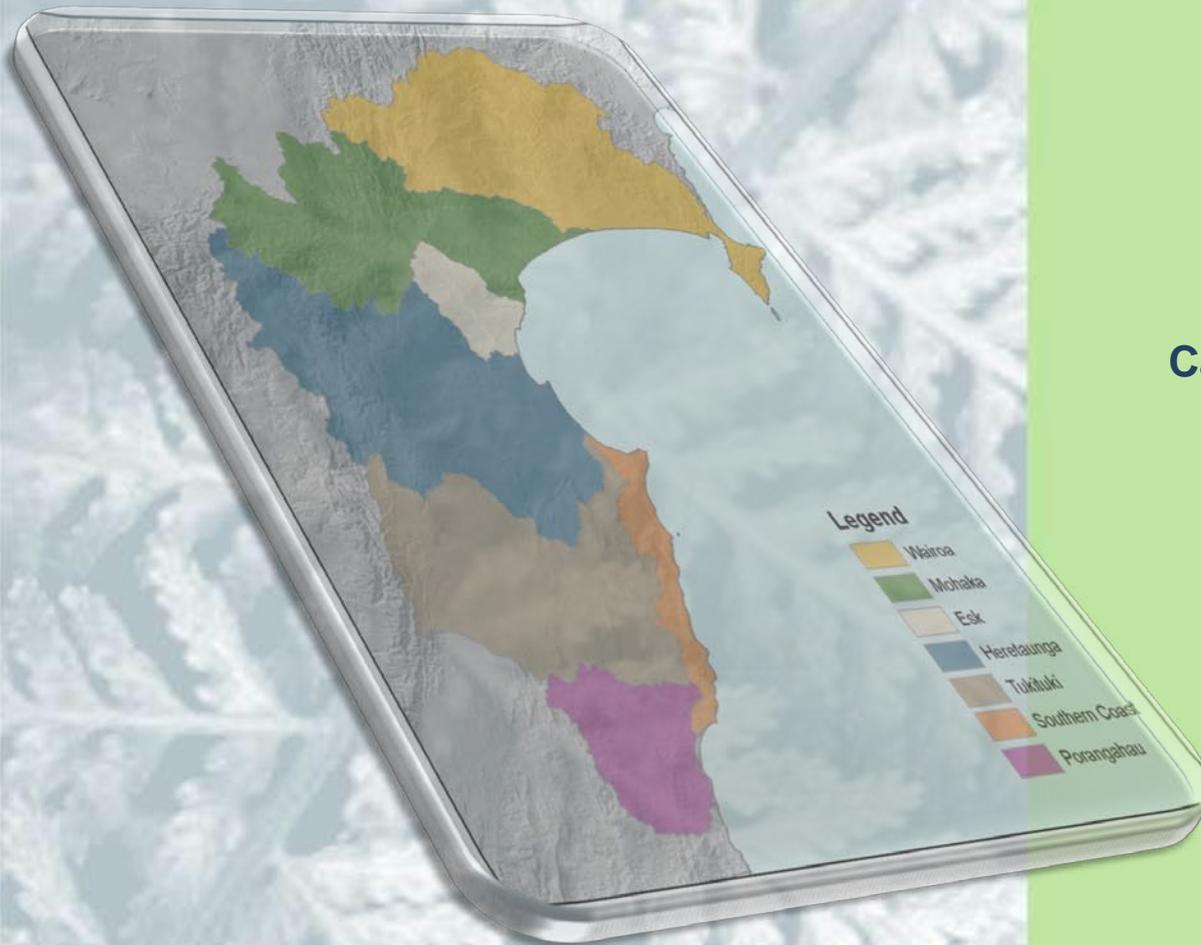


# HAWKE'S BAY REGIONAL COUNCIL



SAFEGUARDING YOUR ENVIRONMENT + KAITIAKI TUKU IHO



## Hawke's Bay Catchment Zone Profiles

July 2012  
SD 12/08  
HBRC Plan Number 4337



159 Dalton Street + Private Bag 6006 + Napier  
Tēleponi (06) 835 3600  
Fax (06) 835 3601  
Regional Freephone (06) 0800 108 838

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## Strategic Development Group

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## Hawke's Bay Catchment Zone Profiles

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Prepared by:

**Chris Reed**, Senior Planner

**Gavin Ide**, Team Leader Policy

Reviewed by:

**Helen Codlin**, Group Manager Strategic Development

July 2012

SD12/08

HBRC Plan Number 4337

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## Introduction

This report was largely compiled in late 2010 to provide a broad description of profiles (including SWOT<sup>1</sup> assessment) of catchments and catchment zones within the Hawke's Bay region. The region's many catchments have been grouped into seven 'catchment zones' (see Figure 1).

Information presented in this report was collated by Council staff at a series of internal workshops for the purposes of building shared understanding of the catchments' characteristics and the issues and drivers facing them and their respective communities.

The catchment profiles and SWOT assessment in Appendix 1 do not represent a Council position or any formal policy adopted by Council. The profiles are a 'starting point' for understanding, and are certainly not intended as a comprehensive or definitive description of the characteristics, issues and drivers for each of the seven catchment zones. A preliminary version of these Catchment Zone profiles was prepared and circulated to attendees of the Regional Council's 2010 Regional Water Symposium.

The seven catchment zones are principally based on groupings of the region's surface water catchments. Some main river catchments have been combined into a 'zone.' These zones form the basis of a variety of the Council's initiatives and projects (for example: s36 RMA science monitoring charges; and catchment-based RMA plan changes).

In the following pages, the figures for each 'catchment zone' also illustrate differently coloured sub-catchment areas.

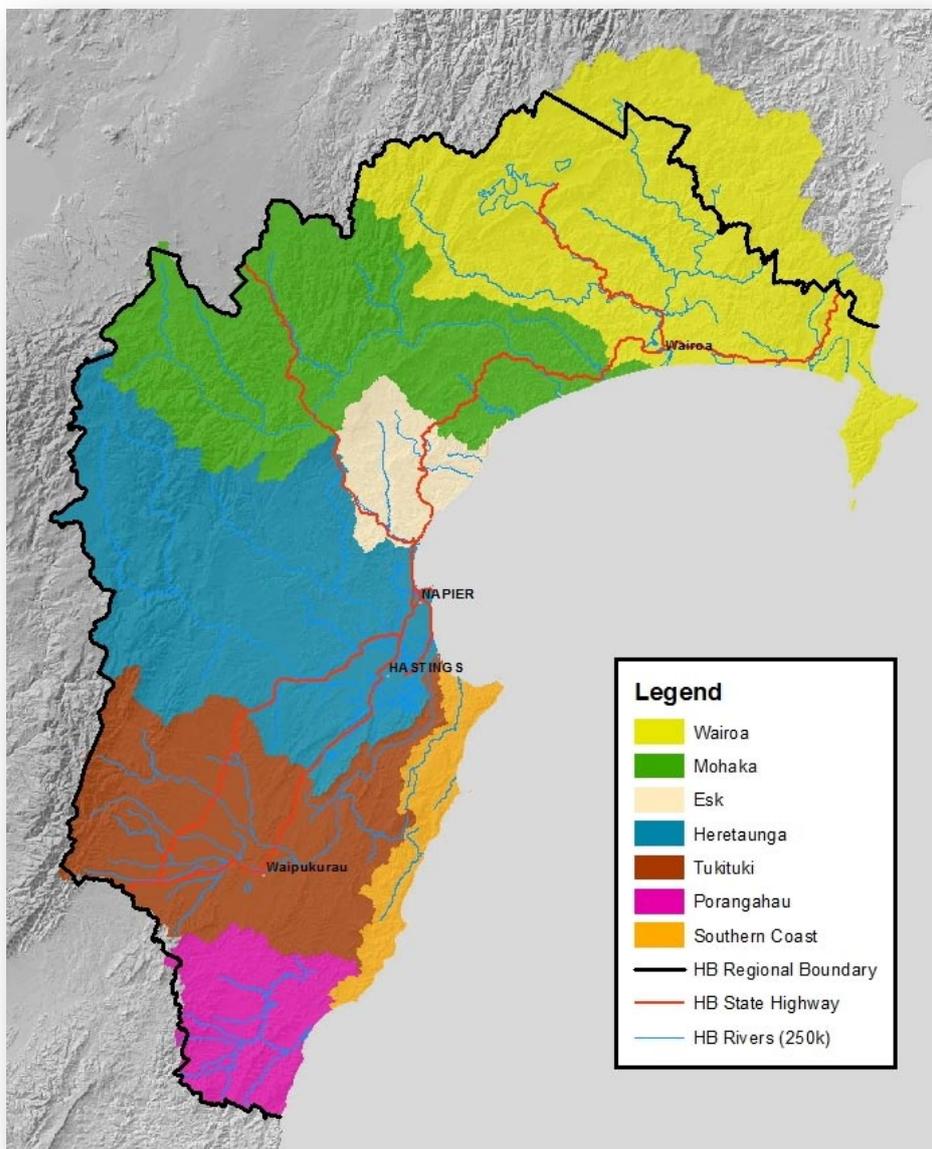


Figure 1 - Hawke's Bay Catchment Zones

<sup>1</sup> SWOT refers to strengths, weaknesses, opportunities and threats.

# Wairoa zone

## Issues and drivers

- Hill country farming and forestry dominate economy, but erodible soil resources and surface waters are threatened by unsustainable land management and high rainfall
- Mahia Peninsula is a popular regional tourist destination. A wealth of other natural assets are less intensively used
- Heavily reliant on a few key employers
- The zone's relative isolation is compounded by transport and IT infrastructure shortcomings, which could limit development potential
- Strong local identity, despite socio-economic challenges. A vulnerable zone with potential

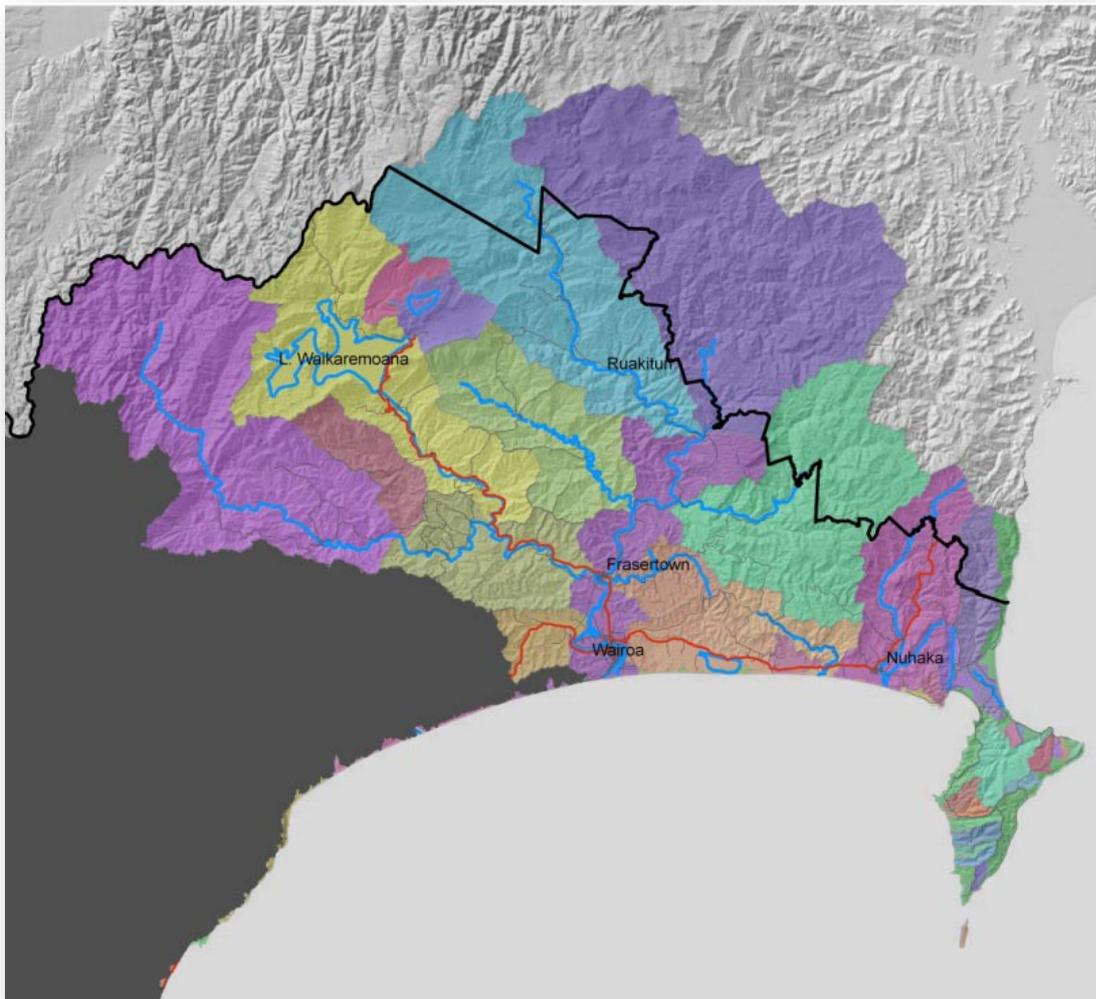


Figure 2 - Wairoa Catchment Zone and sub-catchments

## Characteristics

**Water resources.** This large zone includes Wairoa catchment and smaller coastal catchments of Whakaki, Nuhaka and Mahia. Lake Waikaremoana and Lake Waikareiti are focal points of Te Urewera National Park. Rivers are integral to the zone's character and wellbeing: Wairoa, Waiau, Waikaretaheke (hydro generation), Mangaaruhe, Ruakituri, Hangaroa and Mangapoike. Mahia Peninsula is an iconic coastal landscape and the wetland/lagoon complex (Wairoa to Oraka) is of national significance. There are hot springs at Morere. Minor coastal aquifers supply water. Water quality is generally good, but high suspended solids concentrations and loads and poor visual clarity are issues caused by a combination of erodible soils, high rainfall and agriculture/forestry practices. The Wairoa River catchment is subject to periphyton growth in response to nutrient inputs. Sediment loads in rivers is smothering substrate and impairing habitat quality.

**Climate.** Rainfall is extremely high in the upper Wairoa catchment. The lower zone is warmer and drier. Some air quality standards have been exceeded in Wairoa township.

**Geology and soils.** Soft sedimentary hill country dominates (sand/siltstone) with hard greywacke and argillite forming higher hill country in the west. Hill country soils are erosion prone with low infiltration rates. High rainfall and tectonic activity exacerbate instability. The alluvial sediments of the lower Wairoa valley and coastal plain are naturally fertile, but much is poor draining. The Mangaone cave system near Nuhaka is the 13<sup>th</sup> longest in North Island.

**Ecology.** Large areas of indigenous forest in the upper zone, but elsewhere hill country pasture and commercial forestry predominate. The latter land uses result in generally low ecological value. The lakes, river systems and coastal lagoons/wetlands are ecologically rich, with surface waters supporting a wide range of native fish, including critically threatened longfin eel and koara. There are large populations of brown and rainbow trout (e.g. upper/middle Ruakituri, upper Hangaroa and all Waiau).

**Land use.** Te Urewera National Park and Conservation Areas in the upper zone. Elsewhere, hill country sheep and beef and plantation forestry predominate due to limited land use capabilities. Some dairy farming occurs around Wairoa, Nuhaka and Mahia. Deer farming is also found. There have been shifts from pastoral land uses to plantation forestry in recent years, particularly on marginal land, influenced by a range of economic factors. Intensive cropping and horticulture exists on the fertile lowlands with some additional potential.

**Water use.** Surface waters are not subject to allocation pressure (under 50% allocated). Hydro power generation is a potential use. Small coastal aquifers are sources of water supply (with naturally elevated chloride concentrations) in some areas.

**Built environment.** Sparsely populated with small communities. Wairoa is the only main service town, with SH2 links to Napier and Gisborne, a small airport and rail link (freight only). The AFFCO processing works is a major employer. The small rural centre of Frasertown includes basic services, a water treatment plant and Frasertown Meat. Wairoa relies on flood warning rather than defences. Many rural roads are unsealed and SH38 (to Lake Waikaremoana) is partly sealed. Hydro generation at Waihi produces around 20% of Wairoa District's electricity.

**Social / Cultural.** The zone comprised around 5.3% of regional population (2006 Census). It displays a declining population trend (actual and predicted) with significant outmigration of younger people and a very high percentage of Maori. There is a higher proportion of lower incomes than the rest of region. Mahia peninsula is a popular holiday destination with a high proportion of baches/holiday homes and seasonal pressures on communities/infrastructure. Housing stock is almost entirely pre-2000 homes (98%). Hawke's Bay's Maori/non-Maori health disparities are particularly significant for this zone.

**Economy.** The zone generated 5.7% of the regional GDP and 4.7% of regional employment in 2009 (broad based estimates). The economy is dominated by primary production and processing, with heavy reliance on two main processing works for employment. Forestry is of growing importance. Coastal/eco tourism and recreation are the other economic drivers. Hydro power generation, oil and gas may offer potential.

# Mohaka zone

## Issues and drivers

- The Mohaka River and wider catchment is a regional 'flagship' in terms of natural character and recreation value. The river's quality is important to regional identity and recognised nationally and internationally (e.g. trout fishing)
- Water quality underpins social and economic wellbeing
- Existing water quality issues in the upper Mohaka related to intensive land use practices are being addressed with the community
- Potential for further land use intensification is limited. Lower Mohaka has hydro potential
- Treaty Claimant groups, including Ngati Pahauwera, are currently negotiating settlements

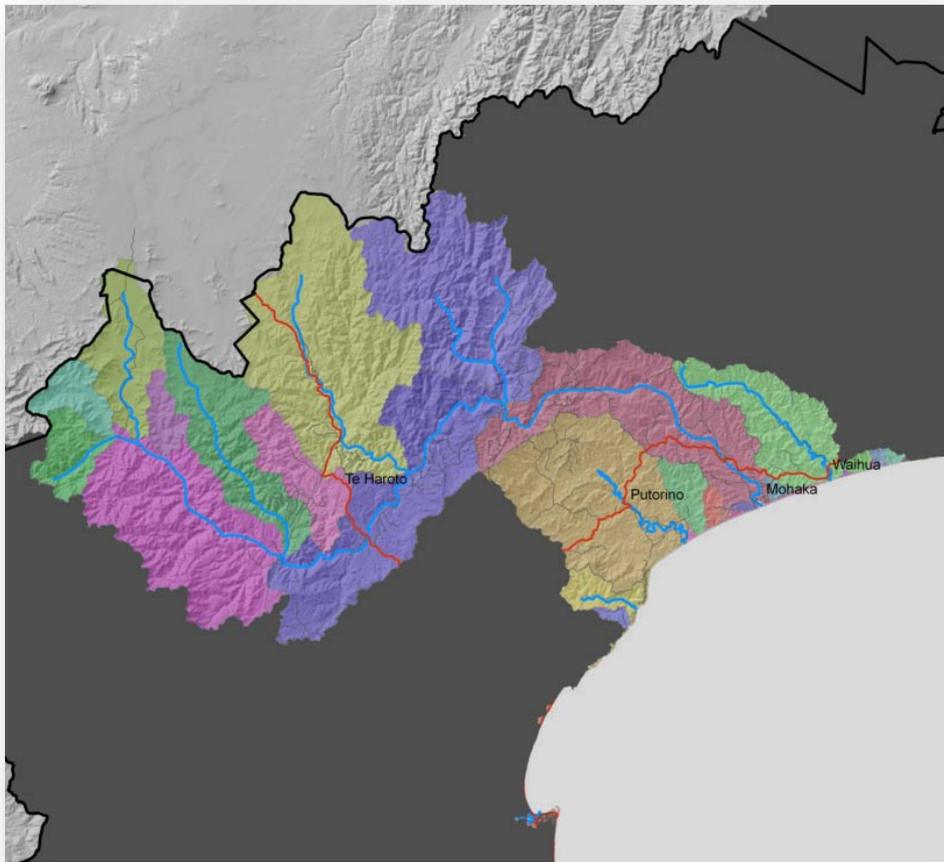


Figure 3 - Mohaka Catchment Zone and sub-catchments

## Characteristics

**Water resources.** The zone includes the large Mohaka catchment (Mohaka mainstem and Taharua, Ripia, Waipunga and Te Hoe tributaries) and the small Waihua and Waikari catchments. The Mohaka and tributaries are of high ecological, cultural, recreational and scenic significance, with outstanding values of upper and mid sections recognised by Water Conservation Order (WCO). It is also the quality of the whole system that is regionally/nationally valued. Water quality in some parts of the Mohaka River catchment is relatively poor compared to water quality of other rivers of the same river environment classification. The greatest water quality issue is the impact of intensive land use on the Taharua and upper Mohaka, which has increased nitrogen concentrations (causing excessive periphyton growth), caused shifts in the macroinvertebrate community, reduced clarity and reduced trout growth potential. Water clarity is lowest in the lower Mohaka River catchment downstream of the Te Hoe confluence. Hot springs are found off SH5.

**Climate.** Climate reflects altitude and distance from the coast. Cool wet upper zone (1800-2600mm+ annual rainfall) and harsh winters. Warmer and drier lower zone.

**Geology and soils.** Greywacke steeplands with a volcanic, acidic overlay dominate much of the upper zone. Pumice flatlands of the Taharua, Ripia, and Waipunga sub-catchments have potential for intensive land use which is limited by low natural fertility, fast-draining soils and a harsh climate. Erosion-prone sedimentary hill country dominates the mid-lower zone. Alluvial terraces of the lower Mohaka and Ripia confluence offer limited areas where more versatile land use is possible.

**Ecology.** Ecological value is high with the upper-mid zone dominated by indigenous forest, much in DOC forest parks or other conservation land. The Mohaka supports many native fish species and a world class trout fishery recognised by WCO (i.e. mainstem and tributaries above SH5). This is being impacted downstream of the Taharua confluence by land use intensification. The Waihua and Waikari catchments have little indigenous cover.

**Land use.** Over 50% of the Mohaka catchment is covered with indigenous forest, with manuka/kanuka and pine forestry also significant. Pasture (mainly sheep and beef) is limited in the Mohaka catchment. Land use intensification (dairying) in the headwater Taharua sub-catchment is impacting on water quality. Scope for dairy conversion in the neighbouring Ripia sub-catchment is limited by a range of factors. Some cropping, horticulture and viticulture occurs on the lower Mohaka river terraces. Pastoral sheep and beef is the principal land use in the Waihua and Waikari catchments with some pine forestry.

**Water use.** Less than half of the surface water resources are allocated. Water resources in the Mohaka catchment are principally used for river-based recreation (see below).

**Built environment.** The catchment is very sparsely populated with only a few small settlements, including Mohaka, Raupunga, Waihua, Te Haroto and Tarawera. Infrastructure includes the SH5 and SH2 road links (with limited access from the rural road network), and the Gisborne-Napier railway which includes the spectacular Mohaka rail viaduct.

**Social / Cultural.** The zone comprised around 0.9% of regional population (2006 Census). The Mohaka River (and tributaries) has high social/cultural importance not only to local communities but the wider Hawke's Bay population and even nationally. Recreation opportunities, cultural identity and identification with an iconic wilderness landscape are important values. Recreation includes a world class trout fishery, multi-day/single day kayaking of national importance, rafting, wilderness tramping and hunting, swimming and camping. The recreational profile varies across upper/mid/lower reaches. Maori identity with the Mohaka and exercise of kaitiakitanga is strong (Ngati Pahauwera, Ngati Hineuru, Ngati Tuwharetoa). Cultural health issues remain poorly understood.

**Economy.** The zone generated 1% of regional GDP and 1% of regional employment in 2009 (broad based estimates). Agriculture, forestry and tourism are central pillars of the Mohaka economy (relative contributions unquantified at present). The lower Mohaka is also a principal source for high-quality gravel for the central East Coast region (subject to replenishment of this non-braided river). Farming dominates the Waihua and Waikari catchments.

# Esk zone

## Issues and drivers

- A small 'zone of two halves', Esk Valley being the northern gateway to the main Hawke's Bay centres and Tutira being an area that is of increasing popularity for conservation activities (e.g. Guthrie Smith Outdoor Education Centre; Pan Pac kiwi crèche at Lake Opouahi; DOC Boundary Creek reserve; and conservation planting at Lake Tutira)
- Popular recreational outlet for Napier and Hastings
- Contains a single industry site of Pan Pac mill, which is reliant on the Esk River for its water supply

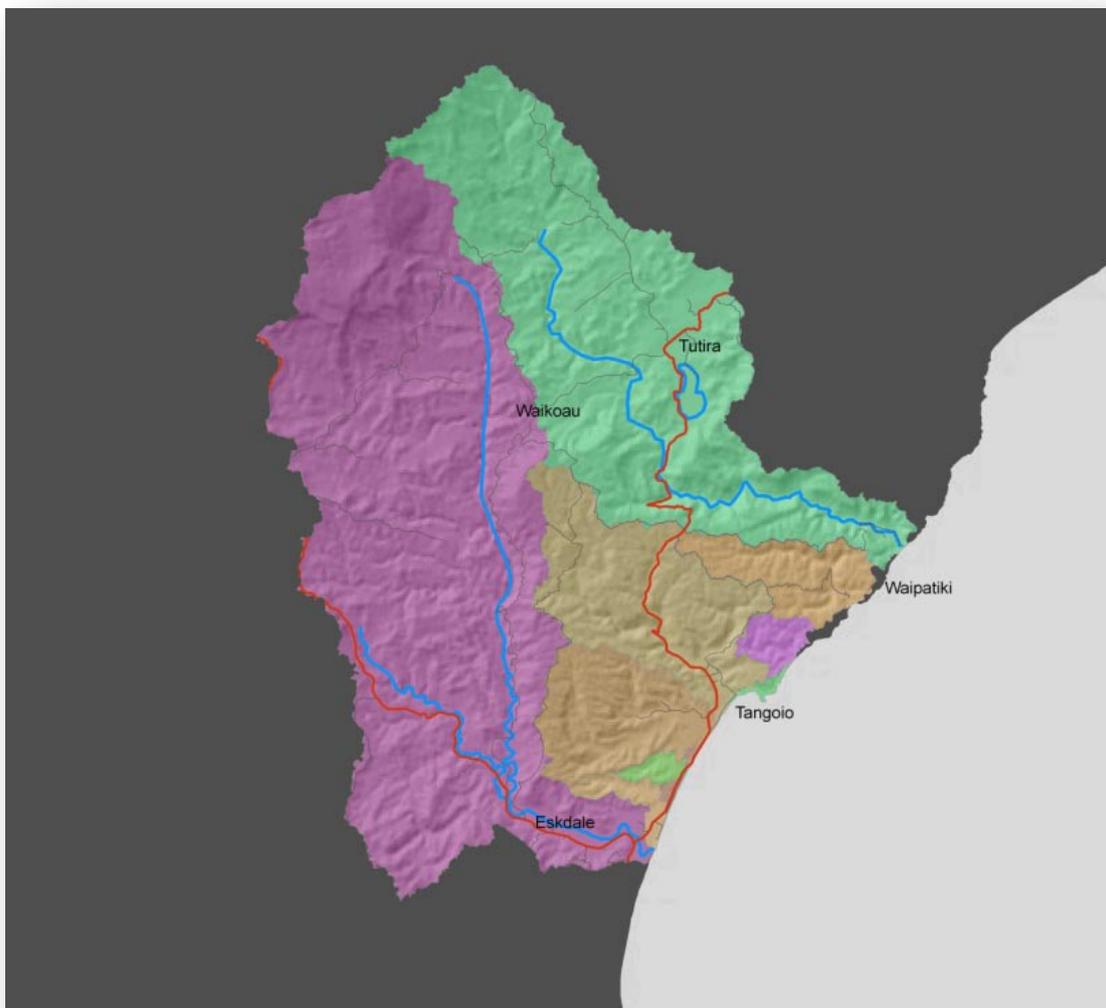


Figure 4 - Esk Catchment Zone and sub-catchments

## Characteristics

**Water resources.** Include the Esk, Waikoau and Aropaoanui Rivers and tributaries and the Tutira Lakes (Tutira, Waikopiro and nearby Opouahi). A small, productive aquifer system underlies the Esk Valley/Bay View/Whirinaki area (unconfined/confined). Coastal waters include cliffs and coves. There are indications of water quality issues related to land use. Overall water quality in the Esk catchment is 'average,' with regular breaches of nutrient guidelines. Sandy Creek and Mahiaruhe Stream (Tutira) have water quality issues. Land use impacts on water quality need to be better understood.

**Climate.** Cool wet upper zone to warmer, drier lower zone. The Esk catchment is prone to flash floods. The Esk Valley has a frost-free microclimate.

**Geology and soils.** Esk headwaters are in the Mangahaururu Range. Rolling to steep sedimentary hill country predominates (lime/sand/mudstone), which is unstable and erosion-prone. These characteristics are exacerbated by rainfall events. The fertile alluvial soils of the Esk valley have high land use capabilities (valley runs 11 km inland from coast).

**Ecology.** The zone includes several regional 'jewels': Lake Tutira (2<sup>nd</sup> largest freshwater lake in Hawke's Bay), Lake Opouahi, Boundary Stream mainland island (800ha representing the whole altitudinal sequence from lowland forest to mountain forest) and the Guthrie Smith Trust area. Remnant pockets of native vegetation occur elsewhere. The Esk and Aropaoanui catchments both include a diverse of native fish population. The Esk in particular has a healthy rainbow and brown trout fishery.

**Land use.** Large tracts of forestry occur in the upper-mid zone with significant areas also in the hills of the lower zone as well. Sheep and beef predominate elsewhere, with a significant dairying pocket in the Tutira area (around 10 smaller-scale, family owned farms of 100-300 cows). The Esk Valley's 'Mediterranean' microclimate supports viticulture, olives and orchards and is popular for lifestyle blocks. Some cropping takes place around Tangoio.

**Water use.** There are a number of consented water takes for Esk Valley irrigation and Pan Pac timber mill. Allocation status is 50-100%, with Te Ngāru / Pakuratahi fully allocated.

**Built environment.** Only a few small inland and coastal communities occur, including: Eskdale, Whirinaki, Tangoio, Waipatiki, and Tutira. The Esk Valley and neighbouring coastal community are in close proximity to Napier and its services, port and airport. Good links are provided by the Geothermal Highway (SH5) and Coastal Highway (SH2). The Esk Valley is popular for lifestyle blocks with roadside cafes. Seasonal demands on coastal infrastructure are likely. Whirinaki includes a power plant and the Pan Pac timber processing works.

**Social / Cultural.** The zone comprises around 0.9% of regional population (2006 Census). The Esk Valley and surrounding coast is strongly linked with Napier (services, commuting, visitors, recreation), but elsewhere communities are more isolated and self-contained. Tutira in particular displays a strong, motivated community (e.g. Tutira-Maungaharuru Visionary Group). Seasonality issues for the southern coastal area, including summer holiday visitors. A range of recreational/cultural assets (coast, rivers, lakes, reserves, hills, pa sites, mountain bike park) offer attractions and 'playgrounds' for the main Hawke's Bay population.

**Economy.** The zone generated 0.9% of regional GDP and 0.9% of regional employment in 2009 (broad based estimates). Forestry, agriculture, viticulture and wood processing (Pan Pac) are important, along with tourism focussed around the Esk Valley and southern coastal area. Strong economic links of the southern zone with Napier. Significant offshore aquaculture is under development (Napier Mussels).

# Heretaunga zone

## Issues and drivers

- Contains Heretaunga Plains and main urban centres, representing around 80% of regional GDP – the region's primary 'powerhouse'
- Large catchment area with three major rivers crossing the Plains. Significant flood control and drainage schemes are required to maintain land productivity and manage flood events
- Recent knowledge regarding connection between the Ngaruroro River and Heretaunga Plains groundwater resources put the security of existing groundwater supplies under pressure
- Heretaunga Plains Urban Development Strategy (HPUDS) defines growth patterns to protect versatile soils
- Streams draining urban centres are degraded in quality and there is increasing community demand for improvements
- Three claimant groups are currently negotiating Treaty settlements

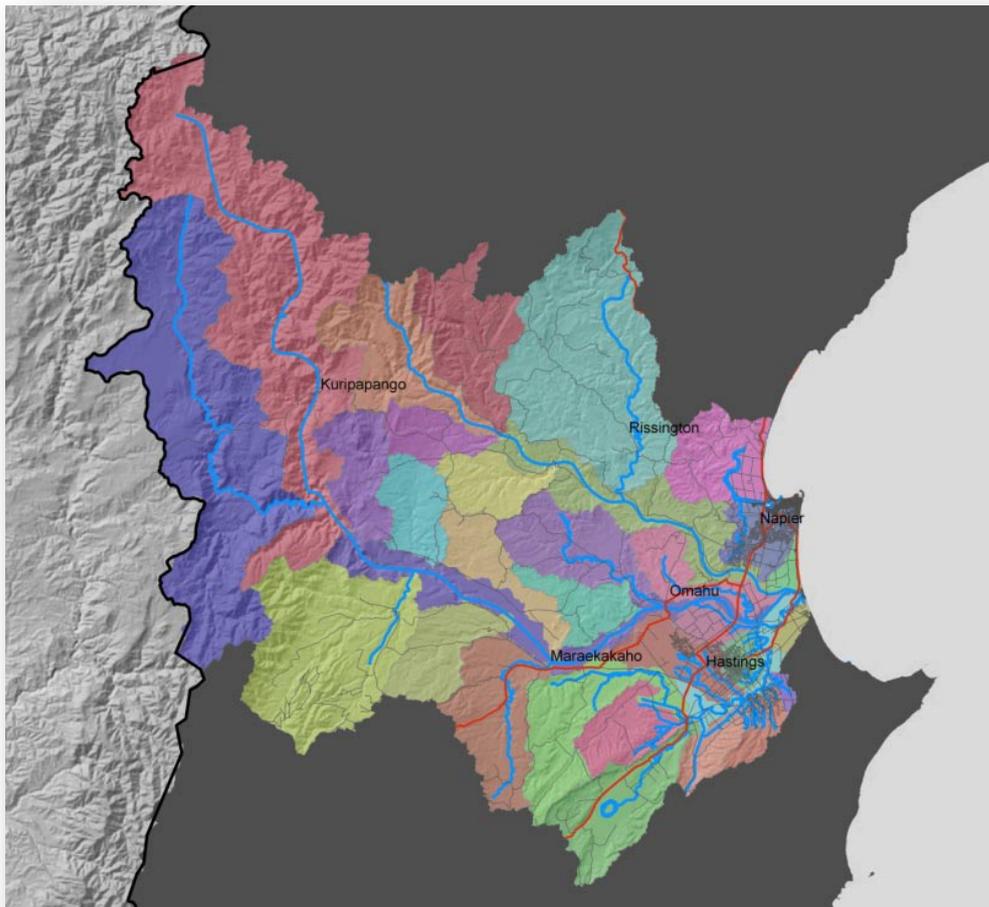


Figure 5- Heretaunga Catchment Zone and sub-catchments

## Characteristics

**Water resources.** Major river systems include the Ngaruroro and Tutaekuri Rivers, along with Karamu stream network and Napier urban streams. Other resources include the Ahuriri Estuary and Poukawa and Waitangi wetlands. The Heretaunga Plains benefit from the Region's most productive aquifer (approx. 320km<sup>2</sup>, confined/unconfined), unconfined) that serves as drinking water supply for Napier and Hastings and irrigation and some industrial supplies. Water quality issues are evident in surface waters. These are caused by both rural and urban contamination, depending on location. The quality of both the Ngaruroro and Tutaekuri Rivers declines in lower reaches owing to increases in nutrient concentrations, increased periphyton growth and reduced visual clarity.

**Climate.** 'Sunny Hawke's Bay' image. Temperate Plains' climate with warm, dry summers (drought threat) and mild, wetter winters with frost and hail risks for intensive agriculture. Colder, wetter climate in hills and especially the ranges, with intense rainfall events presenting a flood risk to Plains. Urban air quality issues are particularly evident in the Hastings airshed (12 exceedances of national PM<sub>10</sub> standard in 2011 compared with four for Napier), exacerbated by a winter inversion layer.

**Geology and soils.** Steep greywacke ranges transition to varied sedimentary foothills (with Loess and ash overlay) and the extensive, alluvial Heretaunga Plains. Plains' soils are among the most productive in New Zealand, but with diverse properties and vulnerable to various risks. A legacy of intensive cultivation and urban uses have modified soil properties in a site-specific manner.

**Ecology.** Large tracts of native vegetation occur in the upper zone (Kaweka and Ruahine Forest Parks), extensively modified in the mid-lower zone with isolated patches of indigenous vegetation. Ahuriri Estuary is a significant conservation area with high ecological value, along with Poukawa and Waitangi wetlands. Many native fish species and rainbow and brown trout occur across the zone. Rural streams are generally of higher ecological value than urban streams. Wide-scale possum control occurs including in urban areas.

**Land use.** The Plains are subject to intensive agriculture (cropping, horticulture, viticulture), land use associated with the main urban centres, including transport, flood protection and service infrastructure and a range of industries. Intensive agriculture is subject to market-driven change. Pastoral land uses predominate beyond the Plains (with large dairy conversions at Patoka). DOC conservation land occurs in the upper zone. Historic contamination of land resources from industry or agrichemicals may limit land use potential in some areas. Council-owned stopbanks provide recreation infrastructure networks.

**Water use.** Use of water for irrigation and frost protection is vital for the Plains' agricultural economy. Ngaruroro and Karamu surface water resources are fully/over allocated and Tutaekuri resources are 50%-100% allocated. Groundwater supplies the urban centres, but agricultural availability is limited by location, with identified water short areas. Competition for water resources is a driver for more efficient use of water. Surface waterways are used for urban stormwater disposal.

**Built environment.** This zone is the regional urban and infrastructure hub and focus for growth. Protection of the Plains soil/land resource adds planning complexity. Extensive flood control schemes perform a vital role. Napier and Hastings are very different in character. Road, stormwater and wastewater infrastructure requires some upgrading to accommodate growth. Municipal wastewater is discharged via coastal outfalls. Napier airport's runway upgrade (mid-2011) will provide jet capability. The port offers a full range of shipping services with rail links, but has limited space available which creates storage constraints. Land required for new housing in HPUDS area (2015-2045) is projected around 1880ha. Some smaller communities have non-reticulated water supply and on-site wastewater treatment, which creates disposal issues.

**Social / Cultural.** The zone comprised around 81.3% of regional population (2006 Census). A range of factors contribute to a strong lifestyle appeal for living and working (climate; employment, services and facilities; recreation; and landscapes - coast, ranges, Napier Hill and Te Mata Peak landmarks). However, Napier-Hastings is a relatively low income area with a significant degree of socio-economic deprivation. Settlements vary in profile. Only moderate population growth expected (8014 (16%) in HPUDS area 2015-2045), but with strongly aging profile (68% increase in 65+, with 80+ growing most) and 25% increase in Maori population. A falling household occupancy rate propels

household growth, with continued changes in housing profile predicted (2015-45): 15% increase in 'couple without children' families, 20% fall in two-parent families and 29% increase in sole person households.

**Economy.** The Plains are the regional economic 'powerhouse', being home to the urban commercial and professional hubs as well as intensive agricultural production and processing. The zone as a whole generated 83.1% of regional GDP and 85.1% of regional employment in 2009 (broad based estimates). Visitor industry servicing is particularly significant for Napier (international reputation as Art Deco city). Viticulture and wine production now rivals Marlborough. Construction, education and health services should continue to be lead employing industries. Total employment is forecast to increase around 18% (2015-2045 HPUDS area). Strongest GDP growth over HPUDS period is forecast for construction, education, tourism/hospitality services, cultural/recreational services, transport/storage, public administration and business services.

# Tukituki zone

## Issues and drivers

- Large diverse area where water use in the Ruataniwha Basin directly impacts on the lower Tukituki River catchment
- Current water supplies for irrigation are insecure as a result of minimum flows and existing stream allocation limits and new knowledge of groundwater/river water connections
- Division between those who 'have' water and those who do not
- More land could be used more productively were water made available. Ruataniwha Plains have potential to become a 2<sup>nd</sup> regional 'powerhouse' if improved water management and new infrastructure increases availability of water
- Sophisticated transient model available to enable whole system management of Ruataniwha water resources

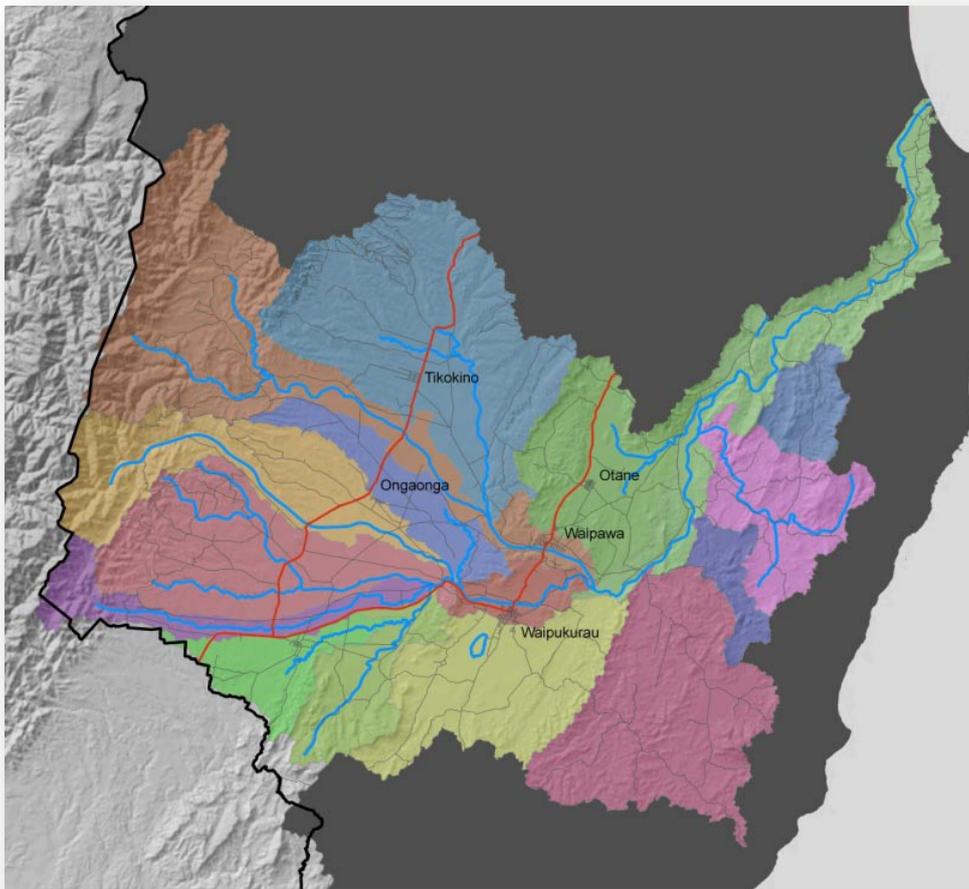


Figure 6 - Tukituki Catchment Zone and sub-catchments

## Characteristics

**Water resources.** A large catchment that includes the Tukituki and Waipawa Rivers plus a network of tributary rivers/streams converging on the Ruataniwha Plains. The Ruataniwha aquifer system is a major resource, but with complex ground-surface water interactions and abstraction pressure from existing allocations. High profile water quality issues focus on periphyton growth as a consequence of nutrient enrichment (nitrogen and phosphorus). Nutrient concentrations are increasing in some tributaries. Point-source phosphorus contamination from municipal wastewater is being addressed. Diffuse nitrogen contamination from agriculture is an increasing issue. Lake Hatuma (5,300 ha catchment) is one of Hawke's Bay's priority wetlands for Council's works and services.

**Climate.** Varies greatly with topography and location. High rainfall in ranges and coastal hills, but moderate with gradient on the Plains (subject to frosts and winds). Flood and drought prone.

**Geology and soils.** Diverse, faulted geology and varied landscape. Greywacke ranges and mud/sandstone foothills transition to the Plains with complex soils (29 types including: heavy clays to gravels; shallow to deep; waterlogged to excessively drained). Smaller hill bands (sand/mud/limestone) separate the Plains from soft, erodible, poor-draining 'coastal' hills. The lower catchment includes the Tukituki valley with iconic Te Mata Peak backdrop and southern Heretaunga Plains.

**Ecology.** This zone may be regarded as having highly modified agricultural landscapes with low natural capacity (providing limited ecosystem services) and remnant indigenous vegetation, except for native forest in Ruahine Forest Park. There is limited terrestrial biodiversity connectivity with few corridors (especially lower catchment). A range of native fish occur (including the threatened longfin eel and Hawke's Bay rare koaro), as well as trout (1 of 4 main Hawke's Bay fisheries). Lower reaches of the catchment support a highly productive whitebait fishery.

**Land use.** While agriculture is less intensively developed in the Ruataniwha Plains than the Heretaunga Plains, the recent rate of change in the Ruataniwha Plains is greater, with intensive bull beef (unquantified), dairying, cropping and horticulture all featuring. Recent dairy conversions now account for 43% of the region's cows with around 35 consents (2008). Takapau and Ashley Clinton are now significant dairy centres. Elsewhere, extensive sheep and beef predominate, but with shifts to more intensive beef. Viticulture occurs in the lower catchment.

**Water use.** Allocation status is 'fully allocated'. Further groundwater allocation is on hold until the relationship with surface water is better understood. The Ruataniwha Plains and lower level rolling country include about 40,000 ha of land with irrigation potential, of which around 5,000 ha is irrigated. There is significant water demand for agriculture.

**Built environment.** Waipukurau and Waipawa are service towns. Land-based wastewater treatment infrastructure will add development capacity. There is a network of smaller communities (Otane and Takapau have public water supply and reticulated wastewater). This zone has close proximity to the main Hawke's Bay population centres, with SH2 and SH50 providing good north-south links. There are also rail links for freight. Lifestyle development is popular in the lower Tukituki. Flood control schemes include the Upper Tukituki (183km) and Heretaunga Plains (which include large tracts of Council owned land).

**Social / Cultural.** The zone comprised around 9.1% of regional population (2006 Census) and displays a varied socio-economic profile and sub-zonal identities. An important recreational resource for the main population centres (much is river-focussed - angling, swimming, some kayaking). The Tukituki River is recognised as a nationally significant trout fishery with over 12,000 angler days spent on the river per annum – the highest angler visitation rate of any river in the region. Almost half the population lives within the various settlements. The proportion of Maori to Central Hawke's Bay population (majority of catchment) is well above the national average, but slightly lower than in the Hastings district. The proportion of elderly persons in the population is expected to increase significantly.

**Economy.** The zone generated 7.2% of regional GDP and 6.3% of regional employment in 2009 (broad based estimates). The economy is dominated by agricultural production, with significant recent shifts in activity. Processing and packing (e.g. meat, apples) and associated support industries/services are important. Farming and forestry accounts for around 33% of Central Hawke's Bay employment, with about 22% in manufacturing. There is general growth in foreign ownership of farms and businesses and decline of intergenerational farming. Tourism is a lesser, but significant economic contributor (unquantified). Seasonal work demand is high. The zone is an important source of gravels for the region.

# Porangahau zone

## Issues and drivers

- 'Edge of region' zone with considerable potential
- Subject to regular droughts and floods which will increase in frequency according to climate change predictions
- Huatokitoki Community Catchment Project will serve as good model for making farming systems more resilient to difficult climatic and environmental conditions

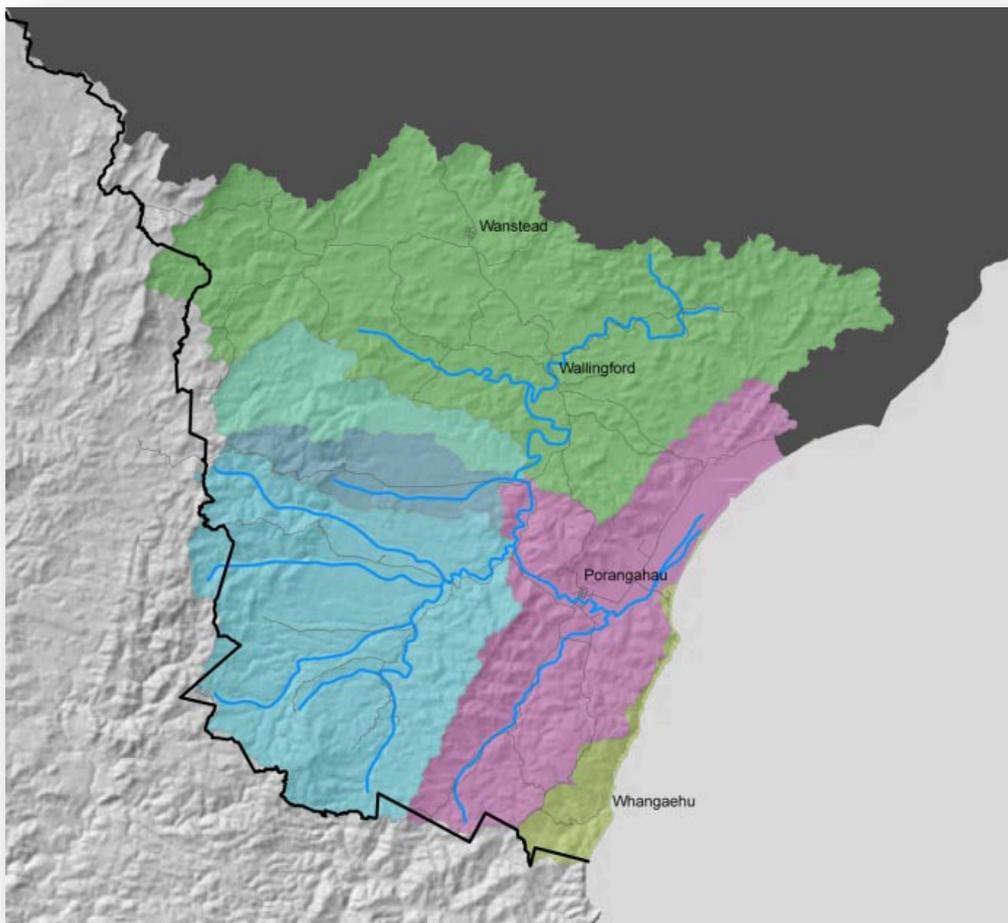


Figure 7 - Porangahau Catchment Zone and sub-catchments

## Characteristics

**Water resources.** Surface water availability is limited with no major headwaters. Resources include: Porangahau River (35km) and estuary and number of smaller streams (e.g. Huatokitoki, Mangawhero, Mangaorapa and Mangamaire). Some streams are ephemeral. Water quality issues are associated with poor visual clarity, periphyton growths, impairment of macroinvertebrate community health and poor bacteriological quality. Estuarine water quality has declined.

**Climate.** Warm and dry. Relatively windy.

**Geology and soils.** The zone comprises moderate hill country of soft sedimentary geology. Soils are generally fertile, but erosion-prone (sand/mudstone and argillite). There are areas of low elevation flat land, including alluvial terraces, Potassium and bentonite resources exist.

**Ecology.** Isolated remnants of native vegetation exist. Porangahau Estuary (750 ha) is one of the few estuaries on the north east coast of New Zealand. It has a unique assemblage of fish species and is a nationally important habitat for whitebait, flounder, mullet and kahawai. Porangahau River has poor to average habitat for most of its length. It has a valued eel fishery, but is not significant for trout.

**Land use.** Predominantly extensive sheep and beef. Some forestry, deer, cropping and one vineyard occur in this zone. Areas of versatile land use are limited (e.g. by climate)

**Water use.** Less than half of the surface water resources are allocated. Low-flow events can become extreme, with zero flow occasionally recorded in the mid reaches of the catchment.

**Built environment.** The few small settlements in this zone include Porangahau (range of local facilities), Wallingford, Wanstead, and Mangaorapa. SH52 provides good road links, despite the area's relative isolation. Porangahau has an 80 km flood control scheme. Tourist development is focussed at Te Paerahi Beach (Porangahau). While both Porangahau and Te Paerahi have wastewater treatment plants that have contributed to river/estuarine water quality issues, these will undergo some upgrading under recently issued discharge consents. A number of marae and historic rural buildings (homesteads) are scattered across the zone.

**Social / Cultural.** The zone comprised around 1% of regional population (2006 Census). While Porangahau offers good facilities for its size, local residents can feel under pressure from summer tourism. Communities rely very heavily on services from outside the zone. The Maori community is strong and catchments within the zone have high cultural value with a number of whare and pa and an extensive history of river use. Farming community includes inter-generational landowners. The community identifies with Hawke's Bay despite being edge-of-region.

**Economy.** The zone generated 0.8% of regional GDP and 0.7% of regional employment in 2009 (broad based estimates). Farming, tourism and fishing are important sources of income. The economy is heavily reliant on services derived from outside the zone. There is no local industrial base.

# Southern Coast zone

## Issues and drivers

- A popular high quality coastline, close to urban hubs – a key Hawke’s Bay lifestyle asset
- Increasing use and urban-intensity development putting pressure on infrastructure (e.g. Waimarama) and the water quality in the zone
- Heretaunga Plains Urban Development Strategy (HPUDS) gives direction to desired growth for Ocean Beach and Waimarama
- The zone is subject to intensive rain events that cause soil loss from the steep rural margins, which subsequently impacts on coastal water bodies

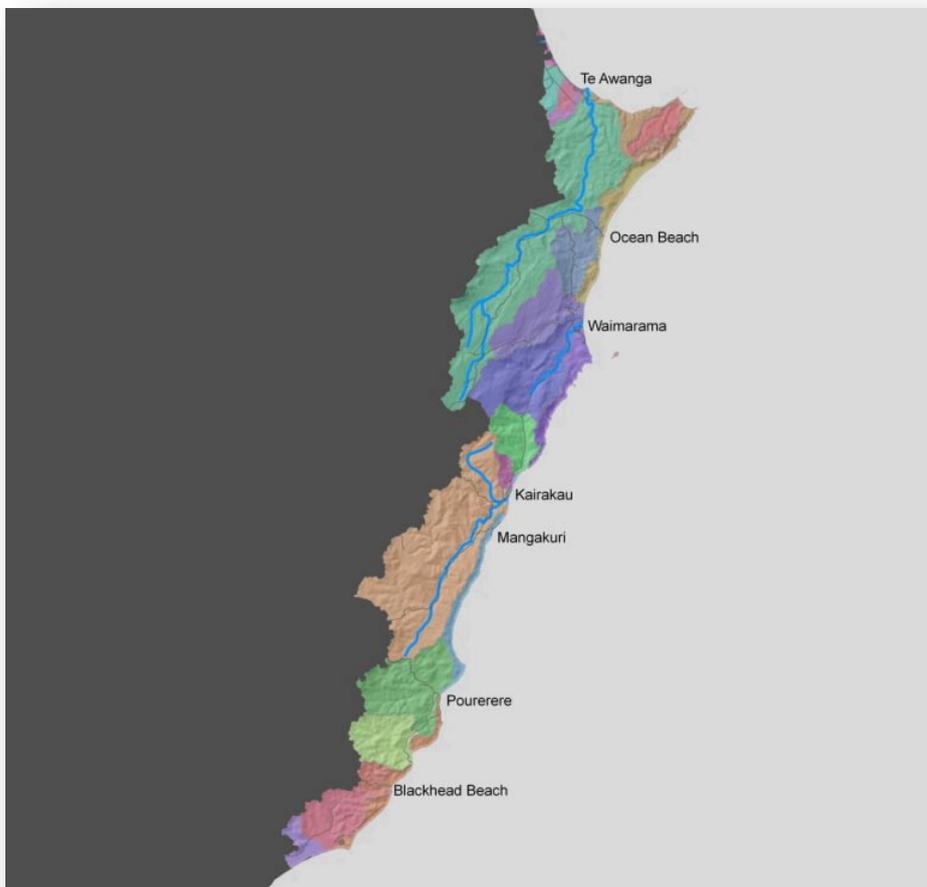


Figure 8 - Southern Coast Catchment Zone and sub-catchments

## Characteristics

**Water resources.** A number of surface water catchments with smaller rivers and streams occur in the zone (e.g. Maraetotara River, Waipuka, Waingongoro, Pouhokio and Te Apiti Streams, and Mangakuri River). Some are spring-fed. Water quality issues common to the zone include impaired ecological health (macro invertebrate communities), reduced visual clarity, periphyton exceedances and poor bacteriological quality (elevated *E.coli* concentrations). Questions regarding the causes of these impairments remain (e.g. human influence, natural, inappropriate guidelines).

**Climate.** Hot, dry and windy, especially on the coast. Higher rainfall occurs on the Maraetotara plateau (microclimate).

**Geology and soils.** Erodible hill country of soft, fertile mudstone predominates, with areas of harder argillite further south and fertile, alluvial soils on southern edge of Heretaunga Plains around Te Awanga to the north. Hill tops have limestone influence. The Maraetotara plateau has freer-draining, fertile ash soils. Cape Kidnappers and Bare Island are important coastal landmarks.

**Ecology.** Areas of indigenous terrestrial ecology are sparse and scattered. Coastal ecology includes Ocean Beach dunes and Cape Kidnappers Gannet Reserve. Important areas of marine ecology include the Te Angiangi Marine Reserve (446ha) between Blackhead and Aramoana beaches.

**Land use.** Extensive sheep and beef on hill country with some large holdings. Intensive land uses around Te Awanga and the southern Heretaunga Plains including horticulture, viticulture and cropping. The sandy beaches are popular for recreation, particularly Ocean Beach and Waimarama.

**Water use.** Surface water is 'fully allocated' in the Maraetotara and Puhokio catchments. Elsewhere water quantity allocation is undetermined but not an issue of concern.

**Built environment.** This comprises a series of small coastal settlements that vary in character. These include Te Awanga, Ocean Beach, Waimarama, Pourerere and Blackhead. Some settlements have a high proportion of holiday homes and baches. The limited infrastructure is subject to seasonal stresses. Settlements lack reticulated services. Rural road access is limited.

**Social/Cultural.** The zone comprised around 1.4% of regional population (2006 Census). The northern part of the zone is strongly linked with the adjacent urban populations, whereas the southern end is more isolated. While seasonal population fluxes characterise many communities, some have a strong resident community identity (e.g. Te Awanga). Significant areas of Maori-owned land (e.g. southern end of Ocean Beach and Waimarama) and marae occur. Intergenerational farming remains but with an increase in foreign and Landcorp ownership.

**Economy.** The zone generated 1.4% of regional GDP and 1.3% of regional employment in 2009 (broad based estimates). The economy is dominated by agriculture, tourism and recreation, with some cray fishing. Subdivision development is increasingly likely.

# Appendix 1:

## SWOT assessment of Catchment Zones

### Introductory note

The following SWOT (strengths, weaknesses, opportunities, threats) assessment of catchments was undertaken collaboratively by staff from a range of Regional Council teams to create the catchment profiles. Workshop outcomes are presented in general, unedited form with no order or ranking of entries.

**The results are informative, not definitive. They are included to stimulate discussion and constructive thought processes only.**

Further investigation or wider consultation will be appropriate to add additional rigour to this assessment.

| <b>Wairoa zone</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Strengths</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>Opportunities</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <ul style="list-style-type: none"> <li>• Natural assets: rivers (Wairoa navigable), conservation land including national park, Mahia peninsula, coastal wetlands, Lake Waikaremoana</li> <li>• Community resilience and identity with area, strong Maori community (kaitiakitanga)</li> <li>• Land use not irrigation dependent</li> <li>• Fertile flats (limited area)</li> <li>• Good growing climate</li> <li>• Key employers (AFFCO, Frasertown Meat)</li> <li>• Access to recreational and tourism opportunities</li> <li>• House prices</li> <li>• Proactive district council</li> </ul> | <ul style="list-style-type: none"> <li>• Enhance communications (SH38, rail closure opportunity to enhance SH2 and/or 'rail trail', Mahia Gateway, broadband, inland port)</li> <li>• Forestry – ETS, high value forest species, tree/shrub crops on hill country</li> <li>• Negative carbon footprint</li> <li>• Hydro power generation, oil and gas resources</li> <li>• Tourism (coordinated: multi-sport, iconic coastal and inland landscapes, heritage)</li> <li>• Young available workforce</li> <li>• Treaty settlement outcomes</li> <li>• Maori owned land and return to family land</li> <li>• Mahia wastewater infrastructure upgrade</li> </ul> |
| <b>Weaknesses</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <b>Threats</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <ul style="list-style-type: none"> <li>• Image</li> <li>• Isolation and communication infrastructure (transport links, broadband)</li> <li>• Hill country erosion (loss of soil resource, incomes, high repair cost, water quality impacts)</li> <li>• Flooding and other hazards</li> <li>• Forestry monoculture</li> <li>• Low value economy with reliance on key employers</li> <li>• Population decline and loss of young people</li> <li>• Incomes and social deprivation</li> </ul>                                                                                                      | <ul style="list-style-type: none"> <li>• Unsustainable land use practices (pasture erosion, forestry harvesting impacts)</li> <li>• Communication links not addressed, rail closure</li> <li>• Reliance on key employers</li> <li>• Vulnerable small communities, increasing deprivation</li> <li>• Population decline (youth outmigration)</li> <li>• Side-effects of regeneration initiatives (e.g. tourism impacts on identity)</li> <li>• Wastewater infrastructure</li> <li>• Coastal erosion</li> <li>• Leadership/political tension post-Treaty settlement, distance from HBRC</li> </ul>                                                             |

## Mohaka zone

| Strengths                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Opportunities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• Outstanding natural and wilderness values of Mohaka catchment (limited degradation to date)</li> <li>• Water Conservation Order recognition</li> <li>• Community identification with the Mohaka catchment at local, regional and national level</li> <li>• World class fishing and kayaking</li> <li>• Other wilderness and river recreation</li> <li>• Land use limitations help safeguard character</li> <li>• Limited development to date</li> <li>• SH5 and SH2 links</li> </ul> | <ul style="list-style-type: none"> <li>• Integrated management - Mohaka system</li> <li>• Address relatively localised water quality issues to enhance Mohaka system</li> <li>• Proactive management to address risks</li> <li>• Coordinated tourism/recreation opportunities</li> <li>• Forestry potential – ETS</li> <li>• Hydro power generation (economic) of lower Mohaka outside WCO area</li> <li>• Land management (nutrients, erosion control)</li> <li>• Understand cultural values to inform management</li> <li>• Co-governance – increasingly organised, proactive iwi</li> </ul> |
| Weaknesses                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Threats                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <ul style="list-style-type: none"> <li>• Land use impacts (diffuse contamination) on water quality (all 4 wellbeings): nuisance periphyton and effects on fishery from nutrients in upper Mohaka; water clarity below Te Hoe confluence from land erosion</li> <li>• Limited land use versatility - erosion-prone, limited productivity</li> <li>• Few amenities for isolated communities</li> <li>• Marginal profitability of sheep and beef farming</li> <li>• Rural road network and digital communications</li> </ul>     | <ul style="list-style-type: none"> <li>• Fragmented management of Mohaka system</li> <li>• Delays in addressing Taharua impacts</li> <li>• Failure to anticipate risks</li> <li>• Erosion impacts of farming and forestry</li> <li>• Hydro-power – community/political division</li> <li>• Vulnerable sheep and beef farmers - marginal profitability</li> <li>• Biosecurity (possums, Didymo in upper Mohaka, rabbits)</li> </ul>                                                                                                                                                             |

## Esk zone

| Strengths                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Opportunities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• Natural features, inland and coastal landscapes</li> <li>• Local and regional recreation</li> <li>• Accessibility                             <ul style="list-style-type: none"> <li>○ SH2 and SH5 links and railway (freight)</li> <li>○ Proximity to main Hawke’s Bay populations and port</li> </ul> </li> <li>• Industry location near to Napier</li> <li>• DOC estate</li> <li>• Cohesive communities (especially Tutira)</li> <li>• Sandy beaches (relatively remote given proximity to Napier)</li> <li>• HBRC owned land, Guthrie Smith Trust</li> </ul> | <ul style="list-style-type: none"> <li>• Coordinated tourism/recreational/cultural opportunities offered by diverse landscapes near to population centres and airport</li> <li>• High traffic throughput</li> <li>• Improve marketing</li> <li>• Carbon forestry - ETS</li> <li>• Road network improvements</li> <li>• Small-scale hydro power (economic)</li> <li>• Sensitive subdivision in coastal valleys/hills</li> <li>• Engagement of communities (e.g. Tutira Maungaharuru Visionary Group)</li> </ul>                                                           |
| Weaknesses                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Threats                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <ul style="list-style-type: none"> <li>• Erosion-prone soils</li> <li>• Emerging water quality issues - land use impacts</li> <li>• Diverse communities have different needs. Some relatively isolated</li> <li>• High risk to hazards (floods, drought, snow etc.)</li> <li>• Flood-prone productive land and Esk community</li> <li>• Quality of SH2</li> <li>• Poor promotion of opportunities</li> </ul>                                                                                                                                                                                              | <ul style="list-style-type: none"> <li>• Climate change impacts on hazards and drought</li> <li>• Land use impacts on water quality (soil loss, nutrients)</li> <li>• Uncoordinated development sprawl in southern zone</li> <li>• Biosecurity (rabbits, possums, TB, weeds)</li> <li>• Post-Treaty settlement leadership</li> <li>• Coastal pressures, lack of awareness of aquatic spawning environments</li> <li>• Management of ‘transition zone’ (urban edge to rural) could lack clarity</li> <li>• Degradation of popular assets would be high profile</li> </ul> |

## Heretaunga zone

| Strengths                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Opportunities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• Quality of life package</li> <li>• Temperate climate ('Sunny Hawke's Bay')</li> <li>• Primary production ('fruitbowl of NZ')</li> <li>• High class soils of Plains and wine terroir</li> <li>• Groundwater resource</li> <li>• Processing base</li> <li>• Service levels, networks, infrastructure, facilities of main urban centres. Critical mass for growth</li> <li>• Communications (transport and IT networks)</li> <li>• Large available workforce</li> <li>• Landscape features</li> <li>• History, Art Deco/Spanish Mission Napier</li> <li>• Possum control</li> </ul> | <ul style="list-style-type: none"> <li>• Strategic development of Plains (HPUDS)</li> <li>• High speed broadband</li> <li>• Regional branding</li> <li>• Ecological enhancement and urban biodiversity</li> <li>• Enhance as lifestyle choice for living and working (e.g. communications, urban design, urban recreation and local networks)</li> <li>• Water harvesting? (Ngaruroro, upper Karamu)</li> <li>• Tourism, recreation, cultural events</li> <li>• Co-management/governance building natural and social value</li> <li>• Communications upgrades</li> </ul> |
| Weaknesses                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Threats                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <ul style="list-style-type: none"> <li>• Water limitations</li> <li>• Water quality - intensive rural and urban uses</li> <li>• Flood risks and other hazards</li> <li>• Poor planning and urban-rural conflict</li> <li>• Air quality (Napier and Hastings)</li> <li>• Parochialism ('Napier vs Hastings')</li> <li>• Relative isolation to other regions and networks</li> <li>• Lack of biodiversity</li> <li>• Property/land prices</li> <li>• Old housing stock</li> <li>• Low wage economy / seasonality</li> <li>• Soil contamination legacy</li> <li>• Wastewater and stormwater infrastructure</li> </ul>        | <ul style="list-style-type: none"> <li>• Hazards: earthquakes, flooding, coastal erosion, drought</li> <li>• Climate change impacts</li> <li>• Degradation/loss of productive soils</li> <li>• Urban sprawl</li> <li>• Sensitive landscapes</li> <li>• Production-led economy</li> <li>• Non-adaptive leadership</li> <li>• Narrow focus branding (Wine Country, Art Deco)</li> <li>• Aging population (retirement destination) and loss of youth (education outside region)</li> <li>• Low skill base</li> <li>• Socio-economic divide</li> </ul>                       |

## Tukituki zone

| Strengths                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Opportunities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• Reasonable amount of water, high rainfall in ranges</li> <li>• Fertile Ruataniwha Plains</li> <li>• Productive, versatile primary sector</li> <li>• High amenity value: varied landscapes and recreation use (angling, swimming, some kayaking, tramping, cycling)</li> <li>• Accessibility - urban populations, other regions</li> <li>• Perception of strong communities: number, activity, positivity, openness to change, intergenerational knowledge, rural leaders</li> <li>• Stakeholder collaboration: Tukituki Liaison Group, water user groups etc.</li> <li>• Gravel-rich</li> </ul> | <ul style="list-style-type: none"> <li>• Identify vision, develop identity</li> <li>• Development potential</li> <li>• Improved connectivity (e.g. plains and hills)</li> <li>• Water management across landscapes</li> <li>• Diversification of landscapes (multi-functional)</li> <li>• Climate change (crop types)</li> <li>• Water harvesting (ensure multiple benefits)</li> <li>• Build community around water management</li> <li>• Land use opportunities without irrigation need</li> <li>• Natural capital/biodiversity in working landscapes</li> <li>• Forestry - ETS</li> <li>• Investment (international airport catalyst)</li> <li>• Tourism, niche industries, lifestyle development</li> </ul> |
| Weaknesses                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Threats                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <ul style="list-style-type: none"> <li>• Water fully allocated</li> <li>• Water quality trends (land use intensification)</li> <li>• Angler usage decline</li> <li>• Fragmented - upper, middle, lower catchment</li> <li>• Loss of generational farmers</li> <li>• Community values not well understood (urban vs rural, playground vs workplace)</li> <li>• Debt, cash flows, transport costs</li> <li>• Sector led</li> <li>• Cost of local governance</li> <li>• Lack of rural broadband</li> </ul>                                                                                                                                  | <ul style="list-style-type: none"> <li>• Intensification impacts on ground and surface waters (quality, quantity) and land (natural capital)</li> <li>• Climate change: droughts, floods, crop types</li> <li>• Growth impacts on existing communities</li> <li>• Increasing conflict around values</li> <li>• Corporatisation, foreign ownership, development</li> <li>• Production-led agricultural economy</li> <li>• Increasing land prices</li> <li>• Out-of-area processing</li> <li>• Biosecurity (e.g. TB, rabbits)</li> <li>• Lifestyle development</li> </ul>                                                                                                                                         |

## Porangahau zone

| Strengths                                                                                                                                                                                                                                                                                                                                                                     | Opportunities                                                                                                                                                                                                                                                                                                                                                                           |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• Relatively fertile</li> <li>• Hinterland NZ, sense of place, relative isolation</li> <li>• Coastal tourism</li> <li>• State Highway link (coastal tourist route)</li> <li>• Estuary</li> <li>• Whitebait</li> <li>• Community</li> <li>• Edge of Hawke's Bay, but links to adjacent regions</li> <li>• Historic influence</li> </ul> | <ul style="list-style-type: none"> <li>• Strong community can adapt/reorganise (e.g. Huatokitoki project)</li> <li>• Tourism</li> <li>• Irrigation (winter water storage)</li> <li>• Forestry</li> <li>• Alternative energy (wind, solar)</li> <li>• Subdivision/development</li> <li>• Sense of place with strong history and rural hinterland character</li> </ul>                    |
| Weaknesses                                                                                                                                                                                                                                                                                                                                                                    | Threats                                                                                                                                                                                                                                                                                                                                                                                 |
| <ul style="list-style-type: none"> <li>• Dry</li> <li>• Erodible soils</li> <li>• Land use impacts on water quality</li> <li>• Relative isolation (including lack of broadband and mobile phone coverage)</li> <li>• Lack of local employment opportunities</li> <li>• Lack of unique identity</li> <li>• Infrastructure (e.g. wastewater)</li> </ul>                         | <ul style="list-style-type: none"> <li>• Climate change impact on dry area</li> <li>• Erosion through poor land management</li> <li>• Land use impacts on water quality</li> <li>• Slow IT communications roll out</li> <li>• Status quo could cause physical degradation and loss of economic opportunity</li> <li>• Potential lack of political influence (edge-of-region)</li> </ul> |

## Southern Coast zone

| Strengths                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Opportunities                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• Range of high-quality popular beaches</li> <li>• Scenic, rugged coastal landscapes</li> <li>• Tourism (beach focussed)</li> <li>• Marine reserve</li> <li>• Close proximity to urban populations and services (northern zone)</li> <li>• Fertile hill country</li> <li>• Mild climate</li> <li>• Maori ownership – a brake on development or ensures done with care</li> <li>• No big employers – remain recreation focussed</li> <li>• 2 HBRC priority catchments for waterway protection (Pouhokio, Maraetotara)</li> </ul> | <ul style="list-style-type: none"> <li>• Tourism and related development (Hawke’s Bay lifestyle package)</li> <li>• Joint ventures with Maori</li> <li>• Forestry – ETS</li> <li>• Ecological restoration and protection</li> <li>• Wind energy</li> <li>• Foreign ownership (environmental management)</li> <li>• Improve access</li> <li>• Long coastline provides strategy options – treat as whole or different approaches in sub-zones</li> </ul> |
| Weaknesses                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Threats                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <ul style="list-style-type: none"> <li>• Dry (droughts)</li> <li>• Access – roads and remote south</li> <li>• Erosion-prone</li> <li>• Biodiversity – sparse and disconnected</li> <li>• High profile conflicts (Ocean Beach development, Te Awanga coastal protection)</li> <li>• Seasonal pressures on infrastructure (e.g. wastewater)</li> <li>• Social infrastructure (e.g. schools)</li> <li>• No major employers</li> <li>• Accessibility of southern zone</li> </ul>                                                                                           | <ul style="list-style-type: none"> <li>• Erosion</li> <li>• Surface water quality</li> <li>• Development pressure generates community conflict and erode quality of asset (e.g. Ocean Beach)</li> <li>• Climate change</li> <li>• Dunes and archaeological sites (development, apathy, resources)</li> <li>• Foreign ownership (social/cultural)</li> <li>• Potential loss of valued public assets (beach access)</li> </ul>                           |