

SUMMARY

Seal-seabird predatory behaviour

- × Seabird predation by seals at Ichaboe Island seems restricted to a few individuals that differ with respect to intensity of predation, bird species targeted and diurnal factors. Some seals prey on birds on a regular basis, exploiting a specialist niche, while others take birds opportunistically. Seals may learn the predatory behaviour from other seals, or initially take birds as an extension of play behaviour.

- × The predation cues identified were adequate to attract the attention of the observer and indicate seal-seabird predatory activity. The use of these cues proved valuable, and the same concept could possibly be adapted to other behavioural studies.

- × The tagging of seals by marks distinguishable from a distance would greatly improve the accuracy of identifying the sex and age of seals that prey on birds. The four seals that were individually identifiable provided valuable insight into seal-seabird predation at Ichaboe Island.

- × Gannet clouds are an interesting behavioural phenomenon that deserves further investigation.

- × Predation by seals on gannets, cormorants and penguins differed in terms of the time between predations, number of birds taken per day as well as behavioural aspects. Seals are implicated in inflicting injuries to penguins.

Evaluation of methods

- × Predations noted during each method of observation differed significantly in terms of bird species preyed upon; this may be ascribed to seasonal differences as well as predation cues.
- × Cormorant predations differed significantly between methods for diurnal, environmental and spatial distributions. This may be due to the grouping of species (Cape and bank cormorants) and may also be partly attributable to seals taking these birds opportunistically, as such behaviour is bound to be variable.
- × Gannet and penguin predations did not differ significantly between methods in the case of diurnal or environmental distributions, suggesting that incidental observations may reveal trends despite the inherent bias in this method.
- × Observational methods differed with respect to the spatial distribution of predation; this highlighted a potential bias in spatial sampling during incidental observations in particular.

- × Up to 36% of predations may be missed during incidental observations; this method is nevertheless recommended in the absence of systematic observations.

Environmental, spatial and temporal variation

- × The large annual variation in the seal-seabird predation records at Ichaboe Island over a ten-year period may result from: the observations being incidental; seals taking birds opportunistically; seals specialising in seabird predation; the number of birds available as prey. Environmental factors also contribute to the observed variation.
- × The distinct seasonal pattern in predatory activity is attributed to fledgling gannets and cormorants, which form a temporary, abundant food resource; they are easy prey for seals and form one-third of all predations noted.
- × Observed diurnal trends in predatory activity for each species and age class of bird can be accounted for by the behaviour of the birds and are therefore biologically significant.
- × While the effect of BS on seal predatory behaviour can be explained in terms of bird activity, it is possible that cormorant and penguin predations may be under-represented at high BS.

- × The relationship between SST and seal-seabird predation seems to confirm that seals do not eat birds as an alternative food resource; this relationship deserves further attention.
- × The distances from the island that birds of different species and ages are preyed upon can be explained in terms of bird activity. However, the distance and the size of the bird affect the likelihood of observing predatory activity.

Impact of seal-seabird predation

- × The impact of seal predation on seabirds at Ichaboe Island seems negligible; however, the actual level of predation is higher than the reported level.
- × The available data does not allow for the calculation of predation rates or pressures by seals per bird species, due to the biases introduced through the incidental nature of the observations.
- × Predation on chicks and eggs of seabirds by kelp gulls, and the phenomenon of “soaked” gannets are believed to be greater mortality factors than seal-seabird predation.
- × Seal-seabird predation pressure cannot account for the decline in seabird numbers; other factors of mortality – notably at-sea factors such as interactions and competition with commercial fisheries, and oiling – are therefore implicated.

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