Appendix 3: Inshore and offshore fishing in pre-European New Zealand

In 1993 we wrote an extended discussion on the issue of where pre-European Māori were obtaining most of their fish – inshore or offshore (Leach & Boocock 1993: 20–27). This is still a topical issue, revisited in submissions to the Waitangi Tribunal, where Māori lay claim to an interest in the modern fishery well out to sea, partly on the basis of oral traditions. In the published discussion on this issue I was very critical of the view presented by Paulin, where he concluded that the Māori had "little apparent knowledge of fishes below 100 m depth" (Paulin 1989: 2). Paulin reached this view after thoroughly examining recorded Māori names for fishes. He found few names for deep water species. My main point of criticism related to the use of linguistic data for the intended purpose. There are many reasons why lists of Māori names for fish species recorded during the historic period are pitifully inadequate, and Paulin himself lists seven of these. In respect of deep water species, the most important reason is that early Europeans, writing down Māori names for fish, were themselves ignorant of deep water fishes, and were thus unable to record them! The opportunity to tap into the store of traditional Māori knowledge about the deep water fishery soon passed as Māori adopted European customs and technology. The only sensible way to assess pre-European knowledge of the deep water and offshore fishery is to examine archaeological data for evidence of the species themselves. This source of knowledge does not lie and is not biased by social or ideological issues. One bone, accurately identified to species, is as close to an absolute as one could hope for. A sizeable number of bones of a deep water and/or offshore species scattered through archaeological sites in several parts of New Zealand would be irrefutable evidence of fishing away from the inshore area and, more to the point, is quantifiable. I therefore think it is useful to attempt to do just that – to quantify the relative amount of fish which pre-European Māori were obtaining inshore and offshore. This appendix is aimed at providing such an assessment.

The first thing I need to do is comment on what the terms inshore and offshore might mean in this context. For distinguishing depth, I have made an arbitrary boundary of 50 metres. As far as distance from shore is concerned, 100 metres is a suitable dividing line. If a species is almost always found either more than 100 metres offshore, or almost always at depths of more than 50 metres, I class it as offshore. This means that pelagic species like tuna that are usually in clear oceanic waters well out to sea but caught on the surface are classified as offshore. In addition, species that can be taken close to shore, but in water greater than 50 metres, such as groper, are also classified as offshore. In cases where a species can be taken in both zones I apportion the quantities below accordingly. I am sure some will argue that some of the apportions I make are unfair in some way, but that is not my intention. If anything I have probably erred in favour of the offshore position for species found in both zones. The ratio of inshore/offshore is plainly shown and different researchers can tinker with anything in the Table except the first MNI value, and recalculate the values at the bottom of the Table as they see fit. The MNI abundance values below are taken from Appendix 1.

Thus characterised, 83% of fishes taken in the pre-European period were from the inshore environment.

No	Family	Common Name	NMI	Ratio	Inshore	Offshore
1	Anguillidae	Freshwater eels	131	100: 0	131	0
2	Aplodactylidae	Marblefish	48	100: 0	48	0
3	Arripidae	Kahawai	481	60:40	289	192
4	Carangidae	Trevally, etc.	603	60:40	362	241
5	Triglidae	Red gurnard	170	60:40	102	68
6	Sparidae	Snapper	6346	90:10	5711	635
7	Congridae	Conger eel	192	80:20	154	38
8	Elasmobranchs	Sharks, etc.	224	80:20	179	45
9	Ophidiidae	Ling	713	10:90	71	642
10	Scorpaenidae	Scarpee, etc.	542	40:60	217	325
11	Uranoscopidae	Giant stargazer	4	100: 0	4	0

12	Latrididae	Blue moki, etc.	473	90:10	426	47
13	Leptoscopidae	Estuarine stargazer	9	100: 0	9	0
14	Moridae	Red cod, etc.	3685	90:10	3316	368
15	Balistidae	Leatherjacket	712	100: 0	712	0
16	Cheilodactylidae	Tarakihi, etc.	990	80:20	792	198
17	Nototheniidae	Maori chief	316	80:20	253	63
18	Odacidae	Greenbone	2967	100: 0	2967	0
19	Mugiloididae	Blue cod	6664	60:40	3998	2666
20	Pleuronectidae	Flounder, etc.	27	100: 0	27	0
21	Percichthyidae	Groper/hāpuku	238	0:100	0	238
22	Labridae	Spotty, etc.	4259	100: 0	4259	0
23	Gempylidae	Barracouta, etc.	10075	90:10	9068	1008
24	Scombridae	blue mackerel	26	0:100	0	26
25	Kyphosidae	Parore, etc.	11	100: 0	11	0
26	Centrolophidae	Blue warehou, etc.	22	10:90	2	20
27	Osteichthyes	Unidentified bony fishes	141	50:50	70	70
28	Zeidae	John Dory	29	20:80	6	23
29	Mugilidae	Yelloweyed mullet, etc.	192	100: 0	192	0
30	Callorhinchidae	Elephantfish	21	20:80	4	17
31	Merlucciidae	Hoki	9	0:100	0	9
32	Squalidae	Spiny dogfish	39	80:20	31	8
33	Myliobatidae	Eagle ray	34	100: 0	34	0
34	Dasyatidae	Sting ray	2	100: 0	2	0
35	Diodontidae	Porcupinefish	3	100: 0	3	0
36	Chimaeridae	Ghost shark	35	0:100	0	35
MNI Totals			**40433**		**33450**	**6982**
Percent					**82.7%**	**17.3%**