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ANALYSIS OF FISH REMAINS FROM SOUTHERN FIORDLAND AND STEWART ISLAND

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In southernmost New Zealand the main areas from which fish remains in Maori sites have been identified are the south-west coast of Fiordland (Coutts, 1972), and the Southland coast from Sandhill Point to Tiwai Point, together with Ruapuke Island (Coutts, 1972; Coutts and Jurisich, 1972; Higham, 1968; Leach and Leach, 1980; Anderson, 1983). No quantified data have been reported from Stewart Island or from the south coast of Fiordland west of Sandhill Point. Fish remains identified from small grab samples of previously disturbed midden from these latter areas are reported here and briefly considered in their regional context.

The midden samples

Several sites were recorded in Port Adventure, Stewart Island, by Cave (1980a) but Kelly's Beach was not visited (fig. 1). In January 1983, while camping there, I took the opportunity to collect several small samples of midden thrown up by the building of a Lands and Survey Department shelter and the digging of a rubbish hole. This material came from a layer of shell midden about 30-40 cm thick which lay just under the ground surface. Details of the fish remains are given in Table 1. Some struck flakes of quartz and an absence of any European material suggest that the site is probably of pre-European age. Port Adventure was occupied, however, in the early European era by Maori returned from the unsuccessful Auckland Islands colony of the 1840s and the Acheron journal mentions a settlement in the south-east part of Port Adventure (probably at the Old Neck) which was largely deserted because the inhabitants were at that time of the year (28 April 1850) out on the muttonbird islands, including Tiia at the mouth of Port Adventure (Howard, 1940).

The other samples come from a cave site (S173-4/13), near the mouth of the Andrewburn on the south coast of Fiordland. The Andrewburn is close to the Green Islets (Fig. 1), one of the few places where small craft might expect some shelter along this coast, and an area in which numerous sites have been reported over the years (see Biggar journal in Begg and Begg, 1973; Cave, 1980b). There had been severe fossicking in the Andrewburn Cave in 1979 at which time some fishermen were camped there and growing potatoes near the entrance. In April this year Kim Morrison, of the Fiordland National Park staff, took several of his colleagues, and Lyn Williams and myself, on a helicopter

Kelly's Beach	Species	Parts	MNI
Sample A	Barracouta	dentary(R=4,L=4) premaxilla(L=1) articular(R=1,L=1)	4
	Ling	dentary(L=1) maxilla(R=1,L=1) no match maxillae,therefore	2
	Blue Cod	dentary(L=2) maxilla(R=1)	2
	Wrasse	premaxilla(L=1)	1
Sample B	Barracouta	articular(L=1)	1
	Ling	dentary(R=1) maxilla(L=1) articular(R=1) no match dentary,articular,thus	2
	Red Cod	dentary(L=1)	1
		Total	13
Andrewburn			
Sample 03	Wrasse	premaxilla(L=1)	1
Sample 04	Wrasse	dentary(R=1) premaxilla(L=1) pharyngeal =1 no match dentary,premaxilla,thus	2
	Trumpeter	maxilla(L=1)	1
	Butterfish	pharyngeal =1	1
Sample 05	Wrasse	premaxilla(L=1) pharyngeal =1	1
	Small fish,unid.	quadrate frag =1	1
Sample 06	Wrasse	dentary(L=1)	1
	Small fish,unid.	dentary,eroded =1	1
		Total	9

TABLE 1. Identified parts and minimum numbers of individual (MNI).

trip around the south coast to check on several sites, including this one. We found that fossicking had continued and took some small samples of midden from disturbed patches. Details of the fish remains from these are given in Table 1. There is nothing in the samples to indicate a post-European age although there was early post-European occupation in the area by Maori food-gathering expeditions. Kent, of the Mermaid met a party of Maori at, or very near, Green Islets on 14 June 1823, who had arrived the day before to catch birds and seals for preservation (Begg and Begg, 1973:317).

Aspects of interpretation

Bearing in mind the very small size of the samples and the circumstances of their recovery there can be little said about them alone. Put into the regional context, however, they add some evidence to current conclusions about certain factors which shaped Maori fish catches in southern New Zealand. Two are worth looking at here.

Species	Catching method	Percentage Representation		
		(I)	(II)	(III)*
Flounder	Seine net	-	-	11
Stargazer	" "	-	-	-1
Warehou	" "	-	-	-1
Kahawai	" "	-	-	-1
Moki	Set net	-	-	63
Copper Moki	" "	-	-	-1
Butterfish	" "	-	11	5
Leatherjacket	" "	-	-	-1
Tarakihi	" "/Baithook	-	-	7
Trumpeter	" " "	-	11	1
Ling	Baithook	30	-	-
Red Cod	"	8	-	1
Skate	"	-	-	-1
Gurnard	"	-	-	-1
Blue Cod	"	15	-	4
Sea Perch	"	-	-	-1
Wrasses	"	8	56	3
Barracouta	Lurehook	38	-	-1
Unidentified		-	22	-

Note: (I)=Kelly's Beach,(II)=Andrewburn,(III)=modern catch.
-1 = less than 1%

TABLE 2. Fish species and methods of catching them.

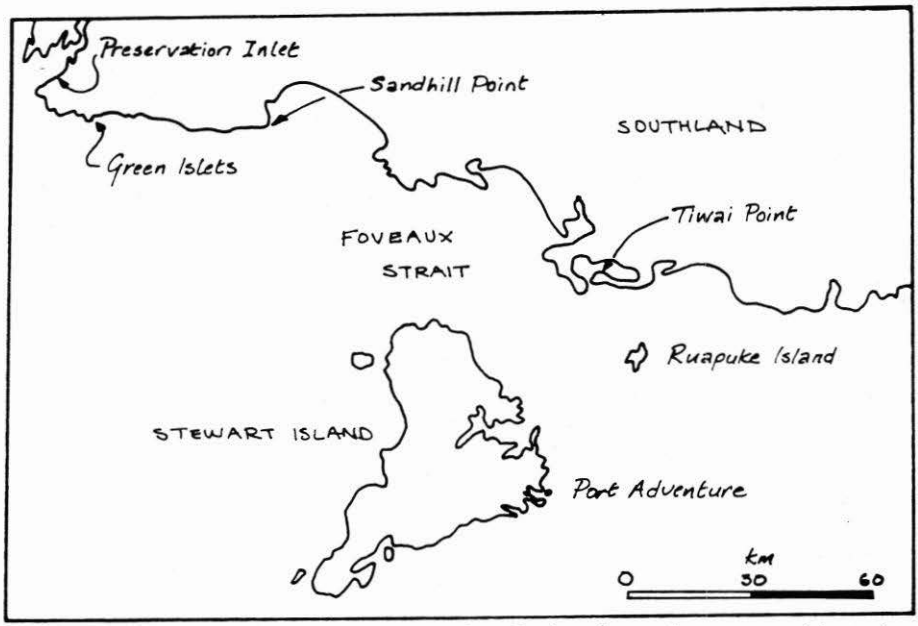

FIGURE 1. Southernmost New Zealand showing places mentioned in the text.

Firstly, there is little evidence of the use of seine or set nets. Table 2 shows the proportional representation of species in the samples from each site as a whole. These are compared with the results of our week's fishing in Port Adventure, in January 1983, in which we used two monofilament set nets of 4¼ inch mesh (40 m and 50 m) and one 80 m monofilament net of 5½ inch mesh rigged for flounder. These were set mainly within a kilometre of Kelly's Beach. In our catch of about 400 fish around 90% comprised species normally taken in nets (Table 2).

In the Kelly's Beach remains, however, none of these species are represented, and they form only 10-20% of the fish in the Andrewburn samples. Since species such as moki and butterfish are abundant in the marine environments near these sites and, indeed, throughout southern New Zealand, their low representation in sites seems to arise from technological preferences which selected against them. Further data showing this to be a consistent pattern are noted in Anderson (1982) and are fully reviewed in Anderson (1983). In the latter paper I have argued

Offshore(Pelagic and open ground)		% Kelly's Beach	% Andrewburn
Barracouta		38	-
Ling		30	-
Red Cod		8	-
	Total	76	-
Inshore(Rocky ground)			
Butterfish		-	11
Trumpeter		-	11
Blue Cod		15	-
Wrasses		8	56
	Total	23	78

TABLE 3. Inshore/offshore preferences.

that, in addition to environmental reasons, the labour available to make and use nets, especially seines, was much more difficult to muster in southern New Zealand than in the north.

The second conclusion to be reinforced is that there is an east coast-south coast difference in the representation of species from inshore, as against offshore, habitats. Table 3 shows that at Kelly's Beach the remains are from three of the 'big four' of east coast South Island Maori catches (the fourth was hapuku, see Leach and Hamel, 1978). These species were caught predominantly from canoes at distances which sometimes reached 30 km offshore. In contrast, at the Andrewburn, the species are from rocky inshore habitats (Table 3), and were probably caught directly from the rocks. Elsewhere in southern New Zealand fish remains generally show the same east coast/offshore - south coast/inshore difference. Amongst other things it probably arises, as Leach and Anderson (1979) and I (Anderson, 1981, 1983) have argued, from the considerably more dangerous sailing conditions for Maori canoes in waters exposed to the south.

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