

# Wellington Region

Riversdale

Wairarapa Coast

Masterton District

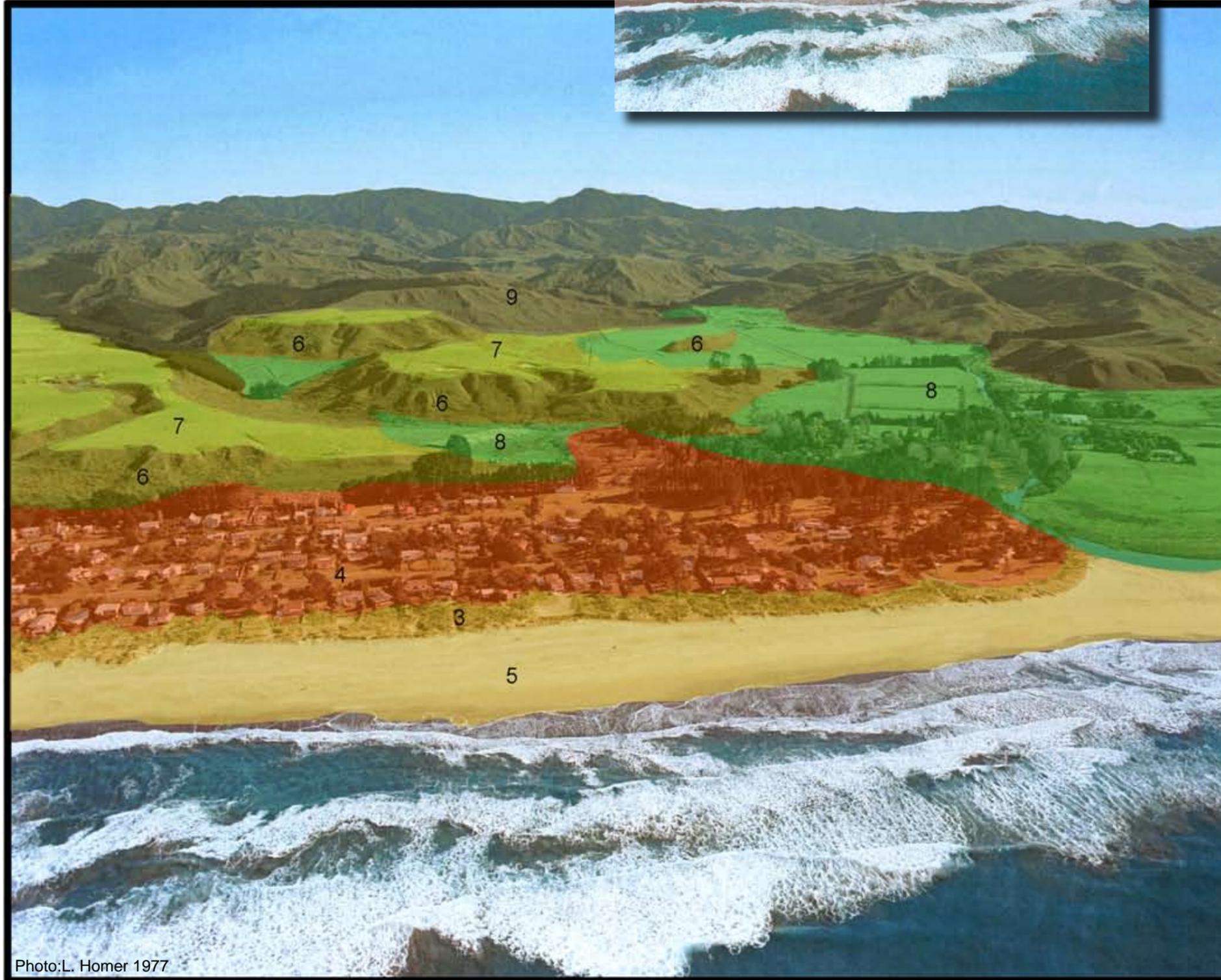
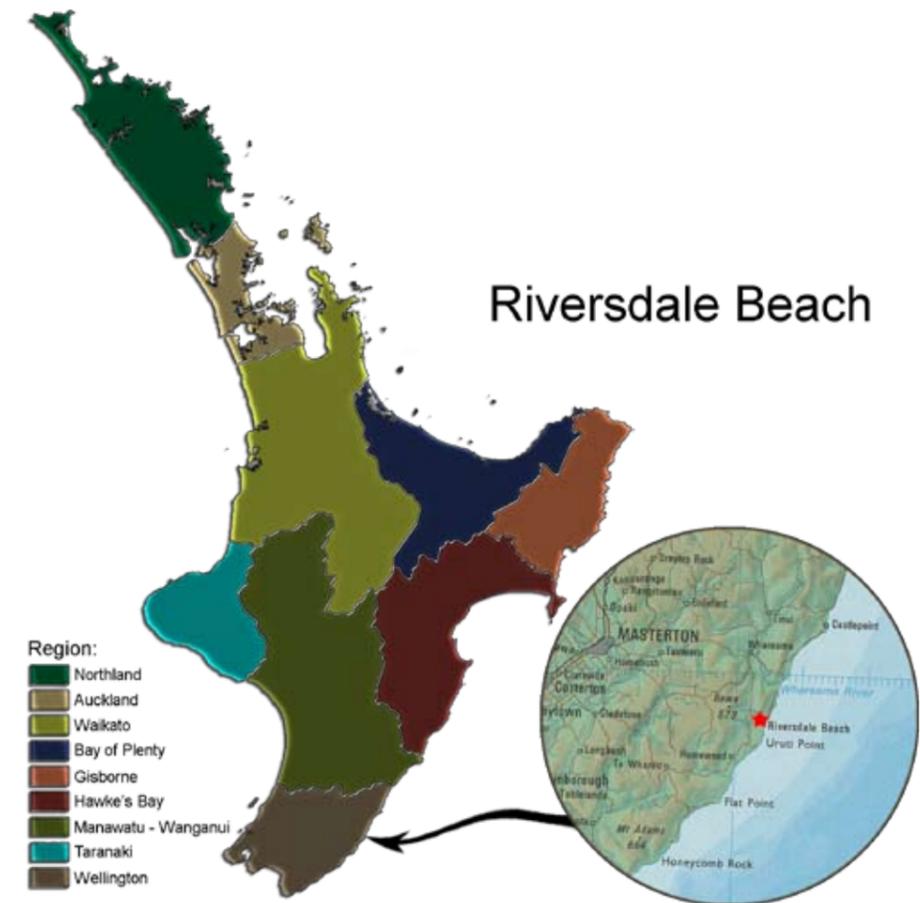
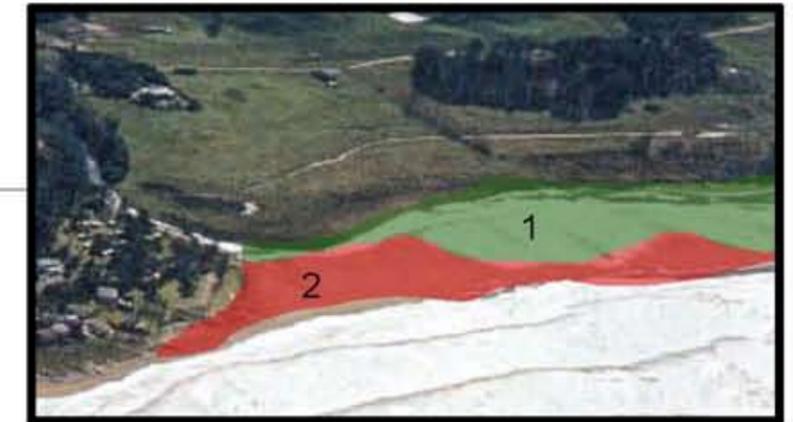


Photo: L. Homer 1977



Riversdale Beach

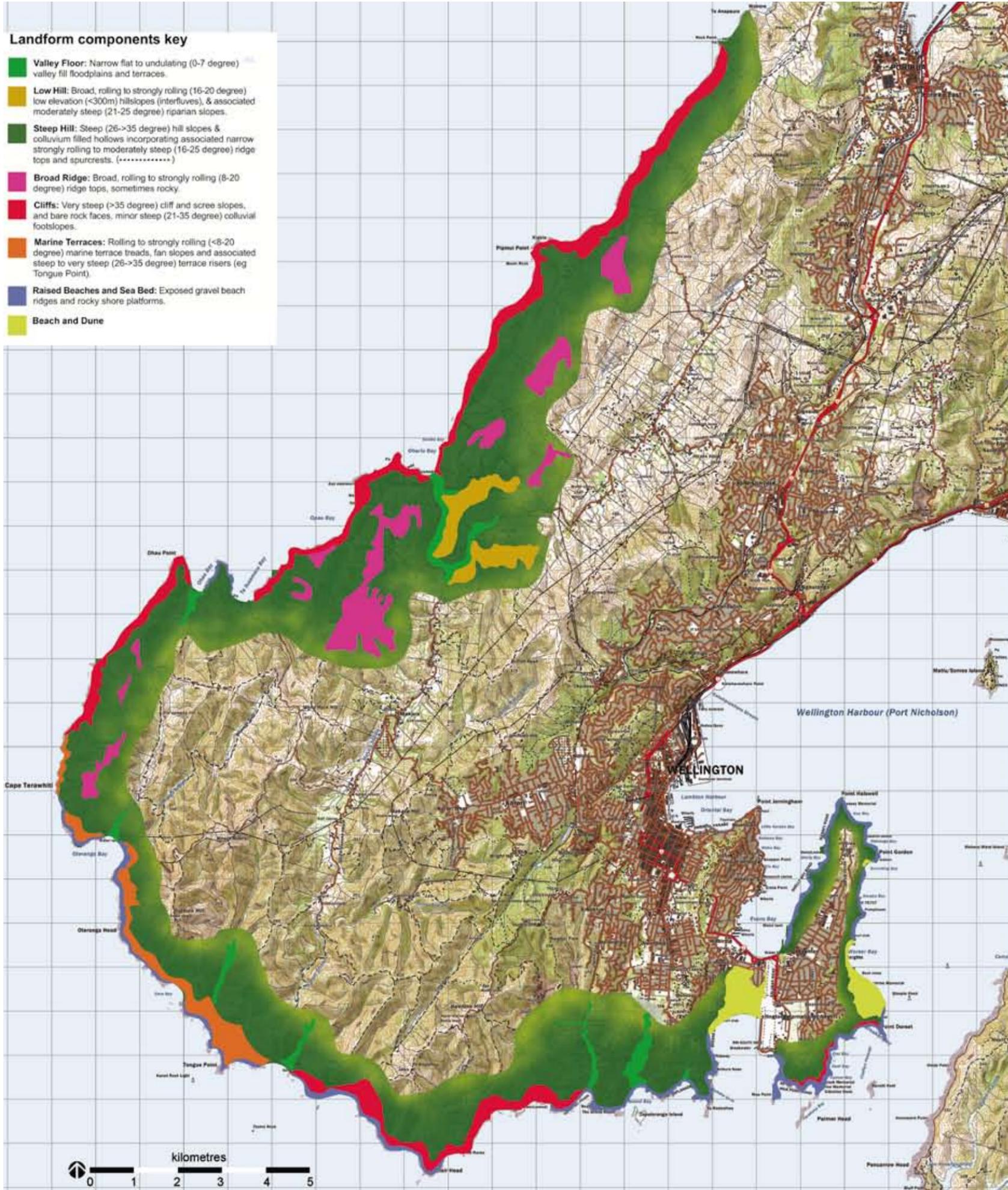


## Land Types:

- 1. Elongated estuary
- 2. Prograding sand spit
- 3. Active foredune
- 4. Stabilised dunes and interdune complex
- 5. Beach
- 6. Lower riser slope
- 7. Uplifted dissected marine terraces cut into weakly indurated mid Tertiary aged calcareous siltstones and sandstones
- 8. Uplifted marine terraces
- 9. Weakly indurated mid Tertiary aged calcareous siltstones and sandstones

**Landform components key**

- Valley Floor:** Narrow flat to undulating (0-7 degree) valley fill floodplains and terraces.
- Low Hill:** Broad, rolling to strongly rolling (16-20 degree) low elevation (<300m) hillslopes (interfluvies), & associated moderately steep (21-25 degree) riparian slopes.
- Steep Hill:** Steep (26->35 degree) hill slopes & colluvium filled hollows incorporating associated narrow strongly rolling to moderately steep (16-25 degree) ridge tops and spurcrests. (\*\*\*\*\*)
- Broad Ridge:** Broad, rolling to strongly rolling (8-20 degree) ridge tops, sometimes rocky.
- Cliffs:** Very steep (>35 degree) cliff and scree slopes, and bare rock faces, minor steep (21-35 degree) colluvial footslopes.
- Marine Terraces:** Rolling to strongly rolling (<8-20 degree) marine terrace treads, fan slopes and associated steep to very steep (26->35 degree) terrace risers (eg Tongue Point).
- Raised Beaches and Sea Bed:** Exposed gravel beach ridges and rocky shore platforms.
- Beach and Dune**

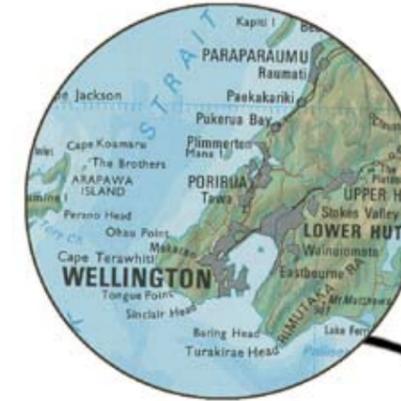


# Wellington Region Wellington City

**Region:**

- Northland
- Auckland
- Waikato
- Bay of Plenty
- Gisborne
- Hawke's Bay
- Manawatu - Wanganui
- Taranaki
- Wellington

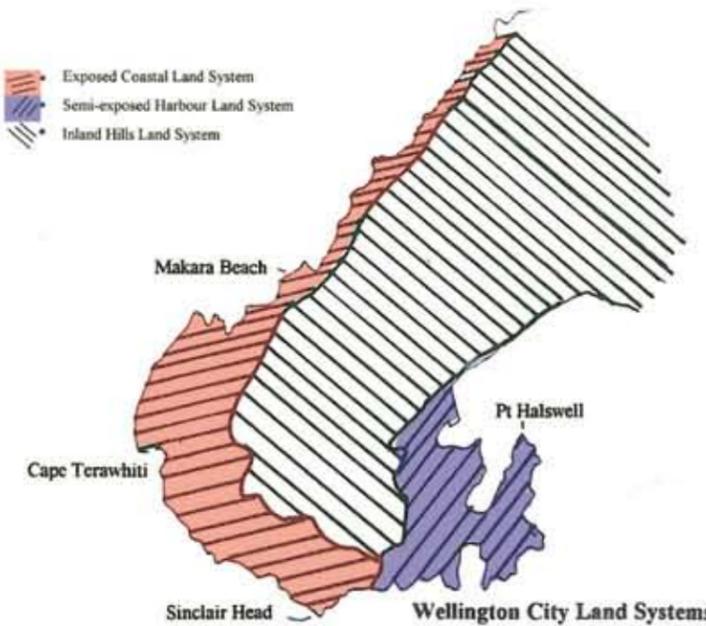
## Wellington



**LAND SYSTEMS**

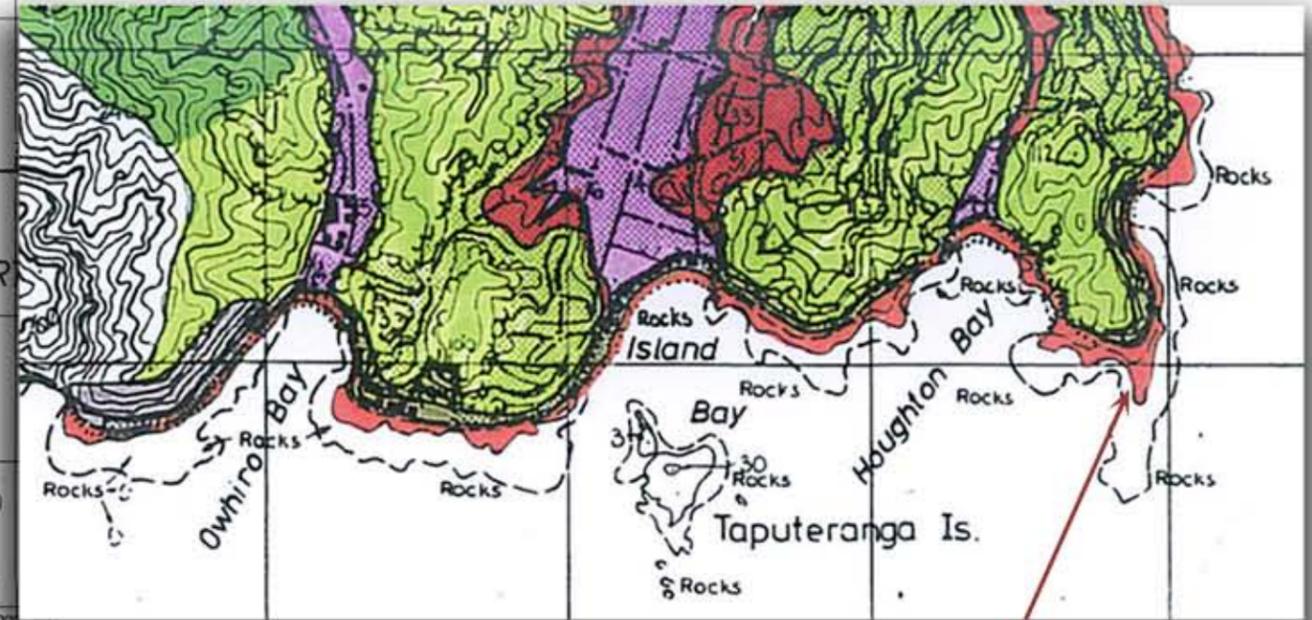
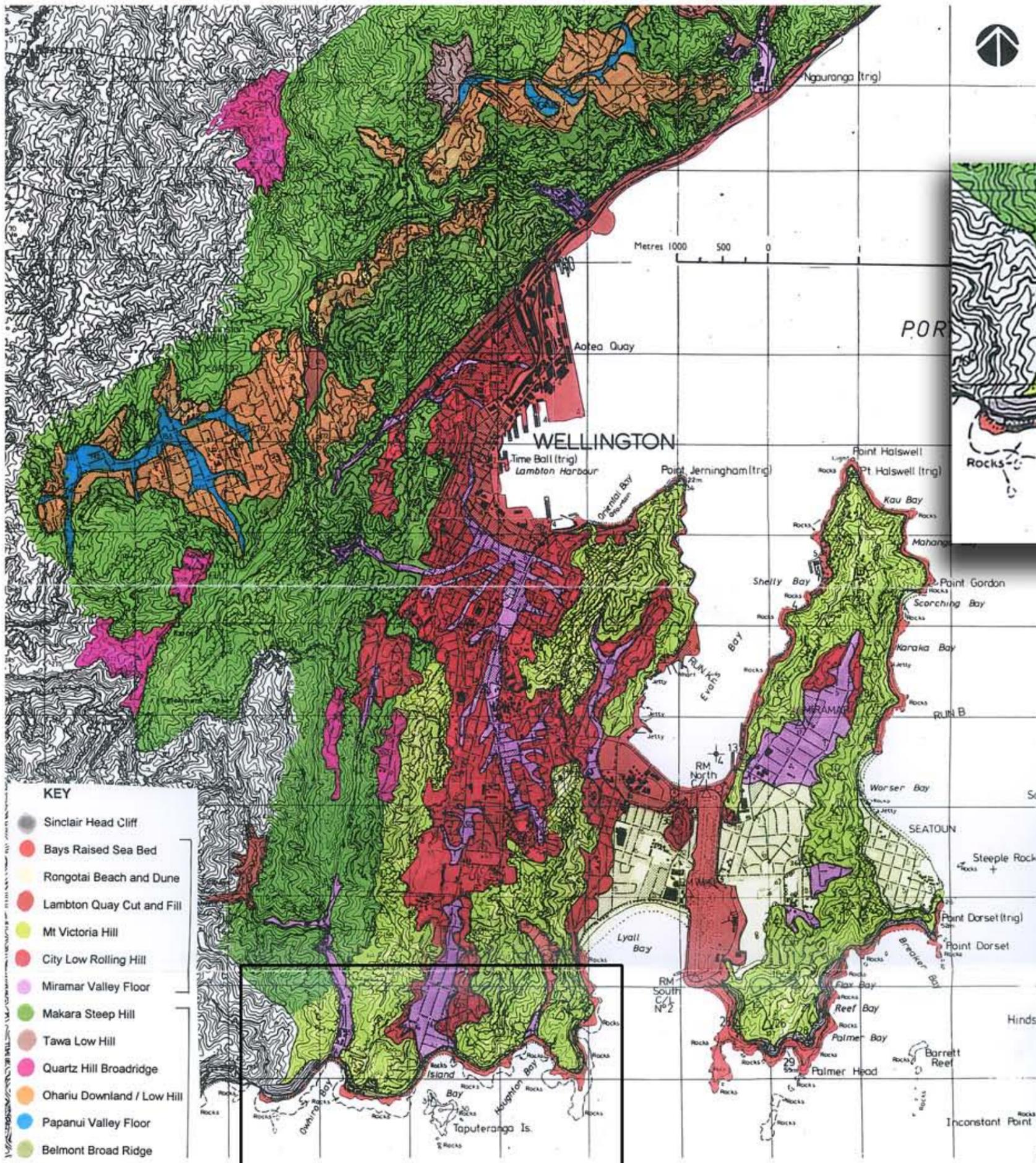
The following three land systems were established, based on major physiographic pattern and climate:

- Exposed Coastal Land System
- Semi-exposed Harbour Land System
- Inland Hills Land System



Landcare Research  
Contract Report:  
LC9899/022

# Wellington City landforms



Te Rae Kaihau

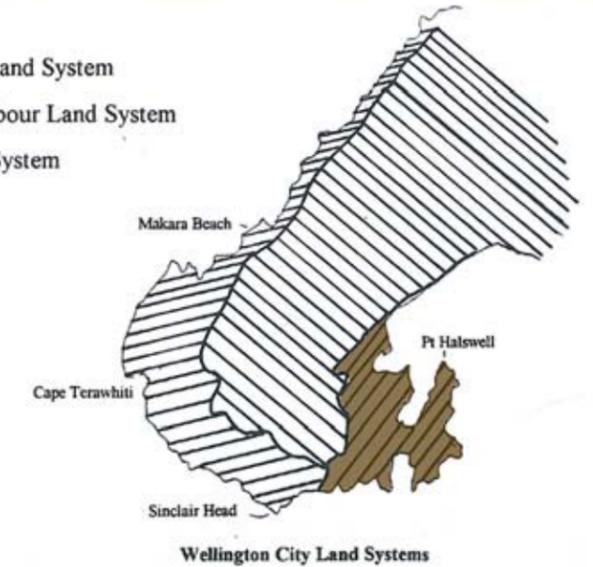
## KEY

- Sinclair Head Cliff
- Bays Raised Sea Bed
- Rongotai Beach and Dune
- Lambton Quay Cut and Fill
- Mt Victoria Hill
- City Low Rolling Hill
- Miramar Valley Floor
- Makara Steep Hill
- Tawa Low Hill
- Quartz Hill Broadridge
- Ohariu Downland / Low Hill
- Papanui Valley Floor
- Belmont Broad Ridge

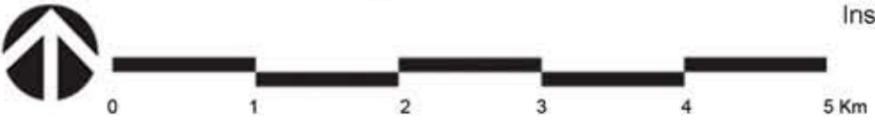
## LAND SYSTEMS

The following three land systems were established, based on major physiographic pattern and climate:

- ▨ Exposed Coastal Land System
- ▨ Semi-exposed Harbour Land System
- ▨ Inland Hills Land System



Landcare Research  
Contract Report:  
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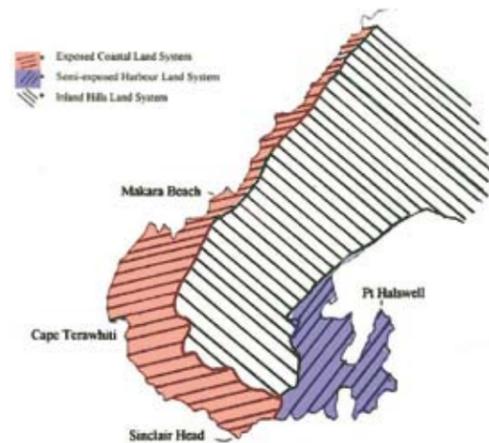


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# Land Types of Wellington City

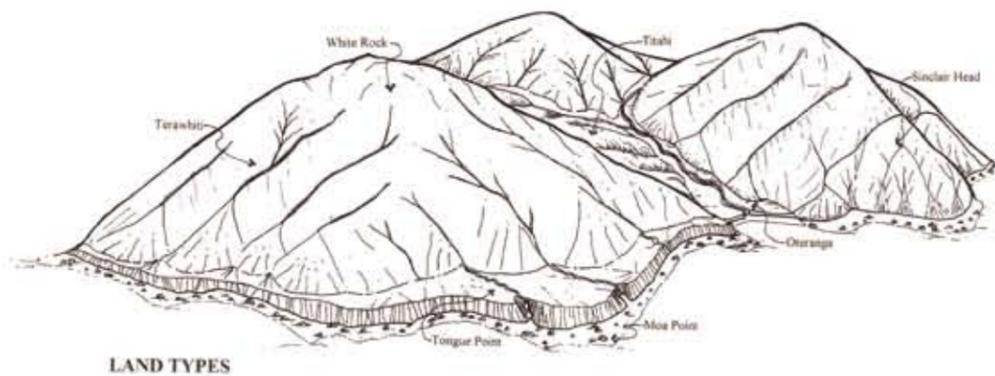
## Exposed Coastal Land System

- Terawhiti steep hill
- White Rock broad ridge
- Sinclair Head cliff
- Tongue Point marine terrace
- Oteranga stream
- Moa Point raised sea bed
- Titahi low hill



Sinclair Head Cliff Land Type - viewed from Red Rocks

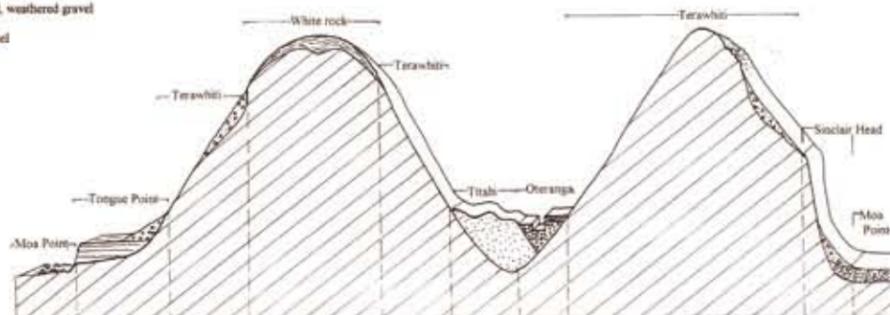
## EXPOSED COASTAL LAND SYSTEM



LAND TYPES

## EXPOSED COASTAL LAND SYSTEM Cross Section . 1 .

- KEY**
- greywacke
  - greywacke platform / beach gravel
  - windblown sand
  - colluvium and scree
  - consolidated, weathered gravel
  - alluvial gravel
  - loam



LAND TYPES

### TERAWHITI STEEP HILL LAND TYPE

| Landform component                   | Rock type                    | Regolith depth                    | Slope     | Soil  | Altitude    | Exposure           | Erosion   | Vegetation   | Climate |
|--------------------------------------|------------------------------|-----------------------------------|-----------|---|-------------|--------------------|---|--|---------|
| narrow, rocky ridge tops             | greywacke                    | 0 - 30 cm with some rock outcrops | 16 - 25°  | Terawhiti hill soils: stony silt loam, stony sandy loam, drainage: well to somewhat excessively drained                     | 200 - 300 m | exposed            | slight sheet slight wind                          | pasture <i>Carex</i> coastal scrub                     |         |
| low ridge tops and spur crests       | greywacke                    | 30 - 40 cm                        | 16 - 25°  | Terawhiti hill soils: stony silt loam, stony sandy loam, drainage: well to somewhat excessively drained                     | 300 - 450 m | exposed            | slight sheet slight wind                          | pasture <i>Carex</i> coastal scrub                     |         |
| steep rocky hills                    | greywacke                    | 0 - 30 cm with rock outcrops      | 20 - >35° | Terawhiti steeped soils: stony silt loam, stony sandy loam, stony silt loam, drainage: well to somewhat excessively drained | 200 - 300 m | exposed            | slight sheet slight wind                          | pasture coastal scrub <i>Carex</i> gorse               |         |
| steep mid slopes                     | greywacke                    | 30 - 40 cm                        | 20 - >35° | Terawhiti steeped soils: stony silt loam, stony sandy loam, drainage: well to somewhat excessively drained                  | 300 - 450 m | exposed            | moderate severe moderate soil slip moderate sheet | pasture coastal scrub <i>Carex</i> gorse <i>manuka</i> |         |
| colluvium filled troughs and hollows | colluvium and some greywacke | 50 - 200 cm                       | 20 - 35°  | Terawhiti steeped soils: stony silt loam, stony sandy loam, drainage: well to somewhat excessively drained                  | 100 - 450 m | exposed            | slight sheet slight wind slight soil slip         | pasture coastal scrub <i>Carex</i> gorse <i>manuka</i> |         |
| steep steep slopes                   | greywacke siltstone          | 0 - 30 cm                         | 20 - >35° | Terawhiti steeped soils: stony silt loam, stony sandy loam, drainage: well to somewhat excessively drained                  | 30 - 400 m  | exposed            | severe severe moderate gully                      | coastal scrub <i>Carex</i> gorse <i>manuka</i>         |         |
| steep riparian slopes                | greywacke                    | 30 - 40 cm                        | 20 - >35° | Terawhiti steeped soils: stony silt loam, stony sandy loam, drainage: well to somewhat excessively drained                  | 100 - 300 m | moderately exposed | moderate soil slip moderate sheet                 | coastal scrub broad leaved scrub pasture               |         |
| low and colluvial fan slopes         | stone colluvium              | 10 - 50 cm                        | 0 - 15°   | Hawthornage stony silt loam, stony silt loam, drainage: well to somewhat excessively drained                                | 50 - 150 m  | moderately exposed | slight gully slight deposition                    | pasture coastal scrub <i>Carex</i>                     |         |

### WHITE ROCK BROAD RIDGE LAND TYPE

| Landform component     | Rock type                            | Regolith depth                    | Slope   | Soil  | Altitude    | Exposure | Erosion                  | Vegetation                 | Climate |
|------------------------|--------------------------------------|-----------------------------------|---------|---|-------------|----------|--------------------------|----------------------------|---------|
| broad rocky ridge tops | loam over greywacke (some colluvium) | 0 - 50 cm with some rock outcrops | 0 - 20° | Kardaro silt loam texture: silt loam sandy loam drainage: moderately well to well drained | 200 - 400 m | exposed  | slight sheet slight wind | pasture <i>Carex</i> gorse |         |
| broad ridge tops       | loam over greywacke (some colluvium) | 50 - 100 cm                       | 0 - 20° | Kardaro silt loam texture: silt loam sandy loam drainage: moderately well to well drained | 200 - 400 m | exposed  | slight sheet slight wind | pasture <i>Carex</i> gorse |         |

### SINCLAIR HEAD CLIFF LAND TYPE

| Landform component   | Rock type                    | Regolith depth | Slope    | Soil   | Altitude  | Exposure | Erosion   | Vegetation                          | Climate |
|----------------------|------------------------------|----------------|----------|--|-----------|----------|---|-------------------------------------|---------|
| low rock faces       | greywacke                    | 0 cm           | >35°     | bare rock  | 0 - 300 m | exposed  | severe gully, slight sheet                                    | bare                                |         |
| steep steep slopes   | greywacke siltstone          | 0 - 30 cm      | >35°     | Terawhiti steeped soils: stony silt loam, stony sandy loam, drainage: well to somewhat excessively drained | 0 - 300 m | exposed  | severe severe   | coastal scrub                       |         |
| very steep slopes    | greywacke                    | 10 - 30 cm     | >35°     | Terawhiti steeped soils: stony silt loam, stony sandy loam, drainage: well to somewhat excessively drained | 0 - 300 m | exposed  | moderate sheet moderate soil slip slight sheet                | coastal scrub short tussock pasture |         |
| colluvial fan slopes | colluvium and some greywacke | 10 - 40 cm     | 21 - 25° | Terawhiti steeped soils: stony silt loam, stony sandy loam, drainage: well to somewhat excessively drained | 0 - 100 m | exposed  | moderate severe moderate depression slight gully slight sheet | coastal scrub short tussock pasture |         |

### TONGUE POINT MARINE TERRACE LAND TYPE

| Landform component | Rock type                                    | Regolith depth | Slope   | Soil  | Altitude   | Exposure | Erosion  | Vegetation                          | Climate |
|--------------------|--|----------------|---------|---|------------|----------|--|-------------------------------------|---------|
| low slopes         | colluvium                                    | 40 - 200 cm    | 4 - 15° | Titahi silt loam texture: stony silt loam drainage: well drained                                      | 30 - 100 m | exposed  | slight depression                                  | pasture coastal scrub               |         |
| terrace surfaces   | colluvium and loam over gravel and greywacke | 40 - 200 cm    | 0 - 30° | Titahi silt loam texture: silt loam, fine sandy loam drainage: imperfectly to moderately well drained | 50 - 100 m | exposed  | slight   | pasture coastal scrub               |         |
| terrace faces      | loam consolidated gravel greywacke           | 0 - 40 cm      | >35°    | Terawhiti steeped soils: stony silt loam drainage: excessively drained                                | 0 - 80 m   | exposed  | slight sheet slight gully slight sheet slight wind | pasture short tussock coastal scrub |         |

### OTERANGA STREAM LAND TYPE

| Landform component         | Rock type            | Regolith depth | Slope  | Soil  | Altitude  | Exposure           | Erosion                             | Vegetation    | Climate |
|----------------------------|----------------------|----------------|--------|---|-----------|--------------------|-------------------------------------|---------------|---------|
| gravelly river beds        | greywacke gravel     | 0 - 2 cm       | 0 - 5° | Waikanae gravelly sand texture: stony drainage: excessively drained                           | 0 - 20 m  | moderately exposed | severe deposition                   | bare grass    |         |
| low steep slopes           | alluvium over gravel | 1 - 15 cm      | 0 - 5° | Waikanae gravelly sand texture: stony to gravelly sand drainage: somewhat excessively drained | 0 - 20 m  | moderately exposed | moderate to severe moderate erosion | pasture grass |         |
| medium height steep slopes | alluvium over gravel | 20 - 40 cm     | 0 - 5° | Hawthornage stony silt loam texture: stony silt loam drainage: somewhat excessively drained   | 10 - 20 m | moderately exposed | slight                              | pasture grass |         |

### MOA POINT RAISED SEA BED LAND TYPE

| Landform component    | Rock type        | Regolith depth | Slope   | Soil   | Altitude | Exposure | Erosion    | Vegetation         | Climate |
|-----------------------|------------------|----------------|---------|--|----------|----------|------------|--------------------|---------|
| gravel beach edges    | greywacke gravel | <15 cm         | 0 - 5°  | Taukaka gravelly sand texture: gravelly sand drainage: excessively drained | 0 - 10 m | exposed  | deposition | bare coastal scrub |         |
| rocky exposed sea bed | greywacke        | 0 cm           | 0 - 15° | bare rock  | 0 - 10 m | exposed  | slight     | bare               |         |

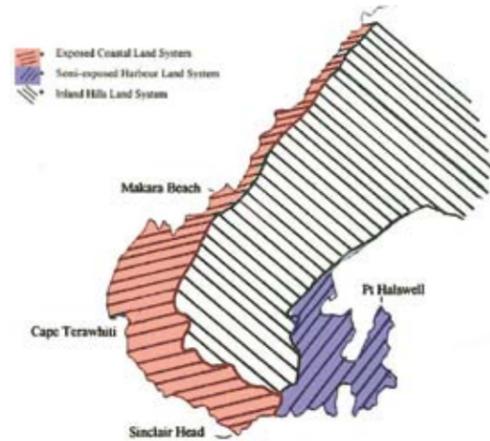
### TITAHU LOW HILL LAND TYPE

| Landform component               | Rock type                   | Regolith depth | Slope    | Soil   | Altitude   | Exposure           | Erosion                   | Vegetation                  | Climate |
|----------------------------------|-----------------------------|----------------|----------|--|------------|--------------------|---------------------------|-----------------------------|---------|
| steep rising outcrops            | slightly consolidated sands | >100 cm        | 18 - 20° | Titahi silt loam texture: fine sandy loam, loamy sand drainage: well to somewhat excessively drained | 20 - 100 m | moderately exposed | slight sheet              | pasture gorse <i>manuka</i> |         |
| moderately steep riparian slopes | slightly consolidated sands | >100 cm        | 21 - 25° | Titahi silt loam texture: fine sandy loam, loamy sand drainage: well to somewhat excessively drained | 20 - 100 m | moderately exposed | slight sheet slight gully | pasture gorse <i>manuka</i> |         |

# Land Types of Wellington City

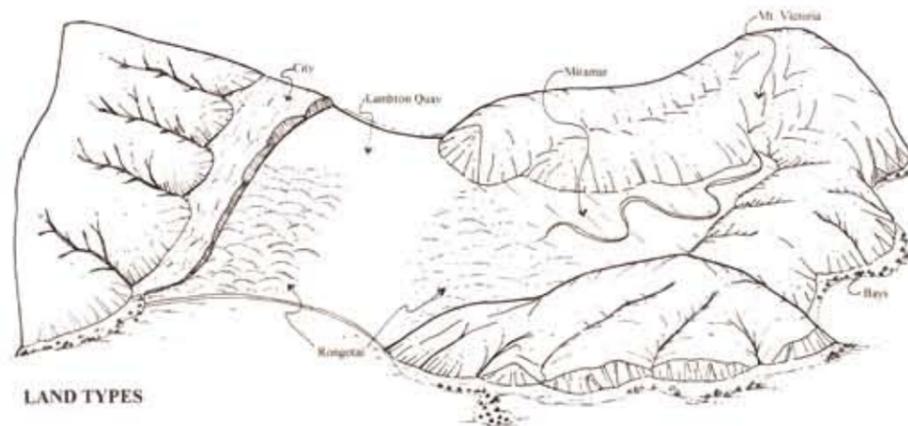
## Semi-exposed Harbour Land System

- Bays raised sea bed
- Rongotai beach and dune
- Lambton Quay cut and fill
- Mt Victoria hill
- City low rolling hill
- Miramar valley floor



Bays Raised Sea Bed Land Type - Kau Point viewed from Gordon Point

## SEMI-EXPOSED HARBOUR LAND SYSTEM



LAND TYPES

### MT VICTORIA HILL LAND TYPE

| Landform component                   | Rock type   | Regolith depth | Slope  | Soil  | Altitude    | Exposure  | Erosion  | Vegetation   | Climate |
|--------------------------------------|---|----------------|--------|---|-------------|---|--|--|---------|
| ridge tops and open areas            | loess and colluvium over greywacke (moderately to highly weathered) | > 100 cm       | 0-15°  | Parakaia silt loam, Parakaia hill soils, Korokoro hill soils<br>texture: silt loam or sandy loam over clay loam<br>drainage: moderately well to imperfectly drained | 100 - 200 m | moderately sheltered  | slight sheet<br>slight wind                        | grass<br>exotic trees<br>coastal scrub                       |         |
| seaward steep mid slopes             | greywacke with some rock outcrops                                   | 0 - 60 cm      | 30-35° | Terawhiti uncoloured soils<br>texture: stony sandy loam, stony silt loam<br>drainage: well drained to somewhat excessively drained                                  | 0 - 200 m   | moderately exposed  | moderate soil slip<br>slight scree<br>slight sheet | grass<br>coastal scrub<br>exotic trees broad-leaved scrub    |         |
| moderately steep mid slopes          | greywacke   | 30-60 cm       | 21-35° | Terawhiti hill soils<br>texture: stony sandy loam, stony silt loam<br>drainage: well drained to somewhat excessively drained  | 0 - 200 m   | seaward slopes moderately exposed, landward slopes moderately sheltered | slight soil slip<br>slight scree<br>slight sheet   | grass<br>coastal scrub<br>broad-leaved scrub<br>exotic trees |         |
| colluvium filled troughs and hollows | colluvium, loam and silt over greywacke                             | 50 - 200 cm    | 10-25° | Korokoro hill soils<br>texture: sandy loam, silt loam<br>drainage: moderately well to well drained  | 0 - 200 m   | seaward slopes moderately exposed, landward slopes moderately sheltered | slight soil slip<br>slight scree                   | grass<br>broad-leaved scrub<br>exotic trees                  |         |

### RONGOTAI BEACH AND DUNE LAND TYPE

| Landform component | Rock type       | Regolith depth | Slope | Soil  | Altitude  | Exposure           | Erosion                 | Vegetation                            | Climate |
|--------------------|-----------------|----------------|-------|---|-----------|--------------------|-------------------------|---------------------------------------|---------|
| foredunes          | wind blown sand | >500 cm        | 4-15° | Waikare sand<br>texture: sand<br>drainage: excessively drained                      | 0 - 10 cm | moderately exposed | moderate to severe wind | terrace sand dune vegetation<br>bare  |         |
| low back dunes     | windblown sand  | >500 cm        | 4-15° | Waikare sand<br>texture: sand<br>drainage: excessively drained                      | 0 - 10 cm | moderately exposed | slight wind             | terrace sand dune vegetation<br>grass |         |
| sand plains        | windblown sand  | >500 cm        | 0-3°  | Hikio weakly sorted sand<br>texture: sand<br>drainage: somewhat excessively drained | 0 - 10 cm | moderately exposed | slight wind             | grass                                 |         |

### CITY LOW ROLLING HILL LAND TYPE

| Landform component                               | Rock type   | Regolith depth | Slope | Soil   | Altitude  | Exposure             | Erosion | Vegetation                                  | Climate |
|--|---|----------------|-------|--|-----------|----------------------|---------|---|---------|
| low rolling ridges, interflaves and valley sides | loess and colluvium over greywacke (moderately to highly weathered) | 100 - 200 cm   | 4-15° | Parakaia silt loam, Parakaia fine sandy loam<br>texture: silt loam or fine sandy loam over clay loam<br>drainage: moderately well to imperfectly drained | 0 - 100 m | moderately sheltered | soil    | grass<br>exotic trees<br>broad-leaved scrub |         |

### LAMBTON QUAY CUT AND FILL LAND TYPE

| Landform component | Rock type          | Regolith depth | Slope | Soil | Altitude  | Exposure           | Erosion | Vegetation    | Climate |
|--------------------|--------------------|----------------|-------|------|-----------|--------------------|---------|---------------|---------|
| excavated areas    | greywacke regolith | <100 cm        | 0-3°  | -    | 0 - 20 m  | moderately exposed | soil    | bare<br>grass |         |
| filled areas       | greywacke regolith | >100 cm        | 0-3°  | -    | 0 - 100 m | moderately exposed | soil    | bare<br>grass |         |

### BAYS RAISED SEA BED LAND TYPE

| Landform component    | Rock type        | Regolith depth | Slope | Soil  | Altitude | Exposure           | Erosion    | Vegetation            | Climate |
|-----------------------|------------------|----------------|-------|---|----------|--------------------|------------|-----------------------|---------|
| gravel beach ridges   | greywacke gravel | <15 cm         | 0-7°  | Parakaia gravelly sand<br>texture: gravelly sand<br>drainage: excessively drained | 0 - 10 m | moderately exposed | deposition | bare<br>coastal scrub |         |
| rocky exposed sea bed | greywacke        | 0 cm           | 0-15° | hard rock   | 0 - 10 m | moderately exposed | soil       | bare                  |         |

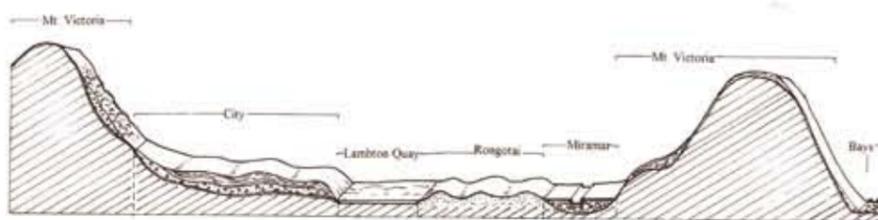
### MIRAMAR VALLEY FLOOR LAND TYPE

| Landform component                                    | Rock type                       | Regolith depth | Slope | Soil  | Altitude | Exposure  | Erosion | Vegetation | Climate |
|---|---------------------------------|----------------|-------|---|----------|-----------|---------|------------|---------|
| narrow, superficially to poorly drained valley floors | alluvium, alluvium over gravels | 50 - 100 cm    | 0-3°  | Waikare silt loam<br>Golfers silt loam<br>texture: silt loam<br>drainage: imperfectly to poorly drained | 0 - 40 m | sheltered | soil    | grass      |         |
| narrow, well drained valley floors                    | alluvium, alluvium over gravels | 50 - 100 cm    | 0-3°  | Waikare silt loam<br>texture: silt loam<br>drainage: well to moderately well drained                    | 0 - 40 m | sheltered | soil    | grass      |         |

### KEY

- greywacke
- greywacke platform / beach gravel
- windblown sand
- colluvium and scree
- consolidated, weathered gravel
- alluvial gravel
- loam

## SEMI-EXPOSED HARBOUR LAND SYSTEM Cross Section . 2 .



LAND TYPES

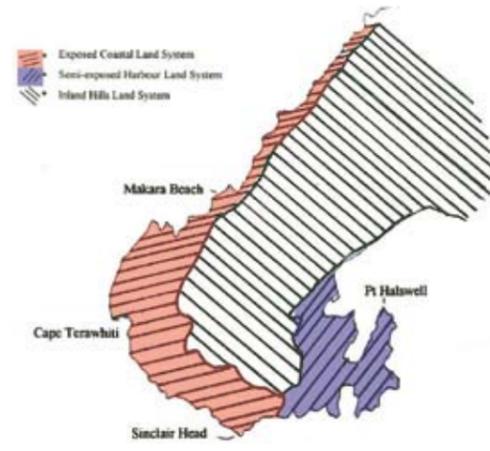
# Land Types of Wellington City



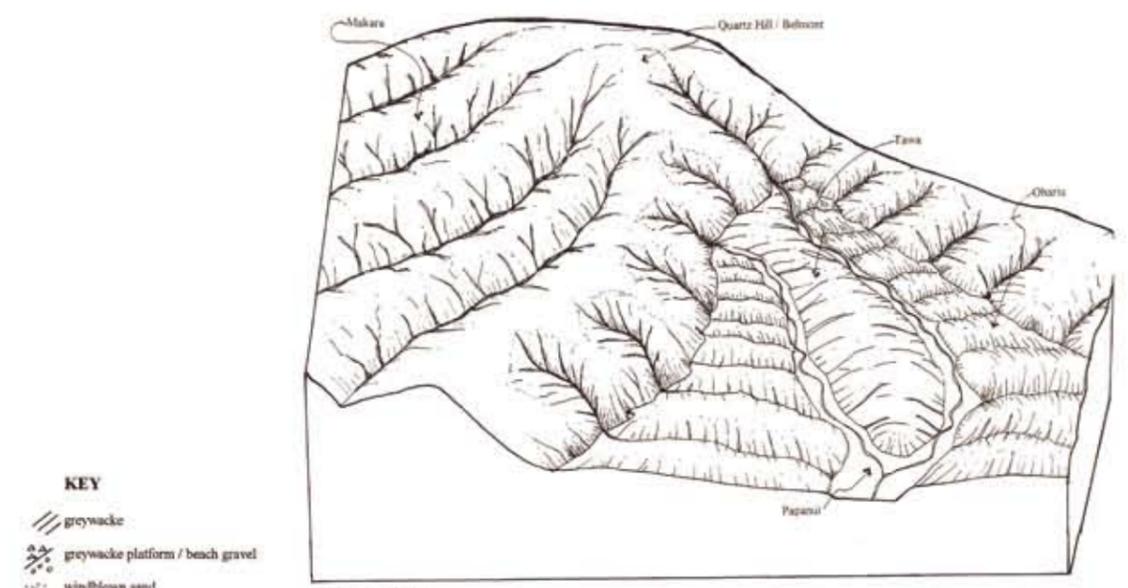
Makara Steep Hill Land Type - Makara Smiths Gully, from top of coastal escarpment, north of Makara Beach

## Inland Hills Land System

- Makara steep hill
- Tawa low hill
- Quartz Hill broad ridge
- Ohariu downland / low hill
- Papanui valley floor
- Belmont broad ridge

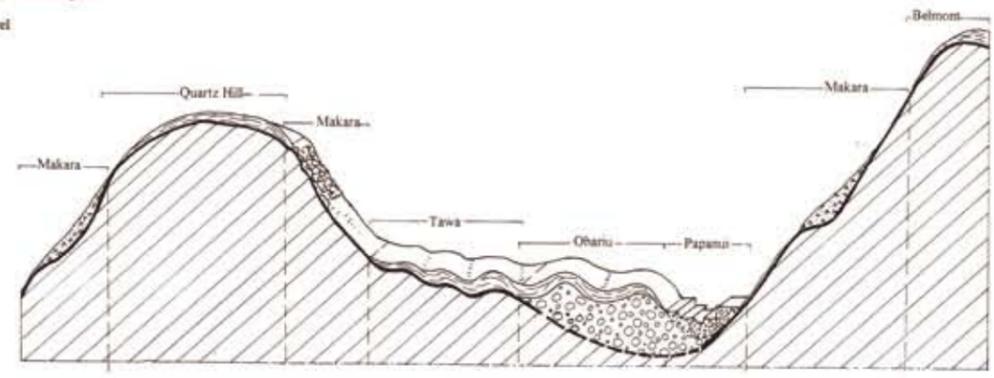


## INLAND HILLS LAND SYSTEM



- KEY**
- greywacke
  - greywacke platform / bench gravel
  - windblown sand
  - colluvium and scree
  - consolidated, weathered gravel
  - alluvial gravel
  - loess

### LAND TYPES INLAND HILLS LAND SYSTEM Cross Section . 3 .



## MAKARA STEEP HILL LAND TYPE

| Landform component                   | Rock type                    | Regolith depth                    | Slope    | Soil   | Altitude    | Exposure             | Erosion                           | Vegetation  | Climate |
|--------------------------------------|------------------------------|-----------------------------------|----------|--|-------------|----------------------|-----------------------------------|---|---------|
| narrow, rocky ridge tops             | greywacke                    | 0 - 50 cm with some rock outcrops | 16 - 25° | Makara hill soils<br>texture: silt loam, stony silt loam<br>drainage: well to somewhat excessively drained                               | 200 - 400 m | moderately exposed   | slight sheet slight wind          | pasture<br>gorse<br>Cassiope  |         |
| narrow ridge tops and spot areas     | greywacke                    | 50 - 100 cm                       | 16 - 25° | Makara hill soils<br>Korokoro hill soils<br>texture: silt loam, stony silt loam<br>drainage: moderately well to well drained             | 100 - 400 m | moderately exposed   | slight sheet slight wind          | pasture<br>gorse<br>Cassiope  |         |
| steep rocky shafts                   | greywacke                    | 0 - 30 cm with rock outcrops      | 26 - 35° | Makara steepland soils<br>texture: stony silt loam, stony sandy loam<br>drainage: somewhat excessively drained                           | 200 - 450 m | moderately exposed   | slight sheet slight wind          | pasture<br>gorse<br>Cassiope<br>broad leaved scrub  |         |
| steep and slopes                     | greywacke                    | 30 - 75 cm                        | 26 - 35° | Makara steepland soils<br>texture: silt loam, stony silt loam, fine sandy loam<br>drainage: well drained to somewhat excessively drained | 50 - 400 m  | moderately exposed   | moderate scree moderate soil slip | pasture<br>gorse<br>manuka<br>Cassiope<br>broad leaved scrub<br>fern<br>ericic conifer forest |         |
| colluvium-filled troughs and hollows | colluvium and some greywacke | 50 - 200 cm                       | 26 - 35° | Makara steepland soils<br>texture: silt loam, stony silt loam, fine sandy loam<br>drainage: moderately well to well drained              | 100 - 400 m | moderately exposed   | slight sheet slight soil slip     | pasture<br>gorse<br>manuka<br>Cassiope<br>broad leaved scrub<br>fern<br>ericic conifer forest |         |
| steep riparian slopes                | greywacke scree              | 0 - 30 cm                         | 26 - 35° | Makara steepland soils<br>texture: stony<br>drainage: excessively drained  | 50 - 400 m  | moderately exposed   | moderate scree                    | gorse<br>manuka<br>Cassiope<br>broad leaved scrub<br>pasture<br>fern<br>ericic conifer forest |         |
| steep riparian slopes                | greywacke                    | 30 - 75 cm                        | 26 - 35° | Makara steepland soils<br>texture: silt loam stony silt loam fine sandy loam<br>drainage: well drained                                   | 50 - 200 m  | moderately sheltered | moderate sheet moderate soil slip | pasture<br>gorse<br>manuka<br>fern<br>ericic conifer forest                                   |         |

## TAWA LOW HILL LAND TYPE

| Landform component               | Rock type           | Regolith depth | Slope    | Soil   | Altitude   | Exposure  | Erosion                       | Vegetation  | Climate |
|----------------------------------|---------------------|----------------|----------|--|------------|-----------|-------------------------------|---|---------|
| low rolling hills                | loam over greywacke | 30 - 80 cm     | 16 - 25° | Korokoro hill soils<br>texture: silt loam sandy loam<br>drainage: well drained | 20 - 300 m | sheltered | slight sheet slight soil slip | pasture<br>gorse<br>ericic conifer forest                       |         |
| moderately steep riparian slopes | loam over greywacke | 30 - 80 cm     | 21 - 25° | Korokoro hill soils<br>texture: silt loam sandy loam<br>drainage: well drained | 20 - 300 m | sheltered | slight sheet slight soil slip | pasture<br>gorse<br>ericic conifer forest<br>broad leaved scrub |         |

## QUARTZ HILL BROAD RIDGE LAND TYPE

| Landform component       | Rock type                           | Regolith depth | Slope   | Soil   | Altitude    | Exposure           | Erosion                  | Vegetation       | Climate |
|--------------------------|-------------------------------------|----------------|---------|--|-------------|--------------------|--------------------------|------------------|---------|
| broad rolling ridge tops | loam over greywacke (some dolerite) | 100 - 200 cm   | 8 - 20° | Paromata silt loam<br>Korokoro hill soils<br>texture: silt loam or sandy loam over clay loam<br>drainage: moderately well to imperfectly drained | 150 - 400 m | moderately exposed | slight sheet slight wind | pasture<br>gorse |         |

## OHARIU DOWNLAND/LOW HILL LAND TYPE

| Landform component               | Rock type   | Regolith depth | Slope    | Soil   | Altitude   | Exposure  | Erosion                       | Vegetation                                | Climate |
|----------------------------------|---|----------------|----------|--|------------|-----------|-------------------------------|---|---------|
| broad rolling downland           | loam over consolidated gravels (moderately to highly weathered) | 80 - 180 cm    | 8 - 20°  | Ngaro silt loam<br>judgement silt loam<br>texture: silt loam over silty clay loam<br>drainage: moderately well drained         | 20 - 200 m | sheltered | nil                           | pasture<br>gorse                          |         |
| broad strongly rolling hills     | loam over consolidated gravels (moderately weathered)           | 50 - 80 cm     | 18 - 25° | Ngaro silt loam<br>judgement silt loam<br>texture: silt loam over silty clay loam<br>drainage: moderately well to well drained | 20 - 240 m | sheltered | slight soil slip slight sheet | pasture<br>gorse<br>ericic conifer forest |         |
| moderately steep riparian slopes | loam over consolidated gravels (moderately weathered)           | 30 - 80 cm     | 21 - 25° | Ngaro silt loam<br>judgement silt loam<br>texture: silt loam over silty clay loam<br>drainage: moderately well to well drained | 20 - 200 m | sheltered | slight soil slip slight sheet | pasture<br>gorse<br>ericic conifer forest |         |

## PAPANUI VALLEY FLOOR LAND TYPE

| Landform component                  | Rock type             | Regolith depth | Slope  | Soil   | Altitude  | Exposure  | Erosion                                 | Vegetation       | Climate |
|-------------------------------------|-----------------------|----------------|--------|--|-----------|-----------|---|------------------|---------|
| narrow, well drained valley floors  | alluvium              | 50 - 80 cm     | 0 - 3° | Waikanae silt loam<br>Collins silt loam<br>texture: silt loam<br>drainage: imperfectly to poorly drained   | 0 - 100 m | sheltered | moderate streambank moderate deposition | pasture<br>rubus |         |
| various, well drained valley floors | alluvium over gravels | 50 - 80 cm     | 0 - 3° | texture: silt loam<br>drainage: well to moderately well drained  | 0 - 100 m | sheltered | moderate streambank moderate deposition | pasture<br>rubus |         |
| medium height terraces              | alluvium over gravels | 50 - 80 cm     | 0 - 3° | Waikanae silt loam<br>texture: silt loam sandy silt loam<br>drainage: well to somewhat excessively drained | 0 - 100 m | sheltered | nil                                     | pasture<br>gorse |         |

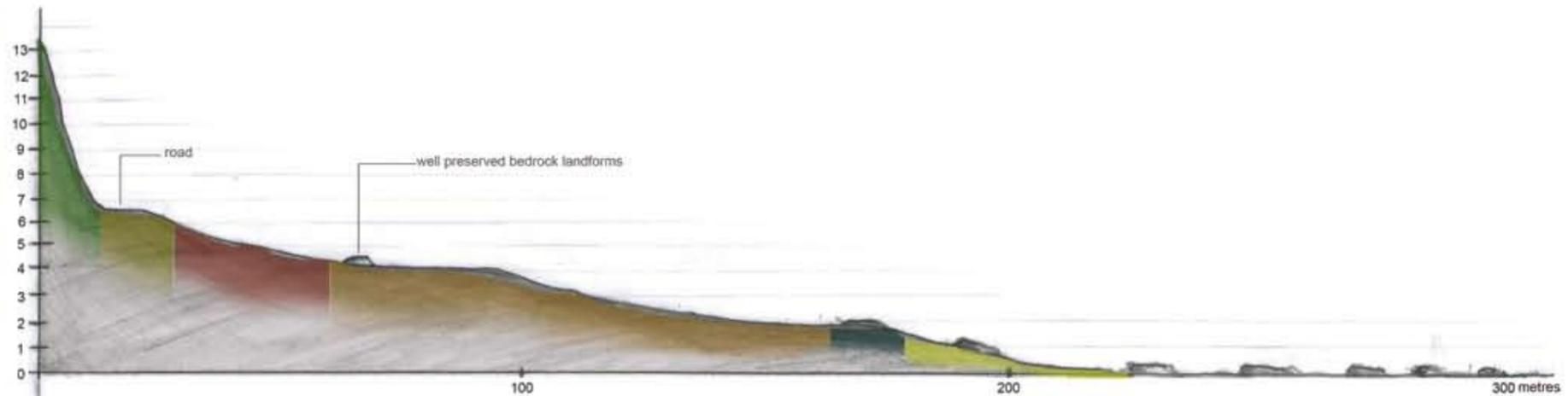
## BELMONT BROAD RIDGE LAND TYPE

| Landform component       | Rock type                                  | Regolith depth | Slope   | Soil  | Altitude    | Exposure           | Erosion | Vegetation                             | Climate          |
|--------------------------|--|----------------|---------|---|-------------|--------------------|---------|--|------------------|
| broad rolling ridge tops | loam and colluvium deposits over greywacke | 100 - 150+ cm  | 8 - 20° | Belmont silt loam<br>Belmont hill soils<br>texture: silt loam<br>drainage: well drained | 300 - 450 m | moderately exposed | nil     | pasture<br>gorse<br>broad leaved scrub | October 29, 1998 |



Breaker Bay 1931

Frederick de Jersey Clere  
Watercolour  
175 x 252 mm



- Pre- 3468 BC seaciff ●
- 3468 BC-430 BC (platform substrate of road) ●
- 3468 BC - 430 BC seaciff ●
- 430 BC - 1855 platform with stacks ●
- 430 BC - 1855 Beach Ridge ●
- Modern Beach Ridge ●

(Sourced: Dr Little)

Section A--A