5: Colville Harbour Specific Characteristics at Level 4

These are mapped with reference to **Map 10**

Area	Rating	Key Values	Additional Comments
Paeroa Slopes	Very High	 These elevated and steep upper slopes are covered in indigenous forest and shrubland. Upper eastern parts of the area is within conservation land. No modification evident. 	 Excludes pastoral land Forms southern part of indigenous-clad Moehau Range
Motukawao Island Group	Very High	 Conspicuous, prominent and unmodified volcanic island group. Very high levels of perceived naturalness due to their intact vegetation and rocky, exposed character. The islands are home to many threatened bird species 	 Aquaculture located off Moturua Island (Rabbit Island) - Refer to Coastal Marine Area B Collectively, naturalness is amplified due to the lack of modification
Colville Bay slopes	High	 Modified Manuka kanuka dominated headland. High abiotic, biotic and experiential degrees of naturalness 	 Scattered with dwellings and associated clearings of exotic grassland. Contained by pastureland. Excludes forestry.
Papaaroha	High	 Indigenous kanuka manuka shrubland dominates much of the lower. Upper ridges are largely indigenous forest in DOC ownership. 	 Does not include extensively modified lower slopes and valley floor. Forms part of broader indigenous vegetation cover of central peninsula.



Port Jackson

COASTAL TERRESTRIAL AREA 6:



Coastal Characteristics, Coastal Environment Extent and Coastal Context Area

The Port Jackson Coastal Terrestrial Area encircles the narrow rugged peaks of the Moehau Range which makes up the northern tip of the Coromandel Peninsula, extending northwards into the Hauraki Gulf. Immediately north of Waiaro the coastal terrestrial area extends in a clockwise direction around the tip of the Peninsula. The area encompasses the coastal tips of the long ridges and steep, narrow valleys radiating outwards from the Moehau Range, ending at Te Karaka Bay on the east coast of the Coromandel Peninsula. The landform is very intact.

Key coastal characteristics include: the Port Jackson Road extends at the foot of gently sloping ridgelines; lower slopes of the range are largely cleared of vegetation, in areas native forest extends from the upper reaches of the range down gullies and in places meets the coastline; many ridges and hillsides are steep with slipping and some erosion evident; two settlements, the sandy embayment of Port Jackson at the tip of the Peninsula and the larger harbour of Port Charles to the south; scattered small islands, including Square Top Island in the north and Motukokopu Island, a small sea stack off the coast of the eastern headland of Port Charles.

Inland of this Coastal Terrestrial Area, the coastal context includes the Moehau Range which climbs to 1,341 metres above sea level. Colville Channel extends northwards of the Port Jackson Coastal Terrestrial Area, between Coromandel Peninsula and Great Barrier Island. South eastward of this Coastal Terrestrial Area are several island archipelagos including the Cuvier, Mercury and Ohinau Islands.

> Below: The agricultural lower slopes of the Moehau Range, just south of Port Jackson



Abiotic

Above: Stony Bay

The Port Jackson Coastal Terrestrial Area includes the steep and very steep foothills of the Moehau Range, rising to 653 metres above sea level on the western coastline. This Coastal Terrestrial Area represents the northerly tip of the peninsula and includes a complex sequence of dramatic exposed cliffs, headlands, indented bays and inlets. Beaches are predominantly white sand although gravelly/ stony beaches are also common.

The geology is principally greywacke overlain by prolific volcanic deposits. Geopreservation Sites in this Coastal Terrestrial Area include a concentration on the western side of the peninsula around Fantail Bay and include the Fantail Bay, Paritu hornfels, which represent the best and most easily accessible example of the Paritu Pluton and contacts with greywacke, which has metamorphosed to hornfels. Other sites here include the Paritu granite quarry areas and the Darkie Stream tourmaline. At Ka-iti Point, west of Port Jackson is the Ka-iti porphyrite, a well exposed coastal section of this hydrothermally altered intrusion. Further east is the Fletchers Bay Waitemata Group sediments and the Sugar Loaf volcanic sequence, a series of spectacular stone pinnacles.

Landforms are relatively unmodified apart from small areas on valley floors, especially at Port Charles. There are extensive steep rocky coastal faces as well as flatter gradient beaches.

Like other areas on the peninsula, watercourses here are often short and steep with the longer watercourses associated more on the easterly side of this Coastal Terrestrial Area, draining into the deeper bays, including Stony Bay and Port Charles and including Stony Bay Creek, Okahutahu Stream and Tangiaro Stream. Wetlands would have originally been associated with these poorly drained river valleys.

The area receives strong winds due to its isolated location.

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Left: Moehau Stag Beetle

Biotic

Land cover analysis: The total land area of the Port Jackson Coastal Terrestrial Area is 8,429ha. This includes 5.6ha of islands. Of this, 37% of the land cover is indigenous shrubland, 32% is rural production land and 28% is indigenous forest. Of the remainder, 1% is exotic treeland and there are very small areas (<1% each) of artificial surfaces, bare surfaces, exotic scrub, mangroves and indigenous wetlands, in aggregate covering only 1.4%. There are no waterbodies. The total indigenous land cover is 65%.

The entire area would have once been completely covered in Indigenous forest with shrubland occurring on steeper faces where erosion would have occurred. Indigenous shrubland now covers steeper land and in gully headwaters with the remaining land dominated by indigenous shrubland and forest. This unit covers the top of the Coromandel Peninsula with a mountain range extending steeply to the coastal edge. Coromandel Forest Park extends over this range with much of the indigenous land cover contained within this Conservation Area and other QEII Covenants.

The lower foothills continue with deeply incised gullies that support fingers of native shrubland species and productive pasture which is clustered around Port Jackson, Fletcher Bay and Port Charles.

Valley floors support productive pasture with modified drainage patterns supporting minimal indigenous vegetation. The streams on the plains will provide a conduit for migratory species to move to and from the sea and to allow species that prefer cool mountain streams with good water quality to move upstream to the Coromandel Ranges.

Wetlands are naturally uncommon in this area except poorly draining gully systems on flatter land, mainly around Fletcher Bay, Sandy Bay and Port Charles. And the coastal areas from Cape Colville to Sandy Bay support rare and threatened wading and coastal bird species. The native Pateke, or Brown Teal, is an endangered duck species found in the Port Charles and Waikawau area along with endangered invertebrate Moehau Stag Beetle.

Experiential

The most remote areas of the Coromandel Peninsula, Port Jackson, Fletcher Bay and Port Charles providing small settlement areas with boat access. The steep terrain supports grazing farmland with more frequent pockets of native bush cover that extend down from the central range. Steep coastal edges and isolated embayments have limited access with some areas completely inaccessible by road. Sugar Loaf and Square Top Island (including The Pinnacles) are remote areas exemplifying high levels of perceived naturalness.

Numerous walks within this Coastal Terrestrial Area enable people to experience remote-like characteristics, notably on Muriwai Walk, Coromandel Walkway and Stony Bay Track.

From Fletcher Bay to Port Charles and also south of Port Charles, the coastal environment is dominated with native bush cover, with some narrow road access from Port Charles to Stony Bay. The natural environment dominates with limited modification increasing the perception of naturalness in this area.

Below: Forested slopes above Shag Bay



Rating at Level 3				
Degree of Natural	Natural Character Attributes			
Character	Abiotic	Biotic	Experiential	
Very High				
High				
Moderate to High	\checkmark	\checkmark	\checkmark	
Moderate				
Moderate to Low				
Low				
Very Low				
	Overall Natural Character Rating		Moderate to High	

Below: Kaiiti Point, Port Jackson



Coastal Terrestrial Area 6: Port Jackson Specific Characteristics at Level 4

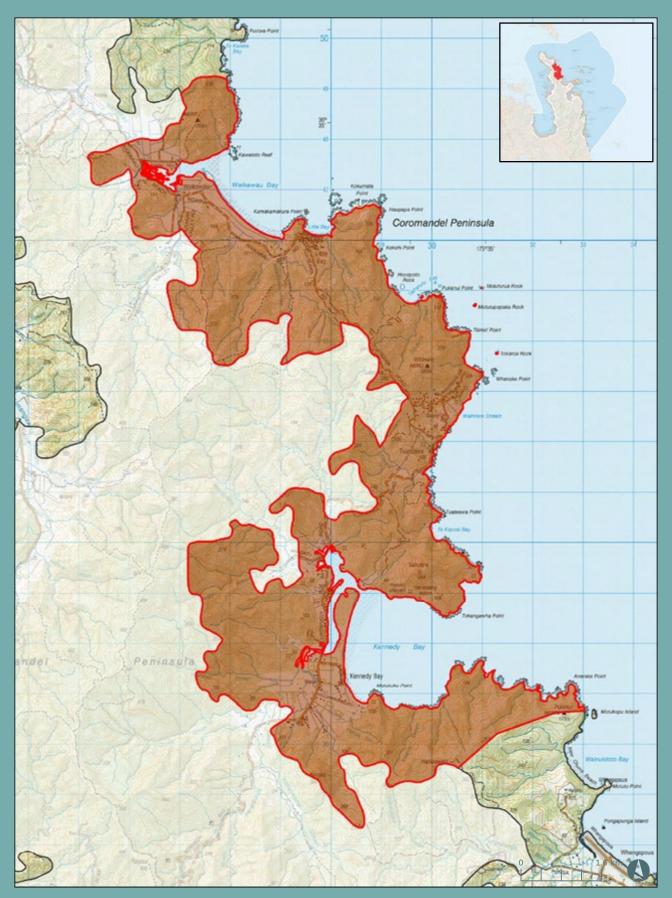
These are mapped with reference to Map 11

Area	Rating	Key Values	Additional Comments
Moehau Vegetated Slopes	Very High	 An intact sequence of native forest extends down the short, steep ridgelines from the top of the Moehau Range to the waters edge in this area. Unmodified abiotic and biotic tract of land. Very high experiential naturalness 	 Includes parts of the Fantail Bay Recreation Reserve and Coromandel Forest Park. Part of Moehau Range. Provides critical vegetation link to coast at Fantail Bay. Upper slopes are part of DOC recreation reserves. Excludes pastoral farmland and modified lower slopes.
Stony Bay Forest	Very High	 Steep valleys and spurs contain a mixture of unmodified native shrub land and forest. Extensive areas under formal protection in Conservation Areas, QEII covenants. The Moehau ecological area in particular, supports an almost complete altitudinal sequence of plant and animal communities from near sea level to sub-alpine conditions. It is home to a number of rare or endangered endemic species (e.g. land snails, Archey's frog). An exceptional tract of naturalness. 	 Entirety of the area under DOC management. Include QEII land to south. Includes power line, Stony Bay Track, Road, walkway and Coromandel Walkway. Excludes the modified lower slopes fringing Stoney Bay Beach. All these are subservient to the extent of forest. Forms part of inland Moehau Range.
Puroa and Onekura slopes	Very High	 Unmodified indigenous bush and shrubland extends from the first ridgeline to the coast. Highly natural and relatively inaccessible. Very High perceived level of naturalness due to the rugged and exposed character of the coastal ridgelines and remote inner valleys. Manuka kanuka dominates. Scattered wilding pines, native forest on ridge tops at the north and south of the area. 	 Regenerating areas of bush. Does not include the modified lower slopes to the north and east. Excludes the small modified coastal fringe of Potiki Bay. Forms part of inland Moehau Range.
Sugar Loaf and Square Top Island	Very High	 Exposed island and headland, extenuating experiential characteristics including remoteness Dramatic eroding cliffs and rocky foreshore with indigenous scrub. 	Sugar Loaf part of Stony Bay Recreation Reserve.



Kennedy Bay

COASTAL TERRESTRIAL AREA 7:



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Coastal Characteristics, Coastal Environment Extent and Coastal Context Area

Located on the eastern coast of the Coromandel Coastline, this Coastal Terrestrial Area extends from Waikawau Bay in the north to the coastal peak of Pukenui, immediately south of Kennedy Bay in the south. The area includes the forest clad slopes of the southern parts of the Moehau Range and northern parts of the Coromandel Range and includes the embayments of Waikawau Bay and Kennedy Bay. This undulating, predominantly modified Coastal Terrestrial Area contains a number of small settlements and road access to the majority of the coastline, although it is very intact as a landform.

Coastal characteristics include the uninterrupted slopes extending from the coastline up to the ridgelines and peaks; the enclosed bays at Waikawau and Kennedy Bay; the extensive tracts of very steep rocky shoreline with continuous indigenous shrubland/forest up to ridgeline; the barrier dune at Kennedy Bay and relic dune ridges behind; steep coastal faces dropping down to the ocean; the rear dune saltmarsh and wetlands at Waikawau and Kennedy Bay and the prominent headlands on either side of Kennedy Bay and Waikawau.

Beyond the coastal environment, the coastal context comprises elevated and forest clad peaks and ridges associated with the Coromandel Forest Park.

Above: Development within the bush at Tuateawa



Below: Waikawau River draining into Waikawau Bay. The Waikawau dunes are evident at the bottom of the photograph

Abiotic

The Kennedy Bay Coastal Terrestrial Area includes the steep and very steep foothills and escarpments of the westerly located inland hills, rising to 364 metres above sea level at Hapapawera, as well as including the broad sandy, predominantly flat embayments of Waikawau Bay and Kennedy Bay. The heads of the bays are an accumulation of alluvial deposits comprising mud, sand, dunes and gravels and typical of other Coastal Terrestrial Areas, is the main focus of settlement. Coastal cliffs and weathered bluffs characterise the coastline north of Kennedy Bay. This Coastal Terrestrial Area also includes the series of small, yet prominent offshore volcanic island platforms.

There is one Geopreservation Site within this Coastal Terrestrial Area and it is located at Kennedy Bay, known as the 'Tumbledown Rocks' rock fall.

Landforms are largely unmodified except on valley floors at Waikawau and Port Kennedy and rural residential development at Tuateawa. There are extensive steep rocky coastal faces and rocky headlands with small, sometimes sandy, mainly rocky bays in between.

Watercourses are short and steep along the headlands, due to their small catchments. However they tend to be longer where they drain into the embayments, due to the catchments being broader. Some longer watercourses include Harataunga Stream and Kopurukaitai Stream which drain into Kennedy Bay and the Waikawau River which flows into Waikawau Bay.

Extensive wetlands would originally have existed in the poorly drained flat-gradient river valleys, with extensive rear dune and river valley wetlands located behind the barrier dune ridge at Port Kennedy and Waikawau Bay, many now drained.

Biotic

Land cover analysis: The total land area of the Kennedy Bay Coastal Terrestrial Area is 4,070ha. This includes 0.6ha of islands. Of this, 61% of the land cover is indigenous shrubland, 20% is indigenous forest and 13% is rural production land. Of the remainder, almost 4% is exotic treeland, 1% is indigenous wetlands and there are very small areas (<1% each) of artificial surfaces, bare surfaces, mangroves and waterbodies, in aggregate covering only 1.5%. There is no exotic scrub. The total indigenous land cover is 82%. Coromandel Forest Park dominates the area with some of it extending from the ranges to the coast at Waikawau Bay. The vegetation patterns continue to follow the landform with steep and deeply incised valleys supporting indigenous shrubland and forest. Waikawau Bay wetland supports a number of rare and endangered wading birds, including the Pateke and invertebrate populations.

Watercourses tend to have steep short gradients, except across short areas of the plains at Waikawau and Kennedy Bays where a flatter gradient occurs. Riparian vegetation remains across most of the stream reaches with freshwater fish populations that are expected to be relatively diverse. Freshwater macroinvertebrate communities will vary depending on location, with diverse communities of sensitive species occurring where riparian vegetation is more extensive, transitioning to less diverse pollution-tolerant communities where riparian vegetation depleted and rural production is more intensive.

Coastal wetland and saltmarsh is found at Kennedy Bay with vegetation sequence extending to the indigenous shrubland around the coastal edges. The productive rural land is limited to river valleys at Kennedy and Waikawau Bays with small pockets of open pasture found along coastal edge of Tuateawa.

Experiential

Boat access is gained from Tuateawa, Little Bay and Kennedy Bay. Access is gained from both the east and west coast roads to these areas. Waikawau Bay is less populated than its neighbouring Little Bay, which includes residential subdivision and rural residential subdivision.

The wide unmodified dune system along Waikawau Bay provides a strong visual indicator of the natural processes and patterns. Grazing farmland extends immediately behind and along the valley and lower slopes of the area. Further south and into the ranges behind, natural regenerating bush is interspersed with blocks of forestry plantations.

Between Little Bay and Tuateawa the coastline is relatively unmodified and the native bush cover dominates. Access through this area is gained only via the coastal road and Taiharuru Bay is remote with either side completely covered in native bush. Modification to this area is limited and visually unapparent. Further south at Tuateawa and Kennedy Bay human modification is visually apparent. Whilst native vegetation cover dominates at Tuateawa the cover is less cohesive and the visual indicators of human modification are apparent. This is with the exception of Tokangawha Point which is covered in regenerating coastal native bush cover and includes the historic features of a shipyard and whaling station.

From Motukuku Point to Anarake Point the coastline returns to its more highly natural state with no visually apparent modification and is dominated by native bush cover.

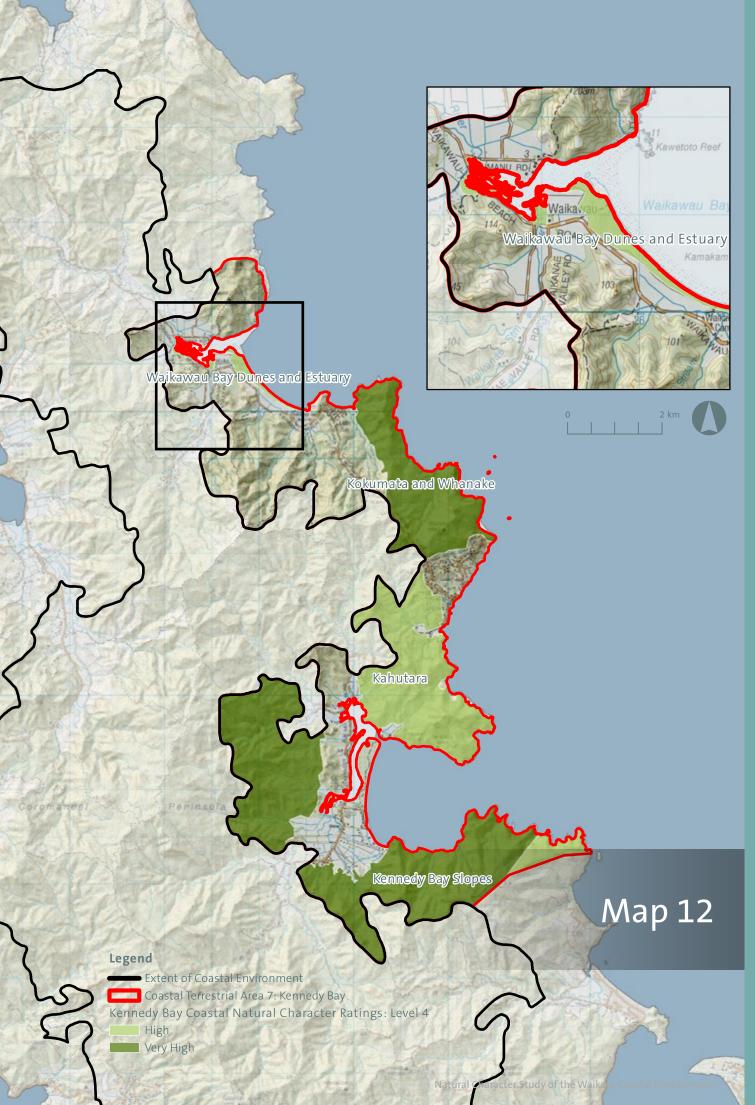
Rating at Level 3				
Degree of Natural	Natural Character Attributes			
Character	Abiotic	Biotic	Experiential	
Very High		\checkmark		
High	\checkmark		\checkmark	
Moderate to High				
Moderate				
Moderate to Low				
Low				
Very Low				
	Overall Characte	High		

Coastal Terrestrial Area 7: Kennedy Bay Specific Characteristics at Level 4

These are mapped with reference to Map 12

Area	Rating	Key Values	Additional Comments
Waikawau Bay Dune and Estuary	High	 Extensive dune system, small patches of indigenous vegetation including pingao and spinifex. Abiotically, unmodified. Experiential naturalness amplified due to lack of structures and modification. 	 Part of Waikawau Bay farm park and recreation area managed by DOC. Excludes pastureland and Waikawau Beach Road.
Kokumata and Whanake	Very High	 Unmodified indigenous forest covers this headland. Cliffed head, rocky shore platforms, offshore rock stacks, alongside native vegetation contributes to a remote and untouched character. 	 Includes track, part of Tuateawa Road and small buildings in Taiharuru Bay. Excludes housing at Tuateawa. Part of central spine of indigenous vegetation cover. Critical vegetation sequence from mountains to sea.
Kahutara	High	 Steep, craggy and unmodified weathered coastal cliffs and bluffs. Large intact area of broadleaved indigenous hardwoods. Provides northern vegetated backdrop to Kennedy Bay. 	 Includes tracks, part of Tuateawa Road and occasional isolated small buildings.
Kennedy Bay Slopes	High (southern tip), Very High (remainder)	 Precipitous, exposed sea cliffs, small sandy embayment's and rock platforms. Area of native shrubland with pockets of native forest. Provides southern vegetated backdrop to Kennedy Bay. 	 Evidence of wilding pine, reduces levels of naturalness. Part of central spine of indigenous vegetation cover. Critical vegetation sequence from mountains to sea.

Coastline north of Kennedy Bay

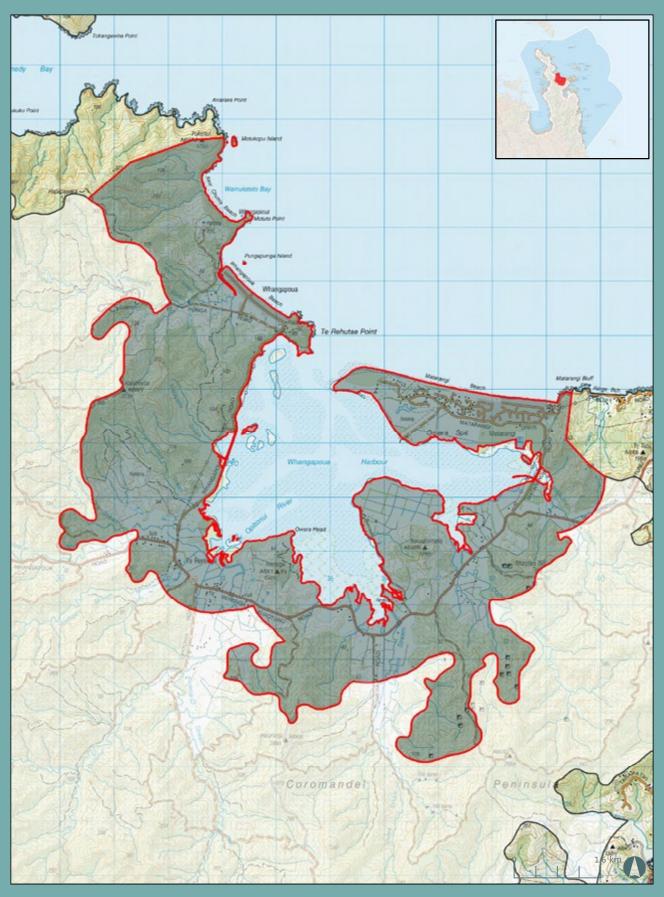


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SECTION C: WAIKATO'S EAST COAST MARINE AND TERRESTRIAL AREAS

Whangapoua

COASTAL TERRESTRIAL AREA 8:





Coastal Characteristics, Coastal Environment Extent and Coastal Context Area

This Coastal Terrestrial Area is central to the Whangapoua Harbour and includes the highly modified alluvial valley floor, the Omara sand spit and settlement of Matarangi Beach.

Key coastal characteristics include; developed settlements of Whangapoua and Matarangi, which are situated on a barrier beach separating the shallow harbour from the ocean; gently sloping ridges, highly modified cleared valley floors and coastal margins; largely vegetated hill country, the majority of which is exotic forestry and or manuka/kanuka with small patches of native forest; Whangapoua Harbour is a large estuarine environment featuring remnant terrestrial plant communities on its fringe; small ephemeral streams drain the valleys and coastal margins surrounding the Harbour; the Opitonui River, the Owera Stream and other smaller watercourses drain into the Harbour from the south; features the undeveloped and relatively inaccessible Wainuiototo Bay or New Chums Beach, the beach is famous for its 'untouched' character and features a white sand beach backed by native bush and coastal hill country.

Beyond the coastal environment, the coastal context contains the foreslopes of the Coromandel Range and encircle Whangapoua Harbour and its small plains. Largely cloaked in native forest and forestry plantations, the foothills extend westwards to meet the Coromandel Ranges.

Abiotic

The Whangapoua Coastal Terrestrial Area is centred on the Whangapoua Harbour and associated watercourses draining the land. The topography is predominantly low lying and flat, with small foothills rising to 273 metres above sea level at Kakahoroa. Alluvial soils predominate the lowlands, especially around the harbour, while sand and silt accumulations form the most populated part of this Coastal Terrestrial Area at Matarangi.

There are two Geopreservation Sites: Whangapoua columnar jointed basalt, a very impressive example of a prominently located feature of basalt and the developed Omara spit.

The Waitekuri River, Opitonui River, Owera Stream, Otanguru Stream and many other smaller watercourses meander through the alluvial flats and extensive wetlands and flow directly into the harbour.

Above: Omara Spit and Matarangi Beach



Above: Omara Spit Below: Banded kokopu (Photograph: Department of Conservation)

Biotic

Land cover analysis: The total land area of the Whangapoua Coastal Terrestrial Area is 4,064ha. This includes almost 6ha of islands. Of this, 38% is rural production land, 27% is exotic treeland and 22% is indigenous shrubland. Of the remainder, almost 7% is artificial surfaces, 2% is indigenous forest, almost 2% is indigenous wetlands and 1% is exotic scrub. There are very small areas (<1% each) of bare surfaces, mangroves and waterbodies, in aggregate covering only 0.6%. The total indigenous land cover is 26%.

The less steep landform supports more productive land use with productive forestry and pasture dominating the land cover. The indigenous land cover is largely focused to south of Whangapoua and Matarangi settlements in the form of regenerating native shrubland. Matarangi Bluff Scenic Reserve supports a 276 hectare area of secondary growth native forest including kanuka and kauri with a 4.5 hectare centrally located wetland. (Clarkson, Tyrell, 2012). Threatened species include fernbird and invertebrates such as weta, giant centipede and cockroach. Banded kokopu, red finned bully and koura are found in streams in the Matarangi Bluff Scenic Reserve and potentially the wider area.

Other protected areas include the QEII covenants on the large area of indigenous shrubland on the northern side of Whangapoua Harbour.

Extensive land drainage and stream modification occur on the plains around Whangapoua Harbour with riparian cover largely removed except in indigenous shrubland on the ridgeline to the north of Whangapoua Harbour.

Experiential

Boat access is gained into the harbour from Whangapoua Road and from Omara Spit. With the exception of the northern extent of the area at Wainuiototo Bay, comprising dominant native vegetation cover, the remainder of the area returns to a mix of rural farmland, pockets of native bush in steeper areas and residential settlements along the coast. Whangapoua and Matarangi include residential settlement that has removed any indicators of the natural dune processes and

vegetation patterns. Whangapoua Harbour is surrounded by rural farmland that extends to the coastal edge, with productive forestry, interspersed with native bush cover, forming the coastal backdrop. Human activity dominates this area as a popular visitor destination with an airstrip, boat access and recreational activities occurring throughout the area.

Rating at Level 3				
Degree of Natural	Natural Character Attributes			
Character	Abiotic	Biotic	Experiential	
Very High				
High				
Moderate to High				
Moderate				
Moderate to Low	\checkmark	\checkmark	\checkmark	
Low				
Very Low				
	Overall Natural Character Rating		Moderate to Low	

Above: Owera Stream draining into Whangapoua Harbour

Coastal Terrestrial Area 8: Whangapoua Specific Characteristics at Level 4

These are mapped with reference to Map 13

Area	Rating	Key Values	Additional Comments
Wainuiototo Bay	High	 Abiotically unmodified with Whangapoua columnar jointed basalt geopreservation site, an indented headland between Whangapoua and Wainuiototo Bay/ New Chums Beach. Small ribbon of native shrub lining the undeveloped New Chums Beach and large area of native vegetation to the north of the beach including rocky, exposed Anarake Point and Motukopu Island. High experiential values due to its 'untouched' character. 	 Access via DOC track from Whangapoua, no road access to Wainuiototo Bay/ New Chums Beach. Small parts of the coast included in New Chums Recreation Reserve. Part of central spine of indigenous vegetation cover. Critical vegetation sequence from mountains to sea.
Te Rehutae Point	High	 Significant vegetated headland feature provides entrance to Whangapoua Harbour. Biotically retains a large stand of native forest. Small embayments, rocky coastal cliffs. Abiotically unmodified. 	 Te Rehutae Point is under DOC management as Opera Point Historic Reserve. Does not include houses to western side of the Point.
Whangapoua Harbour Islands	High	 Small islands at the west side of the Harbour retain areas of native herbaceous saline vegetation. Abiotically unmodified. Recognised in the Waikato Regional Coastal Plan as an area of outstanding wildlife habitat. 	 Wider harbour is part of Coastal Marine Area C: Eastern Coromandel. Comprises a group of approximately four islands.



Above: Motukopu Island