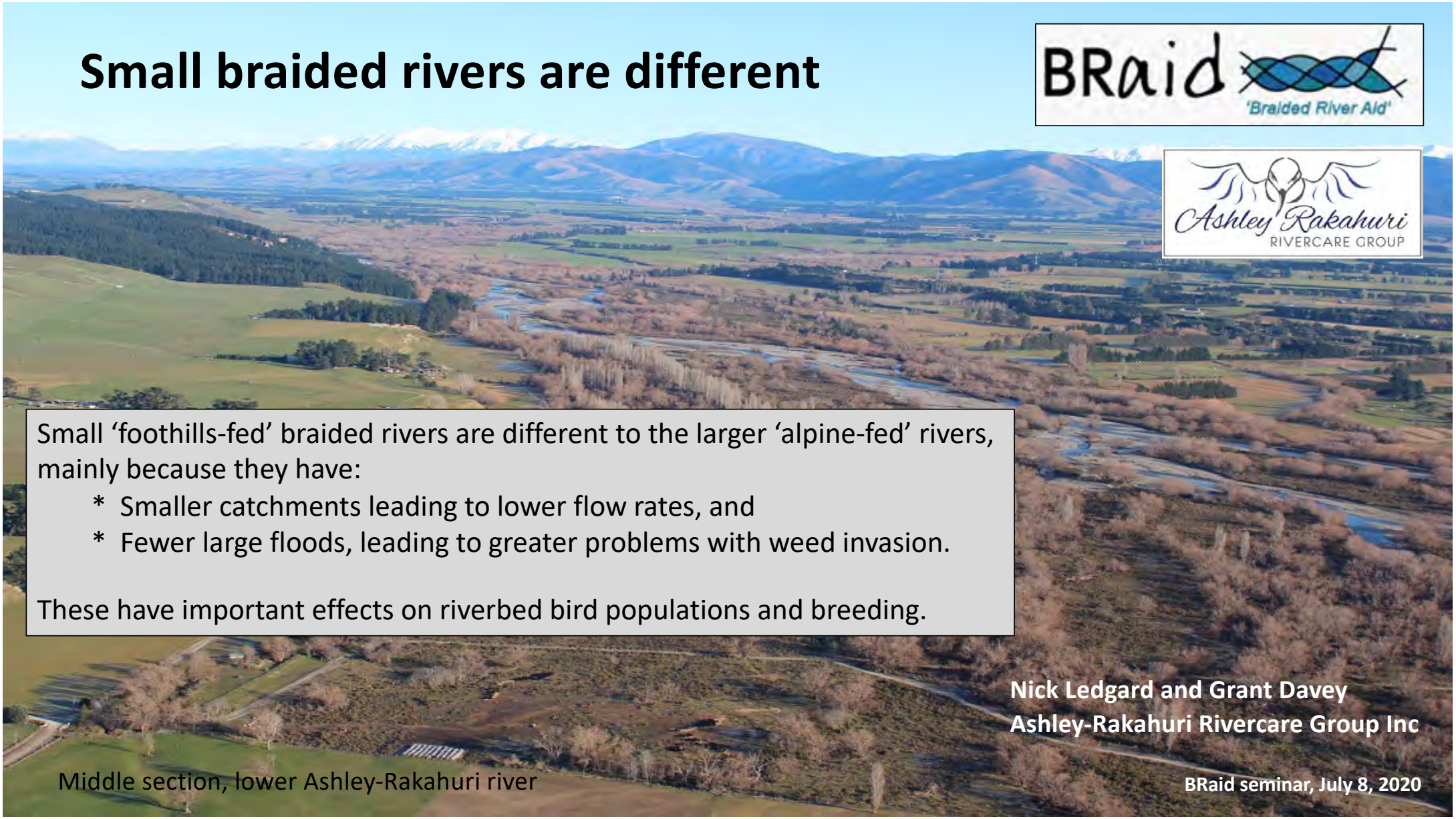
Small braided rivers are different



Small ‘foothills-fed’ braided rivers are different to the larger ‘alpine-fed’ rivers, mainly because they have:

* Smaller catchments leading to lower flow rates, and
* Fewer large floods, leading to greater problems with weed invasion.

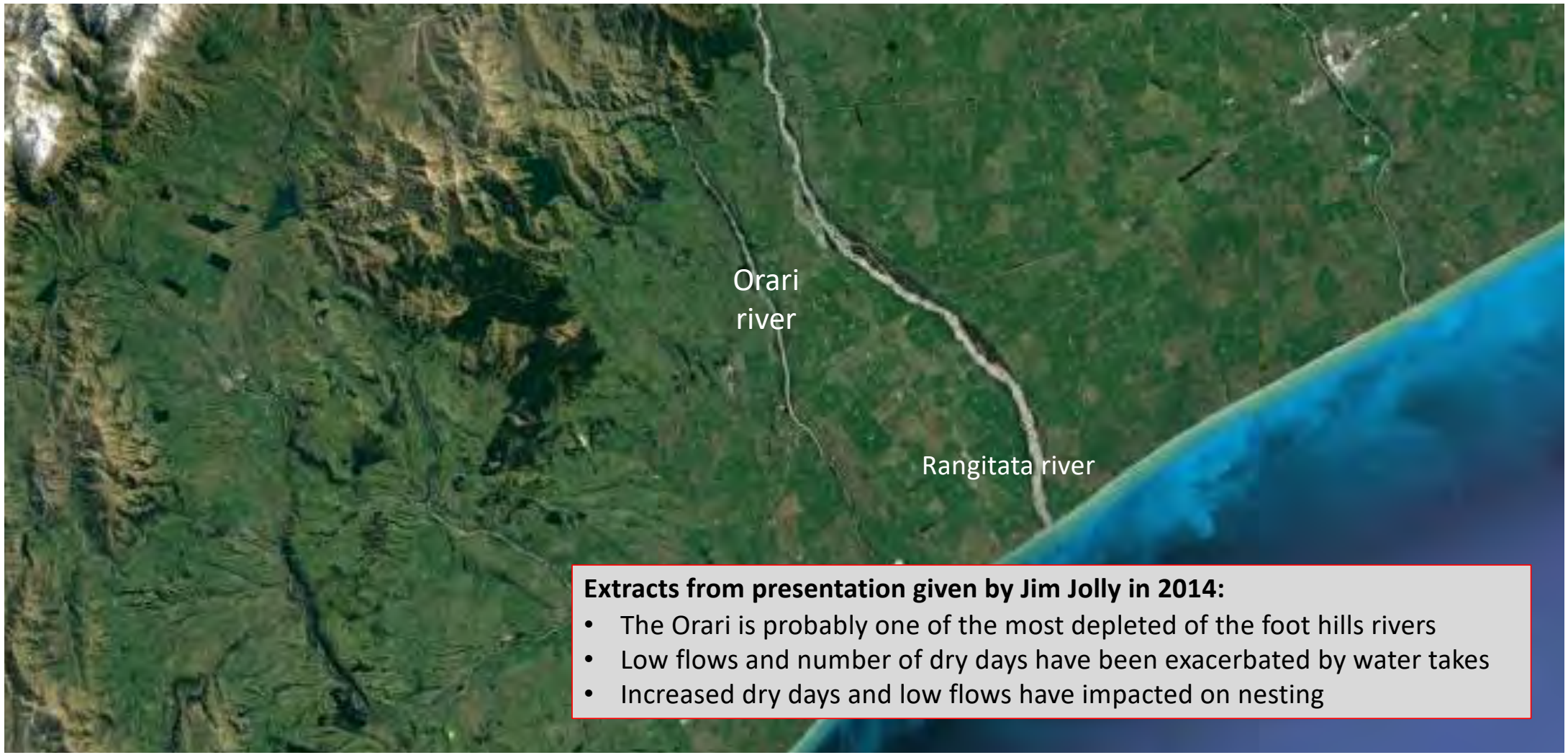
These have important effects on riverbed bird populations and breeding.

Middle section, lower Ashley-Rakahuri river

Nick Ledgard and Grant Davey
Ashley-Rakahuri Rivercare Group Inc

BRaid seminar, July 8, 2020

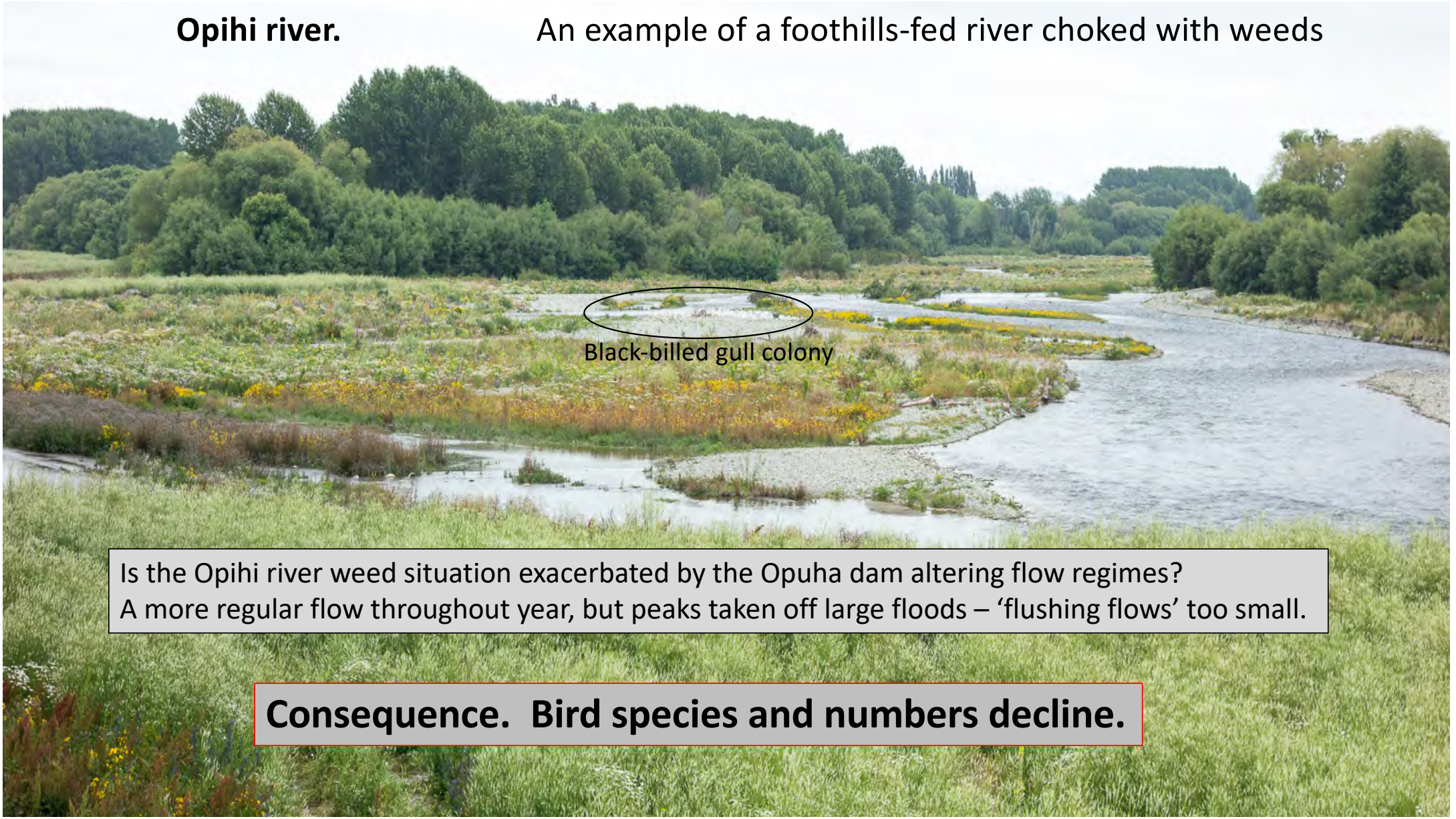
Lower flow rates mean greater impacts from water abstraction eg., Orari river



Extracts from presentation given by Jim Jolly in 2014:

- The Orari is probably one of the most depleted of the foot hills rivers
- Low flows and number of dry days have been exacerbated by water takes
- Increased dry days and low flows have impacted on nesting

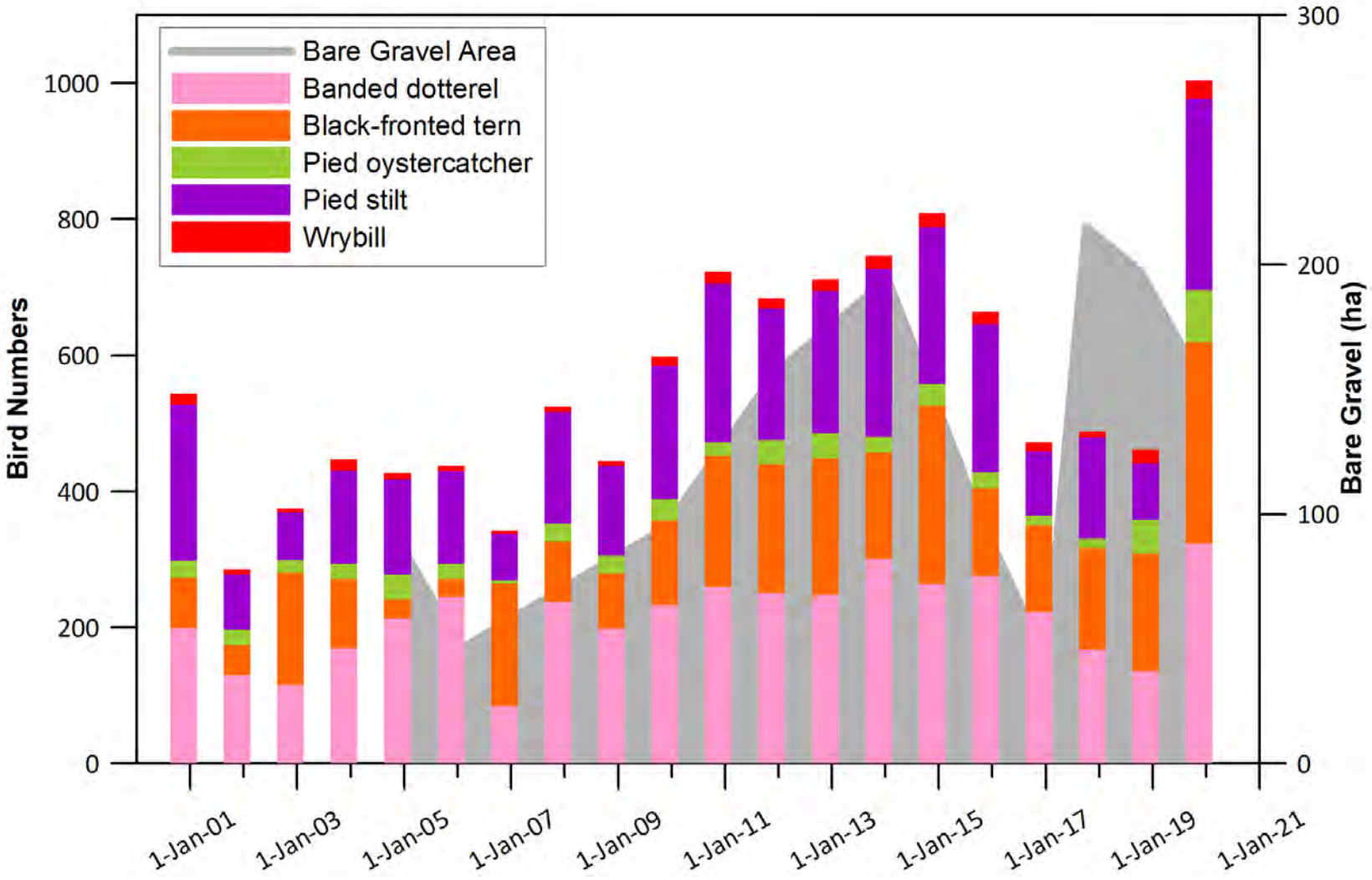
Opihi river. An example of a foothills-fed river choked with weeds

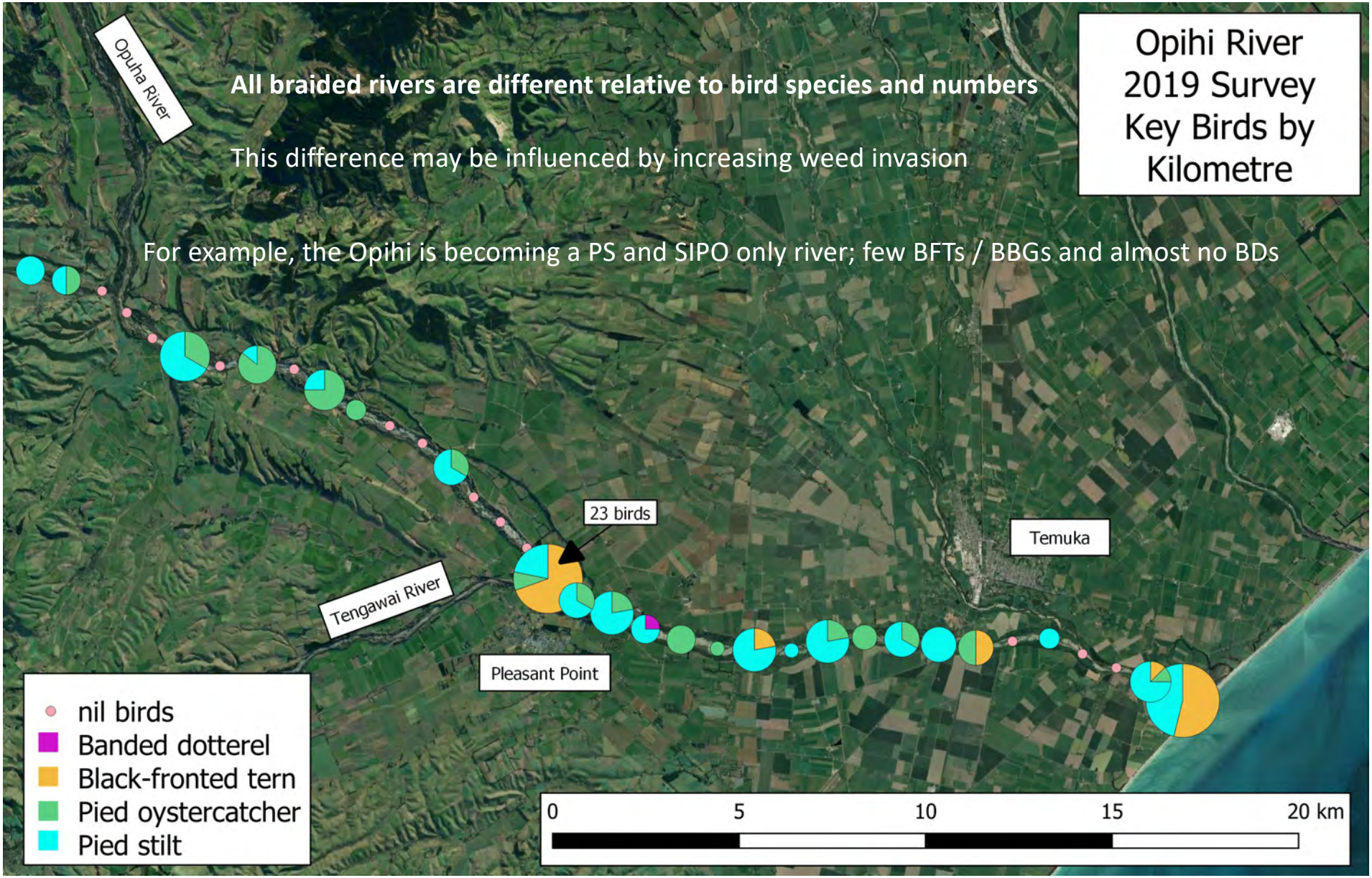


Is the Opihi river weed situation exacerbated by the Opuha dam altering flow regimes?
A more regular flow throughout year, but peaks taken off large floods – 'flushing flows' too small.

Consequence. Bird species and numbers decline.

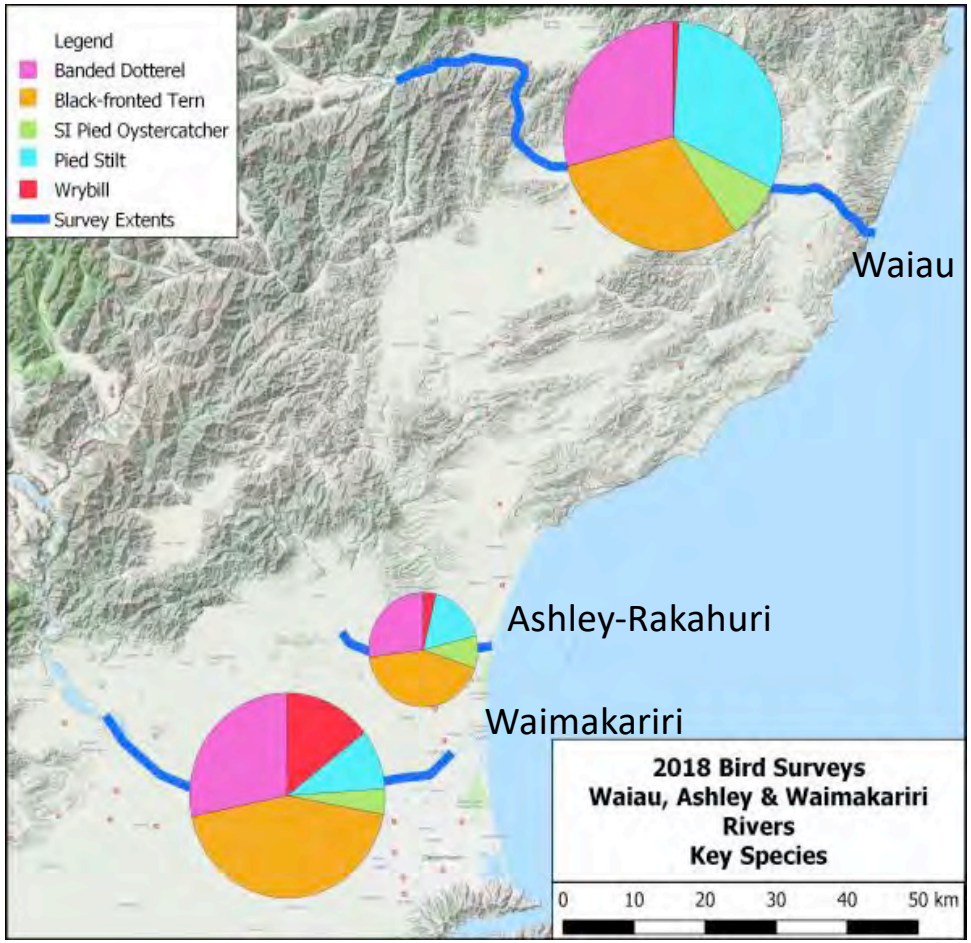
When clean shingle areas decrease (weeds increase) bird numbers decline. Case study of Ashley-Rakahuri river

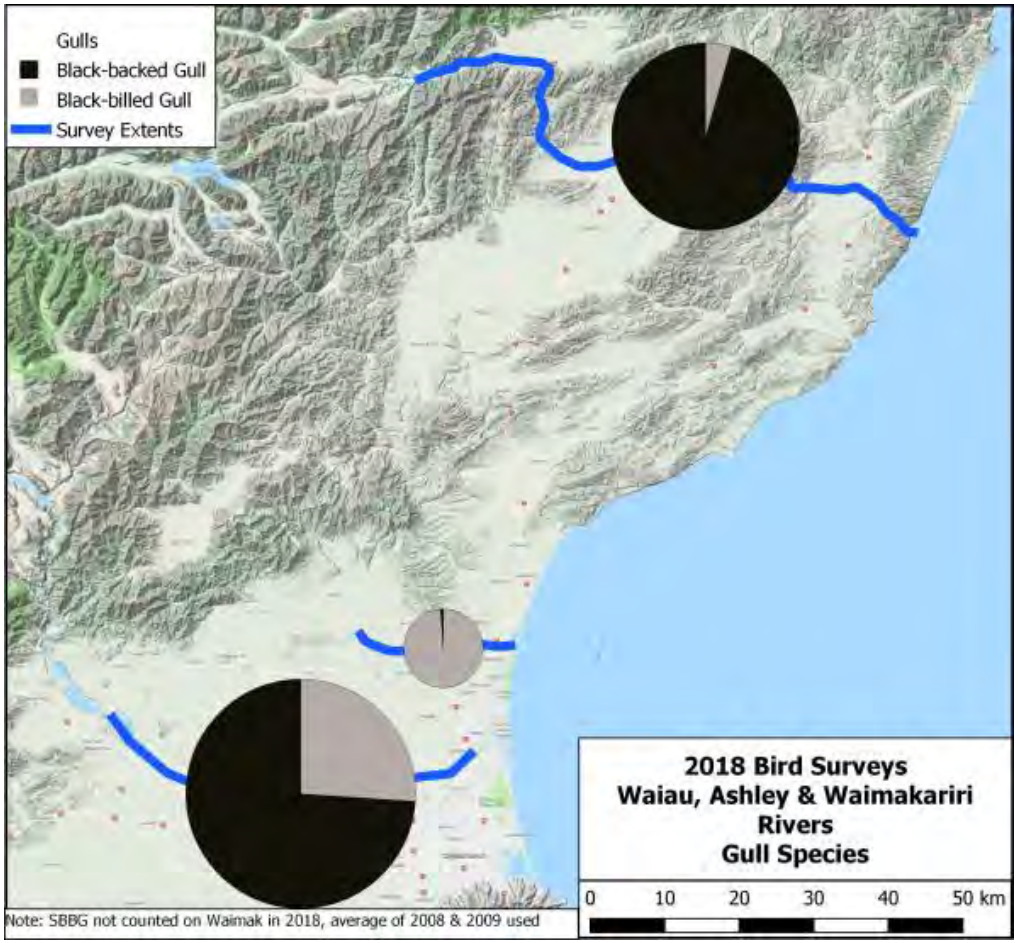



Opihi River
2019 Survey
Key Birds by
Kilometre
All braided rivers are different relative to bird species and numbers
This difference may be influenced by increasing weed invasion
For example, the Opihi is becoming a PS and SIPO only river; few BFTs / BBGs and almost no BDs
Opuha River
23 birds
Temuka
Tengawai River
Pleasant Point
nil birds
Banded dotterel
Black-fronted tern
Pied oystercatcher
Pied stilt
0
5
10
15
20 km

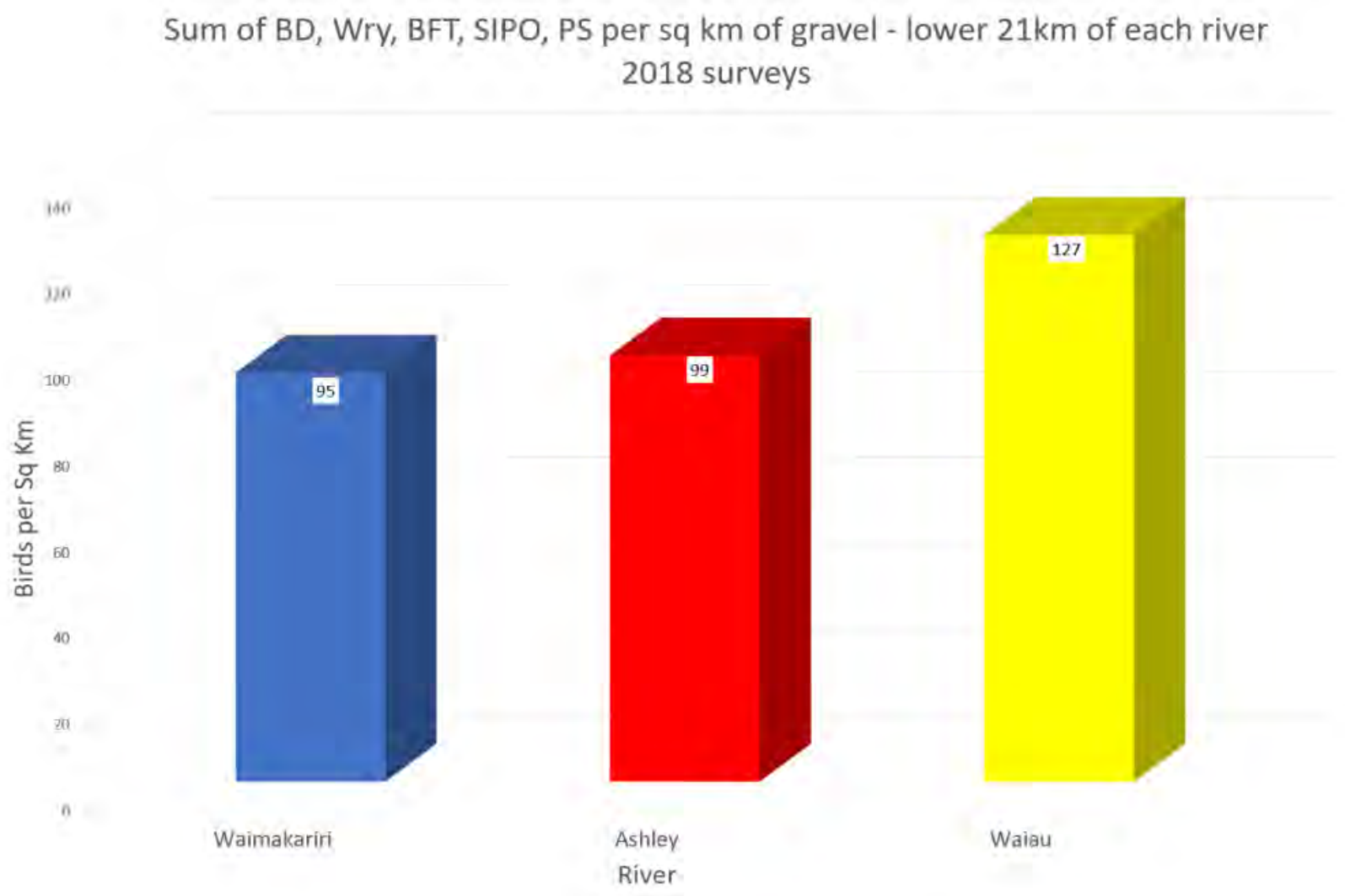
All braided rivers are different. Changing trends in bird numbers – north to south

Unknown reason for virtually no SBBGs in foothills-fed lower Ashley-Rakahuri river



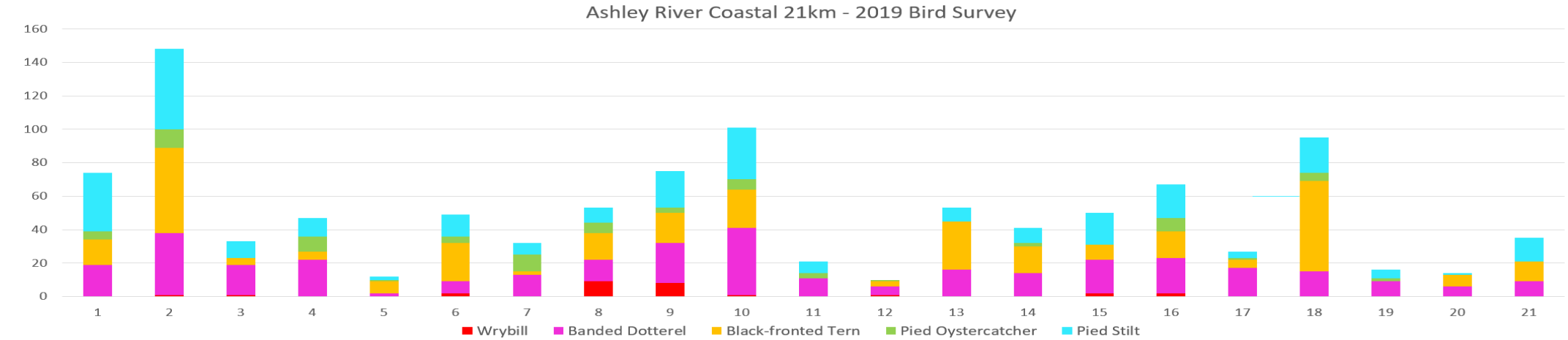


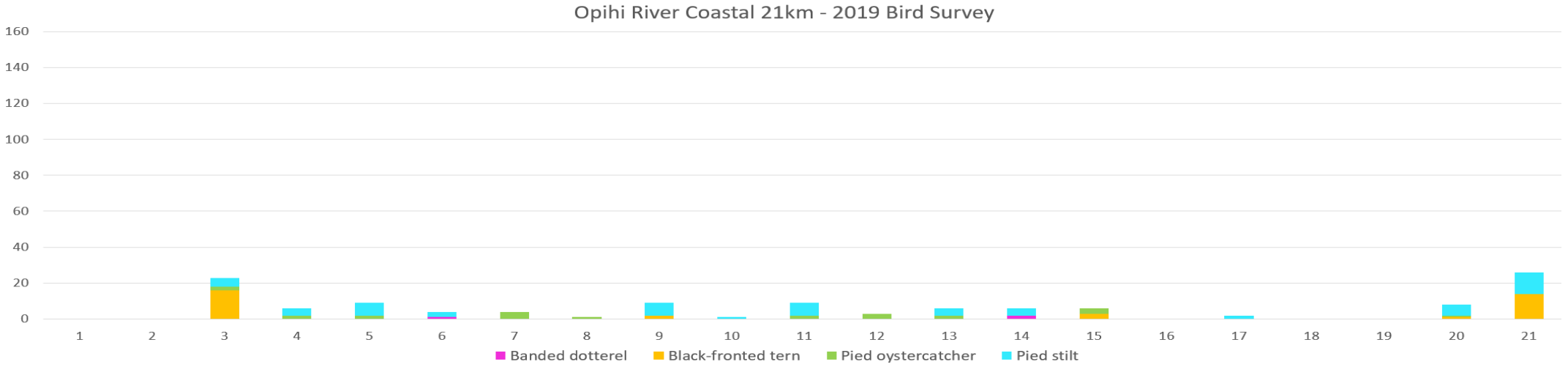
Comparative bird numbers in Waiau and Waimakariri rivers (alpine-fed) and Ashley-Rakahuri river (foothills-fed)



Comparative bird numbers in two similar sized foothills-fed rivers

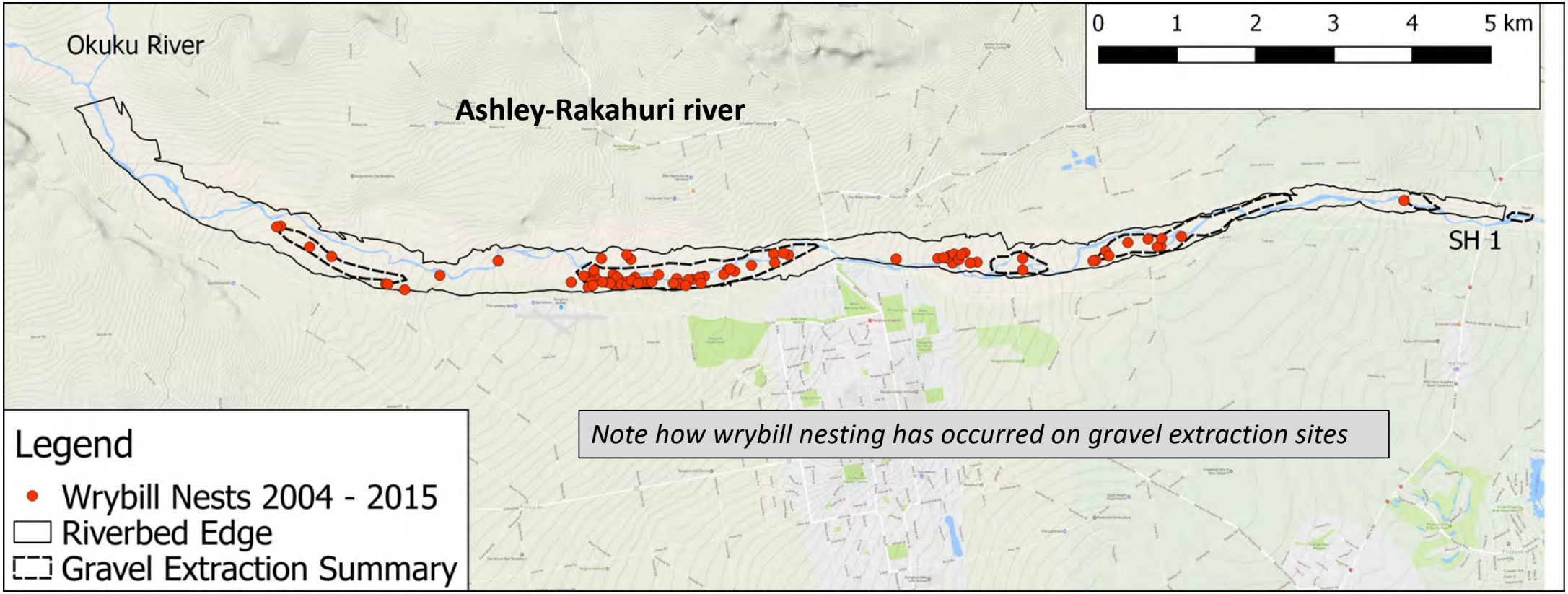
Ashley-Rakahuri and Opihi rivers





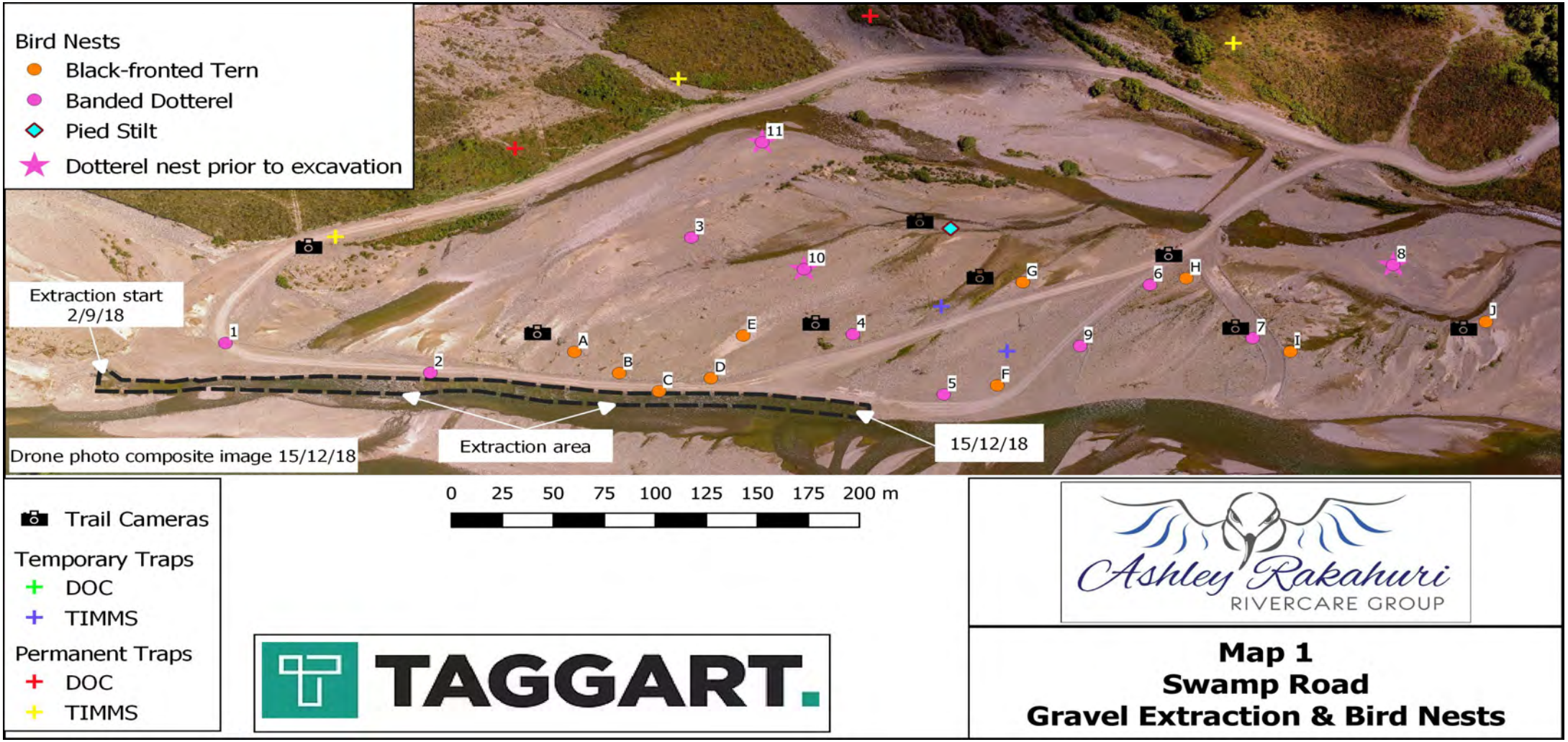
What can we do about weed invasion?

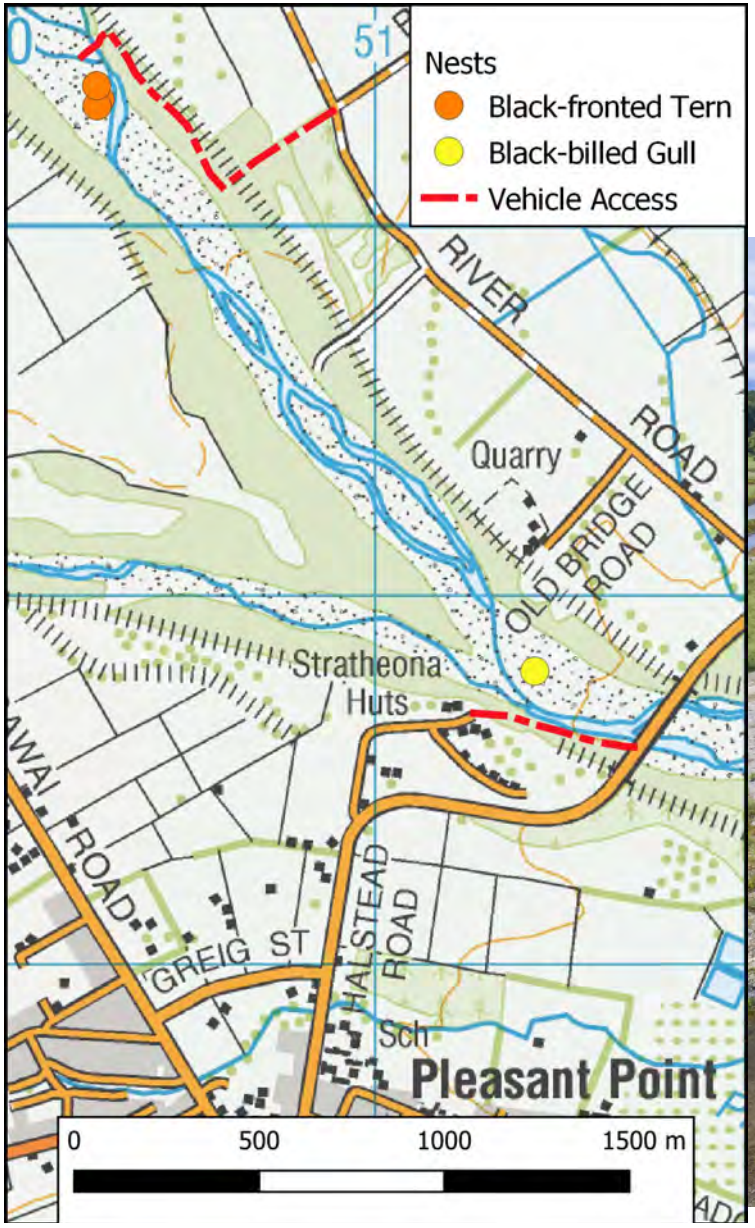
Plenty of evidence that birds will favour breeding on former shingle extraction sites



What can we do about weed invasion?

Gravel extraction co-existing with active gravel extraction: Swamp road, Ashley-Rakahuri. 2018





What can we do about weed invasion?

Combatting weed invasion – gravel extraction

Opihi river. Only colonies present where there has been recent gravel extraction.

27/12/19. Bare gravel due to recent gravel extraction in nesting area

Combatting weeds – gravel extraction. Lower Okuku river

Nesting and feeding habitat created by gravel extraction

15ha cleared on Ashley-Rakahuri in 2019 winter.

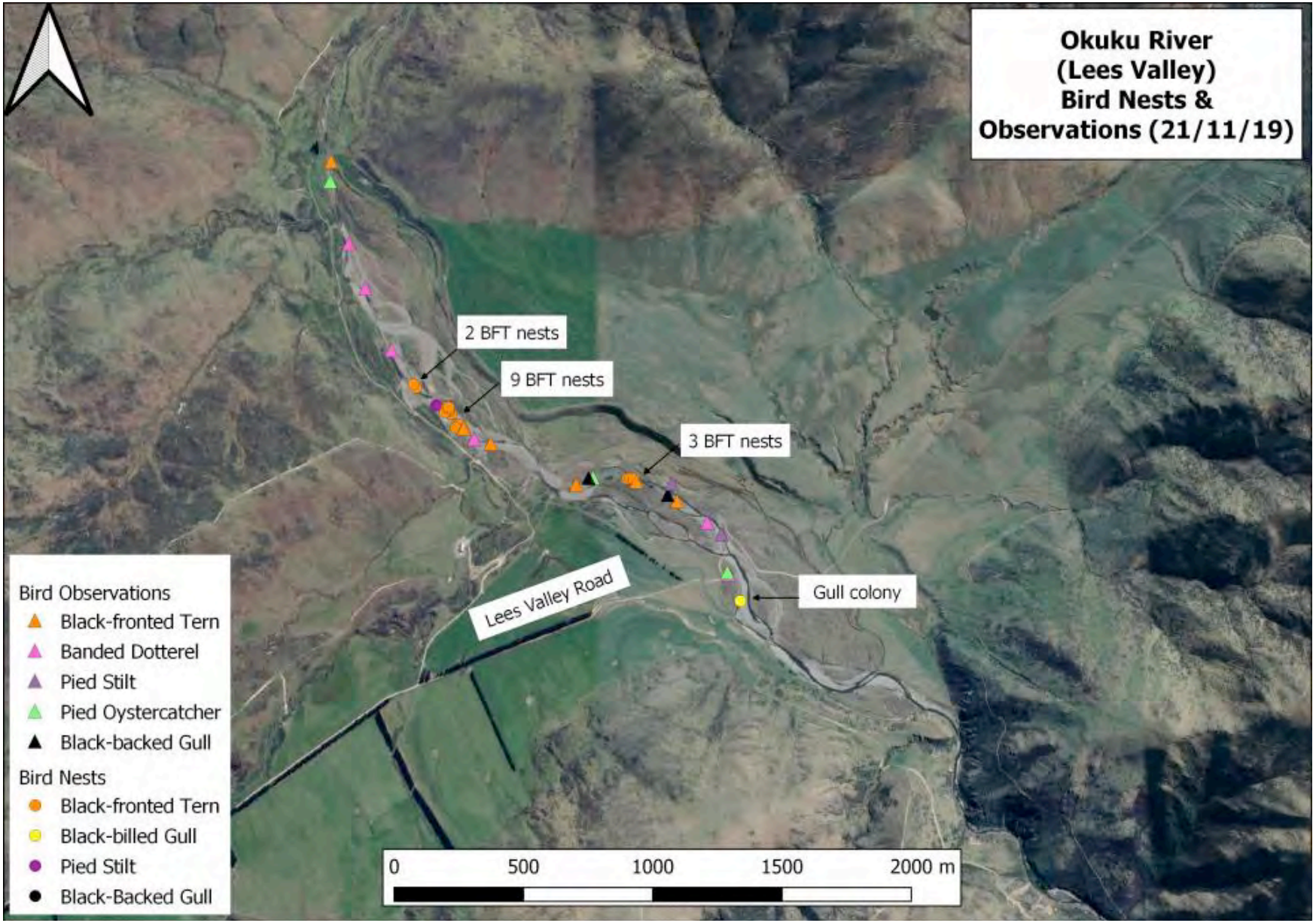
30ha proposed for 2020 winter

Combatting weed invasion. Strategic removal by dedicated machine

Tractor-mounted ripper / undercutter

Upper reaches of foothills-fed rivers not so weed affected (eg Okuku).

More suitable for successful bird breeding?



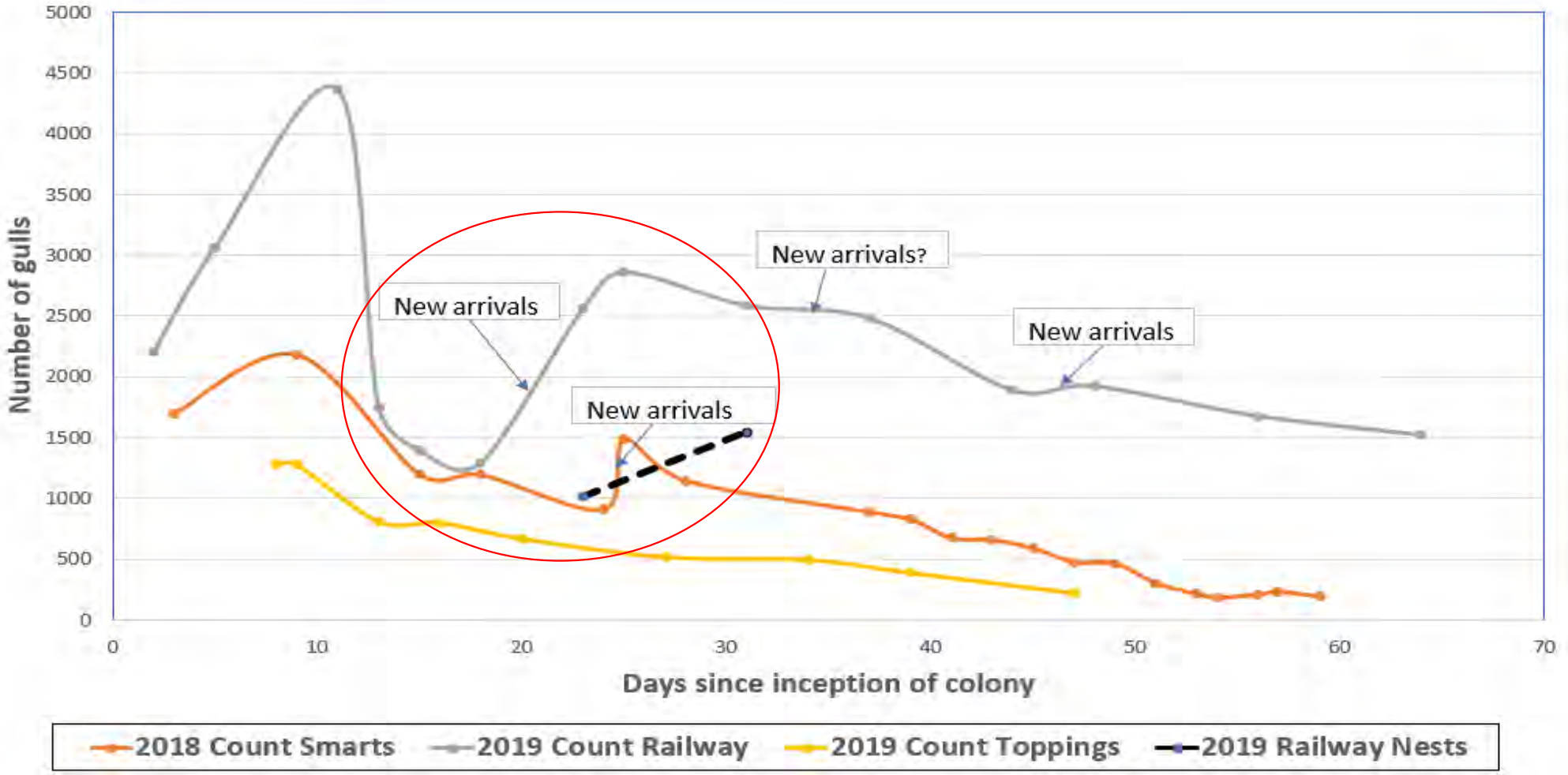
Upper Okuku river – Lees Valley

Few weeds

Successful breeding outcomes for BBG and BFT

Being less flood prone, smaller foothills-fed rivers can act as breeding refugia for birds nesting on more flood-prone alpine-fed rivers.

Eg., on the Ashley-Rakahuri river, after severe floods on the Waimakariri (16km south) in late spring, 2019.



4/12/19 – 612 adult BBG

Breeding refuge?

Eg., black billed gulls on Opihi river

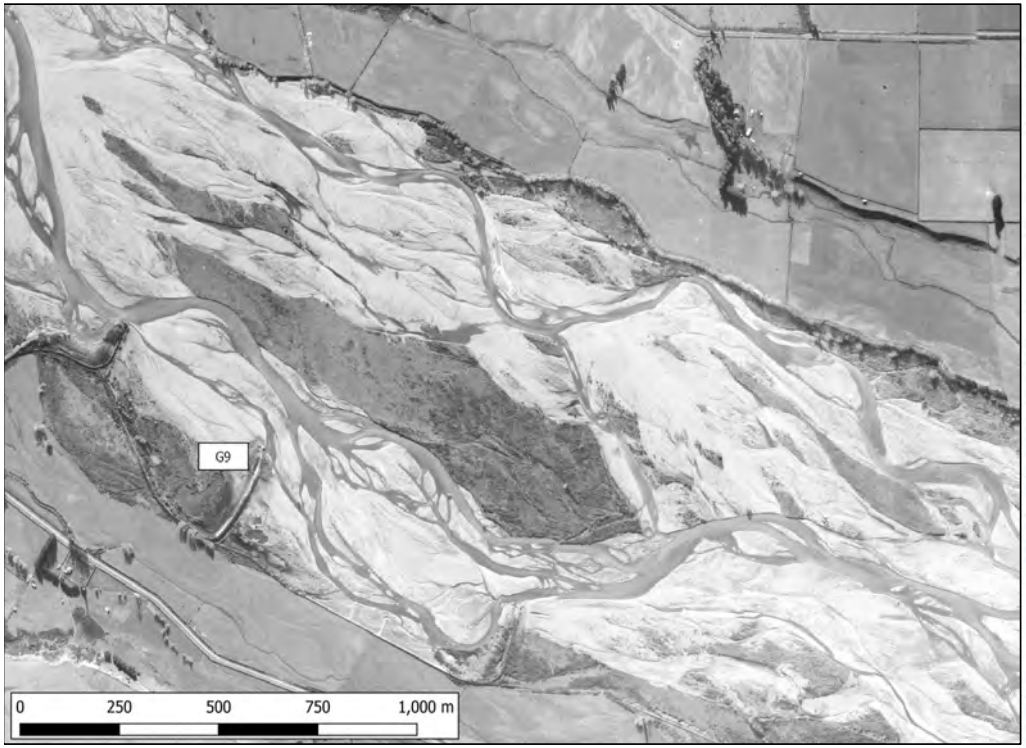
27/12/19 – 855 adult BBG

Why do we manage braided rivers?

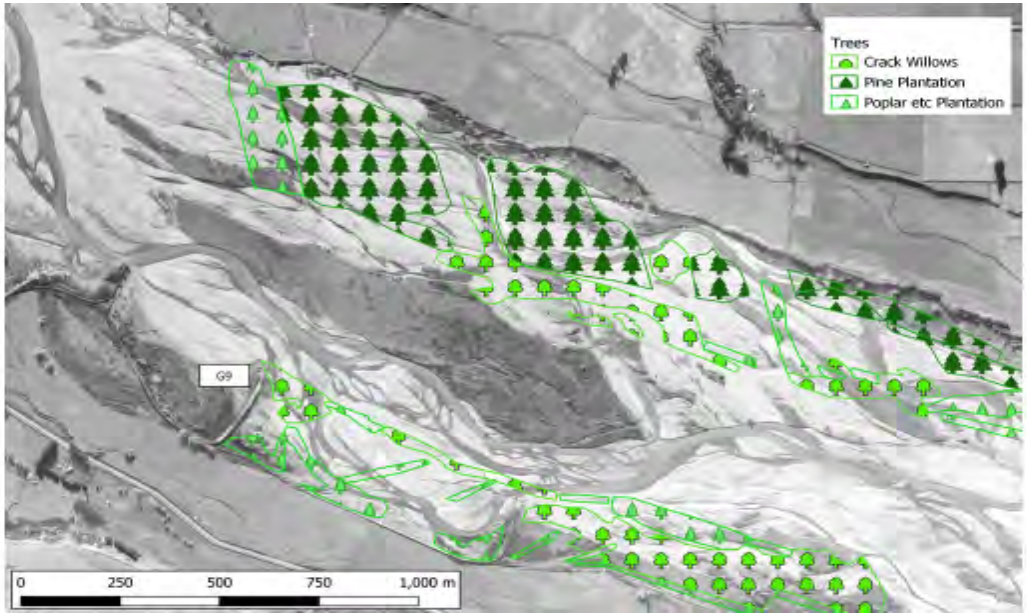
- To retain floods within fixed boundaries
- To maintain indigenous biodiversity, especially that which has evolved to feed and breed on braided rivers.
  - The major threats to indigenous biodiversity are:
    - Loss of feeding / breeding habitat, due to weed invasion
    - Losses to predators
    - Human disturbance

Is management reducing braided river habitat by facilitating excessive widening of berms, and hence reducing fairway width and braiding?

1941



1941 plus present-day trees ➡



Ashley-Rakahuri river: Groyne 9 area

2019

Smaller foothills-fed braided rivers are different

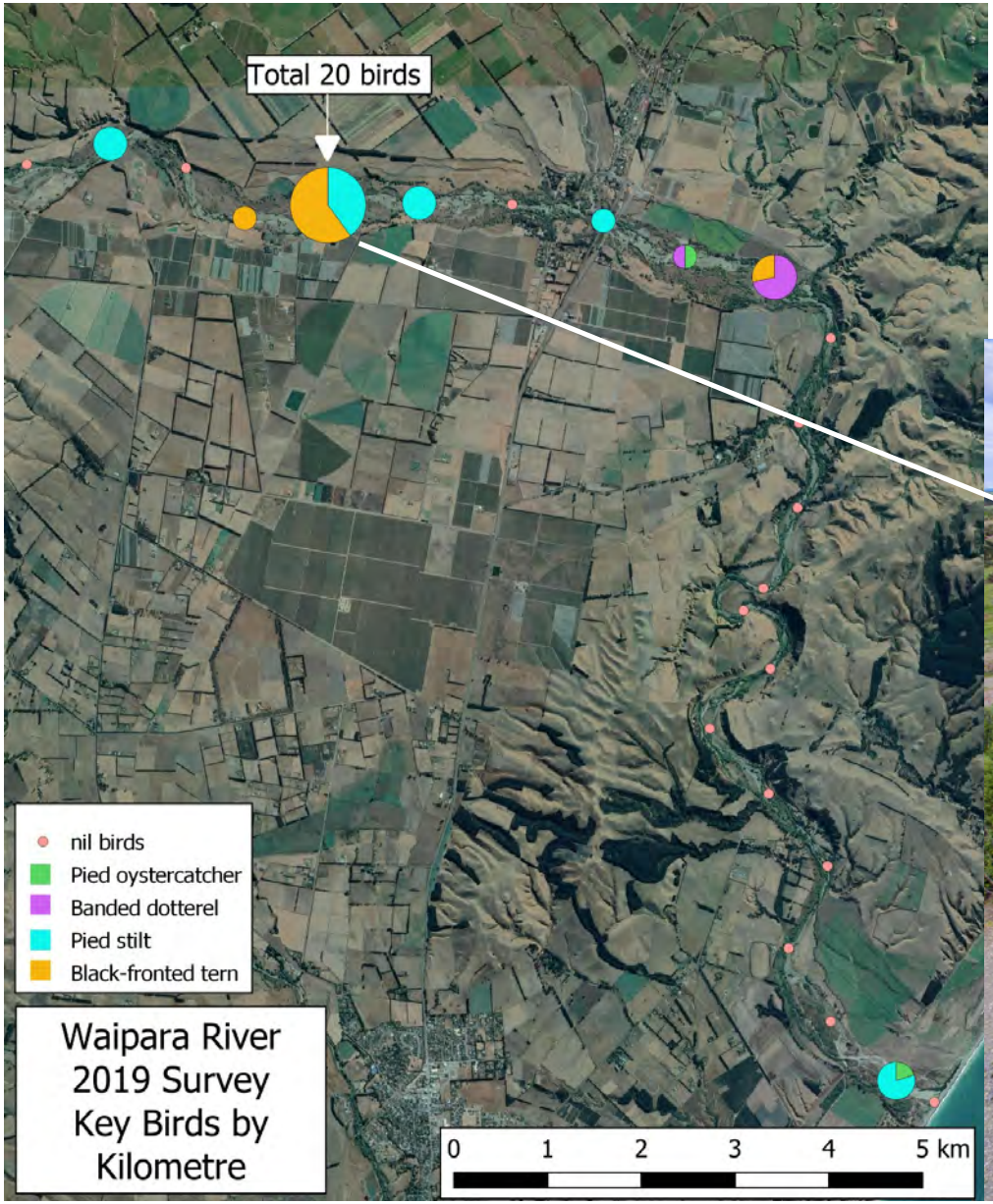
Compared to alpine-fed rivers, foothills-fed rivers are:

* less prone to all-destroying floods
* more prone to habitat loss due to weed invasion
* more prone to water abstraction problems
* more prone to drying up
* more attractive to certain species eg, black-fronted dotterel?
* less attractive to certain species eg, black-backed gulls
* more prone to ground predator problems (eg, rats) – more adjacent cover, less exposed. Greater range of predators?
* more prone to human disturbance – easier accessibility
* more attractive for management by community groups?

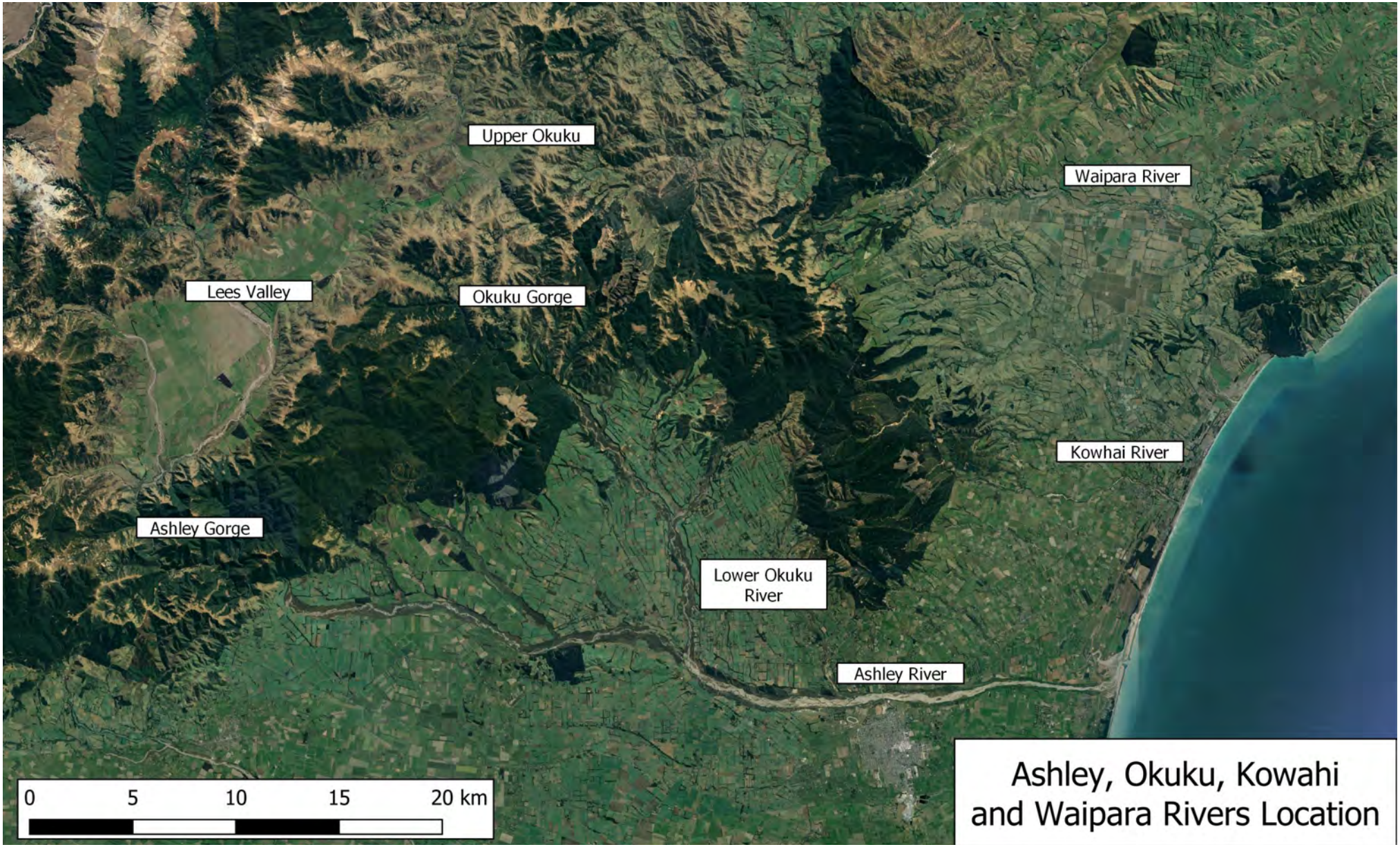
End of ppt

4/12/19 – 7 BFT, 3 nests found

27/12/19 – 2 adult BFT, 1 fledgling seen


Total 20 birds
nil birds
Pied oystercatcher
Banded dotterel
Pied stilt
Black-fronted tern
Waipara River
2019 Survey
Key Birds by
Kilometre
0
1
2
3
4
5 km


Nest in failed BFT
colony


Upper Okuku
Waipara River
Lees Valley
Okuku Gorge
Kowhai River
Ashley Gorge
Lower Okuku River
Ashley River
0 5 10 15 20 km
Ashley, Okuku, Kowahi and Waipara Rivers Location