

PART C
SIGNIFICANT AMENITY FEATURES (SAF)

SIGNIFICANT AMENITY FEATURES (SAF)

Mākāroro River

Mangataura Stream

Waipawa River

Upper Tukituki River

Tukipo River

Tangarewai Stream

Mangatewai River

Makāretu River

Te Aute Limestone Crest

Lake Whatuma

Pōrangahau Inland Dunes

Eleven significant amenity features have been identified throughout Central Hawke's Bay District. Of these eleven, eight relate to river or stream corridors which flow away from the Ruahine Range in the western extent of the District. Indigenous vegetation is one of the key characteristics contributing to the recognition of these corridors as a significant amenity feature, although often with a higher degree of modification (e.g. grazing/browsing) than the nearby ONF's identified above. Maintaining this existing vegetation and preventing further removal of indigenous species is an important method in maintaining this characteristic. While limiting the planting of new exotic species within these areas is not achievable in a planning sense, it should not be encouraged.

The two central area features (Silver Range and Lake Whatuma) are recognised for their landform values, with Lake Whatuma also having high associational values. Maintaining clear visibility of the Silver Range feature is important for recognition of its key characteristics, with earthworks and pine plantations seen as the possible threats to this, and both factors should not be encouraged in a landscape sense. Any activities which could adversely affect cultural values should also be limited.

The one coastal area has been mainly recognised for geomorphology and cultural associational values, but there is also a degree of ecology values present, despite the extent of modification. Earthworks could adversely affect the key characteristic of the dune landform and impact on cultural sites, so both are to be limited in a planning sense.

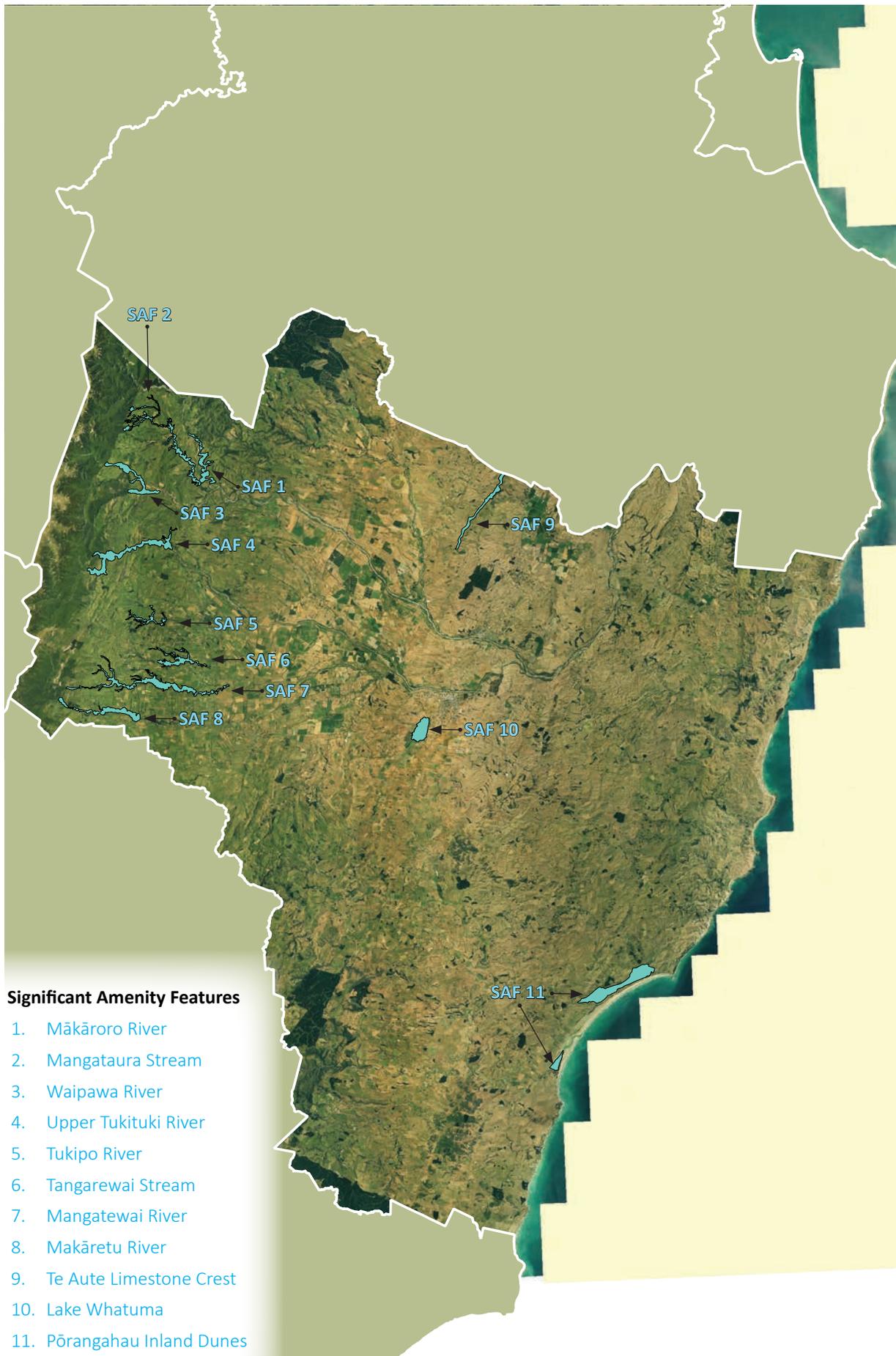


Figure 94: Significant Amenity Features (blue) identified in Central Hawke's Bay District

Overview of Eight Incised Rivers off the Ruahine Range

Identification: Significant Amenity Features (SAF)

Location:

NZ Topo 50 – BL36, BL37,

Description

Sections of eight separate river valleys flowing off the Ruahine Ranges. Distinctive valley systems incised into the softer sandstone/mudstone and alluvial terraces of the landform east of the Ruahine Range. Areas of regenerating indigenous podocarp forest combined with areas of grazing over the eroded landform of the meandering valley floors and enclosing escarpments. Areas included are within the following river valleys;

- Mākāroro River
- Mangataura Stream
- Waipawa River (upper)
- Tukituki River (upper)
- Tukipo River
- Tangarewai River
- Mangatewai River
- Makāretu River

The density and extent of indigenous vegetation that clothes the incised river valleys influences their assessment as a Significant Amenity Feature (SAF) versus an Outstanding Natural Feature (ONF), with the lesser extent of indigenous vegetation and less incised landform contributing to it being assessed as a SAF rather than an ONF.

Where areas of indigenous vegetation occur without the landform context necessary to define them, it is possible they are not recognised as either ONF's or SAF's. An example of such an area is Evertree Bush on the northern side of Mākāroro Road where 7ha of original podocarp forest is located. Highly worthy of botanical recognition but lacking the landscape definition needed to be recognised as either an ONF or SAF. In contrast, the valley immediately to the north parallel to Forty Acre Stream contains 18ha of podocarp forest and regeneration within a defined and identifiable catchment that has its own landscape character by virtue of its enclosing topography, defined extent and density and consistency of its vegetation.

All eight rivers have distinctive incised landforms with varying amounts of indigenous vegetation. Some contain limited areas of exotic vegetation such as

pinus which detract from the perceived naturalness but are not considered sufficiently dominant to cause the area to be excluded. Typically, such areas of pinus are excluded from the SAF boundary. However, this may not always be the case if areas of native vegetation are well represented and the landform is sufficiently distinctive such as a clearly defined river channel with areas of original or regenerating native bush.

Where larger areas of pinus occur, the area has generally been excluded from the feature. Pastoral activities occur within the features to varying extents. While this detracts from the perceived naturalness, where pastoral areas have been included the landform is considered sufficiently distinct or remnant vegetation sufficiently abundant to warrant recognition as a Significant Amenity Feature.

The general characteristics relating to the eight rivers are discussed below, following by a discussion, map, photos and assessment of each individual river.

Natural Science Geological/Geomorphological

A pattern of defined valleys descending gently from the sandstone greywacke of the Ruahine Ranges. Incised into the softer terraces that are formed of gravel, sand, silt and mud through alluvial processes. Their distinctive meandering pattern is eroded into the valleys, with old oxbow patterns and escarpments clearly evident. Incised to varying extents, with deeper valleys tending to be narrower and more heavily vegetated as they offer less scope for farming activities, while wider valleys retain more scattered indigenous vegetation located towards the escarpments or less accessible areas.

Hydrological

Water in all the streams and rivers are tributaries to the Tukituki or Waipawa Rivers, with potential ecological benefits that the indigenous land cover has on the rivers water quality.

Consent has been granted to dam the Mākāroro River for water storage as part of the Ruataniwha Plains Irrigation Scheme, although implementation of the consent is uncertain due to legal impediments.

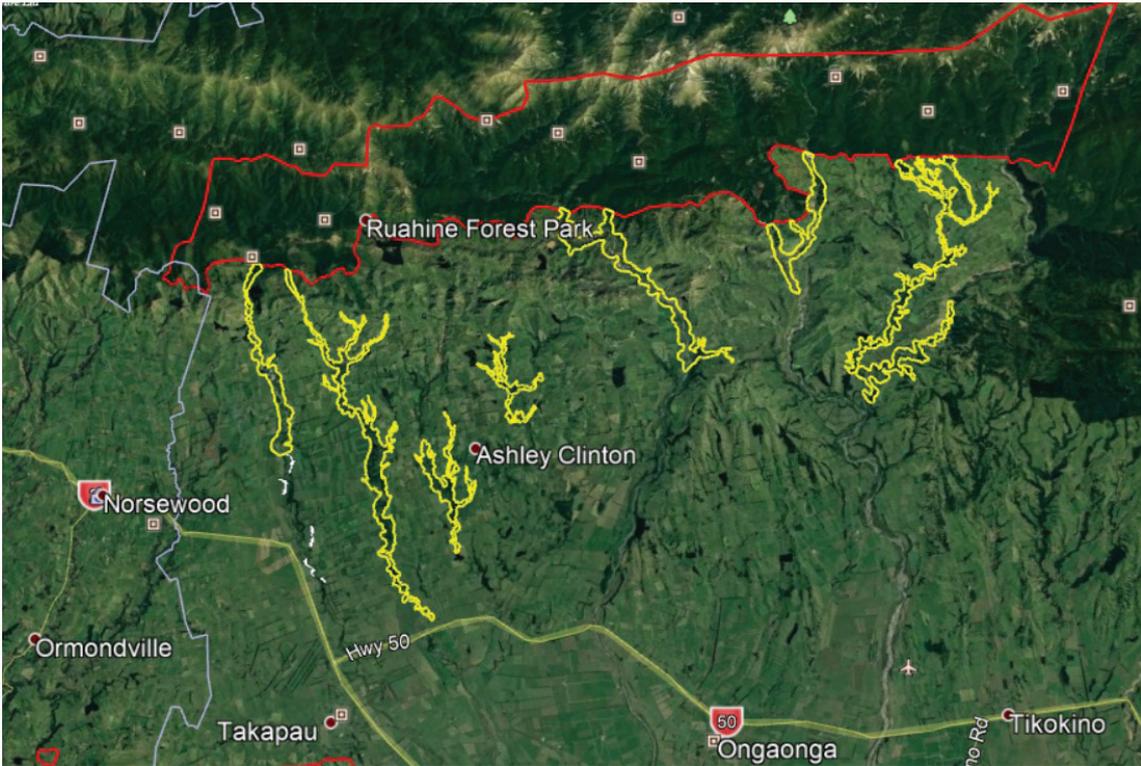


Figure 95: Eight Significant Amenity Feature Rivers off the Ruahine Range

Ecological

The nine rivers assessed as Significant Amenity Features have followed a meandering pattern down their channels, with the formation of oxbows and scallops. Those in narrow valleys have confined meanders, while those in wider valleys have more expansive meanders, with several oxbow lakes still remaining within some of the cut off meanders. Examples where these are still observable, occurring in the Mākāroro, Mangatawai and Mangataura Streams and Rivers.

With the meandering came the formation of escarpments, with many of the steeper ones still retaining indigenous vegetation. Rata remains on some, while manuka, kanuka and mahoe is present on others where regeneration is occurring.

Several of the areas identified as Significant Amenity Features contain areas of original remnant vegetation. Tangarewai Stream flows through Monckton Scenic Reserve, most of which contains relatively young vegetation but does include black beech up to 80cm diameter, matai, totara and rimu to 75cm, and kahikatea to 90cm. Also located there is a matai of 45cm and a bole of 12m and 24m tall about 300 years old and a kahikatea with a bole of 24m, height of 33m and 260 years old.



Figure 96: A'Deanes Bush Totara 600 years old, 33m high, 2.65m diameter. Remnant of the podocarp forest that once covered the terraces east of the Ruahine Range.

Another area of bush typical of that which covered the lowland terraces east of the Ruahine Ranges is within A'Deanes Bush on Makāretu Road (not within an SAF). This contains old podocarp forest, with the largest tree being a 600 year old Totara 33m high and 2.65m diameter. Surrounded by rimu, matai and kahikatea over 300 years old and typical of the species and sizes that would have covered the area stretching towards SH50.

Areas within the defined river gullies identified as SAF's contain native regenerating indigenous vegetation at various stages of maturity. In some instances the vegetation completely covers the valley floors and enclosing escarpment, while in other areas it is more sparse and intermingled with pasture and grazing. There are occasional areas of pine plantation within the valleys and more frequently along the terrace edges.

Vegetation creates improved habitat for indigenous and exotic birdlife. Regeneration appears to be approximately 50-80 years old and more in places, with emergent podocarp species apparent and beginning to dominate, particularly on moister south-facing slopes. Pockets of remnant forest is older, with such areas having survived the fires of the last 150 years, possibly due to their sheltered location in the valleys and gullies and the dampness of these areas.

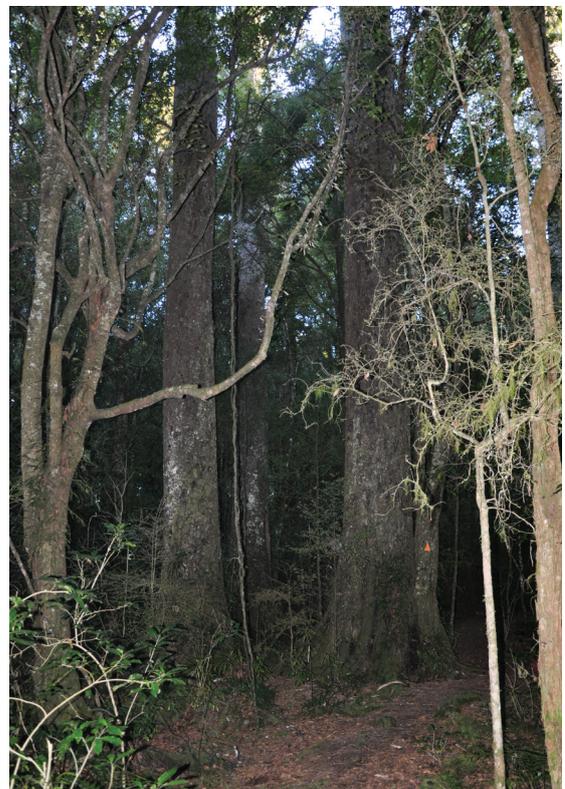


Figure 97: A'Deanes Bush. Dense spacing indicated trees seeded at a similar time, immediately after the destruction that occurred through the Matawhero Period.

Remnant vegetation within the Significant Amenity Feature area is likely to have originated after the winds and fires of the Matawhero Period 400 years ago. The larger and denser vegetation is more likely to have been remnant from this period, but much has been milled or burnt since European settlement. Research by PJ Grant concludes that much regeneration started at a similar time after the destruction of the Matawhero Period, evidenced by closely spaced tall trees that have seeded at similar times.

Ongoing grazing and the effects of pests and weeds may lead to reduced ecological values where this occurs, with such activities more likely in the Significant Amenity valleys that are more accessible and appear to be more integrated with farming operations than the areas assessed as Outstanding Natural Features.

Perceptual Memorability

Each river valley is memorable as a clearly defined geological feature of an incised valley containing a meandering river. On the larger rivers, such as the Tukituki and Waipawa, braided river patterns start to emerge in the lower reaches of the SAF, with this pattern becoming more pronounced further downstream as the rivers leave the confines and meanders of the gorges and enter the flatter terrain of the Ruataniwha Plains.

The presence of indigenous vegetation, much of it mature and several hundred years old, plus stands of younger natives, is memorable as threads of bush across the pastoral terraces. Typically embedded in the recesses of the river channels, the dark green of the native trees emphasises their meandering paths, giving hints to what once covered the terraces and has been milled and burned over the last 150 years.

The combination of the clearly defined form of the river channels and the strong presence of remnant native vegetation contributes to the memorability of these features.

Legibility/Expressiveness

Landform is expressive of the natural geomorphic forces which shaped it, showing a rhythmic pattern of valleys and steep-sided, eroded meandering river courses. Landform reflects natural erosion patterns, and is also expressed through the patterns of regenerating vegetative cover such as on the steeper sided escarpments. The underlying eroded landform is clearly expressive through the incised terraces and remnant oxbows overlain with regenerating podocarp forest which in turn is clearly legible as remnant

land cover distinct from their adjacent productive land-use. Vegetation patterns are expressive of incised valley systems, with the moister and more sheltered valleys showing maturity in the regeneration process. The historic meander patterns are imprinted into the valley footprints, although partially screened in some valleys by the remnant vegetation. Remnant oxbow ponds are still present in several meanders, but most are dried as the river has changed course and become more incised over time.

Transient

The bush environment is sheltered and enclosed, with habitat for fauna and the sound of birds, rivers and streams.

Aesthetic

High aesthetic value due to the quality of the regenerating indigenous vegetation, the pattern of the incised valleys, and the evidence of the geomorphic processes within these areas – isolated and with a high degree of perceived naturalness. A contrast to the surrounding terrace landform and productive rural land-use, further emphasising the aesthetic value of the defined areas.

Naturalness

High perceived naturalness with unmodified landform and indigenous vegetative cover particularly in the incised valleys. Natural value is contributed to by the presence of the forest regeneration in combination with the landform.

Associational Shared/Recognised

Identification of many of the SAF rivers as Areas of Significant Natural Conservation Value (ASNCV) in the Operative District Plan gives some shared recognition of the ecological values they hold. Of the eight SAF rivers, the following have some part of their SAF river channel with an ASNCV overlay:

- Mangataura Stream
- Tukituki River (upper)
- Tangarewai River
- Mangatawai River
- Makāretu River

QEII Covenants are another form of shared and recognised value, with the covenanted areas needing to be of an acceptable standard to be recognised by the QEII National Trust, and their recognition being something that is openly shared. The following rivers have some covenant within their SAF area:

- Mangataura Stream
- Tukituki River (upper)
- Makāretu River

Historical

Vast areas of podocarp forest covered the flatter terraces and lower slopes of the Ruahine Ranges. Most of this was originally felled for milling, with a many mills located across the area. One such mill was Thomsens Mill at Orua Wharo near Takapau, another was the McCullough's Mill of North Block Road while another was the Miles & Sons Mill on the corner of Ashley Clinton/Wilson Cutting Rd.



Figure 98: Photo of Miles & Son mill at Ashley Clinton

This old mill site now only has two old wooden sheds to show its past presence, but was once a local feature established by George Miles in the 1920's and operated by him, his sons and others till after WWII.



Figure 99: Two sheds are all that remain from the original Miles Mill at Ashley Clinton.

While native forest is now limited to the river valleys and isolated pockets, it originally covered much of what is now pasture and cropping land used for rural purposes throughout the district. Regeneration of the native forest has occurred to varying degrees, with the defined areas demonstrating areas of regeneration and generally moving into or through secondary growth and in places emergence of tertiary species.

Tangata Whenua

All of the identified SAF rivers are tributaries to the Tukituki River. Reference to the Tukituki River Catchment Cultural Values and Uses (HBRC report June 2012) clarifies and defines key Māori environmental cultural values and their application within the Tukituki River catchment, in particular describing Mauri, which is the life essence of nature itself on this planet, and how essential its preservation and protection is:

‘When mauri is extinguished within a species, the result is extinction because the natural restorative and

regenerative powers are lost. Of absolute importance to Ngāti Kahungunu is the preservation and protection of mauri. Ensuring the preservation and protection of mauri is to provide for conservation of bio-diversity. The outcome will ensure the restoration and regeneration of ecosystems. Mana whenua as kaitiaki seek to sustainably manage all taonga species within the Tukituki River catchment. This is expressed through the cultural value of mauri that seeks to enhance the life force principle included in people, fish, animals, birds, forests, land, seas, rivers, biodiversity and ecosystems.

The Tukituki river flows ki uta ki tai – from the mountains to the sea – from its headwaters in the Ruahine Ranges, downstream through the Ruataniwha plains and lowland mouth and coastline at Haumoana. From the headwaters of the upper Tukituki tributaries which cross the Ruataniwha Plains are: the Mākāroro, Waipawa, Mangaroa Stream, Kahahakuri Stream, Mangataura Stream, Mangaonuku Stream, Tukipo River, Maharakeke Stream, Ngahape Stream, Pōrangahau Stream, Mangatewai River, Mangapohio Stream, and Makāretu River.

All the Tukituki tributaries, rivers and streams will have an influence on the overall ecological health of the catchment. Therefore, these tributaries are considered in terms of their relationship to cultural values, their mauri and the cumulative effects on the whole ecosystems and ecological health state of the Tukituki River catchment.

This underpinning philosophy is enshrined in the recent Heretaunga Tamatea Deed of Settlement, where the Pōrangahau/Taurekaitai River, Waipawa River, Tukipo River and Tukituki River and its tributaries were given Statutory Acknowledgement and Crown acknowledged that—

(a) the lakes, rivers, springs, and wetlands of Heretaunga Tamatea, such as Whatuma, Runanga and Poukawa, the Tutaekuri, Ngaruroro, Maraetotara, Tukituki, Waipawa, Makāretu, and Pōrangahau / Taurekaitai Rivers, and the Pekapeka swamplands are mahinga kai that are central to the well-being of the hapū of Heretaunga Tamatea; and

(b) the loss of traditional lands has limited the ability of the hapū of Heretaunga Tamatea to access these waterways, to gather traditional foods, and to provide the manaakitanga that is intrinsic to Heretaunga Tamatea; and

(c) the modification and degradation of the Heretaunga Tamatea environment due largely to the introduction of weeds and pests, farm run-off, industrial pollution, and drainage works has severely

damaged traditional food resources and mahinga kai. The Act provides for cultural redress, including: Cultural redress that does not involve the vesting of land, namely,—

- (i) a statutory acknowledgement by the Crown of the statements made by Heretaunga Tamatea of their cultural, historical, spiritual, and traditional association with certain statutory areas and the effect of that acknowledgement, together with deeds of recognition for the specified areas; and statutory acknowledgement provides for;

The only purposes of the statutory acknowledgement are—

(a) to require relevant consent authorities, the Environment Court, and Heritage New Zealand Pouhere Taonga to have regard to the statutory acknowledgement, in accordance with sections 24 to 26; and

(b) to require relevant consent authorities to record the statutory acknowledgement on statutory plans that relate to the statutory areas and to provide summaries of resource consent applications or copies of notices of applications to the trustees, in accordance with sections 27 and 28; and

(c) to enable the trustees and any member of Heretaunga Tamatea to cite the statutory acknowledgement as evidence of the association of Heretaunga Tamatea with a statutory area, in accordance with section 29.

Key Characteristics

High landscape values derived from the perceived naturalness of the remnant and regenerating indigenous vegetation cover in combination with the natural patterns of the incised valley landform pattern. The contrast with the surrounding areas of pastoral land increases the landscape value of such remnant areas of vegetation and meandering valleys. Waterways carry high cultural value of Mauri and responsibilities are now recognised by the Deed of Settlement for those tributaries to the Tukituki River.

These rivers are discussed individually in the following eight sections.

Individual Rivers

The nine individual rivers identified as Significant Amenity Features (listed below) are discussed individually from north to south in the following pages

- Mākāroro River
- Mangataura Stream
- Waipawa River (upper)
- Tukituki River (upper)
- Tukipo River
- Tangarewai River
- Mangatawai River
- Makāretu River

Mākāroro River

Identification: Significant Amenity Feature

Location:

NZ Topo 50 – BL36

Description

Assessment of the Mākāroro River, being downstream of the Mākāroro Gorge which is separately assessed as an ONF. The assessment of the Mākāroro River (downstream of the gorge) as a Significant Amenity Feature has been made on the understanding that the RWSS dam does not form part of the consented baseline and therefore has been assessed as not forming part of the existing environment in terms of effects.

If the dam was considered part of the existing environment, the gorge would not be assessed as an ONF and the part below the context of the dam location would likely be assessed as an SAF in combination with the abutting Mākāroro River section.

The area assessed as meeting the standards necessary for a Significant Amenity Feature (SAF) is the length of river from the gorge down to the junction with the Waipawa River. This is a 5km stretch of river (5km direct or 9.5km as the river flows), with the upper end of the gorge being east of the Wakarara Settlement intersection and the lower end of the SAF being Mākāroro Road bridge (Burnt Bridge) just upstream of the confluence with the Waipawa River.

Natural Science

Geological/Geomorphological

An incised river valley, carrying shattered greywacke from the Ruahine Range and carved into the lowland hills abutting the ranges. Incised into a pumiceous sandstone, sandy mudstone conglomerate, which lies within the Kidnappers Group and forms the Wakarara Range to the north, and gravel alluvial terraces within the river valley. A fault line is recorded as passing across the river at the northern end of the gorge section.

As the river widens below the gorge, the geology changes to include alluvial material that has gathered to form the flatter river terraces characteristic of the plains and lower slopes east of the Wakarara Range. Such terraces are clearly discernible adjacent to the intersection of Mathew and Wakarara Roads, where alluvial flats are divided by hedge rows and the Mākāroro River becomes less incised and takes on wider meanders as it passes through the softer depositional material.

Old oxbow patterns from previous meanders are clearly visible, with an old oxbow wetland remaining in the southern meander just upstream of Burnt Bridge. This incised meandering pattern illustrates the river's erosion into the soft depositional material on the terraces.

Ecological



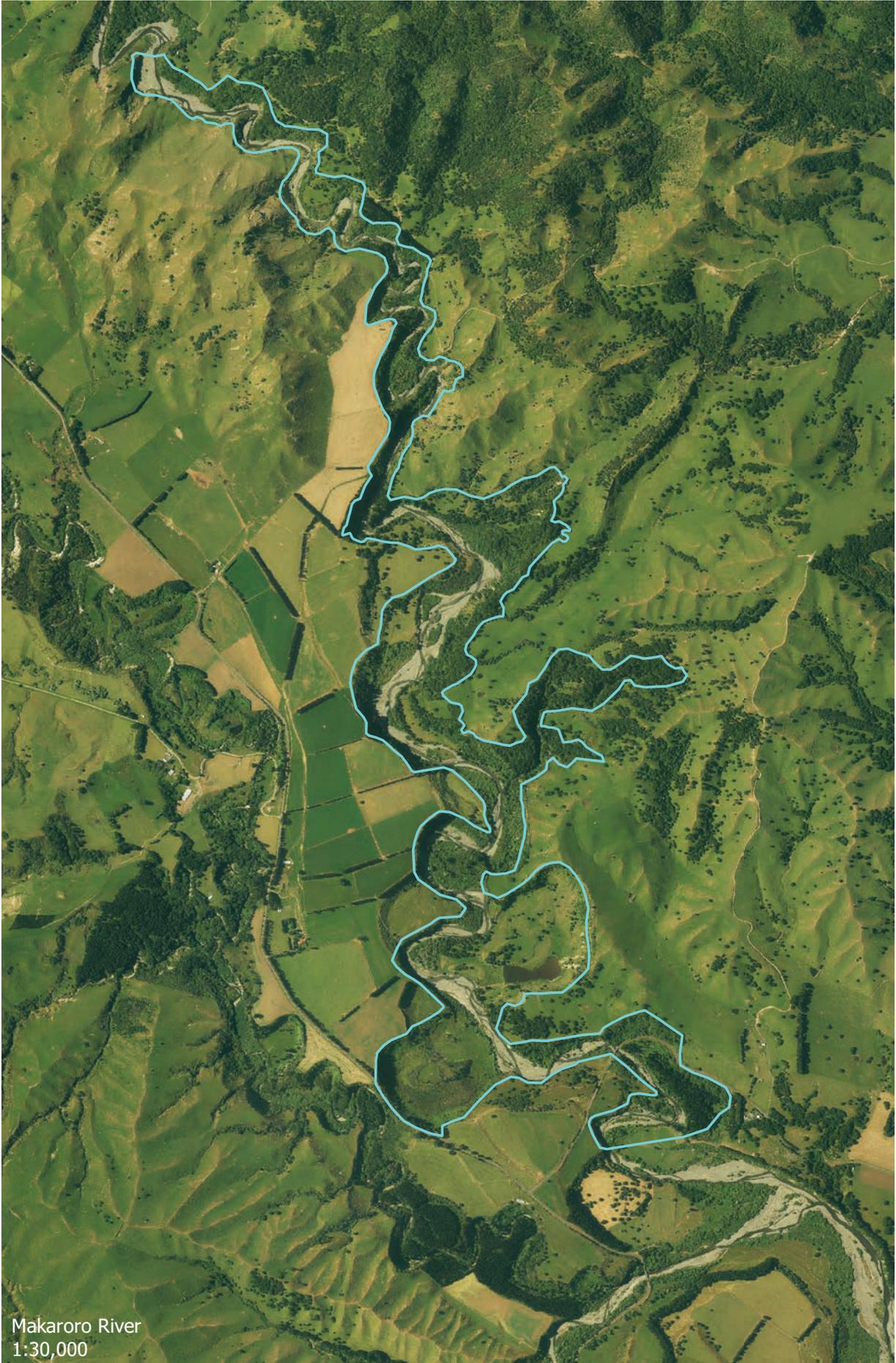
Figure 100: Mākāroro oxbows. Remnant wetland and pond in old oxbows, illustrating the meandering pattern through soft depositional material on the terraces.

Areas of indigenous forest clothe the sloping riverside escarpments and terraces, particularly on the northern side of the river, where the SAF abuts the southern edge of the Wakarara Range ONF. Pasture extends down some of the escarpments on the southern side and in the lower portions of the incised river channel. Vegetation beech and podocarp forest plus a mix of pasture and less well developed native regeneration. Both types of native vegetation enhance the ecological values and water quality while also creating a habitat for indigenous and exotic birdlife.

Areas of pastoral land are located on the escarpments and in the old meanders of the oxbows, with the lowest southern oxbows still containing remnants of its more saturated history with the presence of ponds and a horseshoe shaped wetland.



Figure 101: Mākāroro River aerial photo looking west up the river. Note oxbow pond lower right in meander.



Makaroro River
1:30,000

The Protected Natural Area Programme (PNAP) undertaken by DoC in 1994 recognised Smedley Bluffs (RAP 25), being bush covered escarpments on the true left bank in the lower part of the SAF opposite Mathew Road, noting the beech and podocarp species and other native vegetation:

“On the higher dry sites black beech is the dominant tree Good numbers of totara, kahikatea, matai and rimu are scattered through the northern half of the RAP and a few small pockets of manuka are present.”

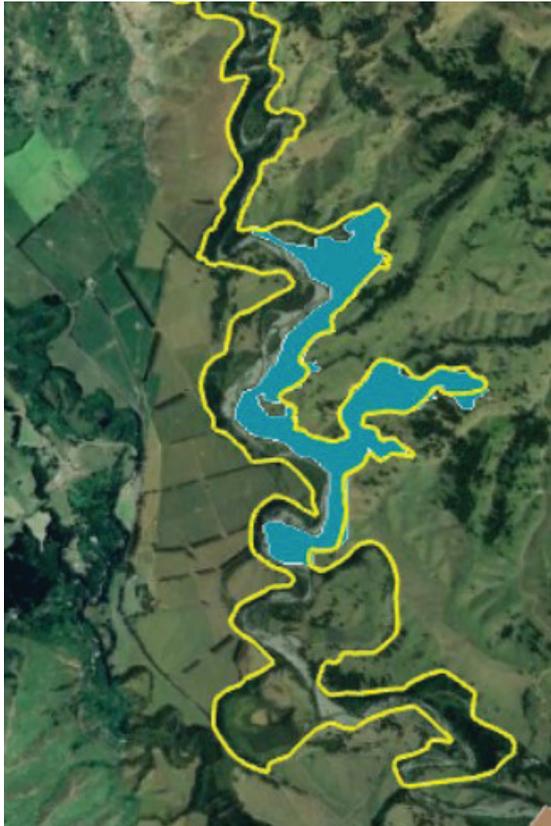


Figure 102: True left bank of the Mākāroro River SAF recognised by PNA programme as RAP 25 (solid blue area). Known as Smedley Bluffs.

The area covered by the PNAP is also categorised as a ASNCV (Area of Significant Nature Conservation Value) in the operative District Plan. This classification is likely to be extended during the district plan review to include more of the lower section and the gorge and to be renamed SNA (Significant Natural Area).

Hydrological

The river carries 1.23m³/s mean annual low flow before joining the Waipawa River just below the lower end of the SAF. Water is sourced from rainfall in the Ruahine Ranges where the headwaters start. The site of the consented Ruataniwha water storage dam is at the upper end of the gorge, upstream and separate to the SAF.

Perceptual Memorability

The lower portion of the SAF is memorable for its combination of incised channel form, with its widening meanders and remnant oxbows, plus remnant and regenerating native vegetation. The river channel becomes more apparent as its incised form contrasts with the adjacent flats as it weaves through the emerging terraces that widen south of Mathew/ Wakarara Road intersection. The contrasting form of flat terraces with depressed meandering channels highlighted by the presence of large swathes of native vegetation increases the memorability of the river.



Figure 103: Wakarara Road on narrow strip between Maungataura Stream (left) and Mākāroro River (right).

Legibility/Expressiveness

An expressive meandering pattern resulting from the river’s erosive action through the sandy mudstone conglomerate and alluvial terraces. Clear evidence of the erosion process of the river eating into the surface material and forming depressions and incised patterns.

Old oxbow patterns from previous meanders are clearly visible, with an old oxbow wetland remaining in the southern meander just upstream of Burnt Bridge. The Mākāroro River has almost joined with the meander of the Mangataura Stream to the south, with the narrow remaining terrace that separates the two being the alignment of the Wakarara Road. A little over 50m of the embankment remains between these two rivers channels, graphically expressing the power of the rivers running off the Ruahine Range.

Transient

The river valley has its own microclimates, with the sheltered valley characterised by heat in the summer, cold in the winter, and high waters during heavy rain periods throughout the year. Home for birdlife and song and the sound of flowing water are all characteristics of these sections of the river.

Aesthetic

Areas of indigenous vegetation throughout the valley system has a high degree of coherence and reinforces its vividness both as a feature and in harmony with the natural meanders of the river. The river follows an incised valley that contrasts with the intactness of the terraces it crosses, being clearly expressive of the softness of their underlying alluvial geology.

Naturalness

A high degree of perceived naturalness, more so in the areas with the greatest presence of native vegetation. The density and extent of indigenous vegetation that clothes the incised river valley influences its assessment as a Significant Amenity Feature, reduced from a outstanding rating by the presence of pastoral activity.

Associational Shared/Recognised

Tributaries and the spiritual and ecological health are valued by Māori for its Mauri. The value of the clean flowing river waters are recognised by all, with its attributes reflecting environmental well being. These rivers are connected with the aquifers, which flow under the Ruataniwha Plains, so have long term values associated with that. The Mākāroro River is a tributary of the Tukituki River, which is recognised as the main river flowing through Central Hawke's Bay and north through Hastings District. The Tukituki River has high associational values for CHB with all other rivers flowing off the Ruahine Range within CHB being tributaries to it.

Historical

In the 1920s, a milling operation was based at Mākāroro River approximately 3km upstream of the gorge. The mill ran for 25 years, cutting podocarp from the local area. The Gardner and Yeoman's Mill was located at the present Mākāroro River carpark. A timber mill also operated from near the end of North Block road from 1930 for 12 years.

Gold mining took place in Gold Creek which is a tributary to the Mākāroro River on the edge of the Forest Park, while copper was also mined in the area.

A number of tracks were utilised by the people of Heretaunga Tamatea in times of peace and war to cross from one side of the Ruahine Range to the other. One was known as Te Atua-o-Mahuru. From the western side it ran from Te Awarua and came out on the eastern side at the headwaters of the Mākāroro Stream and followed the stream down to the Ruataniwha Plains.

William Colenso used the river to access this crossing of the Ruahine Ranges. The route he followed is marked on

NZ Topographical maps as Colenso Spur and Colenso Spur Track, both of which connect with the upper reaches of the Mākāroro River. A memorial to Colenso is located within the Forest Park on Colenso Spur above the Mākāroro River



Figure 104: Colenso Memorial on spur above Mākāroro River. Route shown to him by Māori to cross the Ruahine Range. Mākāroro River used as the eastern access.

Tangata Whenua

Motu o Puka Pā was located on the north bank of the river channel within the length of the SAF. This pā was under the leadership of chief Tuawāhia whose influence spread right down to Rakautatahi Marae just south of Takapau (on Snee Rd at the junction with SH2).

Tamakiuru and Amiria lived at Rakautatahi. Amiria was taken prisoner at Te Ruru in Manawatū by Ngāti Kahungunu and taken to Wairoa. Karena was born there. Te Rere lived at Motu o Puka (near the headwaters of Waipawa) and at Rakautatahi, as well as at Te Kehou where they had a burial ground. Their chief was Tuawāhia.

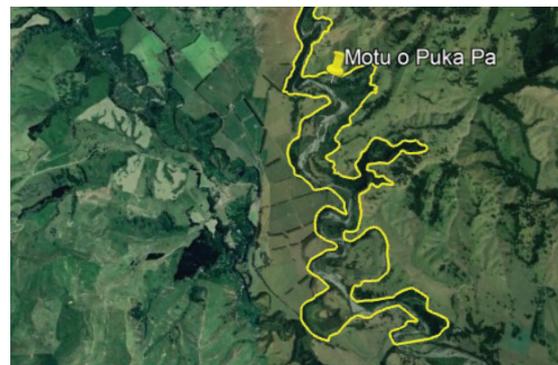


Figure 105: Motu o Puka Pā site on the Mākāroro River.



Figure 106: Aerial photo Motu-o-Puka Pā site on the Mākāroro River.

Motu-o-Puka was not a defensive pā but was located at the meeting point of two walking routes around the Wakarara Range (alternatively named Ngawhakarara). One was around the western side, which now is generally aligned with Mangleton and Mākāroro Roads, while the other was around the eastern side from Ngaroro.

Walking tracks then headed south, with one possible route being along the foothills of the Ruahine Range following Moorcock Stream, with the other possibly passing through a lookout and pits at Pendle Hill, Te Whiti-o-Tu Pā north of Wakarara Road, an unnamed pā by Springhill Reserve, a bird snaring site near Petit Valley Road and another unnamed pā near Makāretu Road before arriving at Rakautatahi Marae or Te Horehore Pā (or others) near Takapau.

Responsibilities under the Deed of Settlement apply to this area.

Key Characteristics

The length of river channel reaches the level of Significant Landscape Feature due to the combination of distinctive incised landform, perceived and ecological naturalness due to the presence of remnant and regenerating native forest, historic and cultural associations. Current pastoral activities within the river channel potentially reduce the ecological naturalness.

Potential Issues

Preservation of the existing indigenous vegetation is important to maintain this characteristic that contributes to the SAF. Limiting grazing, particularly large animals, to assist regeneration, preventing drainage of remnant wetland vegetation, and limiting earthworks are factors that would also assist maintenance of the values of this amenity feature, along with weed and pest control.

Potential Response

- Maintain and enhance indigenous vegetation throughout the ONF.
- Discourage drainage of wetlands
- Limit earthworks
- Restrict establishment or spread of exotic plants
- Limit built development
- The river system has great significance to iwi, particularly the river itself for the mauri it brings. See details in Overview above on the Deed of Settlement for associated responsibilities and cultural significance.

Figure 107: Motu o Puka Pā site on the Mākāroro River. Meeting point of western and eastern tracks possibly used by Māori around the Nga Wakarara Range before heading south. Two possible routes shown in green.

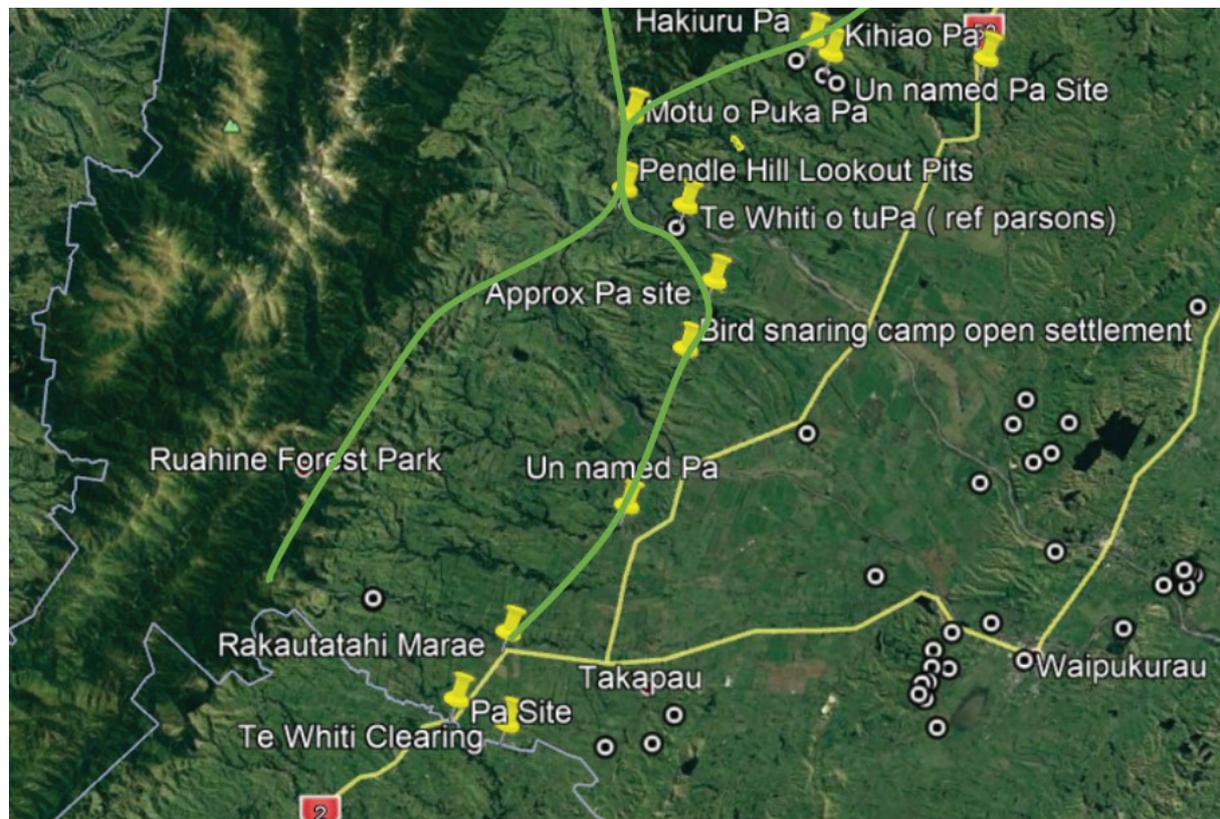




Figure 108: Aerial photo of the Mākāroro River.

Mangataura Stream

Identification: Significant Amenity Feature

Location:

NZ Topo 50 – BL36

Description

The section of the Mangataura Stream identified as being a Significant Amenity Feature (SAF) extends almost 10km from the eastern edge of the Ruahine Range down to the confluence with the Waipawa River. It has an area of approximately 380ha, which includes the upper portion which is made up of a number of smaller tributaries. These all originate in the Ruahine Range and join together at Wakarara settlement before combining to form the larger Mangataura Stream that joins the Waipawa River 5km downstream from the settlement. The tributaries and the stream flow through incised channels enclosed by rolling hills in the upper portions and abutting flatter terraces in the lower portions. Each channel is filled with a mixture of regenerating native vegetation and pasture.

Natural Science

Geological/Geomorphological

A collection of incised river channels, carrying shattered greywacke from the Ruahine Range's sandstone mudstone conglomerate of the Kaweka Terrane. East of the forest park, the tributaries are carved into the fossiliferous mudstone/sandy mudstone conglomerate of the lowland hills abutting the ranges before becoming incised into gravel alluvial terraces within the river valleys. The Ruahine Fault and the Mohaka Fault pass through the upper portions of the SAF, while an unnamed fault passes across it in its lower portion. All three faults follow a general NNE/SSW direction.

Hydrological

The Mangataura Stream flows from the Ruahine Range, with the western most parts of the Mangataura and tributary channels abutting the Ruahine ONL. Many smaller tributaries feed into larger streams that in turn combine to form the main channel of the Mangataura Stream. The Stream joins the Mākāroro just before that joins the Waipawa River.

Ecological

Each tributary contains remnant and regenerating podocarp vegetation, with species ranging from regenerating manuka through to large podocarp such as totara.

Three separate areas are covered by a QEII Open Space Covenants, which require the areas to be fenced from grazing and protects the native forest. The covenanted areas are approximately 65ha, lying in steeper valleys.

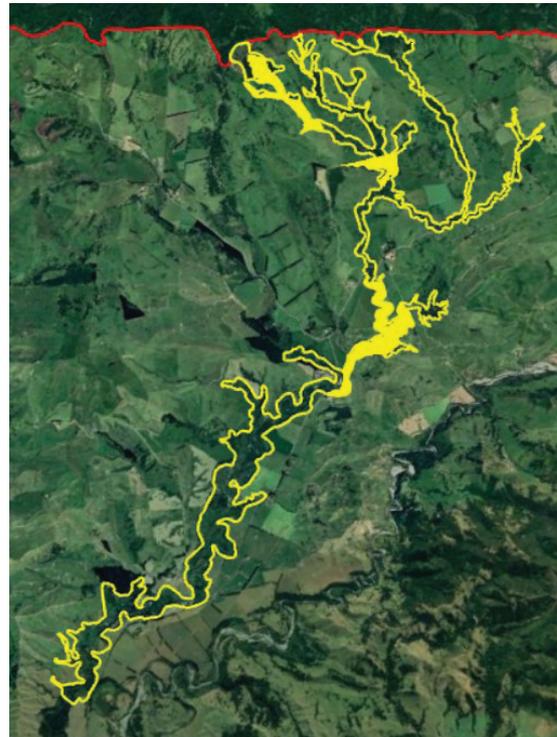


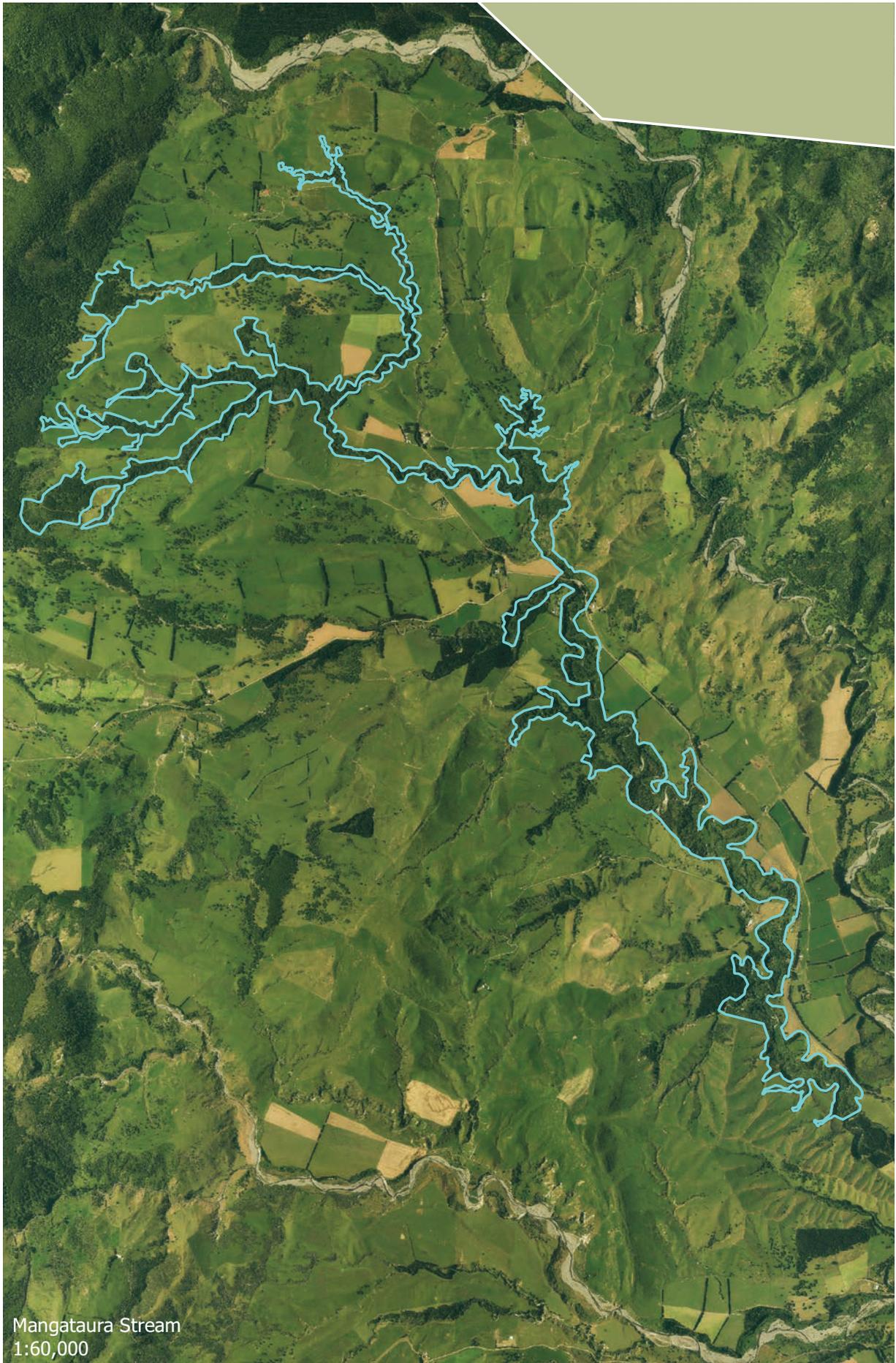
Figure 109: Three areas (yellow) totalling 65ha set aside with QEII Covenants in Mangataura Stream valley.

The upper covenanted area almost links with the Ruahine Forest Park, while the next area is smaller at 10ha and lies downstream just north of Norris Road and by Norris Hut. The third area is located in the stream valley west of Wakarara Road. Vegetation appears to be a mix of mature podocarp but also containing areas of younger broadleaf regeneration and areas of manuka regeneration on slopes that may once have been grazed.

Liddles Creek and Triplex Creek flow into Mangataura Stream at Wakarara, but neither creek falls within the SAF.

Vegetation in the SAF includes a mix of remnant and regenerating podocarp forming a thick cover within the less accessible steeper sided valley system plus areas of regenerating manuka and broadleaf species. Grazing is apparent in parts where terrain permits and is located in scattered areas along the stream's course and its tributaries.

The stream flows through surrounding land use of open pasture, making the area of SAF the only sizable and connected length of native vegetation within this catchment downstream of the Ruahine Range boundary. The vegetation within the larger QEII covenant, particularly



Mangataura Stream
1:60,000

the lower portion west of Wakarara settlement, appears to include well established and possibly original podocarp stands. The quality of this vegetation, plus the very clearly defined topographical containment, would qualify this part for consideration as an ONF.

The same applies to the rest of the area currently mapped as a SAF section of the Mangataura Stream and the other identified tributaries, where there is the appearance that stock grazing may take place within parts of them. If this is not the case, or they can be fenced or have cattle excluded, they would be eligible for consideration as an Outstanding Natural Feature. A site visit and ecological expert would inform this.

Areas of pastoral land are located on the escarpments



Figure 110: Mangataura Stream with remnant or regenerating native vegetation.

and in the old meanders of the downstream oxbows, with the several of the downstream oxbows still containing remnants of its more saturated history with the presence of ponds and a horseshoe shaped wetland. These all add to the ecological diversity and rarity of the stream channel, contributing to its landscape significance.

Perceptual



Figure 111: Mangataura Stream with remnant oxbow lake in old meander

Memorability

The Mangataura Stream and tributaries of the SAF are memorable for their combination of incised channel form emphasised by remnant and regenerating native vegetation. The river channel and the tributaries are made more apparent by their contrast in terms of colour, vegetation and form with the adjacent rolling pastoral land. They invoke memories of what the land cover once was across the wider area.

Legibility/Expressiveness

An expressive meandering pattern resulting from the stream's erosive action through the sandy mudstone conglomerate and alluvial runoff from the Ruahine Range. Clear evidence of the erosion process of the river eating into the surface material and forming depressions and incised meandering patterns.

Transient

The river valley has its own microclimates, with the sheltered valley characterised by heat in the summer, cold in the winter, and high waters during heavy rain periods throughout the year. Home for birdlife and song and the sound of flowing water are all characteristics of these sections of the river.

Aesthetic

Indigenous vegetation through the valley system has a good degree of coherence and reinforces its vividness both as a feature and in harmony with the natural meanders of the river. The river follows an incised valley that follows the grain of the land and contrasts with the intactness of the terraces it crosses, being clearly expressive of the softness of their underlying alluvial geology. These combine to give the valleys high aesthetic value.

Naturalness

A good degree of perceived naturalness in the incised river valleys where the greatest presence of native vegetation prevails. The density and extent of indigenous vegetation that clothes the incised river valleys influences its assessment as a Significant Amenity Feature, reduced from a outstanding rating by the apparent results of pastoral activity in the channels. This may be proved incorrect by a site visit and ecological expert advice.

Associational Shared/Recognised

Streams and their spiritual and ecological health are valued by Māori for their Mauri. The value of the clean flowing river waters are recognised, with its attributes reflecting environmental well being. Valued for their

clean water and the associated values this brings. These rivers feed the aquifers, which flow under the Ruataniwha Plains, so have long term values associated with that.

Placement of QEII covenants over parts of main channel and tributaries to the Mangataura Stream illustrate the willingness of the owners to preserve the values of the natural environment in perpetuity, which ensures they are shared with future generations. Identification of a small area at the top of the stream as ASNCV in the District Plan confirm the wider recognition of the ecological value of this small area.

Historical

Mapping of old forests by PJ Grant indicate that the proposed SAF would have been covered by the extensive podocarp forest that grew across the Ruataniwha terraces. This would suggest the possibility that trees within the stream valley may be several hundred years old if they survived milling and burning since the Matawhero Period.

A timber mill was located nearby on Mākāroro Road near the river and another on North Block Road near the Waipawa River. The Mangataura Stream and its tributaries lie between the two mills and may have been the source of logs for either or both, but more likely for the Wakarara mill on Mākāroro Road. This may be the case as it appears the other mill sourced timber from south of the Waipawa River.

Tangata Whenua

The river systems have great significance to iwi, particularly the rivers themselves for the mauri they bring. See ONF Introduction for details on the Deed of Settlement, associated responsibilities and cultural significance.

Key Characteristics

The distinguishing characteristics of the named stream and unnamed tributaries that cause them to form the SAF are the density of native vegetation, which may include original trees that survived the burning and clearance over the last hundred plus years, plus its containment within a defined landscape setting.

The presence of such dense native vegetation contributes to fulfilment of the 'ecological' and 'naturalness' factors in the landscape assessment process, while the containment within the incised main valley system and more rolling lower tributaries contributes to the 'expressiveness' and 'coherence' aesthetic factors. Rarity and associational cultural values are also contributing factors.

Potential Issues

Clearance or degradation of native vegetation throughout any part of the area. Damage to flora and fauna by pests or grazing animal. Establishment or spread of exotic plants within the areas and along stream margins. Earthworks and structures that remove native vegetation or reduce perceived naturalness.

Potential Response

- Maintain and enhance indigenous vegetation throughout the ONF.
- Limit earthworks
- Restrict establishment or spread of exotic plants
- Limit built development
- The river system has great significance to iwi, particularly the river itself for the mauri it brings. See details in Overview above on the Deed of Settlement for associated responsibilities and cultural significance.

Figure 112: Upper reaches of the Mangataura Stream SAF incised tributaries valleys filled with native vegetation



Waipawa River - Upper

Identification: Significant Amenity Feature

Location:
NZ Topo 50 – BL36

Description

The section of the Waipawa River identified as being a Significant Amenity Feature (SAF) extends 4.5km from the eastern edge of the Ruahine Range down to the confluence with Middle Stream, then a further 1km downstream of that. The tributaries and the river flow through deeply incised valleys enclosed by rolling hills in the upper portions and abutting flatter terraces in the lower portion. Each channel is filled with a mixture of regenerating native vegetation and pasture.

Natural Science

Geological/Geomorphological

A collection of incised river channels, carrying shattered greywacke from the Ruahine Range's sandstone mudstone conglomerate of the Kaweka Terrane. East of the forest park, the tributaries are carved into the fossiliferous mudstone/sandy mudstone conglomerate of the lowland hills abutting the ranges before becoming incised into gravel alluvial terraces within the river valleys. The Ruahine Fault and the Mohaka Fault pass through the upper portions of the SAF, while an unnamed fault passes across it in its lower portion. All three faults follow a general NNE/SSW direction.

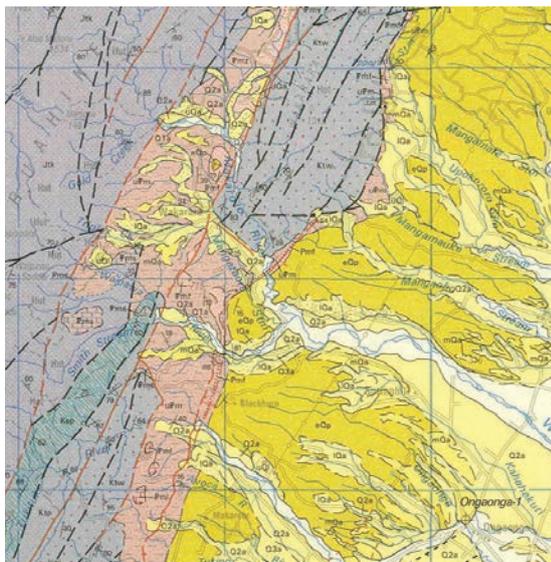


Figure 113: Waipawa River carved through mudstone conglomerate before crossing alluvial gravels of the Ruataniwha Plains.

Hydrological

The Waipawa River flows from the Ruahine Range, with the western most parts of the river and tributary channels abutting the Ruahine ONL. Many smaller tributaries feed into larger streams that in turn combine to form the main channel of the Waipawa River, which then joins the Tukituki River just downstream of Waipukurau..

Ecological

The Waipawa River the Middle River tributary contain regenerating podocarp vegetation, with species ranging from regenerating manuka through to areas of larger broadleaf vegetation.

Vegetation appears to be a mix of podocarp but also containing areas of manuka regeneration on slopes that may once have been grazed. Much of the slopes are still covered in pasture, although access is steep and small areas of erosion is also apparent on the steep escarpments.

Perceptual Memorability

The Waipawa River and tributaries of the SAF are memorable for their combination of deeply incised channel form, with regenerating native vegetation on some of the steep escarpments. The river channel and the tributaries are made more apparent by their depth, width and scale in terms of landform as they weave through with the adjacent rolling pastoral land.

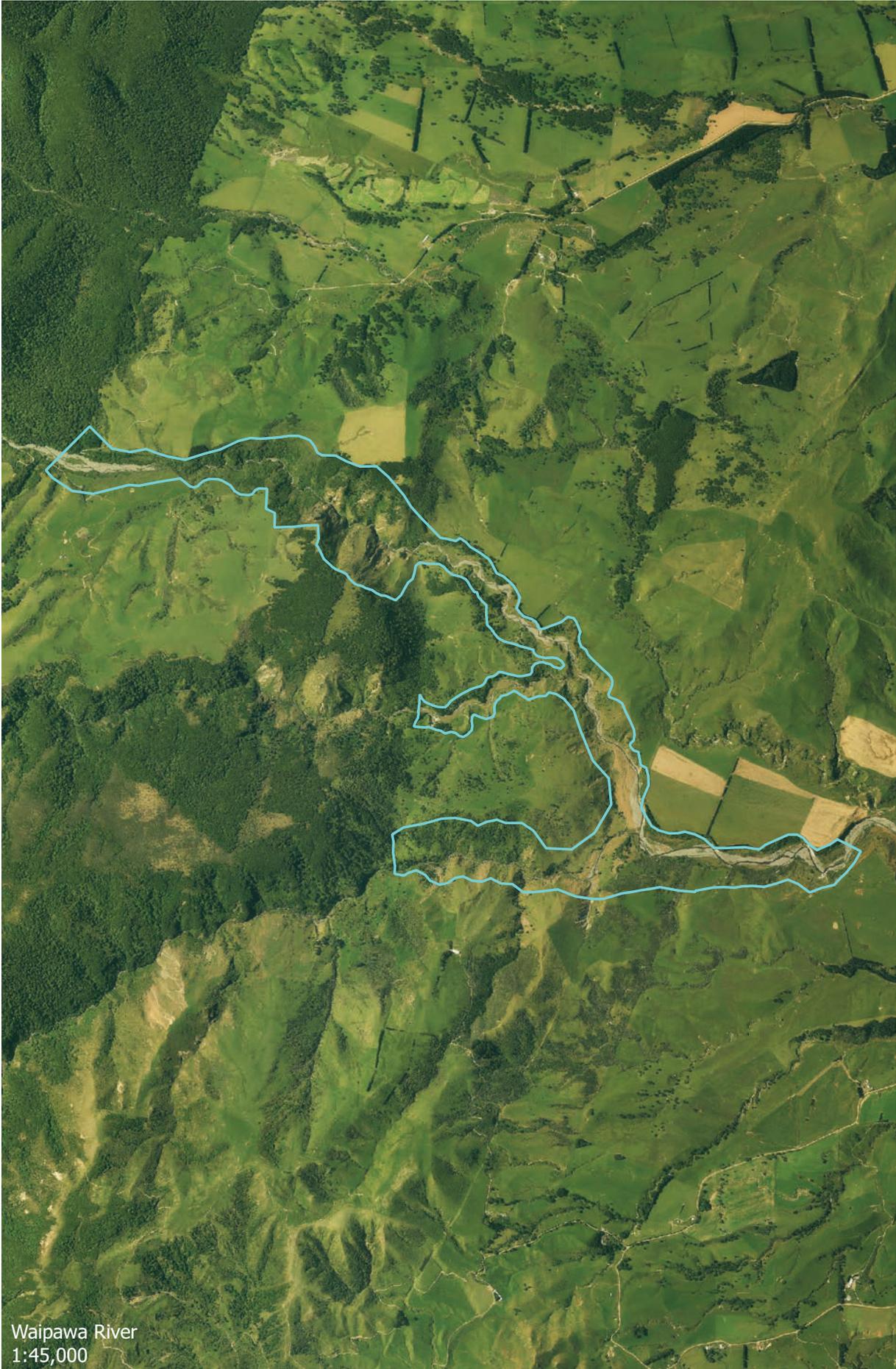
Legibility/Expressiveness

An expressive meandering pattern resulting from the rivers erosive action through the sandy mudstone conglomerate and alluvial runoff from the Ruahine Range. Clear evidence of the erosion process of the river eating into the surface material and carrying alluvium from the Ruahine Range.

The width of the Waipawa River in 1930 was only 20m at this point, but major floods progressively widened it (1936- 60m, 1955- 73m, 1960- 93m, 1964- 98m, 1975 - 105m, 1988 - 119m). This demonstrates the effects of large floods and increased quantities of sediment being transported from the headwaters in the ranges.

Transient

The river valley has its own microclimates, with the sheltered valley characterised by heat in the summer, cold in the winter, and high waters during heavy rain periods throughout the year. Home for birdlife and song and the sound of flowing water are all characteristics of these sections of the river.



Waipawa River
1:45,000

Aesthetic

Indigenous vegetation through the valley system has a degree of coherence, but it is the river's incised valley that follows the grain of the land and contrasts with the intactness of the rolling hills it passes through that has the greater aesthetic appeal. It is clearly expressive of the softness of their underlying mudstone and alluvial geology. These combine to give the valleys high aesthetic value.

Naturalness

The boldness of the incised gorge emphasises the power of the formative processes that have formed it over millennia and the naturalness of these. A good degree of perceived naturalness in the incised river valleys where the greater presence of native regeneration prevails. The density and extent of indigenous vegetation that clothes the escarpments of the incised river valleys influences its assessment as a Significant Amenity Feature, combined with the extensive erosion that has occurred over millennia to create the gorges and valley systems.

Associational Shared/Recognised

Streams and their spiritual and ecological health are valued by Māori for their Mauri. The value of the clean flowing river waters are recognised, with its attributes reflecting environmental well being. Valued for their clean water and the associated values this brings. These rivers feed the aquifers, which flow under the Ruataniwha Plains, so have long terms values associated with that.

Historical

A number of saw mills were located along the foothills of the ranges. The Wakarara mill, located on the south bank of the Mākāroro River at the end of Wakarara Road operated for 30 years up until the 1950's, while the McCulloch Mill was located on the bank of the Waipawa River. It was one of the last mills to establish, starting in 1930 before moving 3km northwest to operate at the end of North Block Road on the north bank of the Waipawa River until 1940. It cut matai, rimu, and totara which had diameters up to 2m.

Mapping of old forests by PJ Grant indicate that the proposed SAF would have been covered by the extensive podocarp forest that grew across the Ruataniwha terraces. This would suggest the possibility that trees within the stream valley may be several hundred years old if they survived milling and burning since the Matawhero Period.

Tangata Whenua

The river systems have great significance to iwi, particularly the rivers themselves for the mauri they bring. See ONF Introduction for details on the Deed of Settlement, associated responsibilities and cultural significance.

Key Characteristics

The distinguishing characteristic of the Waipawa River gorge are the geomorphology, with the extensively incised valley that has carved its way through the rolling foothills of the Ruahine Range. Areas of regenerating native vegetation reinforce the escarpments, particularly the south facing slopes that remain wetter during the year.

Potential Issues

Clearance or degradation of regenerating native vegetation throughout any part of the area. Establishment or spread of wilding or plantation pines or weeds within the areas and along stream margins. Large scale earthworks and structures that remove native vegetation or reduce perceived naturalness.

Potential Response

- Maintain and enhance indigenous vegetation throughout the ONF.
- Limit earthworks
- Restrict establishment or spread of exotic plants
- Limit built development
- The river system has great significance to iwi, particularly the river itself for the mauri it brings. See details in Overview above on the Deed of Settlement for associated responsibilities and cultural significance.



Figure 114: Waipawa River, deeply incised gorge with native vegetation regrowing on steep escarpments

Tukituki River - Upper

Identification: Significant Amenity Feature

Location:

NZ Topo 50 – BL36

Description

The section of the Tukituki River identified as being a Significant Amenity Feature (SAF) extends 7.5km direct (11.5km as the river flows) from the eastern edge of the Ruahine Range. The tributaries and the river flow through deeply incised valleys enclosed by rolling hills in the upper portions and abutting flatter terraces in the lower portion. The river channel is filled with a mixture of regenerating native vegetation and pasture.

Natural Science

Geological/Geomorphological

A collection of incised river channels, carrying shattered greywacke from the Ruahine Range's sandstone mudstone conglomerate of the Kaweka Terrane. East of the forest park, the tributaries are carved into the fossiliferous mudstone/sandy mudstone conglomerate of the lowland hills abutting the ranges before becoming incised into gravel alluvial terraces within the river valleys. The Ruahine Fault and the Mohaka Fault pass through the upper portions of the SAF, while an unnamed fault passes across it in its lower portion. All three faults follow a general NNE/SSW direction.

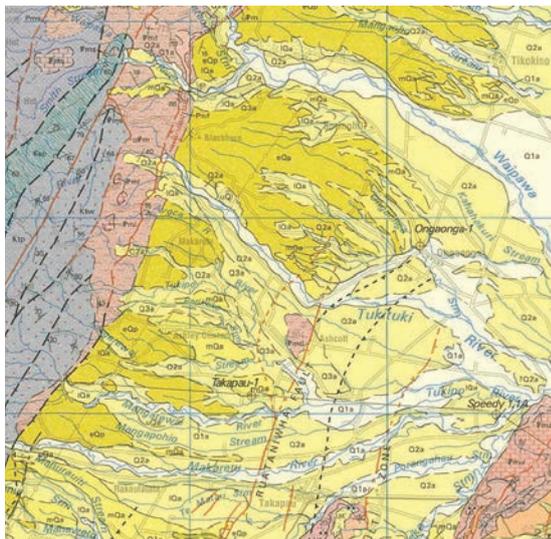


Figure 115: Tukituki River carved through mudstone conglomerate before crossing alluvial gravels of the Ruataniwha Plains. The Ruahine Fault and the Mohaka Fault (orange dashed lines) pass through the upper portions of the SAF.

Hydrological

The Tukituki River flows from the Ruahine Range, with the western most parts of the river and tributary channels abutting the Ruahine ONL. Smaller tributaries feed into larger streams that in turn combine to form the main channel of the Tukituki River, which then joined by the Waipawa River just downstream of Waipukurau. The Tukituki river is the main river of Central Hawke's Bay, flowing north to reach the sea at Haumoana.

Ecological

The Tukituki River and the main tributary contain regenerating vegetation that appears to be a mix of broadleaf and podocarp but also containing areas of manuka regeneration on slopes that may once have been grazed. Much of the slopes are still covered in pasture, although access is steep and small areas of erosion are also apparent on the steep escarpments.

A QEII Covenant has been placed over 30ha of land around a 1.5km long tributary that flows south from opposite 140 Hinerua Road into the Tukituki River. The valley is steeply sided and appears to contain regenerating broadleaf shrubs and larger podocarp trees. Being a QEII covenant, the area will be fenced off to prevent grazing.

The lower half of the SAF is also recognised in the District Plan as an Area of Significant Nature Conservation Value (ASNCV). This identifies plant and animal communities and habitats that are rare or unique, or which provide good representation of the plant communities that existed more widely in the District before vegetation clearance (CHB District Plan 2.2 Definitions).

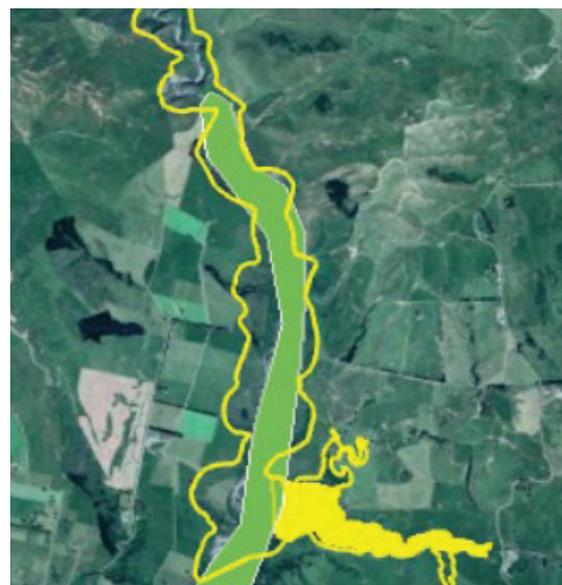
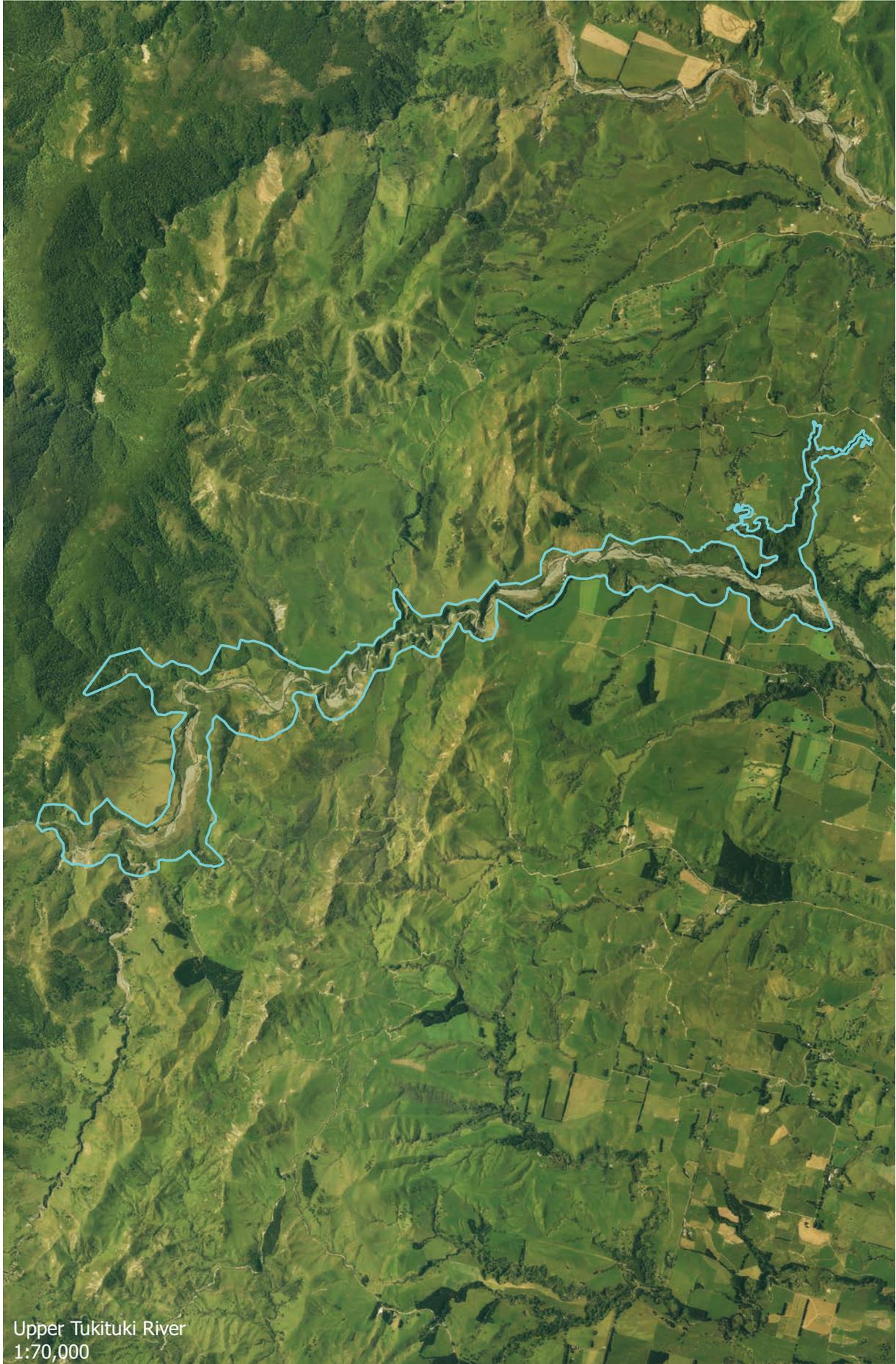


Figure 116: Tukituki River SAF (Yellow boundary), ASNCV (Green band), QEII Covenant (Solid yellow).



Upper Tūkituki River
1:70,000

The hills were once covered in dense podocarp and beech forest that was milled and burnt in the early 1900's to convert the land to pasture. A number of mills were located in the area including at Wakarara, North Block Road on the Waipawa River, top end of Mill Road and Ashley Clinton. The Tukituki SAF does not appear to have remnants of this original forest, but steep sided gullies such as they one now covered by a QEII covenant appear to contain regeneration of native vegetation that would have once thrived over the wider area.



Figure 117: Forest near the end of Mill Road was deliberately burnt for conversion to pasture. Forest contained red beech and scattered miro, rimu, matai and kahikatea. Mill Road ends adjacent to the top of the Tukituki River SAF

Perceptual Memorability

The Tukituki River and tributary of the SAF are memorable for their combination of deeply incised channel form, with regenerating native vegetation on many of the steep escarpments. The river channel and the tributaries are made more apparent by their depth, width and scale in terms of landform as they weave through with the adjacent rolling pastoral land.

Legibility/Expressiveness

An expressive incised meandering pattern resulting from the river's erosive action through the sandy mudstone conglomerate and alluvial runoff from the Ruahine Range. Clear evidence of the erosion process of the river eating into the surface material and carrying alluvium from the Ruahine Range.

Transient

The river valley has its own microclimates, with the sheltered valley characterised by heat in the summer, cold in the winter, and high waters during heavy rain periods throughout the year. Home for birdlife and song and the sound of flowing water are all characteristics of these sections of the river.

Aesthetic

Indigenous vegetation through the valley system has a degree of coherence, but it is the river's incised valley that follows the grain of the land and contrasts with the intactness of the rolling hills it passes through that has the greater aesthetic appeal. It is clearly expressive of the softness of their underlying mudstone and alluvial geology. These combine to give the valleys high aesthetic value.

Naturalness

A good degree of perceived naturalness in the incised river valleys where the greater presence of native regeneration prevails. The boldness of the incised gorge emphasises the power of the formative processes that have formed it over millennia and the naturalness of these. The presence of indigenous vegetation that clothes the escarpments of the incised river valleys contributes to its assessment as a Significant Amenity Feature, combined with the more extensive regeneration in the tributary now covered by a QEII covenant.

Associational Shared/Recognised

Streams and their spiritual and ecological health are valued by Māori for their Mauri. The value of the clean flowing river waters are recognised, with its attributes reflecting environmental well being. Valued for their clean water and the associated values this brings. These rivers feed the aquifers, which flow under the Ruataniwha Plains, so have long terms values associated with that.

Placement of a QEII covenants over parts of a tributary to the Tukituki River illustrate the willingness of the owners to preserve the values of the natural environment in perpetuity, which ensures they are shared with future generations. Identification of a 3km length at the lower end of the river as ASNCV in the District Plan confirm the wider recognition of the ecological value of this area.

Historical

A number of saw mills were located along the foothills of the ranges. The McCulloch Mill was located on the bank of the Waipawa River. It was one of the last mills to establish, starting in 1930 before moving 3km northwest to operate at the end of North Block Road on the north bank of the Waipawa River until 1940. It cut matai, rimu, and totara which had diameters up to 2m and possibly milled timber from the Tukituki catchment.

Mapping of old forests by PJ Grant indicate that the proposed SAF would have been covered by the extensive podocarp forest that grew across the Ruataniwha terraces.

This would suggest the possibility that trees within the river valley may be several hundred years old if they had survived milling and burning since the Matawhero Period.

Tangata Whenua

The river systems have great significance to iwi, particularly the rivers themselves for the mauri they bring. The Tukituki River receives particular mention in the Deed of Settlement. See ONF Introduction for details on the Deed of Settlement, associated responsibilities and cultural significance.

Key Characteristics

The distinguishing characteristic of the Tukituki River gorge is the geomorphology, with the extensively incised valley that has carved its way through the rolling foothills of the Ruahine Range. Areas of regenerating native vegetation, particularly on the south facing escarpments and valleys that remain wetter during the year, reinforce the naturalness and meandering presence of the gorge and incised valley system.

Potential Issues

Clearance or degradation of regenerating native vegetation throughout any part of the area. Establishment or spread of wilding or plantation pines or weeds within the gorge and along the river margins. Large scale earthworks and structures that remove native vegetation or reduce perceived naturalness by altering the incised landform.

Potential Response

- Maintain and enhance indigenous vegetation throughout the ONF.
- Limit earthworks
- Restrict establishment or spread of exotic plants
- Limit built development
- The river system has great significance to iwi, particularly the river itself for the mauri it brings. See details in Overview above on the Deed of Settlement for associated responsibilities and cultural significance.

Figure 118: Tukituki River, deeply incised gorge with native vegetation regrowing on steep escarpments



Tukipo River

Identification: Significant Amenity Feature

Location:

NZ Topo 50 – BL36

Description

The section of the Tukipo River identified as being a Significant Amenity Feature (SAF) extends almost 3.5km from the lower foothills of the Ruahine Range down to the flats of the river terraces. It has an area of approximately 113ha, which includes the upper portion which is made up of a number of smaller tributaries. These all originate in the lower foothills and join together at the Clinton Makāretu Road before flowing east towards SH50. The tributaries and the river flow through incised channels enclosed by rolling hills in the upper portions and abutting flatter terraces in the lower portions. Each channel is filled with a predominance of regenerating native vegetation and some pasture.

Natural Science

Geological/Geomorphological

Several incised river channels cut into the mudstone rolling foothills of the Ruahine Range and the carved into the alluvial terraces of the Ruataniwha Plains.

Hydrological

The Tukipo River sources from the Ruahine Range, with the western most parts of the river 4km from the eastern edge of the Range. Several main tributaries downstream of the SAF, including the Mangatewai and Makāretu, feed into river that in turn combine to form the main channel of the Tukipo River. The river joins the Tukituki River at Pukeora Reserve just west of Waipukurau.

Ecological

Each tributary within the SAF appear to contain remnant and regenerating native vegetation, with species ranging from regenerating manuka through to larger podocarp such as totara. Ecological expert advice and a site visit would be needed to confirm this.

Vegetation in the SAF appears to include a mix of remnant and regenerating podocarp forming a thick cover within the less accessible steeper sided valley system plus areas of regenerating manuka and broadleaf species. Grazing is apparent in parts where terrain permits and is located in scattered areas along the river courses and terraces.

The stream flows through surrounding land use of open pasture, making the area of SAF the only sizable and connected length of native vegetation within this catchment downstream of the Ruahine Range boundary.

Perceptual Memorability

The Tukipo River tributaries of the SAF are memorable for their combination of incised channel form emphasised by remnant and regenerating native vegetation. The river channel and the tributaries are made more apparent by their contrast in terms of colour, vegetation and form with the adjacent rolling pastoral land. They invoke memories of what the land cover once was across the wider area.

Legibility/Expressiveness

An expressive meandering pattern resulting from the river's erosive action through the alluvial runoff from the Ruahine Range. Clear evidence of the erosion process of the river eating into the surface material and forming depressions and incised meandering patterns.

Transient

The river valley has its own microclimates, with the sheltered valley characterised by heat in the summer, cold in the winter, and high waters during heavy rain periods throughout the year. Home for birdlife and song and the sound of flowing water are all characteristics of these sections of the river.

Aesthetic

Indigenous vegetation through the valley system has a high degree of coherence and reinforces its vividness both as a feature and in harmony with the natural meanders of the river. The river follows an incised valley that follows the grain of the land and contrasts with the intactness of the terraces it crosses, being clearly expressive of the softness of their underlying alluvial geology. These combine to give the valleys high aesthetic value.

Naturalness

A high degree of perceived naturalness in the incised river valleys where the greatest presence of native vegetation prevails. The density and extent of indigenous vegetation that clothes the incised river valleys influences its assessment as a Significant Amenity Feature, reduced from a outstanding rating by the apparent results of pastoral activity in the channels.

Associational Shared/Recognised

Streams and their spiritual and ecological health are valued by Māori for their Mauri. The value of the clean flowing river waters are recognised, with its attributes reflecting environmental well being. Valued for their clean water and the associated values this brings. These rivers feed the aquifers, which flow under the Ruataniwha Plains, so have long terms values associated with that.

Historical

Mapping of old forests by PJ Grant indicate that the proposed SAF would have been covered by the extensive podocarp forest that grew across the Ruataniwha terraces. This would suggest the possibility that trees within the river valley may be old if they survived milling and burning since the Matawhero Period.

A timber mill was located nearby on the corner of Ashley Clinton/Wilson Cutting Road and another further away on Mill Road. The nearer one may have taken logs from the Tupiko River area but the river's steep sided terrain may have allowed some specimens to survive.

Tangata Whenua

The river systems have great significance to iwi, particularly the rivers themselves for the mauri they bring. See ONF Introduction for details on the Deed of Settlement, associated responsibilities and cultural significance.

Key Characteristics

The distinguishing characteristics of the Tupiko River that cause it to form the SAF are the density of native vegetation, which may include original trees that survived the burning and clearance over the last hundred plus years, plus its containment within a defined landscape setting.

The presence of such dense native vegetation contributes to fulfilment of the 'ecological' and 'naturalness' factors in the landscape assessment process, while the containment within the incised main valley system and more rolling lower tributaries contributes to the 'expressiveness' and 'coherence' aesthetic factors. Rarity and associational cultural values are also contributing factors.

Potential Issues

Clearance or degradation of native vegetation throughout any part of the area. Damage to flora and fauna by pests or grazing animal. Establishment or spread of exotic plants within the areas and along stream margins. Earthworks and structures that remove native vegetation or reduce perceived naturalness.

Potential Response

- Maintain and enhance indigenous vegetation throughout the ONF.
- Limit earthworks
- Restrict establishment or spread of exotic plants
- Limit built development
- The river system has great significance to iwi, particularly the river itself for the mauri it brings. See details in Overview above on the Deed of Settlement for associated responsibilities and cultural significance.

Figure 119: Tukipo River Significant Amenity Feature

