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Introduction

- Cetacean species are thought to be critically at risk from anthropogenic disturbances (e.g., climate change, pollution and over-harvesting of marine habitats).
- Identifying cetacean hotspots for conservation management is therefore critical.
- Conservation efforts in Aotearoa New Zealand may be particularly important because it is recognised as a globally important cetacean diversity hotspot (53% of the world's cetacean species use New Zealand waters).

Using geographic predictions of 30 cetacean taxa,

hotspots within New Zealand waters were identified.

Methods

Geographic predictions were developed by Stephenson et al. (2020) using two methods:

- 15 taxa: Relative Environmental Suitability 🦊 data 🚚 certainty)
- 15 taxa: Boosted Regression Tree models 🔶 data 숙 certainty)

Two spatial estimates of uncertainty were available:

- Prediction uncertainty for each taxa
- Number and distribution of cetacean sighting records

Using the geographic predictions and associated uncertainty estimates, cetacean hotspots were **identified** using two methods:

- Estimates of cetacean richness
- Spatial prioritisation analysis

Increasing levels of uncertainty were incorporated and the effect of this investigated on the distribution of hotspots

References:

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Areas consistently highlighted as important with increasing weighting of uncertainty \rightarrow Confident high value for conservation (e.g. Kermadec Ridge, Chatham Rise and Islands, Kaikoura coastline, Cook Strait)

Areas highlighted as important with low weighting of uncertainty but not with high weighting of uncertainty -> high biological values but uncertain (e.g., vast offshore areas where little sampling exists but where rare species may be predicted to occur) Areas not highlighted as important with low weighting of uncertainty but increases with high weighting of uncertainty -> moderate levels of importance with high certainty (e.g., East Cape, South Taranaki Bight and the west coast of South Island)