

Distribution and long term population trends of banded dotterels on braided rivers in New Zealand

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Banded dotterel images: Ailsa Howard

Introduction



- Historically a common bird breeding in a wide range of habitat types
- In early 1980s, estimated population of 40,000 – 60,000
- Numerous studies shown high levels of predation
- Ongoing habitat loss (breeding and wintering grounds)
- Anecdotal declines

Objectives

- Collate banded dotterel counts from braided rivers across New Zealand
- Estimate population trends
- Use these data to estimate:
 - Rates of population change
 - Appropriateness of the threat status given to this species
- Determine whether the few predator control initiatives on braided rivers result in increases in banded dotterel numbers



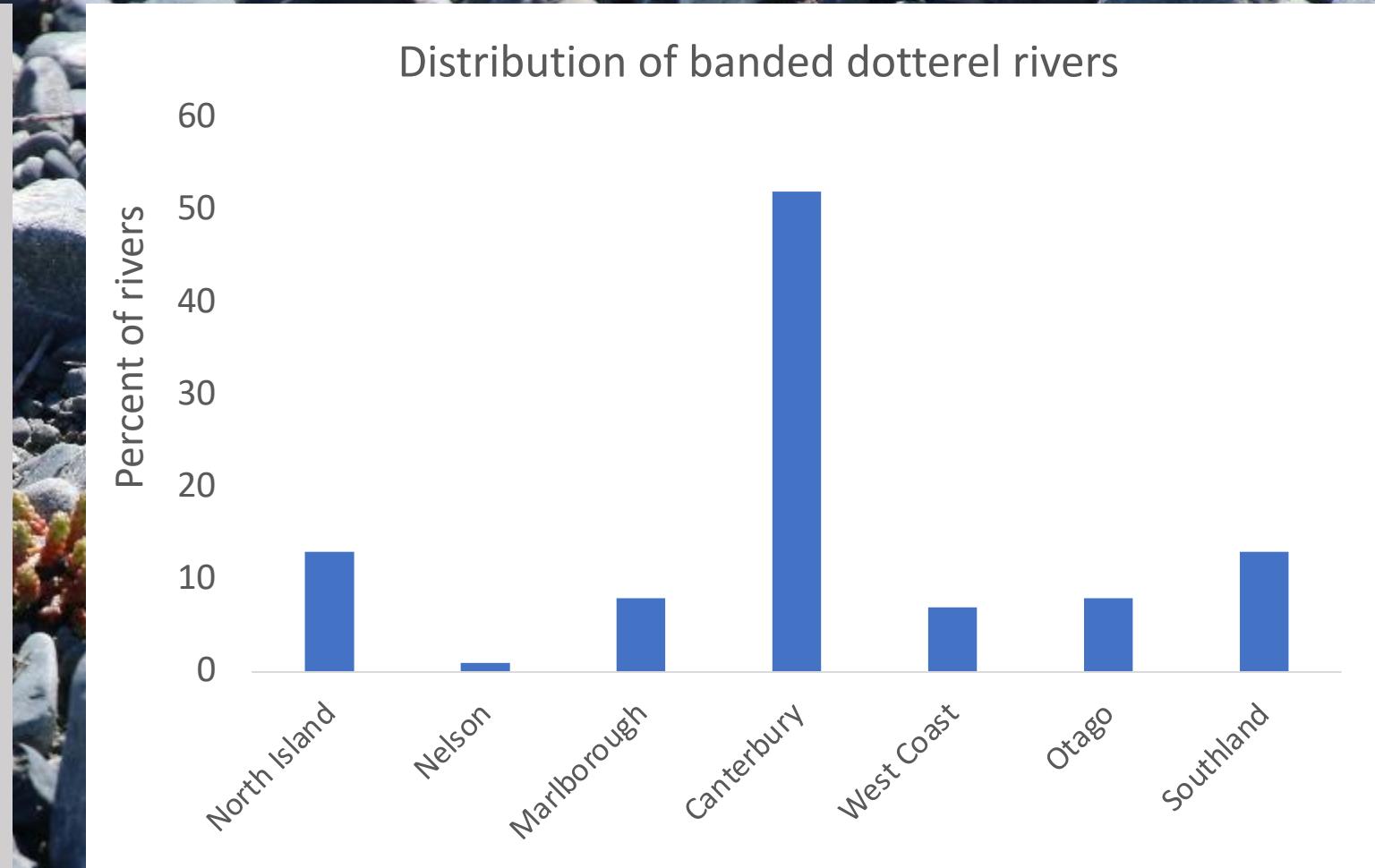


Methods – Braided river bird counts

- Standardised walk-through surveys
- Only used counts that were done in the same way each time
 - Precluded a large number of non-standard counts
- Analysed using generalized linear models (>4 counts/river)

Number of populations

- Collated counts on 119 braided rivers
- n = 453 counts
- 3,240 km total
- 1962 to 2017
- Sum of most recent counts = 12,730 dotterels
- Sum of maximum counts = 19,329 dotterels



Number of populations

- Largest concentration - 3 Hawkes Bay rivers (2,851)
- The ‘Top Ten’ rivers
 - Ngaruroro – 1,193,
 - Wairau – 1,178
 - Tukituki – 1,064,
 - Godley – 705
 - Rakaia – 660
 - Rangitata – 534
 - Tutaekuri – 509
 - Tasman – 741
 - Oreti – 416
 - Cass – 412
- Densities: 0.05 birds/km – 43 birds/km

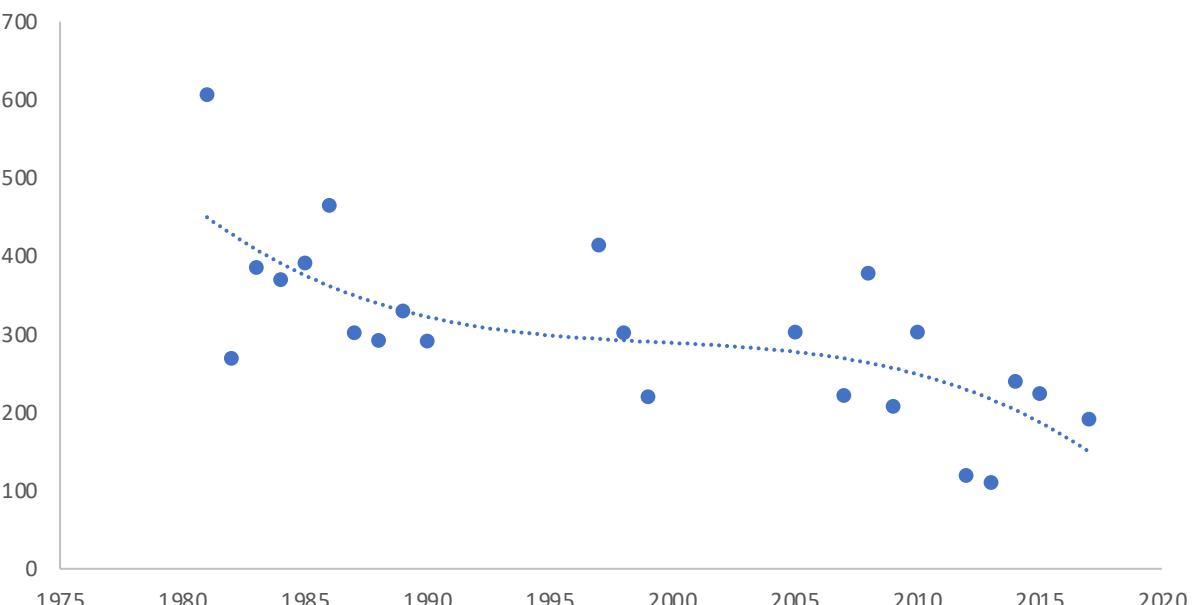


Population trends on rivers

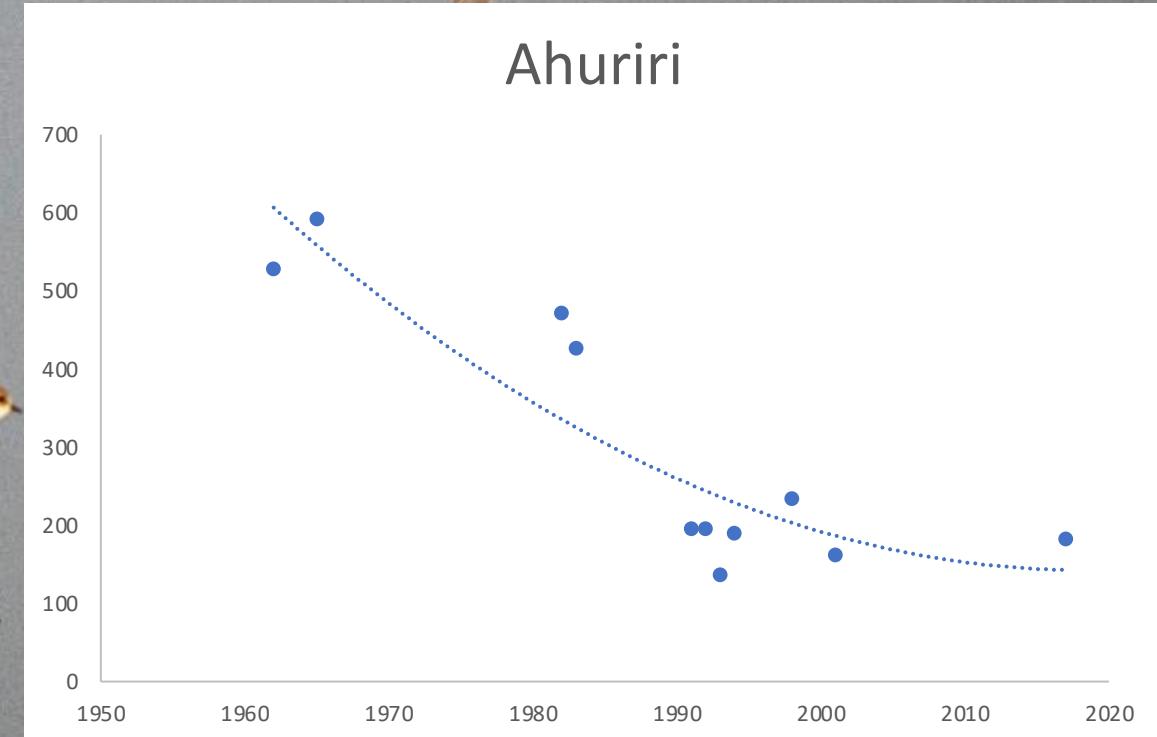
- Estimated for 33 rivers
- Trends ranged from +4% to -8.7% per annum
- Overall average = -3.7% pa

Examples

South Ashburton

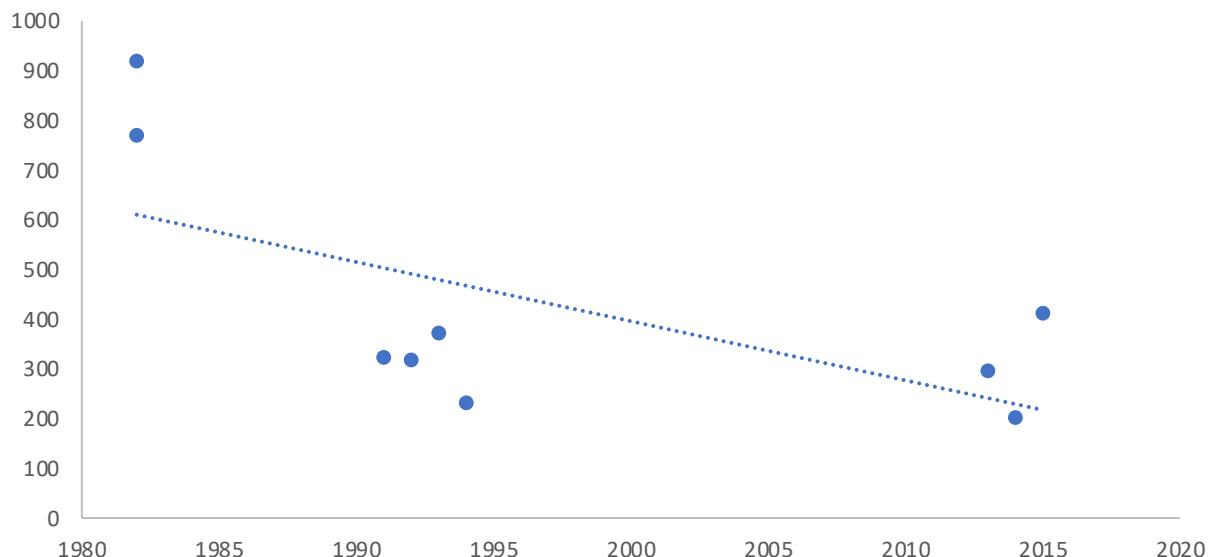


Ahuriri

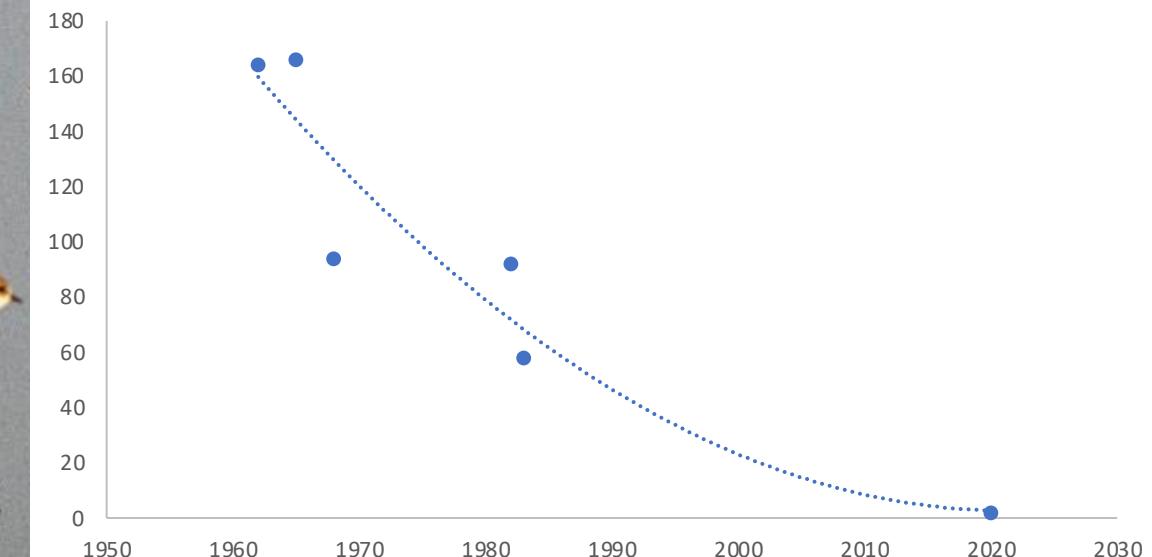


Examples

Cass

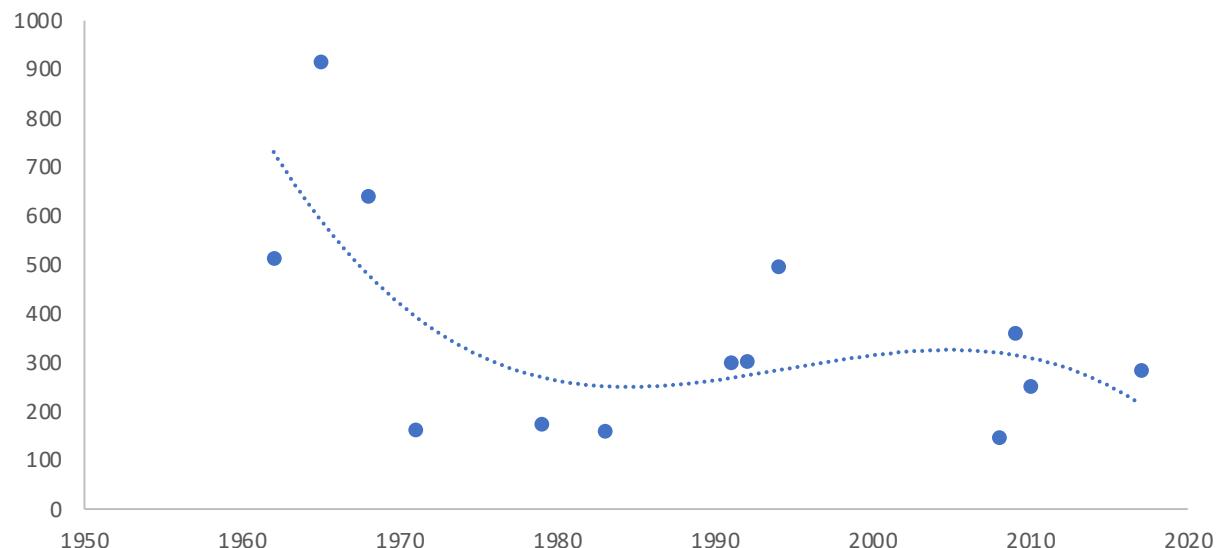


Hakataramea

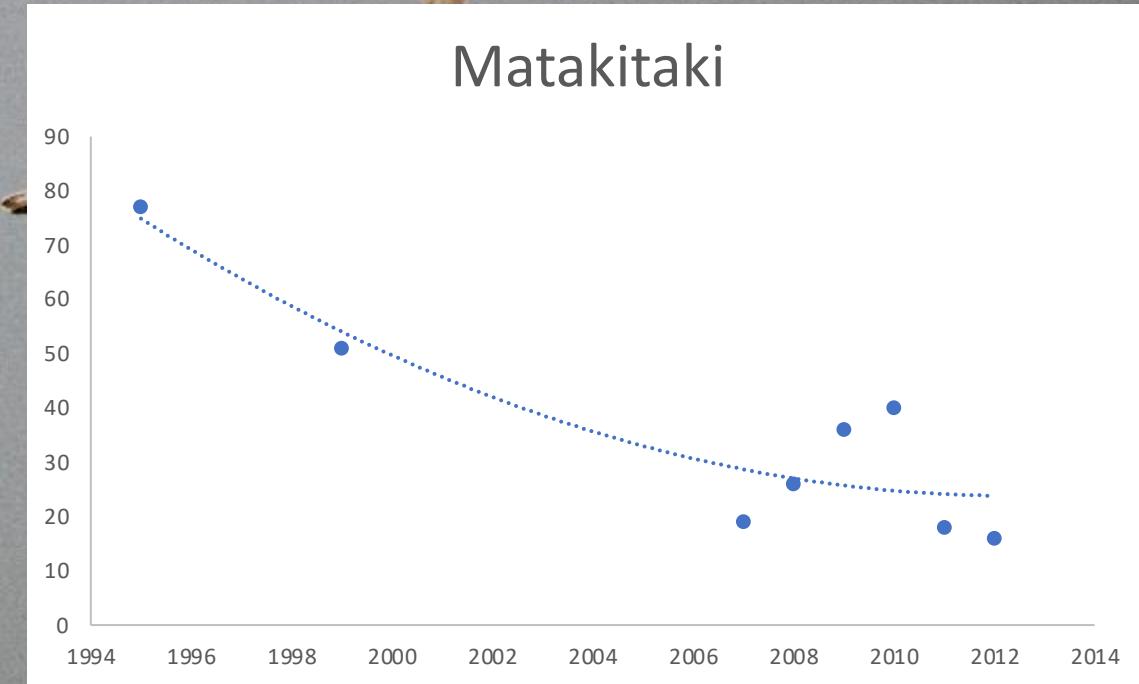


Examples

Tekapo

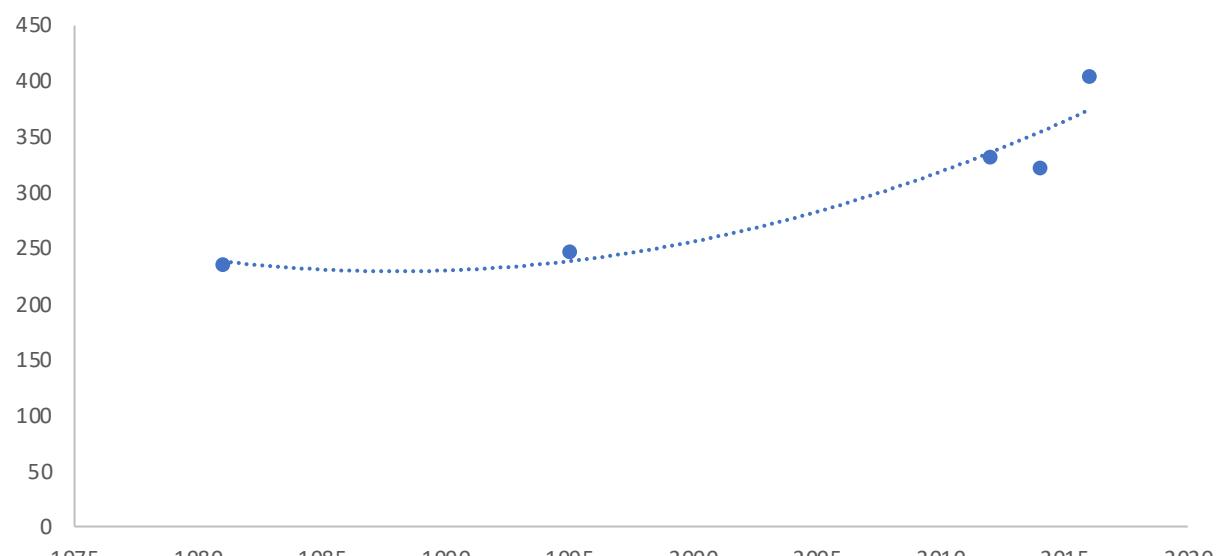


Matakitaki

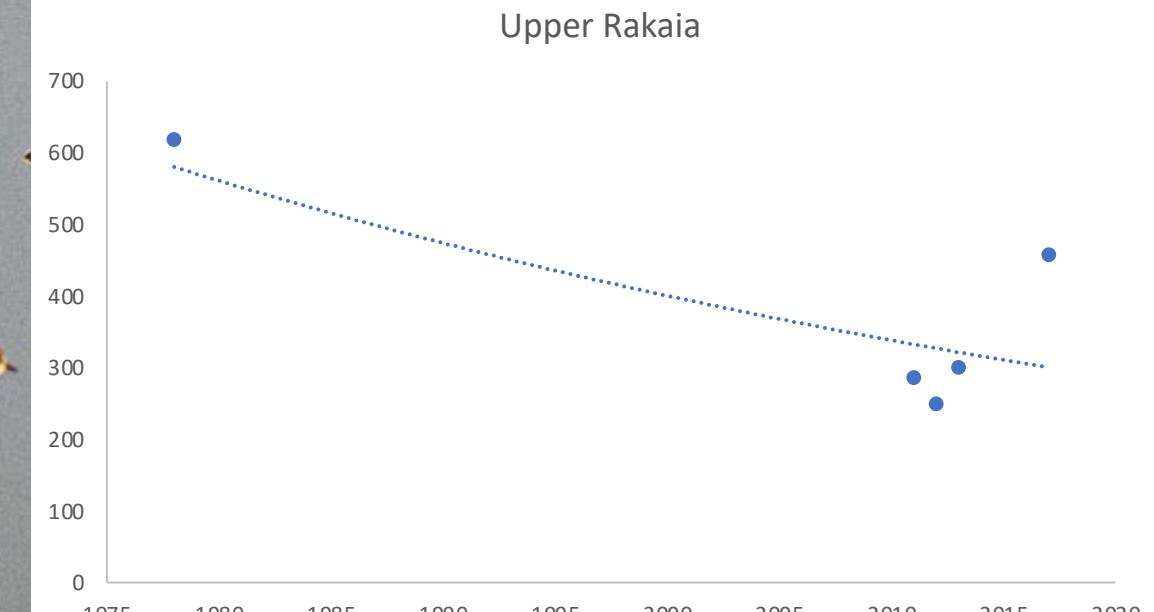


Examples

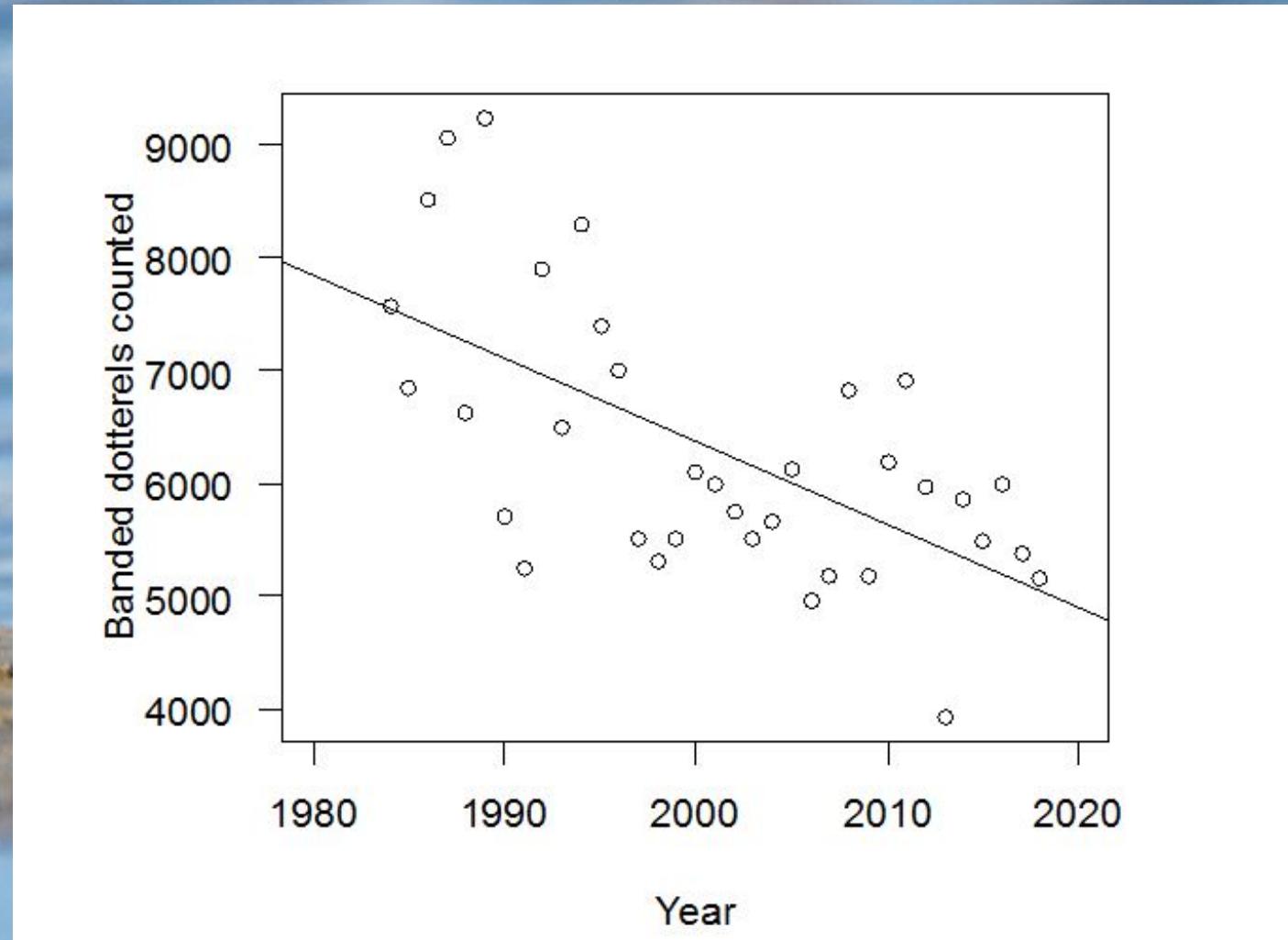
Upper Waimakariri



Upper Rakaia

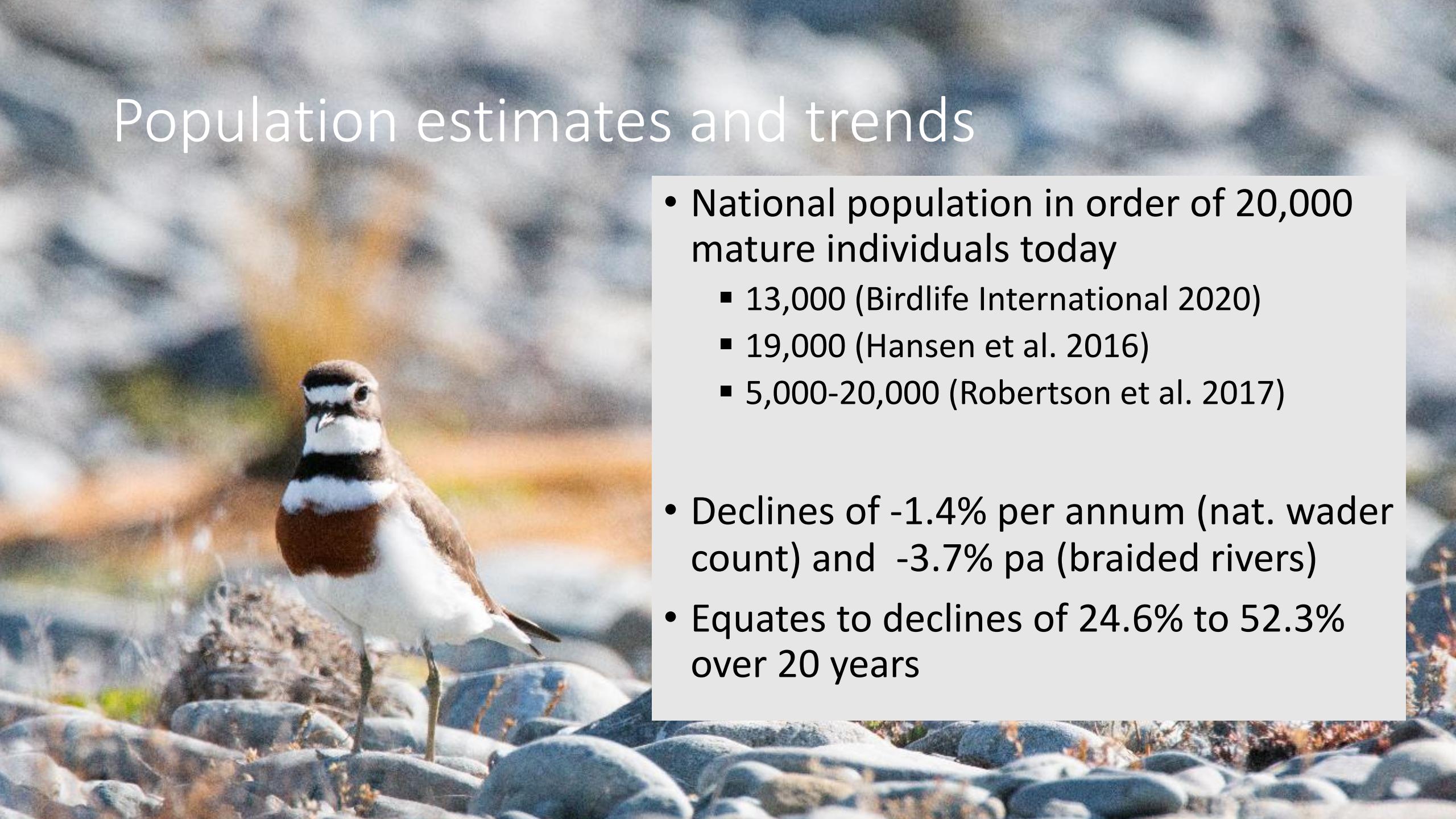


Estimated rates of decline – National wader count



Population estimates and trends

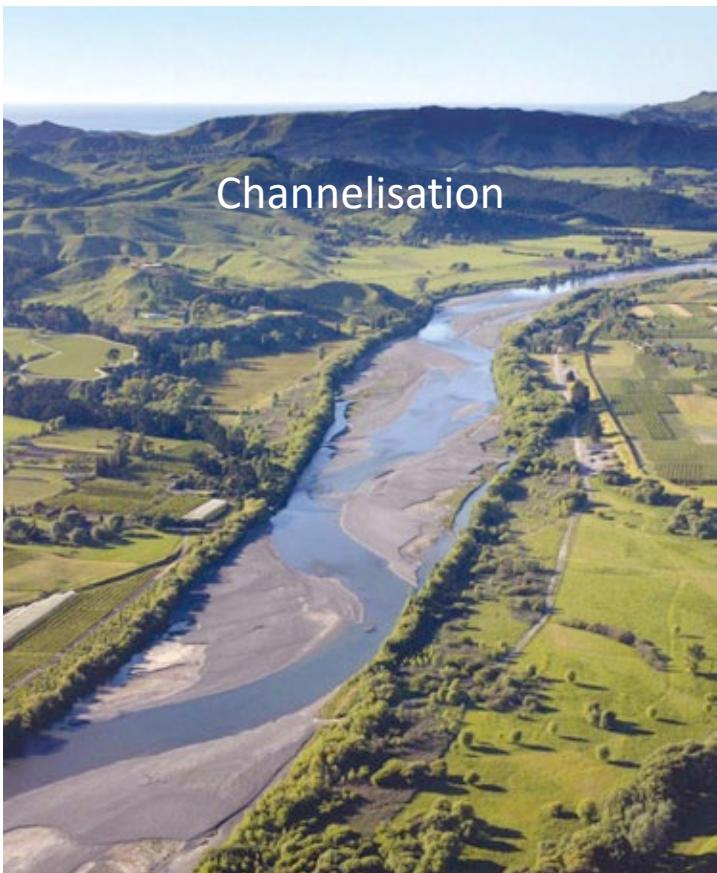
- National population in order of 20,000 mature individuals today
 - 13,000 (Birdlife International 2020)
 - 19,000 (Hansen et al. 2016)
 - 5,000-20,000 (Robertson et al. 2017)
- Declines of -1.4% per annum (nat. wader count) and -3.7% pa (braided rivers)
- Equates to declines of 24.6% to 52.3% over 20 years



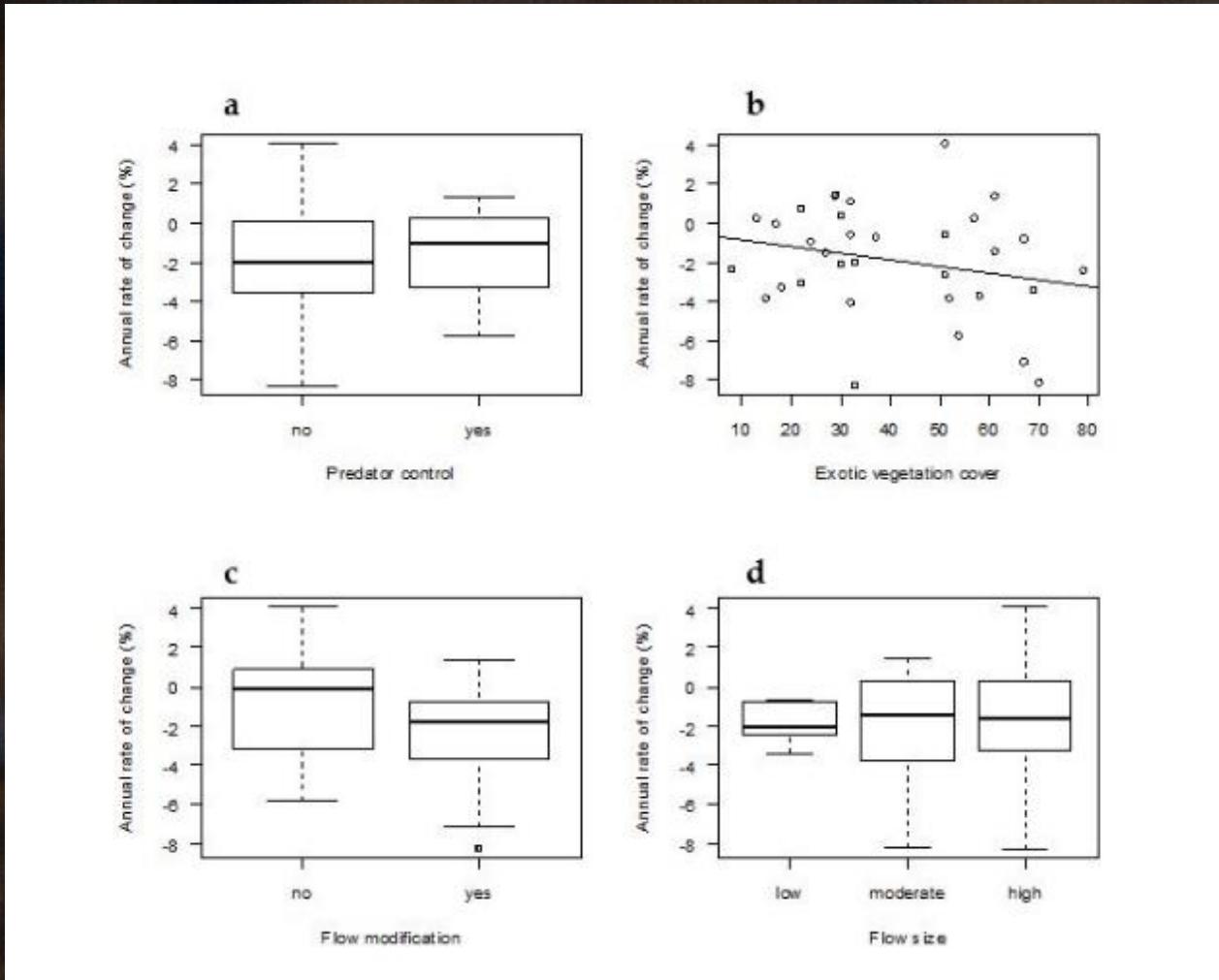
Threat status

- ‘Near Threatened - Decreasing’ – IUCN Red List
- ‘Nationally Vulnerable’ – NZ List
(predicted decline of 30–70% over three generations)
- Depends entirely on what classification system you use and how you estimate generation time

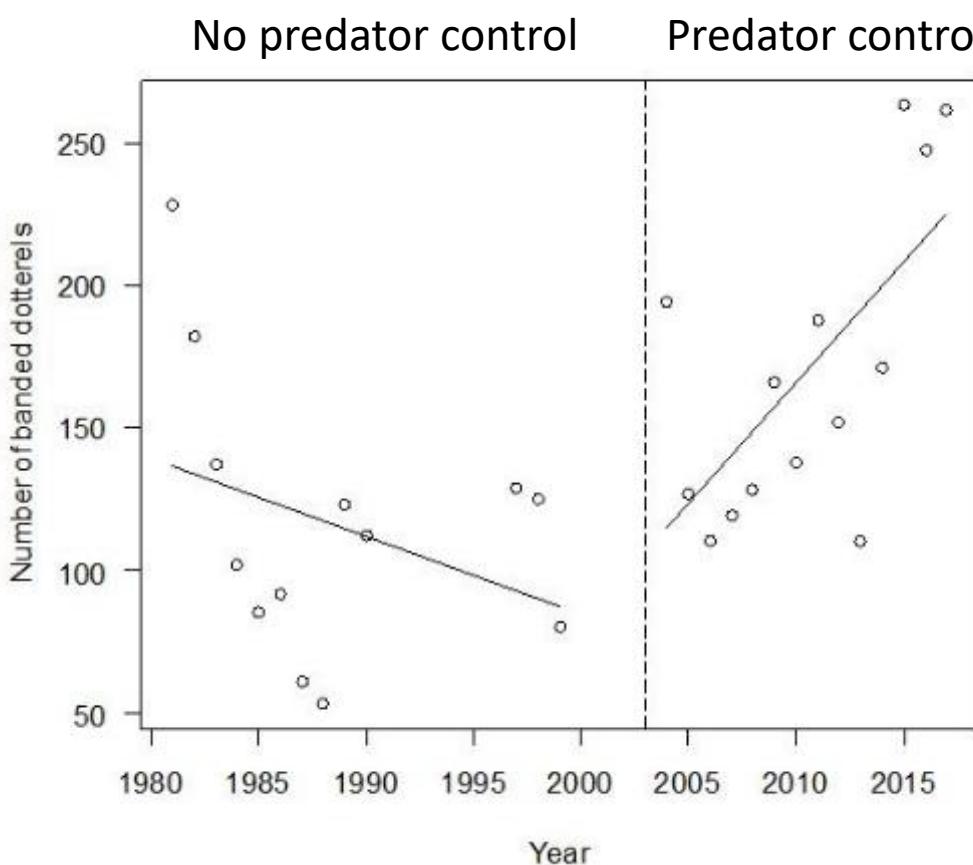




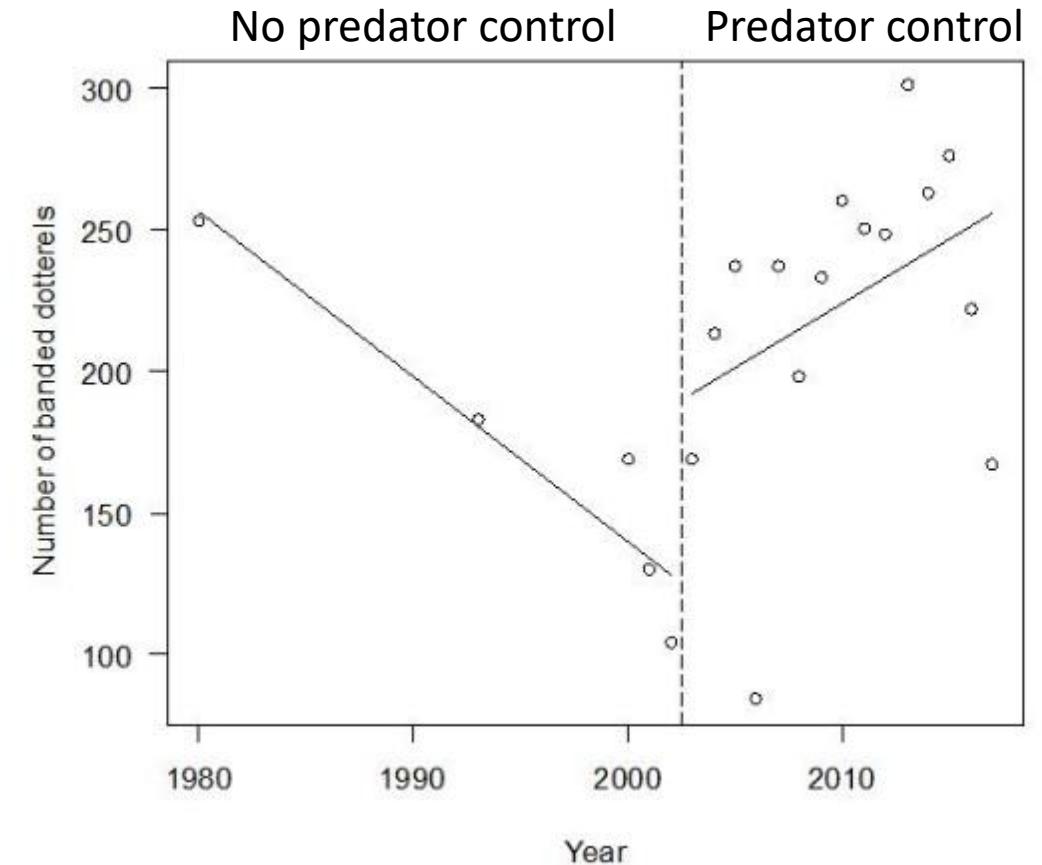
Factors influencing populations



Can we reverse the decline?



Upper Ashburton River



Ashley River

Conclusions



- Banded dotterels in steady decline
- Average -3.7% pa decline on braided rivers
- Equates to 52.3% decline over 20 years
- Unsure of how representative trends are of other habitat types
- National population in order of 20,000 mature individuals
- Banded dotterels facing numerous threats – not just on braided rivers
- Predator control programmes starting to demonstrate positive trends

Thank you

This talk was based on the following paper:

O'Donnell C.F.J.; Monks, J.M. 2020. Distribution, long term population trends and conservation status of banded dotterels (*Charadrius bicinctus bicinctus*) on braided rivers in New Zealand. *Notornis* 67: 733-754.

https://www.researchgate.net/publication/348281273_Distribution_long_term_population_trends_and_conservation_status_of_banded_dotterels_Charadrius_bicinctus_bicinctus_on_braided_rivers_in_New_Zealand

References

BirdLife International. 2020. *Charadrius bicinctus*. The IUCN Red List of Threatened Species 2020: e.T22693845A180230226. <https://dx.doi.org/10.2305/IUCN.UK.2020-3.RLTS.T22693845A180230226.en>. Downloaded on 13 July 2021.

Hansen, B.D., Fuller, R.A., Watkins, D., Rogers, D.I., Clemens, R.S., Newman, M., Woehler, E.J. and Weller, D.R. (2016) Revision of the East Asian-Australasian Flyway Population Estimates for 37 listed Migratory Shorebird Species. Unpublished report for the Department of the Environment. BirdLife Australia, Melbourne.

Robertson, H.A.; Baird, K.; Dowding, J.E.; Elliott, G.P.; Hitchmough, R.A.; Miskelly, C.M.; McArthur, N.; O'Donnell, C.F.J.; Sagar, P.M.; Scofield, R.P.; Taylor, G.A. 2017. Conservation status of New Zealand birds, 2016. New Zealand Threat Classification Series 19. Department of Conservation, Wellington. 23 pp.