

IN THE MATTER of the Resource Management
Act 1991

AND

IN THE MATTER of a resource consent
application by Mainpower New
Zealand Limited to establish a
windfarm at Mt Cass

STATEMENT OF EVIDENCE OF MICHAEL MALTHUS TROTTER

1. **QUALIFICATIONS AND EXPERIENCE**

1.1 My full name is Michael Malthus Trotter.

1.2 I hold a Bachelor of Science degree from Canterbury University. I commenced studying Archaeology under the tutorage of the Director of the Otago Museum in the 1950s and have held various positions throughout New Zealand in the field of Archaeology since the 1960s including, Archaeologist at Canterbury Museum from 1965 to 1976, Principal Curator at Canterbury Museum from 1976 to 1983 and Director (CEO) of Canterbury Museum from 1983 to 1996. I have been self-employed as an Archaeological Consultant from 1996 to the present day.

1.3 Throughout my career as an Archaeologist I have held a number of other positions in the field of archaeology including:

(a) Visiting Lecturer and Course Lecturer in Archaeology, University of Canterbury;

(b) Member of Cook Bicentenary Expedition to South Pacific in 1969;

(c) Recipient of a Royal Society grant to study Aborigine rock art sites in Australia In 1971;

(d) Seconded to Government of Niue to conduct an archaeological survey in 1974-1975;

(e) Council member, Secretary, Canterbury Regional Filekeeper, Vice President and President of the New Zealand Archaeological Association;

(f) Council member, Vice-President and President of Canterbury Branch of the Royal Society of New Zealand;

(g) Council member of the Art Galleries and Museums Association of New Zealand;

(h) Member of the Archaeology Committee of New Zealand Historic Places Trust;

(i) Member of the Canterbury Regional Committee of the New Zealand Historic Places Trust.

- 1.4 My particular area of expertise is the eastern coastal and inland areas of the South Island with an emphasis on Canterbury and Marlborough. I have undertaken work for a range of organisations such as the Department of Conservation, the New Zealand Historic Places Trust, the Waimakariri District Council, the Kaikoura District Council, the Hurunui District Council, the Runanga o Kaikoura and the Ngai Tuahuriri Runanga of Ngai Tahu. I am the author of a number of publications and reports on various significant archaeological investigations and excavations covering much of the South Island and selected parts of the South Pacific. A list of all my main publications and reports is appended as **Attachment 1**.

Statutory Guidance

- 1.5 In accordance with a request from MainPower, I have undertaken an archaeological assessment of the proposed Mount Cass Windfarm area. This included field examinations carried out on 20 June 2006 and 9 January 2008.

- 1.6 For the purposes of the assessment, I followed the explanation of the term “archaeology” given in the New Zealand Archaeological Association’s publication, *Archaeological Site Recording in New Zealand* :

Archaeology is the study of the physical evidence of past human activity. It deals with a range of material from earthwork

structures and lost or discarded tools to old rubbish dumps. It is also concerned with the environment, how it has affected human settlement and how humans have transformed it for their own purposes.

- 1.7 The definition of “archaeological site” used in the Historic Places Act 1993 is also relevant:

“Archaeological site” means any place in New Zealand that—

(a) Either—

(i) Was associated with human activity that occurred before 1900; or

(ii) Is the site of the wreck of any vessel where that wreck occurred before 1900; and

(b) Is or may be able through investigation by archaeological methods to provide evidence relating to the history of New Zealand.

- 1.8 Both the above definitions encompass evidence of European and Maori origin.

- 1.9 Anyone intending to carry out work that may damage, modify or destroy an archaeological site must first obtain an Authority from the New Zealand Historic Places Trust. The archaeological Authority process applies to land of all tenure including public, private and designated land, and to all site that fit the Historic Places Act definition, regardless of whether or not:

- The site is recorded in the Site Recording Scheme of the New Zealand Archaeological Association or is registered by the Trust,
- The site only becomes known about as a result of ground disturbance,
- The activity is permitted under a district or regional plan, or a resource or building consent has been granted.

1.10 Lastly, I have borne in mind the requirement under s 6(f) of the RMA to protect historic heritage from inappropriate subdivision, use, and development is identified as a matter of national importance.

In the Act, Historic heritage includes:

- historic sites, structures, places, and areas,
- archaeological sites,
- sites of Maori significance, including wahi tapu,
- surroundings associated with the natural and physical resources.

These categories are not mutually exclusive and some archaeological sites may include above ground structures or may also be places that are of significance to Maori communities.

Where resource consent is required for any activity the assessment of effects is required to address cultural and historic heritage matters.

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General Description

1.11 Although there is no direct evidence as such, it is likely that people travelled into this Mount Cass–Dovedale area from coastal or inland settlements in pre-European times to hunt for moas and other forest-dwelling birds. Any indication of such activity could provide useful information relating to the history of New Zealand.

1.12 In more recent times, the general area has been (and still is) used predominantly for grazing and other farm-related activities, tramping, and the hunting of introduced fauna.

Basis of Assessment

1.13 The types of archaeological sites that were specifically looked for in the field in were:

- Camp sites – temporary encampments in the shelter of rocks or a cliff face, identifiable by materials left behind.
- Fireplaces – burnt, usually broken, stones, and possibly charcoal.
- Ovens – hollows in the ground surface containing fireplace material.
- Artwork – drawings, scratchings or carvings on rock faces sheltered from weathering.
- Burials – human remains that have been deposited either as a body or one or more bones, sometimes but not always deliberately hidden from cursory view.
- Caches – artefact(s) that have been stored or hidden in a sheltered place for subsequent collection.
- Artefacts – man-made objects which may be discarded, lost or cached.
- Quarries – if the limestone contains flint nodules (as it does in some areas in Canterbury) there is the possibility of finding evidence of it being broken out of the rock for use in making artefacts.

- Miscellaneous – items such as unworked lithic materials that do not occur naturally in the immediate vicinity or firewood stacked in a shelter.
- Other evidence relating to the early European utilization of the area.

Nearby Archaeological Sites

1.14 Existing records of archaeological sites in the general area were consulted. The New Zealand Archaeological Association established a Site Recording Scheme in 1958 to create simple but systematic files of information about archaeological sites. An index to this scheme is maintained by the Department of Conservation in Wellington, and regional files are kept by the New Zealand Historic Places Trust in Christchurch.

1.15 There are no recorded archaeological sites in the Mount Cass or Dovedale areas, the nearest being some human burials about five kilometres to the south (site number N34/20) and some occupational rock shelters over six kilometres to the east (N34/18-19). Other archaeological sites – pits, pa, burials, occupational shelters, ovens – occur nearby in both these distal localities.

1.16 Aerial photographs, supplied by MainPower, were studied. While it was not thought that actual archaeological sites would be seen on these, the purpose of examining them was to identify “likely” areas which could then be subjected to field surveys. No such areas were found.

Field Survey of Mt Cass

1.17 A field survey was made of the greater part of the ridge on the Mount Cass property was under taken on 20 June 2006.

- 1.18 This involved two people (myself and Jeanette McIsaac) walking along the ridge, examining both the top (where the wind turbines are likely to be located) and the upper part of northern scarp face (where there was greater likelihood of utilized shelters).
- 1.19 Except in patches of dense bush, all "shelter" type rock formations and flat areas of ground were examined. In some places snow up to 30-40 centimetres deep covered the ground, inhibiting close examination, but these were not considered to be sufficient to affect the survey as a whole. As well, a thorough search was made of, and around, every piece of limestone in two areas of about 50 metres square, as a test for the accuracy of observations on the general survey.
- 1.20 Aerial photographs, examined as stereo pairs, indicated that the Dovedale section of the ridge was much the same as the Mount Cass section, though with less bush cover from Totara peak eastward. There was, therefore, little point in surveying it, the Mount Cass section being considered sufficiently representative of the whole Windfarm area as regards archaeological assessment.
- 1.21 Nevertheless, a general survey of the Dovedale section was undertaken on 9 January 2008. Likely rock formations along the top of the ridge were examined, and a "cave" like overhang that had been pointed out to us on the scarp face was inspected.
- 1.22 As well, a general examination was made of much of the fallen limestone below the face of the ridge. The very northern part of this section was not inspected in detail as it was evident from a distance that it was a most unlikely place to find archaeological evidence

Results

- 1.23 Only one piece of limestone warranted further study. This was a small overhang with black and red marks on the overhanging rock face. Detailed examination of both the marks and the "floor" of the overhang

using standard archaeological methods did not, however, reveal any indication of human activity here.

- 1.24 At the western end of the Mount Cass area there was a section of obsolete rabbit fencing, which had subsequently been replaced by newer rabbit fencing near by. The obsolete piece is not of any great significance itself, and as it would not be any earlier than about 1920, is not covered by the Historic Places Act.
- 1.25 The vegetation does appear to have been modified by human activity but not in a way that would warrant recording or preserving as an archaeological site.

Assessment

- 1.26 By their very nature, most archaeological sites of the type likely to occur in the Mount Cass area tend not to be visible on the surface of the ground.
- 1.27 Much evidence of past human activity, if not deliberately placed in a protective situation at the time, disappears through scattering and weathering if it is not protected by sheltering rocks or covered by soil. It is thus not possible to say with total certainty that there are no archaeological sites in the Mount Cass area.
- 1.28 However, there are two factors that allow an assessment to be made. One is the terrain itself. People using the area are unlikely to have camped on the ridge or to have carried out other activities that would lead to evidence of their presence being left there. Much more hospitable situations can be found on the valley floor to the north where there is both shelter and water available.
- 1.29 The other factor is that absolutely no archaeological evidence of any past human activity was found during a fairly comprehensive field search.

- 1.30 In my opinion, there is therefore no indication of anything of an archaeological nature that needs to be taken into consideration in the initial planning a Windfarm in the Mount Cass area.

Recommendation

- 1.31 Assuming the Windfarm goes ahead, it would be appropriate to have all areas of ground modification intensively searched for archaeological features at the time the initial work is being done.
- 1.32 Contractors working on the Windfarm should adhere to an Accidental Discovery Protocol which would take effect in the unlikely case of any archaeological evidence being uncovered.
- 1.33 It might be a useful precaution to have an archaeologist have a further look at the area during the time that access roading is being constructed. If anything of archaeological importance were to be noted at this stage, application could be made to the New Zealand Historic Places Trust for an Authority to disturb, modify or destroy any archaeological site in the area, under Section 11 or 12 of the *Historic Places Act 1993*.
- 1.34 The completion of this process could help avoid a possibly long delay if something significant was found during the actual construction work. If the consent process has been fully dealt with beforehand then any unexpected discovery can be dealt with by an authorized archaeologist relatively quickly.

Michael Trotter

November 2008

Attachment 1

PUBLICATIONS and REPORTS ~ Michael Trotter

(The following list does not include the many newspaper articles that were written for the “Museum of Nature” and “Museum Pieces” series in the Christchurch Press.)

- 1955 First Excavation of a Moa-hunter Camp site at Waimataitai Mouth, Katiki. *Journal of the Polynesian Society* 64(3): 259-303.
- 1956 Maori Shank-barbed Fish-hooks. *Journal of the Polynesian Society* 65(3): 245-252.
- 1957 On a Perforated Sinker, Otago. *Journal of the Polynesian Society* 66(4): 436-437.
- 1959 Archaeological Investigations in North Otago. *New Zealand Archaeological Association Newsletter* 2(3): 10-13.
- 1961a Pa a Te Wera; a Trial Excavation. *New Zealand Archaeological Association Newsletter* 4(3): 27-29.
- 1961b A Quartzite Source Site at Nenthorn, Central Otago. *New Zealand Archaeological Association Newsletter* 4(3): 29-32.
- 1964 Recording Methods Used on North Otago Sites. *New Zealand Archaeological Association Newsletter* 7(3): 117-120.
- 1965a Excavations at Ototara Glen, North Otago. *New Zealand Archaeological Association Newsletter* 8(3): 109-114.
- 1965b Avian Remains from North Otago Archaeological Sites. *Notornis* 12(3): 176-178.
- 1965c The Barbed Fish-hook; Its Place in the Murihiku Cultural Sequence. *Journal of the Polynesian Society* 74(3): 347-355.
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- 1966b Fieldwork in Canterbury and North Otago. *New Zealand Archaeological Association Newsletter* 9(1): 3 (note).
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- 1967b Radiocarbon Dates from North Otago. *New Zealand Archaeological Association Newsletter* 10(4): 137-142.
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- 1967e Excavations at Katiki Point, North Otago. *Records of the Canterbury Museum* 8(3): 235-249.

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- 1968b North Otago Archaeological Sites (Part 1 Moeraki). *New Zealand Archaeological Association Newsletter* 11(3): 94-102.
- 1969a *Lake Pukaki Survey*. Archaeology Department, Canterbury Museum. (8 pages).
- 1969b Recent Rock Shelter Investigations in North Otago. [With Beverley McCulloch] *New Zealand Archaeological Association Newsletter* 12(3): 124-140.
- 1970a Archaeological Investigations in the Aviemore Area, South Island. *Records of the Canterbury Museum* 8(5): 439-453.
- 1970b A Holocene Section at Scaifes Lagoon, Wanaka. *Records of the Canterbury Museum* 8(5): 463-467.
- 1970c Excavations at Shag Point, North Otago. *Records of the Canterbury Museum* 8(5): 469-485.
- 1970d North Otago Archaeological Sites (Part 2 Oamaru). *New Zealand Archaeological Association Newsletter* 13(3): 135-142, 13(4): 198-199.
- 1970e Dymocks' Swamp Dig, Kaiapohia. *Canterbury Museum Archaeological Society Newsletter* 22, August 1970.
- 1971a *Prehistoric Rock Art of New Zealand*. [With Beverley McCulloch] A. H. & A. W. Reed, Wellington. (87 pages.)
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- 1972f Pits at Seddons Ridge, Kaikoura. *New Zealand Archaeological Association Newsletter* 15(3): 94-99.
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- 1973b Takamatua Salvage, Banks Peninsula. *New Zealand Archaeological Association Newsletter* 16(2): 74-77.
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- 1973d Radiocarbon Dates for South Island Rock Shelters. [With Beverley McCulloch] *New Zealand Archaeological Association Newsletter* 16(4): 176-178.
- 1974a *Prehistory of the Southern Cook Islands* [as editor]. Canterbury Museum Bulletin 6.
- 1974b List of Rarotongan Archaeological Sites. In *Prehistory of the Southern Cook Islands*, edited by M. M. Trotter, pages 80-83. Canterbury Museum Bulletin 6.
- 1974c Archaeological Survey of Atiu, Cook Islands. In *Prehistory of the Southern Cook Islands*, edited by M. M. Trotter, pages 95-119. Canterbury Museum Bulletin 6.
- 1974d Radiocarbon Dates from Rarotonga. In *Prehistory of the Southern Cook Islands*, edited by M. M. Trotter, page 146. Canterbury Museum Bulletin 6.
- 1974e *Marlborough Sounds Archaeological Survey 1974*. Canterbury Museum, Christchurch. (24 pages).
- 1974f *Archaeological Excavations at Takahanga, Kaikoura*. Canterbury Museum Archaeological Society, April 1974. 7 pages.
- 1975a The First Twenty Years: Radiocarbon Dates for South Island Moa-hunter Sites 1955-74. [With Beverley McCulloch] *New Zealand Archaeological Association Newsletter* 18(1): 2-17. (Also published under separate cover by the authors.)
- 1975b *Port Underwood Archaeological Survey*. Canterbury Museum, Christchurch. (20 pages).
- 1975c Archaeological Survey of Niue Island. *New Zealand Archaeological Association Newsletter* 18(2): 76-81.
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- 1975e Further Investigations at Pari Whakatau, Southern Marlborough, New Zealand. *New Zealand Archaeological Association Newsletter* 18(3): 145-151.
- 1975f Further Excavations at Wairau Bar, New Zealand. *Asian Perspectives* 18(1): 75-80.
- 1975g Archaeological Investigations at Redcliffs, Canterbury New Zealand. *Records of the Canterbury Museum* 9(3): 189-220.
- 1975h Prehistoric Burials at Teviotdale, North Canterbury. *Records of the Canterbury Museum* 9(3): 221-230.
- 1976 Investigations of Otokitoki, Banks Peninsula. *New Zealand Archaeological Association Newsletter* 19(3): 119-123.
- 1977a *Titirangi Archaeology: An Interim Report*. Marlborough Sounds Maritime Park Board, Blenheim. (18 pages.)
- 1977b Moa-hunter Research Since 1956. In *The Moa-hunter Period of Maori Culture* by R. S. Duff, 3rd edition; pages 348-375. Government Printer, Wellington.
- 1978 Some Radiocarbon Dates for Moa Remains from Natural Deposits. [With Beverley McCulloch] *New Zealand Journal of Geology and Geophysics* 22(2): 277-279.
- 1979a *Prehistory at Clarence Bridge*. [With Beverley McCulloch] Kaikoura Coastal Reserves Board. (22 pages.)
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- 1981b *Takahanga Pa 1980*. [With Beverley McCulloch] New Zealand Historic Places Trust. (29 pages.)
- 1981c *Prehistoric Rock Art of New Zealand*. (2nd edition.) [With Beverley McCulloch] Longman Paul, Auckland. (88 pages.)
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- 1986a A Maori Mat from Tentburn, New Zealand. *Archaeological Association Newsletter* 29(3): 186-91.
- 1986b Works of Art – or Scribbles? The Significance of Maori Rock Art. In *Nga Tuhituhi o Nehera*. Forester Gallery, Oamaru.
- 1986c Immunochemical Detection and Characterisation of Osteocalcin from Moa Bone [with Beverley McCulloch, N. L. Huq, S. M. Rambard, L. Teh, A. D. Davies, and G. E. Chapman]. *Biochemical and Biophysical Research Communications* 129(3): 714-20.
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- 1987b Eight articles in *The Press on Canterbury Museum and Te Maori*. [With Beverley McCulloch]
- 1987c Fyffe Moa Hunter Site. [With Beverley McCulloch] *Te Karanga* 3(3).
- 1987d Fish-hook Industry at Whalers Bay. [With Beverley McCulloch] *Te Karanga* 3(3).
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- 1999c How Many Sites? The Clarence Complex. [With Beverley McCulloch] *Archaeology in New Zealand* 42(3): 230-237.
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- 1999e Return to Lake Pukaki. [With Beverley McCulloch] *Archaeology in New Zealand* 42(4): 300-308.
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- 2007c Archaeological Assessment of Browns Rock Intake Tunnel, North Canterbury. Report to Waimakariri District Council.
- 2007d Waipapa Bay Archaeological Assessment. Summer Wine Initiatives.
- 2007e Archaeological Assessment of Leithfield Hotel Proposals, North Canterbury. Summer Wine Initiatives.
- 2007f Archaeological Assessment for Proposed Torquay Street Pensioner Units. Report to Kaikoura District Council.
- 2007g Report on Archaeological Monitoring of Work at 43 Lake Terrace Road, Birdlings Flat. Report to New Zealand Historic Places Trust.
- 2007h Archaeological Assessment for Proposed Subdivision, Scarborough Street, Kaikoura. Summer Wine Initiatives.
- 2007i Report on Repiling of Historic Cottage at the Corner of Beveridge and Montreal Streets, Christchurch. Report for the New Zealand Historic Places Trust.
- 2007j Archaeological Assessments for the Kaikoura District Council. Report for the Kaikoura District Council.
- 2007k An Archaeological Investigation Strategy for Lot 20, Poranui Beach Road, Birdlings Flat. Report to New Zealand Historic Places Trust.
- 2007l Monitoring Strategy for Proposed Bollards at South Bay Reserve, Kaikoura. Report to the Kaikoura District Council and the New Zealand Historic Places Trust.
- 2007m *Archaeology at South Bay, Kaikoura*. Summer Wine Initiatives.

- 2007n Monitoring Strategy for Proposed Kiwa Road Toilet. Report to the Kaikoura District Council, Department of Conservaton, and the New Zealand Historic Places Trust.
- 2007o Monitoring of Geotechnical Excavations at Pa O31/34, Kaikoura. Report to New Zealand Historic Places Trust.
- 2007p Monitoring Foundation Preparation at 41 Lake Terrace Road, Birdlings Flat. Report to New Zealand Historic Places Trust.
- 2008a The Mount Cass Windfarm – An Archaeological Assessment. Summer Wine Initiatives. [Update of 2006 report.]
- 2008b Report on Proposed Kaikoura Projects, February 2008. Report to the Kaikoura District Council.
- 2008c Report on the Installation of a Toilet at Kiwa Road. Report to the Kaikoura District Council and the New Zealand Historic Places Trust.
- 2008d Archaeological Assessment of Seddons Ridge, Kaikoura. Summer Wine Initiatives.
- 2008e Archaeological Assessment at Amberley Beach Sewerage Area. Report for Hurunui District Council.
- 2008f Archaeological Assessment of a Proposed Subdivision at Mangamaunu, Kaikoura. Summer Wine Initiatives.
- 2008g Report on Proposed Fyffe Area Road Widening Project, March 2008. Report to the Kaikoura District Council.
- 2008h Report on Archaeological Monitoring at Torquay Street Pensioner Units, Kaikoura, March 2008. Report to the Kaikoura District Council and the New Zealand Historic Places Trust.
- 2008i *Mata Hapuka – Archaeology at Birdlings Flat.* Summer Wine Initiatives.
- 2008j Report on Monitoring the Installation of Bollards at South Bay Reserve, Kaikoura. Report for Kaikoura District Council and New Zealand Historic Places Trust.
- 2008k Report on Monitoring Earthworks at 24 Lake Terrace Road, Birdlings Flat. Report for the New Zealand Historic Places Trust.
- 2008l Archaeological Assessment of Lot 4, DP 8337, Ocean Bay, Port Underwood. Report for Marlborough District Council.
- 2008m Report on Monitoring Earthworks at Seddons Ridge, Kaikoura. Report for the New Zealand Historic Places Trust.
- 2008n Report on Archaeological Monitoring of a Soak Hole at Dolphin Encounter, July 2008. Report for the New Zealand Historic Places Trust.
- 2008o In press. *Rare Breeds of Heritage Livestock in New Zealand.* [With Beverley McCulloch] Willson Scott Publishing, Christchurch.

(Archaeological Assessments and Authority Reports to the New Zealand Historic Places Trust written before 2001 have not been included in the above list.)