

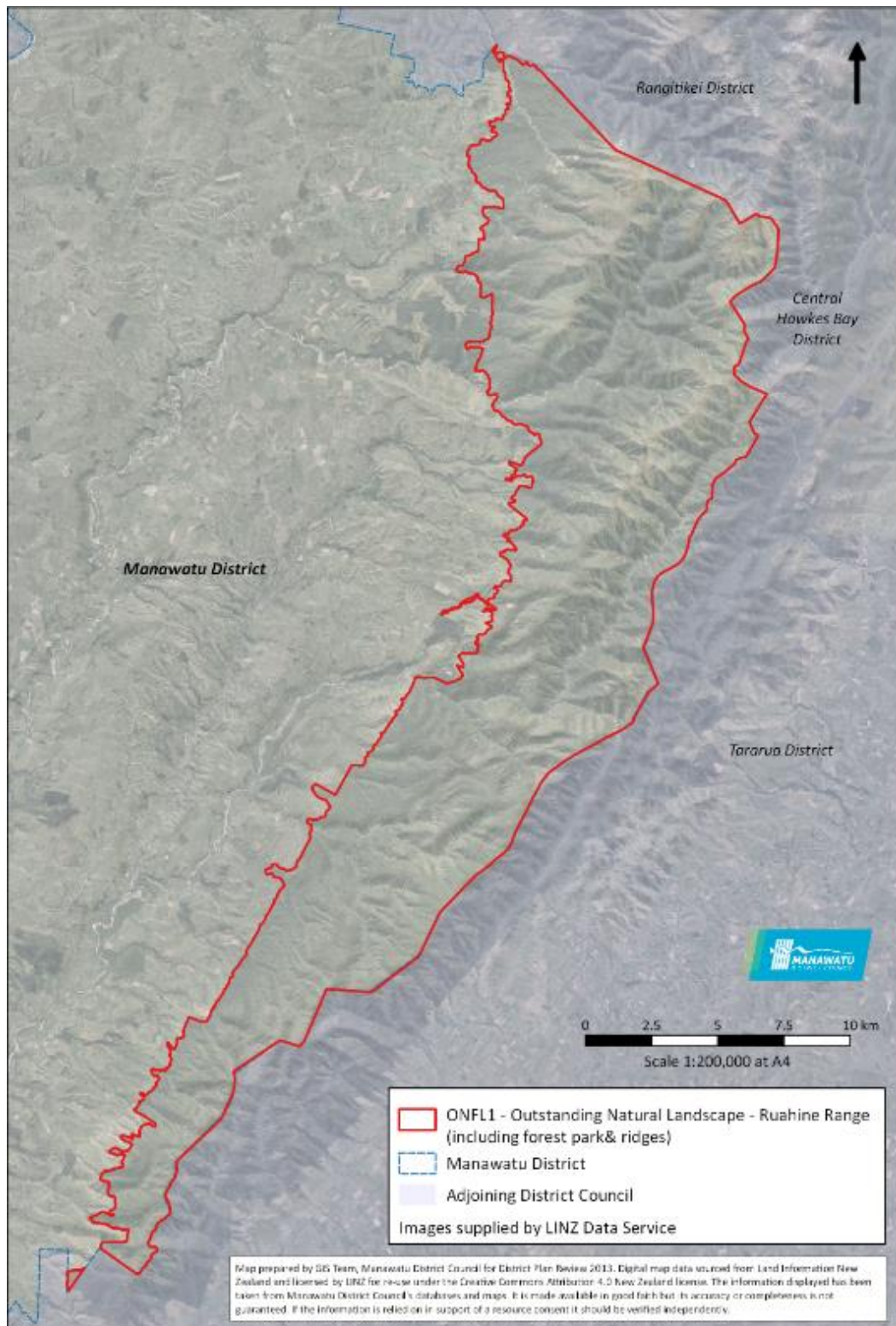
NFL – APP1 – OUTSTANDING NATURAL FEATURES AND LANDSCAPES

NFL – APP1 describes the characteristics and values of all listed Outstanding Natural Features and Landscapes that have been identified for the Manawatū District.

The intention of identifying individual characteristics and values within NFL-APP1 of the Manawatū District Plan is to provide support to plan users in determining the extent of a proposed activity’s potential effects within an Outstanding Natural Feature and Landscape.

It is important for plan users to note that Iwi accounts of tribal affiliations may vary throughout NFL-APP1. This reflects the different narratives of Iwi for the specific Outstanding Natural Feature or Landscape. The Council has intentionally preserved each account to ensure the integrity of Iwi information provided is maintained.

OUTSTANDING NATURAL LANDSCAPE 1 – RUAHINE RANGE



Characteristics and Values of Outstanding Natural Landscape

Natural Science	Geological/ Geomorphological	The Ruahine Range is the dominant geographical landmark in the Manawatū District comprising a sequence of mesozoic greywackes of the Torlesse terrane. Representative part of the axial range that extends along the Alpine Fault from Westland to Bay of Plenty. Originated through uplift that has occurred through the meeting of the Pacific and Australian tectonic plates. Folded landscape with patchwork of deeply incised drainage catchments. Ruahine Range has been the subject of geological research, such as the PhD of Dr M Marden on structure and lithology of the Torlesse terrane. Unique as the oldest and most dominant geological landmark in the Manawatū District.
	Biological/Ecological	The Ruahine Range contains a significant area of unmodified indigenous vegetation and is comprised primarily of the Ruahine Forest Park. Representative of the original podocarp and beech forest that covered much of the foothills and throughout the Pohangina and Ōroua Valleys. This intact forest is indicative of the area’s mauri. It includes alpine beech forest and subalpine tussock, and is an important kiwi habitat. Subject of ecological research by DOC (and Forest Service before them) on impacts of pests including possums, deer, and pigs. Appears to be a relatively healthy functioning ecosystem that is clearly evident in the landscape. An ecological feature of this size is unique within the Manawatū District. It includes small fingers of indigenous vegetation in gullies running off the western side of the range and beyond the forest park boundary.
	Hydrological	It includes the upper reaches of some watercourses, such as Bielski Gully – Te Ano Whiro Stream. It is an important catchment for the Rangitīkei, Ōroua and Pōhangina Rivers and their tributaries. The mauri from the catchment’s mountains and forests is transported through the waterways to nourish the land.
Perceptual	Memorability	High memorability as the defining feature and reference landmark for the entire district, dominating the eastern horizon and visible from throughout the district as an expansive indigenous vegetation cover on the dominant axial mountain landform.
	Legibility/Expressiveness	Ranges very expressive of tectonic uplift and highly legible as the eastern boundary of the Manawatū

		District. Steep river and drainage valleys display natural erosion processes over time through the greywacke geology.
	Transient	Higher mountain ranges are covered by snow in winter months. Ranges have a defining effect on the weather, which can change quickly. Exposed to extreme weather.
	Aesthetic	High degree of coherence derived from the colour, texture, maturity and consistency of native vegetation which creates a vivid and visually striking pattern of land cover. When considered in combination with the land form, it is recognised as the most iconic landscape of the district.
	Naturalness	Extensively covered in unmodified indigenous vegetation with high degree of perceived naturalness, isolation and wilderness values. Absence of built form, structures and roads contributes to the perceived naturalness. Both Whāriti and Te Āpiti windfarm are located south of the Ruahine Range ONL in Tararua District. No other network utilities are known within the Manawatū District Ruahine Range ONL.
Associational	Historical	Pockets of early European migration and settlement, although now largely devoid of human habitation. Colenso followed the track used by Māori from Te Awarua in the west to the Makaroro River in the east.
	Recreation	Extensive tramping and eco-tourism. Many huts established over the years by clubs and DOC. Public access is available to the forest park from road ends. Access can also be obtained through private land if this can be arranged with local landowners. Sixtus Lodge and Outdoor Education Centre on Limestone Road is used as a base for school visits to the Ruahine Range and local area.
	Tangata Whenua	<p>The Ruahine Range, under the relevant settlements, is acknowledged as an area of interest for Ngāti Apa, Rangitāne o Wairarapa, Rangitāne o Tamaki Nui-a-Rua, Ngāti Hauti, and Rangitāne o Manawatū (for whom it is also a statutory acknowledgement area). In addition, the Settlement Act and Ōroua Declaration recognise Ngāti Kahungunu in relation to the Range.</p> <p>The Ruahine Range holds great historical, cultural, spiritual and traditional significance to Rangitāne o Manawatū, as it is one of two mountain ranges that identify the iwi of Rangitāne. The long white cloud</p>

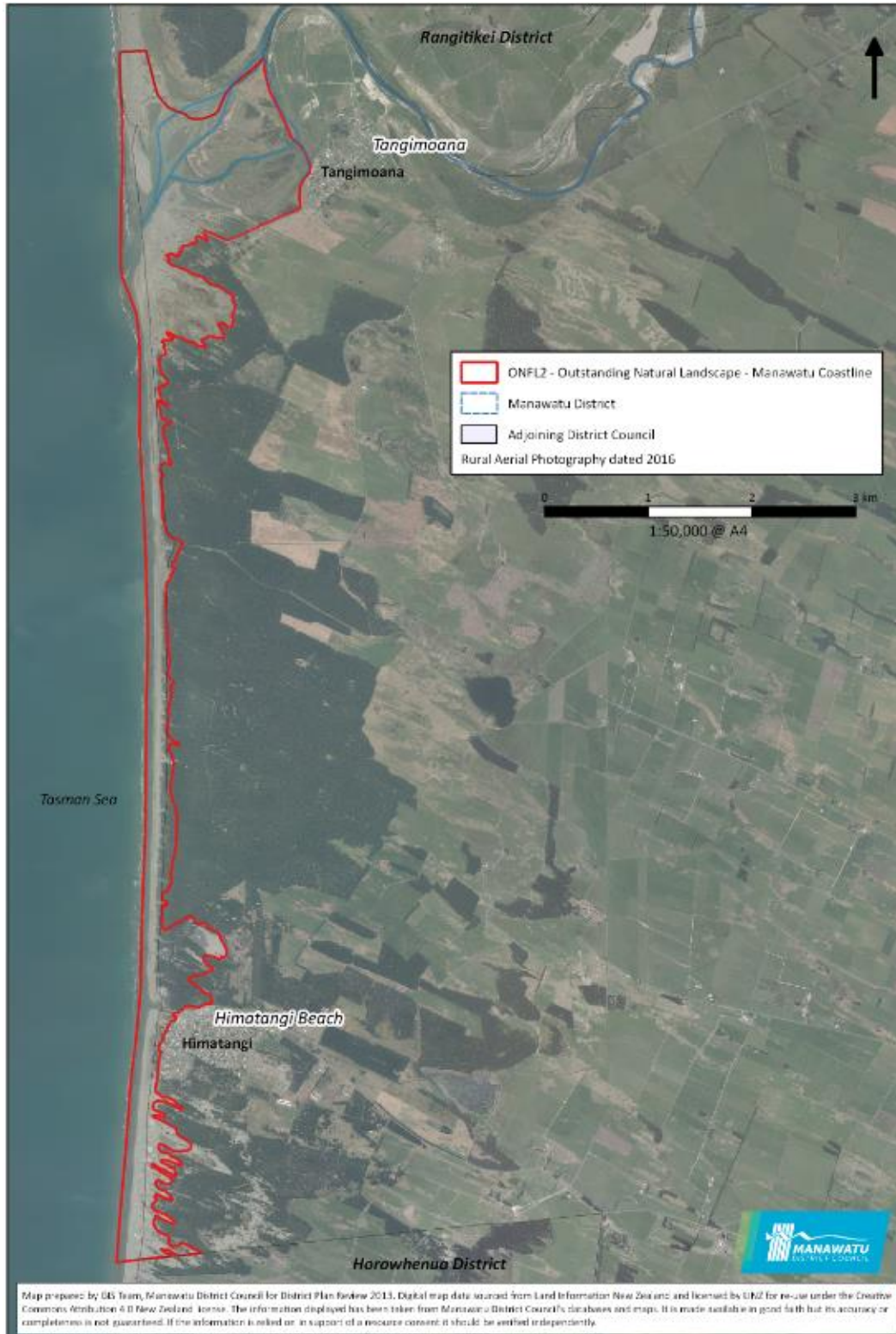
		<p>over the Range is said to be the taniwha Whāngaimokopuna. The southern Ruahine Range is intrinsically connected and related to the activities of the Pōhangina (River and Valley), Te Ahu a Tūranga and Wharite as well as the numerous peaks along the Ranges of which the majority are named after Rangitāne o Manawatū ancestors. The Ruahine mountain range is a source of mauri for Rangitāne o Manawatū, hence the mauri is then transported by the waters of the Ōroua, Pohangina and Manawatū Rivers to the rest of the Rangitāne rohe. Peaks of significance to Rangitāne include Maharahara, Otumore, Tirahe, Te Hekenga, Te Ahu a Tūranga. Wharite (Whare-tītī) Peak towards the south is also of significance but lies in the Tararua District east of the Manawatū boundary line.</p> <p>There is a rock on the hilltop in the Ruahine Range named Te Ahu a Tūranga (imua) - the sacred mound of Tūranga (the elder child). It is located part way along the old Māori track that traverses west to east of the Ruahine Ranges. This peak is of great significance to Rangitāne o Manawatū as it is the place where Tūrangaimua, the son of Turi, the Captain of the Aotea waka was killed. Tūrangaimua settled in the Manawatū after marrying a Rangitāne o Manawatū woman, Parehuia. At some time after his marriage, Tūrangaimua journeyed to Tamaki Nui-a-Rua and Ahuriri, and joined with Rangitāne o Manawatū in fighting the local iwi. Unfortunately, the seemingly defeated Ahuriri iwi were not entirely vanquished and the Tūrangaimua group were overrun at a saddle on the Ruahine Range, just north of Te Āpiti. Tūrangaimua was killed in the ensuing battle, along with several Rangitāne o Manawatū chiefs. The slain were heaped in a mound and the site was named Te Ahu a Tūranga, the mound of Tūrangaimua. Te Ahu a Tūranga is located part way along the old Māori track that traversed west to east of the Ruahine Ranges. Te Ahu a Tūranga is a significant wāhi tapu, culturally, spiritually and historically to Rangitāne o Manawatū. The site is registered with the New Zealand Archaeological Association, as is the narrative associated with it.</p> <p>The Rangitāne o Manawatū Claims Settlement Act 2016 gives recognition to many areas throughout the Manawatū District, including those places listed above regarding the Ruahine Ranges. One particular area referred to in the Deed of Settlement between Rangitāne o Manawatū and the Crown follows ridgelines across the ranges from Mount Richards in the Pōhangina Valley to Ruaroa in Tararua District</p>
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		<p>(see map), via (but excluding) Maharahara (1095m) and Matanginui (1074m) peaks. Rangitāne o Manawatū also have an interest in the Manawatū Gorge Scenic Reserve. However, the scenic reserve on the northern side of the Manawatū River lies within Tararua District and the scenic reserve on the southern side lies within Palmerston North City.</p> <p>The One Plan identifies ‘The series of highest ridges and highest hilltops along the full extent of the Ruahine and Tararua Ranges, including within the Forest Parks’ as an ONFL. The Ruahine Range extends south as far as the Manawatū Gorge. The highest ridge extends along the full length of the Ruahine Range right down to the Manawatū Gorge Scenic Reserve which encloses the Manawatū Gorge. This includes the 6km of farmland between the southern end of the Ruahine Forest Park and the Manawatū Gorge. The ONL identified in the landscape assessment is refined in extent from that identified in the One Plan, which the One Plan makes provision for at the TLA scale. The landscape assessment has reduced the southern extent of the One Plan ONL and generally aligned it with the southern extent of the forest park. This is due to the greater naturalness of the forest park compared to the modified state of the landscape between the forest park and Manawatū Gorge which contains grazed farmland and Te Āpiti windfarm. In determining this ONL, consideration was given to the Rangitāne o Manawatū interests in both the Manawatū Gorge Scenic Reserve and the connection with Te Ahu a Tūranga and Wharite (Whare-tītī) Peak. However, all lie within Tararua District so fall outside the jurisdiction of the Manawatū landscape assessment, even though they may be interpreted as being part of the ridgeline.</p> <p>Ngāti Raukawa ki te Tonga state that the Ruahine Ranges are a significant landscape being a part of pepehā for all iwi and hapū within the Manawatu landscape. Raukawa also recognise the connectivity of the ranges to the iwi's water sources and how they reference whakapapa of atua in the landscape.</p> <p>Rangitāne o Manawatū state that hapū would migrate to seasonal camps in the Ruahine Ranges to hunt birds such as kiwi, weka, kākā, kākāpō and kākāriki. Kiore were hunted along known trails, berries and rārāhu (fern root) were collected, as well as a range of high altitude plants for rongoā.</p> <p>Ngāti Kauwhata state ngā pae maunga o Ruahine (the mountain ranges of Ruahine) are an integral part of the cultural identity of Kauwhata. It presents as a key</p>
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		<p>element in the tribal formulaic expression of identity known as pepehā. Kauwhata has had a long affinity with the Ruahine ranges since migration from the Waikato region in the early 1820's, eventually settling along the Ōroua river around 1828. Ruahine has since become an integral part of Kauwhata identity, being observed in waiata, mōteatea and kōrero o te marae (marae oratory conversations).</p>
	Shared/Recognised	<p>The One Plan recognises the qualities of the Ruahine Range as being 'the skyline's aesthetic cohesion and continuity, its prominence throughout much of the Region and its backdrop vista.' and gives protection through the following provisions: The Ruahine Ranges ONFL is in two parts: (j) The Ruahine Forest Park (land administered by the Department of Conservation) and (l) "the skyline" (or more correctly "The series of highest ridges and highest hilltops along the full extent of the Ruahine Ranges including within the Forest Parks described in item (j)."</p> <p>Because the One Plan has been prepared through a public process, including public notification and hearings, these provisions reflect shared and recognised values of the Region. This reinforces the perceptual recognition that the prominence and memorability of the Ruahine Range causes this landscape to form a key part of the identity of the District.</p>
Summary of Key Characteristics		<p>Very high degree of naturalness due to the extensive covering of indigenous vegetation, dominance of large scale landforms, feeling of isolation, wilderness, and lack of human modification. Lack of built development which contributes to the perceived naturalness of the ranges as a defining backdrop to the District. Important recreational area. Highly memorable mountain range landform which contributes to the identity and sense of place of the District and Rangitāne o Manawatū. An existing large transmission tower at Wharite Peak lies outside Manawatū District but is located on one of the highest ridges, affecting the perceived naturalness of the Ranges as seen from Manawatū District.</p>
Potential Issues		<p>The high degree of perceived naturalness is derived from the dominance and expressiveness of the Ruahine Range, contrasting with the surrounding agricultural land form and land use. This could be threatened by clearance of indigenous vegetation for alternative land use; earthworks such as mining, roading or quarrying; large scale damming of rivers;</p>

	<p>large network utilities; and pests and weeds. It would assist with the protection of the key characteristics if the following were to occur:</p> <ul style="list-style-type: none">• discourage the loss of native vegetation;• discourage the establishment of exotic vegetation;• discourage built development;• discourage earthworks; and• discourage adverse effects on cultural values.
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OUTSTANDING NATURAL LANDSCAPE 2– MANAWATŪ COASTLINE



Version 10: 14 January 2019

Characteristics and Values of Outstanding Natural Landscape		
Natural Science	Geological/ Geomorphological	<p>Coastal dune system seaward of the Tangimoana pine plantation. Includes active dune areas located around Hīmatangi township containing the north-western edge of the Foxtangi Dunefield. This part of the dunefield is unique in that it is the last remaining area of functioning duneland ecosystem that remains in private ownership in the area between Hīmatangi and Foxtan (primarily Horowhenua District), and is known as the Foxtangi RAP (DOC Recommended Area for Protection).</p> <p>These areas of the Foxtangi Dunefield either side of Hīmatangi (within Manawatū District) are recommended as ONL, excluding the areas containing pine plantation. The coastline soils are primarily deep, well drained sandy loam. Research has recognised the Manawatū dunefield as the best representative example of Holocene dune development in New Zealand, and one of the best examples of parabolic dune development in Australasia.</p>
	Biological/Ecological	<p>Modified vegetation with prevalence of coastal grasses and acacia covering dunes between the high water mark and pine plantations. Inland dunefields have been planted in pine plantation for erosion control however these lie outside the ONL within the productive Tangimoana Forest. This area contains part of the Tangimoana Dunes, where the rare spiked sand sedge (<i>Eleocharis neozelandica</i>) can be found, and Fernbird area listed in the District Plan (Operative 2002) Appendix 1A (W3), along with part of the Foxtangi Dunes, Appendix 1A (W11).</p>
	Hydrological	<p>Coastal lagoons located inland of the ONL, which contribute to the hydrological functioning of the coastal processes where rivers and streams meet the sea and transporting the mauri from the coastal grasses and dunes to the surrounding land. These include Pukepuke Lagoon and Lake Kaikōkopu located inland of the dunes but set in farmland or adjacent to pine plantation. The ONL includes the mouth of the Rangitikei River and its coastal sand bank plus remnant flows across open floodplains in the southern oxbow. Pukepuke Lagoon relates to the hydrological functioning and is identified separately as a ONF as is Lake Kaikōkopu.</p>
Perceptual	Memorability	Memorable as an expansive unbuilt coastal foredune system.

	Legibility/Expressiveness	Clearly expressive of coastal dune processes.
	Transient	Climatic changes of onshore/offshore winds, sea spray and coastal birds.
	Aesthetic	Extensive linear repetitive dune landform combined with the coastal grassland and native vegetation cover contributes to the coherence of this feature and is vivid particularly when observed from the beach. High aesthetic value due to naturalness and linear extent of unbuilt coastal frontage.
	Naturalness	Generally high naturalness, but with some areas of modification due to tracks and non-native vegetation. Naturalness also influenced by proximity of settlements and pine plantations parallel to the beach.
Associational	Historical	The beach was the highway in early European times, with the Scott’s Ferry serving the Rangitīkei area from 1850 – 1908. A port operated at the Rangitīkei River mouth servicing steamships from 1867-97 when flooding swept away all bridges across the Rangitīkei and silted up the port, closing it forever. The coastal area is abundant in archaeological evidence, with over 35 recorded sites.
	Recreation	Foredunes accessed from coastal settlements, although off-road bikes threaten their stability, particularly in proximity to these settlements.
	Tangata Whenua	<p>Under the relevant settlements, the coastline is an area of interest, as well as a statutory acknowledgement area for both Ngāti Apa and Rangitāne o Manawatū. There are also cultural redress properties in Tangimoana.</p> <p>Foredunes are part of the wider coastal dune system, which was highly significant to Māori. Linked with the historic wetlands inland of the coastal dunes, fish (e.g. eels), flora (e.g. flax, pīngao) and fauna was an important food source for Māori. Numerous middens have been discovered inland of the sand dunes. Hīmatangi was an important source of a variety of foods for Rangitāne o Manawatū. The correct hyphenation of the Hīmatangi is said not to be Hīmatangi but Hī-matangi, and thereby provides a different tale. “Hī” means to fish, and Matangi was a Chief who lived in the mystic past in the Mōhaka District of the East Coast. The name also refers to Matangi capturing and slaying a Taniwha in the area upon his</p>

	<p>settlement. Himatangi was also famous for the abundance of eel and birds available from the wetlands and dune lakes in the area. The mouth of the Rangitikei River being of strategic importance to Rangitāne o Manawatū as it provided an entrance to the Rangitikei and Central North Island. The name “Tangimoana” was allocated to a small coastal area. Traditionally the dune area around the town was referred to as Te Ruahine. The most recognised area or settlement (nearest to the present day township) was Tāwhirihoē. Tāwhirihoē was originally a pā site, then a mahinga kai and cultivation, and finally the flat now known as Scott’s Ferry and Tangimoana.</p> <p>The culturally significant feature of this coastline was the shellfish that were found in areas where the freshwater met the ocean and the wetland areas and small shallow dune lakes that were found between large dune structures. Within these lakes and the freshwater streams that feed them were a variety of native fish and eel as well as birds.</p> <p>Rangitikei River was one of the sites of significance for Ngāti Apa located along the coastline as a fishing station and tauranga waka of Tāwhirihoē and the Rangitikei Heads. The latter area was noted as the place that Rangipowhatu, an early ancestor of the Ngāti Taurira hapū of Ngāti Apa (North Island), first settled. From there, his descendants moved into the Rangitikei Valley and populated the area.</p> <p>The Manawatū Coast has been an integral part of Rangitāne o Manawatū culture, history and existence with those connections being unbroken for over seven hundred years. These connection to the Manawatū Coast and coastal sand dune country have been recorded in waiata, kōrero and whakairo. The coastline or area that was traditionally referred to as Okatia, the spirit that created the Manawatū River, resides on the coast. The coastal area is abundant in archaeological evidence, with over 35 recorded sites. Rangitāne o Manawatū earliest connections with the Manawatū Coast are recorded by their Kurahaupō ancestor, firstly Kupe who navigated the coastline from the East Coast around Te Whanganui a Tara and along the Manawatū River Estuary.</p> <p>Tāwhirihoē Scientific Reserve is located immediately south of the Rangitikei River mouth. The reserve and dune-lands are of historical, cultural, spiritual and traditional significance to Rangitāne o Manawatū. Tāwhirihoē was an important site and nohonga area for people travelling along the coast or linking up with trails following inland to Pukepuke and Puketōtara.</p>
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		<p>The Tāwhirihoē area has traditionally been a launching area for waka and Rangitāne o Manawatū fishing station. Rangitāne o Manawatū also commonly collected pipi along the coastline. The Tāwhirihoē area had a number of large active dunes where traditionally plant and weaving resources such as pīngao were collected. Tāwhirihoē and the adjacent coastline is recognised by DOC as a unique area for its flora, fauna and landforms. The area is also recognised by Rangitāne o Manawatū for this and the natural resources utilised by the iwi. The area is one of the last natural coastal (backshore – foredune) environments with a number of rare sedges and flora. This is one of the last places that the endangered native Katipō spider is found. The Katipō spider is an important figure within Rangitāne o Manawatū lore. Over recent years numerous archaeological sites have been discovered unearthing middens and numerous artefacts providing important insights into the early history and use of the area by Rangitāne o Manawatū. The Tāwhirihoē Scientific Reserve is also recognised under the Statement of Association under the Rangitāne o Manawatū Claims Settlement Act 2016 and Ngāti Apa (North Island) Claims Settlement Act 2010.</p> <p>Ngāti Raukawa ki te Tonga state that hapū within this landscape are Ngāti Rākau, Ngāti Tūranga and Ngāti Te Au, the hapū fought to retain their land at Hīmatangi which later became of the Rangitīkei-Manawatū Block purchase. Pīngao and spinifex is important in this landscape, this area had supplied weavers with Pīngao throughout the district. Kai gathering activities still take place for tuna and fishing in the ONL.</p> <p>Rangitāne o Manawatū state the area was settled by Rangitāne o Manawatū where the iwi thrived being rich in coastal and ocean resources. Of special significance was the mahinga kai toheroa, a large edible bivalve part of whose life phase is based around the native sand binding grass spinifex. The coastal area was one of the first places in the Manawatū to be acquired by European settlers, thus Rangitāne o Manawatū hold less information about the details of their ancestors’ activities along the coastline.</p> <p>Ngāti Kauwhata have stated that they have historical interests in the areas associated with the Manawatū Coastline Outstanding Natural Landscape, and a particular interest at Tangimoana. Ngāti Kāhoru, Ngāti</p>
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		<p>Parewahawaha, Ngāti Kauwhata were given land as part of the Rangitīkei/Manawatū sale and purchase.</p> <p>Ngā Wairiki and Ngāti Apa interests in the coastal zone is though the combined hapū of Ngāti Kauae Muri Ranga Whenua (Ngāti Kauae) and Ngāti Rangitauira (Ngāti Tauira). For many generations through to the time of colonisation, Ngāti Kauae and Ngāti Tauira whānau and hapū traversed this coastal zone, inland of which were a series of paths and fortified pā, from Te Awamate, north of the Rangitīkei River, to Te Awahou on the River, to Omanuka, to Pukepuke, to Te Ohura at Kaikokopu, to Koputara. The Pā site at Kaikokopu, near to the coastal settlement of Himatangi beach, remains in the ownership of Ngāti Kauae and Ngāti Tauira whānau. Te Awahou is the name of a large Ngāti Kauae and Ngāti Tauira settlement on the Rangitīkei River less than 2km inland of Tangimoana. It was here in 1849 that the Rangitīkei Turakina transaction was signed primarily between the Crown and Ngā Wairiki – Ngāti Apa ancestors keen to engage with European settlers as a means of advancing the interests of the Iwi. This opened this part of the Country up for the European settlement that followed. It was from Te Awahou earlier on 21 May 1840 that many Ngāti Kauae and Ngāti Tauira people travelled to the fishing village on the coast called Tawhirihoē and three leaders, Kāwana Te Hakeke, Mohi Mahi and Taumarū (Hamuera Te Raikokiritia) signed te Tiriti o Waitangi. Tawhirihoē was located on the southern bank of the Rangitīkei River mouth near to where Tangimoana is now. The coastal dune lakes were focus areas for seasonal kai gathering. These hapū were experts at building and maintaining wet land defensive pā that provided protection during food gathering seasons when the hapū were spread out and vulnerable. These were also strategic locations for retreat from more permanent settlements on the Rivers during times of danger.</p>
	Shared/Recognised	<p>Dunes recognised for the importance they play in coastal processes and high degree of perceived naturalness. The Tāwhirihoē Scientific Reserve, located on the coast immediately south of Tangimoana, contains one of the last examples of a dynamic dune and ephemeral wetland system, which once stretched along the west coast. The Reserve is partially planted in exotic pine plantation, the areas of which are excluded from the ONL. The Natural Character Assessment for the Manawatū District Coastal Environment did not recognise any areas as</p>

		Outstanding Natural Character. However, the Landscape Assessment does recognise some areas as an Outstanding Natural Landscape. This is due to the weighting on Associational values in a landscape assessment which are absent from a natural character assessment.
Summary of Key Characteristics		Vital contribution to healthy functioning of coastal processes and erosion control with high perceived naturalness of the coastal landforms. High aesthetic values of expressiveness and naturalness resulting from extensive unbuilt coastal strip. Very high cultural associational values of spiritual well-being and kaitiakitanga for Māori. Some protection is also afforded under the NZCPS and the Statutory Authority.
Potential Issues		Coastal foredunes and estuaries define the landscape and contribute to the perceived naturalness, aesthetic values and associational factors. It would assist preservation of the key characteristics if the following were to occur: <ul style="list-style-type: none"> • discourage the loss of native vegetation; • discourage built development; • discourage earthworks; and • discourage adverse effects on cultural values.

OUTSTANDING NATURAL FEATURE 3 – RANGITĪKEI RIVER



Version 10: 14 January 2019

Characteristics and Values of Outstanding Natural Landscape

Natural Science	Geological/ Geomorphological	Incised river valley created by erosion of river through the sedimentary soils, resulting in unique scalloped edges with exposed rock outcrops or mudstone bluffs. Erosion process is evident through the soft sedimentary layers of Plio-Pleistocene fossiliferous sediments. This area contains the Concretion Terrace which is listed in the District Plan (Operative 2002), Appendix 1C (OF1). The Rangitīkei River has a limited area of river flats. These flats are well-drained in most places and are a result of alluvium being deposited when the river has been in flood.
	Biological/Ecological	Exotic vegetation and indigenous forest remnants on valley sides enhances ecological value and river quality while also creating a habitat for birdlife and increasing ecosystem health and mauri. Aquatic species present in the river include eels, koura, freshwater mussels, pātiki (black flounder), īnanga, and rainbow and brown trout.
	Hydrological	The source for the Rangitīkei River is in the Kaimanawa Ranges, rising from springs on Ngāpuketurua. It is representative of one of New Zealand’s longest rivers at 241km long, it is the third longest river in the North Island and the sixth largest North Island river in terms of water volume. Water in the river and from stream tributaries has significant quality and quantity values, particularly on uses downstream. A national water conservation order exists on the river as a means of protecting water flow, and in many respects, this has prevented hydro-electric development on the river. The flow of water changes along the river’s course, which includes areas of rapids interspersed with deeper, quieter water. The Rangitīkei River has a history of flooding and represents one of the educational opportunities of the river, which Massey University recognised and who have undertaken research on the historic channel change of the Rangitīkei River at Bulls by assessing aerial photographs between 1955 and 2007. Flooding was traditionally celebrated by Māori as it formed part of the process of spreading mauri from the surrounding landscape, including from the mountains and forests, to nourish and feed the land and everything living on the land.
Perceptual	Memorability	Highly memorable landscape due to the scale and steepness of landform incision rising from the watercourse - more dramatic than surrounding folded

		landforms due to the presence of significant escarpments and waterway which contrasts with the surrounding modified pastoral landscape. The escarpments have a high degree of memorability and contribute to the identity and sense of place of the area.
	Legibility/Expressiveness	Complex landform features are very expressive of the erosion processes of the river, with ‘empty’ scalloped ox-bows providing historical references to shifts in the river.
	Transient	River valley has its own microclimate. Changes in the location of the river bed over time, as evidenced by the ‘empty’ scallops. River level changes reflective of headwater rains. Deep gorges likely to have some impact on microclimatic conditions, such as creation of mist on colder mornings.
	Aesthetic	High aesthetic value due to its visually striking steep escarpments, cliffs and scalloping. These are a vivid, dramatic and awe-inspiring landscape feature characterised by a repetition of exposed eroding cliffs combined with a meandering scalloped watercourse in the deeply incised river valley, which provides coherence for this stretch of the Rangitikei River before it transitions into the flatter lands south of Vinegar Hill.
	Naturalness	High degree of perceived naturalness despite some pastoral use within the river valley. Naturalness significantly contributed to by the dramatic escarpment features, scale of their erosion and the expressiveness of the river’s meandering course over time as shown by the scallop shaped former ox-bows. Areas of farm land on the river flats have been included in the ONF because the river valley is viewed as an integrated whole between the river and escarpment top. The dominance of the geomorphology and topography is sufficiently strong to warrant the river corridor being read as a whole despite the presence of modified land cover. The river provides an important wildlife corridor.
Associational	Historical	Important travelling route since early settlement. Historic heritage, of particular historical importance are archaeological sites and high potential for archaeological site discovery. From the mid-1840s Pākehā settlers informally leased land from Ngāti Apa at several places south of the Rangitikei River. Rangitāne o Manawatū also leased out large areas of land in the 1840s to settlers in the vicinity of the

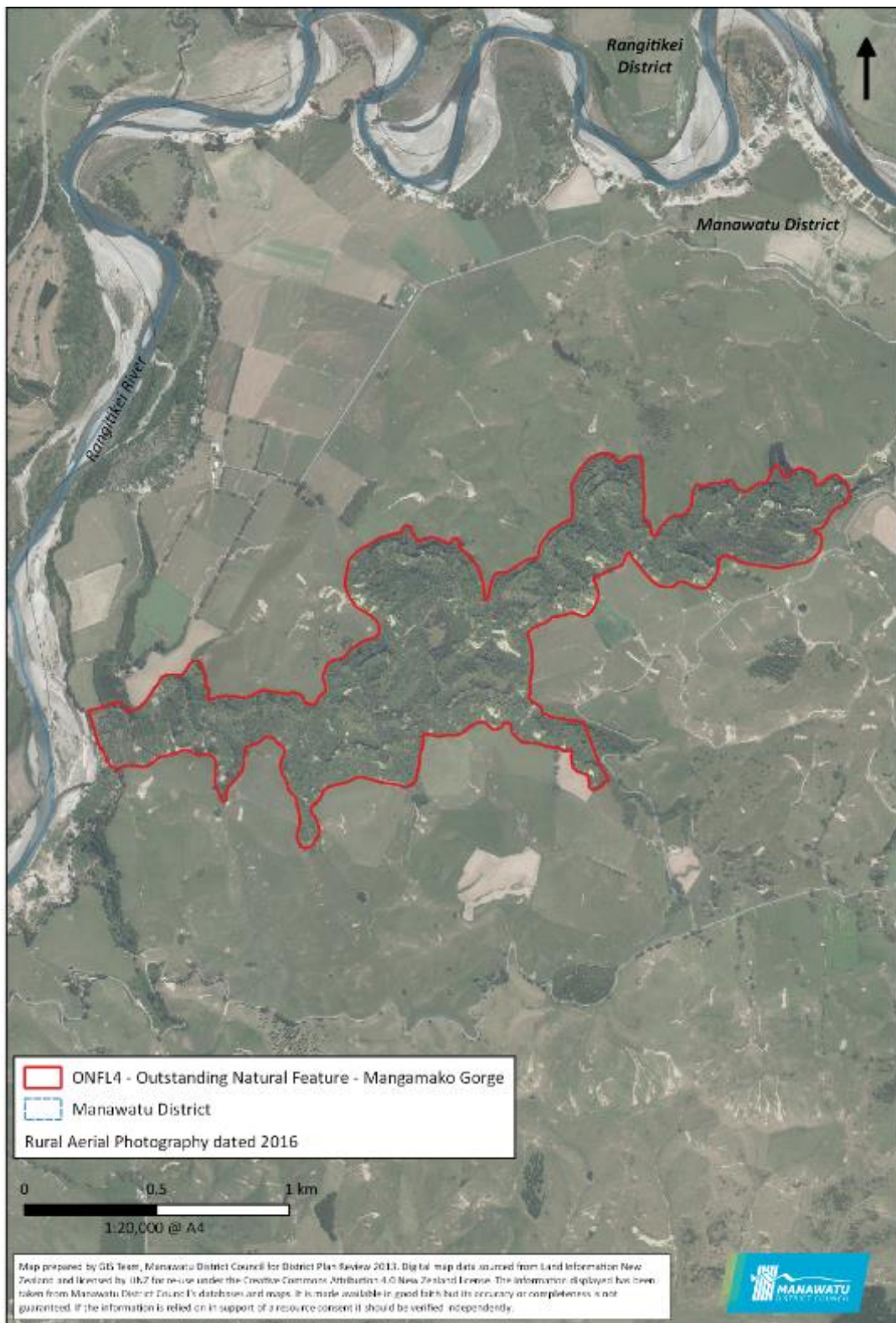
		<p>Rangitīkei River. During 1897 the river experienced its most significant flood since European settlement. The flood resulted in destroyed bridges and fords connecting townships, including bridges at both Mangaweka and Vinegar Hill. Flooding was so intense that large tōtara trees more than 300 years old were swept away near Vinegar Hill. At the lower end of the river homesteads were washed away and stock drowned. In 1958 the river was deemed as being navigable and, as such, became property of the Crown via the Coal-mines Act Amendment Act 1903. In 1959 under the Crown it became a soil conservation and river control reserve.</p>
Recreation		<p>High level of recreational use, including swimming, rafting, jet boating, canoeing, kayaking (including an annual kayaking race) guided and unguided fishing (known for trophy rainbow and brown trout), walking, picnicking, and camping. Jet boating, rafting canoeing and kayaking on the Rangitīkei River are rated highly at a national scale. There are many access points to the river from roads leading off SH1. Access across private land is also available for those who wish to walk up the river to view the cannonball concretions (spherical boulders) in the forest adjacent to the river.</p>
Tangata Whenua		<p>The Rangitīkei River is identified as a statutory acknowledgment area in the following settlements:</p> <ul style="list-style-type: none"> • Ngāti Apa (North Island) Claims Settlement Act 2010 • Rangitāne o Manawatu Claims Settlement Act 2016 <p>The Rangitīkei River is identified as an area of interest in the Ngāti Tūwharetoa Claims Settlement Act 2018.</p> <p>The naming of the Rangitīkei River occurred during the pursuit of Te Haunui a Nanaia for his wife, Wairaka, naming the rivers that he crossed along the way. Rangitīkei has been literally translated to be the day of the long stride, however it refers to the good progress that was made by Te Haunui a Nanaia during his day travels before he encountered the river. The Rangitīkei River is of historical, cultural, spiritual and traditional significance, as well as taonga to these iwi. The river is significant as a marker of the boundary of the rohe of Rangitāne o Manawatū. The river was a means of communication and was used as the main highway between the Central North Island and sea, and as a migration route (such as for Ngāti Tūwharetoa and Ngāti Raukawa). During the arrival of</p>

	<p>Europeans, Māori were noted in the Rangitīkei area for travelling up and down the river by waka at pā sites along the way.</p> <p>The use of the Rangitīkei River as a route relied on lack of conflict with the various iwi and hapū whose boundaries border the river. In this way the Rangitīkei River was not only a physical link between tangata whenua but also a central component to the relationship link between the people. The Rangitīkei River and the district's waterways were a vital means of gaining access to settlement, cultivation and mahinga kai sites. The soil was fertile, and transport to mahinga kai was significantly aided by river access, making rapid communication between pā possible, and hence it was an essential means of trade. During the migration of foreign iwi the river provided an easy method to gather and mobilise warriors from surrounding areas. The Rangitīkei River, with its sheer cliffs, was ideally suited for traditional kāinga (settlements) and elevated fortified defensive pā site.</p> <p>For Ngāti Apa (North Island), the Rangitīkei River was occupied by several hapū. The mouth formed part of the domain of Ngāti Kauae and Ngāti Taura. Inland of these hapū were a number of hapū who descended from Tuariki, who had a famous mokai (pet) named Tutaeporoporo. These hapū included Ngāti Tupua, Ngāti Tupataua, Ngāti Ika/Tumoetere, and Ngāti Tamatea. Many of the Tuariki hapū were strongly interconnected with other hapū in the Whangaehu and Turakina areas. Ngāti Tupua and Ngāti Tūpataua occupied the central reaches of the Rangitīkei on a permanent basis but many of the other hapū only went to the upper areas of the Rangitīkei for refuge from war parties and to snare birds, hunt pigs and catch eels. In 1840, Ngāti Apa signed the Treaty of Waitangi at Tāwhirihoe pā, a Ngāti Apa kāinga near the mouth of the Rangitīkei River. This signified their first major engagement with the Crown.</p> <p>Ngāti Raukawa also have an interest in the Rangitīkei River north of Ngāti Apa's specific areas of interest and they came to settle in the Manawatū district by travelling down the Rangitīkei River valley sometime prior to 1840. The entire river has huge cultural significance to Raukawa, having provided a means of transport and living environment for hundreds of years. Raukawa recognise the status of the river as an integrated system in that Raukawa are inextricable from the river system.</p>
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		<p>For Ngāti Hauiti the Rangitīkei River is defined as the heart of their lands, providing both physical and spiritual sustenance for generations.</p> <p>Rangitāne o Manawatū recognise Ngāti Tauira as a shared hapu between Rangitāne o Manawatū and Ngāti Apa.</p> <p>Ngāti Kauwhata have stated that they have no interest other than this River was where Ngāti Kauwhata arrived from in their tribal migration. They headed inland on the Rangataua Stream near Kākāriki Bridge on the Rangitīkei River.</p> <p>Ngāti Tūwharetoa and Ngāti Waewae have identified a number of key cultural interests relating to the Rangitīkei River catchment. They have referenced the statutory acknowledgement as set out in the Ngāti Tūwharetoa Claims Settlement Act 2018. Ngāti Tūwharetoa and Ngāti Waewae have further information that will be disclosed and considered at the discretion of iwi themselves. Local representatives are keen to engage and explore any changes and/or impacts to the river directly.</p>
Shared/Recognised		<p>The Rangitīkei River is widely recognised by local people and forms a key part of the identity of the central Manawatū Region. Widely recognised for its boating and fishing opportunities. Iconic feature of the area which is widely written about, photographed, filmed and described. The white Papa cliffs contribute to the genius loci of the district.</p> <p>The area defined in the One Plan Schedule G as Rangitīkei River and river valley upstream of Pūtōrino has been refined in this assessment for the District Plan. This refinement has been done in accordance with One Plan Policy 6-7 which states: Territorial Authorities must take into account but not be limited to the criteria in Table 6.1 when: considering adding to, deleting from, or otherwise altering, redefining or modifying the list of outstanding natural features or landscapes listed in Table G.1 of Schedule G.</p> <p>The refinement of the Rangitīkei River ONFL from that described in the One Plan (Mangarere Bridge to Pūtōrino) has been done in accordance with this policy. When reducing the length, criteria in Table 6.1 were considered (as they relate to the Assessment Criteria). The lower portion of this section did not have sufficient expressiveness/legibility or gorge-like containment in comparison to the character of the</p>

		upper section of river (such as Vinegar Hill) to warrant its inclusion within the ONL.
Summary of Key Characteristics		High degree of perceived naturalness derived from the expressiveness of the formative processes of the Rangitikei River course which contrasts with the surrounding terrace landform. The dynamic qualities demonstrated by the legibility of the scallop features (formerly river bed), the dramatic appearance of the enclosing curved escarpments, the dominance of the river corridor, the prominence, visibility and beauty of the white, sheer, papa (mudstone) cliffs, and the unbuilt simplicity of the cliff edges and escarpment tops result in a highly memorable landscape feature. Areas of indigenous riparian vegetation contribute to the ecological and water quality values. Existing areas of grazing and productive land uses allow for visibility of the landform. A Transpower high voltage transmission line Powerco pole lines cross this ONF.
Potential Issues		<p>Earthworks and/or quarrying that may affect the integrity of the mudstone cliffs and scallops (including roading across the escarpments). Further degradation of native riparian vegetation which may lead to sedimentation of the river and destruction of wildlife habitat. Activities, including pine plantations, on the escarpments or terraces which may screen the geological features. It would assist protection of the key characteristics if the following were to occur:</p> <ul style="list-style-type: none"> • discourage the loss of native vegetation • discourage the establishment of exotic vegetation; • discourage earthworks; • discourage adverse effects on cultural values; and • restrict built development.

OUTSTANDING NATURAL FEATURE 4 - MANGAMAKO GORGE



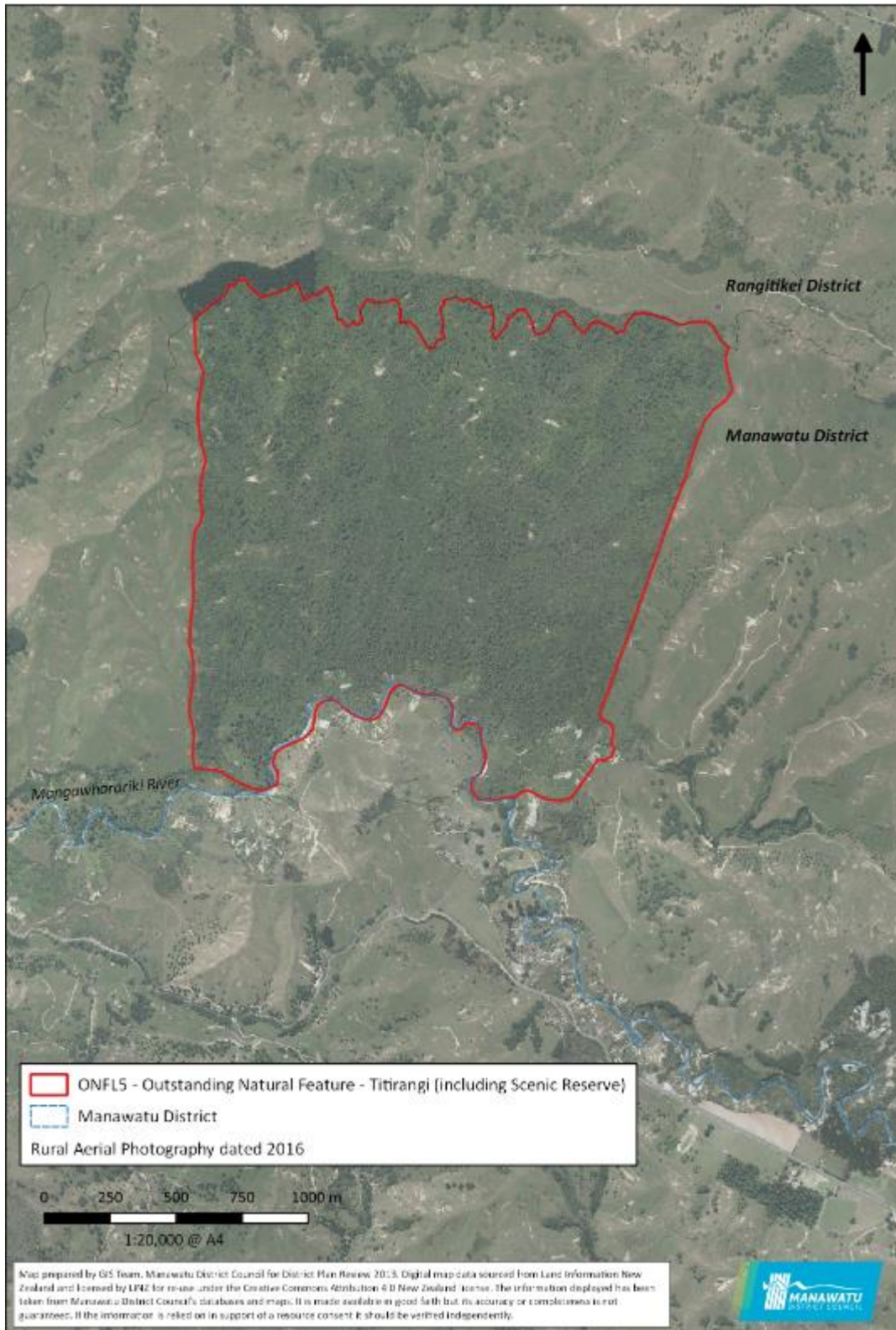
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Characteristics and Values of Outstanding Natural Landscape		
Natural Science	Geological/ Geomorphological	Representative of deeply incised valleys which characterise the area and are unique to the surrounds. The gorge is expressive of the erosion process of the stream through the sedimentary soils, resulting in a meandering watercourse with exposed rock outcrops or white mudstone bluffs that contrast with the surrounding pastoral landscape
	Biological/Ecological	Indigenous forest remnants on valley sides, which enhances ecological value and water quality, increasing ecosystem health and mauri, while also creating a habitat for indigenous and exotic birdlife. Mangamako Gorge is listed in the District Plan (Operative 2002), Appendix 1B (SA41). The Horizons Regional Council recommends the Mangamako Stream for trout spawning value in the Manawatū-Wanganui Region, with rainbow trout residing in the stream. Database records published by NIWA also shows that kōaro, upland bully, Crans bully, red-fin bully and shortfin eel have been recorded as present.
	Hydrological	This gorge services a wide agricultural catchment area and contributes ecosystem functionality through erosion control and the maintenance of water quality and transportation of mauri before runoff reaches the Rangitīkei River. During the summer the Mangamako Stream only flows intermittently.
Perceptual	Memorability	This gorge services a wide agricultural catchment area and contributes ecosystem functionality through erosion control and the maintenance of water quality and transportation of mauri before runoff reaches the Rangitīkei River. During the summer the Mangamako Stream only flows intermittently.
	Legibility/Expressiveness	Complex landform features that are expressive of the erosion processes of the Mangamako Stream demonstrated by its steeply incised character and tall escarpments.
	Transient	Deep gorges likely to have some impact on microclimatic conditions, such as creation of mist on colder mornings. Fauna present in indigenous vegetation.
	Aesthetic	Extensive indigenous vegetation throughout the valley system has a high degree of coherence and reinforces its vividness both as a feature and in contrast to the surrounding modified landscape which

		results in high aesthetic value. The combination of indigenous vegetation cover with the incised valley system has significance within the district through their rarity. A Powerco pole line crosses a southern arm of the feature with minimal effect.
	Naturalness	High degree of perceived naturalness in the gully. Naturalness significantly contributed to by the extent of indigenous vegetation and expressiveness of the stream’s erosion process. Provides an important ecological node along the Rangitikei River wildlife corridor.
Associational	Historical	Unknown.
	Recreation	Limited opportunities for the public to experience this feature, although fishing does occur further upstream in the Mangamako Stream.
	Tangata Whenua	Mangamako Gorge is an area of interest under the relevant settlements for Ngāti Apa and Ngāti Hauiti. Rangitāne o Manawatū only have statutory acknowledgement over the main stem of the Rangitikei River, not its tributaries, so Mangamako Gorge is not an area of interest. Part of the area that Ngāti Apa asserted mana included from the confluence of the Makohine Stream and Rangitikei River, then south a short distance to the mouth of the Mangamako Stream. Additionally, in a general sense, Tikanga Māori Principles such as Kaitiakitanga (Guardianship), Wairua (Well-being) and Mauri (Life force) are important. Ngāti Kauwhata have stated that they have no interest in this area.
	Shared/Recognised	Mangamako Gorge is adjacent to the Rangitikei River which is widely recognised for its fishing opportunities.
Summary of Key Characteristics		High degree of perceived naturalness derived from the expressiveness of the formative processes of the Mangamako Stream incised landform, which contrasts with the surrounding agricultural land use, and the limited built modification. Areas of indigenous riparian vegetation contribute to the ecological and water quality values and overall perceptions of naturalness. An existing Powerco pole line crosses a southern arm of the feature.
Potential Issues		The steeply incised valley system filled with native vegetation defines the feature and contributes to the

	<p>perceived naturalness, aesthetic values and associational factors. It would assist protection of the key characteristics if the following were to occur:</p> <ul style="list-style-type: none">• discourage loss of native vegetation;• discourage the establishment of exotic vegetation;• discourage adverse effects on cultural values; and• discourage earthworks; and restrict built development.
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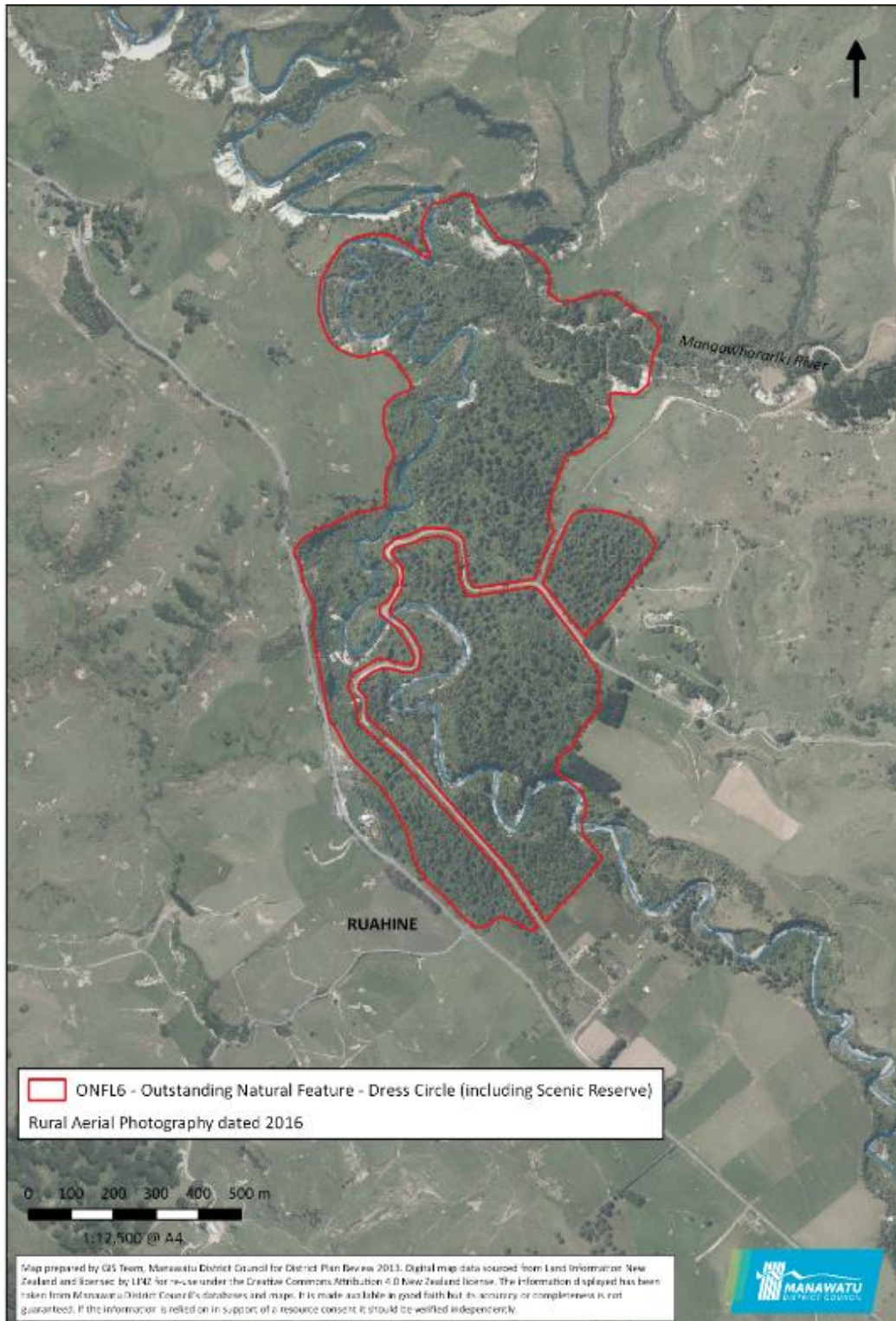
OUTSTANDING NATURAL FEATURE 5 – TITIRANGI



Characteristics and Values of Outstanding Natural Landscape		
Natural Science	Geological/ Geomorphological	Landform is representative of the typical surrounding area consisting of a folded landscape with numerous drainage pattern incisions evident.
	Biological/Ecological	Ecosystem health and mauri is reflected in the large stretches of indigenous flora and fauna habitat, including great examples of specimen trees such as kahikatea, rimu, miro, mātai and rewarewa. These specimens are rare in the area as much of the surrounding landscape was deforested during European settlement. The Titirangi Reserve is regarded as one of the best examples of lowland forest vegetation on the North Island. Survey research undertaken in February 2000 indicates a diverse range of native flora species in the reserve.
	Hydrological	Numerous stream fingers and catchment contribute to the ecosystem functionality of the Mangawharariki River by feeding into the river and enabling the movement of mauri through the catchment. The Mangawharariki River itself is a tributary of the Rangitīkei River and is 33km long.
Perceptual	Memorability	Extensive cover of indigenous vegetation contributes to the simplicity of the feature and is indicative of what the land cover would have looked like prior to European settlement.
	Legibility/Expressiveness	Drainage valleys are expressive of the natural erosion processes.
	Transient	Transient value related to fauna of the forest.
	Aesthetic	High degree of perceived naturalness of the whole feature is exhibited by the expansive indigenous forest and gives rise to vividness and a high degree of coherence.
	Naturalness	Extensively covered in unmodified indigenous vegetation with high degree of perceived naturalness.
Associational	Historical	Unlike much of the surrounding landscape this extensive area of indigenous vegetation was never milled, the land was seen as too difficult to clear when the original European settlers arrived in the area. This makes this an important historical reference to previous land cover.

	Recreation	There are limited opportunities for the public to experience this feature.
	Tangata Whenua	Titirangi is an area of interest for Ngāti Hauiti. Additionally, in a general sense, Tikanga Māori Principles such as Kaitiakitanga (Guardianship), Wairua (Well-being) and Mauri (Life force) are important. Ngāti Kauwhata have stated that they have no interest in this area.
	Shared/Recognised	It is along the Manawatū Scenic Route, which is an alternative to SH1 and allows travellers to discover stunning scenery.
Summary of Key Characteristics		High degree of perceived naturalness derived from the expanse of unmodified indigenous forest which contrasts with the surrounding agricultural land use. Outstanding values supported by ridgeline to stream ecosystem and associational values. This area is regarded as being one of the best examples of lowland forest in the North Island. The two parallel high voltage power lines run past the reserve 1km to the east.
Potential Issues		The extensive and continuous expanse of native vegetation defines the feature and contributes to the perceived naturalness, aesthetic values and associational factors. It would assist protection of the key characteristics if the following were to occur: <ul style="list-style-type: none"> • discourage the loss of native vegetation; • discourage the establishment of exotic vegetation; • discourage adverse effects on cultural values; and • discourage earthworks; and restrict built development.

OUTSTANDING NATURAL FEATURE 6 – DRESS CIRCLE (INCLUDING SCENIC RESERVE)



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Characteristics and Values of Outstanding Natural Landscape		
Natural Science	Geological/ Geomorphological	Indigenous vegetation contained within and adjacent to an incised valley created by erosion of stream through the sedimentary soils which contrasts with the surrounding pastoral landscape. Erosion process is evident through the expressive valley formation, presenting a geological educational opportunity. In places the unique formations of soft grey papa rock, with its many holes, has an appearance reminiscent of swiss cheese.
	Biological/Ecological	Indigenous forest remnants on valley sides are representative of the land cover that would have once covered this area. The remaining native forest enhances ecological value and water quality, increasing ecosystem health and mauri, while also creating a habitat for indigenous and exotic birdlife.
	Hydrological	Large agricultural catchment area upstream of this reserve. The dense vegetation contributes to the area’s ecosystem health along the stream margins by helping maintain water quality and mauri. There are waterfalls located by the Dress Circle swimming hole. The Mangawharariki River is a tributary of the Rangitīkei River and is 33km long.
Perceptual	Memorability	Area has a high degree of memorability due to the composition of natural elements, being primarily the distinctive incised geomorphology and the indigenous vegetation within the valley. This also spreads up onto the terrace in places, extending the vegetation’s influence as a coherent landscape feature.
	Legibility/Expressiveness	Incised river valley and escarpments along with the indigenous vegetation contrasts with the surrounding simple pastoral land cover causing the Papanui (meaning “big flat”) Reserve to be clearly legible in its rural context. Incised valley clearly expressive of the erosive processes that have occurred over time and its mudstone derivation.
	Transient	Transient value related to fauna of the forest, as well as the changing presence of waterfalls caused by flood waters corroding the soft rock.
	Aesthetic	Scenic quality of the incised stream valley with large of tracts indigenous vegetation create a sense of cohesion, while the visually striking exposed mudstone (papa) cliffs contribute to the vividness of the landscape.

	Naturalness	High degree of naturalness resulting from the combination of erosion processes and extent of indigenous vegetation.
Associational	Historical	Early settlers named the reserve as when they saw the surrounding cliffs it reminded them of the dress circle in an opera house.
	Recreation	A popular swimming and picnic spot for over 100 years. There is also a walking track and is a known geocache site.
	Tangata Whenua	The Dress Circle is an area of interest for Ngāti Hauti. In a general sense, Tikanga Māori Principles such as Kaitiakitanga (Guardianship), Wairua (Well-being) and Mauri (Life force) are important. Ngāti Kauwhata state that the Iwi have identified historical interest in this area, noting additional interests that remain in close proximity.
	Shared/Recognised	Early settlers gave the area its name because when they saw the surrounding cliffs they were reminded of the dress circle in an opera house. It has featured in AA magazines, is mentioned on the New Zealand Cycle Trail website, is on the Manawatū Scenic Route and is widely known.
Summary of Key Characteristics		High degree of perceived naturalness derived from the expressiveness of the formative processes of the Mangawharariki River incised landform, which contrasts with the surrounding agricultural land use. Areas of indigenous riparian vegetation contribute to the ecological and aesthetic values. An existing high voltage transmission line passes across the Mangawharariki River 250m west of the Dress Circle ONF.
Potential Issues		The steeply incised landform valley system filled with native vegetation defines the feature and contributes to the perceived naturalness, aesthetic values and associational factors. It would assist protection of the key characteristics if the following were to occur: <ul style="list-style-type: none"> discourage loss of native vegetation; discourage establishment of exotic vegetation; discourage adverse effects on cultural values; discourage earthworks; and restrict built development.

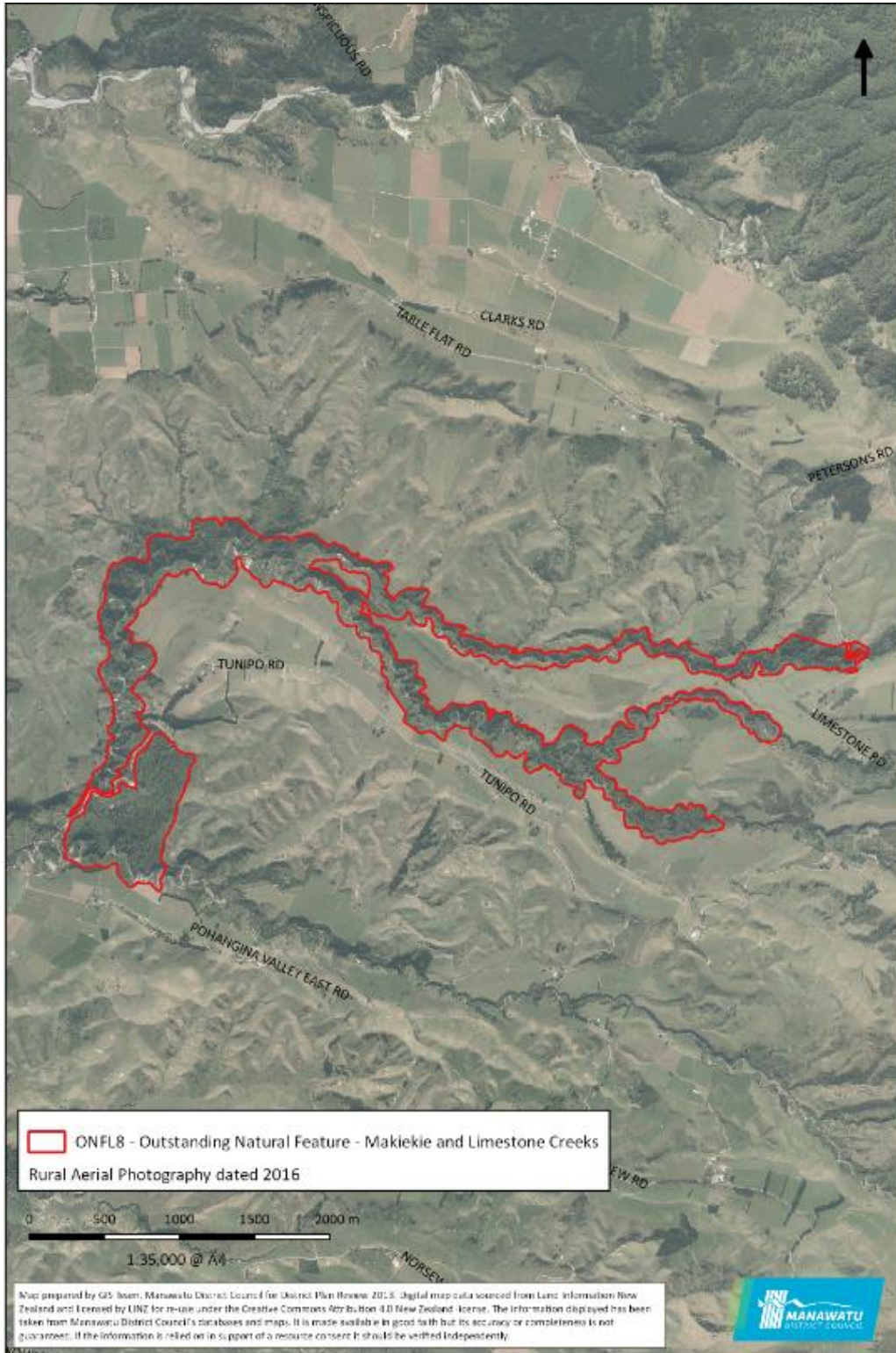
OUTSTANDING NATURAL FEATURE 7 – MANGOIRA AND MANGAHUIA STREAM



Characteristics and Values of Outstanding Natural Landscape		
Natural Science	Geological/ Geomorphological	Deeply incised stream valleys with steep sided faces and dense vegetation. Representative of the erosion processes of the water catchment area which has cut through soft marine sedimentary layers.
	Biological/Ecological	<p>Indigenous vegetation enhances ecological value, mauri and water quality. Mangahua Stream is home to several unique and threatened native fish species, including the rare giant kōkopu, banded kōkopu, longfin and shortfin eels, īnanga, and koura.</p> <p>Vegetation is composed of mixed podocarp-broadleaf forest and scrubland, as well as some sedgeland. Red beech is found along the ridges and represents the main type of tree species. Research completed as part of the 1997 Weed Survey of Scenic Reserves found that there is some evidence of browsing but there is little sign of pressure from pest animals, and a good covering of seedlings is present on the forest floor.</p>
	Hydrological	Riparian vegetation maintains water quality from agricultural land runoff and contributes to ecosystem health and movement of mauri through the area.
Perceptual	Memorability	Contrasts to the modified pastoral landscape and is more dramatic than surrounding folded/flattened terrace landforms.
	Legibility/Expressiveness	Highly legible landform features which are expressive of the erosion processes of the stream demonstrated by the steeply incised escarpment.
	Transient	Low transient value, although fauna and likely microclimatic conditions in gullies.
	Aesthetic	Extensive indigenous vegetation throughout the valley system has a high degree of coherence and reinforces its vividness both as a feature and in contrast to the surrounding modified landscape. The combination of indigenous vegetation cover with the incised valley system has significance within the district through their rarity.
	Naturalness	Whilst the area is surrounded by a largely modified pastoral landscape, a high degree of perceived naturalness within the gullies is exhibited by the extent of indigenous vegetation remnants and regeneration.
Associational	Historical	Unknown.

	Recreation	While there are DOC tramping tracks further east upstream, outside of the boundaries of the ONF, there are none within the ONF, limiting public access. Mangoira Stream has been known to be used for riverbed four-wheel driving.
	Tangata Whenua	The streams are acknowledged as an area of interest for Ngāti Hauiti. Mangahua means “stream of the huia,” a bird once abundant in the area, while Mangoira translates to “essence of a shark”. In a general sense, Tikanga Māori Principles such as Kaitiakitanga (Guardianship), Wairua (Well-being) and Mauri (Life force) are important. Ngāti Kauwhata identify this area as being within the Ōroua River Catchment, of which Ngāti Kauwhata has interest.
	Shared/Recognised	Unknown.
Summary of Key Characteristics		High degree of perceived naturalness derived from the expressiveness of the formative processes of the two incised stream corridors which contrasts with the surrounding terrace landform and agricultural land use. Areas of indigenous gully vegetation contribute to the ecological, aesthetic and water quality values.
Potential Issues		The incised valley systems filled with native vegetation define the feature and contribute to the perceived naturalness, aesthetic values and associational factors. It would assist protection of the key characteristics if the following was to occur: <ul style="list-style-type: none"> • discourage the loss of native vegetation; • discourage the establishment of exotic vegetation; • discourage adverse effects on cultural values; • discourage earthworks; and • restrict built development.

OUTSTANDING NATURAL FEATURE 8 – MAKIEKIE AND LIMESTONE CREEKS



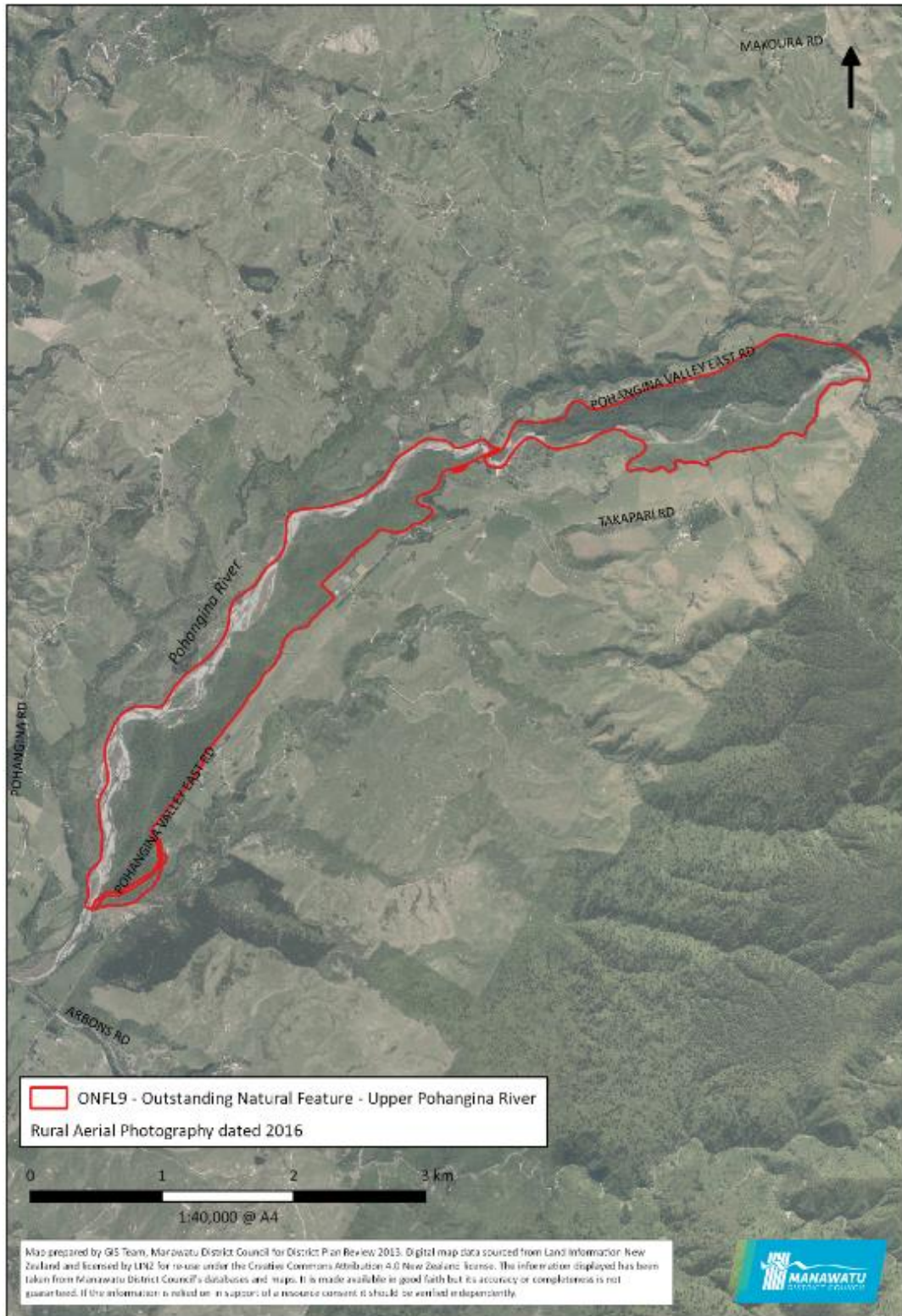
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Characteristics and Values of Outstanding Natural Landscape		
Natural Science	Geological/ Geomorphological	Erosion process of the stream is evident through the creation of steeply incised stream valleys, which are representative of this feature type characteristic of the local area. Relatively small scale when compared to other river valleys within the District which makes them an unusual and unique feature. Strong contrast to the terrace form of the surrounding agricultural land use. This area contains the Glow Worm Caves which are listed in the District Plan (Operative 2002), Appendix 1C (OF2).
	Biological/Ecological	Indigenous forest remnants in Makiekie Reserve and on the valley sides, which enhances ecological value, increasing ecosystem health and mauri, while also creating a habitat for indigenous and exotic birdlife. The forest includes an interesting mix of conifer and broad-leaf species, as well as beech forest. In the Makiekie Scenic Reserve large rimu and tōtara are plentiful. There are also mature red beech trees up to 35m tall in some places, as well as younger, regenerated stands that have come up following wind damage. Horizons Regional Council recommends Makiekie Creek for trout fishery value in the Manawatū-Wanganui Region. Makiekie Creek was also included in a published research article by Michael K. Joy and Russell G. Death who undertook a biological assessment of rivers in the Manawatū-Wanganui region investing macroinvertebrates.
	Hydrological	This ecological system has a catchment which includes the Ruahine Ranges as well as a wide agricultural area and this contributes to the maintenance of water quality and mauri before reaching the Pōhangina River then Manawatū River.
Perceptual	Memorability	Memorable due to the contrast between the vegetated hillsides and incised gullies, and the surrounding agricultural land use and terrace landform.
	Legibility/Expressiveness	Expressive of the formative geomorphological processes.
	Transient	Stream level changes reflective of headwater rains. Deep gorges likely to have some impact on microclimatic conditions, such as creation of mist on colder mornings. Transient value related to fauna of the forest.

	Aesthetic	Extensive indigenous vegetation throughout the valley system has a high degree of coherence and reinforces its vividness both as a feature and in contrast to the surrounding modified landscape which results in a high scenic quality. The combination of indigenous vegetation cover with the incised valley system has significance within the District through their rarity and is an excellent example of indigenous lowland forest.
	Naturalness	High degree of perceived naturalness exhibited by the formative process and indigenous vegetation cover.
Associational	Historical	Unknown.
	Recreation	Forms part of a tramping route, Deerford Track to Makiekie Creek which is used for both walking and hunting.
	Tangata Whenua	The Makiekie and Limestone Creeks are an area of interest to Rangitāne o Manawatū, and Ngāti Hauiti. Ngāti Kahungunu are also acknowledged in relation to the area under the relevant settlements and Ōroua Declaration. Makiekie Creek was also a source of vivianite, a mineral that was used as a blue pigment for the face painting of warriors for battle. This was the only source for Rangitāne o Manawatū and so was of military significance. In a general sense, Tikanga Māori Principles such as Kaitiakitanga (Guardianship), Wairua (Well-being) and Mauri (Life force) are important. Ngāti Kauwhata has stated that as an area of which Ngāti Kauwhata has interest
	Shared/Recognised	Sixtus Lodge located just east of ONF, is used by school groups who often use the local tracks for outdoor recreation. While Glow Worm caves located under Limestone Road are at the eastern edge of ONF. Includes the Makiekie Scenic Reserve, recognised for its ecological and scenic values, which is also located along the Manawatū Scenic Route. Recognised on the AA Traveller website.
Summary of Key Characteristics		High degree of perceived naturalness derived from the expressiveness of the formative processes and extent of indigenous vegetation which contrasts with the surrounding terrace landform and agricultural land use. Areas of indigenous riparian vegetation contribute to the ecological and water quality values.

Potential Issues	<p>The incised valley system with native vegetation defines the feature and contributes to the perceived naturalness, aesthetic values and associational factors. It would assist protection of the key characteristics if the following were to occur:</p> <ul style="list-style-type: none"> • discourage the loss of native vegetation; • discourage the establishment of exotic vegetation; • discourage adverse effects on cultural values; • discourage earthworks; and • restrict built development.
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OUTSTANDING NATURAL FEATURE 9 – UPPER PŌHANGINA RIVER



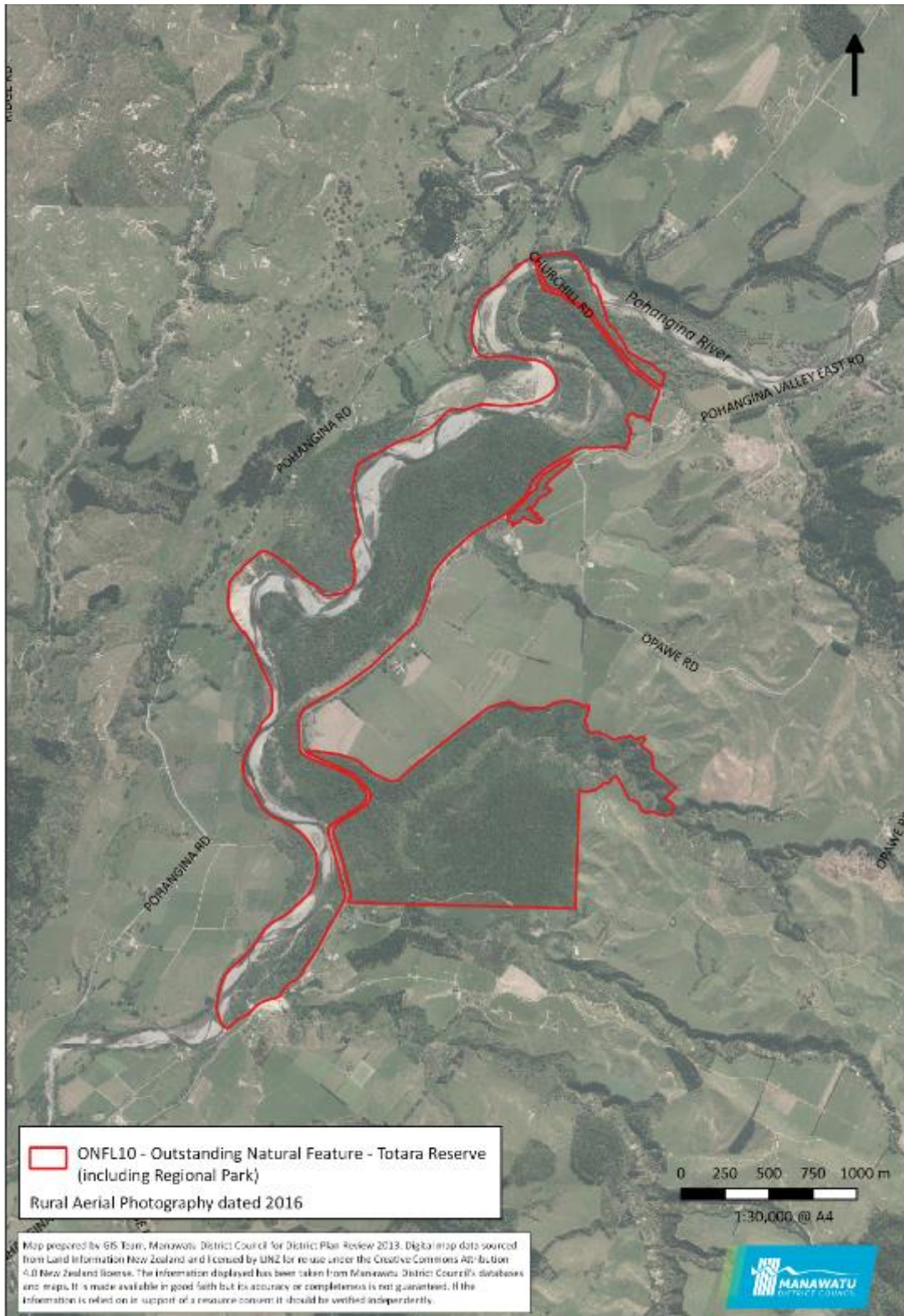
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Characteristics and Values of Outstanding Natural Landscape		
Natural Science	Geological/ Geomorphological	Erosion process of the river is evident through the creation of a river valley and terrace.
	Biological/Ecological	Large stretch of indigenous flora and fauna habitat representative of what would have once been throughout the Pōhangina Valley and reflective of the area’s mauri. Vegetation is dominated by kahikatea forest in the wetter areas and tōtara forest in the drier areas. In parts these kahikatea are mature and large in size, with kahikatea of this size being rare. The Pōhangina River is considered to have a valuable trout fishery resource as well as a number of native fish species including bullies, kōkopu, brown mudfish and eels. Pōhangina River provides educational opportunities, including the study of macroinvertebrate and physiochemical river composition studies (such an investigation by students at Piripiri was led by freshwater ecology scientist Dr Alex James through the PTC Trust).
	Hydrological	Indigenous forest cover protects water quality, enhancing ecosystem health and mauri of the water. The Pōhangina River is one of the Manawatū River’s main tributaries. The river originates in the western foothills of the Ruahine Range and flows close to the range until it merges with the Manawatū River at the western end of Te Āpiti.
Perceptual	Memorability	Area has high memorability as a large stand of dense indigenous vegetation adjacent to the braided Pōhangina River. Bold form of the Podocarp trees rising up out of the native bush is striking.
	Legibility/Expressiveness	The extent of indigenous vegetation is sufficient to be clearly legible as a remnant forest area typical of that which would have once been predominant throughout the Pōhangina Valley.
	Transient	Fluctuations in river level and some flooding is likely. Transient values related to fauna of the forest. Pōhangina Valley tends to get a lot of cloud and has its own microclimate, being close to the foothills of the Ruahine Range, thus, the very climate itself gives a separate identity to the area.
	Aesthetic	High aesthetic appeal due to the extent of unmodified indigenous vegetation along the margin of the river which provides a high sense of coherence and reinforces its vividness both as a feature and in

		contrast to the surrounding modified landscape which results in a high scenic quality.
	Naturalness	High degree of perceived naturalness within the defined ONF exhibited by the vegetation cover which typically extends from the river’s edge to the top of the first river escarpment.
Associational	Historical	Surrounding area was cleared for farming and timber, meaning this area has value in being a remnant of what vegetation once covered the region.
	Recreation	Public walking tracks and camping grounds contained within the reserve. Within the ONF there is the DOC Pōhangina Base and Piripiri campsites. There is good trout fishing and hunting upstream of the Piripiri campsite. A scenic four-wheel drive opportunity is also available on the nearby Takapari Road. At the southern end of the ONF there is the DOC ‘Kahikatea Walk’ which provides an easy walking opportunity, that is suitable for both young and old, to experience the broad-leaf forest.
	Tangata Whenua	Under the Settlement Act, the Upper Pōhangina River is an area of interest for Rangitāne o Manawatū. Ngāti Kahungunu are also acknowledged under the relevant Settlement Act and Ōroua Declaration in relation to the area. During the 19th century Māori occupation sites along the Pōhangina River were frequent. The river provided plentiful supplies of food sources (particularly eels) as well as easily navigable routes. Dense surrounding forest also supplied quantities of birds and berries. Rangitāne o Manawatū traditionally collected hīnau, rātā and hebe berries for food resources, along with other selected native trees. The Pōhangina River is of historical, cultural, spiritual and traditional significance to Rangitāne o Manawatū. Through Rangitāne o Manawatū traditions such as waiata, kōrero and whakairo, a battle occurred between Rangitāne o Manawatū and a neighbouring iwi who crossed the Ruahine Range via Te Ahu a Tūranga and entered the Pōhangina Valley. The battle was known as “Te Wai Whakatāne o Ngāti Kahungunu,” which translates to the battle title “the water where the blood of Ngāti Kahungunu was made to flow”. The area and river mean ‘ulcerated night’, ‘Pō’ meaning night and ‘hanga’ meaning ulcerated. This suggests that the valley had been a place where bloodshed had occurred between Rangitāne o Manawatū and their enemies. Thus, this was a place of darkness and there was a degree of fear attached to the area because of bloodshed. The second level of

		<p>meaning was the very ulcerated or dissected nature of the landscape itself, lots of little streams with valleys cutting down in to the area.</p> <p>Ngāti Kauwhata have stated this is an area of interest for Ngāti Kauwhata.</p>
	Shared/Recognised	The river runs along the Manawatū Scenic Route, which is an alternative to SH1 and allows travellers to discover stunning scenery.
Summary of Key Characteristics		<p>Landform with an extensive indigenous forest from the valley floor to the top of the river terrace. Composition of the vegetated escarpments adjacent to the watercourse hold high levels of perceived naturalness, which contrasts with the surrounding productive farmland. Pōhangina Valley East Road passes through the area, as does have a pole transmission line.</p>
Potential Issues		<p>The extent of native vegetation and enclosure within the valley defines the feature and contributes to the perceived naturalness, aesthetic values and associational factors. It would assist protection of the key characteristics if the following were to occur:</p> <ul style="list-style-type: none"> • discourage the loss of native vegetation; • discourage the establishment of exotic vegetation; • discourage adverse effects on cultural values; • discourage earthworks; and • restrict built development.

OUTSTANDING NATURAL FEATURE 10 – TŌTARA RESERVE



Characteristics and Values of Outstanding Natural Landscape		
Natural Science	Geological/ Geomorphological	Erosion process of the river is evident through the creation of a river valley and terrace which scours the adjacent cliffs. The cliffs adjacent to the Pōhangina River in the Tōtara Reserve are made of ancient, weakly consolidated, weathered river gravels with sparse consolidated silt (Turitea Formation, about a million years old).
	Biological/Ecological	<p>Large stretch of indigenous flora and fauna habitat representative of what would have once been throughout the Pōhangina Valley. The reserve is a much-prized area of bush with podocarp forest covering hills and valleys and is a rare remnant of lowland forest in the Manawatū District, reflecting the mauri of this area. It is a healthy ecosystem and is considered the finest forest remnant in the Manawatū Ecological District (Manawatū Plains Ecological District – PNA Report – June 1995). It is a valuable ecosystem habitat for many indigenous species of plant of bird species. Predominant trees include tōtara, mātai, rimu and kahikatea. Specifically, vegetation is dominated by kahikatea forest in the wetter areas and tōtara forest in the drier areas. There are also some black beech trees and tree ferns.</p> <p>Native birds in the reserve include tui, fantail, waxeye, morepork, bellbird, kingfisher, and kererū. The Pōhangina River is considered to have a valuable trout fishery resource as well as a number of native fish species including bullies, kōkopu, brown mudfish and eels. The diverse ecology of the area provides an educational opportunity for nature studies.</p>
	Hydrological	Pōhangina River flows along the western edge of Tōtara Reserve Regional Park and is prone to flooding. Flooding was traditionally celebrated by Māori as a means of spreading mauri through the landscape. The river has a low gradient in the reserve and a gentle flow which travels through a series of pools and riffles on a fine gravel bed.
Perceptual	Memorability	Area has high memorability as a large stand of mature dense indigenous vegetation adjacent to the braided Pōhangina River. Bold form of the mature Podocarp trees rising up out of the native bush is striking.
	Legibility/Expressiveness	The extent of indigenous vegetation is sufficient to be clearly legible as a remnant forest area typical of that

		which would have once been predominant throughout the Pōhangina Valley.
	Transient	Fluctuation in river level and some flooding is likely. Transient values related to fauna of the forest. Pōhangina Valley tends to get a lot of cloud and has its own microclimate, being close to the foothills of the Ruahine Range. For this reason, the very climate itself gives a separate identity to the area.
	Aesthetic	High aesthetic appeal due to the extent of unmodified indigenous vegetation along the margin of the river which provides a high sense of coherence and reinforces its vividness both as a feature and in contrast to the surrounding modified landscape which results in a high scenic quality.
	Naturalness	High degree of degree of perceived naturalness exhibited by the vegetation cover which typically extends from the river's edge to the top of the first river escarpment.
Associational	Historical	Surrounding area was cleared for farming and timber in the late 1860s, meaning this reserve has value in being a remnant of vegetation that once covered the region. In 1886 the reserve was set aside for state forest purposes, being originally preserved for its timber. When state forest status was cancelled in 1946 the land was declared a recreation reserve and was prized for its scenic values at a time when lowland forest elsewhere in the Manawatū had all but vanished. In 1975 this status was changed from recreation to scenic. It is a popular camping area. The first camping in the area took place in the 1920s at what was originally called the Pōhangina Boys' Camp. Established by the YMCA, the site is now known as Camp Rangi Woods after YMCA general secretary Charles "Rangi" Woods and is located at the northern end of the reserve. Today Tōtara Reserve is co-governed by Rangitāne o Manawatū and HRC.
	Recreation	Public walking tracks, picnic areas, fishing, swimming holes, and camping grounds are contained within the reserve. One of these walks includes the 'Fern Walk', which was developed to encourage Manawatū residents and visitors to the Region to venture into the outdoors. Maintenance and improvement of these facilities should be encouraged.
	Tangata Whenua	Under the Settlement Act, Tōtara Reserve is an area of interest for Rangitāne o Manawatū. During the 19th century Māori occupation sites along the

		<p>Pōhangina River were frequent. The river provided plentiful supplies of food sources (particularly eels) as well as easily navigable routes. Dense surrounding forest also supplied quantities of birds and berries. Rangitāne o Manawatū traditionally collected hīnau, rātā and hebe berries for food resources, along with other selected native trees. The area was also known for a specific type of tōtara which could only be found in this place. The trees were used by Rangitāne o Manawatū to create waka and were prized for their strength, length, and straightness of bough.</p> <p>The Pōhangina River is of historical, cultural, spiritual and traditional significance to Rangitāne o Manawatū. Through Rangitāne o Manawatū traditions such as waiata, kōrero and whakairo. A battle occurred between Rangitāne o Manawatū and a neighbouring iwi who crossed the Ruahine Range via Te Ahu a Tūranga and entered the Pōhangina Valley. The battle was known as “Te Wai Whakatāne o Ngāti Kahungunu,” which translates to the battle title “the water where the blood of Ngāti Kahungunu was made to flow.” The area and river mean ‘ulcerated night’, ‘Pō’ meaning night and ‘hanga’ meaning ulcerated. This suggests that the valley had been a place where bloodshed had occurred between Rangitāne o Manawatū and their enemies. Thus, this was a place of darkness and there was a degree of fear attached to the area because of bloodshed. The second level of meaning was the very ulcerated or dissected nature of the landscape itself, lots of little streams with valleys cutting down in to the area.</p> <p>Ngāti Kauwhata have identified a tribal interest in this area.</p>
	Shared/Recognised	<p>Popular camping ground easily accessible from Palmerston North and Manawatū Districts. Administered by Horizons as a Regional Park. Council interest in Tōtara Reserve is due to the ecological significance and recreational importance of the area. It is used by a wide range of visitors from Feilding and Palmerston North including school groups, scouts, guides and army platoons, as well as casual visitors. The reserve is also along the Manawatū Scenic Route, which is an alternative to SH1 and allows travellers to discover stunning scenery. The Tōtara Reserve Management Plan is in place and provisions should allow for implementation of this despite its identification as an ONF.</p>
Summary of Key Characteristics		Coherence of indigenous vegetation cover of the landform from the valley floor to the top of the river

	<p>terrace. High level of perceived naturalness due to the composition of the vegetated escarpments adjacent to the watercourse which contrast with the surrounding productive farmland. Popular camping and visitor area. A natural feature that is easily accessible by the public thereby enhancing public appreciation of natural features. Maintenance of tracks and public facilities should be facilitated and not discouraged through the planning process.</p>
<p>Potential Issues</p>	<p>The valley floor and terraces filled with native vegetation defines the feature and contributes to the perceived naturalness, aesthetic values and associational recreational factors. It would assist protection of the key characteristics if the following were to occur:</p> <ul style="list-style-type: none"> • discourage the loss of native vegetation; • discourage the establishment of exotic vegetation; • discourage adverse effects on cultural values; • discourage earthworks; and • restrict built development.

OUTSTANDING NATURAL FEATURE 11 – RANGIWĀHIA (INCLUDING SCENIC RESERVE)



Version 10: 14 January 2019

Characteristics and Values of Outstanding Natural Landscape		
Natural Science	Geological/ Geomorphological	Representative of a typical part of the rolling to steep hill country of the upper Ōroua River Valley, with the flat valley of Rangiwāhia Township to the north.
	Biological/Ecological	Indigenous forest remnant of over 50ha in the Rangiwāhia Scenic Reserve with very high ecological values and mauri, and represents the historic land cover of the area. Reserve provides habitat for indigenous and exotic birdlife. Untouched, virgin podocarp forest with mature species including rimu, miro, mātai, maire, kahikatea, rewarewa and several species of rātā. This diversity of large forest species illustrates the reserve’s healthy ecosystem and make it a rare feature in the largely deforested surrounding landscape, as well as a unique area for research and education.
	Hydrological	Uniquely, this ecological system was set aside as a water catchment for the growing town in Rangiwāhia by the early settlers. Surrounded by agricultural land use, with waters flowing into the Kiwitea Stream to the north and the Ōroua River to the south, with both joining together at Feilding.
Perceptual	Memorability	Memorable due to the strong contrast between the dense and tall original indigenous vegetated reserve and the surrounding agricultural land use.
	Legibility/Expressiveness	Expressive of the indigenous vegetation that once covered the entire district.
	Transient	Transient value related to fauna of the forest.
	Aesthetic	Extensive indigenous vegetation throughout the reserve has a high degree of coherence and reinforces its vividness both as a feature and in contrast to the surrounding modified landscape which results in a high scenic quality. The quality of indigenous vegetation cover has significance within the district through their rarity and is an excellent example of indigenous lowland forest.
	Naturalness	High degree of naturalness exhibited by the indigenous vegetation cover.
Associational	Historical	Set aside as a water catchment for supplying the original village of Rangiwāhia around 1860.

	Recreation	Walking tracks marked through the reserve for local recreation. It is also a known geocache site.
	Tangata Whenua	The reserve is an area of interest for Rangitāne o Manawatū, and Ngāti Hauiti. In a general sense, Tikanga Māori Principles such as Kaitiakitanga (Guardianship), Wairua (Well-being) and Mauri (Life force) are important. Ngāti Kauwhata have identified a tribal interest in this area.
	Shared/Recognised	Focus of tracking and tree naming work by keen locals and supported by a grant from the Fonterra Grass Roots Fund.
Summary of Key Characteristics		High degree of perceived naturalness derived from extent of indigenous vegetation which contrasts with the surrounding agricultural land use. The indigenous vegetation contributes to the ecological and water quality values.
Potential Issues		The extensive and continuous expanse of native vegetation defines the feature and contributes to the perceived naturalness, aesthetic values and associational factors. It would assist protection of the key characteristics if the following were to occur: <ul style="list-style-type: none"> • discourage the loss of native vegetation; • discourage the establishment of exotic vegetation; • discourage adverse effects on cultural values; • discourage earthworks; and • restrict built development.

OUTSTANDING NATURAL FEATURE 12 – NITSCHKE/GORTON'S BUSH



Version 10: 14 January 2019

Characteristics and Values of Outstanding Natural Landscape		
Natural Science	Geological/ Geomorphological	Representative of a deeply incised stream valley with steep sided faces and dense native vegetation which is characteristic of this area. Expressive of the erosion processes of the water catchment area which has cut through soft marine sedimentary layers.
	Biological/Ecological	Indigenous vegetation enhances ecological value, biodiversity, ecosystem functionality, and mauri. The feature is representative of land cover that was once common in the area but is no longer, making it a rare feature. It was a Recommended Area for Protection (RAP) in DOC's PNAP survey report (1995) and is listed in the District Plan (Operative 2002 - Appendix 1B) as Natural Area SA40. As part of DOC's survey research was undertaken on the vascular plants present in the area. The plant habitats range from very dry ridges through to dripping wet mudstone banks, and the vegetation from kānuka scrub and kānuka forest, with tōtara and kōwhai to patches of tall tawa and rimu.
	Hydrological	Riparian vegetation improves mauri and water quality from agricultural land runoff, adding to ecosystem health. Tributary to the Waituna Stream, which feeds into the Rangitīkei River.
Perceptual	Memorability	Memorable feature due to the steeply incised gully spur terrain with its dense dark native vegetation which covers these gullies and their contrast with the modified folded/flattened landforms of the pastoral surrounds.
	Legibility/Expressiveness	A highly legible small scale topographical feature set within a simple landform of gently rolling pasture. The steeply incised gullies contrast with the relatively flat terrain of the surrounding landform. This contrast is accentuated by the variance in colour form and texture between the dark native vegetation within the gully and the light pasture grass of the surrounding landforms.
	Transient	Strong transient values are not readily apparent, although likely fauna values and microclimatic conditions in gullies.
	Aesthetic	Extensive indigenous vegetation throughout the valley system has a high degree of legibility and coherence which reinforces its vividness both as a feature and in contrast to the surrounding modified landscape. The combination of indigenous vegetation

		cover with the incised valley system has significant aesthetic appeal within the district through their rarity.
	Naturalness	Whilst the area is surrounded by a largely modified pastoral landscape, there is a high degree of naturalness within the gullies due to their containment and the extent of indigenous vegetation remnants.
Associational	Historical	Old tōtara stumps indicate past logging.
	Recreation	Limited opportunities for the public to experience this feature.
	Tangata Whenua	Under the relevant settlements the bush is an area of interest for both Ngāti Apa and Rangitāne o Manawatū. Ngāti Apa extensively used Waituna Stream for its plentiful fishing resources and built pa tuna or eel weirs in the stream. In a general sense, Tikanga Māori Principles such as Kaitiakitanga (Guardianship), Wairua (Well-being) and Mauri (Life force) are important. Ngāti Kauwhata assert that they have identified an interest in this area.
	Shared/Recognised	Managed as a QEII National Trust property, the 200ha Nitschke Bush is recognised for its botanic values, although there remain ongoing management challenges due to its relative smallness and isolation and proximity to productive agricultural activities and potential weed sources. Large remnants of forest such as Nitschke’s Bush are rare on the Manawatū Plains, especially those with some flat terrain, and this area of bush gives a glimpse into the District’s pre-agricultural landscapes.
Summary of Key Characteristics		High degree of perceived naturalness derived from the combination of vegetation and expressiveness of the landform’s formative erosion processes. This feature stands out due to the contrast with the flatness of the surrounding agricultural land use. Areas of indigenous riparian vegetation within the gully systems contribute to the botanical, ecological and aesthetic values.
Potential Issues		The incised valley system with native vegetation defines the feature and contributes to the perceived naturalness, aesthetic values and associational factors. It would assist protection of the key characteristics if the following were to occur:

	<ul style="list-style-type: none">• discourage the loss of native vegetation;• discourage the establishment of exotic vegetation;• discourage adverse effects on cultural values;• discourage earthworks; and• restrict built development.
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OUTSTANDING NATURAL FEATURE 13 – PUKEPUKE LAGOON



Version 10: 14 January 2019

Characteristics and Values of Outstanding Natural Landscape

<p>Natural Science</p>	<p>Geological/ Geomorphological</p>	<p>The formation of Pukepuke Lagoon is closely associated with the development of the Manawatū dune field, which forms part of New Zealand’s largest dune field. Pukepuke Lagoon is a dune wetland and, therefore, is representative of one of New Zealand’s most threatened and rare ecosystem types in New Zealand. The dune lake is a result of the formation of sand dunes along the coast near Tangimoana. Pukepuke Lagoon lies at the margin of a belt of stable sand dunes. The lagoon previously occupied a notably larger area to the northwest of its current, relatively recent location. Only a few dune lakes remain in the district, with Pukepuke Lagoon being one of two most notable ones. The lagoon is shallow and migrated eastward with sand movement. The sand dunes have now stabilised, and the shape and location of the lagoon is unlikely to change dramatically. The composition of the lake bed is sand and is likely underlain by silt/iron pan, however there are also areas of sandy gravel.</p>
	<p>Biological/Ecological</p>	<p>It is an important, diverse wetland habitat for over sixty bird species, including both native and introduced birds. A number of species rarely found elsewhere in the Region live at Pukepuke Lagoon, including the North Island fernbird, spotless crane, marsh crane, New Zealand shoveler and New Zealand scaup. The royal spoonbill and variable oystercatcher visit the wetland occasionally. Two rare Nationally Threatened and globally threatened species, the New Zealand dabchick and the Australasian Bittern, are also found here. Other birds reported seen at the lagoon include black swans, shags and New Zealand falcon. The New Zealand Ecological Society journal published an article on the ‘Use of Pukepuke Lagoon by Waterfowl’. The study looked at waterfowl population studies at the lagoon, which was the first such study in New Zealand at the time. The lagoon also has a large, scientifically and biologically important population of short finned eel. Long finned eel, brown mudfish and īnanga are also present. Weir systems have been improved to enable native fish species to swim into the lagoon, including eels.</p> <p>Three wetland herbs which are rare elsewhere in the Region have been found at Pukepuke Lagoon. These are <i>Hydrocotyle pterocarpa</i>, <i>Zannichellia palustris</i> and dwarf musk. The New Zealand Ecological Society journal also published an article on ‘The History and Present Vegetation of the Macrophyte Swamp at</p>

		<p>Pukepuke Lagoon’. Other articles published in the journal on studies undertaken on Pukepuke Lagoon include ferret biology, and the activity and dispersal of pūkeko.</p> <p>The New Zealand Wildlife Service researched waterfowl at Pukepuke until the late 1960s. In 2015, freshwater ecologists from NIWA carried out research on Pukepuke Lagoon, where they found plants growing across the bottom of the lagoon, which was predominately native, and is a good indicator of the ecology of the lagoon and a healthy ecosystem/ecosystem functioning. The ecologists were happy with the results and stated that the lagoon still held high biodiversity values. The same survey was carried out in 2001 and the vegetation results were almost the same, another good sign. They also compared their results to research conducted in 1978 and concluded that there has been no significant change in vegetation status or condition in those 25 years between the studies.</p>
	Hydrological	<p>The current lagoon’s catchment area of approximately 2,300ha consists of the upper Boss Stream catchment and the northern part of the original lagoon catchment. It is located four kilometres south of the lower Rangitikei River and approximately four kilometres from the coast. The lagoon is representative of the largest in a series of coastal lagoons, making it significant. Sand dunes prevent inland water runoff escaping out to sea. It contains a shallow lake up to two metres deep, drying out occasionally in summer droughts. Water quality and quantity is affected by surrounding farming activities. To prevent flooding of adjacent farmland, a sectioned weir has been constructed across the lagoon outlet. This helps to maintain water levels in the summer and minimises flooding in the winter. The coastal lake systems in the area connect with the ocean through Kaikōkopu Stream and the stream connected to Pukepuke Lagoon crossing the coastal margin. The care and protection of these coastal margins is integral to the health of the fisheries at the coastal margin itself and further inland. The diversity and health of the vegetation in the lagoon indicates that Pukepuke Lagoon’s water quality is high and that it is in very good condition with a healthy ecosystem.</p>
Perceptual	Memorability	<p>Memorable feature due to the expansive water of the lagoon and the dense vegetation which surrounds the water and contrasts with the textures and colours of the surrounding pastoral and plantation landscape.</p>

	Legibility/Expressiveness	Expressive of the wetland habitat that once covered a much larger area in the district. A highly legible small scale landscape feature set within a mosaic of paddocks and plantation forestry. This contrast is accentuated by the variance in texture and seasonal colour between the surrounding landforms.
	Transient	Migratory birds and seasonal colour changes and growth pattern with plants. Changing water levels with the seasons.
	Aesthetic	Expansive water body and intactness of remnant surrounding indigenous vegetation has a high degree of legibility and coherence which reinforces its vividness as a rare feature and provides a contrast to the surrounding modified landscape.
	Naturalness	Whilst the area is surrounded by a largely modified pastoral landscape, there is a high degree of naturalness within the lagoon area due to the extent of the lake and the indigenous vegetation remnants.
Associational	Historical	<p>Over the last century the area has been drained, contributing to the reduction of the wetland's size. When the Crown acquired the Pukepuke Reserve in the 1950s, the former Māori owners of the reserve negotiated the retention of fishing rights within the lagoon, with the agreement held under a deed of trust. That agreement is still honoured today, and the lagoon continues to be used by Parewanui hapū who make their journey to the lagoon to gather eels.</p> <p>In 1968, Pukepuke Lagoon became a wildlife management reserve through the Ministry of Internal Affairs, and was managed by the Wildlife Division (Wildlife Service). The Wildlife Service wrote a management plan for the lagoon in 1977, which was later expanded on in 1987 and included objectives and policies for Pukepuke Lagoon. In 1987, with the formation of DOC, management shifted from the Wildlife Division to DOC, renaming the lagoon from Pukepuke Wildlife Reserve to Pukepuke Lagoon Conservation Area.</p>
	Recreation	Pukepuke Lagoon House is available for accommodation for those visiting the site. There are also bird hides for viewing birds and wildlife watching, as well as a short walkway which includes a boardwalk. Gamebird hunting ballots are held for duck shooting on the lagoon. Access has remained relatively restricted, which has been thought to have

		assisted in the lagoon retaining its relatively good health and diversity.
	Tangata Whenua	<p>Under the relevant settlements the lagoon is an area of interest and statutory acknowledgement area for both Ngāti Apa and Rangitāne o Manawatū.</p> <p>The lagoon provided resources such as harakeke, īnanga, eels and birds. Land Court records pertaining to the Hīmatangi Block reveal that the area was an important source of eel, fern root, kōkopu, kōkō (tūi), kererū and kiekie. Numerous cultivations were situated along the coast, particularly Hīmatangi. A variety of native and migrating birds were located in the wetlands, lagoons, lakes and swamps at Hīmatangi and Pukepuke. Rangitāne o Manawatū oral histories record a number of battles occurring in the vicinity and over the lagoon.</p> <p>Pukepuke lagoon is within the domain of Ngāti Kauae of Ngāti Apa and Ngāti Tauira. It formed one of a chain of defensive wetland and lake based pā starting with Te Awamate north of Rangitīkei, to Te Awahou on the Rangitīkei River, to Pukepuke, to Omanuka, to Kaikokopu and to Koputara. In particular, Pukepuke belonged to the Ngā Potiki and Ngāti Rangiwaho sections of Ngāti Tauira. The fortified pā at Pukepuke was situated on an island in the lake. Use of the lake was often seasonal, but at times the hapū lived here more permanently. Even after colonisation, the hapū visited the area seasonally to gather food. Significant battles and events occurred at the pā which have shaped Ngāti Apa’s history in the area.</p> <p>Lakes Ōmanuka, Pukepuke and Kaikōkopu provided valuable mahinga kai and an abundance of tuna (eel) to Rangitāne o Manawatū in the early times. They are the places where Rangitāne o Manawatū would stop overnight to replenish food stocks and to rest while travelling between Rangitīkei and Manawatū. Rangitāne o Manawatū own a property immediately adjacent to Pukepuke which they are undertaking reforestation of.</p> <p>Ngāti Kauwhata have identified interests in the Lagoon between State Highway One and the Manawatū Coastline.</p>
	Shared/Recognised	The lagoon has been described as one of the district’s natural treasures (recorded in a newspaper article in the 2002 ‘Manawatū District State of the Environment Report’) and is recognised under the MDC District Plan, Map fourteen, as a Conservation Area and under Appendix 1 – Heritage Places. Numerous articles on

		<p>research undertaken at Pukepuke Lagoon have been published in the New Zealand Ecological Society journal, as well as an article in the Notornis: Journal of the Ornithological Society of New Zealand and New Zealand Journal of Zoology. Research on Pukepuke Lagoon is included in the book by Joseph J. Kerekes titled 'Developments in Hydrobiology: Aquatic Birds in the Trophic Web of Lakes'. Pukepuke Lagoon is also recorded on the 'Protected Planet' website, which is managed by the United Nations Environment Conservation Monitoring Centre with support from IUCN and its World Commission on Protected Areas.</p>
<p>Summary of Key Characteristics</p>		<p>Pukepuke Lagoon has a range of scientific attributes (landforms, flora and fauna), along with significant historical, cultural and recreational values. High degree of natural character derived from the ecological health of the lagoon, including the presence of many bird species (some rare), healthy native vegetation, and good water quality. This feature stands out due to the modified surrounding agricultural and plantation forestry land use. Areas of riparian vegetation within the area and the open water of the lake contribute to the botanical, ecological and aesthetic values. High cultural associational values are recognised as part of the ONF values.</p>
<p>Potential Issues</p>		<p>The open water and remnant native vegetation defines the feature and contributes the natural character, perceived naturalness, aesthetic values, and associational factors. It would assist protection of the key characteristics if the following were to occur:</p> <ul style="list-style-type: none"> • discourage the loss of native vegetation; • discourage the establishment of exotic vegetation; • discourage adverse effects on cultural values; • discourage earthworks; and • restrict built development.

OUTSTANDING NATURAL FEATURE 14 – LAKE KAIKŌKOPU



Version 10: 14 January 2019

Characteristics and Values of Outstanding Natural Landscape		
Natural Science	Geological/ Geomorphological	Basin-type dune lake formed at the boundary of two dune forming phases. Shallow lake with a sandy bottom. Lake Kaikōkopu is a dune wetland and, therefore, is representative of one of New Zealand’s most threatened and rare ecosystem types in New Zealand.
	Biological/Ecological	Indigenous raupō and Carex secta comprise the majority of the lake’s vegetation, however crack willow is also present, which reduces the ecological integrity of the area. In recent times, Horizons (Manawatū-Wanganui) Regional Council has cited the importance of the connected Kaikōkopu Stream for native fish spawning, as well as for redfin bullies. Due to the migratory nature of these species the protection of the connecting water systems is important in retaining and further enhancing what remnant native fishery there is. The lake is an important breeding and feeding area for two rare, threatened species of waterfowl, the New Zealand dabchick and Australasian bittern. It is important for a number of other bird species, reflecting the lake’s ecosystem functionality and mauri.
	Hydrological	Shallow lake that has an inlet stream (Kaikōkopu Stream) and an outflow through the dunes to the nearby ocean. Seventy-five percent of the lake is open water. Due to Kaikōkopu Stream’s shallow depth and low flows for much of the summer period E. coli concentrations can breach contact recreation guidelines at times, especially following rainfall, reducing the mauri of the water. However, in 2016 the Kaikōkopu Stream Revitalisation Project was undertaken which included riparian planting. Since this project, the stream has performed better hydrologically and future research through fish surveys will be used to determine ecological conditions of the stream.
Perceptual	Memorability	Expansive water of the lake and riparian vegetation which surrounds the water contrasts with the textures and colours of the surrounding pastoral and plantation forestry landscape.
	Legibility/Expressiveness	Expressive of the wetland habitat that once covered a much larger area in the district.
	Transient	Migratory birds and seasonal colour changes and growth pattern with plants.

	Aesthetic	Significant aesthetic appeal as a result of the vividness of the lake, which provides a general pattern of land cover coherence, combined with the remnant riparian vegetation.
	Naturalness	A moderate degree of perceived naturalness exists within the lake due to the presence of the combination of indigenous vegetation and its open body of water. This character is however degraded by the extent of pastoral farming, drainage and plantation forestry which surrounds the area.
Associational	Historical	Some afforestation has been undertaken in the surrounding area, primarily for revenue purposes but also to stabilise the land.
	Recreation	Lake Kaikōkopu is privately-managed for gamebird hunting.
	Tangata Whenua	<p>Under the Settlement Act, Lake Kaikōkopu is an area of interest for Rangitāne o Manawatū and Ngāti Apa.</p> <p>Lake Kaikōkopu is located within Hīmatangi. The correct hyphenation of the word is said not to be Hima-tangi but Hī-matangi. “Hī” means to fish, and Matangi was a chief who lived in the mystic past in the Mōhaka District of the East Coast. The name also refers to Matangi capturing and slaying a taniwha in the area upon his settlement. Hīmatangi was famous for the abundance of birds and eels available from the wetlands and dune lakes in the area, namely one of these was Lake Kaikokopu. As a result of the early land transactions between the Crown and Ngāti Apa (North Island), access to many of the resources along the coastal area became very difficult and limited. Reserves were established around coastal lakes, including Lake Kaikōkopu, but no legal access was provided for these land areas. Traditionally, Lake Kaikōkopu was accessed mainly for tuna but also for kōkopu, mudfish, īnanga and kākahi (freshwater mussel).</p> <p>Lake Kaikokopu is a remnant of what was once a much larger wetland. Several Ngāti Kauae and Ngāti Taurira whānau have retained ownership in two nearby Māori freehold blocks that were once on the banks of the lake. Ancestors of these landowners thought that they owned the lake, and the lake was generally referred to as Hunia lake after a prominent Ngāti Apa and Ngāti Taurira leader named Kāwana Hunia. His son Wirihana was in the practice of leasing access to the lake for duck shooting well before it was</p>

		<p>understood that the legal ownership of the lake had actually been transferred to settlers. One of these blocks contains the location of the Te Oahura pā which belonged to Kawana Te Hakeke and his division of Ngāti Kauae. This pā was heavily utilised during seasonal eel fishing and the harvesting of other varieties of kai, including manu. Lake Kaikokopu is one of a series of Ngāti Kauae and Ngāti Taurira lakes and fortified pā sites extending from Te Awamate north of the Rangitīkei, to Te Awahou on the Rangitīkei River, to Omanuka, to Pukepuke, to Kaikokopu and as far south as Koputara.</p> <p>Lake Kaikōkopu provided valuable mahinga kai and an abundance of tuna (eels) to Rangitāne o Manawatū in the past. It was a place that Rangitāne o Manawatū would stop overnight to replenish food stocks and to rest while travelling between Rangitīkei and Manawatū.</p> <p>Ngāti Kauwhata have reported interests in this area.</p>
	Shared/Recognised	Listed as a heritage place under Appendix 1 of the MDC District Plan. Recognised as having outstanding landscape values and therefore recognised as an outstanding waterbody under the Draft NPS for Freshwater Management. The significant values of outstanding waterbodies are to be protected (National Policy Statement for Freshwater Management 2019 Policy 10).
Summary of Key Characteristics		Moderate degree of perceived naturalness derived from the presence of indigenous vegetation combined with the expressiveness of the lake which contrasts with the surrounding agricultural and plantation forestry land use. The rarity of this habitat type, its rare fauna species and high cultural associations, its remnant hydrological connectivity with Pukepuke Lagoon and other dune lakes along the coastal edge all elevate this remnant dune lake and wetland to be considered an Outstanding Natural Feature.
Potential Issues		<p>The open water and remnant native vegetation defines the feature and contributes to perceived naturalness, aesthetic values, and associational factors. It would assist preservation of the key characteristics if the following were to occur:</p> <ul style="list-style-type: none"> • restrict adverse effects on cultural values; • limit the loss of native vegetation; • limit the establishment of exotic vegetation; • limit earthworks and drainage; and

	<ul style="list-style-type: none">• limit built development.
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