

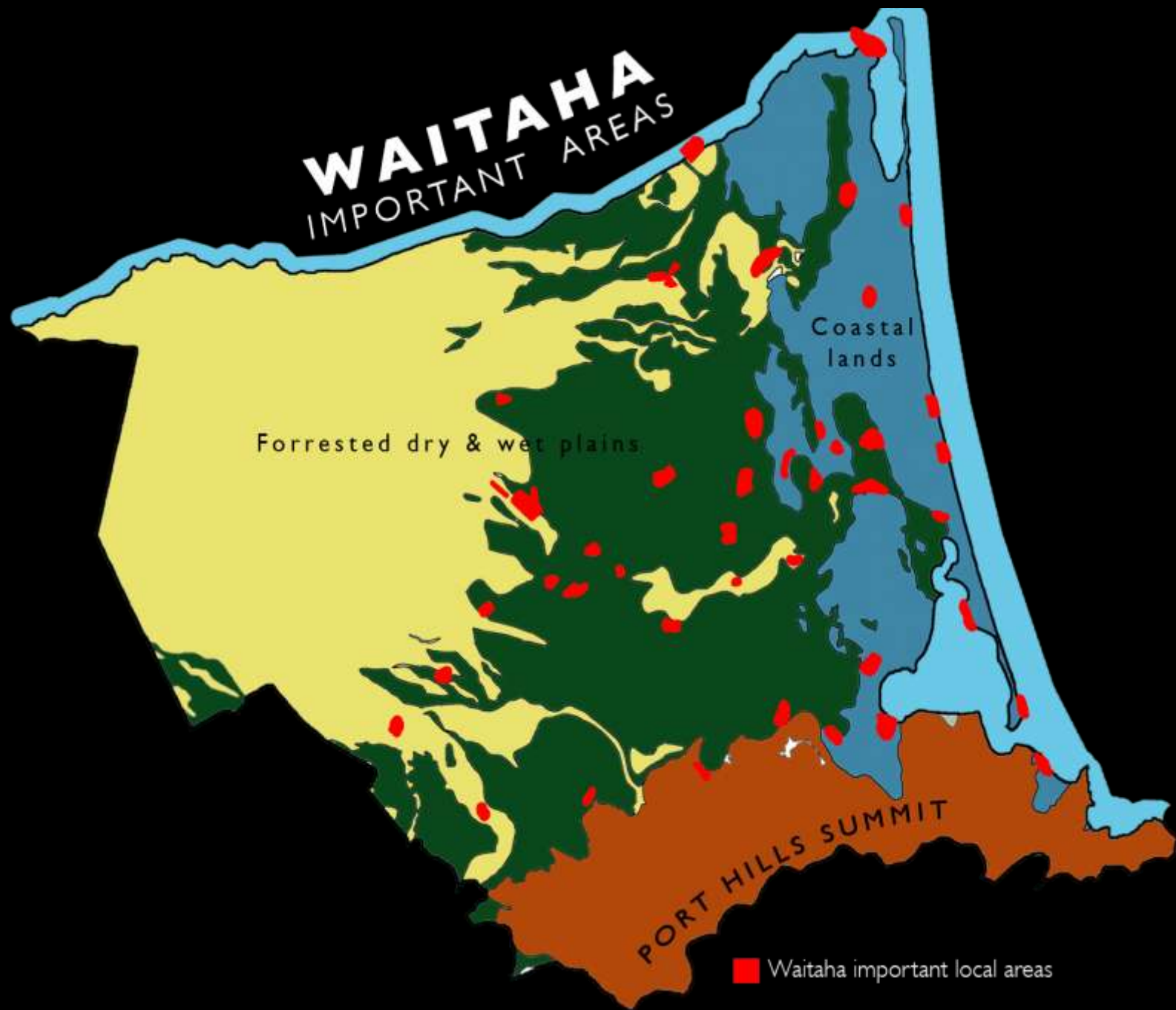
River of Life
Otakaro Avon River Park Potential

Di Lucas, Landscape Architect

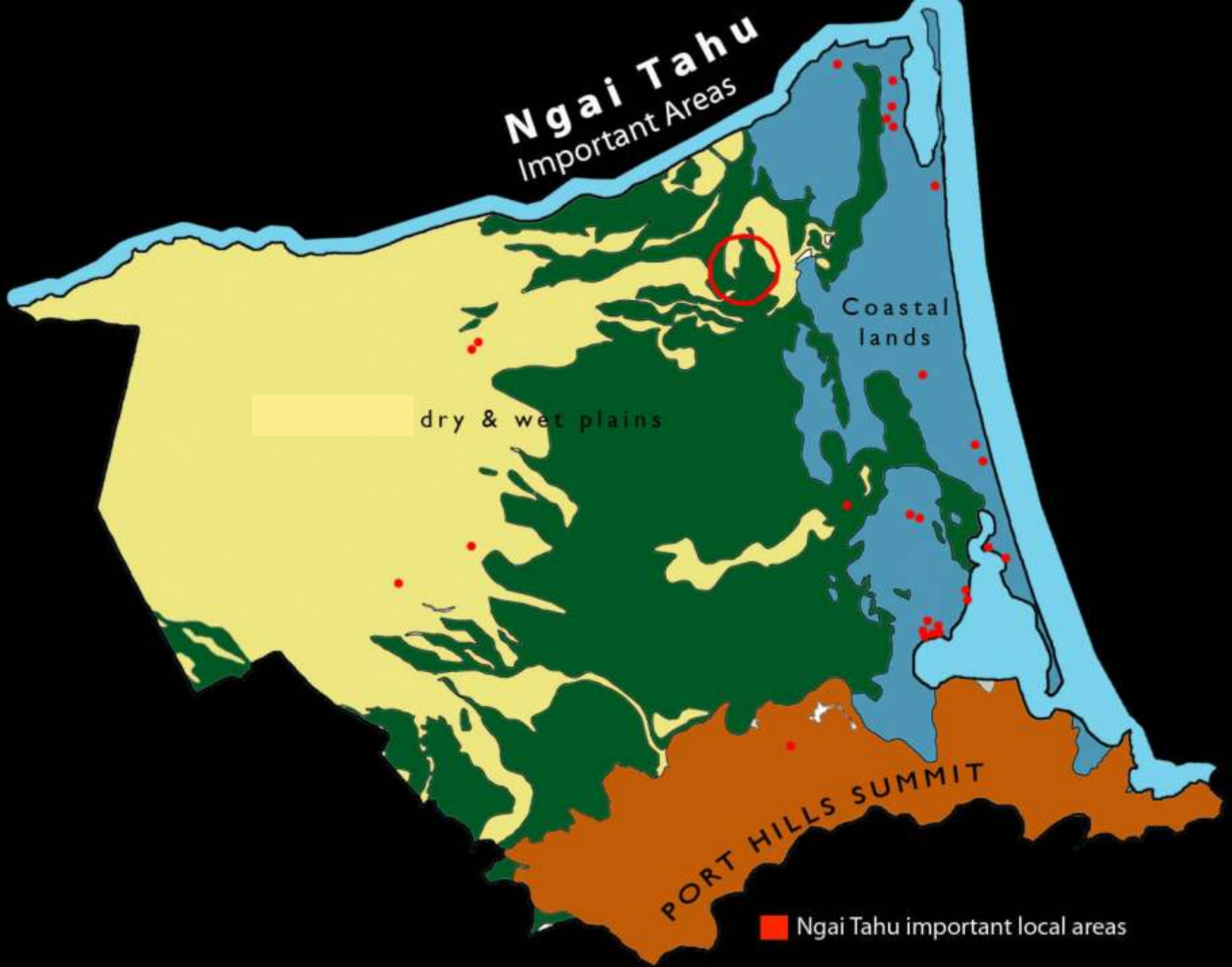
14 August 2011

WAITAHA

IMPORTANT AREAS



■ Waitaha important local areas

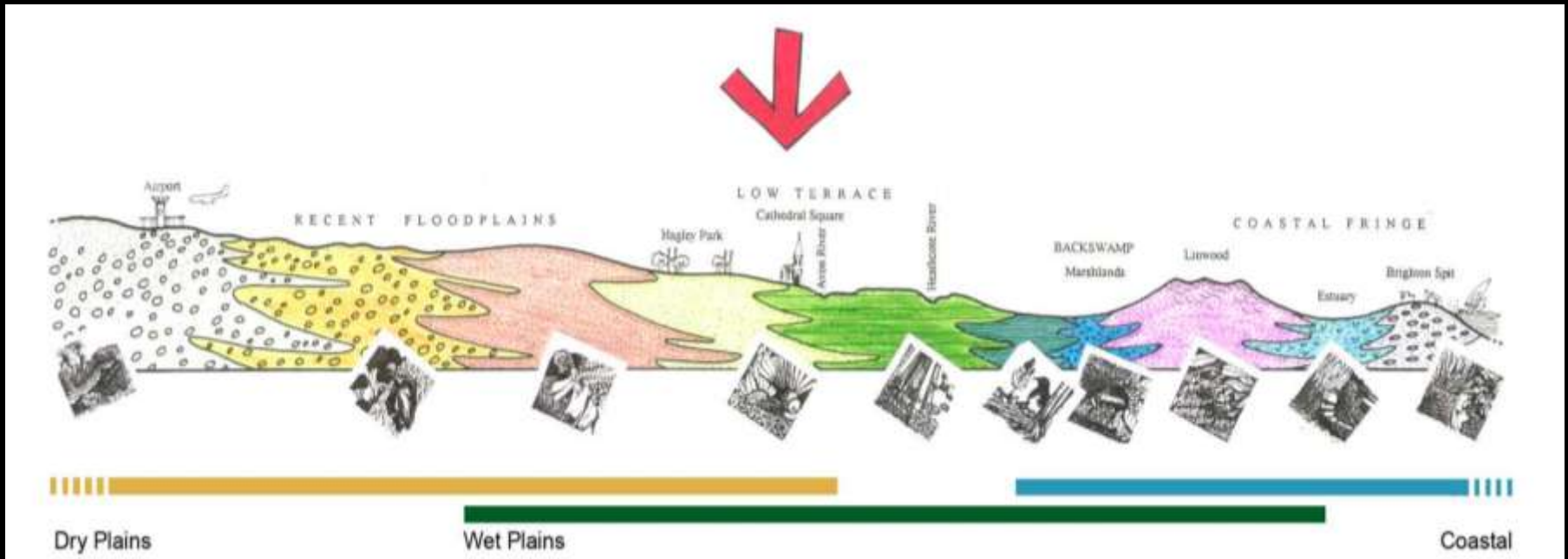
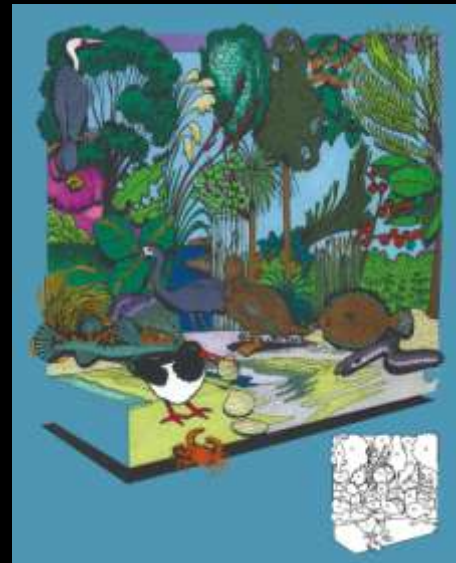
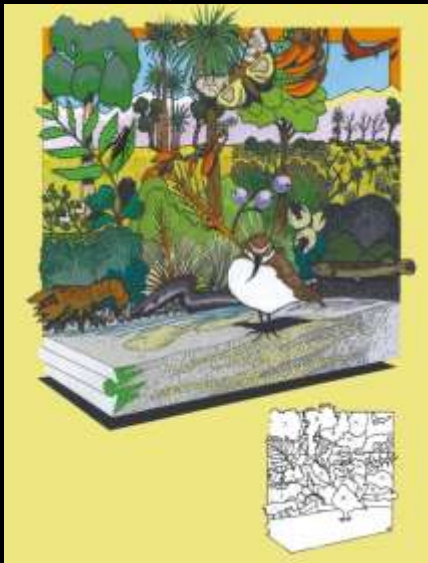


Dry Plains

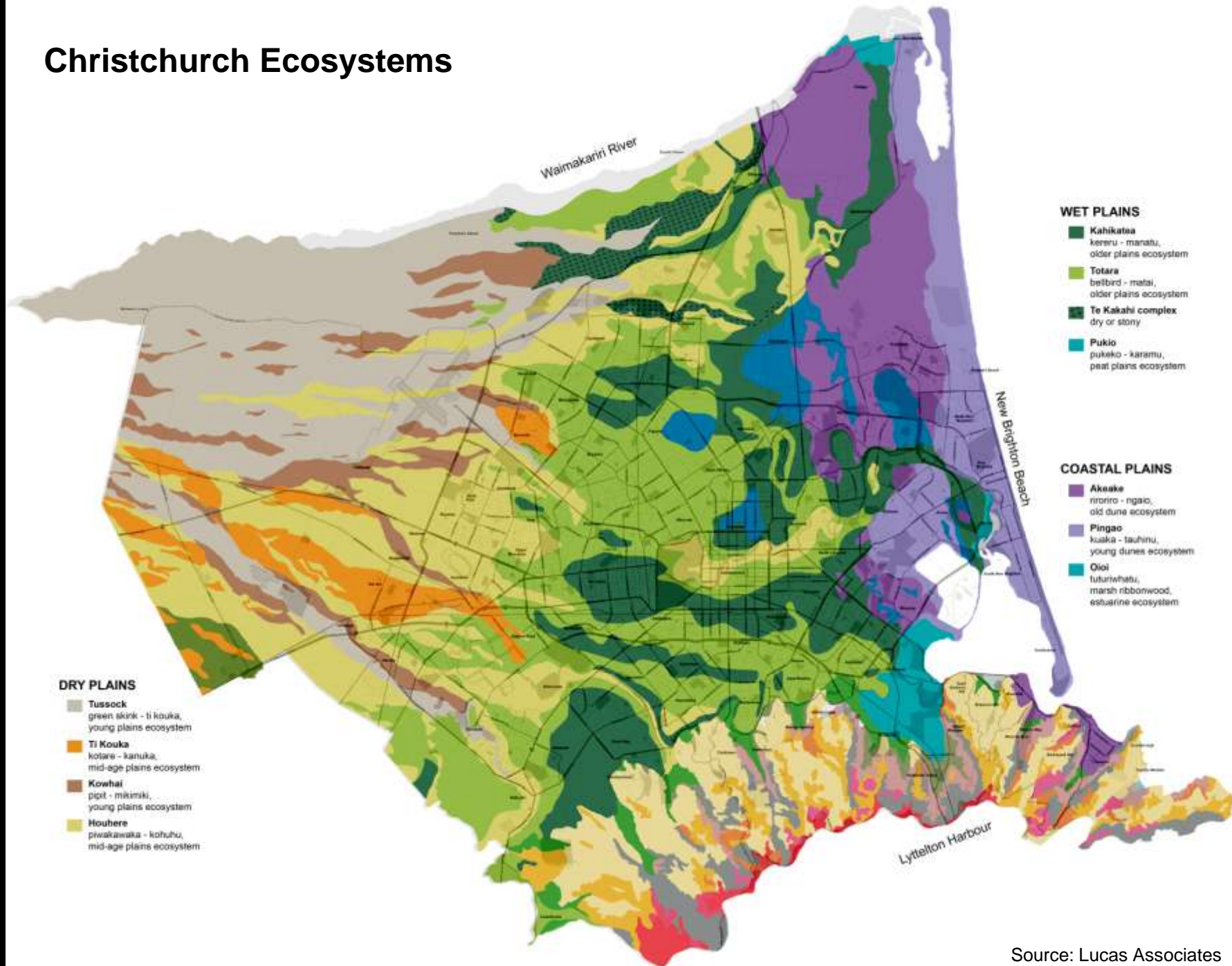
Wet Plains

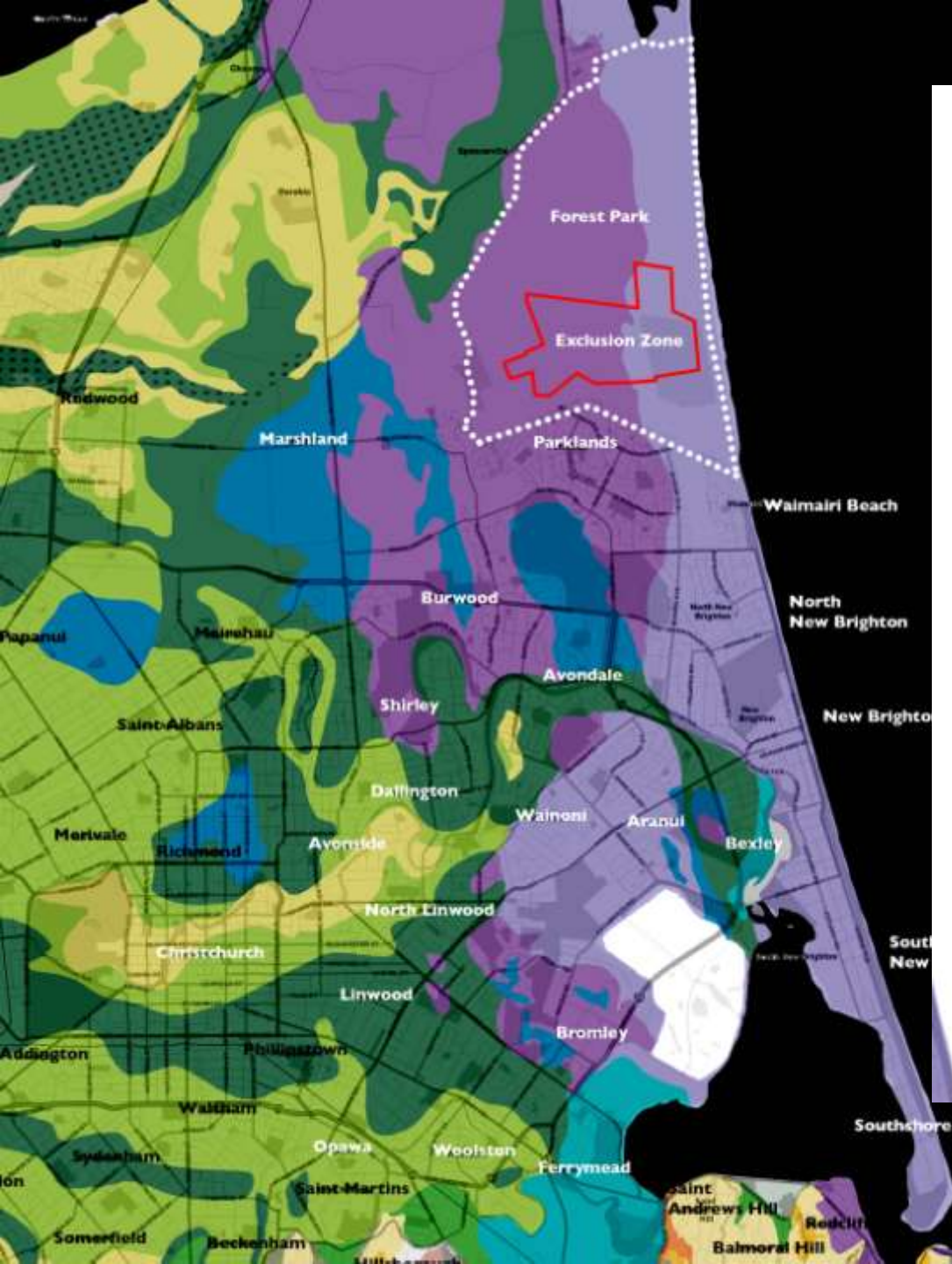
Coastal

Port Hills



Christchurch Ecosystems





WET PLAINS

- Kahikatea**
kereru - manatu,
older plains ecosystem
- Totara**
bellbird - matai,
older plains ecosystem
- Te Kakahi complex**
dry or stony
- Pukio**
oukeko - karamu.

COASTAL PLAINS

- Akeake**
riroriro - ngaio,
old dune ecosystem
- Pingao**
kuaka - tauhinu,
young dunes ecosystem
- Oioi**
tuturiwhatu,
marsh ribbonwood,
estuarine ecosystem

Wet Plains:

- Marshland
- Dallington
- Avonside
- Linwood
- Phillipstown
- Opawa
- Woolston
- Bexley

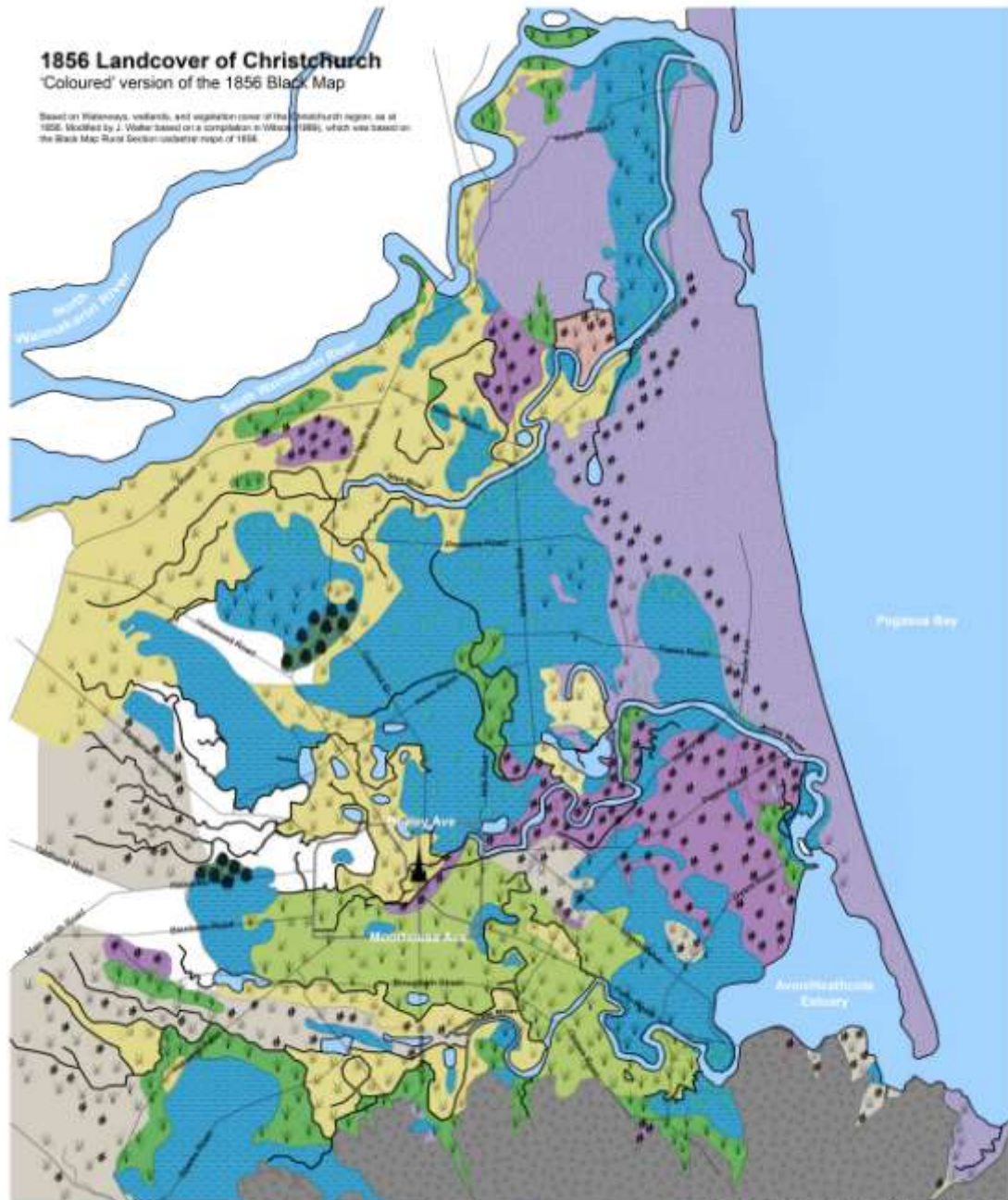
Coastal Plains:

- Parklands
- Burwood
- Shirley
- Waimairi Beach
- North New Brighton
- New Brighton
- South New Brighton
- Wainoni
- Aranui
- Bromley
- Southshore
- Ferrymead

1856 Landcover of Christchurch

'Coloured' version of the 1856 Black Map

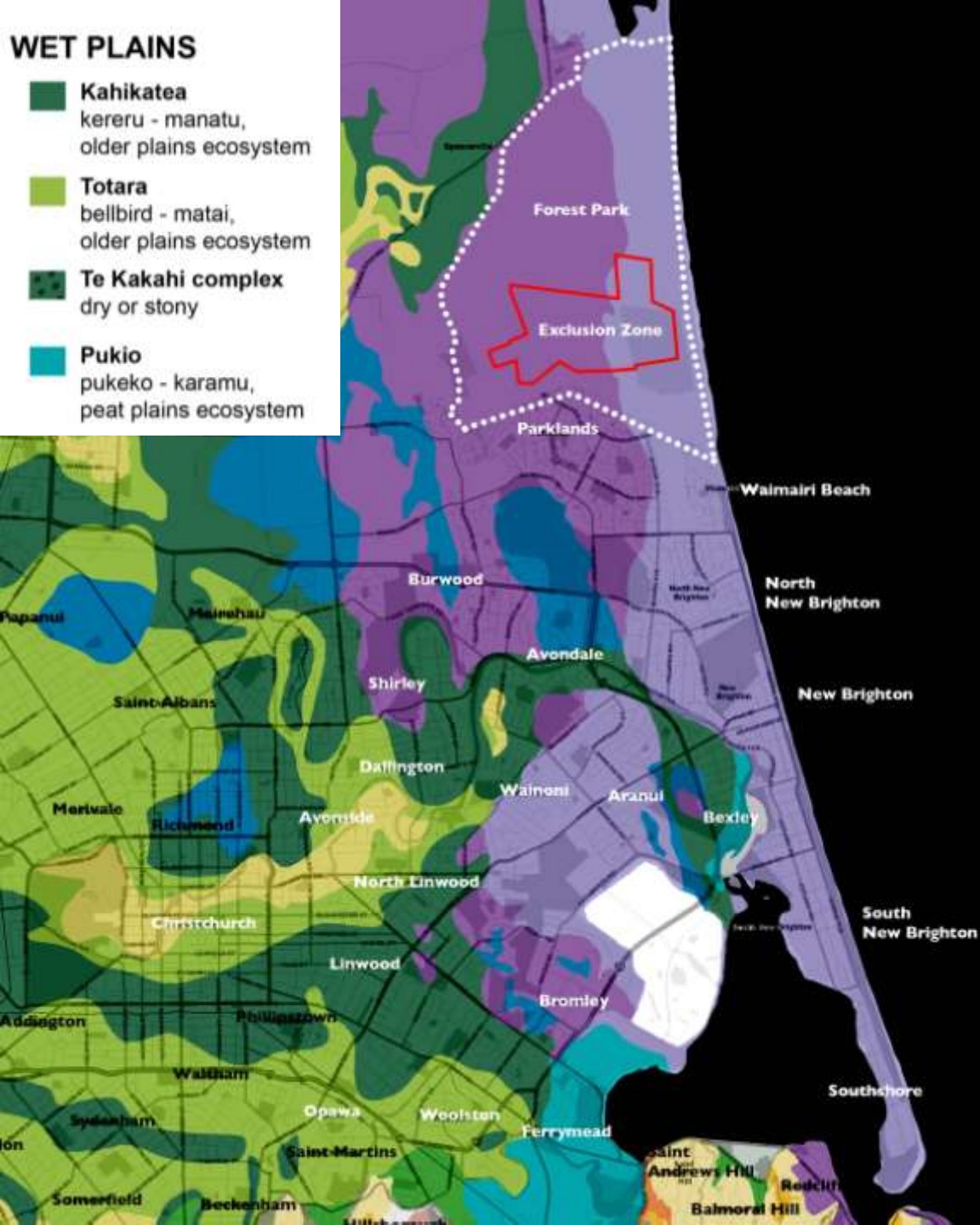
Based on Wiersema's, wetlands, and vegetation cover of the Christchurch region, as at 1856. Modified by J. Venter based on a compilation by Wiersema (1989), which was based on the Black Map Road Section cadastral maps of 1856.



Source: Wiersema, Wetlands, Drainage Units, Vol 2:44, Christchurch City Council 2003

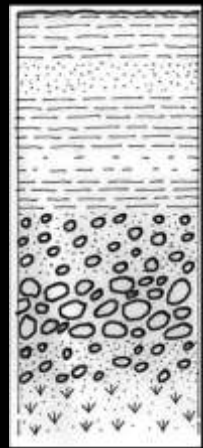
WET PLAINS

- Kahikatea**
kereru - manatu,
older plains ecosystem
- Totara**
bellbird - matai,
older plains ecosystem
- Te Kakahi complex**
dry or stony
- Pukio**
pukeko - karamu,
peat plains ecosystem



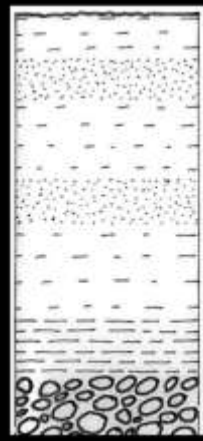
Wet Plains Soils

Kahikatea



Underlayers: Clay & sand alternating on silt over greywacke river stones (2-100mm rounded) with some peat.

Totara



Underlayers: Alternating silt, sand & clay on greywacke river stones (2-100mm rounded).

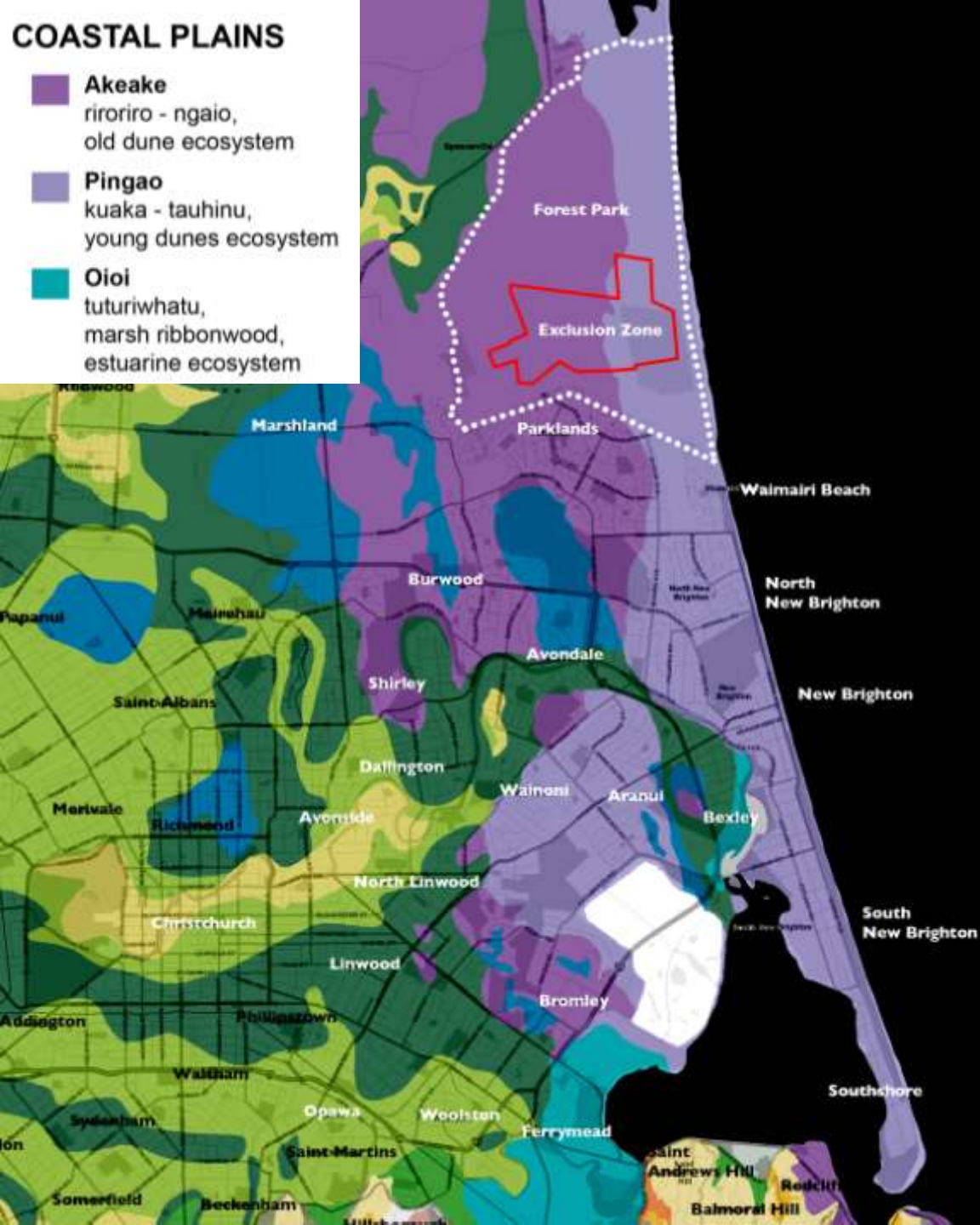
Pukio



Underlayers: Alternating peat with logs & clay/sand. This overlies clay/sand & beach-worn greywacke stones (discoid) & shell beds.

COASTAL PLAINS

- Akeake**
riroriro - ngaio,
old dune ecosystem
- Pingao**
kuaka - tauhinu,
young dunes ecosystem
- Oioi**
tuturiwhatu,
marsh ribbonwood,
estuarine ecosystem



Coastal Plains Soils

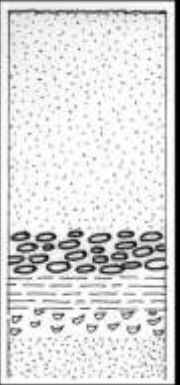
Akeake

Underlayers: Sand on silt/clay on peat on sand on beach-worn greywacke stones (2-100mm discoid) on sand with some shells.



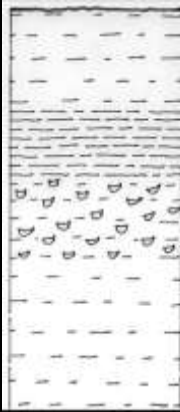
Pingao

Underlayers: Sand on beach-worn greywacke stones (2-100mm discoid) on clay on shells on sand.



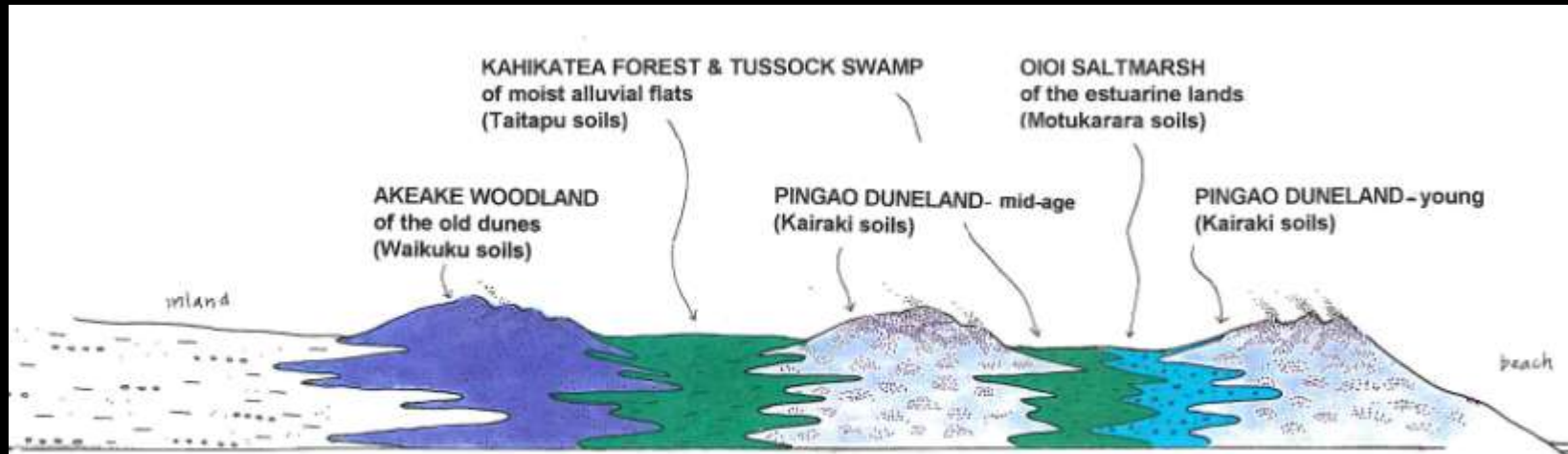
Oioi

Underlayers: Alternating silt & clay with shells. No greywacke stones but some small pieces of wood.

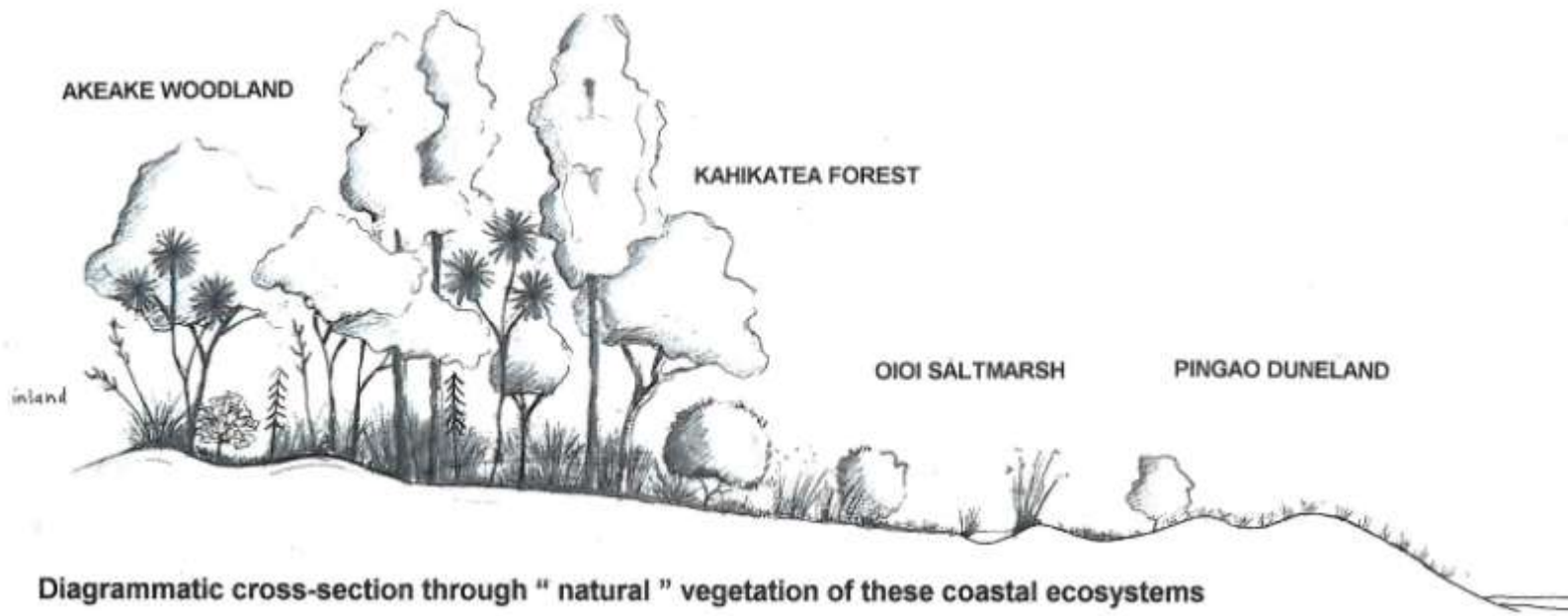


Source: Lucas Associates

Diagrammatic cross-sections through 'natural' vegetation of these coastal ecosystems



Diagrammatic cross-section through land system underlying ecosystems



Diagrammatic cross-section through "natural" vegetation of these coastal ecosystems

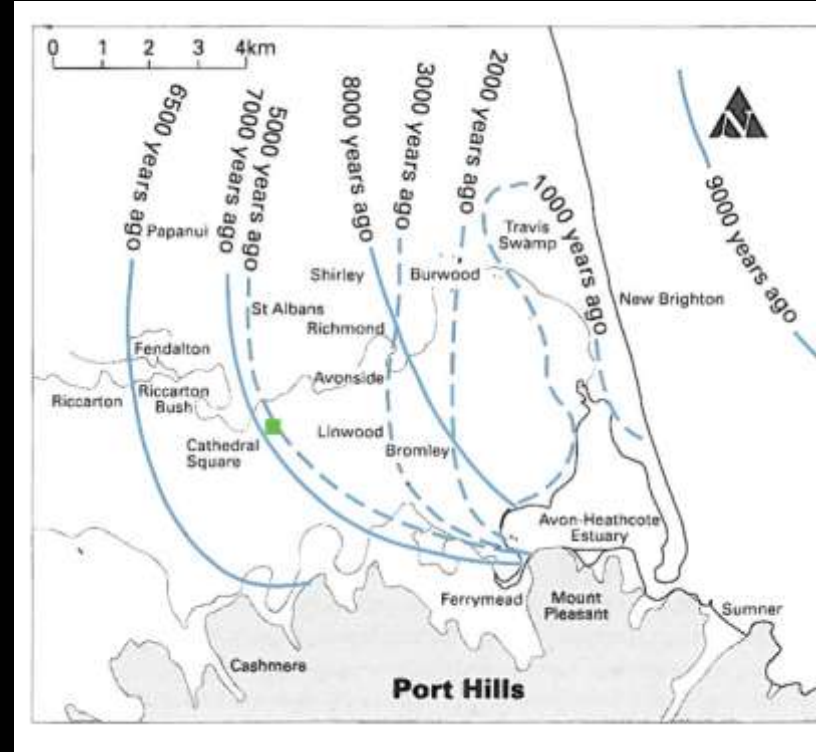
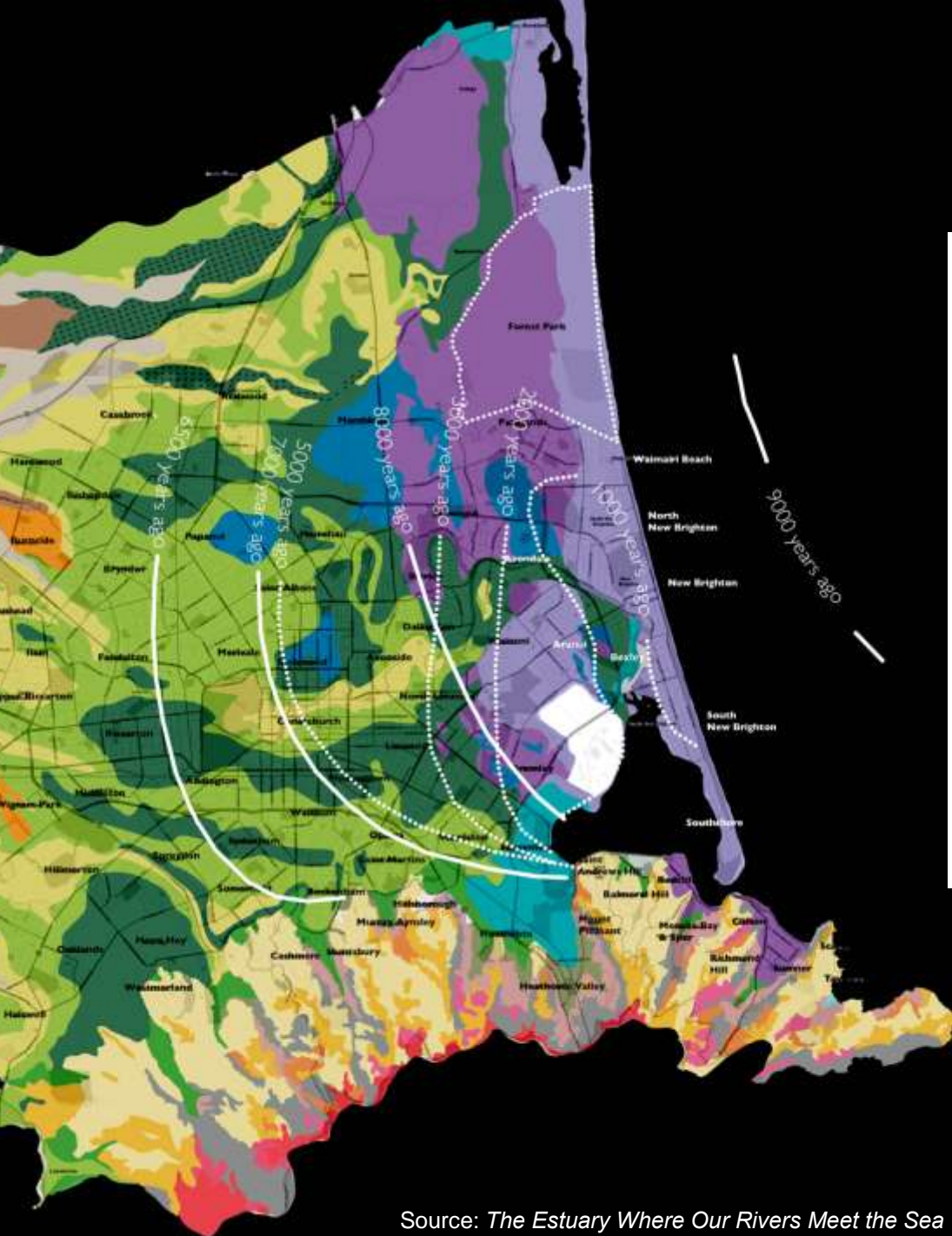
The Avon-Heathcote Estuary in the 1800s



The Avon-Heathcote Estuary Now



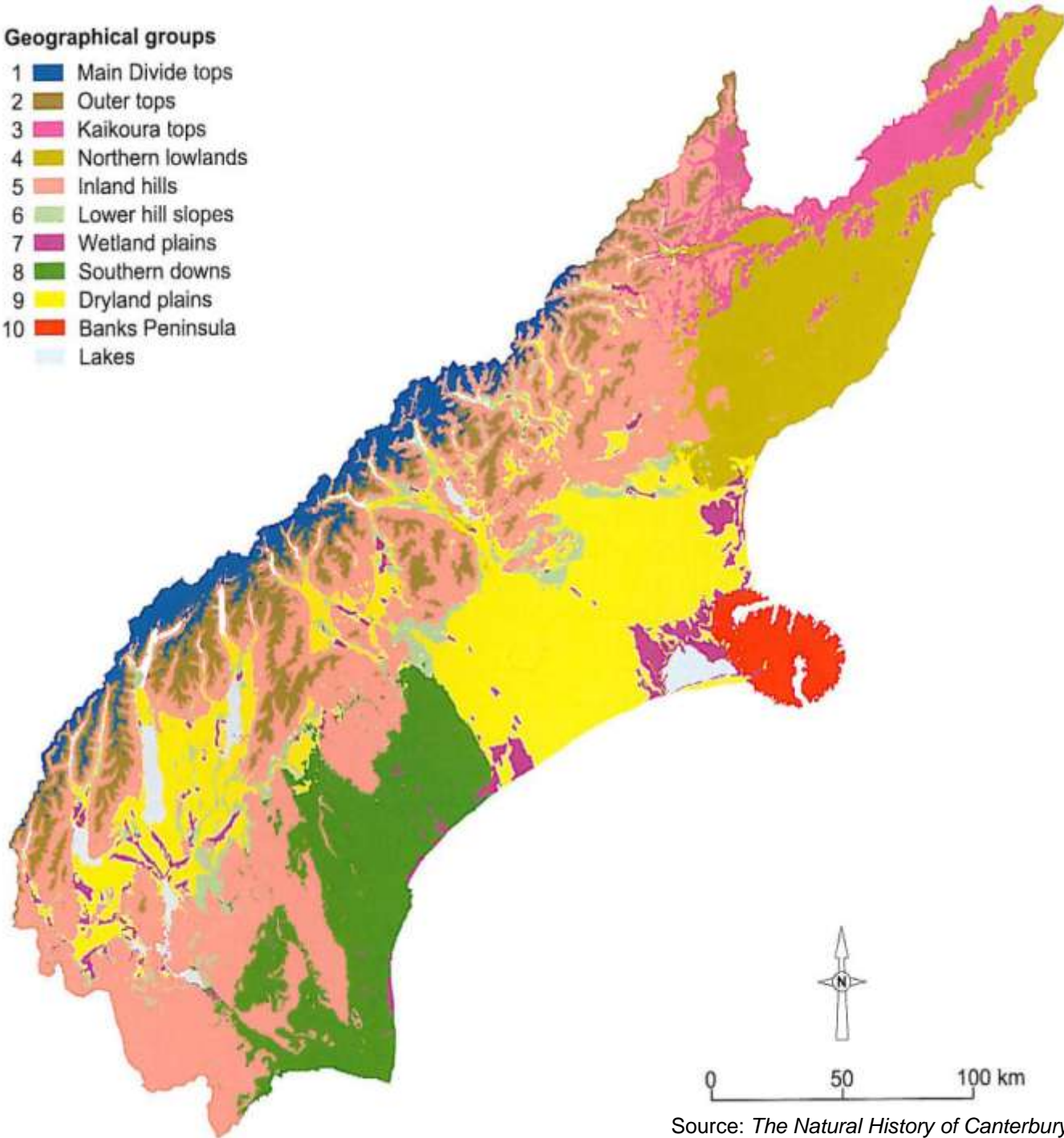
Shorelines in the last 9,000 years





Geographical groups

- 1 Main Divide tops
- 2 Outer tops
- 3 Kaikoura tops
- 4 Northern lowlands
- 5 Inland hills
- 6 Lower hill slopes
- 7 Wetland plains
- 8 Southern downs
- 9 Dryland plains
- 10 Banks Peninsula
- Lakes



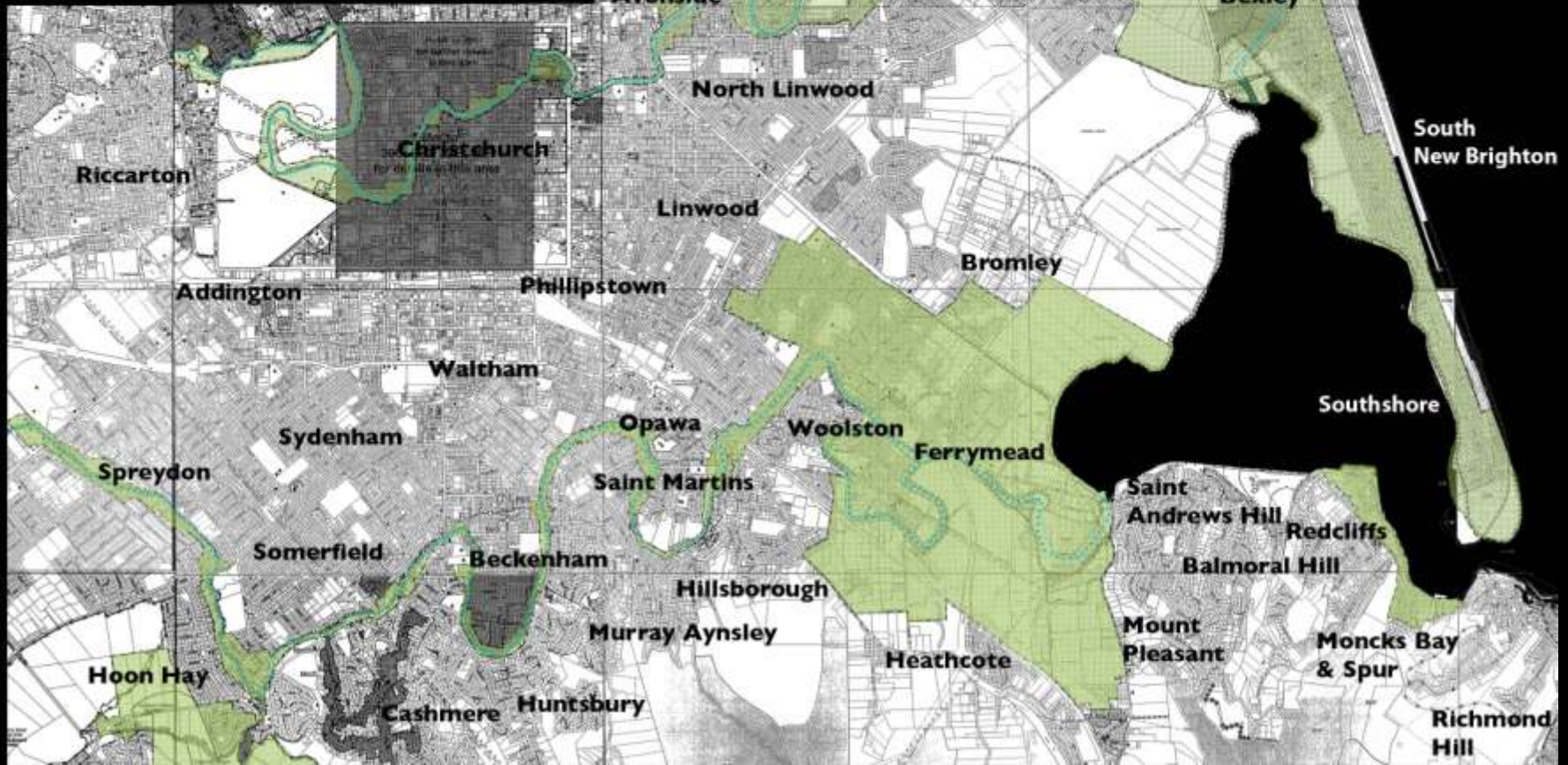
Source: *The Natural History of Canterbury*,



Flood Management Areas

Christchurch City Council

Adopted January 2011



Horseshoe Lake off Moncrieff Place



Avon River





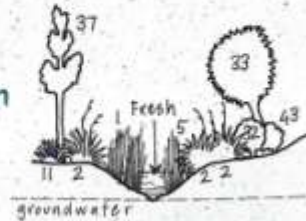


RIVER AND STREAM PROFILES

These profiles show the sequence of native plants best suited to each zone. Scale is exaggerated.

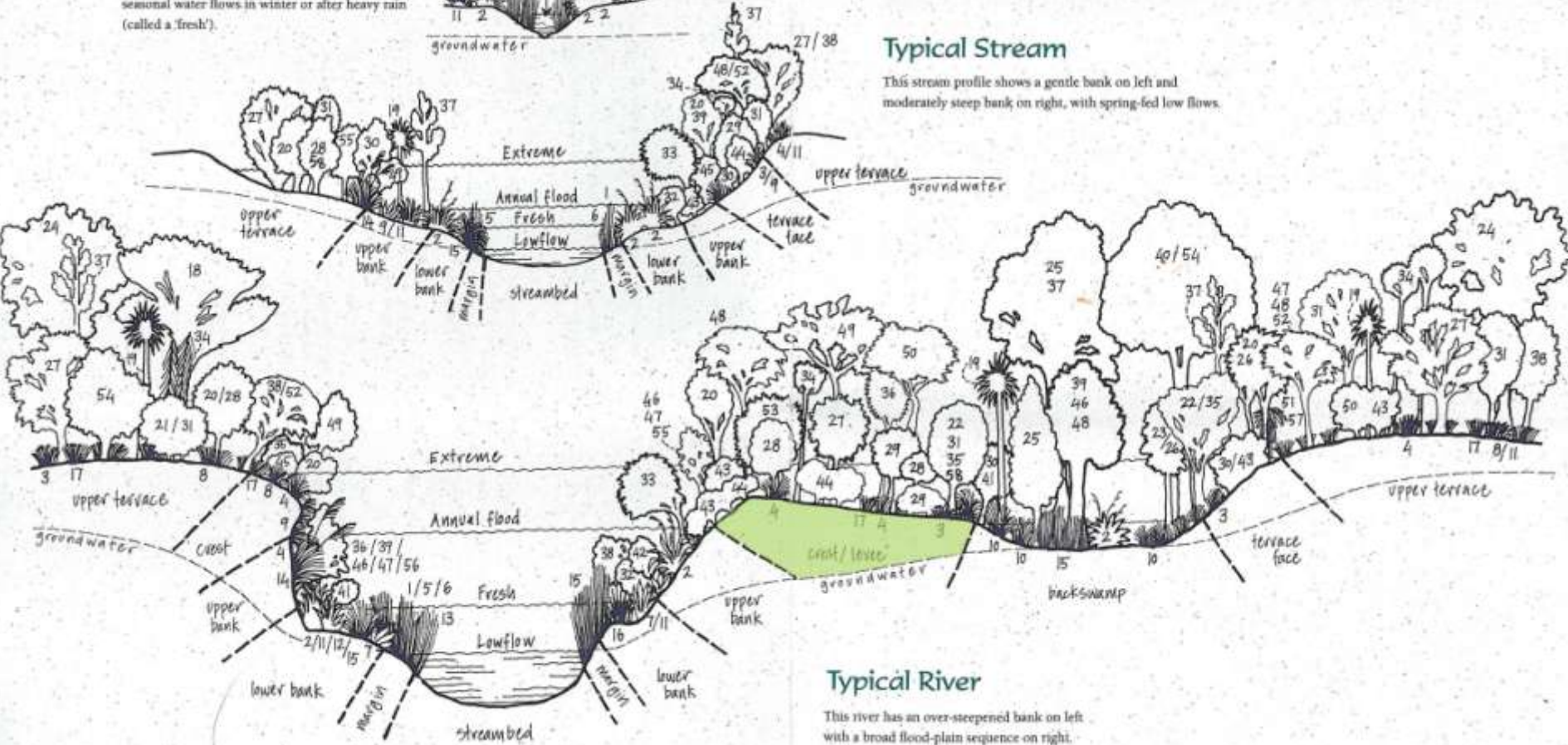
Typical Seasonal Stream

This profile shows upper stream reaches with seasonal water flows in winter or after heavy rain (called a 'fresh').



Typical Stream

This stream profile shows a gentle bank on left and moderately steep bank on right, with spring-fed low flows.



Typical River

This river has an over-steepened bank on left with a broad flood-plain sequence on right.



Halswell
River levees
ripped after
the February
earthquake



Fitzgerald Avenue-Avon River



Central City Waterways as at 1850 & in 2000





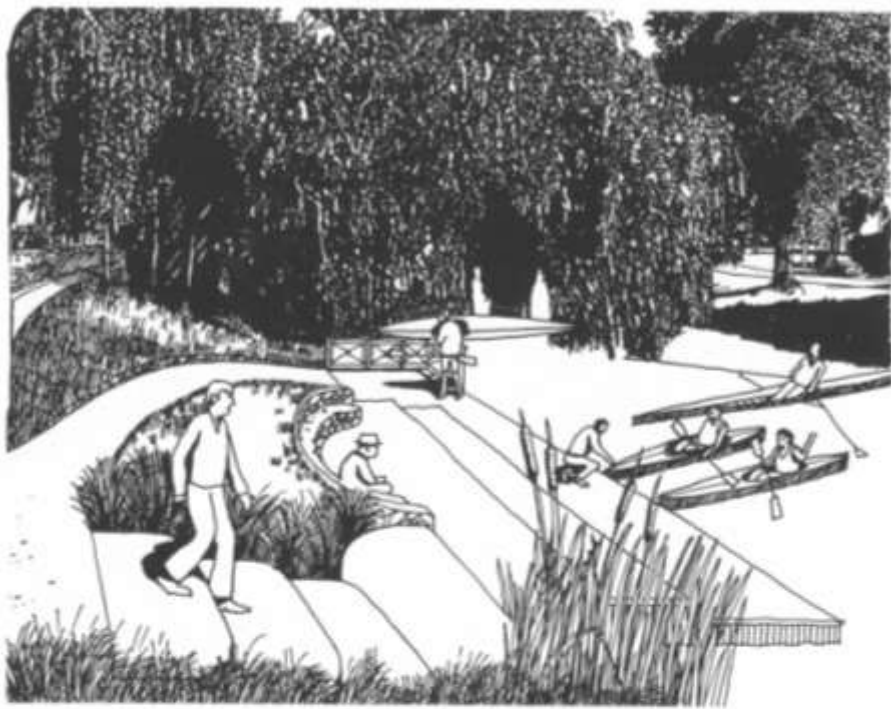
AVONSIDE ~~DRIVE~~ PARK

from Fitzgerald Avenue to Linwood Avenue



Lucas Associates

351 Manchester Street tel. 365 0789 April 6, 2001



EXISTING SITUATION:

Two lanes, two-way traffic, no pedestrian and cycle opportunities at riverbank.

© 2011 Lucas Associates
 2011 Riverbank Study - 001-100 - April 2011

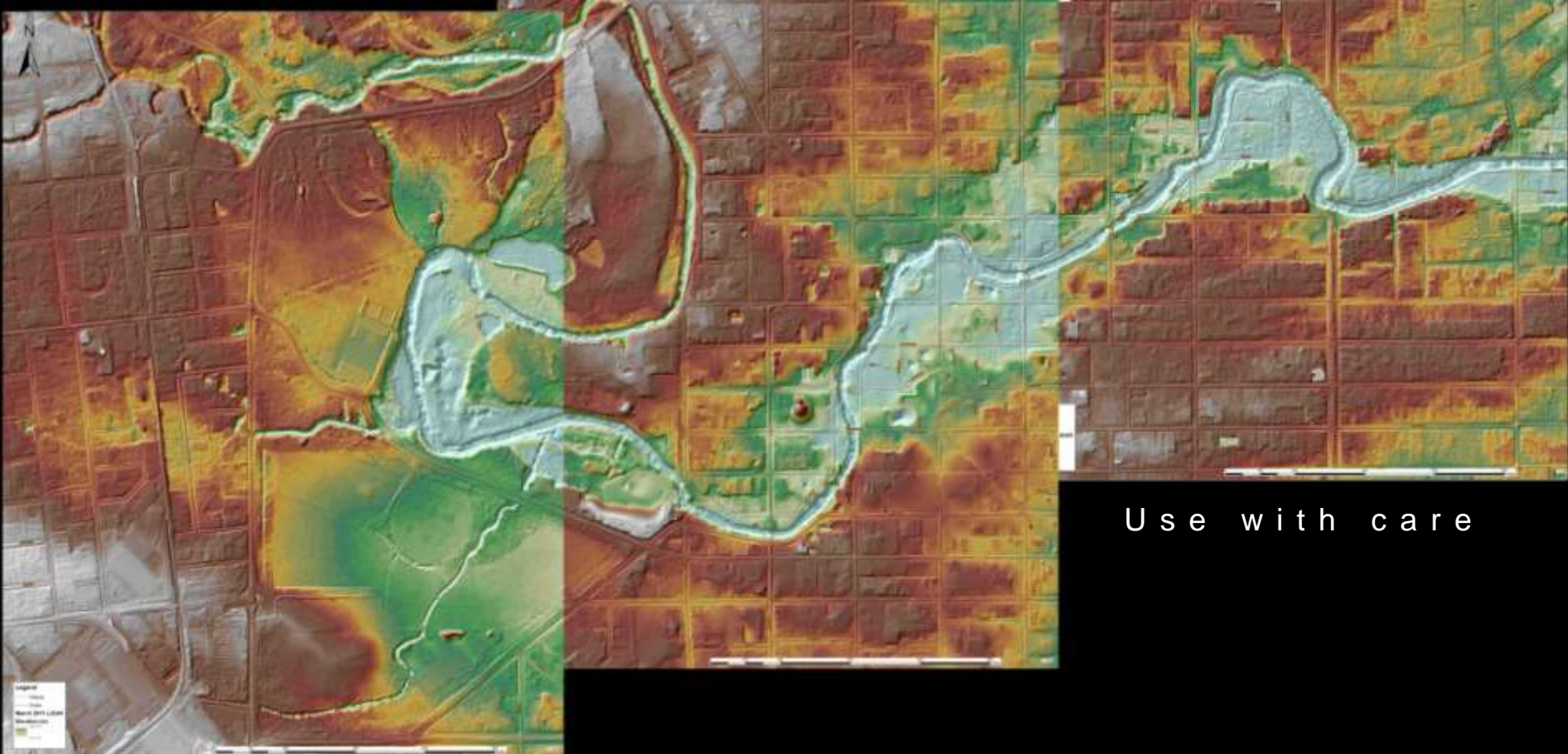


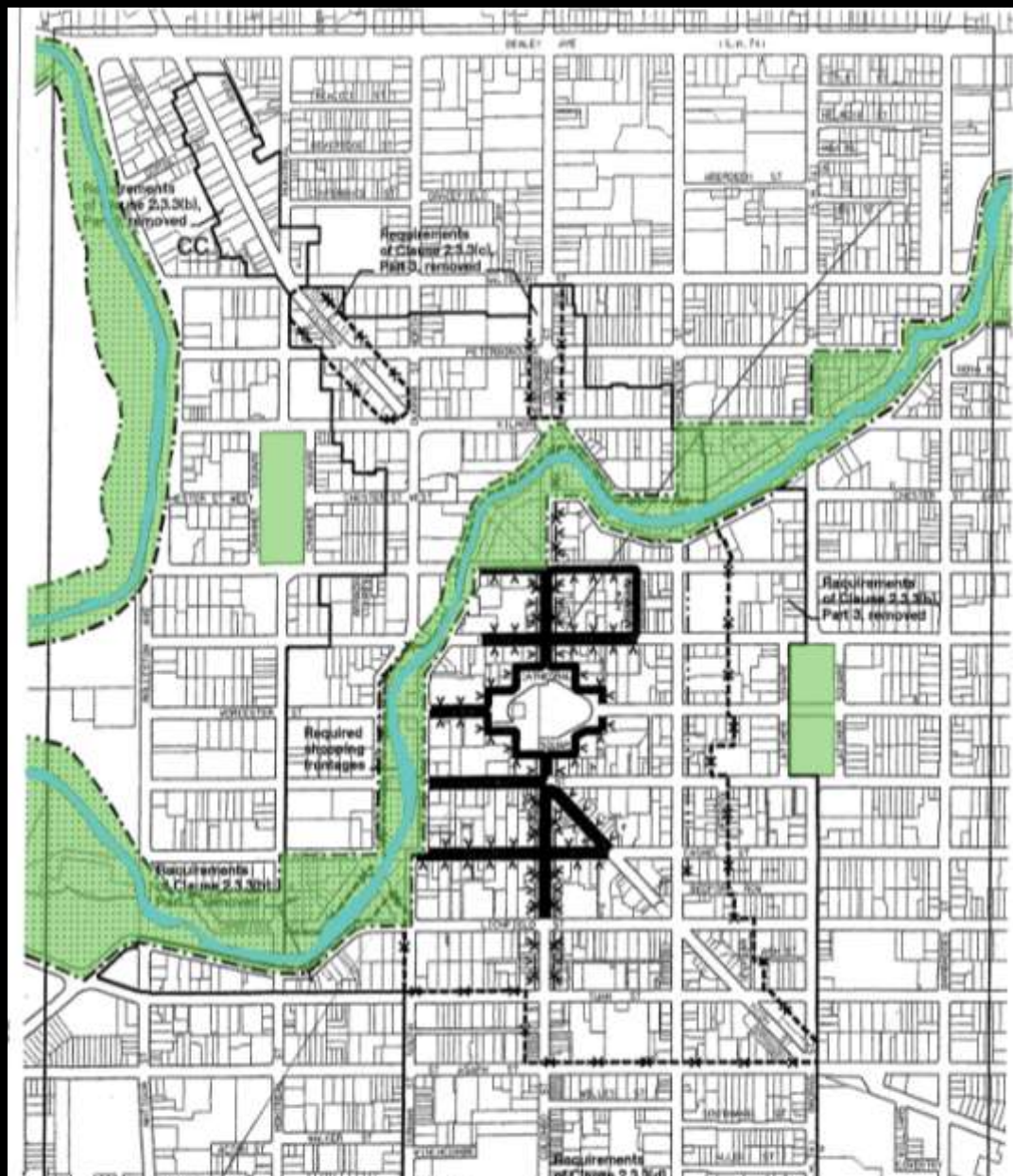
RIVERSIDE PARK

With road removed, pedestrian and cycle routes, slopes regraded and naturalised plus riverbank access with possible landing stages etc.

With one lane, one way slow street, pedestrian and cycle routes, slopes re-graded and naturalised.

DRAFT LIDAR of the Avon River & Central City

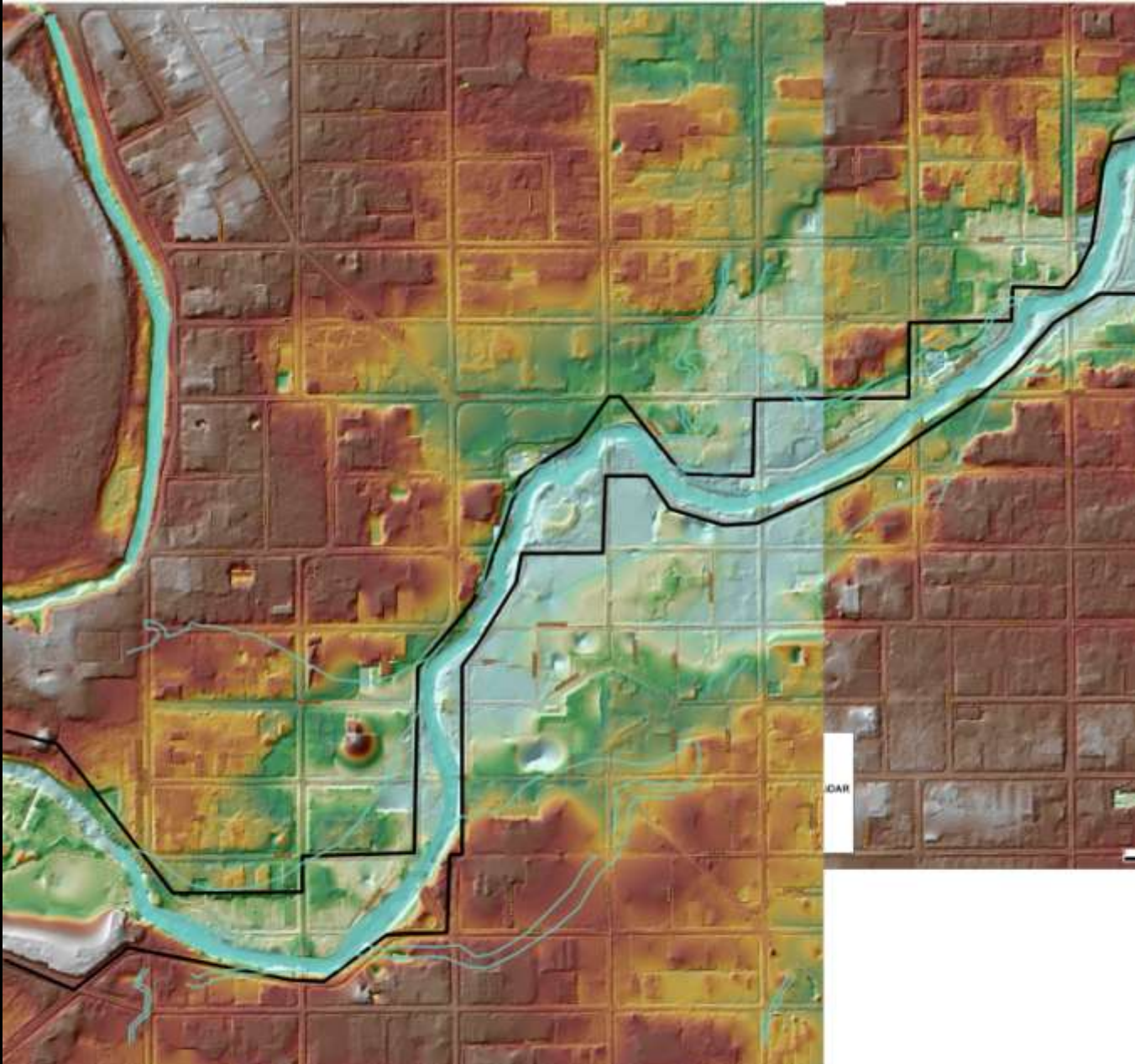




Flood Management Area in City Plan

January 30, 2011

Avon River Blue-Greenway Pedestrian Corridor & Cycleway Potential



**DRAFT LIDAR, use with care
overlay with Flood Management
Areas**

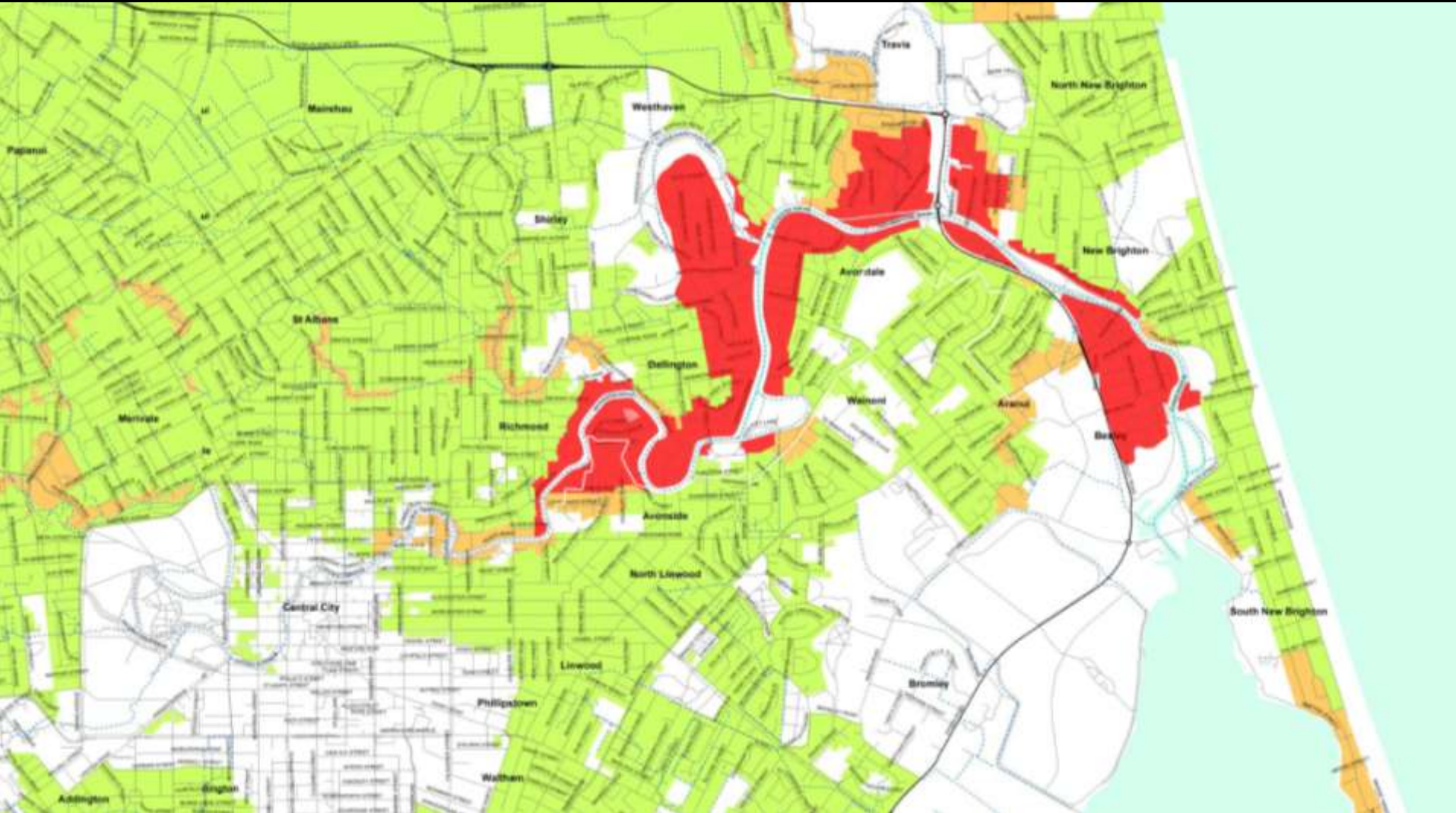
LIDAR

March 2011

'It's not our intention that it [red zone] will become a park'

-Gerry Brownlee

Nelson Mail June 25, 2011

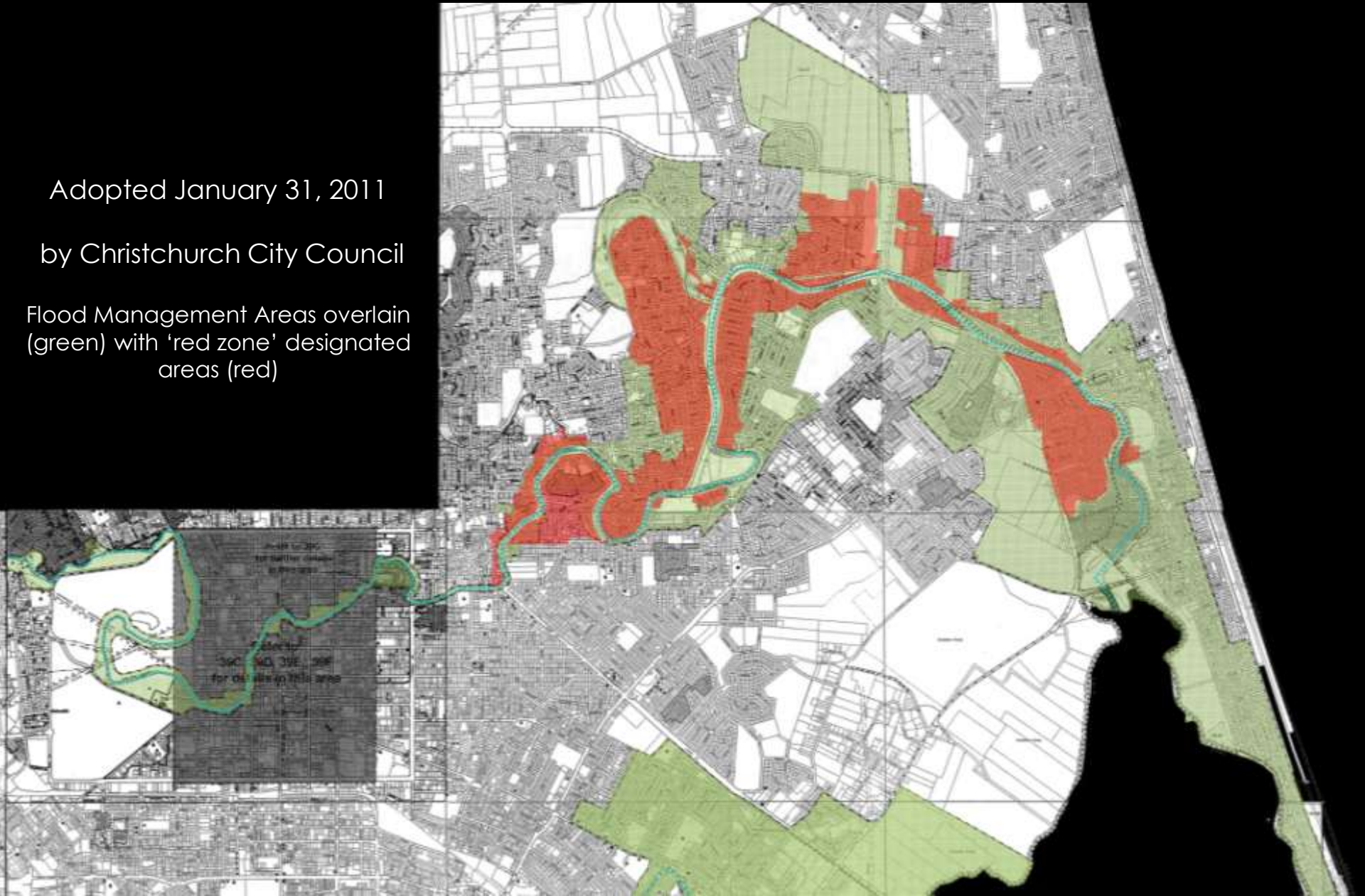


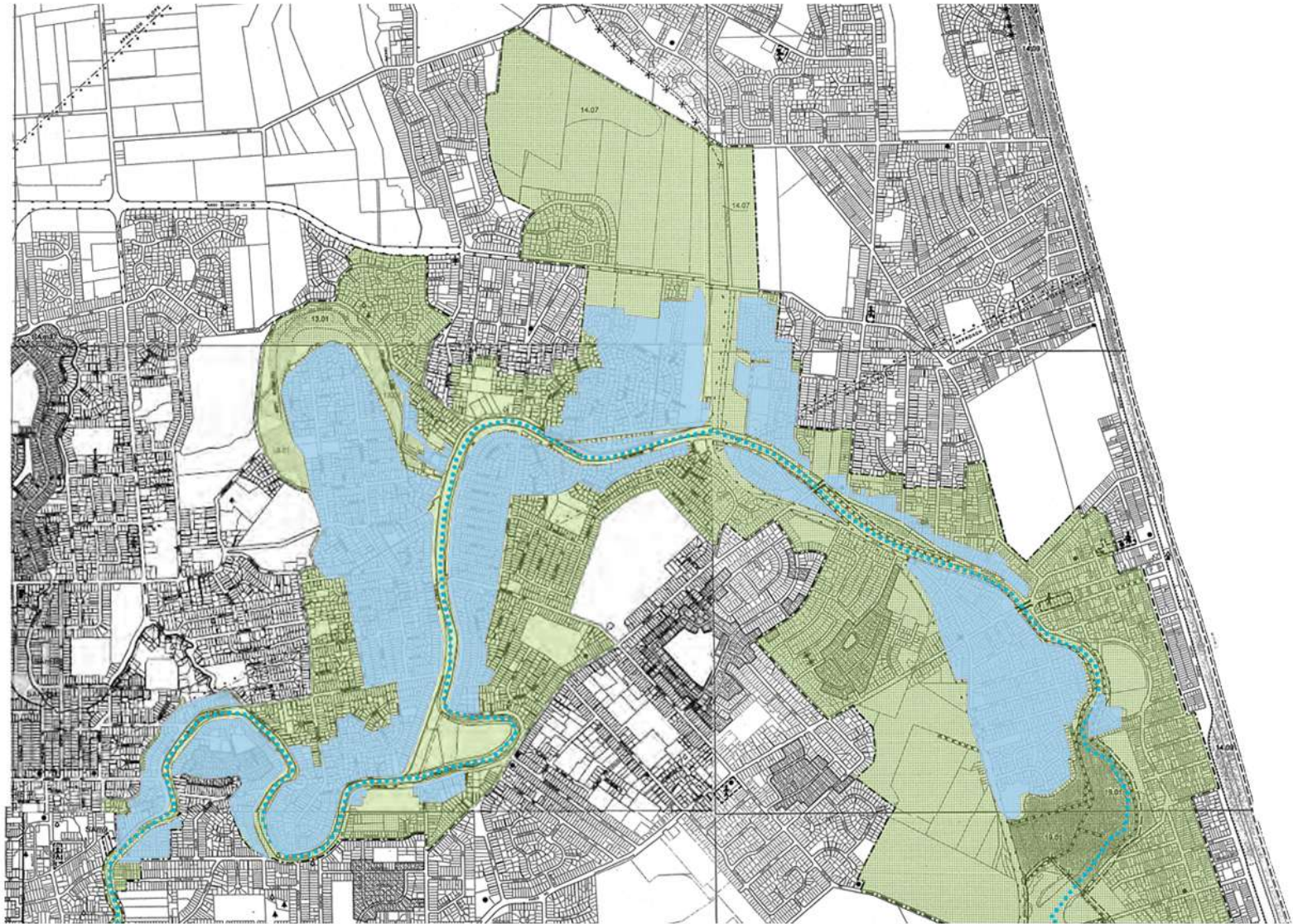
Flood Management Areas

Adopted January 31, 2011

by Christchurch City Council

Flood Management Areas overlain (green) with 'red zone' designated areas (red)





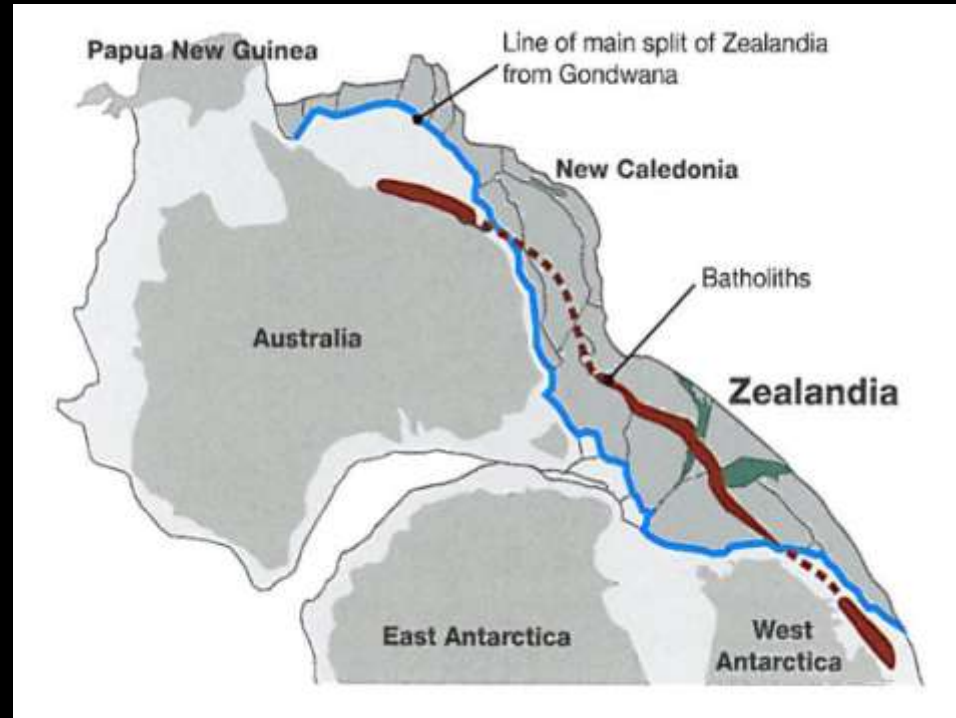
Red Zone (blue) that are within the Flood Management Area (green)

Possible Lake & Wetland Sites

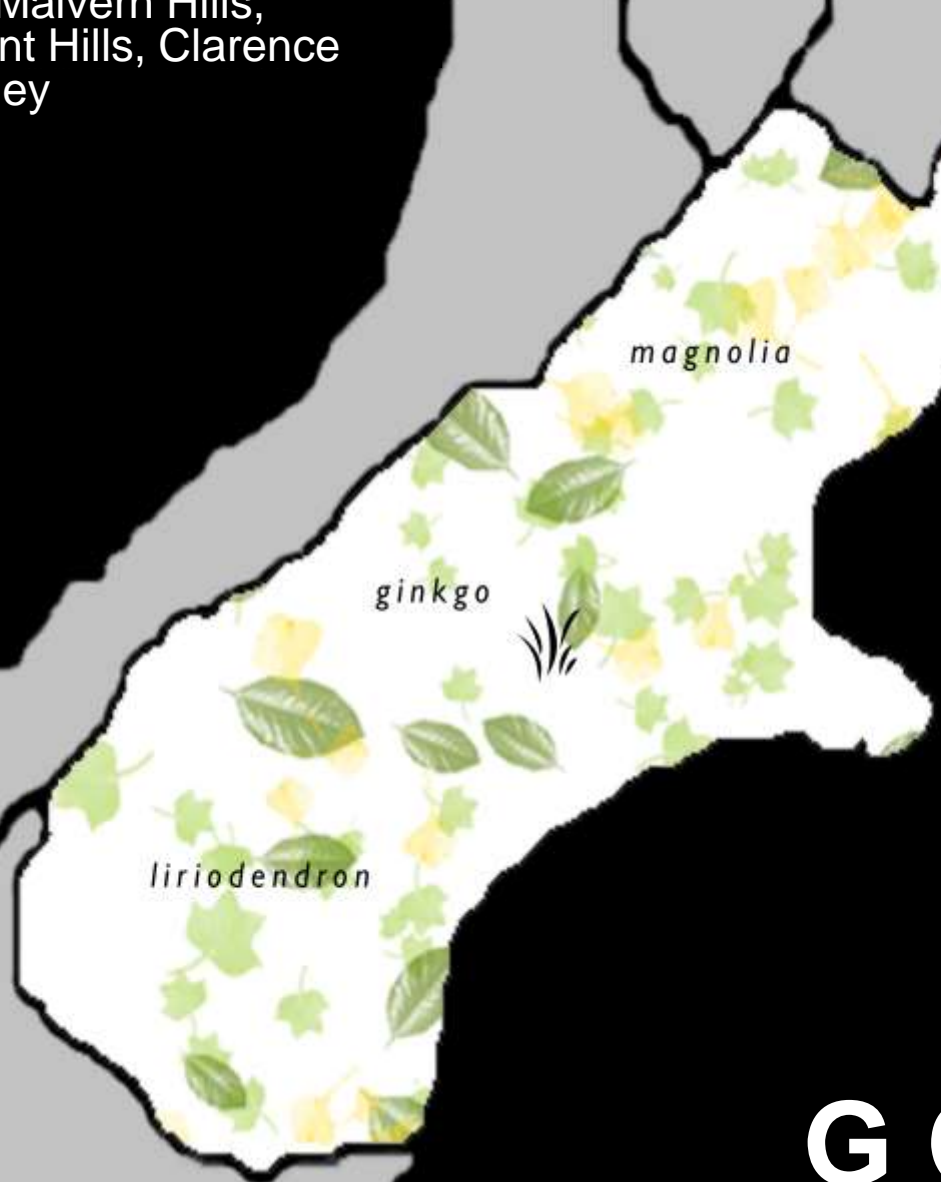


Avon Lakes & Wetlands





Canterbury Fossils
eg Malvern Hills,
Clent Hills, Clarence
Valley



magnolia

ginkgo

liriodendron

Ginkgo fossil



Liriodendron ancestor



G O N D W A N A

Art work

Cycleway

Art work

Promenade

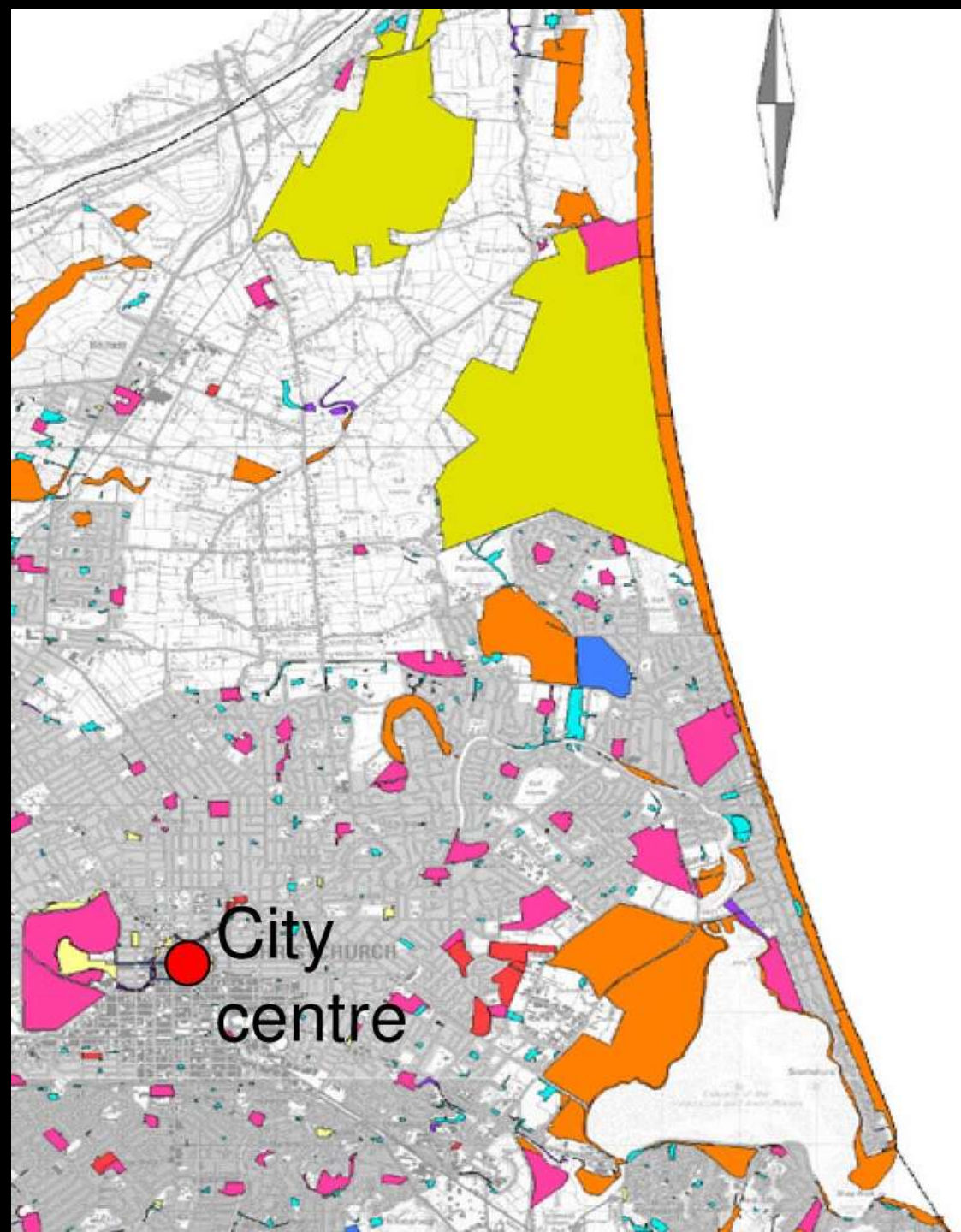
Allotments



Avon River corridor

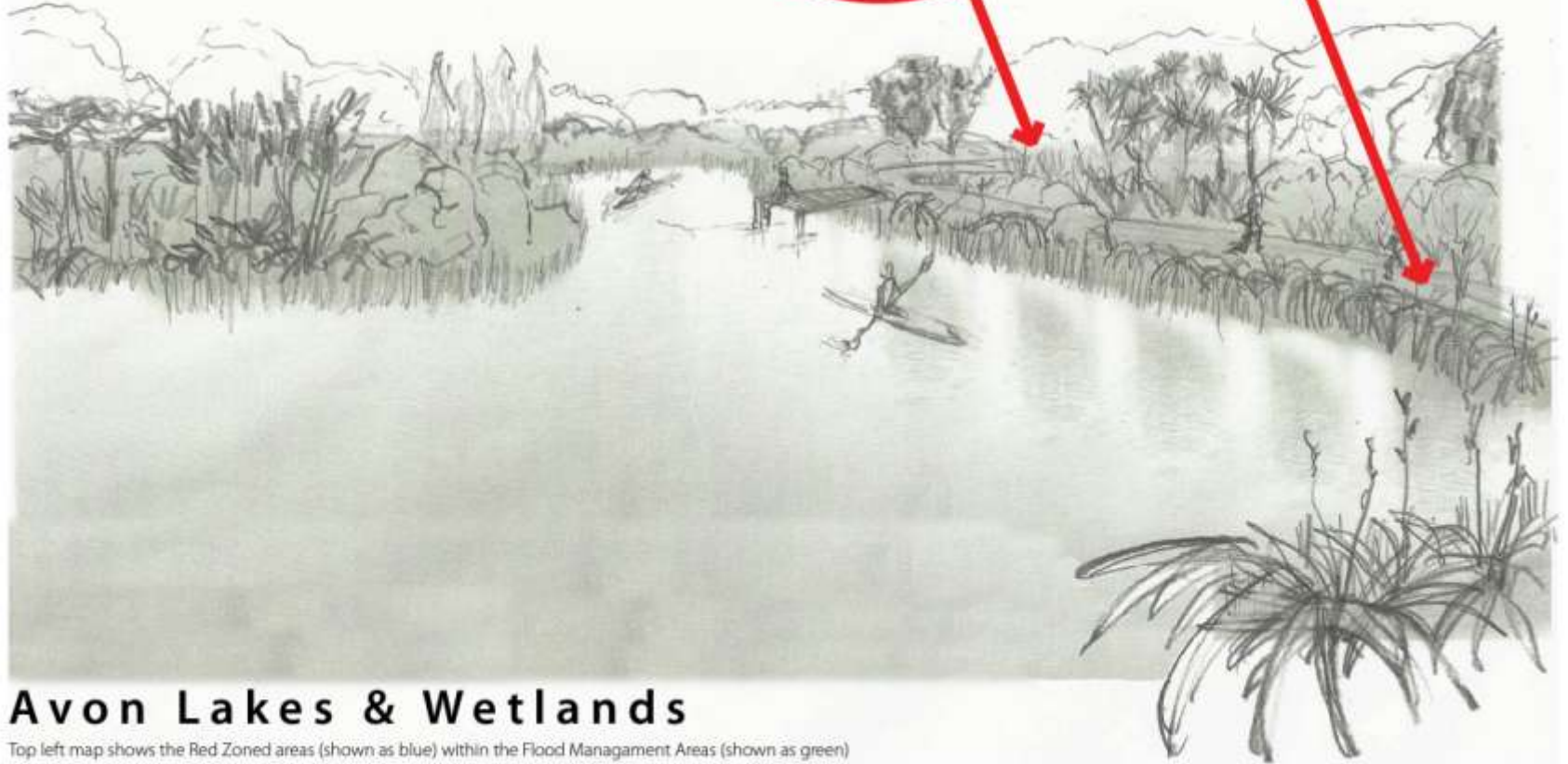
780 parks
50,000 street trees

- Sports Park
- Riverbank Area
- Regional Park
- Community Park
- Garden/Heritage Park
- Forest Park
- Conservation Area
- Cemetery
- Department of Conservation Administered
- Conservation Covenant on private land





Possible Lake & Wetland Sites



Avon Lakes & Wetlands

Top left map shows the Red Zoned areas (shown as blue) within the Flood Management Areas (shown as green)



SILVER FERN WALK & CYCLE WAY
Earthquake cracks on levees are filled with silt to create level path and becomes a feature of walking /cycling track.

lets green the
red zone



Lucas Associates

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