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MANAGEMENT OF HISTORIC SITES IN NEW ZEALAND'SROSS DEPENDENCY, ANTARCTICA

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Introduction and historical background

In January 1987 the authors spent a month in the Ross Dependency (the part of Antarctica which is administered by New Zealand) working on various site management tasks on behalf of the Ross Dependency Historic Site Management Committee. Before describing our work, we will outline the events which created the historic sites, and the administrative framework which presently governs activities in the Ross Dependency, including the organisation and support for historic site management work.

New Zealand's involvement with the Antarctic is largely a consequence of its relative proximity (4,000 km from Christchurch) to one of the favoured regions of the continent, viz. the area centered around the Ross Sea-McMurdo Sound - now known as the Ross Dependency (Fig. 1) and the historic events which occurred there, in particular the use of the area between 1900-1917 for base camps by British expeditions seeking to be first to the South Pole, and other polar explorations.

Casual links between New Zealand and the Antarctic continent had been forged much earlier by sealers, whalers, and explorer-scientists such as Sir James Clark Ross. But it was the public interest in New Zealand occasioned by the Scott and Shackleton expeditions, their use of Lyttleton and Port Chalmers as final provisioning centres, and the establishment of over-wintering bases on the shores of Ross Island by the British expeditions which cemented New Zealand's place in Antarctic history. This era of exploration and adventure, now known as the Heroic Age of Antarctic exploration, is widely recognised as having pre-eminent historical importance. It is characterised by well-documented feats of human endurance and courage in the face of formidable odds. The huts, associated artefacts, monuments, and field depots are the tangible remains of the early expeditions. As such they play an important role in transmitting history, traditions, and values to succeeding generations. From a scientific point of view, they are time

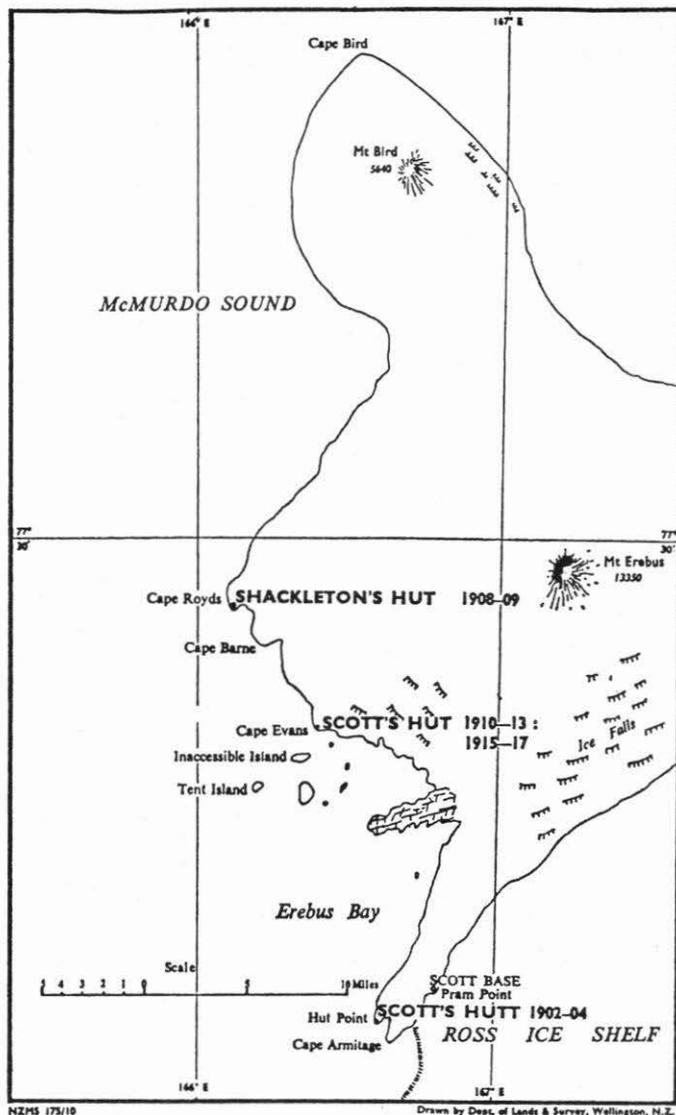


FIGURE 1. The location of Scott's, and Shackleton's Huts, on Ross Island, Ross Dependency, Antarctica.

capsules of technological achievement, vital sources of knowledge about undocumented facets of the expeditions, and constitute an invaluable comparative data base for research now and in the future.

#### Historic Site Management in the Ross Dependency

Between the First and Second World Wars there was a growing recognition by many nations of the strategic importance and natural resources in and around Antarctica. This led to a spate of territorial claims. In 1923 Britain formally claimed the Ross Dependency area and ceded control of it to New Zealand, although New Zealand had little real involvement (except for collecting fees for Ross Sea whaling licenses) until the massive expansion of scientific activity in Antarctica initiated during the International Geophysical Year (1957-58). In that year New Zealand's Scott Base was established by Sir Edmund Hillary.

In 1959 the Antarctic Treaty was signed by the nations with territorial claims in Antarctica (including New Zealand); subsequently some 22 other nations have been allowed associate membership. Although the Treaty is primarily designed to protect the Antarctic environment, one of the clauses recognises the significance of the Heroic Age sites (they are called 'historic monuments' in the Treaty) and requires that each territorial claimant maintains those in their territory.

#### The Historic Sites in the Ross Dependency

The N.Z. government has, through its responsibility for the administration of the Ross Dependency, taken an active interest in the historic monuments within its territory. This is in part due to the fact that within the New Zealand controlled territory there are more Heroic Age sites than in any other part of Antarctica. There are substantial 'monuments' in the form of living and storage huts, the associated artefacts, food depots, and historic cairns or markers (resulting from five British expeditions between 1899-1917) within the Dependency. These include:

- living and storage huts at Cape Adare built by members of the 'Southern Cross' expedition led by C.E. Borchgrevink (1899-1900) (first to overwinter in Antarctica).
- a substantial hut at Hut Point, Ross Island built by Capt R.F. Scott's 'Discovery' expedition (1902-4), used initially for polar exploration and seeking a route to the Pole, and as a staging base by the later Scott and Shackleton expeditions (see Plate 1).



PLATE 1. Scott's "Discovery Expedition" hut (1902-04) at Hut Point, Ross Island, now adjacent to the large United States McMurdo base.



PLATE 2. The NE side of Shackleton's hut (1907-9) at Cape Royds, Ross Island. The structures in the foreground are the remains of the garage and stables which were walled with stacked provision cases.

- the overwintering hut at Cape Royds built by Ernest Shackleton's 1907-09 'Nimrod' expedition (the base for their aborted Pole attempt). It was used again between 1914-17 in the course of Shackleton's transcontinental exploration (the ill fated 'Aurora' expedition) (Plate 2).

- Scott's hut at Cape Evans established during his 1910-13 'Terra Nova' expedition. Although Scott reached the Pole (after Amundsen), he and his companions succumbed on the return journey. The hut was later used by members of Shackleton's 'Aurora' expedition (Plates 3 & 4).

Unfortunately, no evidence remains of 'Framheim', the base-camp established on the Ross Ice shelf by Roald Amundsen, the Norwegian who beat Scott to the South Pole in 1911.

The Antarctic Division of the Department of Scientific and Industrial Research is responsible for implementing the annual New Zealand Antarctic Research Programme (N.Z.A.R.P.) and ensuring compliance with the provisions of the Antarctic Treaty. In line with its Treaty obligations, shortly after the establishment of the New Zealand scientific research station (Scott Base) in 1957-58, the Antarctic Division turned its attention to restoring the more accessible historic huts and protecting associated relics. From the outset the Division sought expert advice on the care of the historic monuments (although no list appears to exist of the experts consulted). In late 1959 a committee was formed (now known as the Historic Sites Management Committee) to formulate policy and establish work projects and priorities. The New Zealand Historic Places Trust is represented on this committee by its Director.

During the summer of 1960-61 the Cape Evans and Cape Royds hut were restored (largely by volunteers), as was Scott's hut at Hut Point in 1963-64. Incidentally, the term 'hut' is somewhat of a misnomer (although its usage is well established); each structure is more akin to an open-plan, two or three bedroom house. Restoration involved clearing the huts of ice and snow (major jobs), retrieving and listing relics, restoring the huts as far as possible to their original appearance, making them weatherproof, and clearing the hut environs of rubbish.

Commencing in 1970 (and continuing until 1985-86) the N.Z. Antarctic Society has provided two volunteers each summer to maintain the three huts on Ross Island (i.e. those at Hut Point, Cape Evans, and Cape Royds) and act as caretakers on behalf of the Antarctic Division. As the remote Cape Adare hut is seldom visited, it has had relatively low priority in terms of restoration, but some



PLATE 3. The NE side of Scott's "Terra Nova" expedition hut (1901-13), Cape Evans, showing the cold porch (front right), stables, and latrines (freestanding).



PLATE 4. A corner of the kitchen area in Scott's Cape Evans hut. Many of the provision containers and their labels are in urgent need of conservation.

preventive maintenance was carried out in 1974. A major restoration exercise planned for last summer had to be postponed because of transport problems.

By the mid seventies, restoration and maintenance had progressed, the number of people having access to the huts had increased, and previously unforeseen problems (particularly concerning artefact conservation) were becoming all too apparent. The Historic Huts Management Committee decided it was timely to review the management regime. This culminated in 'A Strategy for the Preservation and Management of Historic Sites in the Ross Dependency, Antarctica' (Turner 1979).

In 1983 the Ross Dependency Research Committee adopted a flexible five year programme of restoration, maintenance, evaluation, and conservation work for each of the three Heroic Age sites on Ross Island. This followed recommendations in the 'Corporate Strategic Plan for the Ross Island Historic Sites', a management plan compiled by Harrowfield and Turner (1983) which specifically detailed a five year work programme. Both reports identify objectives, goals, and problems and provide the basis for management decisions.

One of the N.Z. Archaeological Association's members, David Harrowfield, was co-author of the Strategic Corporate Plan and has played an influential role in organising and planning historic site work in the Ross Dependency as a member of the Historic Sites Management Committee. He has long argued (without much success until recently) that historic site management in Antarctica and related conservation work should be done by people who are professionally involved in historic site management or conservation rather than willing amateurs. It was on this premises that we were invited (along with two carpenters) by the H.S.M.C. to participate in year two of the current five year programme (see postscript). The work schedule involved two main types of chores: structural repairs and measuring for future recladding; and several recording and assessment tasks related to the long term maintenance of the structures, their contents, and historic integrity.

Besides assisting the carpenters on the structural jobs, our work involved several assigned tasks which were undertaken at each hut and a few which were in response to situations existing at one or more huts. We also had to make recommendations for future work and did other small jobs because they were necessary, or in response to requests from researchers. We can only give brief details of the main tasks, but they provide an insight into the many management and conservation problems encountered in trying to preserve

these unique sites and their contents in an extremely uncompromising environment. Our report to the H.S.M.C. details both the problems and our recommendations (Ritchie and Simmons 1987).

At each of the three huts we were requested to do the following tasks:

- (a) Assess, remove, and dispose dangerous goods (mainly inflammables, ether, drugs).
- (b) Assess the provisions on display in each hut, remove those which were leaking and contaminating others, clean-up any mess and rearrange the provisions where necessary.
- (c) Make shallow channels (where necessary) in the gravel outside each structure to drain melt water away from the foundations and walls (because the ground is permafrosted digging is usually quite tedious)
- (d) Record annual visitor numbers as recorded in the log book in each hut.

We also inventoried and documented the various provision containers in all huts. This was a personal research project, done in part so that the thousands of unlabelled food cans etc stockpiled around the Royds and Evans huts could be identified at least to a generic level in the future.

Site-specific jobs included the following:

#### Hut Point (Fig. 2)

(a) The main structural job at Hut Point involved securing a large section of collapsed ceiling which was resting on and gradually crushing an internal partition composed of empty plywood provision cases. The 'wall' had been erected by members of Scott's 1911 expedition to create an inner living and cooking area within the main structure. Previously, it was thought that the ceiling had been purposefully lowered (by Scott's men) to conserve heat. After inspecting the ceiling structure and reading the available literature in the Scott Base library, we determined the ceiling was brought down by the weight of snow (and subsequently ice) which probably found its way into the ceiling after Shackleton's brief use of the hut in 1907 and prior to Scott's second usage in 1911. A member of the 1911 party noted in his journal (Cherry-Garrard 1965:157) "Atkinson and Crean had cleared the floor of ice in our absence, but the space between the lower and upper roof was solid with blue ice, and the lower roof sagged down in places in a dangerous way ...".



Later he goes on to say " the double roof of the old Discovery hut ...was still full of solid ice; indeed some time afterwards a large portion of it fell ...dripping water was a constant nuisance" (Cherry-Garrard 1965:166). In addition to the provision case wall, a beam from the old magnetic hut (1901 expedition) also supported the collapsed ceiling. Both may have been placed under the ceiling in 1911 to prevent its (further) collapse into the newly created living-cooking area.

To relieve the stress on the provision cases and redistribute the bearing weight, the fallen ceiling section was suspended by wire hangers from the rafters. This is an interim measure until decisions are made on its permanent securement. Present thinking is to leave the fallen section of ceiling at its present level, i.e. as it was when the hut was occupied after 1911 (since the rest of the contents of the hut represent this latter phase of the hut's usage).

(b) We mapped and documented the rapidly deteriorating provision cases, coal sacks, winter awning from the 'Discovery', seal carcass, etc located on the south porch. Due to the very poor condition of these objects recommendations were made concerning their future removal and/or replication.

(c) A series of survey marks were established on the hut walls to monitor long term deformation or structural movement. Previously only one survey point existed on the SE verandah post, which only provided an indication of movement at that corner rather than insights into overall structural deformation of ground subsidence.

### Cape Evans (Fig. 3)

(a) The major job of the season involved an assessment of problems resulting from snow accumulation against the SE wall of the Cape Evans hut within the collapsed remains of the 1911 stores annexe. Every year in December-January the snow melts, and the melt water ponds within the trough-like remains of the annexe and gradually seeps into the interior of the hut causing dampness, very high humidity and associated deterioration problems. Short of total reconstruction of the annexe (and hence its weatherproofing) which is not feasible at present, the only immediate remedy is to remove all or part of the structural remains of the annexe to decrease the entrapment of snow and meltwater. The removal of any part of the annexe will destroy a portion of the original fabric, but the work is necessary to improve the micro-climate (and conditions for artefact conservation) within the main structure. It is proposed to undertake this work during the summer of 1987-88 as a systematic excavation



and recording project. The task is complicated by a number of factors including:

(i) Most of the stores and provision boxes are buried under the snow (the depth of which varies yearly), and they are permafrosted into the ground and to each other. Once the snow overburden is removed excavating the provisions involves picking around each container or box with a trowel or ice-pick and allowing time for thawing, which is a slow process. We found the process could be significantly accelerated by diverting small amounts of melt water into excavation areas which helped soften the ice.

(ii) The stores are undocumented. The lower levels have not been exposed since they were stacked there by members of Scott's party. Thus careful recording during excavation is essential. Recording is complicated by the poor condition of many of the tins, which are often unlabelled. The lighter weight plywood provision boxes (venesta boxes), if they can be extracted, disintegrate on removal (therefore each box must be strapped together). Because the tins are often unlabelled it is essential to keep tins and box remnants together for comparison with identified tins and boxes.

(b) Stores stockpiles (southern dump), rubbish scatters, artefacts and site features (pony line, practice stone igloo), and a few subsurface exposures were also plotted on site maps and assessed. We found within some of the rubbish scatters, containers (or remnants of containers and other artefacts, such as clay pipes) which were not represented in the huts. These need to be documented and retained.

#### Cape Royds (Fig. 4)

(a) Like the situation at Cape Evans, several cubic metres of provisions (mainly canned foods) are stacked against the outside walls of the Cape Royds hut. Some were left there by Shackleton's men, but the majority have been stacked against the walls by various people over the years, in their efforts to tidy up the site. Quartermain (1963:73), describing the initial restoration work at Cape Royds, noted: "Outside, the heterogeneous mass of food cases lying everywhere was sorted. The better-preserved cases and tins were used as originally, to give protection to the hut walls, while the badly rusted and otherwise deteriorated tins, along with general rubbish, were burned. Samples of the foodstuffs were placed in the hut, and the remainder, except for those still in cases against the walls outside, were placed in two caches."

The stores against the Cape Royds hut present some moisture retention problems but to a much lesser extent than at Cape Evans. In fact, the Royds hut is the driest of the

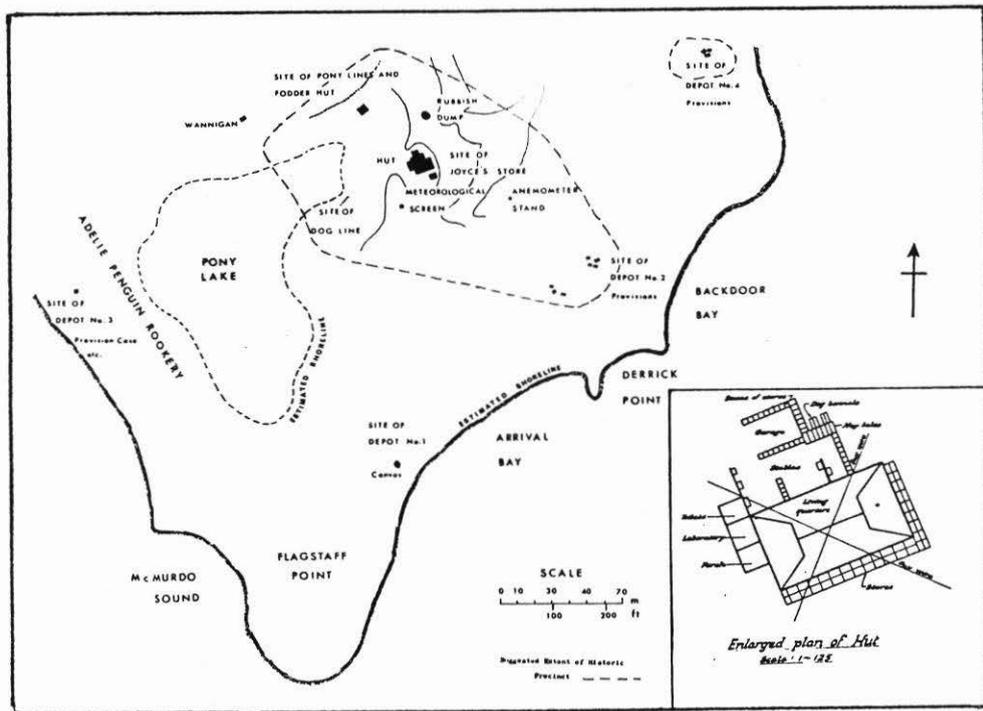


FIGURE 4. Shackleton's Cape Royds Hut and associated features. After a surveyed plan by N.P. Nalder (L & S 37/76), and Harrowfield (1981:24).

three. A test excavation was carried out on the stores located against the south wall of the hut. It was found that the original line of plywood cases was placed c. 30 cm out from the base of the wall and that this gap is now filled with frozen scoria. However, compared with the situation in the stores annexe at Cape Evans, snow retention at Royds is minimal, no melt water ponding was evident, and only the bottom layer is frozen in-situ. This makes their removal and relocation considerably easier, but again, as at Evans, the plywood provision boxes are in a very fragile condition.

In addition to the stacked stores, it was apparent from surface exposures that other stores are buried at a point about three metres out from the south wall (i.e. the approximate location of Joyce's Store). Some of the can types in the archaeological deposit (e.g. Vezet cheese and French sardines) are not represented in the hut. Thus the recording of these deposits has been recommended as part of any future archaeological work at the hut.

(b) Maintenance of the stables and garage at Cape Royds constitutes a major conservation issue which must be addressed in the near future, since the structures, as restored by Quartermain's party in 1961, are beginning to deteriorate. Quartermain (1963:73) noted: "The broken-down walls of provision cases and fodder bales were restored, but not covered, as they were originally with tarpaulin. The garage too was partially reconstructed" (the cases were nailed together and in some instances boards were nailed between them). For discussion of options refer Ritchie and Simmons (1987:24-25).

### Recommendations

In addition to our assigned task-specific recommendations, several more general recommendations have been put to the Historic Huts Management Committee for consideration. Some of our recommendations are listed below. Further details can be found in Ritchie and Simmons (1987).

1. Interpretation. Visitors' experience could be substantially enhanced if some interpretation was provided. We envisage information panels which briefly outline the history, historic events, personalities, construction features, layout, modifications, and management philosophy of each hut.

2. Historic Precincts. In order to maintain and protect their historic and visual integrity, buffer zones or historic precincts should be created around each site. This need was highlighted by the arrival of Greenpeace while we were at Cape Evans. Had we not been there, they would have

established their base immediately adjacent to the historic hut and destroyed both the historic and visual integrity of the site. The establishment of a precinct at Hut Point would facilitate future planning for the site and its ultimate return to a more historic setting. This would include the removal of a U.S. fuelling facility adjacent to the site once it has reached the end of its economic life. This action compliments and enhances the proposed increased interpretation of the hut.

3. Neglect of Archaeological Deposits. There is a need for proper recording and excavation at the Evans and Royds sites, and assessment and disposal of real rubbish such as the numerous wind scattered fragments of plywood provision cases at Evans which create an untidy appearance around the hut. As noted earlier, the venerable midden deposits in some instances contain examples of artefacts which are not represented in the huts. These items should be documented and retained.

4. Need to Assess the Contents of Presently Unlabelled and Unopened Provision Boxes. It is pointless trying to conserve badly damaged food containers etc, if there are pristine examples of similar types in unlabelled boxes which have never been opened. Conversely, if the containers in unopened cases are deteriorating, some remedial action can be programmed.

5. Need to Plot Additional Site Features on the Official Site Maps. This point is self explanatory and will be an ongoing process.

6. Need for Catalogue of Artefacts removed from huts to N.Z. It is apparent from the caretaker's reports and other publications, that a large number of artefacts, many considered to be unique, have been removed to New Zealand and elsewhere for safekeeping, conservation, and/or display purposes. However, there appears to be no inventory of these items, and record of where they are now. The compilation of such a record is an essential management tool.

7. Need for Full Bibliography of Reports. There is an urgent need for the compilation of a full bibliography of the mostly in-house reports on the huts. This would facilitate a methodical approach to management and conservation work, and avoid wasteful repetition.

8. Need for Continuity of Personnel and Programme Funding, and Continuing Professional Input. The maintenance and conservation of the historic huts and their contents in Antarctica will be an on-going demand on both resources and skilled labour. After years of piecemeal

maintenance undertaken on very limited funding, the recent establishment of an Antarctic Heritage Trust should ensure that there is a more systematic and funded programme of conservation work in the future.

### Postscript

The Antarctic Heritage Trust was established in April 1987 to "ensure the preservation of Antarctica's heritage by co-ordinating and raising funds for a programme of conservation and restoration in the Ross Dependency ..." (Heritage Trust publicity pamphlet). The former Historic Sites Management Committee was to have been replaced by an Advisory Committee, but this proposal has been held in abeyance as a cost saving measure. Instead the A.H.T. will seek consultation on an ad hoc basis. It remains to be seen how this system will work but we are optimistic that the advent of specific funding for the maintenance of the historic sites and their contents will enable a systematic conservation programme to be established.

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