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Citizen science and collaborative programs help reveal coastal waterbird trends and understand the mechanisms underlying those trends in the Salish Sea and Pacific coast

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Citizen science and collaborative programs help reveal coastal waterbird trends and understand the mechanisms underlying those trends in British Columbia



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INTRODUCTION

- Waterbirds → Indicators of ecosystem function and changes
- BC coasts → Globally important populations of 22 species
- Major trend differences between overwintering bird communities on our inner and outer coasts?

METHODS

- Citizen science data = British Columbia Coastal Waterbird Survey (1999 – 2019)
- 326 survey sites
- 20-year trends in counts (mean route-level count in a given year) estimated using Bayesian models
- Influence of ecological traits: dietary specialization, migration strategy



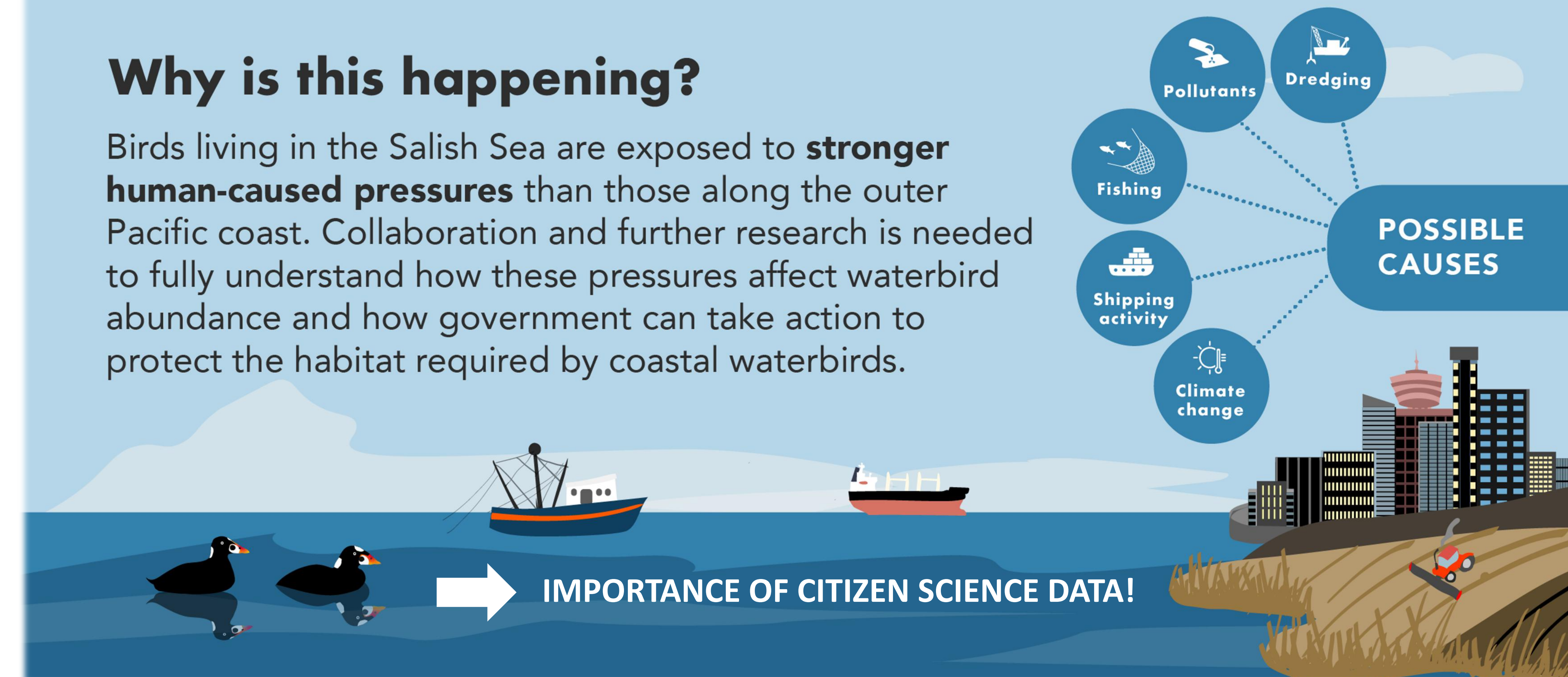
RESULTS

Birds indicate greater environmental pressures in Salish Sea



Why is this happening?

Birds living in the Salish Sea are exposed to **stronger human-caused pressures** than those along the outer Pacific coast. Collaboration and further research is needed to fully understand how these pressures affect waterbird abundance and how government can take action to protect the habitat required by coastal waterbirds.



NEXT STEPS

Ongoing **international initiatives** and **collaborative efforts** to **study threats** and **protect marine/coastal birds** across the Pacific Flyway, especially in the Salish Sea:

- Migratory Shorebird Project
- Pacific Birds Habitat Joint Venture
- Marine Bird Working Group (PSEMP)
- Indigenous partnerships → Capacity building for monitoring
- BC government → BC Coastal Marine and Together for Wildlife Strategies
- Important Bird Areas & Key Biodiversity Areas → Conservation tools

ACKNOWLEDGEMENTS

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FURTHER INFORMATION

- Ethier et al. 2020. *Avian Conserv. Ecol.* 15:20.
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