

North Canterbury Marine Conservation Stocktake

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North Canterbury Marine Conservation Stocktake

OBJECTIVES

- 1) Provide baseline knowledge on our local marine environment and its conservation needs.
- 2) Identify topics or projects suitable for F&B NC to engage with from
 - Online resources / internet search
 - Interviewing individuals, groups and organisations involved in marine research and conservation in the North Canterbury marine environment.



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OBJECTIVES

Tonight's focus:

Present and discuss the options identified.

Your feedback invited!



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BACKGROUND

Marine ecosystems are complex.

Diversity of habitats based on parameters like:

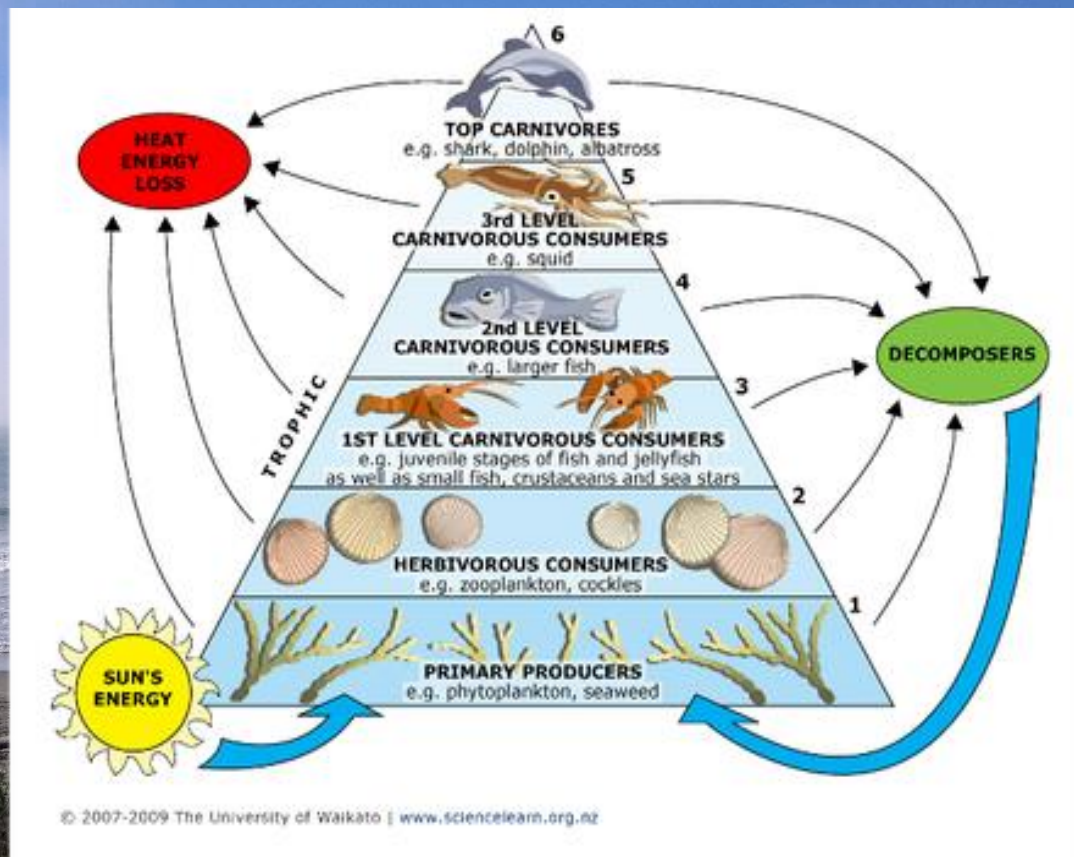
- Wave action / Turbulence
- Light
- Temperature
- Salinity
- Dissolved gases
- Acidity
- Substrate
- Plant cover
- Nutrients



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BACKGROUND

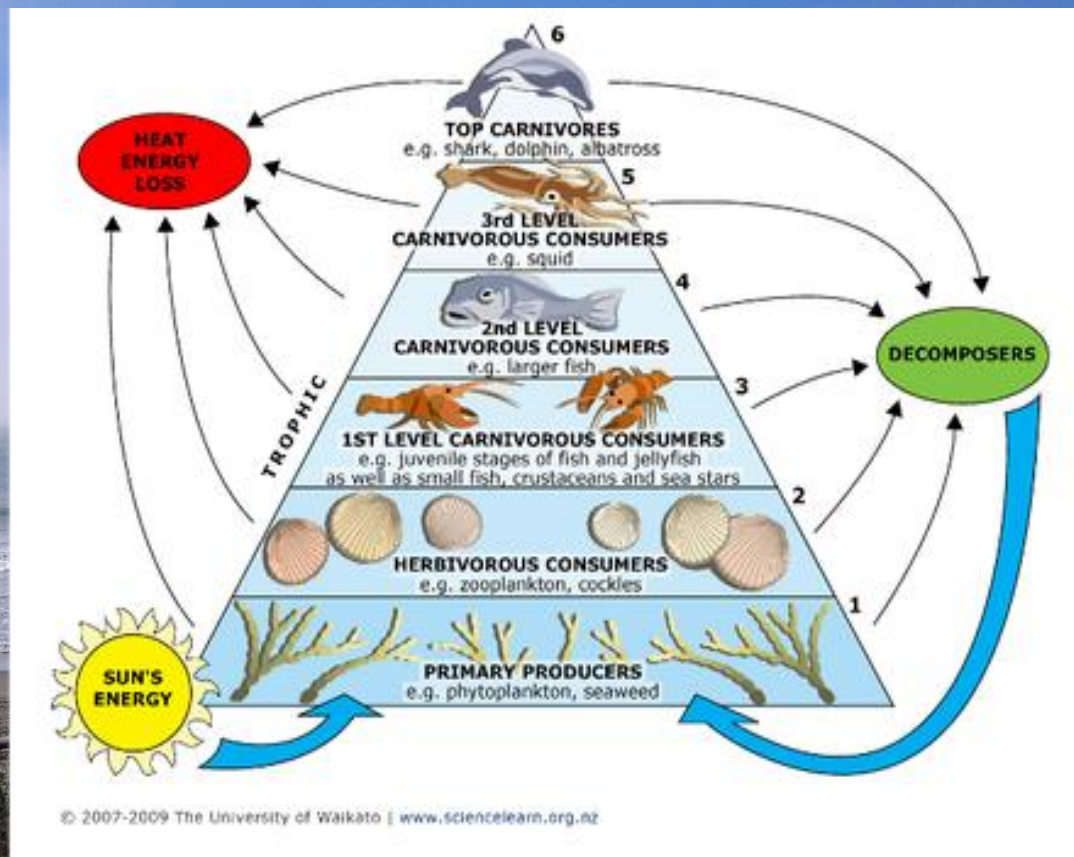
Marine Food webs - moving energy and material



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BACKGROUND

Functioning of Food webs - Indicator for Ocean health



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BACKGROUND

Threats / Pressures / Human impacts



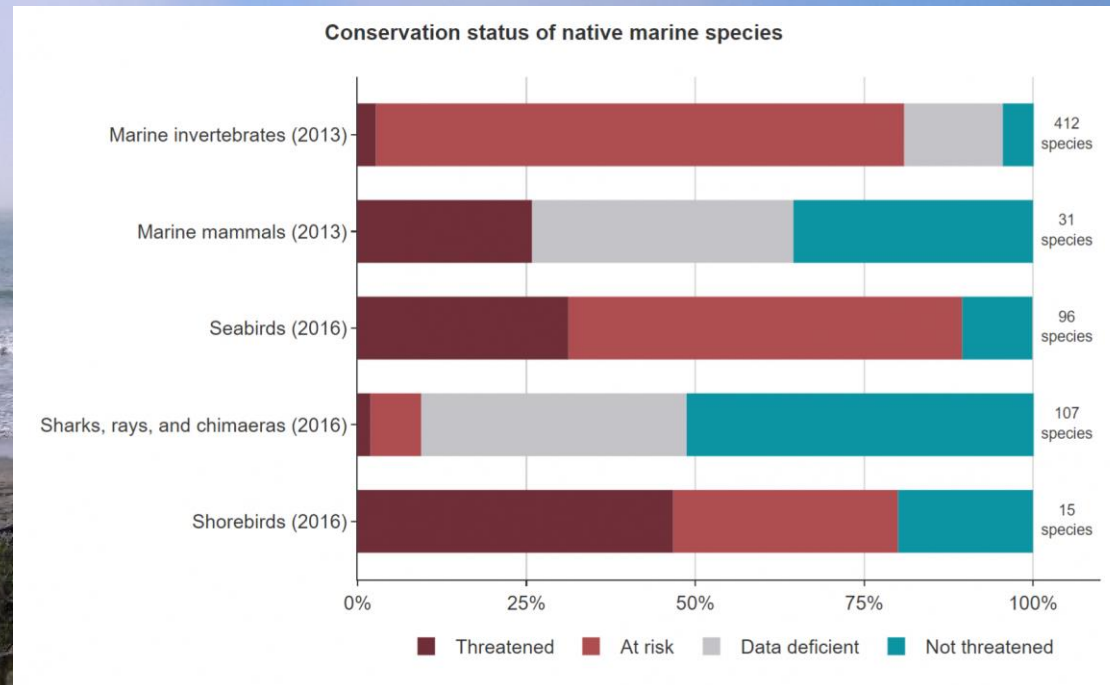
- | | |
|--|-----------------------|
| - Climate change / ocean acidification | - Pollution |
| - Fishing (recreational & commercial) | - Stormwater |
| - Harvesting (recreational & commercial) | - Sedimentation |
| - Farming / Aquaculture | - Land reclamation |
| - Introduced / invasive species | - Building structures |
| - Recreational use of coastal environments | - Sand extraction |
| - Eutrophication | |

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BACKGROUND

New Zealand's Environmental Reporting Series 'Our marine environment 2016' identified **three top issues** affecting marine ecosystems:

- 1) Global greenhouse gas emissions are causing ocean acidification and warming.
- 2) Native marine birds and mammals are threatened with extinction.
- 3) Coastal marine habitats and ecosystems are degraded.



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BACKGROUND

► Cumulative pressures on the marine environment

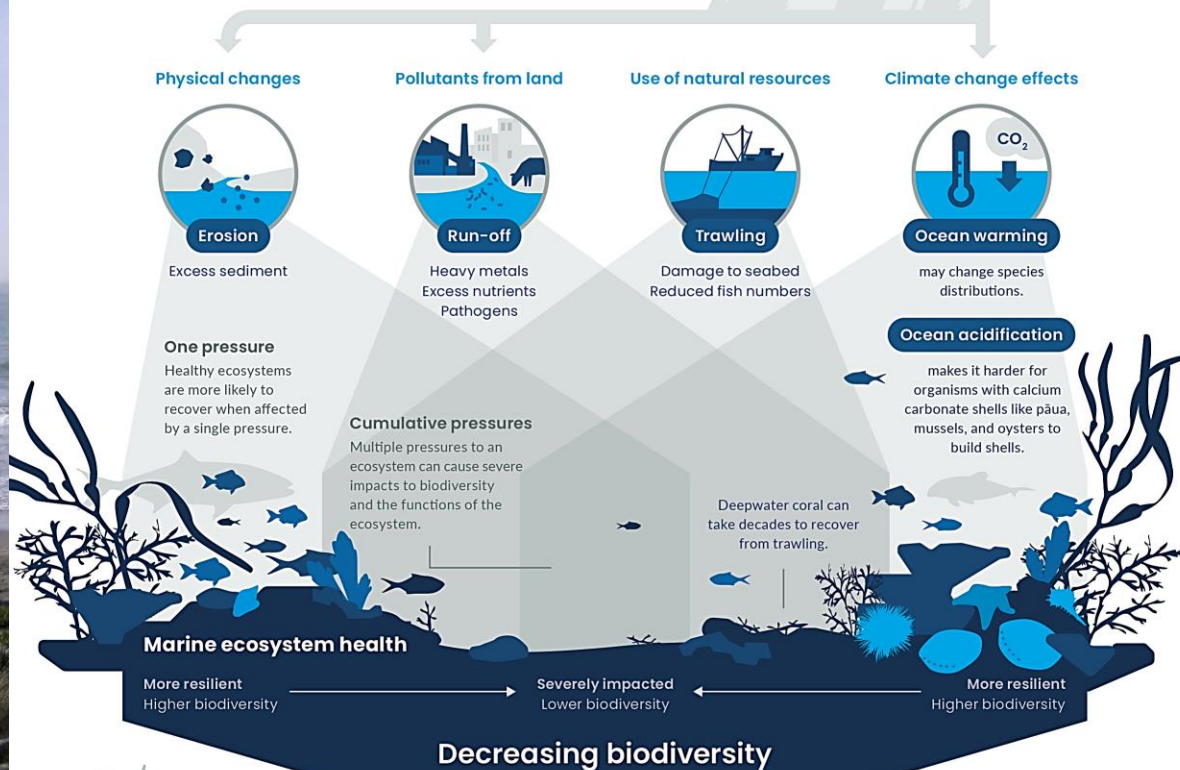
Life in the ocean is degraded when there are multiple pressures on the environment. Some of these pressures are illustrated below.

PRESSURES

Multiple pressures acting together have complex and poorly understood effects on marine species and habitats.

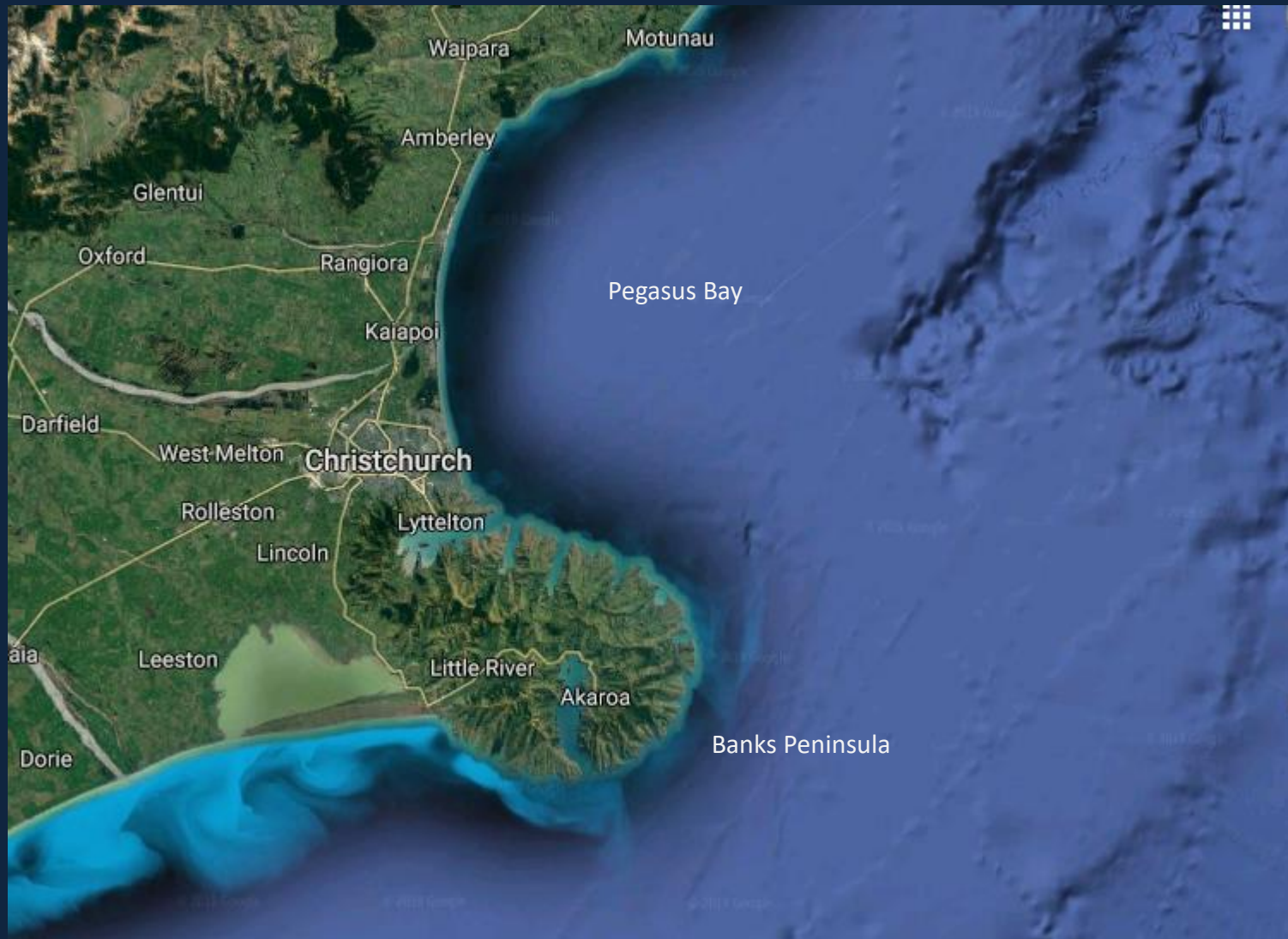
CLIMATE CHANGE

has direct impacts on ecosystems and worsens the effects of other pressures.



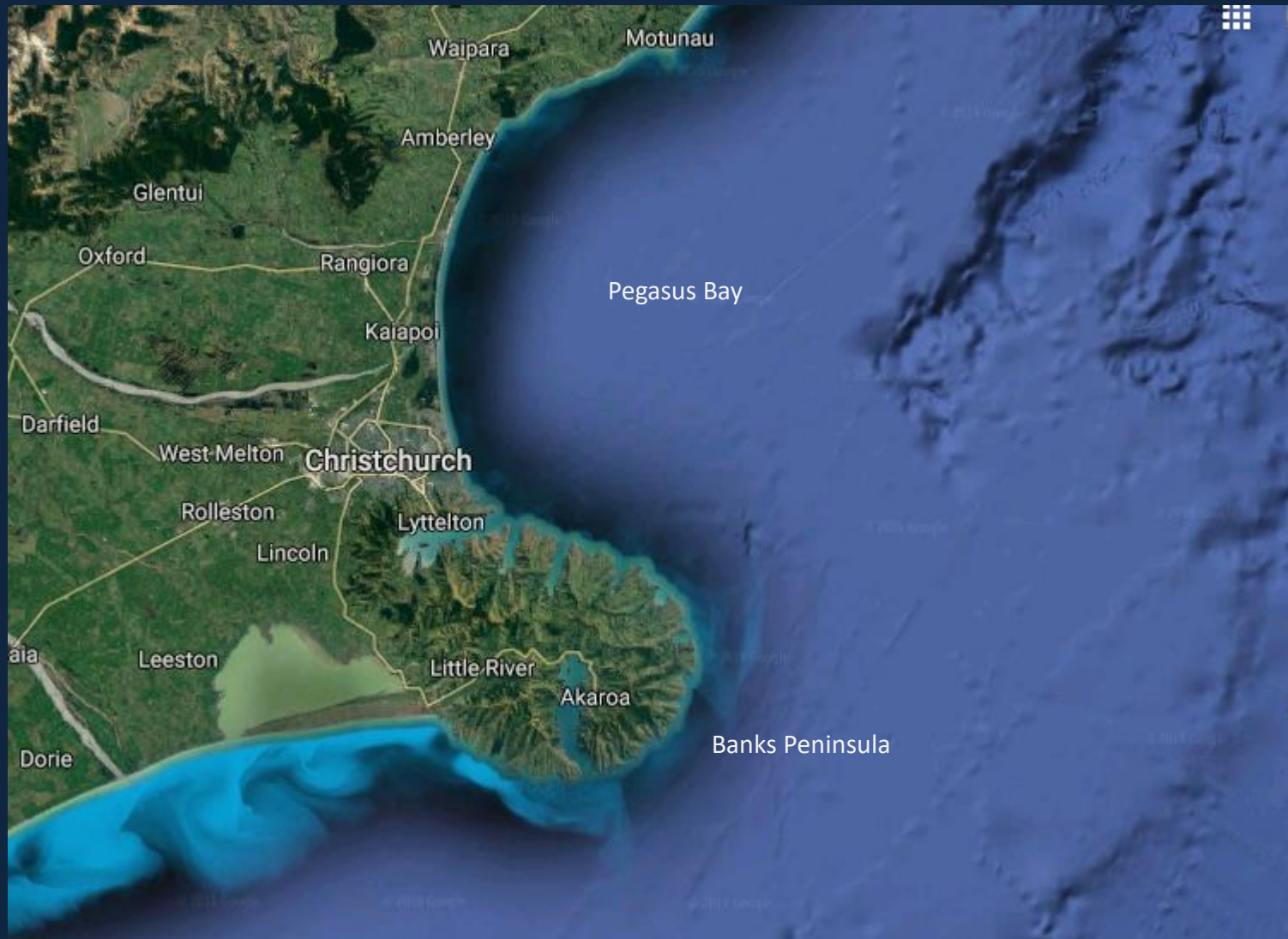
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FOCUS AREA



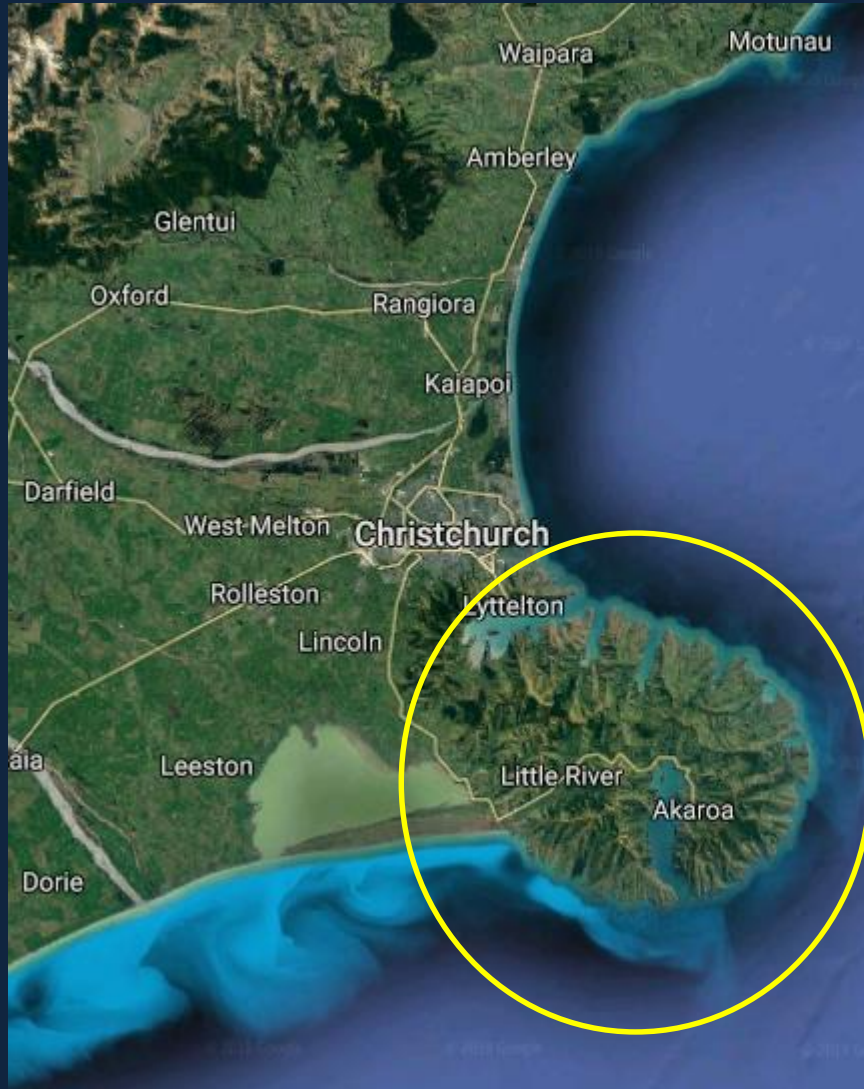
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SPECIAL FEATURES - High habitat diversity



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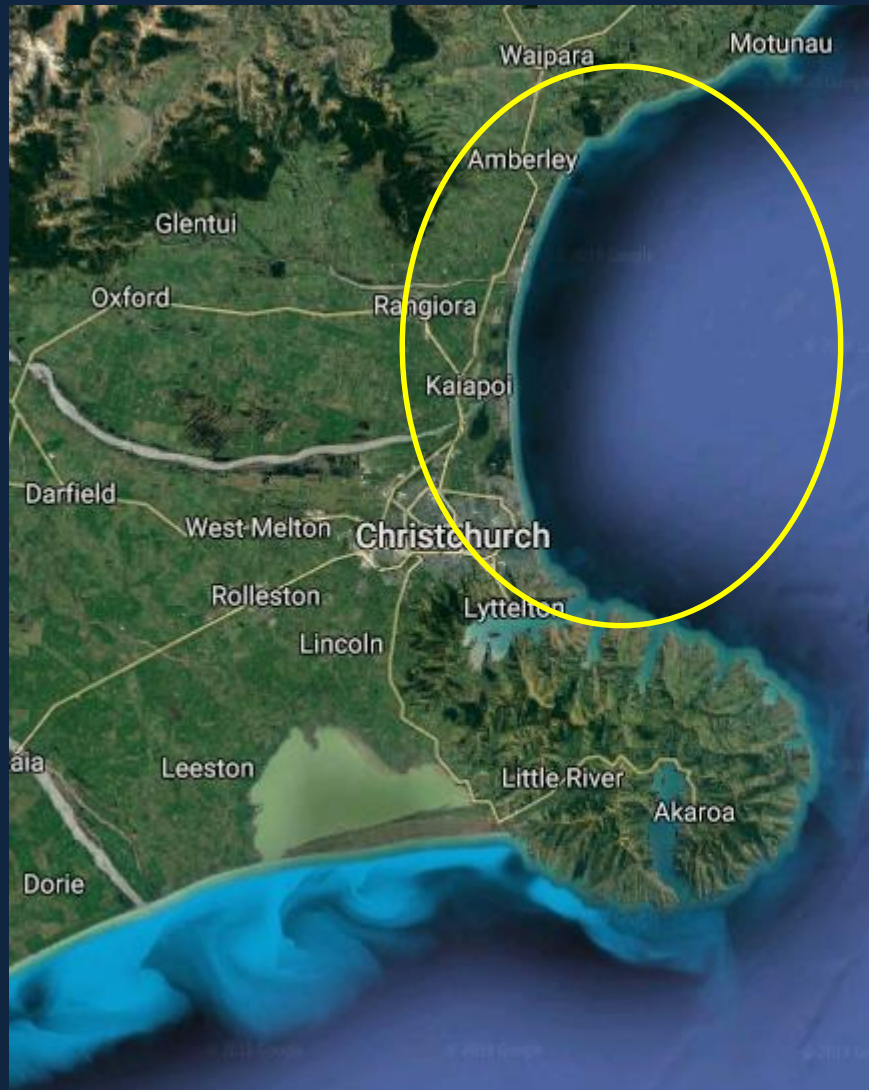
SPECIAL FEATURES - High habitat diversity



- **Banks Peninsula**
 - Extant volcanic
 - Rocky indented coastline
 - Natural harbours
- Pegasus Bay
 - Limestone cliffs
 - Open sand and gravel beaches
 - Dune systems
 - River estuaries
- Motunau Island
 - Rocky offshore outcrop
 - Seabird hotspot

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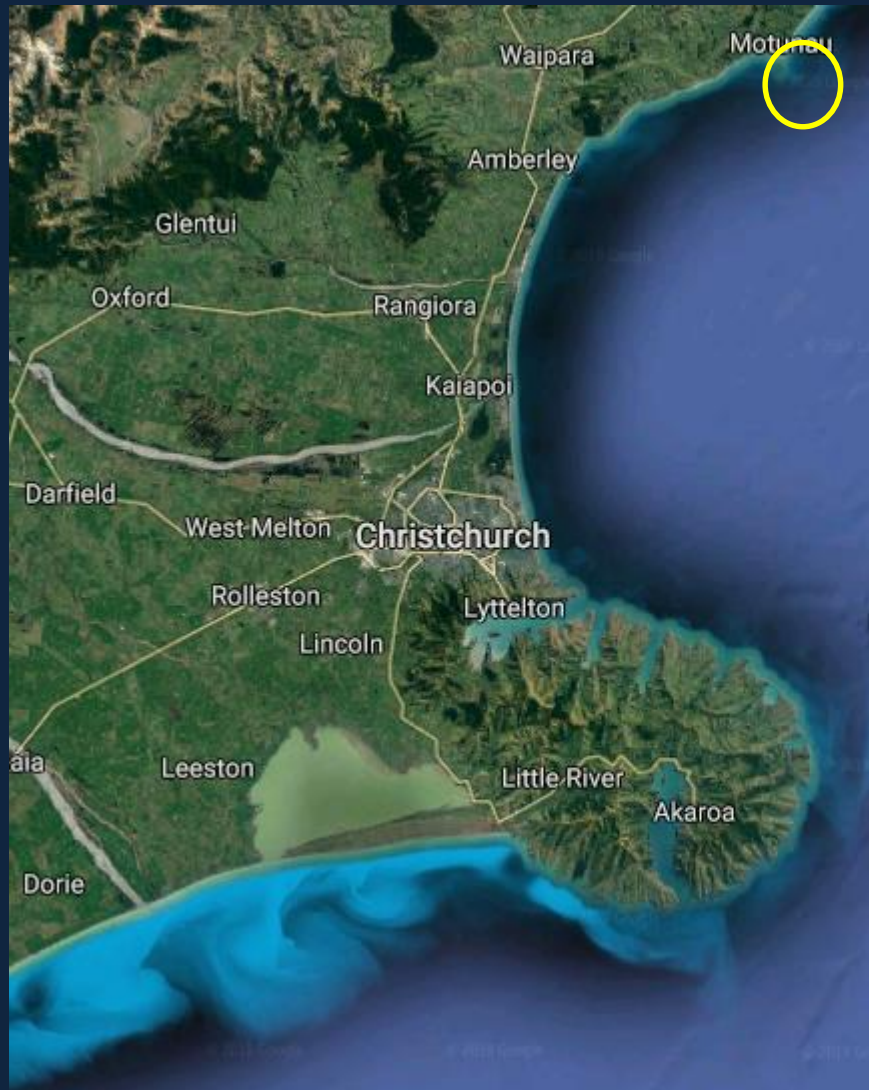
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SPECIAL FEATURES - High habitat diversity



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SPECIAL FEATURES - Regional iconic species



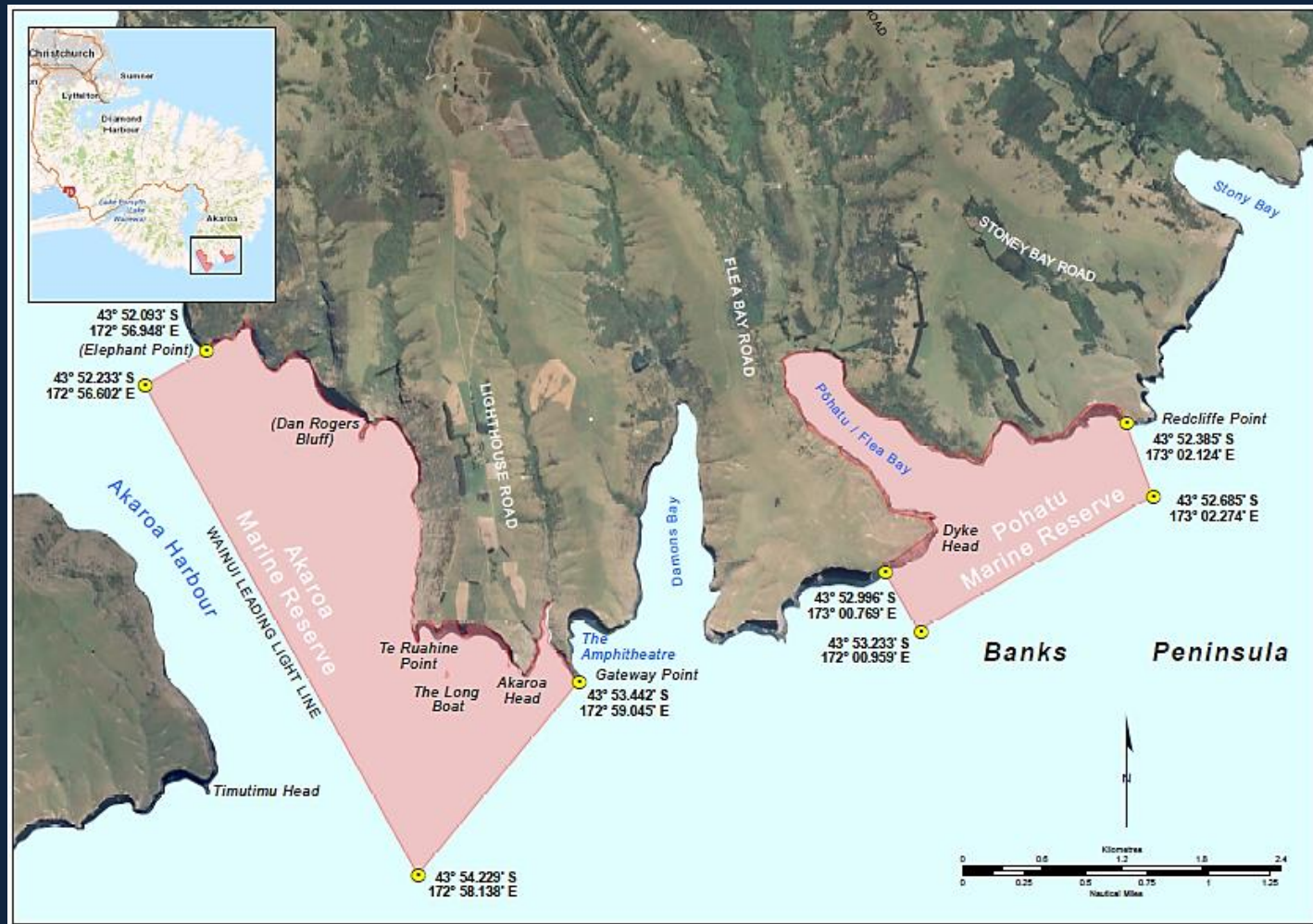
Hector's dolphin



White-flipped penguin

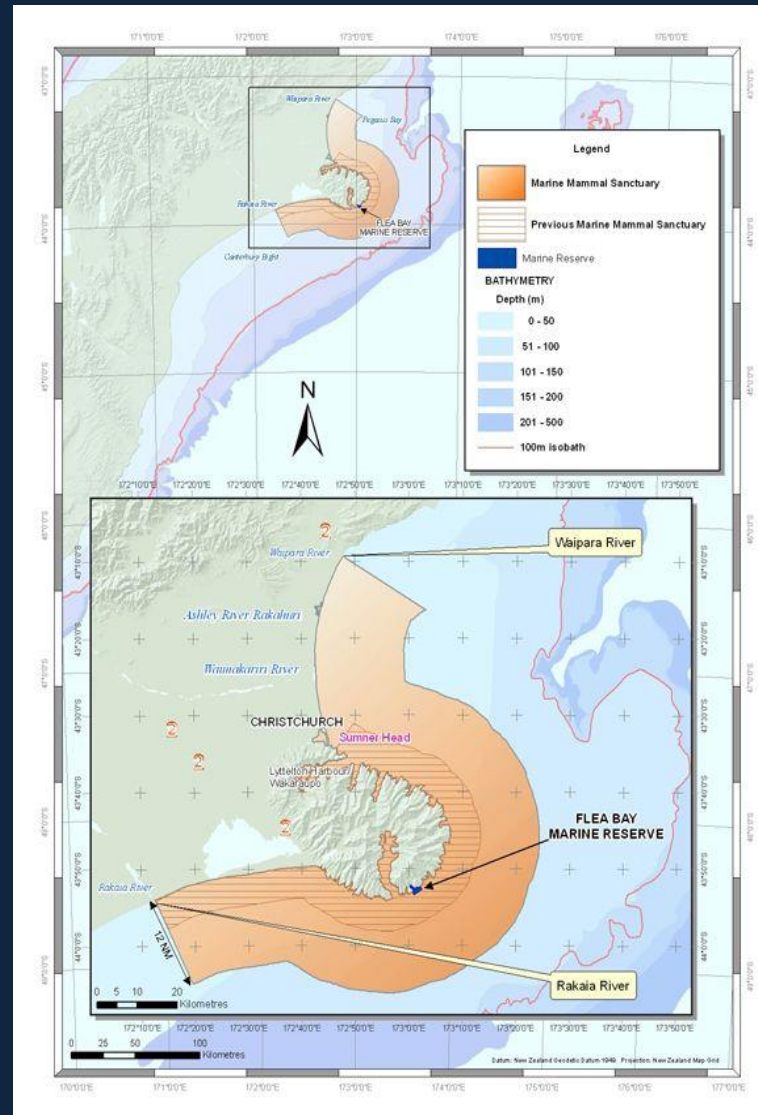
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SPECIAL FEATURES - Marine Reserves



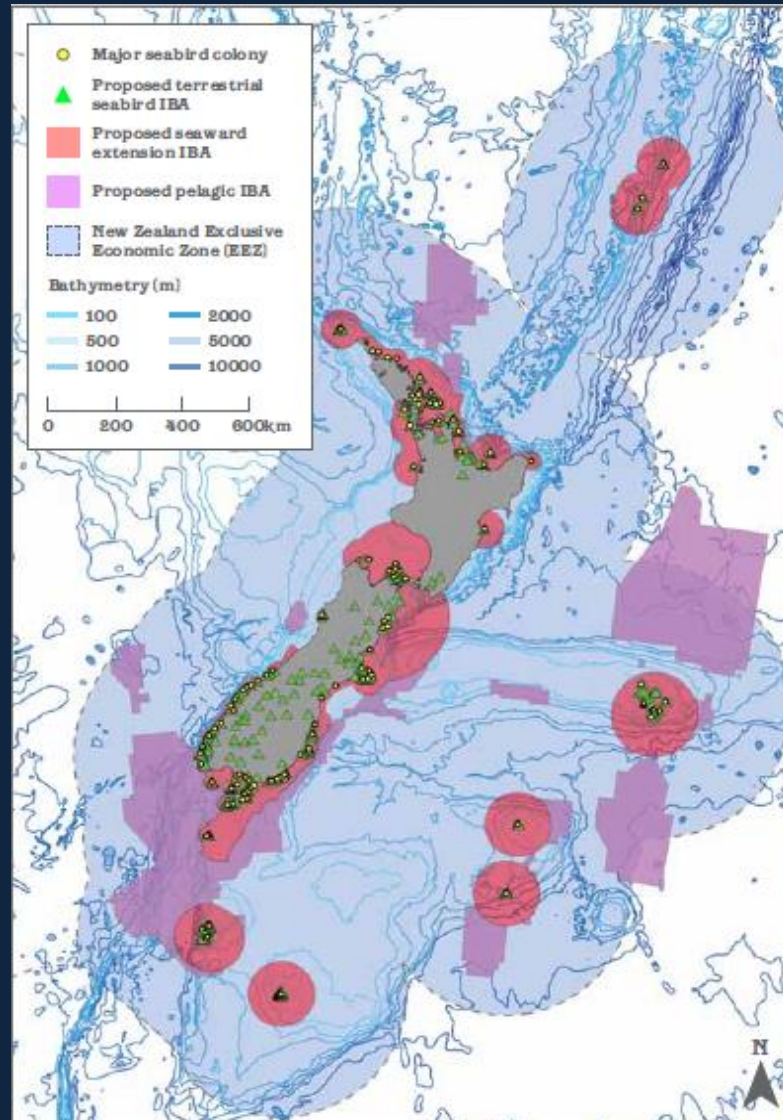
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SPECIAL FEATURES - Marine Mammal Sanctuary



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SPECIAL FEATURES - Important Bird Areas



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The report has covered all main marine species groups

- **Algae**
- **Benthic communities (bottom fauna)**
- **Fish**
- **Seabirds**
- **Marine mammals**

With the aim to identify species or species groups of conservation concern and opportunities for us to act.



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POSSIBLE ACTION ITEMS

Main categories:

- **Promote, Drive, Support Research**
 - E.g. Monitor / study seabird populations as indicators for ocean health
- **Science Communication & Advocacy**
 - Facilitate communication of scientific research results
 - Raise profile of species of conservation concern
 - Support or initiate conservation campaigns
- **Become a Stakeholder / Project Supporter**
 - Partner with governmental agencies and other conservation groups

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POSSIBLE ACTION ITEMS - Promote, Drive, Support Research

Q: What is the importance of our waters to local as well as migrant seabird and marine mammal species?

- Species composition and numbers?
- Spatial and temporal use of the area?

Ideas:

- 1) Systematic at-sea surveys
- 2) Tracking white-Flipped penguins

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POSSIBLE ACTION ITEMS - Promote, Drive, Support Research

1) Systematic at-sea surveys ('Filling in the gaps')

Current information from :

- Aerial surveys of marine birds (1996; 4-10 nm off Banks Peninsula).
- Aerial surveys of Hector's dolphins (2004; 15 nm offshore).
- Reports from seabird interactions during trawl surveys in Pegasus Bay.
- Incidental reports / recordings from shore-based observations.

Missing:

- Systematic at-sea survey of Pegasus Bay and offshore waters of Banks Peninsula, out to / beyond continental shelf edge.
- Coverage of all seasons.

Option:

- Collaborate with researchers from Otago University (contact: Will Rayment) to replicate method used in recent surveys off Otago coast.

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POSSIBLE ACTION ITEMS - Promote, Drive, Support Research

2) Tracking White-flippered penguins

What we know:

- Mainly observed in inshore waters (might have spatial and temporal bias?)
- Tracking of LBP from Oamaru found them to generally forage within 30km off the coast in waters less than 50m deep; staying within a radius of 25km of their colony. But when leaving for longer periods, they headed further away up north.

Questions:

- Where do WFP go during breeding vs winter?
- Can we identify important foraging areas?
- Do WFP make use of BP marine reserves, e.g. Pohatu on the doorstep of the largest colony at Flea Bay?

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POSSIBLE ACTION ITEMS - Promote, Drive, Support Research

2) Tracking White-flipped penguins

Options:

- Potential for collaboration with other groups and researchers.
 - Support offered by Thomas Mattern ('New Zealand Penguin Initiative'), who want to encourage community driven mark-recapture and tracking programs across NZ.
 - John Cockrem (Massey University) formed the 'kororā conservation network' and is looking at opportunities to track penguins on Banks Peninsula and Motunau Island. Started collaboration with 'Pohatu Penguins'.
 - Explore possibilities of tracking WFP at Harris Bay (contact Chris Challis).

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POSSIBLE ACTION ITEMS - Promote, Drive, Support Research

Q: How are our local breeding seabirds faring?

- Population numbers and trends?
- Safety / sustainability of breeding sites?

Ideas:

- 1) Update population estimates of:
 - White-flipped penguins (Banks Peninsula / Motunau Is.)
 - Other Motunau Is. seabird species.
- 2) Status of Spotted shags, White-fronted terns and Red-billed gulls.

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POSSIBLE ACTION ITEMS - Promote, Drive, Support Research

Update population estimates of White-flipped penguins.

What we know:

- Population in recovery after predation pressures and EQ effects.
- Last systematic full population survey from 2000/2001 is outdated.

Questions:

- What is the current population trend?
- Does Motunau Island still hold half of the WFP population?

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POSSIBLE ACTION ITEMS - Promote, Drive, Support Research

Update population estimates of other Motunau Is. seabird species.

What we know:

- Motunau Is. has an outstanding array of seabirds species who would not be able to breed in NC (due to predation etc) if it wasn't for this rock.
- Held largest colonies of WFP, Sooty shearwater, Fairy prion and White-faced storm petrel in all of Canterbury.
- Last (published) survey done in 1997 (pre Boxthorn removal).
- Managed by DOC.

Questions:

- Number and status of seabird breeding populations post Boxthorn removal.
- Potential for further research on species of interest?

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POSSIBLE ACTION ITEMS - Promote, Drive, Support Research

2) Status of Spotted shags, White-fronted terns and Red-billed gulls.

What we know:

- Spotted shags and Red-billed gulls in decline.
- Banks Peninsula / North Canterbury region stronghold for Spotted shags.
- Transient breeding sites for spotted shags.
- Population counts by CCC in collaboration with DOC; report to be published soon.

Questions:

- Reasons for decline?
- Monitoring options?
- Current status of 'Not Threatened' for Spotted shag might need reconsideration?

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POSSIBLE ACTION ITEMS - Promote, Drive, Support Research

2) Status of Spotted shags, White-fronted terns and Red-billed gulls.

Options:

- Establish study colonies.
- Monitor / control predation.
- Collaboration with CCC? (Contact A. Crossland)

POSSIBLE ACTION ITEMS - Science Communication & Advocacy

- Raise public profile for 'undervalued' species like Spotted shag and Red-billed gull.
 - Work with A. Crossland on communicating results from population census report.
 - Take or promote 'community ownership' of largest local RBG colony at Scarborough Head.

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POSSIBLE ACTION ITEMS - Science Communication & Advocacy

Q: Can we use learnings and teachings from conservation research to engage local communities?

Option 1: Promote and inform about marine reserves.

- Liaison with Tom Mactavish (DOC), EnviroSchools, local teachers and science communicators to encourage curiosity, understanding and support of what is going on within our marine reserves.
 - Methodology used for monitoring fish and invertebrates (Baited Underwater Video, BUV) provides a lot of visual and hands on learning opportunities for school kids.

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POSSIBLE ACTION ITEMS - Science Communication & Advocacy

Q: Can we use learnings and teachings from marine conservation research to engage local communities?

Option 2: Effects of climate change on our region.

- Bull kelp die-offs during recent marine heatwaves as indicator for impact of climate change / global warming on keystone species.
 - Bull kelp as a great model organism to learn about marine ecosystems and their vulnerability.
 - Liaise with researchers from UC (Mads Thomsen) for science communication.

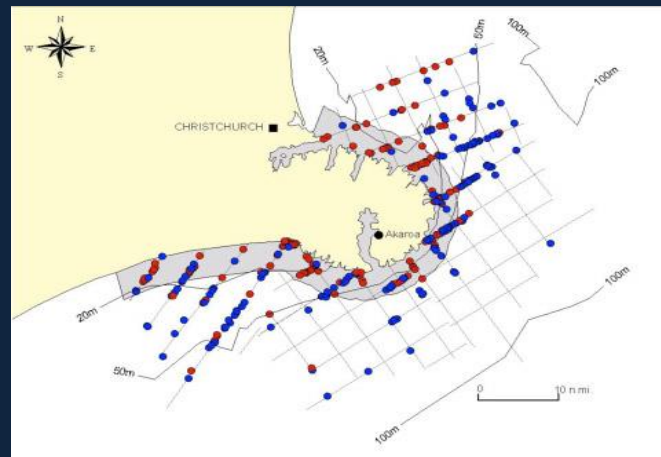
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POSSIBLE ACTION ITEMS - Science Communication & Advocacy

Q: Can we support environmental campaigns at local level?

Option 1: Expansion of marine mammal sanctuary.

- Supporting the IUCN recommendation to ban fishing methods that kill dolphins (gillnets and trawling) throughout the habitat of Hector's dolphins, out to the 100 metre depth contour, including harbours.
 - Work in with F&B National Office directives and researchers from Otago University / NZ Whale&Dolphin Trust (Contact: Liz Slooten).



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POSSIBLE ACTION ITEMS - Science Communication & Advocacy

Q: Can we support environmental campaigns at local level?

Option 2: Environmental Impact Mitigation

- Liz Slooten (Otago University): *“There are various activities in Lyttelton Harbour including dredging, dumping of dredge spoil, pile driving, pile removal and ‘reclamation’ where it would be great if F&B could keep an eye on, make submissions, etc. We could provide information, expert witness work, etc.”*
- Investigate / raise awareness of species bycatch in (local) fisheries.
 - Work in with F&B National Office directives.

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POSSIBLE ACTION ITEMS - Become a Stakeholder / Project Supporter

Option 1: Seabird Restoration Project on Banks Peninsula

- CCC is looking at rolling out a program to re-establish colonies of seabirds formerly or already (but in small numbers) breeding in the North Canterbury area.
- Current target species: Mottled petrel, Sooty shearwater, Fairy prion, White-faced storm petrel.
- Current target area: Te Oka Bay.
- Initial steps involve fencing off suitable area (headlands) and planting them up according to habitat required for target species.
- Community Group partner needed for CCC's funding bid. They would welcome F&B in this role.

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POSSIBLE ACTION ITEMS - Become a Stakeholder / Project Supporter

Option 1: Seabird Restoration Project on Banks Peninsula

- We can offer expertise / 'man-power' for planting and restoration work as well as the 'on-board' seabird ecologist ;)
- F&B Otago branch could share experience from own undertakings in this area (<https://www.forestandbird.org.nz/projects/bring-back-seabirds-otago>).
- Current project status (CCC):
 - Positive feedback from local Runanga who own the next door Tumbledown Bay; opportunity for collaboration.
 - Timeline pending due to role changes within CCC.

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POSSIBLE ACTION ITEMS - Become a Stakeholder / Project Supporter

Option 2: DOC Marine Monitoring Network

- New initiative to set up a suite of parameters to be measured for monitoring purposes within marine reserves nationwide.
- DOC lead Monique Ladds interested in adding F&B NC to stakeholders list to discuss implementation of network at local/regional level.

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PLEASE SHARE YOUR THOUGHTS & IDEAS



THANK YOU