

IN THE MATTER OF The Resource Management Act 1991

AND

IN THE MATTER OF The Proposed Tauranga City Plan

STATEMENT OF EVIDENCE OF KEITH OWEN

**RELATING TO THE SUBMISSION OF THE DIRECTOR-GENERAL OF
CONSERVATION**

DEPARTMENT OF CONSERVATION
P.O BOX 1146, ROTORUA

Introduction

1. My name is Keith Leslie Owen.
2. I am employed by the Department of Conservation as a Technical Support Officer –Fauna by the East Coast Bay of Plenty Conservancy. My role is the co-ordination of protected fauna management programmes in the Conservancy and providing technical support and advice to staff and the public. I have worked for the Department for the last 22 years.
3. I have written many reports and published a number of papers in scientific journals on NZ fauna and their habitats, threatened species and conservation management. I am familiar with the fauna and habitat values associated with Tauranga City.
4. I have carried out fauna surveys and fauna management projects in and around Tauranga City including southern Tauranga Harbour (Te Awanui) and East Papamoa at Te Tumu. This work included a study of marsh bird populations and their habitats of Tauranga Harbour (Owen, 1993) and a report on the distribution and conservation of shorebirds in the Bay of Plenty Region including Tauranga Harbour (Owen, *et al.*, 2006).
5. I have undertaken inspections of the wetlands and dune systems of the Te Tumu Block and the wetland margins of the lower Kaituna River.
6. Use, development and subdivision of the coastal zone of New Zealand has placed increased pressures on natural habitats and indigenous fauna, especially over the last three decades. The Bay of Plenty is no exception.
7. I consider these pressures are the major concern for the continuing safeguard of national and international breeding, migrant and wintering, wading, marsh and wetland birds and other fauna that occupying wetlands, dunes and estuarine habitats and often fully depend upon these places for their habitat requirements and long-term survival.

Scope of Evidence

8. My evidence specifically discusses the importance of indigenous habitats at Poike, Te Tumu and the lower Kaituna River to native fauna, and the key role that these

sites play for certain species. I will discuss the importance of the appropriate identification of these sites through the city planning process.

Importance of Tauranga Harbour

9. Southern Tauranga Harbour, the Te Tumu Block and associated Kaituna River are important habitats for estuarine, marsh and wetland birds. Two of these sites (Southern Tauranga Harbour and the lower Kaituna River) are parts of bigger sites that are listed in an inventory of the most important wetland sites in New Zealand (Cromarty and Scott, 1995). They meet the criteria as Wetlands of International Importance, especially as waterbird habitat, and meet the Ramsar Convention standards for international quality (Cromarty and Scott, 1995) as set down by the Ramsar Bureau of the International Union for the Conservation of Nature and Natural Resources (IUCN) and the International Waterfowl and Wetlands Research Bureau.
10. These habitats are important to native flora and fauna, and as feeding, resting and breeding sites for estuarine, marsh and wetland birds. These sites are all potentially at risk if there are not controls on future development in or around them.
11. I consider it important to clearly identify the sites in the District Plan process and to establish appropriate rules to ensure that they remain intact and undisturbed by humans, pets, vehicles and inappropriate development in the future.

Wildland Consultants Assessments

12. Wildland Report No. 2300 prepared for the Tauranga City Council (Wildlands Consultants 2009) and Wildland Report No. 1345 prepared for Environment Bay of Plenty (Wildlands Consultants 2006) set out in considerable detail why the sites identified in the draft District Plan are considered significant under section 6(c) of the Resource Management Act.
13. I fully concur with the information and assessment provided in these descriptions. They clearly show the district, regional and in some cases, national significance of these sites and the species they contain.

National Context

14. Freshwater wetlands and coastal dune systems are both recognised as threatened habitats nationally and are national priorities for protecting rare and threatened native biodiversity on private land (Ministry for the Environment, 2007). This statement of national priorities was largely targeted towards local authorities.
15. Only 45,600 ha of freshwater wetlands remain in New Zealand - just 9.4% of the original extent. Twenty percent (20%) of our native vascular (sappy) plants are dependant on short-lived (ephemeral) wetlands (such as some of those at Te Tumu) for their survival. These occupy less than 1% of the New Zealand's land area (Ministry for the Environment, 2007).
16. Only 21,300 ha of the national dunelands are left in New Zealand. This is 11.6% of their original extent (Ministry for the Environment, 2007).
17. I consider that the National Priorities for Protecting Rare and Threatened Native Biodiversity on Private Land (Ministry for the Environment, 2007) make it clear that all remaining freshwater wetlands and coastal dune systems identified as significant are recognised as threatened habitats nationally and it is a national priority these are appropriately protected.
18. I now wish to discuss the biodiversity significance and natural values of each of the sites raised in the submission and cross-submissions of the Director-General.

SEA 5 Poike

19. Wildland's Report No. 2300 (Wildlands Consultants 2009) identifies and describes SEA 5 at the south side of the Waimapu Estuary at Poike. This site includes a grey willow and manuka dominated freshwater wetland that lies in a gentle gully on the south side of State Highway No. 29 on private land. The freshwater wetland is connected to the estuary wetland via a drain under the highway and flows into the estuary.
20. I consider Wildland's assessment of this wetland as regionally significant appropriate given the rarity of this ecosystem type in the City and the wider Bay of Plenty.

21. This freshwater wetland is one of a small number of freshwater wetlands within Tauranga City that are in relatively unmodified condition, dominated by grey willow forest and native manuka scrub. I have on numerous occasions observed pukeko (*Porphyrio porphyrio*) and mallard duck (*Anas platyrhynchos*) at the wetland. Both appear to be commonly found there.
22. On the estuary side, which comprises mainly estuarine vegetation, I have recorded three threatened wetland bird species in the lower reaches of the wetland (Owen, 1993). They are North Island fernbird (*Bowdleria punctata vealeae*) (classed as At Risk - Declining), spotless crane (*Porzana tabuensis*) (classed as At Risk - Relict) and banded rail (*Gallirallus philippensis*) (classed as At Risk - Naturally Uncommon) (Miskelly *et al.* 2008). Wildlands have reconfirmed the presence of fernbird in 2005 (Wildlands Consultants, 2005).
23. I consider it likely that spotless crane could be present in the upstream freshwater wetland area, given the species has been recorded on the estuary side of the wetland. This secretive wetland dwelling species has a preference for raupo vegetation habitat. It is possible that North Island fernbird could be present as well, given their presence in the adjacent wetland.

SEA 11 Kaituna Sand Dunes and Wetland

24. This expansive and complex series of habitats comprises of a large unstable coastal dune system with associated freshwater wetlands found inland at the Wairakei Stream. The botanical values of the site are very well described by Wildlands Consultants in their Contract Report's 1914 and 2300 (Wildlands Consultants 2008 and 2009). It is probably the most notable natural feature of the Te Tumu Block.
25. A Wildlands Consultants report shows that there are a very notable array of threatened plants found in the dunes and wetland areas of these habitats-see Wildlands Consultants Contract Report No.2300) (pages 138-140). Many of these have limited regional distribution.
26. The sand dunes host rare plant species, pingao (*Desmoschoenus spiralis*) (classed as At Risk-Relict) and sand tussock (*Austrofestuca littoralis*) (classed as At Risk-Declining) and several uncommon native plants including native celery (*Apium prostratum*) and

coastal mahoe (*Melicytus novae-zelandiae*) which are rarely found in the Tauranga Ecological District.

27. Apart from the rare and uncommon native flora, there are also populations of the threatened native katipo spiders (*Latrodectus katipo*) (classed as Chronically Threatened - Serious Decline) found along the dunes (Brendon Christensen pers.comm.). This is only one of a few Bay of Plenty dune systems where reasonable numbers of katipo spiders are found.
28. At least 100 species of our native butterflies and moths feed as larvae on various species of native *Muehlenbeckia*, with over 75 depend exclusively on *Muehlenbeckia* for their survival (Patrick, 2006). In the case of the small native copper and blue butterflies these species are very dependant on the retention of *Muehlenbeckia complexa* vinelands on the dunes (Patrick, 2006) however, we know very little about what species they are and their distribution.
29. There is also limited information regarding the presence of native lizards at the site but species such as the copper skink (*Cyclodina aenea*), moco skink (*Oligosoma moco*) and shore skink (*Oligosoma smithi*) are possibly present, as these species are known from the Tauranga Ecological District (Whitakar, 2001).
30. The wetland habitats found in the Wairakei Stream within the site are very good examples of ephemeral wetlands which are characterised by seasonal fluctuations in water levels with alternating wet and dry periods. These provide perfect habitats for rare vascular (sappy) plants that depend on fluctuating water levels to sustain their populations. Appendix 1 (Threatened Plant Discoveries in Wairakei Stream) provides a detailed file note of the rare plants found at the wetlands by the Department's botanist.
31. The landowner's representative Jeff Fletcher (Fordland Developments) has accompanied our staff on two site visits to check on these findings and has been kept informed about the finds and our botanist has confirmed to him their identities. Independent consultants have failed to find some of these species, but specimen vouchers from Te Tumu have been lodged with the NZFRI Herbarium curator Chris Ecroyd of Scion, who was able to confirm their identity.

32. Apart from botanical values I have observed the following bird species, little black shag (*Phalacrocorax carbo*) (classed as At Risk-Naturally Uncommon), little shag (*Phalacrocorax melanoleucos*) (classed as At Risk-Naturally Uncommon), pukeko, mallard duck, black swan (*Cygnus atratus*), and pheasant (*Phasianus colchicus*) at these wetlands in reasonable numbers.

SEA 35 Shark Alley to Kaituna Spit Sand Dunes

33. Wildlands Consultants Contract Report No. 2300 (Wildlands Consultants 2009) identifies and describes SEA 35 as a thin strip of dune vegetation being part of the sand dunes near the Kaituna River mouth. I have visited the site and fully concur with their description and flora and fauna information provided. In my experience any additional surveys carried out for fauna in native vegetated habitats generally only increase the value of a site by adding additional species to known information about a site. For example at this site, with further survey work, katipo spiders, native lizards and butterflies are likely to be found.

SEA 36 Kaituna River Wetlands

34. This series of low lying, meandering, freshwater and tidal wetland river loops, along the lower Kaituna River floodplain, are notable habitats for native fauna and flora. They contain a wide range of native and exotic wetland plants and birds that are well described in the Wildlands Consultants Contract Report's 1914 and 2300 (Wildlands Consultants 2008 and 2009).

35. Apart from the species recorded by Wildlands Consultants I have observed paradise shelduck (*Tadorna variegata*), pukeko and Australasian harrier (*Circus approximans*) there and I consider the wetlands to be likely habitat for spotless crake and North Island fernbird, two threatened wetland species.

SEA 37 Elizabeth Wetland

36. This dune hollow lake, although it has a relatively simple vegetation structure, typical of such habitats, it is none the less, a very notable and rare habitat type for the City. The Wildlands Consultants reports 1914 and 2300 describe its features and attributes more fully and I am in agreement with their assessment.

37. In addition to the use of the wetland by breeding Australasian bittern (*Botaurus poiciloptilus*) (classed as Threatened-Nationally Endangered), which is a very notable breeding record for Tauranga City, I have recorded pukeko, mallard, Australasian harrier, spur-winged plover (*Vanellus miles*) and welcome swallow (*Hirundo tabitica*) inhabiting the wetland. It does need fencing as stock has access into it and they disturb the birds there, especially their breeding and resting activities.

SEA 39 Kaituna River Mouth

38. This beach sand and hillside, comprising mainly of maritime pines at the river mouth, is a very notable site for both roosting and breeding native bird species. The sandy beach and sandy margins of the river provide important breeding and roosting sites for a wide range of coastal birds. During low and high water tides northern New Zealand dotterel (*Charadrius obscurus aquilonius*) (classed as At Risk-Nationally vulnerable), red-billed gull (*Larus novaehollandiae*) (classed as At Risk-Nationally vulnerable), pied shag (*Phalacrocorax varius*) (classed as At Risk-Nationally vulnerable), white-fronted tern (*Sterna striata*) (classed as At Risk-Declining), pied stilt (*Himantopus himantopus*) (classed as At Risk-Declining), variable oystercatcher (*Haematopus unicolor*) and other more common species roost there.

39. During the breeding season several pairs of variable oystercatchers and on some occasions a pair of northern New Zealand dotterels breed on the beach.

40. The stand of maritime pines is a very notable breeding site for 3 bird species. Last year I observed pied shag (classed as At Risk-Nationally vulnerable) (c25 pairs), black shag (*Phalacrocorax carbo*) (classed as At Risk – Naturally Uncommon) (1-2 pairs) and white-faced heron (*Ardea novaehollandiae*) (1 pair) all nesting in the pines. I have observed pied shags nesting there annually for over 20 years and it is one of the very few known pied shag nesting colonies in Tauranga Ecological District.

Conclusion

41. It is my opinion that the freshwater wetland and coastal dune habitats and their associated fauna discussed in this evidence are all considered to be rare, threatened and/or are significant habitats and therefore should be identified and recognised by showing them on the district planning maps and listing them in the appropriate section of the plan.

42. I am happy to answer any questions.

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Wildlands Consultants Limited. 2008). Contract Report's No. 2300. Prepared for Tauranga City Council. Wildlands Consultants Limited, Rotorua. 109-188 pp.

Appendix One: Threatened Plant Discoveries in Wairakei Stream, Te Tumu Block (Prepared by Paul Cashmore, Botanist, Bay of Plenty Conservancy, Rotorua)

Introduction

In December 2007) two populations of the nationally threatened stout water milfoil (*Myriophyllum robustum*) were discovered in the northern arm of the Wairakei Stream on the Kaituna 14 Block at Te Tumu, Papamoa East while undertaking an ecological assessment as part of a stormwater resource consent application. I undertook a follow up site visit with the owner's representative Jeff Fletcher (Fordland Developments) whom the Department had had previous discussions with regarding development of the Te Tumu Block and biodiversity values of the land.

Methods

A site visit was arranged on 7 April 2008 with Jeff, Eric van Eyndhoven, John Heaphy (DOC, Tauranga), Nancy Willems (EBOP) and I to resurvey the site. This was the ideal time of year as a summer drought resulted in the wetland being completely dry so it was very easy to access. We accessed the wetland from the eastern end of the Kaituna 14 Block at the causeway where the main access road crosses the wetland at NZMS 260 U14 073 800. We traversed west through the wetland until the fenced off part of the wetland was reached near the end of Papamoa Beach Road, a distance of approx 1.7 km. A follow up site visit to confirm ID of several species was also undertaken traversing the same route with Jeff and I on 27 May 2008. Water levels had risen somewhat since April following rain which made traversing the wetland slightly more difficult.

Results

The wetland had been very heavily grazed over summer with almost all of the dominant native vegetation including raupo and *Baumea articulata* being grazed back to their bases. Grey willow (an exotic) and manuka was the only emergent vegetation

still largely untouched. Despite the browsing and trampling they were still able to discover a variety of threatened plant species in the wetland as follows:

1. Stout water milfoil (*Myriophyllum robustum*) (Chronically Threatened – Gradual Decline)

Both populations were relocated, growing in damp mud under grey willow trees in a relatively open understory. Although no standing water was present the damp mud was obviously sufficient for the water milfoil to survive the dry summer. Luckily stock had not browsed or trampled this area. The populations appeared to be surviving under grey willow trees where the understory was more open with less competition from other species. No other populations were noted on either of the two site visits. The presence of water milfoil in this wetland was surprising given the degree of modification.

This discovery is very significant as this is the only known population in the Tauranga Ecological District (ED) and the only known population in lowland BOP (the other two are in the Kaimai–Mamaku Forest tract)

2. *Cyclosorus interruptus* (Chronically Threatened – Gradual Decline)

Near the western most *Myriophyllum robustum* population they discovered the wetland fern *Cyclosorus interruptus*. Four small populations of 150–200, 62, 66, and 40 fronds respectively were discovered growing amongst dense browsed vegetation including raupo, *Baumea articulata* and swamp millet. All fronds were small reflecting heavy grazing pressure. The species was probably thriving in the drier conditions with low water levels.

This is a further significant find as it is one of the few populations in the Tauranga ED, the others being in wetlands at Matakana Island, Tuhua Island and the Arawa wetlands at Maketu.

3. Swamp fern (*Thelypteris confluens*) (Chronically Threatened – Gradual Decline)

This wetland swamp fern was discovered on the 2nd site visit near the western end of the lagoon close to the other threatened plant populations. Only one small population was seen but may be there are others present in the area. Again it can be

easily overlooked as fronds are small following grazing pressure making it so hard to distinguish it.

This is a further significant find with a similar distribution as for *Cyclosorus interruptus* but is not found on Tuhua Island.

4. Water broome (*Amphibromus fluitans*) (Acutely Threatened – Nationally Endangered)

This native grass was identified by Chris Ecroyd (of Scion, Rotorua) from specimen collected on the first visit. Unfortunately seeding material could not be located on either visit which can more definitively confirm the species. This species is easily confused with the common exotic grass creeping bent (*Agrostis stolonifera*) if seed heads are not present. Creeping bent is certainly present over much of the wetland margins.

This is a significant find as it is the only population in Tauranga ED, with only two others found in the Bay of Plenty.

5. Swamp buttercup (*Ranunculus macropus*) (Chronically Threatened – Gradual Decline)

Only one population of this species was noted near the other *Cyclosorus interruptus* populations. It is reasonably large but is scattered amongst the more common *Ranunculus amphitrichus* which is the predominant species. Herbarium material from the 2nd visit lodged with NZFRI Herbarium was able to confirm the species identification.

The significance of this population is that it is one of only two known population in Tauranga ED, the other site is Matakana Island. It was also previously present on Tuhua.

All species identifications are supported by voucher specimens lodged in NZFRI Herbarium in Rotorua. Threatened plant record sheets are attached with location details. These results have been passed onto Jeff Fletcher who has in turn discussed them with landowners concerned. They are comfortable with the results but did indicate that they would prefer that the information is kept confidential at that stage.

Conclusions

The discovery of five nationally threatened plant species in a relatively modified wetland in the Te Tumu Block near Papamoa is quite unexpected given the few remaining wetland habitats that exist in the Tauranga ED. While modified to a degree, this wetland still retains the essential elements which most of these species require, being regularly fluctuating water levels. This is a key to the continued survival of these species at this site.

Grazing, while not beneficial to the wetland and damaging to some of the threatened plant populations, has also possibly reduced competition for some of the species at the same time. Weeds are present at the site but do not appear to be gradually eliminating these species, although the relationship between the exotic creeping bent and the indigenous grass water broome is unclear. The introduction of new weed species, especially parrots feather, present in the other arm of the Wairakei Stream, could well eliminate this native species from the wetland.

These discoveries have significantly increased the ecological value of the Wairakei Stream. From a botanical perspective it would now be considered one of the most significant wetlands in the Tauranga ED, and certainly one of the wetlands with the highest diversity of threatened flora in the Bay of Plenty. From the follow up work that DOC has done here with Jeff I am confident that the owners now recognise that their wetland now has significant conservation value and will hopefully be sympathetic to its long term preservation when undertaking development plans for Papamoa East.