OUTSTANDING NATURAL LANDSCAPES & FEATURES REVIEW

HOROWHENUA DISTRICT COUNCIL

August 2011

Prepared for Horowhenua District Council by Boffa Miskell Ltd

HOROWHENUA DISTRICT COUNCIL

Boffa Miskell
www.boffamiskell.co.nz

Interpretation of Lines on Maps

The ONFL areas are mapped to communicate their location and general spatial extent. However, landscapes are a continuum and the combination of landscape values that contribute to part of the landscape being identified as an ONFL do not conveniently stop and start at a particular points or boundaries. Consequently, the mapped lines should be considered as 'zones of transition' rather than precise lines that mark absolute points of change. However, for the practicality of the District Plan and landscape management a line does need to be defined.

The boundaries for this ONLF review are based on topographical features, aerial photographs and maps of various scales. While care has been taken to accurately map the lines some discrepancies may occur when integrated at at scales larger than 1: 50 000.

BML Reference W10046

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PURPOSE AND BACKGROUND

Horowhenua District Council (HDC) engaged Boffa Miskell Ltd to undertake a landscape evaluation of the eight outstanding natural landscapes (ONL)* and outstanding natural features (ONF)* proposed in Plan Change 22 (PC22). The scope of the landscape evaluation did not require consideration of the high amenity landscapes (HAL) proposed in Plan Change 22, or any other landscapes or features in the Horowhenua District.

The Proposed ONLs and ONFs (study sites) being considered in this review are:

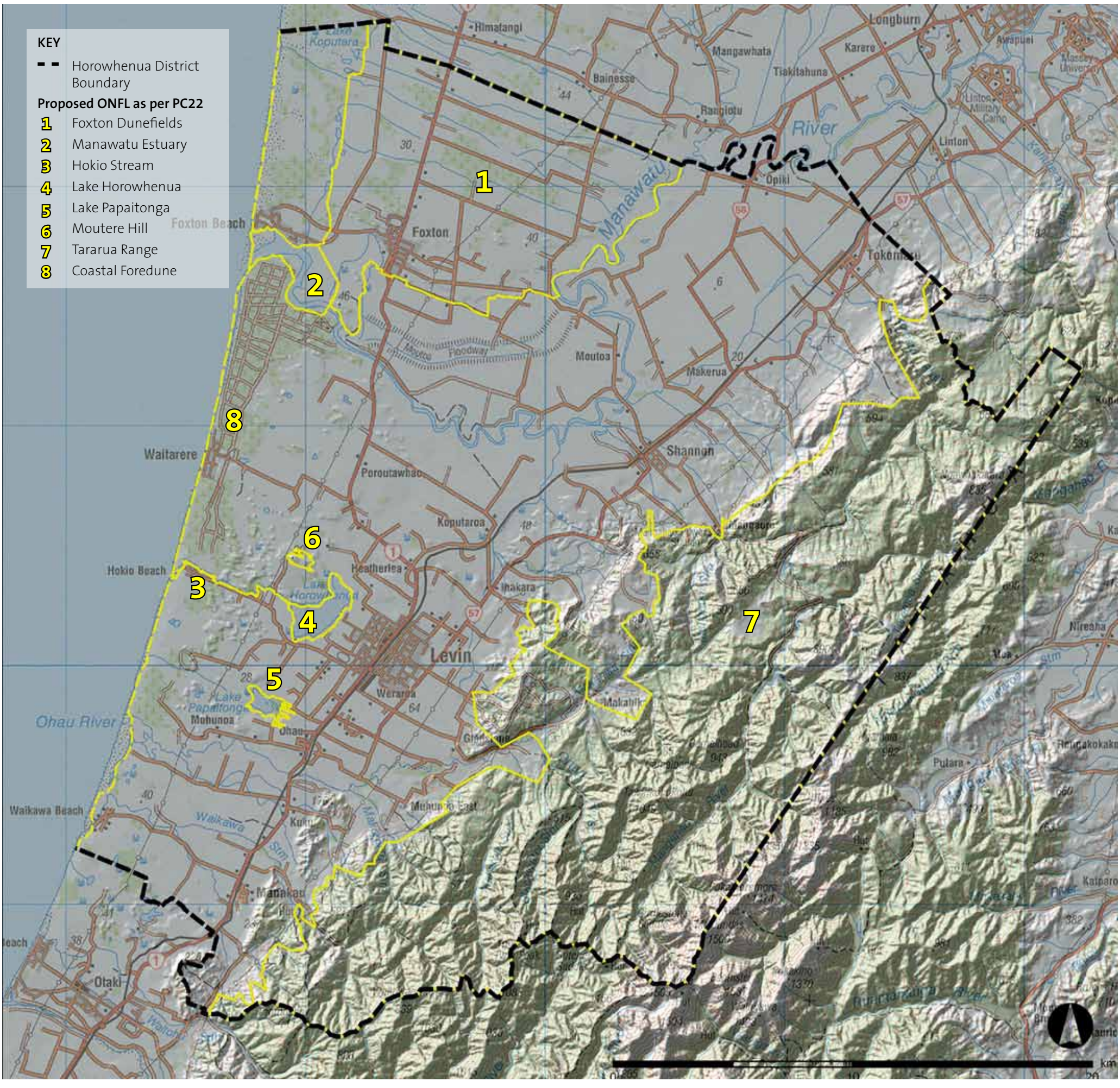
- Foxton Dunefields
- Manawatu Estuary
- Hokio Stream
- Lake Horowhenua
- Lake Papaitonga
- Moutere Hill
- Tararua Range
- Coastal Foredune

The purpose of this review is to evaluate the proposed ONFLs in relation to Section 6(b) of the RMA. The evaluation will therefore assess the landscapes and features in terms of their status; that is, do they reach the threshold of outstanding, what is their extent and where are the boundaries?

*** NOTE;**

ONFs and ONLs are referred to collectively throughout this document as ONFLs

Figure 1: OUTSTANDING NATURAL FEATURES AND LANDSCAPES PROPOSED IN PLAN CHANGE 22



EVALUATION METHODOLOGY

The landscape evaluation methodology is consistent with current 'best practice'. The landscape factors to be considered in the evaluation are also consistent with the Proposed One Plan's[1] requirements for evaluating ONFLs, (Policy 7-7A: *Assessing outstanding natural features and landscapes*, including Table 7.2[2] *Natural Features and Landscape Assessment Factors*), as well as with Policy 15(c) of the New Zealand Coastal Policy Statement 2010 (NZCPS 2010).

The assessment factors listed in both policies are very similar (with one exception) and are referred to as the 'Amended Pigeon Bay criteria'; these criteria are widely used by the New Zealand landscape profession[1] as a set of guiding factors that are useful when assessing landscapes.

Use of the assessment factors do not themselves constitute an evaluation of a landscape. Determining if a landscape qualifies as outstanding requires a subsequent 'weighting' process, and the consideration as to whether the combined significance of the relevant landscape values reaches the threshold of 'outstanding' when compared to other landscapes being considered.

An outstanding natural feature or landscape is defined as having *attributes that are exceptional or pre eminent. These attributes make it stand out amongst other natural features or landscapes. While evidence of human presence and activity may be apparent, natural attributes dominate*[3].

A Best Practice Note; Landscape Assessment and Sustainable Management issued by the New Zealand Institute of Landscape Architects (June 2010) groups the 'Amended Pigeon Bay Criteria' under the following three broad categories:

- Biophysical features patterns and processes, (or Natural Science)
- Sensory qualities (or Perceptual) and;
- Associative (or Shared and Recognised) activities and meanings.

This study has considered the landscape values of the Proposed ONFLs in the context of following framework.

[1] 'Decisions' version of the One Plan currently under appeal.

[2] The Table 7.2 assessment factors listed (also known as the Amended Pigeon Bay criteria) is not necessarily an exhaustive list of all the possible factors by which a landscape can be assessed, nor do they apply to all landscapes, and several of the factors overlap, they provide consistent guidance for landscape assessments.

[3] Landscape planning definitions discussed and agreed to by senior Boffa Miskell Landscape Architects at a workshop, April 2011.

EVALUATION CATEGORY	LANDSCAPE ATTRIBUTES
NATURAL SCIENCE Biophysical features, patterns and processes may be natural and/or cultural in origin, and range from the geology and landform that shape a landscape, to the physical artefacts, such as roads, that mark human settlement and livelihood.	**REPRESENTATIVENESS** The combination of natural components that form the feature or landscape and strongly typifies the character of an area. **RESEARCH & EDUCATION** All parts of the feature or landscape are important for natural science research and education. **RARITY** The feature or landscape is unique or rare within the district or region, and few comparable examples exist. **ECOSYSTEM FUNCTIONING** The presence of healthy ecosystems is clearly evident in the feature or landscape.
SENSORY/PERCEPTUAL Sensory qualities are landscape phenomena as directly perceived and experienced by humans, such as the view of a scenic landscape, or the distinctive smell and sound of the foreshore.	**COHERENCE** The patterns of land cover and land use are in harmony with the underlying natural pattern of landform and there are no significant discordant elements of land cover or land use. **VIVIDNESS** The feature or landscape is visually striking and is widely recognised within the local and wider community for its memorable and sometimes iconic qualities. **NATURALNESS** The feature or landscape appears largely unmodified by human activity and the patterns of landform and land cover appear to be largely the result of intact and healthy natural systems. **EXPRESSIVENESS (Legibility)** The feature or landscape clearly shows the natural processes that led to its existing character. **TRANSIENT VALUES** The consistent and noticeable occurrence of transient natural events, such as seasonal change in vegetation or in wildlife movement, contributes to the character of the feature or landscape.
ASSOCIATIVE/ SHARED AND RECOGNISED Associative meanings are spiritual, cultural or social associations with particular landscape elements, features, or areas, such as tupuna awa and waahi tapu, or sites of historic events or heritage. Associative activities are patterns of social activity that occur in particular parts of a landscape, for example, popular walking routes or fishing spots. Associative meanings and activities engender a sense of attachment and belonging.	**RECOGNISED VALUES** The feature or landscape is widely known and is highly valued for its contribution to local identity within the immediate and wider community, including recreational values. **TANGATA WHENUA VALUES** Maori values inherent in the feature or landscape add to the feature or landscape being recognised as a special place. **HISTORICAL ASSOCIATIONS** Knowledge of historic events that occurred in and around the feature or landscape is widely held, and substantially influences and adds to the value the community attaches to the natural feature or landscape.

EVALUATION PROCESS

The process involved a combination of a review of the work previously undertaken for PC 22, desktop analysis, field work and consultation with PC 22 submitters[3], to document and identify the relevant landscape values. The review has relied on the research material presented in the previous landscape assessments [4], supplemented with further research and analysis of available GIS data.

The landscape values for each proposed ONL/ONF were evaluated, ranked and reviewed at an internal workshop of landscape experts. Those landscapes/features that reached the threshold of 'outstanding' are presented to Horowhenua District Council as revised ONFLs. In this, 'outstanding natural landscapes' and 'outstanding natural features' are not distinguished separately because they are considered as having the same level of significance, the difference being only a matter of scale.

1. Collation of technical information, previous landscape assessments GIS data, consultation with Department of Conservation , Horowhenua District Council, Horizons Regional Council.

2. Field work and expert interpretation of biophysical and sensory landscape values.

3. Workshop with Plan Change 22 submitters to primarily identify the 'community's' associative values and also additional biophysical and sensory landscape values.

4. Using information gathered from research, consultation, and field work a summary of values for each of the proposed eight ONLs/ ONFs was compiled. Gaps in information or aspects to be verified were identified and followed up.

5. Initial evaluation of ONLs/ONFs using assessment factors was completed, including a close examination of site boundaries and liaison with third parties to verify information as required.

6. Internal workshop held to confirm evaluation scores, weightings and extent of each site at 1:50,000 scale. The threshold for ONLs/ONFs was confirmed and the sites which did not meet the threshold were eliminated.

7. Present Revised ONFLs to HDC

[3] Consultation involved a workshop in April 2011 attended by many of the submitters on Plan Change 22 and subsequent face to face meetings with a few landowners.

[4] Treadwell Associates, *Assessment of the Outstanding Landscapes and Natural Features of the Horowhenua District*, Prepared for Horowhenua District Council, August 2009.

Landscape Assessment of the Rural Environment of the Horowhenua District, Prepared for Horowhenua District Council, October 2008.

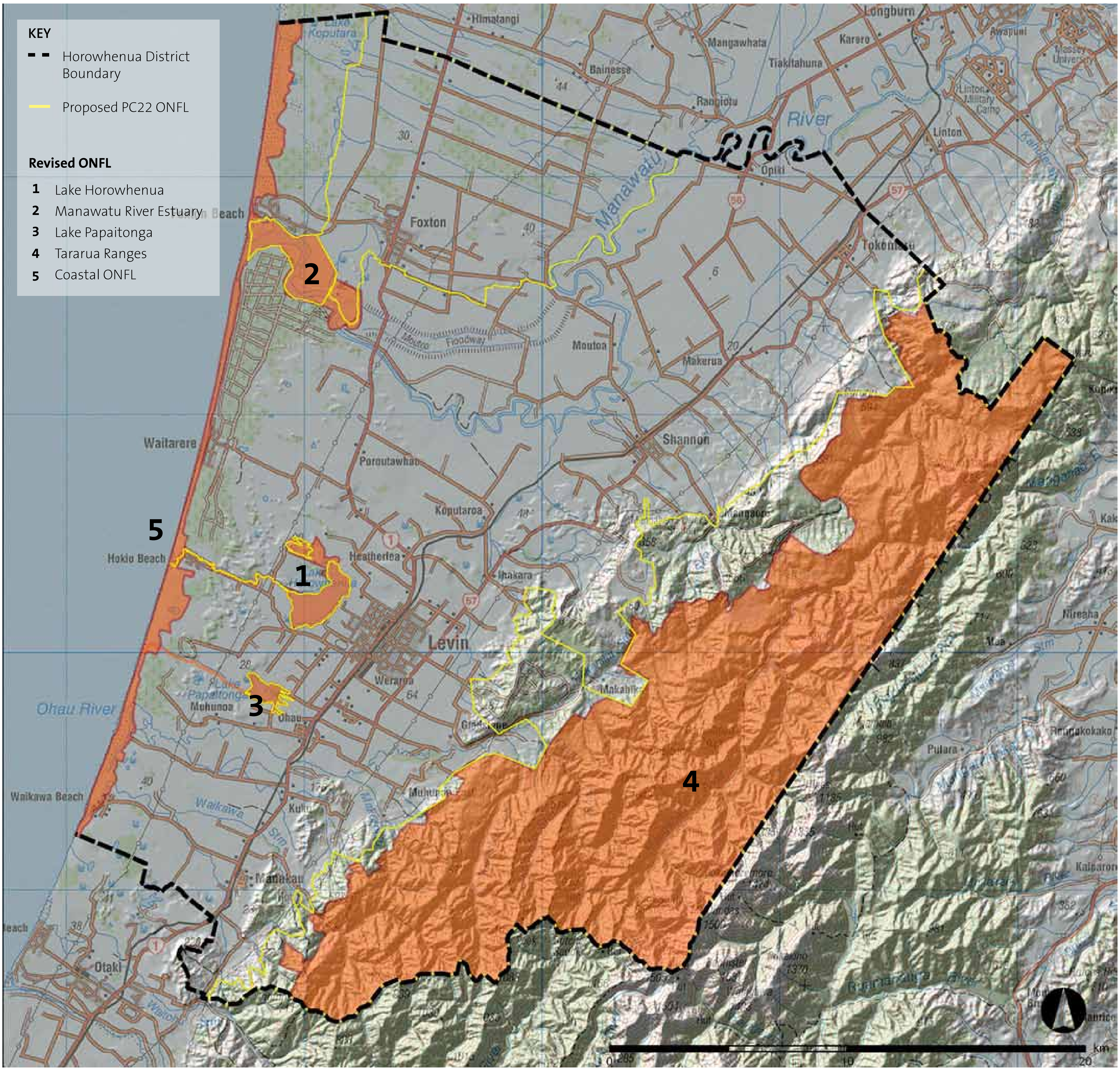
Moutere Hill

The Tararua Ranges form a backdrop to much of the district

EVALUATION SUMMARY

EXISTING ONFL	BIOPHYSICAL	SENSORY	ASSOCIATIVE	PLAN CHANGE 22 STATUS	REVISED ONFL STATUS
Foxton Dunefields	Moderate	High	Moderate	ONL	Deleted
Coastal Foredunes	High	Very High	Very High	ONF	Expanded area and renamed Coastal ONFL
Manawatu Estuary	Very High	Very High	Very High	ONL	Changed Boundary
Lake Horowhenua	Moderate	High	Very High	ONF	ONFL Combine Lake Horowhenua, Hokio Stream and Moutere Hill
Hokio Stream	Moderate	High	Moderate	ONF	
Moutere Hill	High	High	High	ONF	
Lake Papaitonga	Very High	Very High	Very High	ONF	Same boundary add Waiwiri Stream
Tararua Range	Very High	Very High	Very High	ONL	Reduced in Size

FIGURE 2: REVISED OUTSTANDING NATURAL FEATURES AND LANDSCAPES



8 LAKE HOROWHENUA

The closely linked landscape features of Lake Horowhenua, Hokio Stream and Moutere Hill are recommended to be combined into a single ONFL. Each of these features are individually well known and highly valued by the community and iwi, and they have a range of important biophysical values. They are strongly associated to each other culturally, physically and hydrologically, and are more appropriately considered as components of the same outstanding natural landscape, rather than as separate elements.

Lake Horowhenua also known as Waipunahau, covers 2.9 square km (290 ha) and is relatively shallow with an average depth of less than 2.0m. The lake located on the inner margin of an old dune belt, 6.4km inland from the coast. The lake was created when an old course of the Ohau River was damned by wind blown sand forming a large dune barrage.

A weir at the lake outlet controls the lake level, and the Hokio Stream drains the lake 5km to the sea.

The water source for the lake is a combination of local streams and groundwater originating in the Tararua Ranges. Between 1952 and1987 treated sewerage was discharged directly into the lake. Currently stormwater from Levin and runoff from surrounding farmland combined with and the lake's shallowness mean the water quality is poor. The water quality of Hokio Stream is largely determined by the quality of the lake's water and high nutrient levels have caused infestation of weeds in the stream bed in places. For the majority of its length, the stream margins are well vegetated, reducing the adverse environmental effects of runoff from surrounding farmland.

Natural Science Values

The natural values of the lake and stream are much diminished from what was once a densely vegetated and diverse natural environment. However, the underlying hydrological systems and natural landform of the lake is largely unmodified. The lake margin restoration project will, in time, improve the habitat, biodiversity and water quality of the lake.

The lake was once enclosed by diverse forests of kahikatea, pukatea, and rata that extended to the Tararua Ranges. Whitiki Bush and Swamp (RAP 15) located in the northwest corner of the lake contains remnant kahikatea forest which is extremely rare in the Foxton Ecological District. Another smaller area of kahikatea forest is located in the southwest corner of the lake (RAP 14).

Hokio Stream with Lake Horowhenua in background

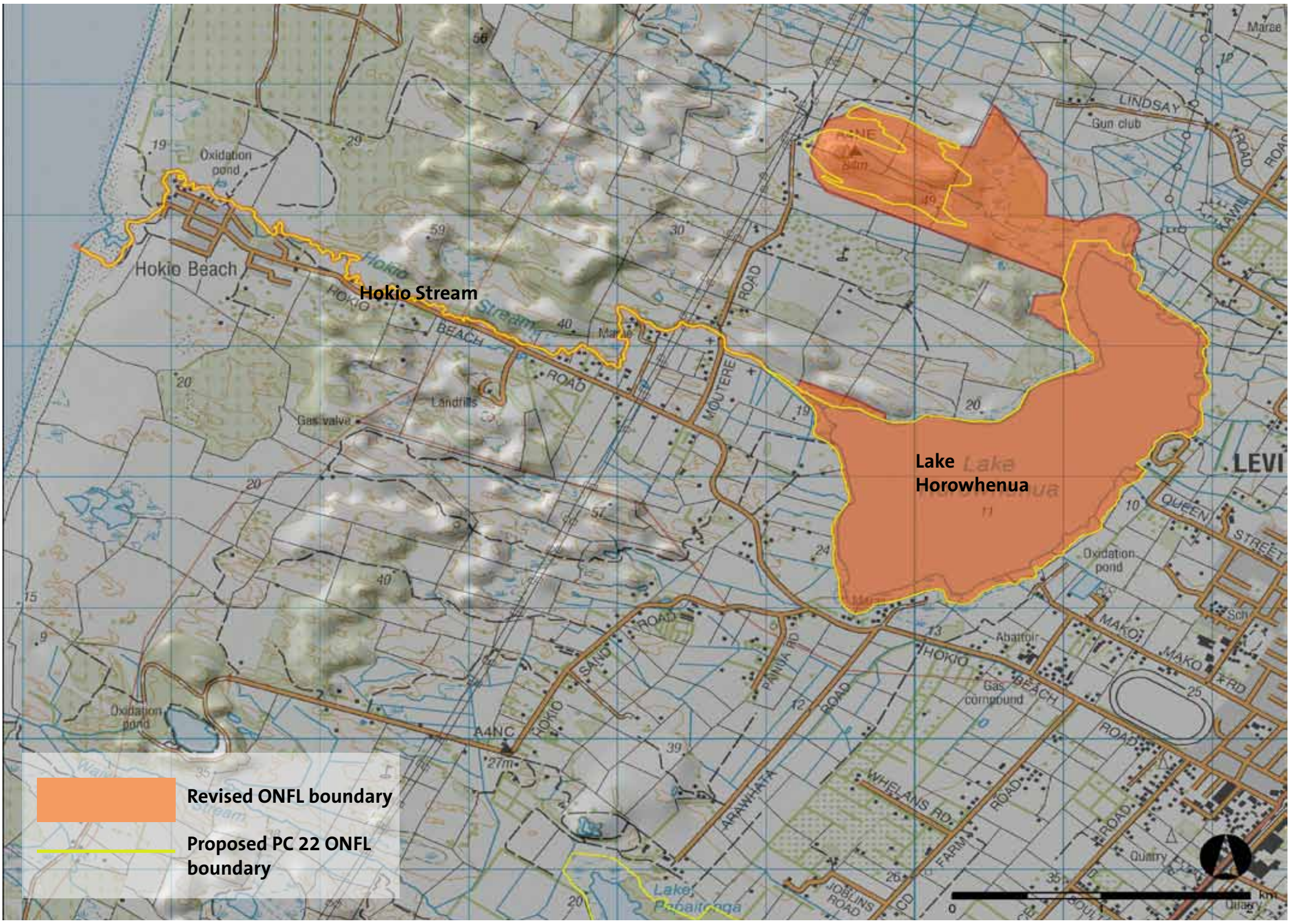
Moutere Hill is biophysically unique in the area due to its height, large size and physical shape. The hill is a large old coastal dune 87m height (30m higher that the surrounding land). The dune's geomorphology is notable, as being the opposite profile to the other dunes in the dune belt. That is, the coastal face of the dune is very steep while the inland face (the lee side) slopes gently down to Lake Horowhenua. All the surrounding dunes have a gently sloping coastal face and a steep lee face.

Lake Horowhenua and Hokio Stream are elements of the same and much larger hydrological system that extends from the Tararua Ranges to the sea.

The community acknowledges that there is huge potential to improve the environmental health of lake, stream and their margins. Currently, the water quality of the lake and stream are poor. The very strong community awareness of this and the evident desire to remedy the situation will, in time, see improvements in the water quality. Muaupoko, through their Lake Horowhenua Trust, own the lake bed, a riparian margin around the lake edge and the outlet stream, Hokio[1]. The Lake Horowhenua Trust is undertaking an extensive lake margin restoration project to re-establish indigenous vegetation to the lake edge and improve the water quality of the lake.

Lake Horowhenua from the air

Moutere Hill- a prominent and unusually shaped sand dune



Sensory Values

The large size of the lake and the openness it creates make it a visually striking element of the landscape, allowing distant views across the lake toward the coast. For most of its length, Hokio Stream is nestled into its small valley with native and exotic vegetation along its margins and so is not visually apparent until the estuary, where it is visually striking and contributes strongly to the high amenity of the area.

Moutere Hill is particularly well known in the local community due to its height and proximity to the lake. From some local locations its characteristic 'lopsided' profile and the mature pine trees on its summit make a memorable landmark.

Shared and Recognised Values

The lake and its margins, Hokio Stream and Moutere Hill hold significant cultural values for Muaupoko who regard the lake as taonga. For centuries, the lake and its surrounding wetlands and dense forests have provided food, shelter, a place to live, as well as cultural and spiritual sustenance. For iwi, the lake and Hokio Stream are inextricably linked as components of one system, connecting the lake and sea, and providing for the seasonal migration of fish, particularly tuna (eel).

The lake is used for recreational activities such as wind surfing, sailing and rowing. However, the poor water quality and weeds in the lake reduce the general amenity of lake for recreational activities on and around the lake. Notwithstanding, the lake still holds an important place in the community's sense of place, and there is strong community support to improve the water quality and for the lake margin restoration project.

Historically, the lake has been a gathering place for the community and has provided a rich source of freshwater fish species, and recreational activity such as swimming, boating and fishing.

Notes on defining the revised ONFL boundary

It is recommended that Lake Horowhenua, Hokio Stream and Moutere Hill should be combined as one ONFL rather than being dealt with as three separate areas.

The ONFL area extends 20m from each bank of the stream.

The revised ONFL should incorporate the two forest remnants (RAP 15 and RAP 14) together with the wetlands situated in farmland between the lake and Moutere Hill.

[1]www. Lake Horowhenua Trust

Landscape Values

- **Three valued landscape features in close proximity with strong cultural associations**
- **Moutere Hill is biophysically unique, due to its size and physical shape**
- **Lake Horowhenua and its margins, Hokio Stream and Moutere Hill hold significant cultural values for Muaupoko**
- **The lake and Hokio Stream are linked components of one hydrological/ecological system providing for the seasonal migration of fish, particularly tuna (eel)**
- **Important forest remnants and wetlands on and near the lake edge**
- **Lake Horowhenua holds an important place as part of District's identity**

The estuary of the Manawatu River is the largest in the lower North Island, covering approximately 250ha and comprising tidal mudflats, saltmarsh, a sand spit and part of the Manawatu River. The area is bounded on the south by the exotic production forest (Waitarere Forest), Foxton Beach settlement on the north, with grazed farmland enclosing the estuary to the east.

Horizons One Plan includes the Manawatu River estuary in its 'Coastline ONFL', identifying its ecological values as being important habitat for indigenous fauna. RAP # 22 lies within the ONL.

Natural Science Values

Approximately 200 ha of the river and adjoining wetlands comprise the RAMSAR[1] convention site, and therefore the estuary is a wetland of international importance, as well as being nationally, regionally and locally recognised for its bird habitat. In all, 93 bird species have been recorded on the estuary, including year-round species as well as migratory birds, some of which are threatened species or critically endangered.

While the water quality of the Manawatu River is generally low, the environmental qualities and biodiversity of the estuary remain high, assisted by on-going natural processes such as tidal flushing, and wind and water action. Physically, there is little modification of the estuary or its margins with the bird observation platform and boat ramp facilities being the only structures of note.

Sensory Values

The daily movements of tides concealing and exposing the tidal mud flats contribute to the transient values of the area, as does the ephemeral nature of seasonal arrival and departure of migratory birds. The form of the estuary is very expressive of the natural processes that have formed it; the effect of erosion and sand deposition, and the forces of the wind and sea alter the course of the river, constantly changing the mud flats, salt marshes and vegetation patterns.

Key sensory qualities of the estuary derive from its expansive openness, and the experience of the changing coastal environment; wind, salt, sand, sun and light. Overall, the estuary has a very natural appearance and feel.

Shared and Recognised Values

The Manawatu Estuary is widely known and highly valued by the community for its natural, historical and recreational values. It contributes significantly to local and wider community's identity, and has been a popular holiday spot since the early days. Recreationally, the estuary is used for boating, fishing, bird watching and walking. In particular, the bird life attracts people from beyond the Horowhenua. Every year, an official welcome and farewell is held for the migratory birds, including godwits and knots which come from Alaska and Siberia.

Historically, the Manawatu estuary and river served as an important transport and trading node providing water access inland as far as Palmerston North and to Foxton where export of flax was once a major industry. Prior to road and rail travel, the beach provided the main land route between Wellington and Whanganui. A ferry house near the mouth of the Manawatu River provided an overnight stopover point.

For Maori, the estuary is a highly significant cultural and spiritual landscape with rich ancestral associations, including many generations of occupation, as an important source for food and natural resources, for transportation inland, as the location of battles and conquest, and sites of waahi tapu and urupa.

Notes defining the revised ONFL boundary

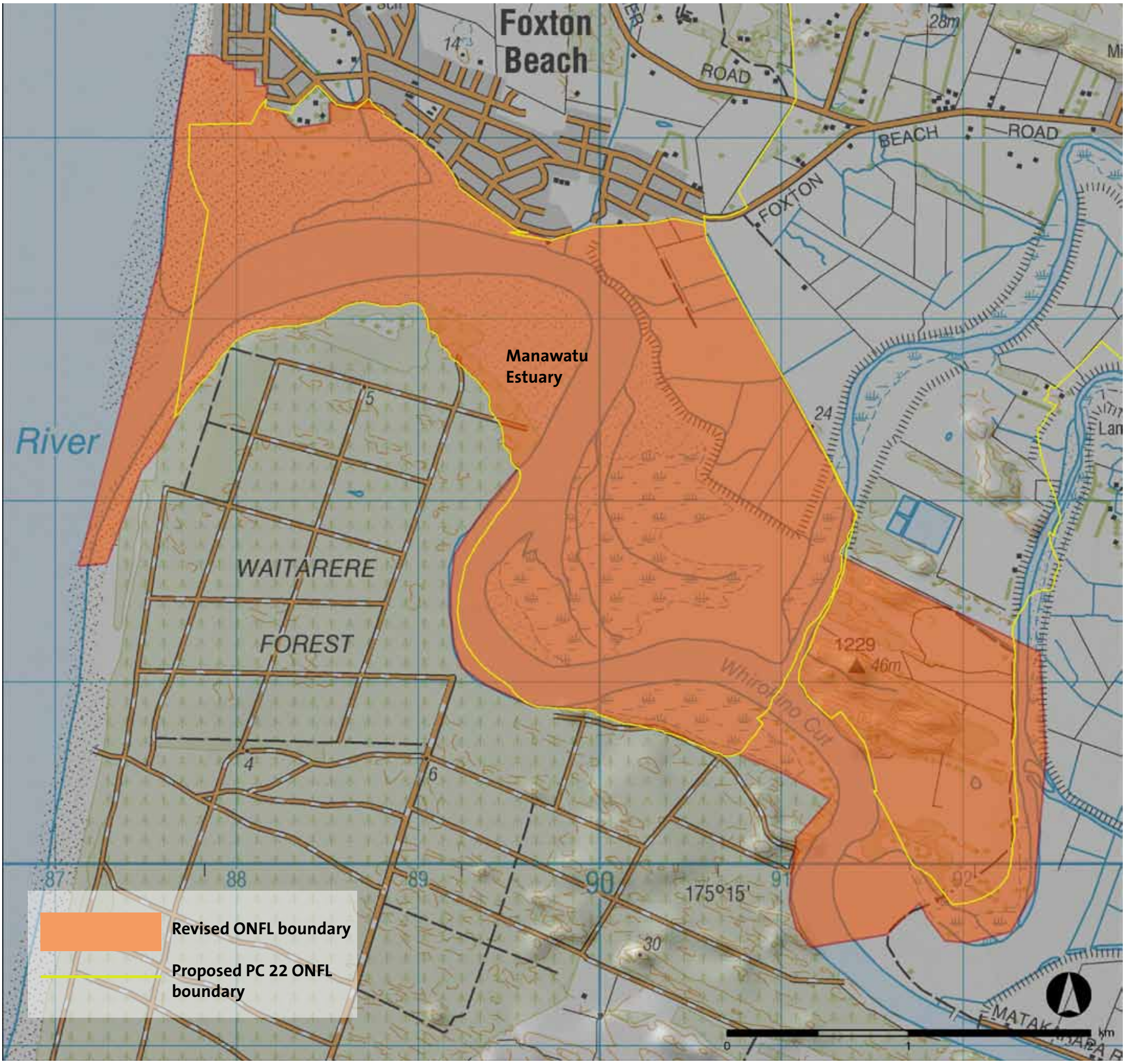
The revised boundary is primarily based on the proposed PC 22 ONL with;

- The addition of an inland area, that was proposed to be included in the proposed Foxton Dunefield ONL. An area of sand dunes in the north side of the river mouth.
- Exclusion of the Foxton Beach Motor Camp

[1]Inter- governmental treaty for the conservation and wise use of wetlands and their resources, 1971.

Manawatu River Estuary

Internationally important habitat for some migrating bird species.



Landscape Values

- Large estuary system with diverse range of biodiversity and habitat
- Internationally important site for some migratory bird species
- Open expansive landscape allowing views inland from the coast
- Rich sensory experience due to ever changing coastal environment - tides, salt, and wind
- Highly significant cultural and spiritual landscape for tangata whenua
- Well recognised and valued historical associations as an early trading and transport node.

Estuary saltmarsh and mudflats

12 LAKE PAPAITONGA

Lake Papaitonga (61.8 ha), also known as Waiwiri, is a dune lake surrounded by indigenous forest, which together makes up the 122ha Papaitonga Scenic Reserve administered by the Department of Conservation. The Lake contains two islands, Motukiwi and Motungarara; these were previously named Papaitonga and Papawhaerangi. Motungarara is an artificial island created by Muaupoko in 1820.

The Waiwiri Stream is the outlet to the lake and crosses the 4.8 km of sand plains and farmland to the coast. Lake Papaitonga and Waiwiri Stream are highly interdependent in terms of their hydrological balance and ecological health. For iwi, the lake and stream are inextricably linked as components of one system, connecting the lake and sea, and providing for the seasonal migration of fish. Consequently, both landscape features are considered to form a single ONFL.

Natural Science Values

The lake, its wetland margins and the vegetation are rare remnants of the original ecology that once covered the Horowhenua sand country, and it is the only intact sequence from wetland to mature dry terrace forest in Wellington and Horowhenua[1]. It is also one of the largest habitats of the endangered *Powelliphanta* snails in the region, and the rare leafless mistletoe, *Korthalsella salicornioides*[2].

The wetland forest associations of kahikatea/pukatea, tawa and pukatea-tawa-swamp maire are now rare. The reserve is home to waterfowl and wading birds as well as forest bird species. Overall, the Reserve has high biodiversity and is in good ecological health.

The rich history and natural and cultural values of Lake Papaitonga and environs are eloquently described by Dr Geoff Park in his 1995 book, *Nga Uruora: The Groves of Life*[3].

Looking west above Lake Papaitonga

Lake Papaitonga at dusk, from viewing platform

Sensory Values

The lake and surrounding vegetation has a high degree of naturalness. Views of the lake, its wetlands and forest backdrop are visually striking and the reserve is a popular destination for those seeking a tranquil natural environment. Externally, the Reserve appears as a large forest remnant set in grazed farmland with views of the lake itself not possible because of it being surrounded by dense native forest.

Shared and Recognised Values

Lake Papaitonga is widely known and highly valued throughout the Horowhenua as valuable sand country landform and forest remnant. The Lake and the surrounding area also has a rich and complex human history and it has important historical associations for Muaupoko The lake, its surrounds and Waiwiri Stream are highly valued as an ancestral landscape, for its historical values and sites including waahi tapu, burial and pa sites, and also for cultural values attached to wildlife, such as eel and birds.

There are several well known stories relating to Maori history in the vicinity of the lake, including occupation, massacres, battles and invasions. Sir Walter Buller eventually purchased property that included Lake Papaitonga in 1897. In recognition of its scenic values, he designated 27.5 ha of native forest as a reserve in 1901, for the benefit of future generations. However, the lake was not added to the Reserve until 1991.

Tracks through the forest surrounding the lake allow visitors to appreciate the natural values of the native vegetation, the lake and wildlife.

Landscape Values

- **Regionally rare remnant of interdunal lake, wetlands, stream and coastal forest.**
- **Good biodiversity and rare intact sequences of lake/wetland/ forest ecosystems.**
- **The lake, its surrounds and Waiwiri Stream are highly valued as an ancestral landscape by tangata whenua.**
- **Several well known and documented stories relating to Maori and European history in the vicinity of the lake.**
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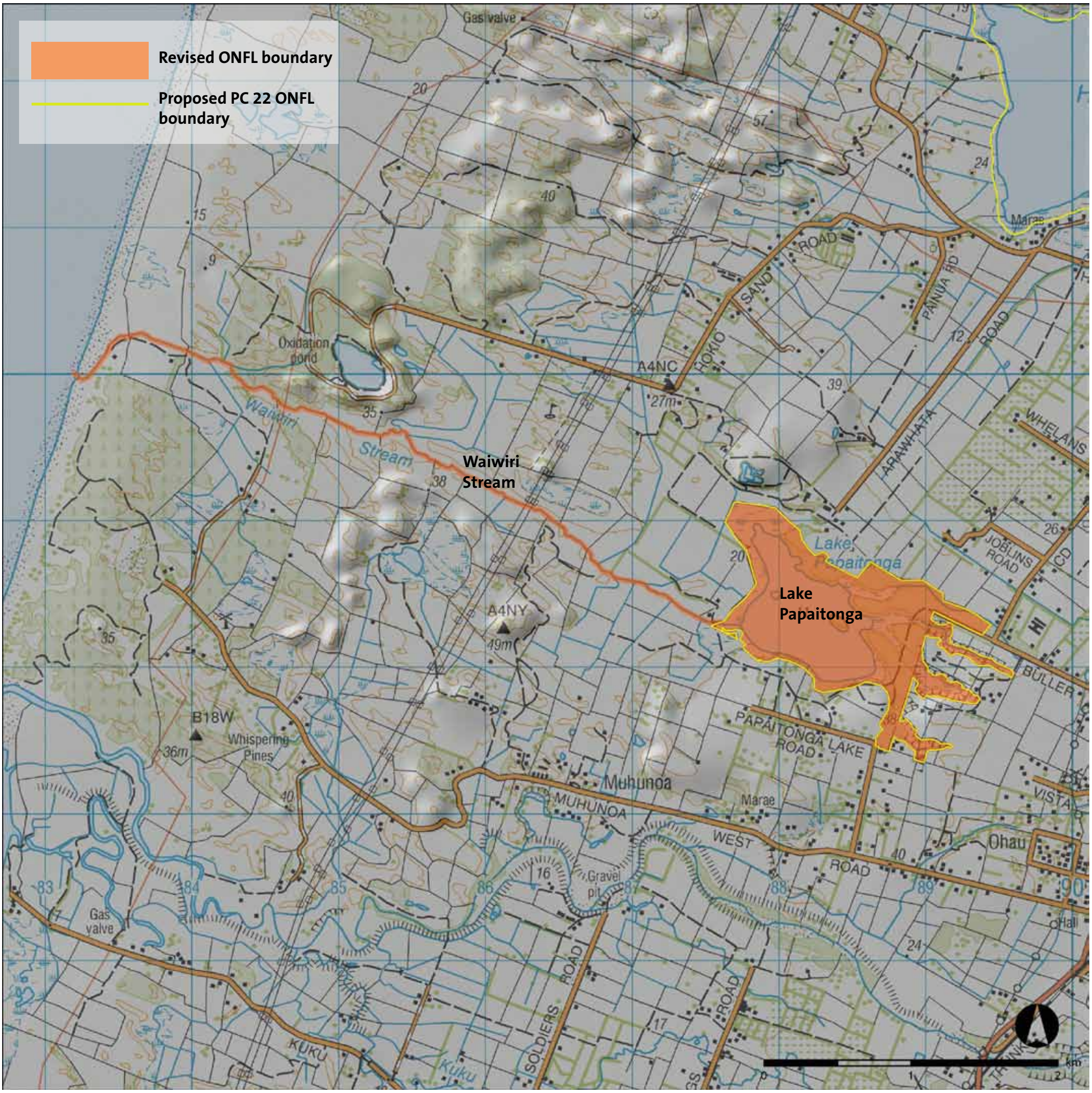


Waiwiri Stream is intergrated with Lake Papaitonga's hydrological and ecological systems.

Notes on defining the revised ONFL boundary

The revised ONFL boundary is the same as the boundary proposed for PC 22, but with the addition of Waiwiri Stream.

The Waiwiri Stream ONFL area extends 20m from the banks of the stream.

[1]http://www.doc.govt.nz/parks-and-recreation/places-to-visit/manawatu-whanganui/manawatu-area/papaitonga-scenic-reserve/

[2]ibid

[3]The Lake in the Sand Country in *Nga Uruora: The Groves of Life*, Geoff Park, Victoria University Press , 1995, pp163-223.

14 TARARUA RANGES

The Horowhenua District includes only a small part of the western side of the Tararua Ranges, comprising a high main ridgeline, slopes and complex of foothills. The main ridgeline rises from 855m (Ngawhakarara) in the north to approximately 1500m (Arete, Mt Dundas and Pukemoremore) in the south, to the east of Manakau. A secondary ridgeline to the east of Manakau has a more east-west alignment with intermediate elevations of between 800-1000m, including the high points of Twin Peak and Waitewaewae; this ridgeline forms part of the Horowhenua District boundary.

The Tararua Range Outstanding Natural Landscape includes the Tararua Forest Park and those adjoining areas beyond the Park boundary where indigenous forest and regenerating vegetation is prevalent. It excludes the areas of exotic production forest, although in a few isolated places, small patches of exotic forest may be included.

The Proposed One Plan identifies the *Skyline of the Tararua Ranges* as an outstanding natural landscape. An analysis of the Tararua skyline as experienced from The Horwhenua District is the subject of a separate report prepared for HDC.

Natural Science

The large scale of the ranges; their height, physical presence and ruggedness, make them a significant geological feature of the Horowhenua. The large area of intact original indigenous forest, contiguous with similar forest beyond the Horowhenua District, has significant ecological values at both a district and regional scale. The ranges contain a diverse range of ecosystems from lowland forest to alpine herb fields and are home to a wide range of native birds and native fish. The higher parts of the ranges, especially within the Tararua Forest Park, are almost completely unmodified giving this area high level of naturalness.

Sensory

The ranges provide a significant visual and physical backdrop to the district, sharply contrasting with the flatness of the Horowhenua plains. The high rugged skyline contributes to the striking visual quality of the ranges which can be appreciated throughout the district. The continuous forest cover, the steep topography and an absence of structures or significant modification contributes to the strong visual coherence of the landform and its very high natural qualities. The coolness and dappled light of the forest interior with dense native vegetation and streams is also widely recognised and appreciated.

Shared and Recognised Values

The ranges, its skyline and forested slopes are widely recognised and valued by the community and are regarded as an important feature of the identity of the Horowhenua District and also adjoining districts. As well as the scenic values, the ranges are highly valued for the recreational activities they provide, including wilderness experience, tramping, mountain biking and hunting.

Significant Maori cultural values are attached to the Ranges which are considered to be a very important ancestral landscape in this part of the lower North Island. The cultural values include Maunga Tapu, whakapapa, waahi tapu and values in relation to the vegetation and wildlife of the forest. The forested ranges provided a valuable source of food for Maori at certain times of the year and historically, numerous trails through the valleys connected Horowhenua to Wairarapa. The Ranges also provided refuge during times of tribal warfare.

Most of the high peaks along the range have Maori names that tell the stories of the early ancestors.

Notes on Defining the revised ONFL boundary

An initial draft line primarily sought to include only indigenous forest and vegetation. Using the land cover data base (LCDB2) and the aerial photography (2005), the draft line excluded exotic forest and grazed farm land. The scale of the mapping did not allow absolute exclusion or inclusion of the above; it is an approximation.

Steep indigenous forest clad Tararua Ranges with many of the foothills and lower slopes farmed

The initial draft line was then amended to:

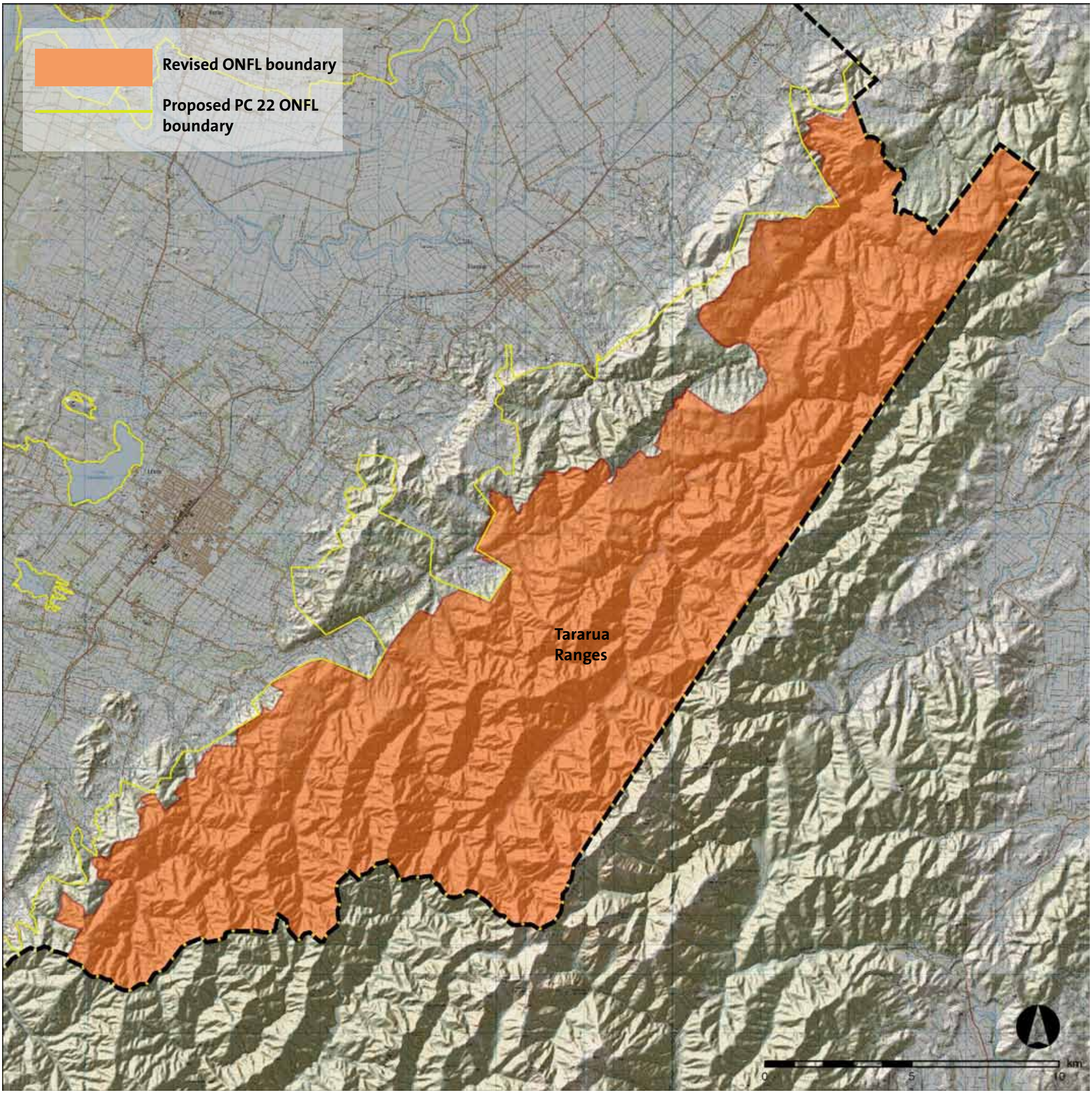
- Coincide with the Tararua Forest Park boundary where the two line locations and orientations were similar;
- Follow natural boundaries of ridge tops or streams where appropriate;
- Follow land parcel boundaries if practical; and
- Include the Tararua Forest Park and DoC conservation land if at all practical.

The draft line was then 'tested' in Google Earth to see if it appears 'logical from the ground'.

All but a very small part of Tararua Forest Park (near Manakau) and all DoC Estate is included in Revised Tararua Range ONL.

Landscape Values

- **Significant geological feature, supporting large area of intact original indigenous forest.**
- **Significant ecological values at both a district and regional scale**
- **High rugged skyline contributes to the striking visual quality of the ranges and identity of the district**
- **Significant Maori cultural values are attached to the Ranges.**
- **Highly valued by the community for recreation.**



The Tararua Ranges form a backdrop and western boundary to the whole of the Horowhenua District

The proposed Coastal Foredune ONF is not mapped in PC 22, but is defined as;

> *"Coastal Foredune Outstanding Natural Feature is a shore-parallel dune ridge formed on the top of the backshore of a beach by wind and sand transportation and deposition and where any vegetation consists of sand colonising flora such as pikao or pingao, spinifex, sand tussock or marram grass."*

As such, it includes just the first line of foredunes.

The Proposed Horizons One Plan identifies The Coastline of the Region as one of the regionally outstanding natural features and landscapes; in particular, it notes the Foxtangi Dunes and Hokio Beach South Dune Fields. The Ohau, Waikawa and Manawatu River estuaries are also noted for their ecological values, particularly as habitats for indigenous fauna.

The Proposed Horizons One Plan defines Coastal Foredune as being "*the strip of land between the Coastal Marine Area and a line roughly parallel with the beach, extending 200m inland of the first line of vegetation."*

This review considered the entire coastline and whether any of the coastline warranted to be an ONFL. This assessment also considered the coastal environment inland of the foredunes. However, it identifies the section of the coast at the Manawatu River mouth as part of the Manawatu Estuary ONFL.

The Survey Report for the Protected Natural Areas Programme[1] identifies three (priority one) areas in close proximity to the coast: Waikawa Estuary (RAP 13), Manawatu Estuary (RAP 22), Foxtangi Dunes (RAP 24).

The Horowhenua coast is a relatively short (35km) stretch of a much more extensive sand dune system extending from Paekakariki in the south to Whanganui in the north (130 km). The sand dune country with associated inter-dunal lakes and wetlands, lagoons and estuaries, is the most extensive dune system in New Zealand[2]. However, much of the inland area of this dune system has been modified through farming, forestry, earthworks and settlement. The dominating influence of the coastal environment is the predominant west-northwesterly winds, which have a major influence on the physical shape of the dune landscape, and local climate.

The 1908 Sand Drift Act resulted in the establishment of large areas of exotic forest in the dune country aimed at stabilising the shifting dunes.

A series of lakes and wetlands aligned north south, lie approximately 4km inland of the coast (Lake Koputara, Koputara Lakes, Orouakaitawa Lagoon and Lake Omanu and their wetland/flaxland/ reedland margins). These features, while formed by coastal processes, are now isolated from the dynamic coastal edge by stabilised grazed pasture and areas of exotic trees. A QEII open space covenant includes part of the Koputara Lakes and wetlands area.

Natural Science Values

The coastal environment comprises sandy beaches and a band of active foredunes backed in a few places, by sand plains and low parabolic sand ridges (such as Foxtangi Dunes north of Foxton Beach and Hokio Dunes). Typically however, belts or plantations of exotic shrubs and trees (*Hakea* sp., macrocarpa, and pine) have been established immediately behind the foredunes and cover tracts of the sand plains beyond. While the original dune/sand plain landforms remain under the forested areas, they are not exposed to the active coastal processes and so have relatively low natural values.

The continuous line of foredunes is only interrupted by the river and stream estuaries, and at Foxton Beach, by the carpark and surf club building. The coastal housing settlements at Foxton Beach, Waitarere and Waikawa extend onto the back of the foredunes.

The sand binding plants, marram and spinifex, comprise the dominant vegetation of the foredunes with indigenous spinifex predominant. Less common, but scattered throughout the foredunes, are pingao, sand coprosma, tauhinu and small areas of native sand daphne.

Sensory Values

The coastal areas close to road ends are well used for recreational activities and at these locations the naturalness and remoteness of

Foxtangi Dunes

Foxton Beach

the long sandy beaches is diminished. However, along the majority of the coastline the expansive unoccupied beaches stretch unimpeded in both directions, and the sounds, smells and elements of the coastal environment are very evident. The river and stream estuaries particularly, add to the expressiveness of the coastal processes with the changes bought by tidal movements, and changing river mouth alignments and flows.

Shared and Recognised Values

Historically, the beaches along the west coast were the primary transport route between Wellington and Whanganui. Popular beach settlements are situated along this stretch of Horowhenua coast and also along the coast north and south of the district. The beaches are an important recreational destinations for Horowhenua residents and others outside the district for walking, driving, fishing and horse riding .

In places along the coast, community care groups are active in restoring the dunes, especially in the areas close to the settlements.

Notes on Defining the revised ONFL boundary

The inland extent of this ONFL has been partly informed by the analysis undertaken as part of the *Natural Character Assessment of the Horowhenua Coast*[3] , which identifies the inland extent of the coastal environment. The revised ONL area includes more than just the foredunes so it is recommended that it be referred to as the Coastal ONFL (rather than the Coastal **Foredune** ONFL)

The ONFL includes the foredunes and adjacent dunelands which are not occupied by settlements. Some areas of pasture land, grazed dunefield, and areas of forest lie within the revised ONL area where they occupy land adjacent to and between dune landforms, as a result of needing to rationalise the ONFL boundary drafted at this scale.

In locations where forest and residential settlements are established immediately behind the foredune, the revised ONL is approximately 150m wide. In areas where the natural dune landforms have not been modified, the revised ONL is wider (eg Foxtangi and Hokio Dunes 500m to 1.0km wide). In other locations, such as estuaries or where exotic forest plantings are more patchy, the width of the revised ONL varies between 150m and 500m.

The ONL boundary aligns with HDC zone boundaries and PC 22 boundaries at settlements, and in rural areas, where practicable, property boundaries are used.

The Coastal ONFL has been mapped as two separate areas; one north and one south of the Manawatu River Estuary ONFL. The sand spit and dunes at the Manawatu River mouth have been included as part of the Manawatu River Estuary ONL.

The Coastal ONFL includes coastal areas and features listed in Schedule F (Outstanding Natural Feature or Landscapes) of the Horizons One Plan as being part of (k) *Coastline of the Region*; namely Foxtangi Dunes, Hokio Beach South Dune Fields, and for their ecological values; the Ohau and Waikawa River estuaries.

While the uniqueness and high natural values of the dune lakes, wetlands and their margins, (4km inland) is acknowledged, they have not been included as part in the Coastal ONFL, due to their more inland location and separation from the coastal dunes by modified farmland.

However, it is recommended that these features do require some level of protection and ongoing management to ensure the natural values, biodiversity and habitats are retained and enhanced. A Coastal Management Strategy that addresses the management of these features would be a more appropriate and effective mechanism to protect these areas. Specific management provisions could be included as part of a future Coastal Management Strategy.

[1]Mc Ewen 1987 in; Ravine D. A, *Foxton Ecological District, Survey report for the protected Natural Areas Programme* 1992. Biological Resource Centre DSIR

[2]ibid

[3]*Draft Natural Character Assessment of the Horowhenua Coast*. An assessment currently being prepared for Horowhenua District Council by Boffa Miskell Ltd., 2011

Hokio Dunes

Landscape Values

- Open, continuous and expansive landscape relatively free of visible structures
- Plantation forests and residential settlements detract from natural values
- Remnant dune areas of once extensive dune system
- Intact dunefields and river estuaries have a high proportion of indigenous vegetation and habitats
- Wild and natural coastal values valued by the community
- Coastal processes evident and still occurring
- Highly significant cultural and spiritual landscape for tangata whenua
- Historic values associated with coast providing an early transport corridor

The proposed Foxton Dunefield ONL occupies 107 square kilometres west of the Manawatu River, adjacent to the northern boundary of the Horowhenua District; the western boundary to this ONL is located approximately 3km inland from the coast. The proposed ONL area is part of New Zealand's most extensive transgressive dunefield covering 900km^2 between Whanganui and the Manawatu River[1].

A pocket of the proposed ONL in south-west corner includes the Manawatu flood plain and old river loop between Foxton and Foxton beach. This study has considered this area as part of the Manawatu Estuary ONL assessment, given the close proximity and hydrological connections of the river loop and wider river catchment.

The rural land consists of an extensive series of dunes aligned perpendicular to the coastline, separated by relatively flat inter-dunal areas. The dunelands were formed by coastal processes of wind deposited sands brought inland by the prevailing northwesterly on-shore winds. Consequently, the dunes lie parallel to the wind direction, resulting in a repeating sequence of lines of dunes separated by flatter low lying land.

The predominant land use of the area is grazed pasture for dairy and beef production with pockets of horticulture. Production forest plantations, woodlots and shelterbelts (typically radiata pine) are also a common land use, with several plantations over 50ha.

The key threat to the dune landforms within a working rural environment is physical modification, as a result of forest milling, farm tracks, earthworks for building platforms, and 'flattening' of dunes to enable large mobile irrigators to operate.

Natural Science Values

The dune landforms are still very evident and in places their form is accentuated by the different vegetation cover such as where production woodlots are established on the dunes and the flatter land between the dunes is grazed. Largely, the dunes appear to be intact, however the inter-dunal hollows and sandflats have been modified by being 'flattened' through continual cultivation and grazing practices.

Vegetation of the farmed land is almost exclusively exotic species, including improved grasses, greenfeed crops, and productive tree species. There is very little indigenous vegetation present; where it does occur the patches are small and scattered. Several reserves protect areas of indigenous vegetation and habitat, but with the exception of Round Bush Reserve, Himatangi Bush Scientific Reserve and Davis Bush, the other areas of indigenous vegetation are very small and fragmented.

The indigenous biodiversity is very low due to the prevalence of production farming systems throughout the area.

Sensory Values

The predominant character of the area is a productive working rural landscape. While the sequences of parallel dunes are a characterising element of the landscape, the overlay of human induced modification is dominant with buildings, fences powerlines, farm tracks and farming operations common features.

Some of the larger dunes as individual landforms, if their form is apparent, are visually striking when viewed at close quarters, but many of the dunes are masked by vegetation. While farmed animals, pasture and pine trees can be considered natural elements, the overall naturalness in relation to 'indigenous natural' is low.

Shared and Recognised Values

The dunefields are a well recognised feature of the Foxton area and also contribute to the identity of the Horowhenua District. Their close proximity to SH1, from where they are easily seen, means they are also readily visible to the travelling public. Historically, the Foxton area and parts of the dune fields were the hub of the flax export industry, and therefore the area has historic and heritage values associated with that activity.

This area, like much of the Horowhenua has high cultural values for the tangata whenua, as a landscape that was occupied by many generations. This area includes two Ngati Raukawa marae, various urupa, waahi tapu and land of cultural importance.

Discussion

It is not considered that the landscape values of the proposed Foxton Dune area as a whole, meet the threshold to consider the entire area as an outstanding natural landscape. That is, while all the landscape values are important and collectively contribute to the significance of the landscape, the area as a whole is not exceptional in the district that warrants the entire dunefields, much of which are substantially modified, being classified as an outstanding natural landscape.

In terms of the criteria used in the assessment review of the ONFLs Foxton Dunefields do not meet the threshold of 'outstanding'.

Notwithstanding this, the dune landforms are an important characterising element of the Horowhenua landscape. The dunes should therefore be recognised in the District Plan via methods to protect or manage the dunes/ larger dunes, which fall outside the ONFL areas.

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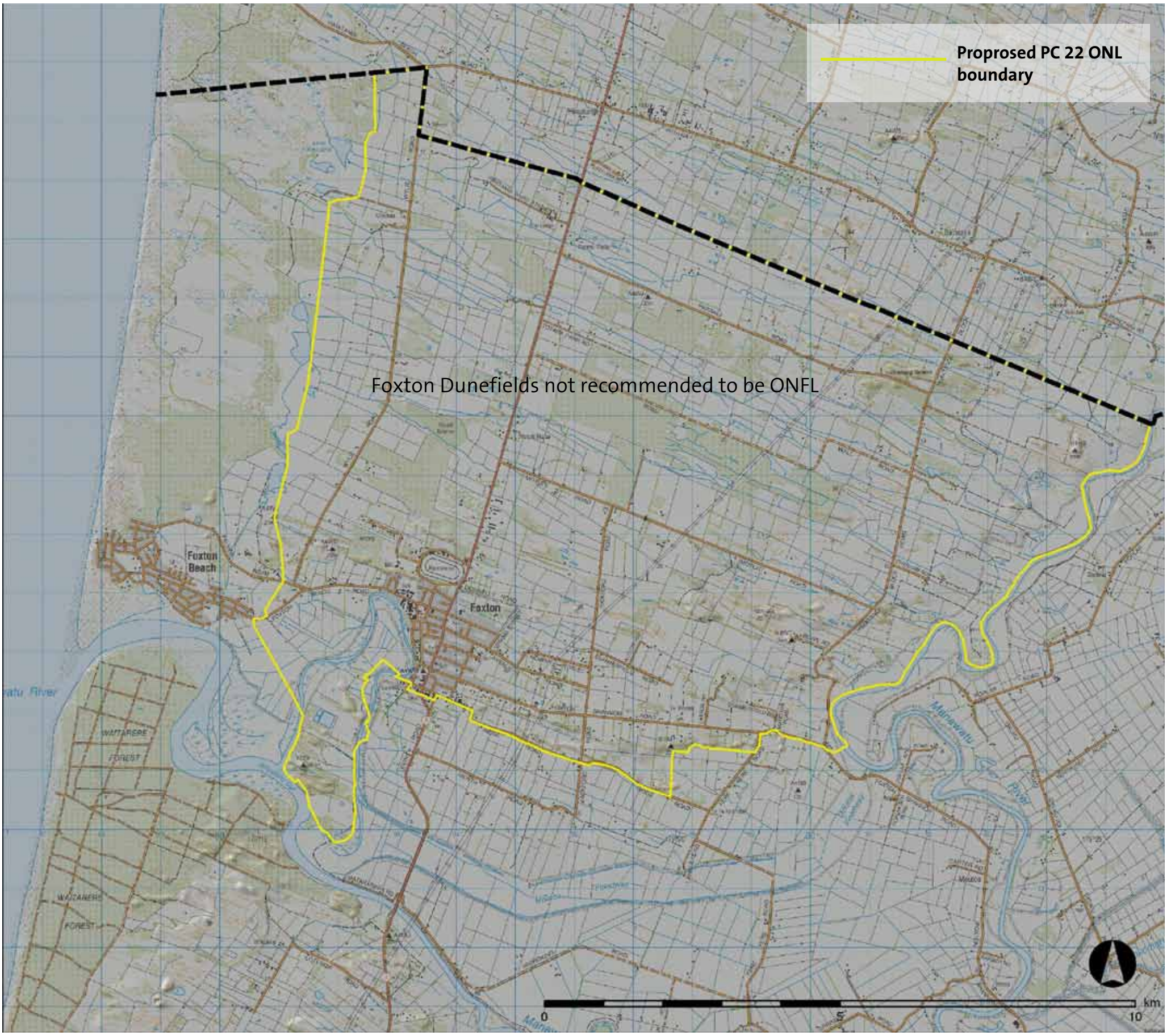
[1]Dr C Sloss. *The Late Quaternary Geomorphology of the Manawatu Coastal Plain*. School of People, Environment and Planning Massey University. in Geosciences Conference

Very little indigenous vegetation remains in the area with productive land uses of farming and forestry predominating.



Areas of the dunefield are covered in production forestry.