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**NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION NEWSLETTER**



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ARCHAEOLOGY AND PREHISTORY OF THE UPPER WAKATIPU REGION

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(Editor's note: this article first appeared in a slightly different form in issue number 25 of The Courier, the journal of the Queenstown and District Historical Society).

This paper stems from an archaeological survey undertaken by the author around the head of Lake Wakatipu in 1975 (Ritchie,1975). That survey initiated an on-going interest in the prehistory and in particular the development of Maori nephrite (greenstone) exploitation in the area (Ritchie,1976, 1977; Beck and Ritchie,1976, 1980).

Much has been written of the traditional history and Maori place-names of the Wakatipu region, notably by Herries Beattie (e.g. 1945), whilst others have drawn on his writings (e.g. Taylor,1950; Newman,1971; Miller,1972). Without belittling the work of the early recorders, they seldom attempted to relate their information (in Beattie's case largely derived from interviews with elderly southern Maoris) to the then known physical evidence, i.e. the archaeological sites and artefacts found in the region. Instead they tended to dwell on the romantic and the legendary. This essay may be somewhat the duller for it, but it is based on the archaeological and documented evidence of Maori occupation in the Upper Wakatipu area.

The environment

The area locally known as the 'head of the lake' nestles between two parallel mountain ranges; the Humboldts to the west, and the Richardson Range to the east (see Fig.1 and Plate 1). To the north the area is dominated by the terminal peaks of long mountain chains, namely Mt Earnslaw, Mt Alfred and the Sugarloaf. The Dart and Rees Rivers have formed a large alluvial delta at the northern end of the lake. The delta is surmounted on both sides by lake terraces. The terrace on the eastern side near Glenorchy, which overlooks a lagoon and former swampland, would appear to have been as favoured for settlement in prehistoric times as it is now by the present inhabitants.

At the time of the first European settlement in the mid 1800s, the whole north-western side of Lake Wakatipu along the Humboldt Range was covered in dense native forest (predominantly beech but containing some podocarps). The forest stretched from the lake shore to about 650m above sea level. Since European settlement at least eight sawmills

have operated in the Upper Wakatipu, which, together with disastrous bush fires around the turn of the century and subsequent forest clearance for pasture, has resulted in a vastly decreased forest area.

No major studies of the pre-European vegetation in the Glenorchy area have been undertaken. It is likely, however, that the eastern margins of the lake were dominated by tussock grassland, extensive patches of bracken fern and occasional cabbage trees, with remnant forest in the creek gullies. Matagouri is also likely to have been a significant vegetation in some areas, whilst swamp-grasses would have dominated on the river delta area.

### Archaeological background

Two factors stand out with regard to the prehistoric occupation of the more inland areas of Central and western Otago. Favoured locations around the inland lakes appear to have served as foci for Maori occupation and the known sites tend to occur in relatively concentrated 'oases' separated by extensive areas largely devoid of evidence of occupation. Travel between these favoured locations, based on the evidence of transient camp sites, ovens and artefact findspots, was generally via the line of least resistance, up the main river valleys, taking to the tops occasionally to avoid obstacles. Presumably mokihi (Bathgate, 1969) were used where possible on the inland waterways.

The upper Wakatipu, like many other areas of Central Otago, has to date seen little archaeological research compared with coastal areas. A number of factors have contributed to this situation:

1. The known evidence indicates that Central Otago has never been greatly occupied by prehistoric peoples.
2. There is a lamentable lack of known undisturbed sites.
3. There is a lack of economic evidence in the sites that are known, although the small number of excavations perpetuates this situation.
4. The distance of the area from the main research institutions.

### The sites

The upper Wakatipu constitutes one of the concentrations of prehistoric settlement in Central Otago. About thirty prehistoric sites are known to exist, or formerly existed within about a 20km radius of Glenorchy. For the record there were also Maori settlements in the middle Wakatipu area at Bob's Cove, Queenstown Bay, Frankton, near the mouth of the Kawarau River and down at Kingston (Beattie, 1945:32; Taylor, 1950:144). However, other than an oven (Site S132/3) near Bob's Cove and isolated finds of artefacts, little firm evidence of the precise location of these settlements has been recorded. Sparse details about

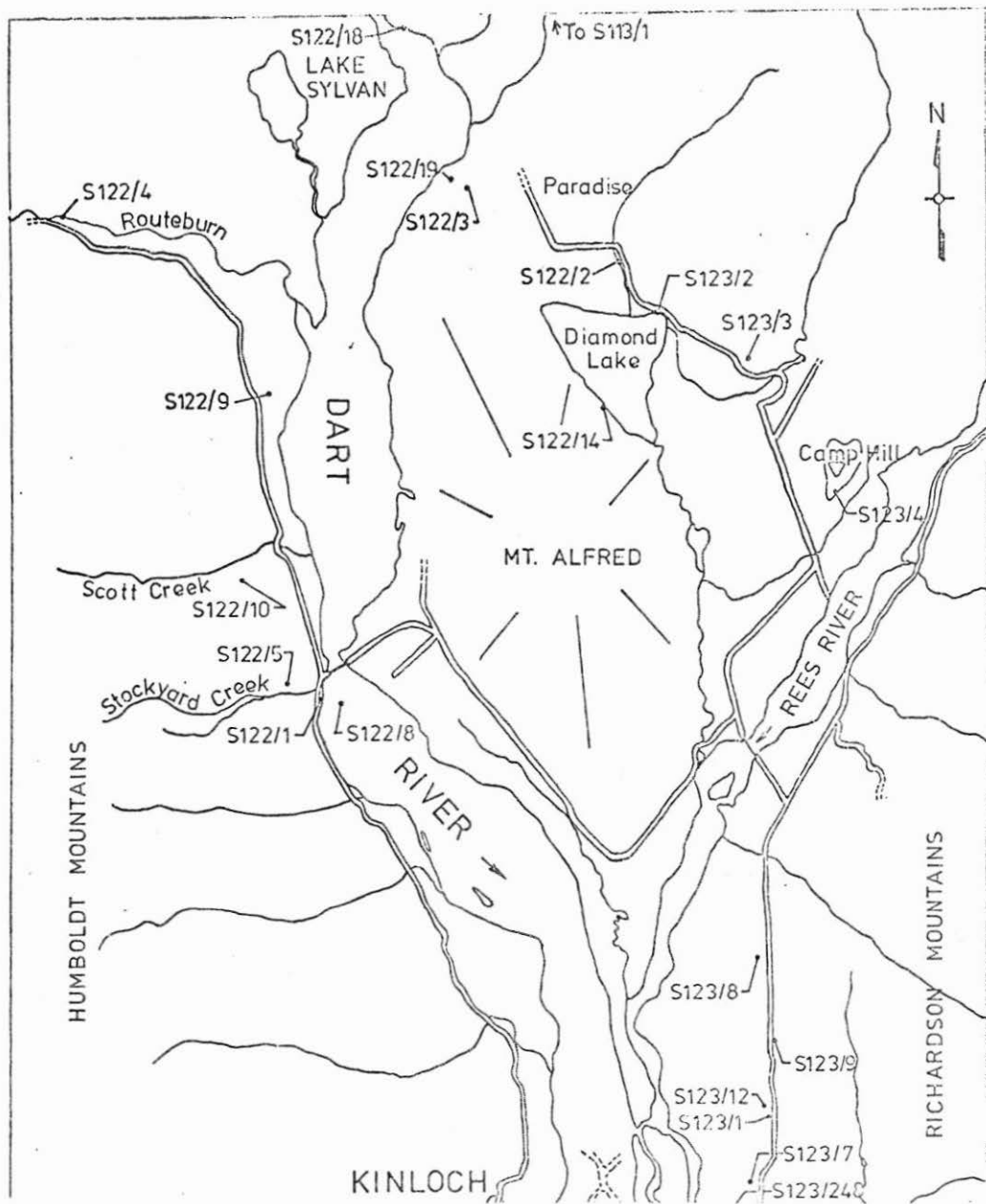
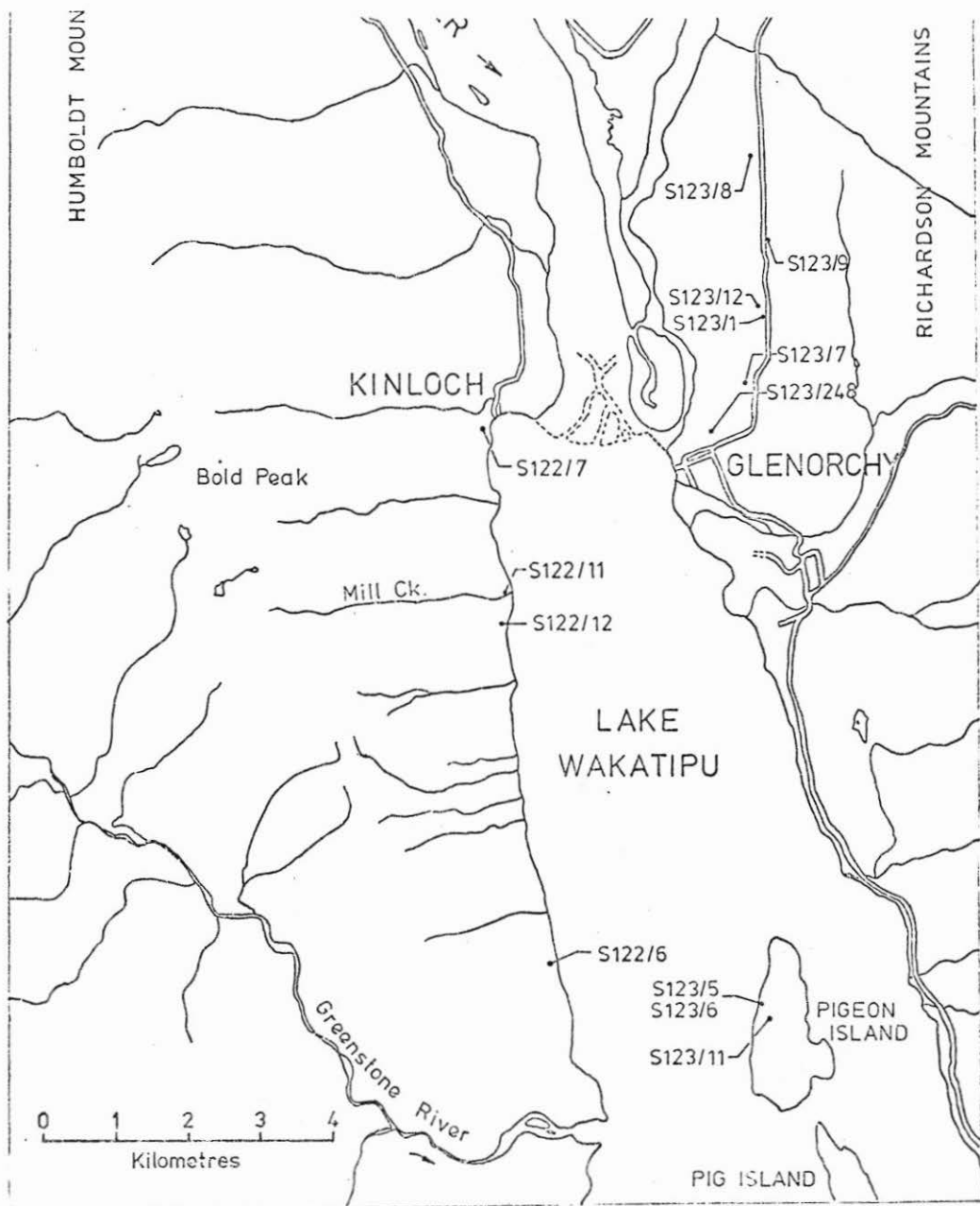


FIGURE 1. Site locations in the upper Wakatipu district.



the existence of ovens, middens and adze finds at Kelvin Heights have also been recorded (S132/1) but this area has never been adequately examined. MacKenzie (1948:16) stated that there were formerly many Maori ovens (S132/34) in the vicinity of the Walter Peak homestead, but most of these have been destroyed by landslides, cultivation or stock trampling. A cache of adzes and a midden containing freshwater mussel shells were uncovered in 1874, and are believed, from the few details provided, to have been located on the shore of Frankton Arm (Keyes, 1967: 22). There is also a prehistoric camp site (S132/4) at the western end of the Kawarau Gorge which will eventually be inundated by the lake formed behind the proposed hydro-dam at Gibbston. This site which has revealed evidence of worked moa long bones (tibia) and cutters of porcellanite and silcrete, will be investigated within the Clutha Valley archaeological programme during the summer of 1980-81 (Ritchie, 1979).

Positive information about sites in the upper Wakatipu area was first brought to the attention of museum authorities about the end of the First World War. In 1919, Mr Charles Haines, a long standing resident, presented a collection of 215 Maori artefacts from the region to the Otago Museum. Most of these were found in the Glenorchy area, but notable exceptions were ascribed to the Shotover Valley, the Nine Mile, and Martins Bay on the West Coast. Some 51% of the artefacts found near Glenorchy were of nephrite, in the form of adzes, chisels, awls and partially worked pieces. Many of the artefacts are known to have been derived from one 'village' site (S122/1) near the Dart Bridge, and another 17 are labelled 'Camp Hill', but unfortunately precise location details of most of the other artefacts in the collection have been lost because they were only labelled 'Glenorchy'. Further information about sites in the area has been given to the author by Mr Fergus Heffernan of Glenorchy. As a young man, he spent considerable time in the company of Mr Haines and was, therefore, able to provide additional information concerning many of the locations from which Haines obtained artefacts.

Although sites in the Glenorchy area are rather inconspicuous, evidence of a wide range of prehistoric site types does exist, or is known to have existed until relatively recently. At least six former open settlement sites are known, near the Dart Bridge (S122/1), the Lagoon site (S123/7) and the Wyuna-Koch site (S123/1) on the terrace above the Glenorchy lagoon, Camp Hill (S123/4), a reputed terrace pa site (Simmons, 1967; Miller, 1972:7), the Glenorchy recreation ground site (S123/248) which has virtually been destroyed and the Paradise site (S122/3). It is likely that two rockshelters (S123/3 and 9), adjacent to the Glenorchy-Paradise Road, from which Charles Haines recovered Maori kits and textiles (now in the Otago Museum) were inhabited too. The cave sites are known to have been desecrated by county workmen.

The role of the pa site (S123/4) on Camp Hill is somewhat enigmatic (Plate 2). Seventeen of the artefacts in the Haines collection in the Otago Museum are labelled 'Camp Hill'. They include eight greenstone adzes and chisels and seven perforated oyster shells. According to Mr Heffernan, Mr Haines found some Maori artefacts on the terrace in front of the hill in 1915.

Mr D.R. Simmons, then ethnologist at the Otago Museum, examined the site in January 1967. He considered an area at the southern end of the hill had been terraced and ditched in a horseshoe around a stand of existing beech trees. House terraces and at least one pit were visible (Simmons, 1967:15). He thought it was probably the legendary pa constructed by southern Maoris in response to the Ati Awa (Te Puoho's) threats of invasion of Murihiku in the 1830s (ibid:15). Numerous depressions which dot the sides of Camp Hill are locally attested to be Maori ovens, and indeed one definite oven was excavated by Simmons (Simmons, pers. comm.). Some of the features were test-excavated by the writer in 1975, however, and it appears many of the depressions are caused by natural phenomena such as tree dimpling, or the digging of prospecting or borrow pits.

The area around the picturesque location of the Paradise camp site (S122/3) has been greatly modified by the imposition of the Glenorchy Scheelite Mining Company's mine, the nearby sawmilling on Mill Flat and land development. John Kingsland found many Maori artefacts in this area between 1900 and 1916. They had been rooted out by pigs, which had been originally brought in to control the bracken, (F. Heffernan, pers. comm.). The Kingsland collection was eventually presented to the Southland Museum, Invercargill, but unfortunately its value is decreased because precise details about the location of the various artefact finds were not recorded. A few hundred yards upstream, a former 'flint knapping' site (S122/18) below the Narrows, has been eroded away by the Dart River (F. Heffernan, pers. comm.).

Two significant artefacts have been found in the vicinity of the Paradise site in recent years by the landholder, Mr J. Veint (pers. comm.). They are a green argillite 2B style adze, and a most notable obsidian core found in 1978. On hand specimen characteristics, the latter artefact is believed to have originated from Mayor Island in the Bay of Plenty. It was possibly traded southwards in exchange for southern produce such as nephrite and muttonbirds. A fibreglass cast of the core is held in the Southland Museum.

Although no trace survives today of the former Maori encampment (S122/248) near the Glenorchy recreation ground "a large amount of Charles Haines' collection was uncovered there" (F. Heffernan, pers. comm.).

Undoubtedly the reason for the existence of some of these settlements or camp sites is related to the discovery and subsequent exploitation of the nephrite deposits. Two proven Maori nephrite collecting areas, the lower Routeburn (S122/4) and the Dart River source (S113/1) are recorded as archaeological sites.

Ovens are another important site type in the area. Several ovens are known, being principally located on the terrace overlooking the lagoon north-east of Glenorchy, and near Diamond Lake (S122/2 and 5, S123/2, 7 and 11). A number of artefact findspots are also recorded. These are mainly of adzes, usually found near ploughed up oven sites, although some were cached (S122/6). Those known to the author were of green argillite (suspected to be from Southland), local greywacke and Routeburn nephrite (e.g. S122/6 and S123/8 and 12).

A feature of the Upper Wakatipu region is the number of apparent 'oven depressions'. Although most of these features are suspected to be of natural origin, it is virtually impossible to positively differentiate them from conventional Maori oven sites without excavation. An 'open-oven' variation, or fireplaces consisting of depressions excavated into a bank in which a fire has been lit, were described by Ritchie (1975:11). The usage of these features is uncertain. Depressions of this type, infilled with charcoal were observed at Elfin Bay in the 1890s (ibid:11). They may be quite recent features and are possibly sheltered fireplaces excavated by station-hands to reduce the risk of fire while boiling the billy in the dry tussock and bracken country.

A reported Maori eel trap (S123/5) and canoe launching ramp (S123/6) on Pigeon Island require further investigation. This island was well wooded at the onset of European settlement and may have been used for canoe building.

### The excavations

In 1967 Mr D.R. Simmons carried out a survey of sites in the Glenorchy area, using the artefact collections of the Otago Museum as a guide, along with tradition information, local knowledge and surface indications. He undertook small scientific excavations on three of the sites he had located. In each case the excavations were aimed at determining the nature of the sites. He had hoped that larger scale excavations could be undertaken later but these did not eventuate (Simmons, pers. comm.).

The survey led him to an early occupation site (S123/1) on the terrace northeast of Glenorchy. He named it the Wyuna-Koch site because



it straddled the boundary between Wyuna Station and G. Koch's property. The site consisted of small ovens and blackened occupation material, notably flake knives, early adze forms and flake debris indicative of adze manufacture. These were located on a low ridge running across the terrace. Part of the site had been ploughed up and the remaining portion was badly disturbed by rabbit burrowing and quarrying. Two radiocarbon dates placed the occupation of the site in the fourteenth century A.D. (Simmons, 1973:175).

The second small excavation was undertaken on a site first reported by Charles Haines (S122/1). The site, which forms a triangle of some 2,500m<sup>2</sup>, is bounded by the Kinloch Road and the right bank of the Dart River. Haines presented the artefacts and moa bone he had found in the site to the Otago Museum in 1919, along with a note and sketch indicating that the two 'huts', in which he found many of the artefacts, were demarcated by low mounds of loess which had built up on three sides around the walls of the former structures. Both huts had fireplaces and one had a paved area (5.5 x 2.75m) along one wall.

The collection Haines obtained from the site included a large number of nephrite artefacts (mainly adzes) in various stages of completion, which led Simmons to describe it as 'a greenstone workers village'. The excavation and associated survey indicated that the settlement consisted of twenty 1.8 x 0.9m gravelled or stone-paved mounds (about 23cm high) connected by paved pathways (Simmons, 1967: 17). He interpreted the mounds as parts of houses of a type hitherto unknown. The other notable feature of the site is the large number of both raised rim and rimless pits. These are likely to have been used for storage and are possibly potato clamps.

Cultural material from the site included opaline, jasperoid, basalt and nephrite flakes, charcoal and fragments of dog and bird bone. In 1979 a large midden containing southern oyster shells (*Ostrea sinuata*) was observed eroding from the river bank beside the site (J. Mitchell, pers. comm.). The writer examined the site on 16 January 1980 with Mr Mitchell. We were only able to find one oyster shell. It appeared that the substantial and potentially very important midden deposit has been washed away by the river quite recently, judging by the freshness and undercut nature of the riverbank.

This site may have been occupied intermittently for several centuries. Simmons (1973:175) obtained a sixteenth century AD radiocarbon date from charcoal recovered from the top of the occupation layer on one of the mounds; however, if the numerous pits are potato clamps, this European introduction would indicate post-1800 AD occupation.

Unfortunately, at the time Simmons worked on this extensive site, his time and resources were limited. The confusion over the function of the various features within the site may be clarified, if the site can be protected and a larger area excavated at some future date.

The third site excavated by Simmons was termed the 'Lagoon site' (S123/7). It is situated about 1.5km from Glenorchy on the lowest terrace above the lagoon. He described it as a large oval structure (3m long) with a raised 40cm high bank on three sides. A large oven occupied most of the central space. One quadrant was excavated; two samples of wood in post-holes again producing radiocarbon dates centred around 1500 AD. It seems likely that this feature was some kind of covered cooking shed although Simmons described it as "a raised rim oven site".

### Greenstone exploitation

Interpretation of the early Maori activity in the upper Wakatipu is hindered by a lack of economic evidence, the disturbed condition of some of the key sites and a lack of comparative data from other inland sites. However, ethnographic documentation would suggest that the main camp sites around the Glenorchy area (and other areas of Central Otago) were used as bases by coastal groups, who came into the areas during the warmer months to exploit various nearby resources (Ritchie, 1976:63, 65).

Undoubtedly the greenstone sources were a major attraction to the area at the head of Lake Wakatipu. The two recognised deposits were definitely being exploited before 1500 A.D., and probably from about 1200 A.D., on the evidence of Wakatipu nephrite in early, dated east coast sites. Ethnographic accounts indicate that the area served as a staging or meeting place for Maori groups using the trans-alpine trails to the west coast and those travelling to and from the Foveaux Straits area and coastal Otago (ibid:65).

After the reports in 1846 of the existence of the West Coast nephrite deposits, it was seemingly forgotten that the Maoris had ever obtained nephrite from the Wakatipu region (Ritchie, 1976:106). In 1965 Dr G. Orbell and Mr N. Groves announced they had rediscovered the 'lost' Maori Wakatipu greenstone lode, i.e. the Routeburn deposit. It had, however, already been modestly reported and the stone proven similar to that of Maori artefacts in the Otago Museum by Professor Turner (1935).

But it was apparent to some archaeologists and museum personnel that another distinctive type of greenstone evident in the artefacts in southern museum collections had characteristics which differed from

the stone from any of the known sources. Beattie (1920) had also recorded information from his Maori informants which suggested that another deposit in the area remained to be found.

In 1970 the Dart nephrite deposit was discovered. The combined weight of archaeological, ethnological and geological evidence indicates that this deposit was the one alluded to by Beattie and it clearly was a most important source of the southern Maoris nephrite (Beck and Ritchie, 1976, 1980; Ritchie, 1976; Beck et al, 1979). Stone from the source has been found in sites around Lakes Te Anau and Manapouri, Foveaux Strait and up the east coast to Banks Peninsula. It is likely that some was traded to the North Island but this has never really been investigated.

Because of its special interest the Dart deposit has been made a 'Special Area' within the Mt Aspiring National Park to ensure its protection (this means that entry is by permit only). Although the Dart nephrite was of primary importance to the southern Maoris, it has little modern commercial potential because it is a relatively small deposit. Recently two areas have been found within the reserve which show evidence of the nephrite being worked at the source (Beck et al, 1979; Beck and Ritchie, 1980). It is believed, however, that the majority of the stone would have been collected as it was found and worked by sawing and grinding at base camps. The occupation sites in the Glenorchy area may have served primarily as 'first stage' work areas, the finishing touches being carried out at the recognised greenstone working settlements around Otago Harbour and Foveaux Strait (Ritchie, 1976:63).

### Food Resources

The limited archaeological evidence makes it difficult to ascertain the dietary importance of the potential food resources available in the upper Wakatipu, or whether various plants and animals were obtained primarily for day to day sustenance, or preserved for packing back to coastal settlements. Although there are many recorded instances of different Maori groups preserving foodstuffs, in particular birds, for over-winter food supplies, obviously the volume that could be carried back from the farthest inland areas such as the upper Wakatipu would be very limited. Studies have shown (e.g. Leach, 1969) that the Maoris clearly had different economic and dietary habits in different areas of New Zealand. Thus one cannot automatically assume that because a certain plant or animal was important in one area, that the same was true of another area. The same can be said of collecting and trapping methods.

Catching eels was undoubtedly an important pursuit and direct evidence of this was observed by Alfred Duncan in the late 1860s (Duncan, 1969:28). He noted that in the vicinity of Diamond Lake "we found traces of Maoris in the shape of stake nets, baskets for catching eels, spears, waddies, ashes and other debris betokening a somewhat recent camp but we never saw any signs of them in the flesh...." (Duncan, 1974:6).

Birds are also likely to have been a major dietary component. Early accounts indicate that wekas and the native quail were abundant in Central Otago. Wekas are known to have been an important Maori food item and they were also eaten regularly by the early European explorers. Wood pigeons, tuis, and parakeets snared or speared in the forest, and ducks taken on the lagoon, lake or river flats are likely to have been significant items of sustenance too, but excavated evidence is wanting. The Dart Bridge site (S122/1) is the only site in the area from which bones (dog and bird) have been recovered, but no analyses have been undertaken on this material yet. Some of the items observed by Duncan are likely to have figured prominently in fowling activity (c.f. on Lake Ellesmere the Maoris built stockades of stakes into which they drove ducks which were unable to fly during moulting. Once they were trapped they were despatched with clubs - Leach, 1969:45).

Freshwater mussels were also a major dietary component as evidenced by the large midden (S122/14) of the shellfish beside Diamond Lake, however, their calorific value to the Maoris is open to doubt (Ritchie, n.d.).

The role of the moa as a food source in the area is uncertain. Charles Haines found moa bone in the Dart Bridge site (Simmons, 1973: 175) but it is the only site in the upper Wakatipu in which moa bone has been found. MacKenzie (1948:17) wrote that, "many Maori mats with moa feathers have been found in the region, and as far as I can ascertain the latest find was in 1884 at Paradise ....". The source of her information is unstated. Even reports of moa remains in natural deposits are few and far between in the upper Wakatipu. Recently an almost complete skeleton of a Dinornis (the largest of the moa genera) was discovered in a cave in the Dart Valley (Beck and Ritchie, 1980). The ensuing publicity resulted in a local farmer bringing forth the weathered remains of a small moa he had found in the Rees Valley. Both these specimens will be displayed in the Ranger Station at Glenorchy. Another reported moa deposit in the Beansburn Valley will be investigated shortly. It is probable that moas had died out or were becoming very scarce by the time the first Maoris entered the region; however, the limited known evidence could

could be misleading, the climate of the upper Wakatipu is not conducive to long term bone survival. Other natural deposits of moa bones have been reported in the Wakatipu region near the mouth of the Von River, in the gorge behind Queenstown, and near the former Owen's punt and the Nevis Bluff in the Kawarau River (White, 1875).

The significance to the Maoris of the various plants available in the upper Wakatipu is even less understood than our knowledge of the faunal resources. It is likely that the roots of the bracken fern (aruhe) were of some import as a food source, along with the cooked root (kauru) of the cabbage tree. Obviously many other trees and plants were also important as sources of firewood, stakes, cordage, thatch and building materials, but exactly what types were available and favoured awaits further fieldwork and research.

### Conclusions

The upper Wakatipu is potentially a vital area for research by southern archaeologists. The sites undoubtedly still contain much pertinent information about why and when Maoris undertook journeys into the interior regions and how they sustained themselves.

The small excavations which have been undertaken to date have enabled a generalised picture of prehistoric activities in the upper Wakatipu to be sketched, but many questions remain unanswered. Perhaps more queries have been raised as a result of the excavations than have been answered. For example, what is the true nature of the Dart Bridge site? We have only a sketchy idea of its layout, the hut or house styles, the numbers that might have occupied the site and what economic or subsistence activities were carried out there. Nearby Kowhai Island (S122/8) bears evidence of terracing and pits - presumably it was associated with the Dart settlement? Similarly the Camp Hill pa site is poorly understood. Controlled excavations on the hill could hopefully reveal more about the nature of the pa and the oven(?) depressions that dot the slopes.

Pigeon Island is also archaeologically unknown. This large island may have played a significant role in prehistoric times, as it did in the early years of historic settlement. A systematic survey of the island is an important first step.

In recent years the nephrite deposits have been the focus of research interest; however, they are only part of the overall picture. A fuller understanding of their exploitation requires further work on the habitation sites in the Glenorchy area.

Further development of the archaeology and prehistory of the upper Wakatipu can be achieved by a number of means, but the initial requirements are:

1. A detailed investigation of the vegetation and wildlife that existed in the area at the time of initial European settlement.
2. Further analysis of the materials that have already been excavated and the publication of the results.
3. A further programme of archaeological research in the area incorporating the results of the first two studies.

### Acknowledgements

This paper is a summation of archaeological knowledge and the known prehistory of the upper Wakatipu region. I am indebted to all those who have made some contribution, be it through fieldwork, in print or verbally. In particular, I would like to thank Mr D.R. Simmons, now Assistant Director/Ethnologist of the Auckland Museum, for comments on his excavations, and Mr F. Heffernan of Glenorchy for additional information about sites in the area. My thanks also to Ms A. Harrison for useful comments on the draft and Ms S. Easdale for drawing the map.

### References

- Bathgate, M. 1969 Maori river and ocean going craft in southern New Zealand - a study of types and change in relation to the physical, social and economic environment 1773-1852. Jnl Polyn. Soc., 78: 344-377.
- Beattie, J.H. 1920 The southern Maoris and greenstone. Trans. N.Z. Inst., 52:45-52.
- 1945 Maori Lore of Lake, Alp and Fiord. Otago Daily Times Ltd., Dunedin.
- Beck, R.J. and N.A. Ritchie 1976 The Dart Valley Nephrite Deposit. Special Report for Mt Aspiring National Park Board.
- 1980 The 1980 Dart Valley Expedition, includes report on Dinornis find in Dart Valley. Southland Museum Report 1980/1.
- Beck, R.J. et al 1978 Dart Valley Expedition April 1978. Southland Museum Report 1978/1.

- Duncan, A.H. 1969 The Wakatipians. (first published 1888). Lakes District Centennial Museum Inc.
- 1974 Reminiscences of Alfred Duncan. The Courier, No.12:6.
- Keyes, I.W. 1967 New Zealand artefacts from the United States 'Transit of Venus Expedition' 1874-75. Smithsonian Contributions to Anthropology, 2:21-25.
- Leach, H.M. 1969 Subsistence Patterns in Prehistoric New Zealand. Studies in Prehistoric Anthropology, Vol.2, Anthropology Dept., University of Otago.
- Mackenzie, F. 1948 The Sparkling Waters of Whakatipu. Reed, Wellington.
- Miller, A.M. 1972 Fragments of pre European history at the head of Lake Wakatipu. The Courier, No.8:6-8.
- Newman, J. 1971 Maori place names in the Wakatipu. The Courier, No. 7:13-17.
- Ritchie, N.A. 1975 Head of Lake Wakatipu Archaeological Site Survey. Unpublished report to the N.Z. Historic Places Trust.
- 1976 A Contribution Towards the Characterisation of Sources of Nephrite and Bowenite in New Zealand. Unpublished M.A. thesis, Anthropology Dept., University of Otago.
- 1977 Chinamans Bluff Archaeological Survey. Southland Museum Report 1977/1.
- 1979 The Clutha Valley Development archaeological programme. N.Z.A.A. Newsletter, 22:162-172.
- n.d. The Excavation of a Maori Rockshelter at Italian Creek, Central Otago. Unpub. ms.
- Simmons, D.R. 1967 Excavations in the Glenorchy area. In Annual Report of the Otago Museum for the years 1965-66.

- Simmons, D.R. 1973 Radiocarbon dates from the Dart Valley region. N.Z.A.A. Newsletter, 16:175.
- Taylor, W.A. 1950 Lore and History of the South Island Maori. Bascands, Christchurch.
- Turner, F.J. 1935 Geological investigations of the nephrites, serpentines and related greenstones used by the Maoris of Otago and Southland. Trans. Royal Soc. N.Z., 65:187-231.
- White, T. 1875 Notes on moa caves etc. in the Wakatipu district. Trans & Proc. N.Z. Inst., 8: 97-103.





WAKATIPU ARCHAEOLOGY Plate 1. View to the head of Lake Wakatipu  
— Pig and Pigeon Islands in foreground.



WAKATIPU ARCHAEOLOGY Plate 2. Terraces at Camp Hill (S123/4).