

Cara Barnes Central Southland College , Sandee Barroga Maniototo Area School, Georgia Brown St. Kevins College , Chloe Gray Queens High School,
Zoe Revell-Lynch Columba College .

Introduction:

The New Zealand sea lion, *Phocarctos hookeri*, is a severely threatened species of sea lion, with less than 10,000 individuals remaining in the wild. This species primarily inhabits the sub-atlantic islands, of which 99% of pups are born on the Auckland and Campbell Islands. However, sea lions are slowly re-colonizing the southern part of the South Island of NZ, after being hunted to local extinction. This re-colonization has increased the resource competition in this area because of the interspecific competition with other predators and the fishing industry [4].

The aim of our study was to compare the foraging diet of sea lions over time, (from recolonisation in the 1990's) and location (Otago vs Subantarctic).

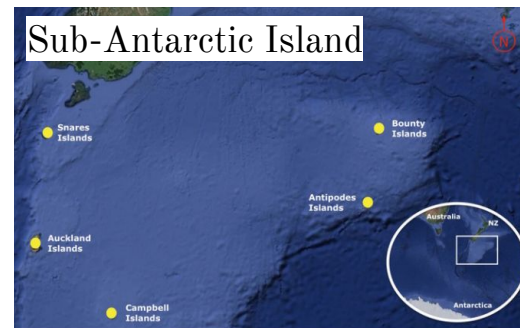
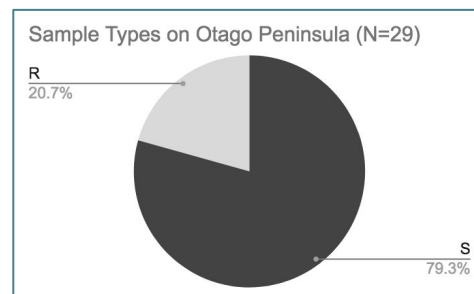
We investigated this project with 2 hypotheses: the first hypothesis was that the Subantarctic population would have a wider variety of prey in their diet however the Otago populations diet would have more nutritional benefits and require less energy to obtain. The second hypothesis is that over the years the Otago populations variety of prey would decrease and the Subantarctic islands variety would increase.

Method - Question 1:

- Day 1 & 2 - Collect both scat and regurgitation samples from known NZ sea lion locations in the Otago Peninsula (Allan's beach and Papanui inlet) (28 samples were collected- 6 regurgitations and 22 scat)
- Day 1 & 2 - sorted and cleaned through samples to find remain to analyse.
- Day 3 - analysing the raw data. Sorting through bones, meat, flesh etc to determines what taxa the species which were ingested by the NZ sea lions
- Place raw data into graphs to determine a trend.

Method - Question 2:

- Steps 1-3 for method 1
- Compare all results done over the years from the Otago peninsula and the Subantarctic islands (1090's to present).



Discussion:

During this investigation our first hypothesis was that the Subantarctic islands region would have the wider variation of prey species, but this hypothesis turned out to be false. The second hypothesis for this investigation was that: from the 1990's to present, the variety of prey utilized by the otago population would decrease and the Subantarctic populations variety would increase. The first part of this hypothesis turned out to be true, For example the the consumption of Osteichthyes in 1990s use to be close to 4 per sea lion, now it is under one species from this tax per sea lion which is a major decrease in diet. For the subantarctic population there has been a decrease in some taxa groups however an increase in others that the sea lions never preyed upon in the 1990s.

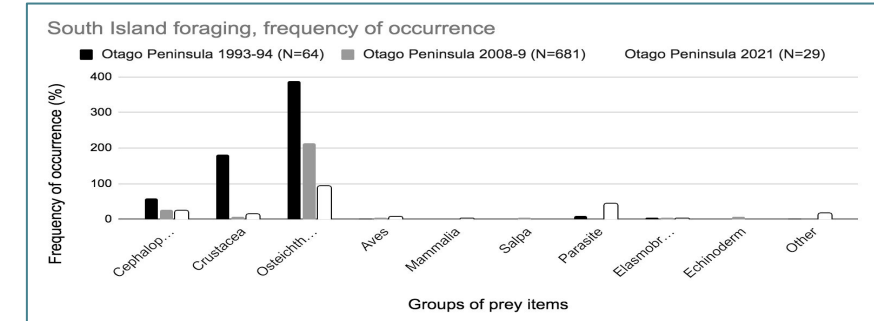
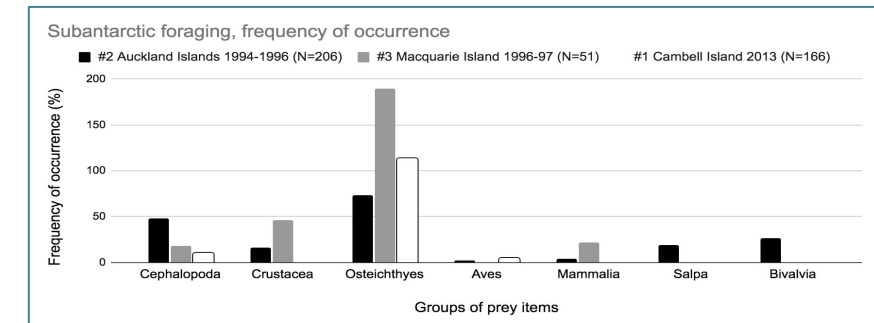
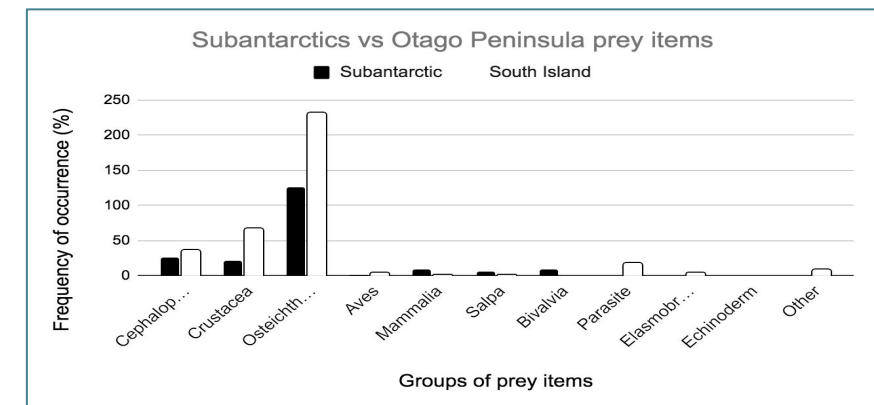
The decrease in the quantity of prey taxa over time in the Otago population of NZ sea lion raises concerns.

This decrease could be for many reasons

- Overfishing
- Overpopulation of predators

Many females in the Otago population have changed their hunting behaviours, and specializing in native penguin species rather than the Osteichthyes taxa which was their original preferences in the 1990s this has raised many worries for the penguin species as more sea lions are becoming species for hunting the species[4]. Over fishing is shown in the subantarctic population as the quantity of cephalopods has decrease in their diets this could be due to the large squid fisheries which commercially operate in these waters, the sea lions retaliated by changing their diet.

Graphs



Conclusions:

Our data shows that the Otago population has the larger variety in their diets, although there is a difference in the taxa they prey on.

- The Subantarctic population prey of 7 taxa
- The Otago population preys on 10 taxa

The quantity of diet taxa that the NZ sea lions in the otago population are obtaining currently differs hugely from the 1990's.

Acknowledgments

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