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## Effects of vessel presence on northern resident killer whale rubbing behaviour

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## Introduction

- Vessel presence in the ocean has a significant impact on northern resident killer whales (NRKW).
- Past studies have demonstrated that NRKWs are less likely to engage in beach rubbing when vessels are nearby.
- In this study, our objectives are to determine rubbing beach preference, critical distance, and activity budget of NRKWs in the presence and absence of vessels.

## Goal and Objectives

Assess the effects of vessel disturbance on NRKW beach rubbing behaviour.

1. Determine the role of vessel distance from NRKW
2. Determine the role of tide height
3. Establish beach usage frequency

## Methods

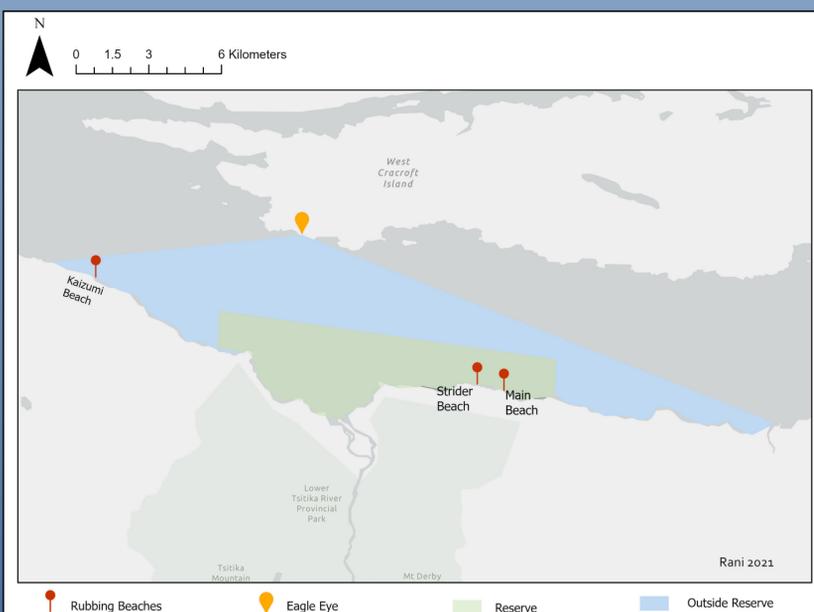


Figure 1: Study area – in and adjacent to the Robson Bight (Michael Bigg) Ecological Reserve (RBMER)

## Results

- Proximity of vessels and tide height influence the beach rubbing behaviour of NRKWs.
- Protection of their critical habitats (in form of MPAs) is beneficial for NRKWs to facilitate and perform their natural behaviours free from harassment.

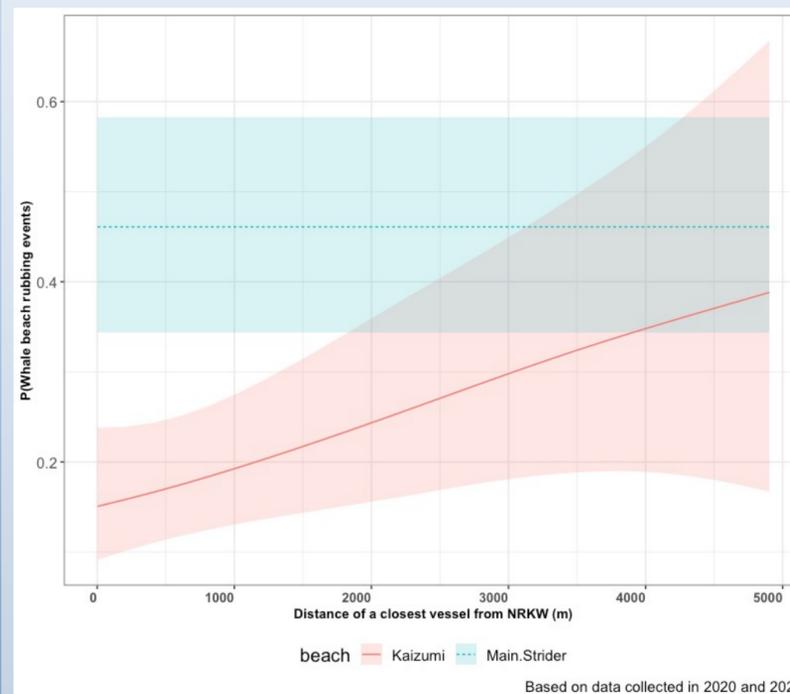


Figure 2: Probability of NRKW beach rubbing at Kaizumi and Main/Strider at different distances of the nearest vessel using GAMM analysis

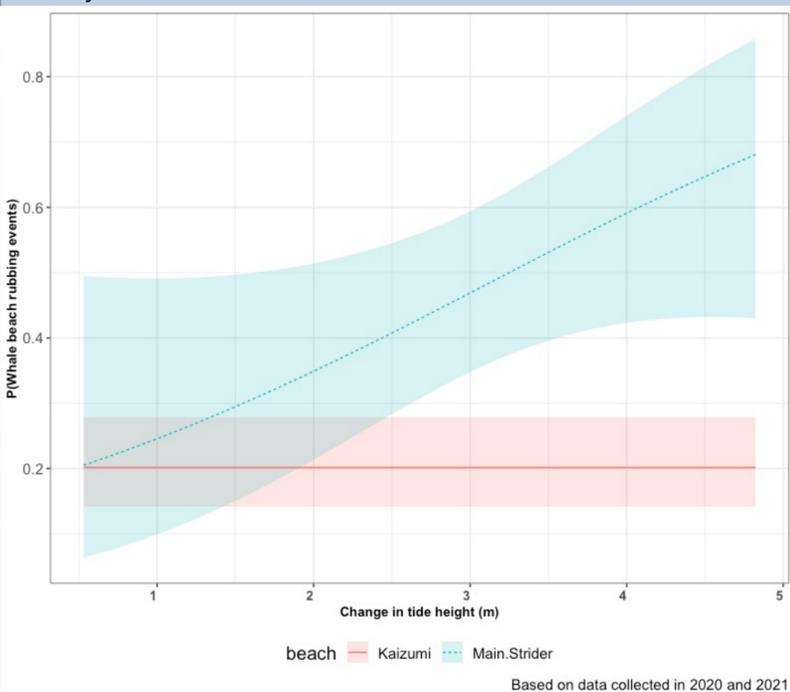


Figure 3: Probability of NRKW beach rubbing at Kaizumi and Main/Strider at different tide heights using GAMM analysis

## Discussion

Marine reserve provides sanctuary and facilitates NRKWs' beach rubbing behaviour, while vessel disturbances hinder such behaviour outside reserve.

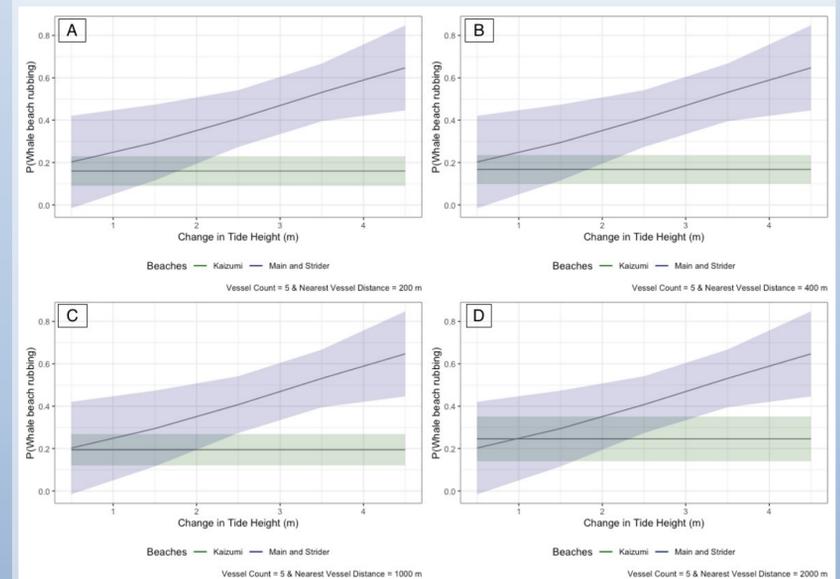


Figure 4: Predictions of beach rubbing probability at the distance of 200 m, 400 m, 1000 m, and 2000 m, at Kaizumi and Main/Strider

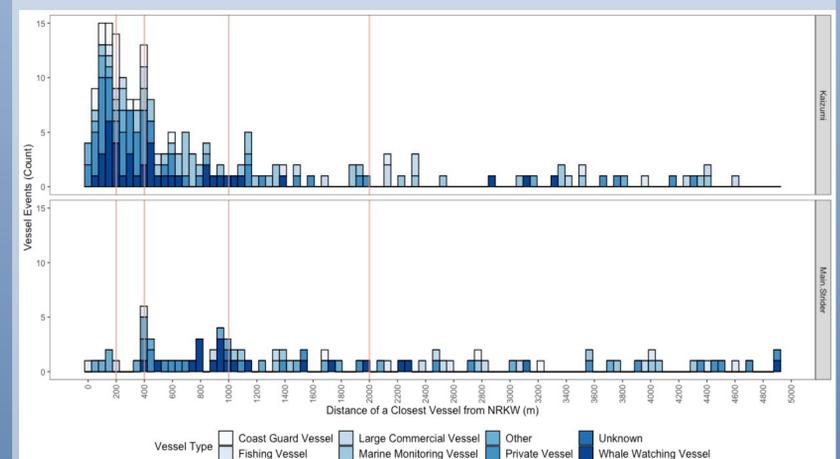


Figure 5: Distribution of closest vessel with type and distance at Kaizumi and Main/Strider.

## Resources



## Acknowledgements

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