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THE CLUTHA VALLEY DEVELOPMENT ARCHAEOLOGICAL PROGRAMME

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Introduction

The Clutha Valley Development project is a major hydro-electric power and irrigation scheme centred on the water resources of the Upper Clutha Valley in Otago. It involves the creation of five man-made lakes over a period of about 25 years. The lakes will eventually inundate 2,400 hectares of presently sparsely occupied land and necessitate over 100km of replacement roading.

The region under discussion (see Fig.1) is enclosed within a rough triangle bounded by the towns of Alexandra, Wanaka and Arrowtown. The main area affected by the scheme is the floor of the Cromwell Gorge which will be almost completely flooded; two arms of the lake will extend up the Clutha River and its major tributary, the Kawerau, in the vicinity of Cromwell township. Although only a small section of the town itself will be flooded, regrettably the historic main street will be lost.

From the outset, when the dam-site investigations began in the early 1960's it was widely recognised that the likely scale of development of any of the schemes under consideration would have serious deleterious effects on many historic sites and their associated landscapes. Besides the urban areas of Cromwell and Lowburn, about 300 other archaeological and historic sites will be affected by the scheme, some 30% of these by new roading.

The environmental setting

The Central Otago landscape is dominated by northeast-southwest trending block mountains separated by wide intermontane depressions. The Upper Clutha depression is partially filled with terrestrial deposits of early Pleistocene age (Wood, 1962), covered with a considerable depth of recent gravels. Extensive tracts of terraces are developed throughout the valley and have been described by Park (1908), McKellar (1960), Wood (1962), and Leamy and Saunders (1967). In places where the mica-schist bedrock is exposed it forms craggy outcrops within the valley.

The climate and past and present vegetation of the Upper Clutha Valley has been recently summarised from earlier descriptions

(Buchanan, 1868; Bathgate, 1922) by Higham et al (1976:12-14) and Ritchie (in preparation). The main changes which have occurred since European settlement seem to be the modification of large areas of fescue tussock grassland to semi-arid vegetation, the removal or diminution in importance of woody and shrubby species and the introduction and rapid spread of many exotic species, the most noticeable being the sweet briar (Rosa rubiginosa) and thyme (Thymis vulgaris). In many parts of the main valley developed pasture land is encroaching rapidly up the hillslopes at the expense of tussock-land.

Despite the aridity of the Upper Clutha region there are major water resources in the area. At the northern end of the valley there are two large lakes, Wanaka and Hawea. These feed into the Clutha River which flows southwards to meet its major tributary, the Kawarau River, at Cromwell. Both rivers have been under-utilised in the past because they are deeply incised necessitating pumping. Instead, remnants of water races which conveyed water from numerous small creeks dot the flanks of the main valley and gorges. These races were originally built for mining purposes, often linking up several seasonal creeks to produce enough 'head'. The resulting terraces and tailings are very evident in the present landscape, especially in the vicinity of Cromwell. In the gorges passage on foot was probably easier in the prehistoric era than it is now after the terraces have been modified.

Previous work

The prehistory of Central Otago, and other inland areas of the South Island such as the McKenzie Country has always been somewhat of an enigma to archaeologists (Ambrose, 1968). The problem has revolved around the lack of known undisturbed sites in the inland areas resulting in disinterest on the part of archaeologists. Prior to 1970 very few excavations had been undertaken in Central Otago. Notable amongst those which have been undertaken are Hawkesburn (Lockerbie, 1955, 1959; Anderson, 1979), three small excavations near Glenorchy (Simmons, 1967, 1973) and Oturehua (Leach, 1969a, 1969b). Most of this work has not been published beyond the preliminary report stage.

The model that has developed for Central Otago's prehistory is that the area is largely a hinterland of climatic extremes into which expeditions were made from the coast for seasonally available food resources and rock materials for implements. Higham et al (1977:15) analysed this model and suggested reasons for the paucity of sites. Not surprisingly they concluded that a more detailed understanding of Central Otago's prehistory would only be gained once intensive and extensive site surveys had been undertaken.

Ironically, it took a major threat to sites in the area in the form of the Clutha Valley hydro development proposals to give Central Otago archaeological research a much needed stimulus. The 1971 report of the Interdepartmental Committee on the Effects of Hydro-Electric Development in the Clutha Valley stated that there were no archaeological sites of major national importance in the Clutha Valley. However, on the contrary, a survey commissioned by the New Zealand Historic Places Trust clearly showed that there were many sites of local and regional significance, including several important prehistoric sites (Bagley,1973).

In 1975, when the project officially commenced, funds were provided through the Historic Places Trust for a major archaeological survey (Higham et al,1977). The survey concentrated on the area likely to be affected by the first dam proposed (DG7) which has subsequently been waived, following a later decision to build a higher dam above Clyde. Consequently a second survey to incorporate the extended area (Mason, 1977), and the excavation of a combined Maori/historic site (S133/37, 121:Ritchie and Ross, n.d.) was under taken in February 1977.

The results of the surveys made it clear that the project would have a much greater impact on sites than had been hitherto realised, and that the majority of the sites fell within the scope of the Historic Places Amendment Act 1975. It was obvious that if the archaeological provisions of the Act were to be carried out efficiently and without undue delay, then the short periods of fieldwork organised by the Anthropology Department would no longer be adequate (Ritchie,1979).

At a meeting of interested parties called in July 1977 it was recommended that an archaeologist should be employed full time on the project. It is the first time that a professional archaeologist has been stationed full time on a development project in New Zealand, the appointment being largely compelled by the existence of the Historic Places Amendment Act (HPA). The author commenced work in December 1977.

The Clutha Valley Development Archaeological Programme

The main objectives of the archaeological programme are to organise and undertake archaeological surveys and excavations within a structured programme of research, to draw project management and field staff's attention to threatened sites and to ensure that the provisions of the HPA Act are met. The fieldwork and research undertaken will be some compensation for the outright loss of many sites. Fieldwork is facilitated by the employment of one assistant full time - currently Anne Ross, an Australian anthropology graduate - and student labour

during vacations.

Liaison on the project is maintained through the Project Construction Engineer, whilst professional direction is provided through the Trust's Senior Archaeologist. A close working relationship is also maintained with the Otago Goldfields Park, it being anticipated that several of the historic sites in the Cromwell area will eventually come under the management of the Park.

The whole archaeological programme is of necessity tied in with the construction schedule, so that all areas will be systematically investigated prior to earthworks. A considerable amount of time is also spent inspecting areas of land for sites to enable other Government departments, farmers, and mining companies to comply with the HPA Act. Over 1,200 sites have been recorded to date, of which only 5% are prehistoric or of suspected prehistoric origin. Although only a relatively small number of Maori sites have been found in the area, notably ovens and rockshelters, they constitute a massive increase in the number of prehistoric sites known in the area prior to 1970.

The surveys to date have confirmed that the project's major affect is on the sites and landscapes resulting from the 1862 Dunstan Goldrush and the subsequent development of the Upper Clutha goldfields through the advent of sluicing, dredging and reef mining. These sites include miners' huts, former settlements, various types of gold workings, water races, mining dams, rock shelters, and the remains of gold dredges. The historic sites can be divided into those which have potential for archaeological research by excavation and those which could be classified as monumental or standing derelict sites. The significance of these latter sites, which comprise c. 60% of all sites, lies in their visual impact and intrinsic history; they form an integral part of the Central Otago landscape.

Fieldwork 1977 to August 1979

In September 1977 Mary Newman was stationed in Cromwell for four months by the Trust. Besides undertaking site surveys of the Lindis Valley and the new Clyde/Cromwell highway alignment (Newman, 1977), she undertook invaluable liaison and establishment work for the archaeological programme.

Following the arrival of the permanent archaeologist it was decided, because of the little known prehistory of Central Otago, to commence the archaeology programme proper (in February 1978) with the excavation of a prehistoric rock-shelter at Italian Creek. The site, which will eventually be destroyed by the realignment of the Clyde/Cromwell highway, is

a transient Maori camp site dated to about 1450 AD. The faunal remains revealed freshwater mussel consumption and strongly suggestive evidence for the consumption of moa eggs (Ritchie, in preparation). This excavation, along with analysis of the material excavated by Otago University at the Rockfall site (S133/37, 121) has contributed significant new information to the prehistory of Central Otago (see Ritchie and Ross, n.d.).

Although the prehistory of the area is particularly important, most of the sites pertain to the goldrushes. At present, research is being conducted into the archaeology of the Chinese mining era in Central Otago which lasted from about 1865 until around 1930. Following a programme of test pitting the first two of a series of rock shelters bearing evidence of occupation by Chinese miners - Firewood Creek S133/424 and Caliche Shelter S133/223 - were excavated in November 1978 and February 1979 respectively. Despite the important part the Chinese miners played in the early gold mining era, relatively little has been recorded about their day to day life. The Chinese tended to stay to themselves and left almost no written records. Over 50 different types of Chinese ceramics and other artifacts have been documented so far from excavated materials and from records made of museum and private collections.

Hand in hand with the excavations has been an intensive site surveying and recording programme. This has continued on from the earlier surveys of the Cromwell Gorge and Lowburn flats (Higham *et al*, 1977; Mason, 1977). During the University vacations in May 1978 and 1979 the rugged Kawarau Gorge was systematically surveyed, often in weather conditions that made office work look appealing. Work on this major report which documents over 200 historic sites is continuing (Ritchie, 1979).

Following a request from the Ministry of Works and Development, a major survey was undertaken of the Shotover River Valley in March 1979 as part of a series of scientific studies being undertaken in advance of silt retention and revegetation investigations. Eight students were employed for two weeks (Plate 1), resulting in the recording of over 250 new historic sites. Besides traditional methods, a helicopter and a rubber raft were gainfully utilised during the survey.

During the August vacation 1979 the area affected by the proposed Luggate dam and environs was surveyed, the fieldwork being under the direction of Anne Ross. One hundred and six sites were documented, many revealing interesting differences from those encountered in the gorges, reflecting the varying mining techniques in this part of the valley.

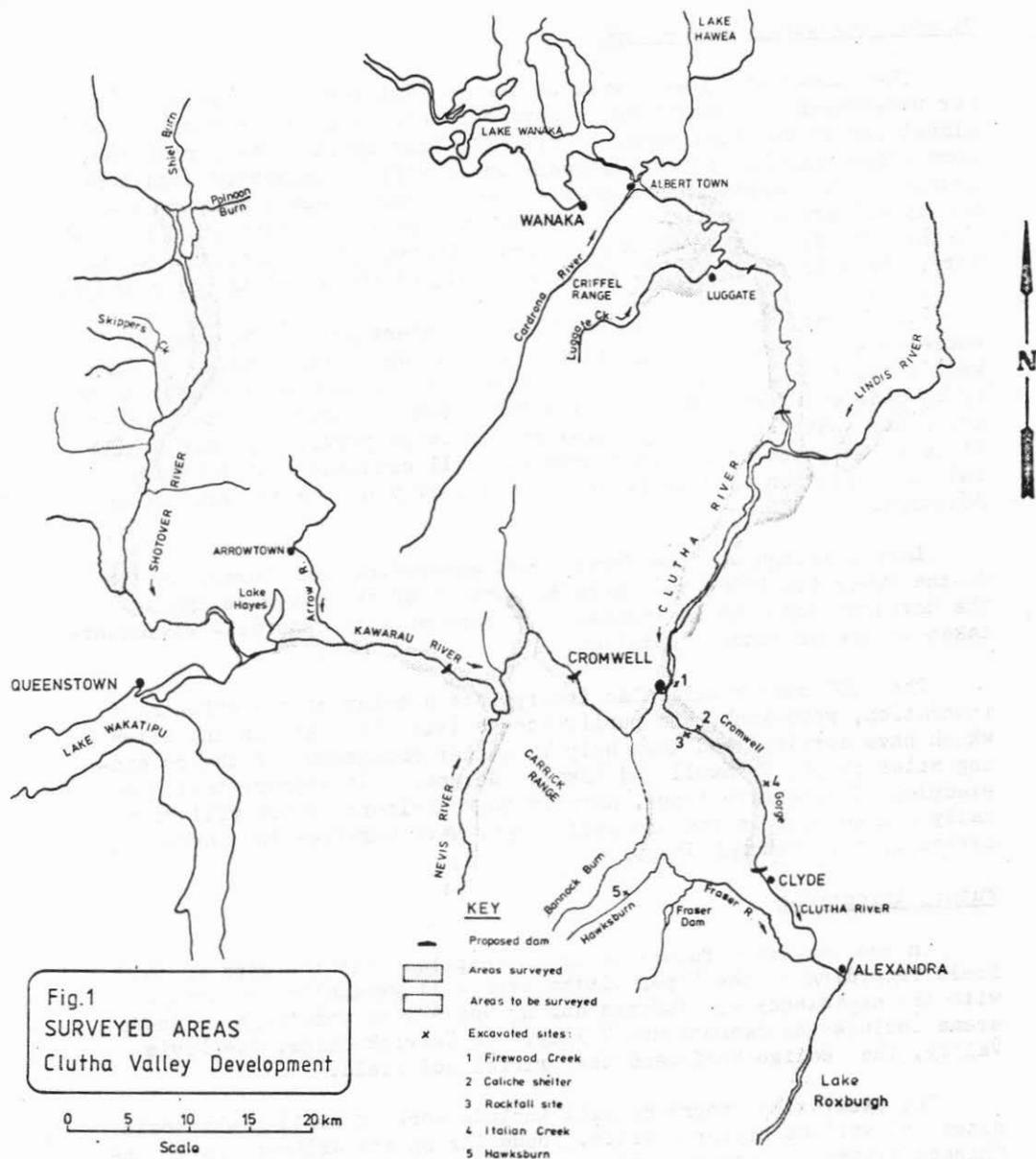


FIGURE 1. Clutha Valley Development survey areas.

Summer fieldwork, 1979 - 1980

The summer of 1979-80 will be the busiest period of fieldwork so far undertaken. Commencing in November there will be four months of almost continuous fieldwork. Initially four small Chinese rock shelters close together in the Cromwell Gorge will be excavated simultaneously. The habitations appear to have formed a small mining community and are suspected to date from the earliest mining in the gorge in the 1860's. In December the area affected by the proposed Queensberry dam will be surveyed, along with the foothills of the Pisa Range.

In January the largest 'dig' so far undertaken on the project will commence with clearing, mapping and excavation of the remains of Cromwell's former Chinatown. This will enable a record of the settlement to be made and facilitate a contrast between the Chinese urban situation and that found in the rural mining camps previously investigated. It is anticipated that this excavation will continue into February and on completion will be followed by a survey of the environs of Lake Roxburgh.

Lake Roxburgh was the first hydro-generation lake formed on the Clutha River (in 1956) and backs the waters of the river up through the Roxburgh Gorge to Alexandra. No form of site recording was undertaken before or since inundation.

The 1980 survey will also incorporate a study of the effects of inundation, wave-wash, and public access (via the lake) on the sites which have survived and thus help in better management of the remaining sites in the Cromwell and Kawarau Gorges. It appears that good examples of some site types, notably rock shelters, which will virtually all be lost in the Cromwell Gorge, have survived the inundation of the Roxburgh Gorge.

Future directions

In the immediate future it is anticipated that the gaps in the field recording of the Upper Clutha area will gradually be surveyed with the assistance of students during University vacations. These areas include the Bannockburn Valley, the Carrick Range, the Nevis Valley, the Bendigo Reefs and the Criffel goldfield.

The excavation programme will include work on small prehistoric sites and various historic sites, focussing on the archaeology of the Chinese miners. Research into the archaeology of the rabbiting era (1879-1930) will be an ongoing project, one of the main aims being to

enable the more precise dating of these sites. Excavations of natural deposits, such as moa remains encountered during earthworks, will continue to be undertaken. Although natural deposits may have only tangential interest to many archaeologists, these excavations have attracted considerable public interest and are producing useful data on the nature and distribution of extinct fauna in the area (Plate 2).

The archaeological programme is seen as far more than just surveys, excavations and producing syntheses. The attraction of many sites in the area lies in the fact that they are part of historical landscapes worthy of protection in their own right. It will be impossible to preserve most of the sites destined for inundation, however, investigations are continuing through the Goldfields Park into the feasibility of preserving Cromwell's old main street under water, and the salvaging of a gold dredge.

Site management and public relations are an important part of the programme, often involving considerable time in field trips and talks.

Judging from the number of queries and requests for site inspections received from local people it appears that the appointment of an archaeologist stationed in Central Otago has filled a vacuum in the regional coverage of New Zealand by members of the archaeological fraternity. This has generated additional work beyond that anticipated when the position was created.

Barring a major change in Government planning, the presently proposed Clutha Valley Development Project will be going ahead although construction will be more drawn out than originally anticipated. The possibility of relocating historic structures from the affected areas has been considered but not accepted because the settings which would be lost are an integral part of the sites.

The losses caused by the project are readily apparent. Not so obvious perhaps are the archaeological gains. The presence of an archaeologist has enabled a continuing protective surveillance and evaluation of those sites which will survive, facilitated mitigation procedures for those partially affected and should ensure that those which will be inundated or destroyed are adequately recorded and investigated. Once the archaeological programme is completed, the Upper Clutha Valley and its tributaries should be one of the most thoroughly archaeologically documented and surveyed areas in New Zealand.

Acknowledgements

Over 30 students have participated in the Clutha Valley Development archaeological programme to date. I would like to record my thanks to them all. Thanks also to Annie Ross for her helpful criticism on the draft of this paper.

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CLUTHA Plate 1. The Shotover survey team March 1979. From left (standing) Paul Wernham, Jenny Hellen, Neville Ritchie, Annie Ross, Virginia Butler, Jim Stockton. (Sitting) Moira White, Gretyl Doo, Debbie Turpen and Caroline Pendergrast.



CLUTHA Plate 2. Neville Ritchie recovering moa bones found in a cleft during bulldozing operations on the new Cromwell bypass.