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THESIS ABSTRACT: "SEA MAMMAL HUNTING
AND PREHISTORIC SUBSISTENCE IN NEW ZEALAND"

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The following abstract is for a Ph.D. thesis submitted at the University of Otago in April 1985.

Archaeological evidence for the exploitation of seals and whales by the prehistoric Polynesian inhabitants of New Zealand has been accumulating for almost 150 years. Although never closely examined, these data have suggested that sea mammal exploitation occurred in only some parts of the country and that its importance varied throughout the prehistoric period (ca. A.D.1000-1800). Detailed analysis of this evidence provides an opportunity to reassess the broader issues of temporal change, regional diversity and seasonal variation which have characterised most previous interpretations of subsistence patterns in pre-historic New Zealand. After reviewing pertinent archaeological and ethno-historic evidence a series of hypotheses were formulated regarding the methods by which sea mammals were procured, the manner in which their exploitation was integrated within regional patterns of subsistence and settlement, and broad temporal and regional variations in its occurrence and importance.

Three sets of analytical techniques crucial to the testing of these hypotheses were developed. Osteometric criteria for determining the age and sex of New Zealand fur seals (Arctocephalus forsteri), the principal exploited species, were derived from a large modern reference sample, as zoological data indicated that most of the biological and behavioural variables likely to have influenced prehistoric exploitative patterns vary with age and sex. Methods for determining the seasonality of exploitation from population composition, growth zones in fur seal canine teeth and the age of fur seal pups were developed, and procedures for reconstructing butchering patterns and estimating meat weight, energy and nutritional yields from archaeological remains outlined.

These techniques were applied to 100 assemblages of sea mammal remains from 53 archaeological sites located in the southern, central and northern regions of New Zealand. Four principal methods of exploitation were identified: scavenging from naturally stranded large cetaceans; harpooning of smaller cetaceans; occasional opportunistic land-based hunting of seals; and regular land-based seasonal cropping of seals. Seal hunting took place predominantly during the period from late spring to early autumn, although in each of the regions examined there was some evidence for autumn-winter exploitation.

In general these pursuits made significant contributions to the diets reconstructed from archaeological faunal remains, with the overall meat, energy and nutritional yields from seals being matched only by those from fish. Whaling may have been directed as much towards collecting teeth and bones for industrial purposes as it was a means for acquiring food. Seal hunting was concerned predominantly with acquiring fresh meat for immediate consumption. There was no archaeological evidence for the ethno-historically documented seal hunting expeditions during which large quantities of seal flesh were preserved.

Both temporal and regional variations in sea mammal exploration were documented. In general these pursuits were of greatest importance early in the prehistoric sequence and persisted longest in southern parts of the country. However both the timing and extent of their decline in importance was much more variable than has previously been acknowledged. These changes appear to have been influenced predominantly by alterations in the distribution and abundance of the major exploited species which, in turn, appear to have been a direct result of human predation. While this study provides further documentation of diversity and change in the composition of subsistence patterns in prehistoric New Zealand it also argues that such variability had little impact upon the organisation of settlement patterns with substantially similar patterns evident throughout the prehistoric sequence in each of the regions examined.