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HUMAN IMPACTS ON 'THE ISLANDS', LAKE WAKATIPU

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In the period 30 April-2 May 1984, an archaeological/environmental assessment survey was conducted on Pig and Pigeon Islands at the north end of Lake Wakatipu (Fig.1) by Brian Ahern (Senior Ranger, Mt Aspiring National Park, Glenorchy); Russell Beck and Karl Gillies (Director, and Archaeologist respectively, Southland Museum); and Neville Ritchie and Stuart Bedford (Historic Places Trust, Cromwell). Complete survey coverage was thwarted by dense undergrowth over many parts of the islands. Planned shoreline inspections using a dinghy were also curtailed by stormy conditions on the lake, and intermittent snow/rain falls.

'The Islands' consist of Pig and Pigeon Islands, and Tree Island, a small bedrock exposure west of Pig Island. They have a total area of 259 ha and have been managed since 1875 as endowment reserves vested in the Queenstown Borough Council. The principal objectives of the survey were to assess the flora and fauna and cultural resources with a view to the islands' status being changed into scenic reserves and their administration being transferred to the Lands and Survey Dept at Glenorchy. The islands are a significant and attractive feature of the landscape as Alfred Duncan described in 1860: "Looking up the northern arm of the lake it seemed like a huge amphitheatre. The waters lay at our feet like a sheet of glass, broken only by two islands (Pig and Pigeon), and backed by the great snow covered ranges which stand in vast array with grand old Earnslaw towering overall and glistening in the morning sun" (Duncan, 1969:24). The islands are still a dominant and picturesque element in the landscape, but whereas in Duncan's day they were wooded, now only remnant pockets of native trees survive.

A secondary object of the survey was to find evidence linking the islands with pre-European exploitation of the nearby Dart/Routeburn nephrite deposits (Beck and Ritchie, 1976 and 1980; Ritchie, 1976; Beck 1984:44-56), or other sites in the Glenorchy area (Ritchie, 1975 and 1980; Anderson, 1982; Anderson and Ritchie, 1981 and 1986). Although few new pre-European or historic sites were located (which could be largely attributable to the dense bracken cover now established on the islands), two previously unrecorded oven-pits were found (S123/252), one of which was tested (N.Z.H.P.T. permit 1984/27). The ovens are believed to be umi-ti. They and an associated radiocarbon date are described later.

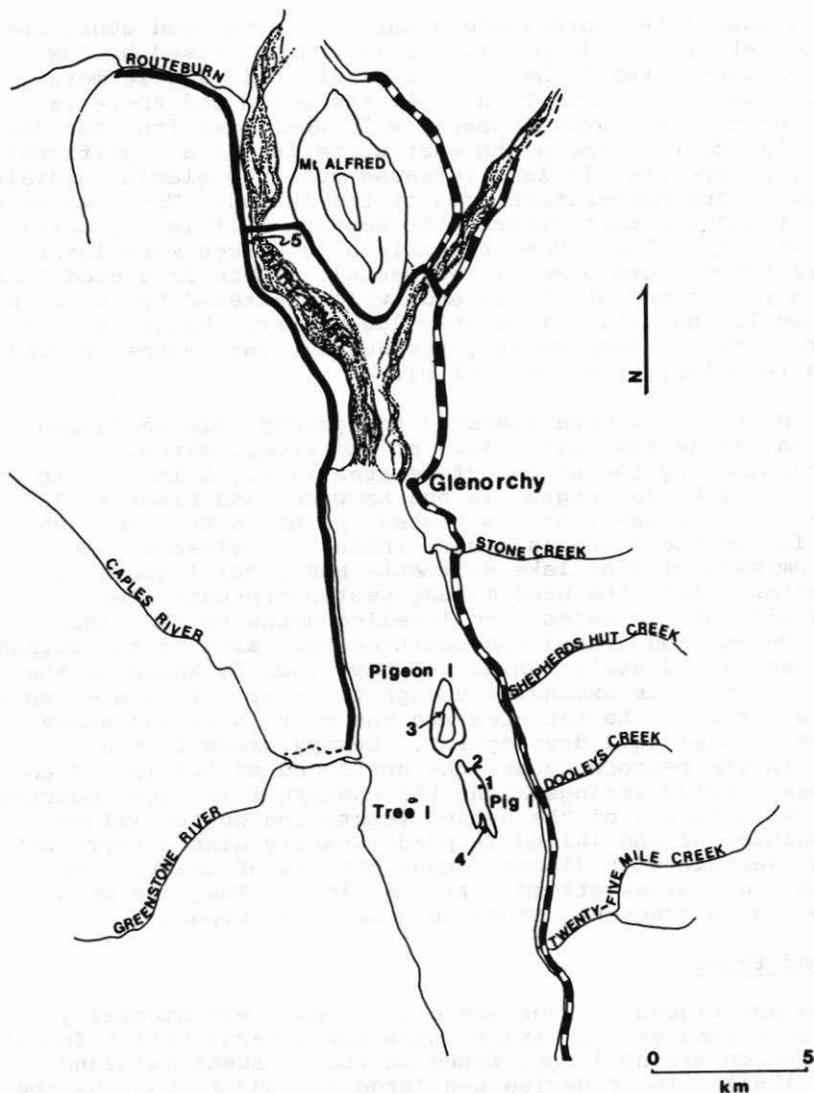


FIGURE 1. North end of Lake Wakatipu showing location of sites mentioned in text. 1. S123/251 (oven?); 2. S123/252 (ovens); 3. S123/12 (ovens?); 4. unconfirmed oven; 5. S122/1 Dart Bridge site.

Environment

Pig Island is approximately three km long, and about one km across at its widest point. It is characterised by low flat topography, the highest point of which is little more than 30 m above the lake level. At the south end there is a deep inlet with a gravel beach, well sheltered from the north. A swamp adjacent to the north-east shoreline is a significant feature, as are the old lake terraces cut into glacial gravels which cover the mid-eastern area of the island. The remainder of the island and particularly the western half is a glacial worn platform of Haast Schist overlain in places with loess deposits (wind blown glacial sediments). There is a good landing at the northern end of the island, well sheltered by the bulk of Pigeon Island, which lies only 200 m away. While both islands are surrounded by deep water (over 500 m), the channel between them is relatively shallow (1-2 m).

By dint of its more elevated topography, Pigeon Island is recognised as the main island of the group, although it has approximately the same surface area as Pig Island. Pigeon Island is 2.5 km in length, is one km wide, and rises to 137 m above the lake level at its highest point on the southern half. The southern shores, where there is a pleasant bay-beach composed of fine lake sediments and glacial gravels, are sheltered from the predominant west-north-west winds. Several old lake terraces form levelled areas on the slope behind the bay and around the south-eastern side of the island. The terrace immediately behind the bay, locally known as the 'cricket pitch', is expansive enough to offer a flat area some 100 x 70 metres. The terraces are the only locations where there is heavier soil development. Swampy areas formed in pockets in the bedrock toward the north end of the island and wet areas forming springs along the eastern flank are important for the maintenance of the native vegetation on the island. The remainder of the island is predominantly glacial-worn schist bedrock overlain with discontinuous patches of loess. The north and west sides afford little shelter. They are open and exposed to frequent strong to gale force winds.

Flora and fauna

Pig and Pigeon Islands are considered environmentally significant because they are refuges for several native forest species which are no longer found on the adjacent mainland (Ahern, 1984). Their demise was largely brought about by the extensive use of fires by pastoralists to clear forest and bracken since the earliest days of historic settlement in the area. Fire has been used as a means of clearing vegetation on the islands too, and both islands have been grazed by sheep,

and possibly cattle at times. In recent years the islands have been leased for intermittent stocking with limited numbers of sheep. In 1980-81 goats were captured on the nearby Richardson Range and released by the lessee on Pig Island. An estimated 30 goats are still there and pose a real threat to remaining pockets of regenerating native vegetation.

The history of repeated fires in the upper Wakatipu has eliminated many native tree species from the area, but small stands of some survive on the islands. Small pockets of kahikatea and matai-podocarp remnants of an earlier period of vegetation cover, cling on around the swampy areas mentioned earlier, particularly along the southern shoreline of Pigeon Island and the north eastern end of Pig Island. Two mature stands of red beech cover the south western spur of Pigeon Island. They are important as a seed source and a support for the podocarps lower down the slope. Shorelines are the other important habitat. Here patches of rata, lancewood, kowhai, manuka, and broadleaf have survived browsing and fires. They too are important as seed sources.

On the eastern promontory of Pigeon Island, a strong but thin stand of mature lancewoods is threatened by the vigorous spread of exotic pines from the bay, which is excluding all other regeneration by native plants. On the western slopes of Pigeon Island, cabbage tree stands are recovering strongly, along with a pittosporum/hebe combination amongst the bracken cover. The main rata and kowhai stands are along the north and east shorelines of Pigeon Island and on the eastern shore of Pig Island. A stand of manuka on the mid-eastern shore of Pig Island is providing shelter for other regenerating native species. Apart from the small areas of native forest just described, the rest of the land area on the islands is covered with emergent scrublands of bracken, and tutu, within which there are occasional cabbage trees and flax groves. Open areas with a thin soil cover hold a sward of brown top and fescue grasses.

The spread of introduced plants and noxious weeds presents a threat to the native vegetation on the islands. Pines and larches established around the sheltered bay at the southern end of Pigeon Island are spreading at the expense of all other vegetation, while small thickets of blackberry, briar and gorse are now established on the shores of both islands. Large tracts of Spanish heath are well established on the north and south ends of Pigeon Island and on the southern area on Pig Island.

Human history

Compared with that found in other interior locations, there is considerable field evidence (supplemented by ethno-

historic records) of pre-European activity around the area at the head of Lake Wakatipu. As the archaeology and prehistory of the area has been reviewed previously (Ritchie, 1980), only directly relevant aspects of it are recapitulated here. Radio-carbon dates obtained by Simmons (1973), and Anderson and Ritchie (1986) indicate that initial Maori visitation to the area pre-dates 1200 A.D. Evidence, principally from excavations at the Dart Bridge site (S122/1; see Anderson & Ritchie, 1981 and 1986), suggest that the area was repeatedly visited throughout the Archaic phase. Initially Maori parties may have been in quest of moa or other food resources. Ti cooking, and the collection of nephrite from the Routeburn and Dart Rivers appear to have become important attractions as moa became increasingly scarce (Beattie, 1920; Anderson, 1982; Ritchie, 1976; Beck, 1984; Anderson and Ritchie, 1986).

Traditionally, the sites around the head of the lake also served as transit camps for travellers passing between the west coast and the interior. Maori place names and traditional routes into the area were recorded by Herries Beattie in his numerous publications (e.g. Beattie, 1945:66).

So where do the islands at the head of Lake Wakatipu fit into this pattern? According to Mackay (1906:41), "the Maori name for Pigeon Island was Wawahi-waka ('splitting canoes'), so named from the fact that the people of the ancient Ngatimamoe and other tribes of the stone age resorted here to fell and split trees for the purpose of making canoes. Totara-pines of large size formerly grew on the islets, before they were overrun by fire. Greenstone implements and ornaments of the neolithic era have been found on Wawahi-waka". Beattie (1920:52) stated one of his informants (he did not mention his name "found a kapeu (greenstone ear pendant) on Pigeon Island (Wawahi-waka), Lake Wakatipu, in the year 1864", and surmised that it was very old because, "it was worn white". In rather contradictory statements Beattie, (1945:29,34) implied Pig Island was known to the Maoris as 'Matau'. also the name of the legendary giant of the lake.

The first European settler in the area, William Rees, also recorded traces of Maori occupation. While searching for sheep country at the head of the lake in 1860, "he stopped only long enough to inspect the timber available on Pigeon Island and found there traces of what was apparently an old Maori garden" (Griffiths, 1971:62; anon, 1860). At this time the islands were well wooded, but by the turn of the century most of the tall timber was gone. Mackay (1906:41) recorded that Pigeon Island was (then) "covered with a growth of koromiko and other shrubs".

While Maori parties may have made some inroads into the established native vegetation, most of the deforestation appears to have occurred between 1860 and 1900. William Rees, the first runholder in the area, was the main perpetrator. According to Griffiths (1971:84) "One of the most lucrative businesses in which Rees was involved was undoubtedly the sawmill, which from the first days of settlement he has established on Pigeon Island". However, an acknowledged expert on the history of the Wakatipu basin, Mr P.M. Chandler believes "the mill at/on the 'islands' to have been located on the adjacent mainland (near the mouth of the Greenstone River) rather than on the actual islands." In the following years mining was at its height in the upper Wakatipu creating a keen demand for structural timber and firewood (Griffiths, 1971:85; Miller 1973:212), much of it being obtained from Pigeon Island. At least one sizeable ship was built on the island. The paddle steamer "Wakatipu", "the first steamer to be constructed for commercial purposes on the lake ... was built from steam-seasoned timber at Pigeon Island by a Mr Gorringer for Messrs C.N. Campbell and Co. She was launched on March 13th 1863 ... and could carry 212 passengers" (Meyer, 1980:15).

Both Pig and Pigeon Island have been intermittently occupied since the first Europeans arrived in the area (P.M. Chandler, pers.comm.). John von Tunzelman, a runholder, lived on Pig Island (also known as Long Island) from 1867-71. His son John was born there. Other pastoralists, William Grieve (1871-75) and McCardle and Hodge (1875-79) also occupied the island for short periods. Pigeon Island has had several lessees over the year: the Johnstons (pre-1888), Charles Waites (1888-1933), Huntly Groves (ca. 1927-1944), and Mary MacKenzie and others (post-1944). Of these, Charles Waites, a former rabbitier, is the most notable in that he lived on the island during his lease tenure. His home was a galvanised iron hut which he built in the bay at the south end of Pigeon Island.

Field evidence

Despite the recorded evidence of both Maori and European activities on the islands, few sites were found during the course of the survey. No Maori sites were found on Pigeon Island but this is not surprising because, apart from a few small open areas, the island is now virtually covered in thick regenerating scrub (bracken and tutu) which impedes progress and reduces ground visibility to virtually zero. In particular, no evidence was found of the 'Maori garden' noted by Rees, the semi-submerged 'stone causeway' and 'eel trap' (S123/5) recorded in 1967 from information given to D.R. Simmons, the 'canoe building site' (S123/6; consisting of 'occupation and a launching ramp') first reported by Charles Haines to the

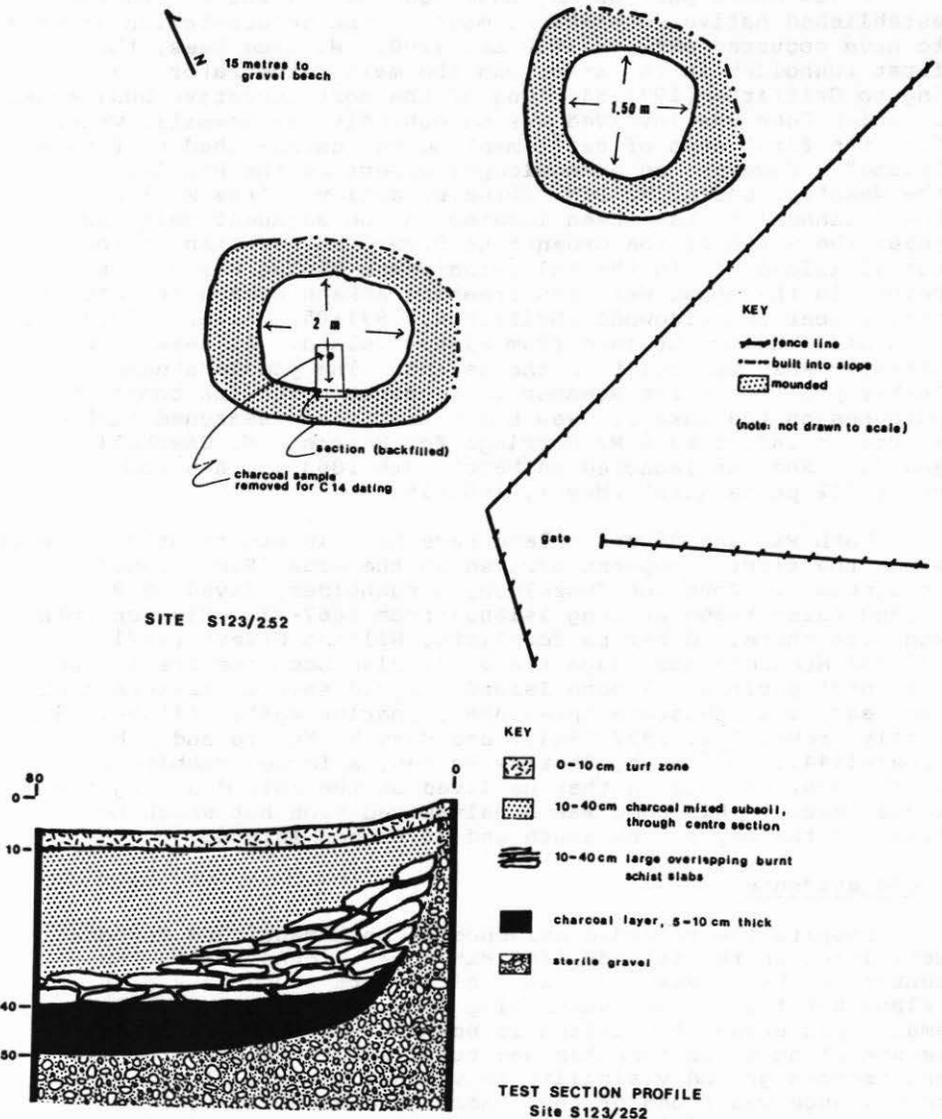


FIGURE 2. S123/252, umu-ti, plan and section. A charcoal sample gave a date of 673 ± 34 BP.

Otago Museum in 1919, or of oven sites (S123/11) on the western slopes of the island reported by the then lessee, Mr D. Sutherland in 1975. To my knowledge, there are no Maori artefacts said to have been found on the islands in public repositories or private collections. Nor was there any visible evidence that could be clearly associated with the early historic activities (saw milling and ship building).

Two previously unrecorded oven-pits (S123/252) were found on Pig Island. They are located immediately behind the small gravel beach at the north-west end of the island (the landing when crossing from Pigeon Island). The ovens, which are believed to be umu-ti, are depicted in plan and section in Fig.2.

A trench-section was excavated in the larger of the two, to confirm it was an oven and to obtain a sample of charcoal for radiocarbon dating. This produced a date of 673 ± 34 , a date which ties in well with the pattern of exploitation suggested by the C14 dates derived from sites in the Glenorchy area. The sectioned oven is 2 m across, 50 cm deep, and is notable in that the stones in it 'lap' up the steep sides. The dominant wood in the oven charcoal, toatoa (Phyllocladus alpinus), is virtually non-existent on the island today. The oven also contained less quantities of coprosma shrub wood.

One other oven-like feature was found. It consists of a 1.3 x 2.3 m hollow-centred mound (30 cm high) surrounded on two sides by a shallow drainage? ditch. This feature is located on the north-east side of the island (grid reference 333800). Upon testing, it contained no evidence that it had been used as an oven, though this does not rule out the possibility that cooking was its intended purpose (it may also be a historic feature). Following publicity of the survey after its completion, a Glenorchy resident informed the Mt Aspiring Park ranger station at Glenorchy, that there is 'a Maori oven' behind the western shore of the deep bay at the southern end of Pig Island. This is quite likely, because the dense bracken prevented an adequate inspection of this area during the survey.

The only historic structure visible on the islands now are sparse remnants (fence posts, parts of old yards, and scattered sheets of corrugated iron) associated with the farming era (possibly remnants of Charles Waites' 1888-1933 occupation), and a large private hut (used as our base). These are all located in the sheltered bay at the south end of Pigeon Island. There is a small hut at the north end of Pig Island.

Concluding discussion

It is difficult to define the role of the islands during the pre-European era. From the known information and visible

field evidence, it seems likely that Maori occupation of the islands were short term or transitory and concentrated on the more sheltered shores of the islands, particularly around the bay at the southern end of Pigeon Island.

According to Mackay (1906) and Beattie (1945:29), the islands (especially Pigeon) were a source of timber for making canoes. If this contention is correct, the gently sloping shorelines around most parts of the islands would have facilitated launching whole or partially fashioned canoes. Pre-European craft built on the islands could have been used for conveying foods (possibly ti, moa meat, preserved ducks or eels) and lithic material (such as nephrite) southward towards Otago and Foveaux coastal settlements. With the exception of moa, the food resources on the islands during the pre-European era were probably similar to those obtainable on the adjacent mainland. The 673 ± 34 B.P. date obtained from charcoal from oven site S123/252 is quite consistent with the pattern of events deduced from investigation of other sites in the area. As happens today, it is likely that the sheltered bays in the islands historically attracted passing small craft voyagers who would often go ashore. Other than Bobs Cove the north arm of Lake Wakatipu affords few locations to shelter from sudden storms which can arise on the lake.

Despite the lack of visible structures associated with the European milling era (1860-1890), clearly milling has had the greatest impact on the islands and markedly changed their appearance. Once the timber resources were depleted, visits to and interest in the islands seem to have waned, except for their intermittent use for grazing by local runholders, picnic parties, and an on-going general appreciation of their scenic values. In the absence of a regular shipping service these days, recreational opportunities are limited to those with boats.

To conclude, because of the dense undergrowth on the islands at present, it is unlikely that all the surface cultural features have been recorded, and as a consequence any picture of past activities is incomplete. Under the proposed management regime (Ahern, 1984), which is basically to eliminate noxious plants and animals and let the indigenous forest regenerate, ground visibility is unlikely to improve substantially in the foreseeable future. While the remnant vegetation on the islands is significant as a benchmark to gauge human-induced environmental changes, and it is desirable to maintain it for both its scientific and scenic values, in the event that accidental scrub fires occur on either island, the opportunities should not be missed to conduct surveys of the burnt areas to enable the recording and assessment of cultural resources. The re-

cording of archaeological sites on the islands before reafforestation, will materially assist understanding of past events and through their interpretation make the islands a more interesting place to visit.

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