

# Hydrology and Water Allocation in Te Awarua- o-Porirua Whaitua

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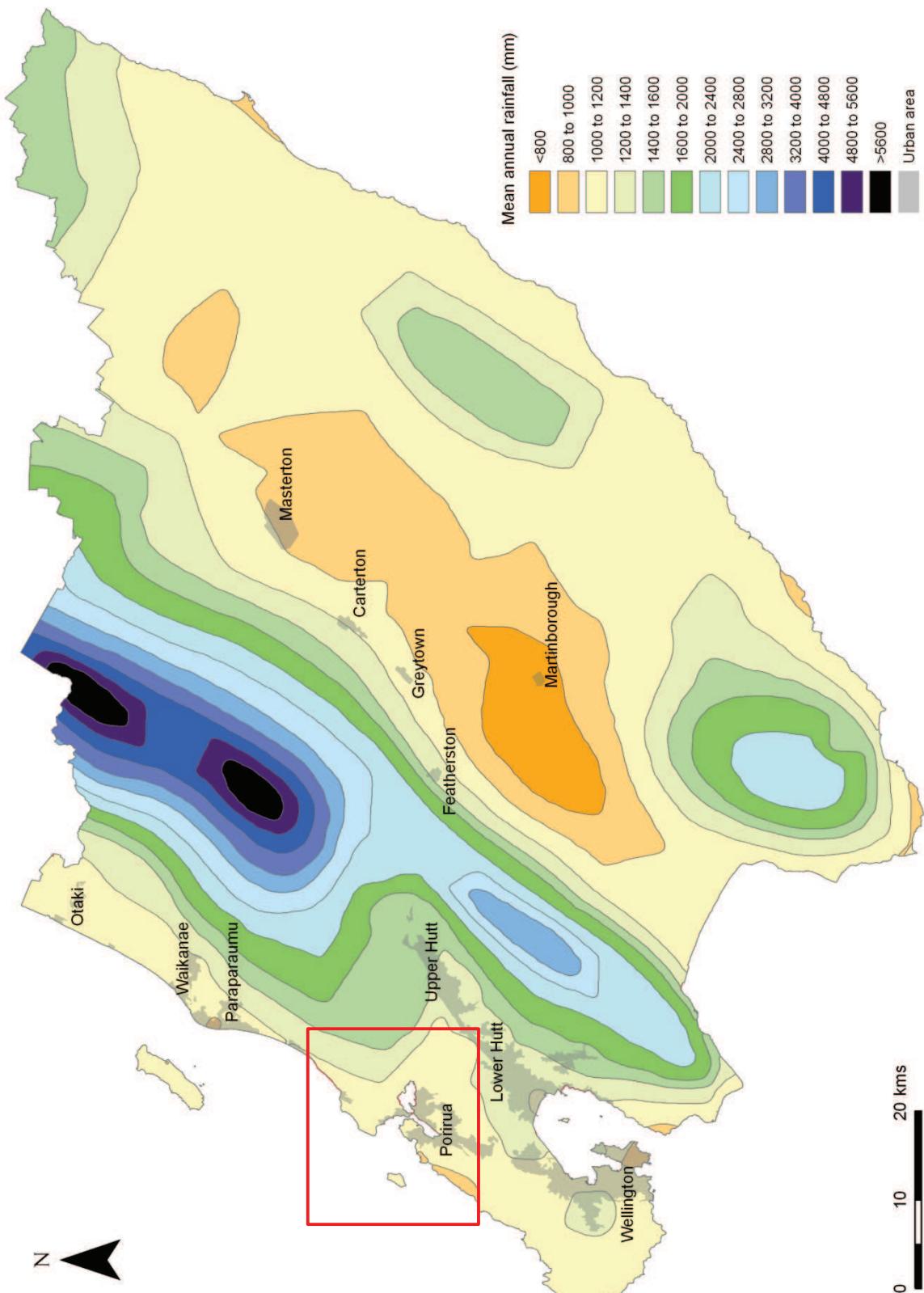


# Background

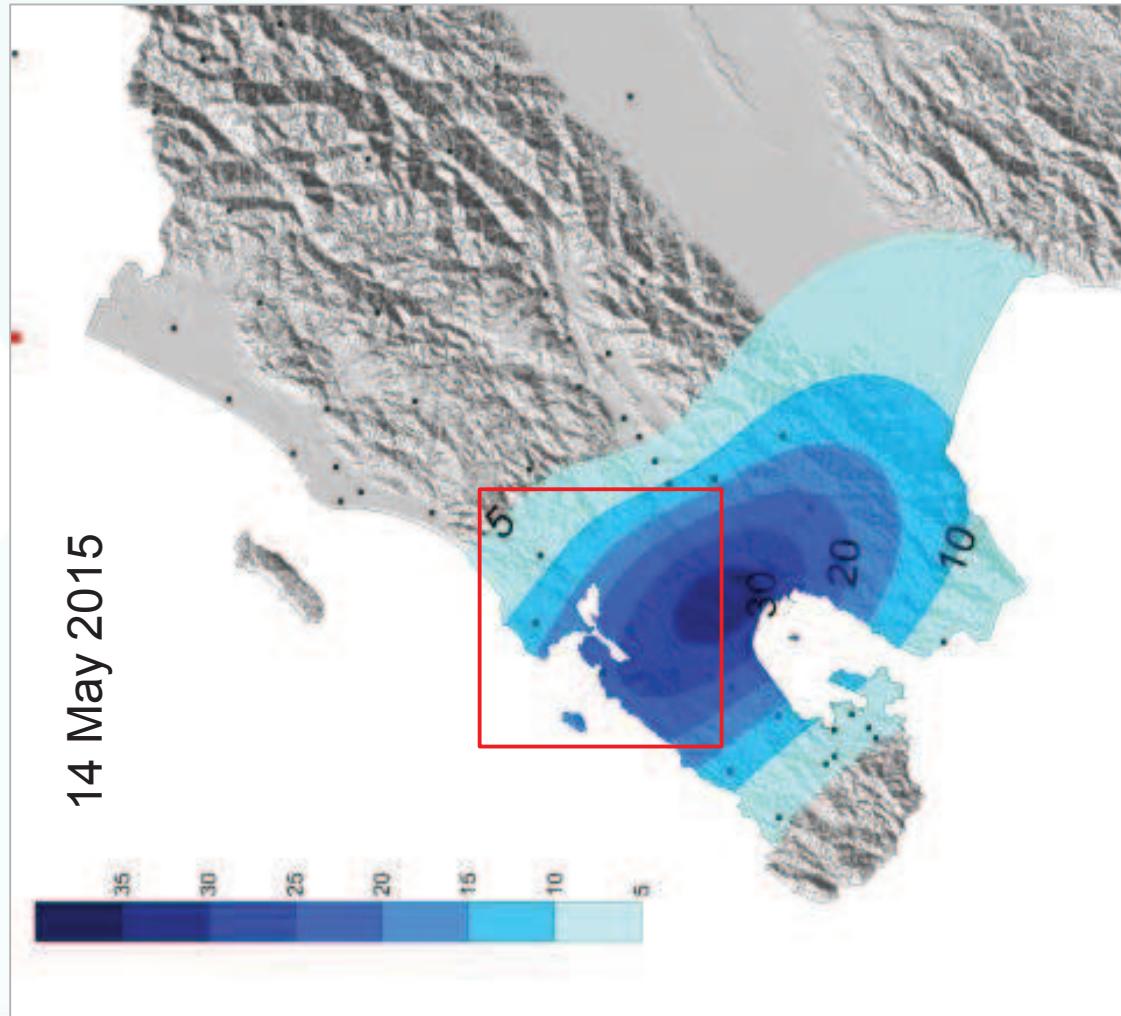
- **Whaitua covers area ~ 210 km<sup>2</sup>**
  - Low lying rolling hills
  - Was covered in native forest
  - Now pastoral and urban land use
  - Greywacke basement

# Rainfall - average

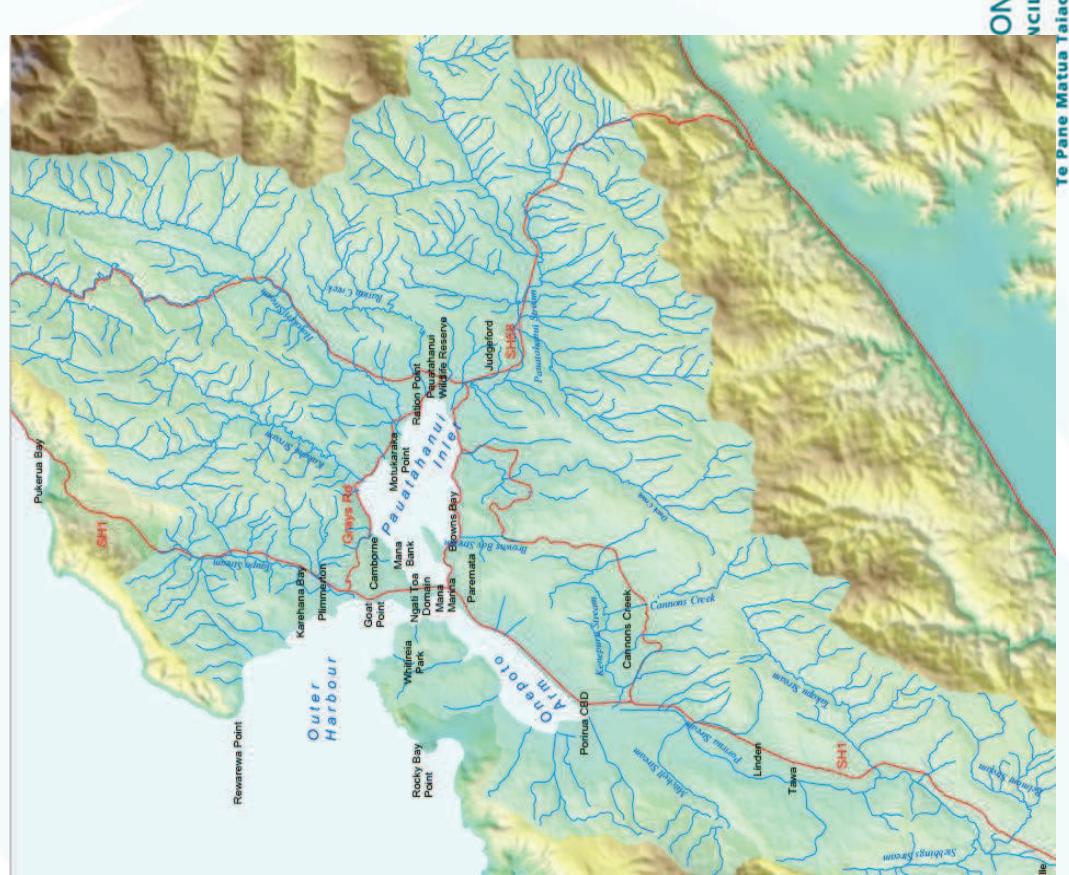
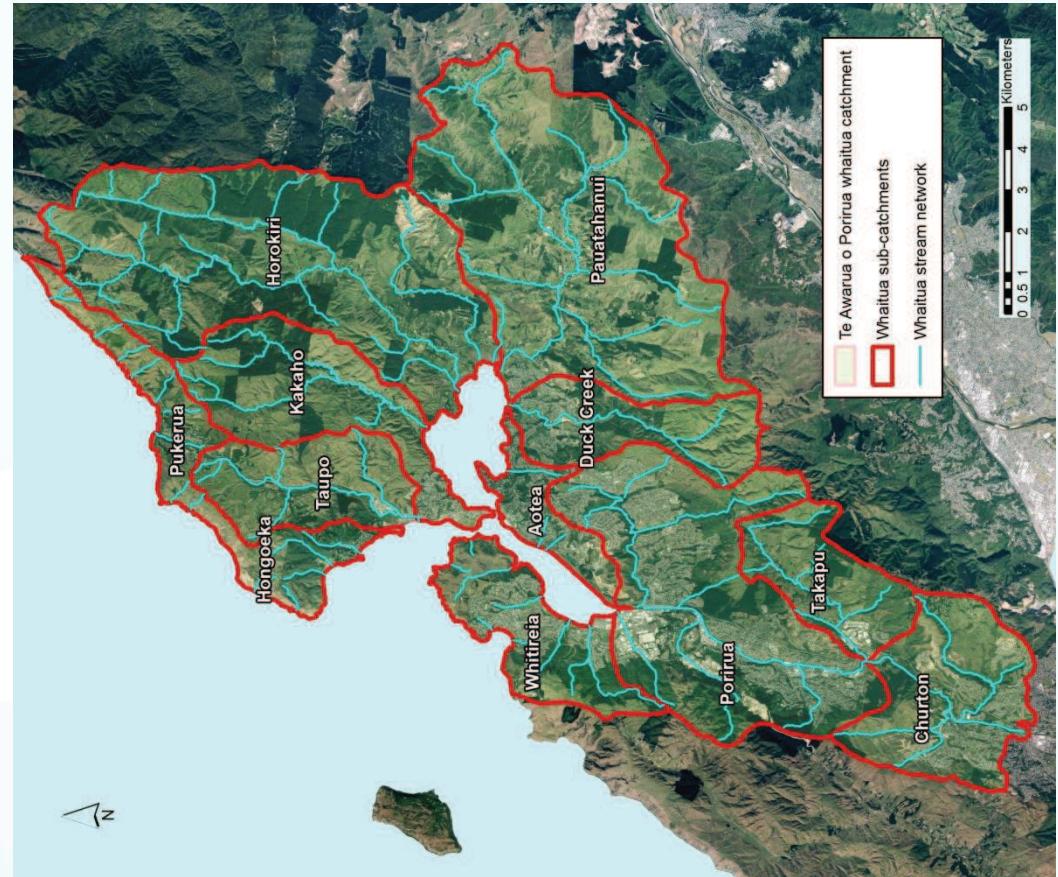
Te Awarua-o-Porirua Whaitua Committee



# Rainfall – storm profile



# Streams of the Whaitua

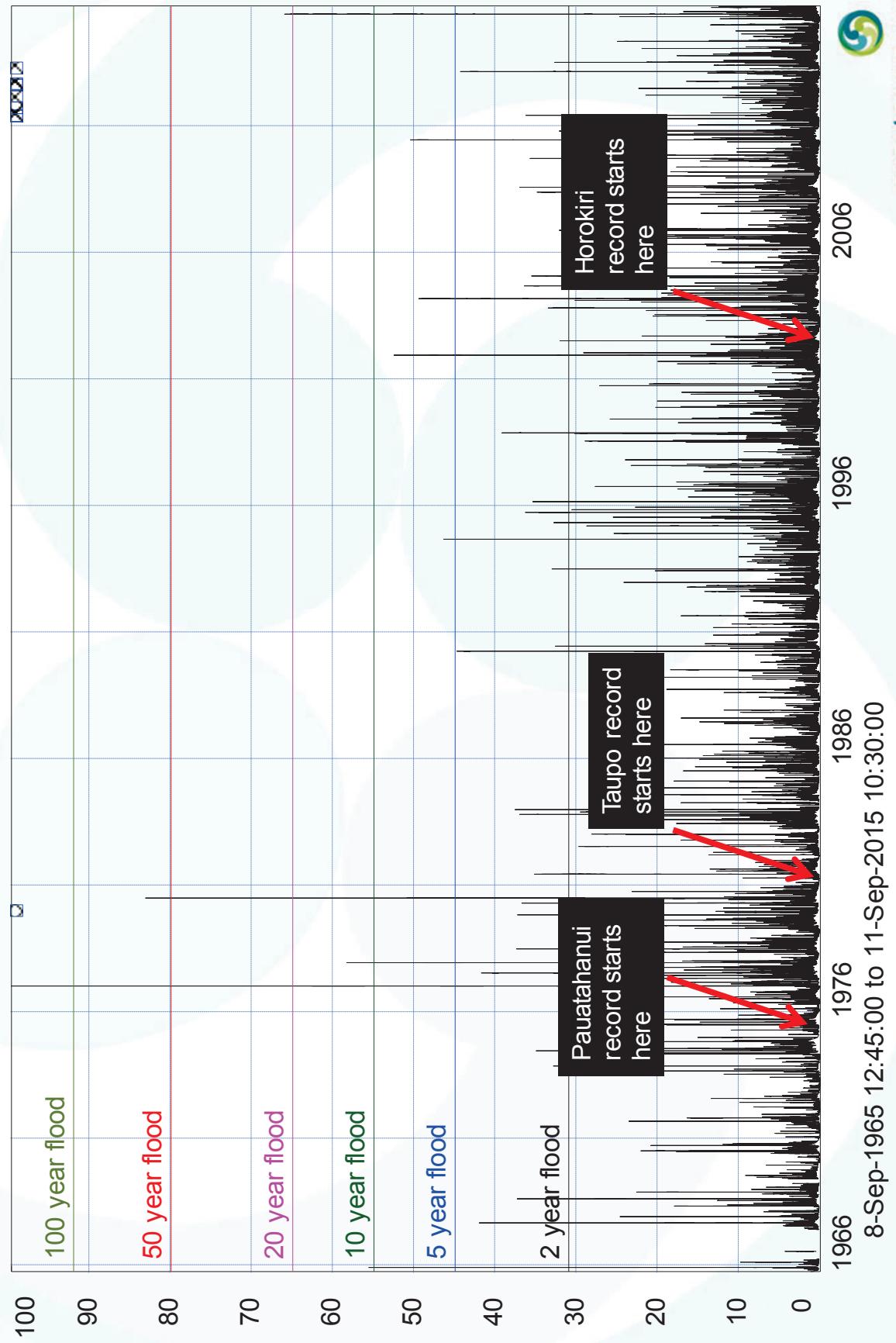


### Monitoring Sites

- | Type       |   |
|------------|---|
| Rainfall   | ● |
| River Flow | ▲ |
| Tide Level | ○ |
| Turbidity  | ✓ |

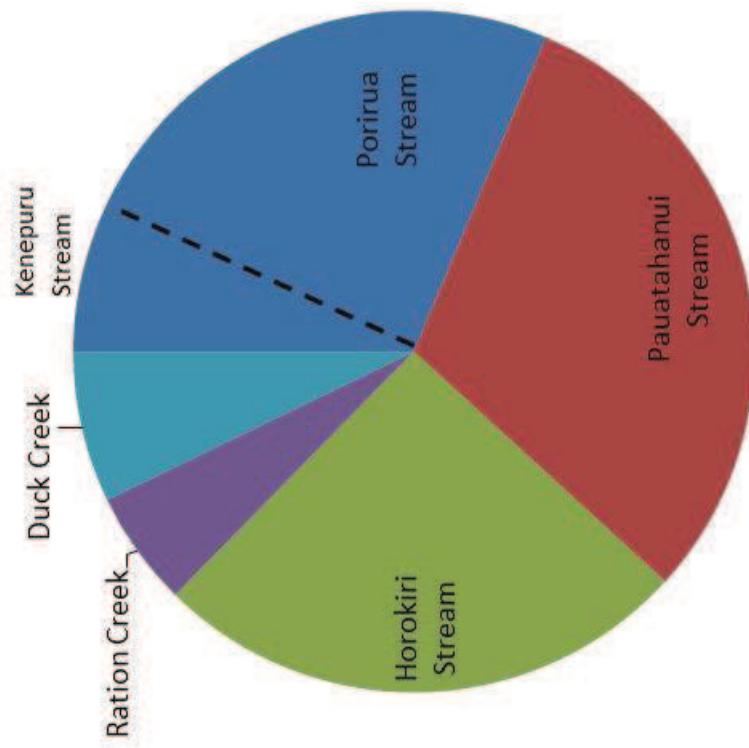
Site Name	Site Name
1 Whenua Tapu	10 Mana Island Aws (NIWA)
2 Battle Hill	11 Judgeford (NIWA)
3 Tawa Pool	12 Mana Island (NIWA)
4 Seton Nossiter Park	13 Titahi Bay T. Plant (NIWA)
5 Tuna Terrace (PCC)	14 Horokiri Stream at Snodgrass
6 Parematā (PCC)	15 Pauatahanui Stream at Gorge (NIWA)
7 City Central PS (PCC)	16 Taupo Stream at Flax Swamp
8 Plimmerton PS (PCC)	17 Porirua Stream at Town Centre
9 Whitby Reservoir (PCC)	18 Porirua Harbour at Mana Cruising Club

0 0.5 1 2 3 4 5 Kilometers

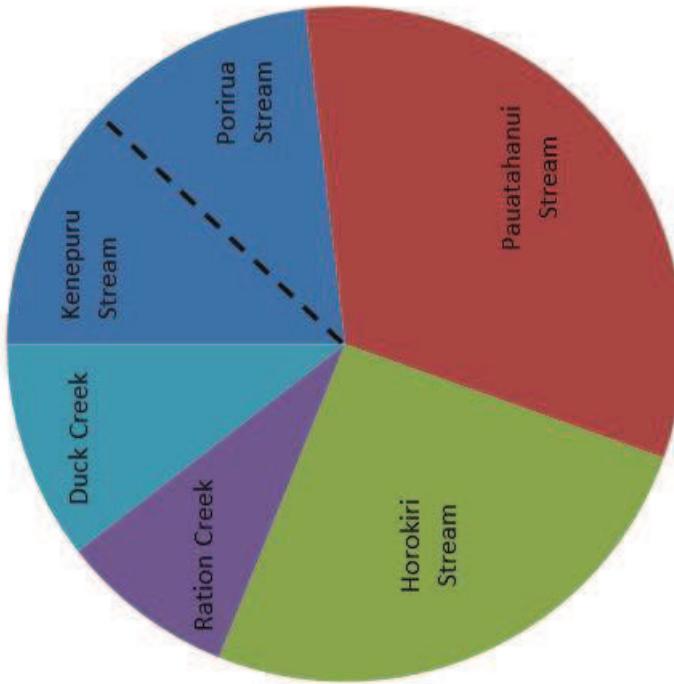




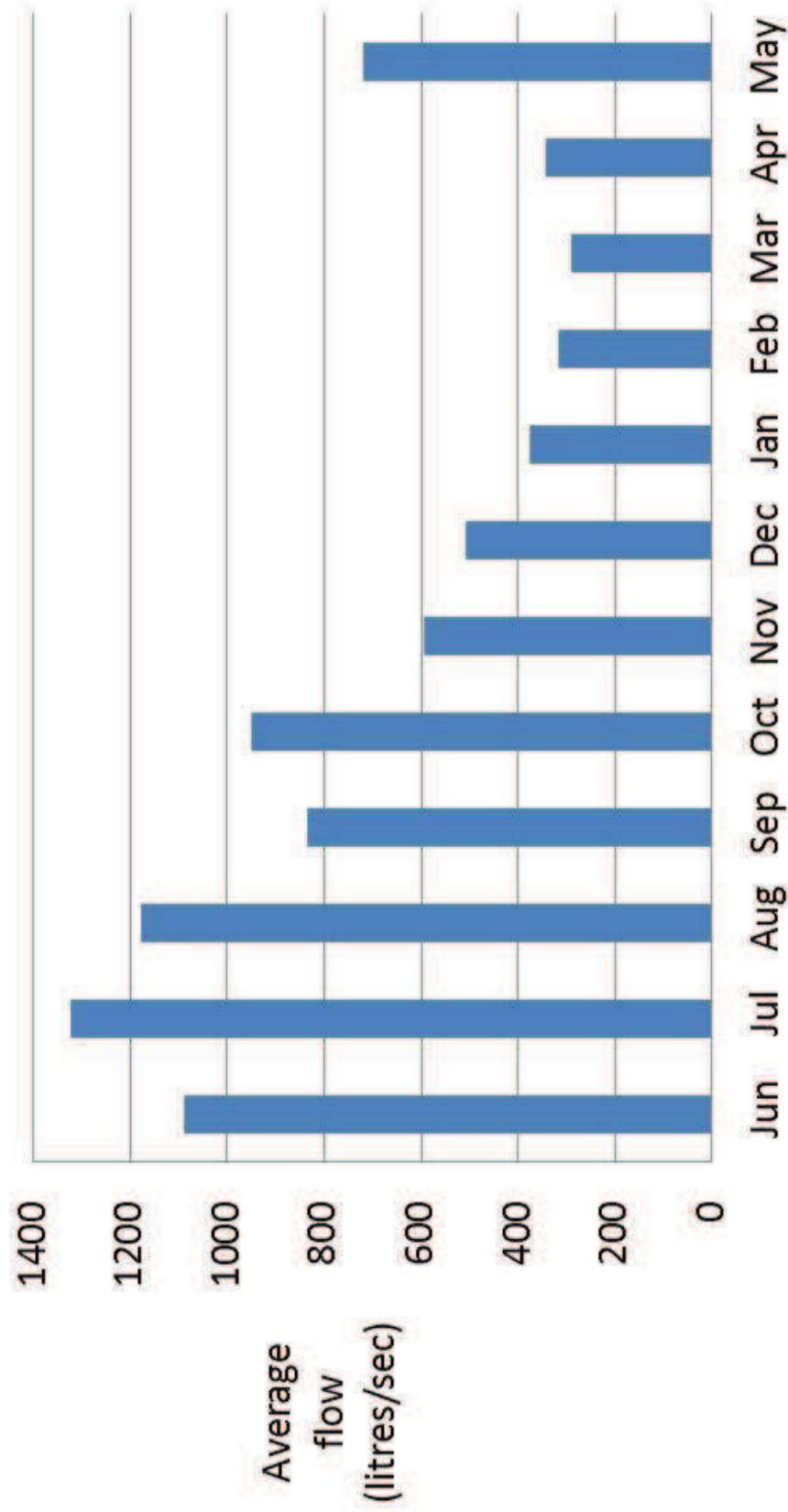
Mean flow contribution



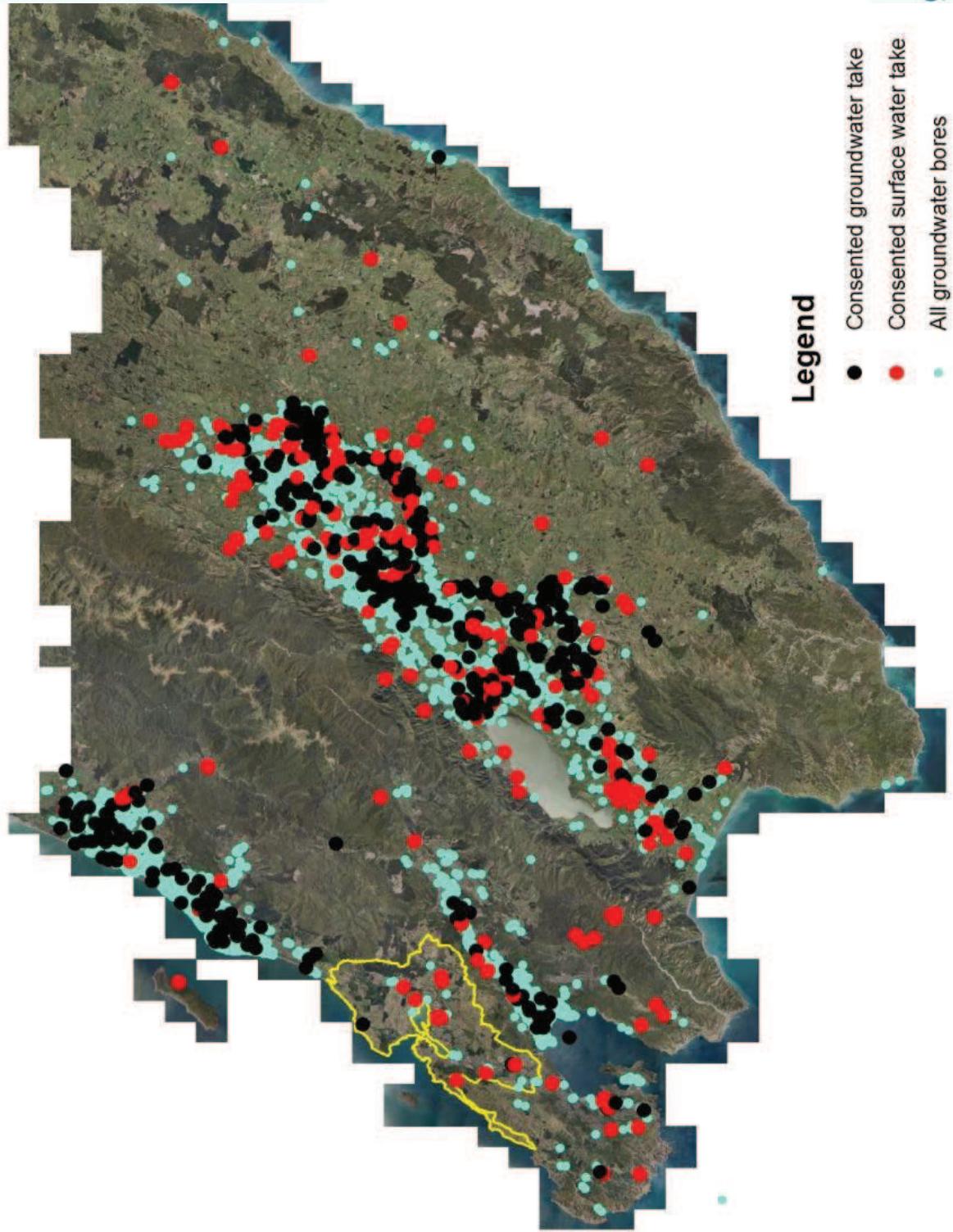
Flood flow contribution (10 year ARI)



## Pauatahanui Stream



# Water takes



# Water takes



Stream	Type of use	Max rate of take (L/s)
Pauatahanui Stream	Irrigation (golf course)	1.7
	Irrigation	<b>12.2</b>
	Irrigation of pasture & dust control (cleanfill)	1.7
Horokiri Stream	Horticultural irrigation (nursery)	1.8
Unnamed Stream (Titahi Bay)	Stock and domestic use	0.9



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# Water management

- Until recently . . .
  - water allocated case by case, no overarching Plan limits
- **Proposed Natural Resources Plan**
  - interim limits for allocation (30% mean annual low flow for streams) and minimum flows (90% of MALF)
- **Water resource outlook**
  - higher average rainfall, more extremes

# Summary

- Relatively good hydrology data at harbour catchment scale but difficult to capture local variation
- Urbanisation and land clearance result in rapid run off
- Demand for water currently low but small streams vulnerable
- Minimum flow and allocation limits a part of future management