

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of an application to amend the Water Conservation
(Kawarau) Order 1997 pursuant to section 216 of the Act

BY the New Zealand and Otago Fish and Game Councils

**Statement of Evidence of Bruce McKinlay
On Behalf of Director-General of Conservation**

Dated: 8 February 2010

Department of Conservation

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1. Introduction – Qualifications and Experience

- 1.1 My full name is Bruce McKinlay. I am currently employed by the Department of Conservation as Technical Support Officer.
- 1.2 I have a Post Graduate Diploma in Wildlife Management from the University of Otago.
- 1.3 I have worked in wildlife management and conservation since 1978. I have been employed by the Department of Conservation (the Department) since the Department's inception in April 1987 and before that was employed by the NZ Wildlife Service of the Department of Internal Affairs. I have undertaken a number of surveys and assessments of invertebrates and vertebrates in New Zealand, particularly in Otago, over this time. I gave evidence to the special tribunal hearing the application for the original Water Conservation (Kawarau) Order in 1992 I have given expert evidence to some 25 tribunals pursuant to various legislation and have made five appearances in front of the Environment Court.
- 1.4 I have been the lead Author for ten peer reviewed published articles in Scientific Journals and Department of Conservation publications. In addition I have been a contributing author to another 13 publications. My publications include work on penguins, albatross, chafer beetles, riverbed birds and predator management. I was the author of the Yellow-eyed Penguin recovery plan and am the leader of the YEP Recovery Group for the Department. I am a contributing author to the Department's Grand and Otago Skink Recovery Plan and am a member of the grand and Otago Skink Recovery Programme.
- 1.5 Brian Patrick, a submitter on this application was a colleague at the Department when much of my work on *Mecodema chiltoni* was undertaken. He commissioned the 1993 report by Dr Barbara Barratt. Mr Patrick was instrumental in establishing the surveys I led, and he participated in field work in December 1994 and reviewed my field findings.
- 1.6 I confirm that I have read and agree to comply with the Environment Court Code of Conduct for Expert Witnesses (Consolidated Practice Note 2006). This evidence is within my area of expertise except where I state otherwise. I have not omitted to consider material facts known to me that alter or detract from the opinions that I express.

2. Scope of Evidence

2.1 This evidence will cover the following:

- a) Description of the New Zealand Threat classification system
- b) Summation of current distribution knowledge of *Mecodema chiltoni*, an endemic beetle
- c) Discussion of the habitat requirements of *Mecodema chiltoni*
- d) Information on the distribution of the endemic and threatened moth *Orocrambus sophistes* and its presence on Schoolhouse Flat
- e) An assessment on the potential impacts of hydro development on *Orocrambus sophistes*

3. New Zealand Threat Classification System

3.1 The NZ Threat Classification system is managed by the Department of Conservation as part of the New Zealand Biodiversity Strategy (2000). It is intended to give a national level assessment of the risk of extinction faced by all taxa. The current system approved in 2008 was a review of a 2002 system. Taxa groups are reviewed on a rolling front. Invertebrates are being reviewed this year. The reviewed System is intended to provide (in amongst other matters) a more sensitive classification for taxa with naturally restricted distributions and small numbers as a result of insular rarity.

3.2 I refer to the Statement of Further Evidence of Murray Nielsen dated 30 June 2009, especially paragraph 3.4 and Diagram A, which showed in table form the revised New Zealand Threat Classification System (2008).

4. Current Distribution of *Mecodema chiltoni*

4.1 *Mecodema chiltoni* is a large ground beetle. It is distinctive by its red elytra. It is a predatory beetle and will eat worms, smaller beetles and other invertebrates. In the 2002 NZ Threat classification assessment it was ranked

- as "Sparse". This means that at the time of ranking *Mecodema chiltoni* was considered to have a wide geographic distribution, occupy a range of habitats or substrate, and is likely to have more than 10 sub populations for colonial breeders. In the revised system the equivalent category is likely to be Naturally Uncommon.
- 4.2 I have undertaken four surveys specifically looking for *Mecodema chiltoni* in the 1990s, concentrating on defining the range of this species and attempting to understand more about their habitat requirements. I have been in the Nevis Valley some four times for the Department of Conservation, once carrying out surveys for *Mecodema chiltoni* and three occasions participating in Protected Natural Areas implementation inspections on Craigroy and Nokomai pastoral leases.
- 4.3 In keeping with the intention of the Code of Conduct for Expert Witnesses I have conferred with Dr Barbara Barrett to collate known sources of information about the distribution of *Mecodema chiltoni*. It was our intention to ensure that the Special Tribunal has access to the best summary of the distribution of *Mecodema chiltoni* as possible. Dr Barratt and I currently have a joint research and monitoring project underway with respect to the Cromwell chafer beetle (*Prodontria lewisii*). The data I collected on *Mecodema chiltoni* in the 1990s has contributed to the distribution map included in Dr Barbara Barratt's brief of evidence.
- 4.4 I consider the distribution of *Mecodema chiltoni* is the Nevis Valley, the southern Eyre Mountains and the Hunter Mountains in Fiordland. Within this range they are found at a variety of altitudes from as low as 330 m (Cromel stream) to 1380 m (Watts Rock). A map summarising this is attached to Dr Barratt's brief of evidence.
- 4.5 *Mecodema chiltoni* have only been found in tussock grassland and beech forest sites. Within forest areas, alluvial red beech forests seem to have higher densities than mountain beech sites. In tussocks beetle numbers are seen as singles. In comparison in beech forest areas I have recorded 3 *Mecodema chiltoni* per person hour searching.
- 4.6 Based on my surveys at Irthing Stream (Southern Eyre Mountains) I think that *Mecodema chiltoni* do not inhabit beech forest immediately adjacent to a

stream, say within the 5-10 metres of the riverbed, but prefer habitat further back in the forest, even though this land might be lower in elevation relative to the riverbank.

- 4.7 My overall impression is that *Mecodema chiltoni* are a terrestrial predatory beetle. I think that they are predominantly a beech forest animal which can live in tussock grasslands. My further impression is that the known distribution places them around the Schoolhouse Flat area in the Nevis Valley, but there are no post 1993 records which confirm their presence here.

5. **Orocrambus sophistes**

- 5.1 *Orocrambus sophistes* is a small moth found on the Schoolhouse Flat area of the Nevis Valley. Its food plant is *Festuca novaezealandiae* (hard tussock). Although first described from the Ida Valley in 1905, Schoolhouse Flat is currently recognised as the best site for this species. By best site I mean a site where the species is in good numbers and there is a large amount of available habitat.

- 5.2 In 2002 *Orocrambus sophistes* was ranked as Nationally Endangered. Nationally Endangered is the second highest threat classification and other species with this threat classification include blue duck (whio) and mohua. The justification of assigning this species to this category was that it had a small population and a moderate to high recent or predicted decline. Overall the criteria for Nationally Endangered have not changed in the reviewed system.

- 5.3 In an exercise to establish with more detail the priority for conservation management, the Department of Conservation has analysed the priority assigned by the threat classification system, the costs of management for conserving each species and the likelihood of success. The data collated for *Orocrambus sophistes* identifies Schoolhouse Flat as the key site for the conservation of this species.

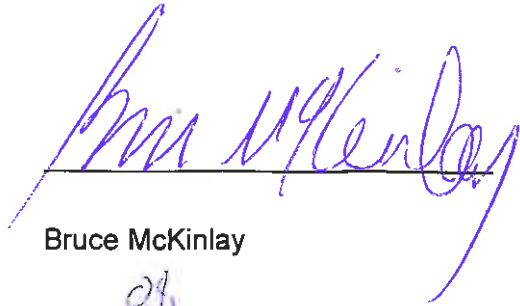
- 5.4 The management actions proposed for this species at this site are:

➤ Surveying to identify new sub populations on Schoolhouse Flat

- Build and maintain a stock proof fence to prevent stock and goat grazing of the site
 - Advocacy to protect the site from unsympathetic land uses
 - Outcome monitoring to ensure that the management actions are successful.
- 5.5 The management of this species is proposed to be undertaken over 710 ha of Schoolhouse Flat. Based on contours from a map if a hydro storage lake at 670 m asl then it will occupy some 35 ha of the land identified as important in maintaining this species.
- 5.6 It is my assessment that the land that might be inundated by any impoundment of the Nevis River in accordance with the Water Conservation (Kawarau) Order as it currently stands is likely to be of lower value for *Orocrambus sophistes* as this land is more likely to be inundated by natural river flood flows than the higher terrace.

6. Comment on Submissions

- 6.1 I have read the submission made to the special tribunal by Brian Patrick and John Douglas which comments on the presence of *Mecodema chiltoni* on the Schoolhouse Flat site. The submission also comments on the presence of the moth *Orocrambus sophistes* at this site.
- 6.2 Whilst I agree that in principle *Mecodema chiltoni* could be expected to be present based on the general habitat type, I think that the absence of a tall tussock grassland habitat means that actual numbers are likely to be low and sparse.
- 6.3 Based on this habitat type and the lack of any *Mecodema chiltoni* records from Schoolhouse Flat I do not consider Schoolhouse Flat to be an important site for *Mecodema chiltoni*.
- 6.4 For *Orocrambus sophistes* Schoolhouse Flat is an important site for this species. However I do not think that the land that might be inundated is as significant to this species as other land in the immediate vicinity.



Bruce McKinlay

Dated ²⁶~~27~~ February 2010