A total of 50 different birds were seen and / or heard. Thanks to all the sharp eyed people who contributed to the Atlas Squares lists!

Mountains of thanks to our 'wondrous' chief organiser, Sandra Jones, and to her able South Island liaison, Anthony Wright, who hunted out superb field trip sites for us to explore. Special thanks must go to Graeme Jane for his amazing species lists and to Gael Doughy, Graeme and Cathy Jones for their inexhaustible knowledge of South Island alpine plants. Thank you to the whole party for the good vibes and great times, it was 'wondrous'!

Ewen thanks the Department of Conservation of the Canterbury Conservancy, for a permit to collect herbarium specimens, which allowed critical determinations to be made later, and added valuable additions to the Auckland Museum herbarium (AK).

Acknowledgements
I would like to extend my gratitude to Ewen Cameron for his proof reading, comments and persistence.

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Field Trip: On the sand – Karekare to Pararaha and back. 21/02/04

Ewen K Cameron

On an overcast and windy morning on 21 February 2004 twenty-five of us set out from the Karekare car park for a beach and dune walk down to the Pararaha Stream and back. The forecast for the day was for the wind and rain to increase.

The group consisted of Bot Soccers: Enid Asquith, Paul Asquith, Dean Baigent-Mercer, Steve Benham, Daphne Blackshaw (present but did not join the walk), Quentin Blackshaw, Ewen Cameron (leader), Lisa Clapperton, Sharen Graham, Peter Hutton, Jo Mackay, Elaine Marshall, Malcolm Simpson, Shirley Tomlinson, Alison Wesley, Barbara White, Bob White, Peter White, Mike Wilcox, Tony Williams, Maureen Young; and the following locals: Caroline Grove, Matthew Grove, Alan Moore, Julia Moore and Ryan Moore.

The dunes south of the Pararaha Stream have radically changed since the late 1980s, and are now flooded, permanently wet and form an extensive oioi sward (*Apodasmia similis*) – creating the largest freshwater wetland on the Auckland mainland (deep and difficult to walk through). But the dunes north of the Pararaha are totally different, being taller, undulating, and containing permanent wetlands only by the cliffs (up to Tunnel Point) and ephemeral ponds in the dune hollows. Our trip was restricted to north of the Pararaha Stream. The whole dune area is very dynamic and is constantly changing. For background information see under 'Karekare' and 'Whatipu Wilderness' in *A Field Guide to Auckland* (Cameron et al. 1997).

Karekare Point had to be negotiated slowly because the tide was quite high and a large swell was running. We followed the old Piha Tramway route (1907-21) still marked by sleeper spikes in the rocky headland. During recent years the build up of sand in this area has meant that the short cliff track no longer has to be used because the once deep gut impassable around high tide has now filled with sand. A few plants were viewed on the mainly bare rocky cliffs that are absent from the dunes: *Celmisia major* and *Asplenium obtusatum* subsp. *northlandicum*.

From here on we focused on the dune plants in the recently created 820ha Whatipu Scientific Reserve managed by the Auckland Regional Council (ARC), gazetted on 26 September 2002. There was a large (>100m across) shallow pool off Cowan Point, formed by the recent stormy weather (Fig. 1), which we rounded and headed inland to the back of the vegetated dunes and away from the freshening NW wind. The fore-dune was dominated by the long-creeping spinifex (*Spinifex sericeus*) and occasional much smaller clumps of the orange-leaved pingao (*Desmoschoenus spiralis*) – towards Whatipu this species locally dominates the fore-dunes. Small shrubs (<1m tall) of tauhinu (*Ozothamnus leptophyllus*) were present 50m in from the front of the fore-dune and as we ventured further landwards the bare sand decreased and the species diversity increased. Hawkbit (*Leontodon taraxacoides*) and shore bindweed (*Calystegia soldanella*) became common, and then knobby sedge (*Ficinia nodosa*) and gravel groundsel (*Senecio skirrhodon*). This later exotic species has greatly increased on the dunes over the last decade. Finally when there was no bare sand, knobby sedge was equally as dominant as the spinifex, which was now reduced to crowded clumps (not long-running over open sand). Other species were now commonly present: harestail (*Lagurus ovatus*), fleabane (*Conyza albida*), *Oxalis rubens* (Fig. 2), coxsfoot (*Dactylis glomerata*), pampas (*Cortaderia selloana*), toetoe (*Cortaderia splendens*) and tarweed (*Parentucellia viscosa*). Pampas was more common on the adjacent cliffs than on the sand – which was probably a reflection of it being more aggressively managed in the

more accessible areas. Toetoe is doomed here (on sand and cliffs) unless the pampas is better controlled (Fig. 3).

We ventured off the informal track, which was almost pure ratstail (*Sporobolus africanus*), to a small stand of cabbage trees (*Cordyline australis*) in a hollow at the back of the dunes and also investigated under a large pohutukawa (*Metrosideros excelsa*) towards the foot of the cliffs. In this area *Carex solandri* and a single plant of *Hypolepis dicksonioides* were added to my species list that was started in 1986 for the Whatipu Sands (see Cameron 1989, 1991) (for current totals see Table 1 below).

Table 1. Vascular flora of the Whatipu Sands.

Native ferns	19
Native dicots	61
Native monocots	54
Adventive ferns	3
Adventive conifer	1
Adventive dicots	87
Adventive monocots	60
Totals	**285**

From here we followed the old Piha Tramway route to Tunnel Point. This area of sheltered fixed dunes was dominated by an extensive sward of kikuyu (*Pennisetum clandestinum*) extending down to Tunnel Point, some 400m to the south. Species penetrating through the kikuyu mat were mainly scattered shrubs (1-4m tall), and included were: blackberry (*Rubus fruticosa* agg.), kawakawa (*Macropiper excelsum*), kanuka (*Kunzea ericoides*), pohutukawa, cabbage tree, flax (*Phormium tenax*), mahoe (*Melicytus ramiflorus*), tree lupin (*Lupinus arboreus*), shining spleenwort (*Asplenium oblongifolium*), apple of Sodom (*Solanum linnaeanum*), *Cyperus ustulatus* and a local patch of buffalo grass (*Stenotaphrum secundatum*).

Tree lupin used to be far more common at Whatipu, but since it died-back throughout New Zealand in the late 1980s (see Williams 1988, Cameron & Wright 1989) it never regained its dominance. Peter Johnston (Landcare Research) has informed me that its demise was due to a fungus (*Colletotrichum* sp., variously referred to as *C. gloeosporioides, C. acutatum* or *C. lupini*) which causes stem lesions and dieback at tips of branches. Genetically it is very close to *C. acutatum*, but it is biologically specialised to *Lupinus* spp. It turned up at much the same time in New Zealand, Australia, South Africa, and Europe, presumably all from a common source, although that source is not known. It is presumed to be introduced to New Zealand.

Above the tramway tunnel on the north side of the rocky Tunnel Point there was a clump of *Celmisia major*, and also some fine polystichums (*Polystichum wawranum*). Through the tunnel we inspected the permanent ponds on the southern side. The tiny (c.1mm long) water meal (*Wolffia australiana*) was spotted by Maureen amongst abundant *Spirodela punctata*, *Potomogeton cheesemanii* and *Ranunculus* ? *amphitrichus* (sterile). Mason, in Moore and Edgar (1970) stated that water meal was first recorded in New Zealand in 1970 (as *W. arrhiza*) and that in winter it becomes swollen with stored starch grains and sinks, rising again in later in the year (frost adapted?). We caught an Australian tree frog (*Litoria aurea*) – a great habitat for them. Paul recorded grey, mallard and paradise ducks here. Unfortunately the dabchick I saw here last winter (1 June) was absent. Shoveler ducks, black swans, shags and bittern also frequent these wetlands.

The ARC have developed a small campsite (for permit holders only) here on the south side of Tunnel Point and provided a toilet. A rusting boiler from the Piha Tramway days lies nearby – evidently it didn't fit through the tunnel. The campsite is mainly a buffalo grass sward, which changes to a kikuyu sward and extends southwards skirting the inland wetlands.

We then headed south along the western fringe of permanent wetlands, finding a nice sheltered spot in the dunes for lunch. On the wetland margin we found a few yellow flowers of the exotic *Utricularia gibba* (Fig. 4), which can be locally abundant at Whatipu. Some eight black shags were perched in a small pohutukawa on the other side of the wetland, near the foot of the cliffs. Looking down on the wetlands (between us and the coastal cliffs) revealed a mosaic pattern of open water and various reed patches of different colours and form. The main species were: raupo (*Typha orientalis*), *Baumea articulata* (over 2m tall), *Eleocharis sphacelata* and *Schoenoplectus tabernaemontani* (Fig. 5). About 400m north of the Pararaha Stream we looked at the small population of *Bolboschoenus fluviatilis* (1.5m tall) on the western edge of a dense stand of *Baumea articulata*. Oddly this is the only patch of *B. fluviatilis* I'm aware of on the Whatipu Sands – perhaps it's only recently arrived (first seen there June 2003)? Pipits were common on the bare sand and fern birds were heard.

Blocking the Pararaha Stream is a large bare dune which causes the stream to flow to the north forming an 800m series of deep ponds with no natural outflow along the base of the cliffs to Tunnel Point (which we'd walked down the west side of); and the main outflow to the south by Pararaha Point where it feeds south into the now extensive oioi wetland to the south (4.5km long), and a small arm which flows more due west (which we followed to the beach front).

Along the flooded edge of this western arm of the stream we admired many of the herbaceous natives: *Myriophyllum votchii*, *Triglochin striata, Carex pumila, Lilaeopsis novae-zelandiae, Isolepis cernua, Lobelia anceps* and *Limosella lineata*. This locality appears now to be the Whatipu Sands stronghold for the latter

Fig. 1. Recently formed shallow pool by Cowan Point; Paratahi Island in background. All photos taken during the trip by EKC.

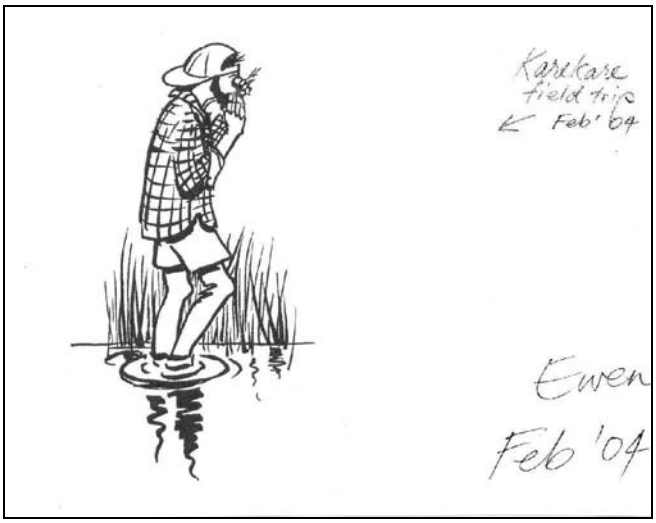

Fig. 4. Ewen examining the bladders of *Utricularia gibba*. Sketch by Shirley Tomlinson.

Fig. 2. *Oxalis rubens* – an attractive native species common in the dunes.

Fig. 5. Wetland mosaic of monocots looking south from near Tunnel Point (the northern blind arm of the Pararaha Stream).

Fig. 3. Native toetoe (left) and exotic pampas (right) compete for habitat on the dunes.

Fig. 6. Behind the fore-dunes: tauhinu, spinifex and bare black sand.

species. Many of the plants were >10cm below the flooded water level. Near Ninepin at Whatipu are the most extensive native meadows on the dunes being several 100m long. On the margin of the western arm of the Pararaha Stream tutu (*Coriaria arborea*) was added to the list. By the mouth of this stream arm is a sizeable (50m x 100m) salt meadow dominated by *Myriophyllum votchii*. Banded dotterel, NZ dotterel and variable oystercatchers were present.

We now turned inland and northwards to traverse the undulating dunes to inspect the many ephemeral ponds in the dune hollows and lessen the impact of the increasing NW wind. This is the best native dune vegetation of the reserve. Virtually the only woody plant present on the dunes here was again tauhinu amongst spinifex (Fig. 6). Patches of pingao are present mainly near the coast and creeping shore bindweed was locally common. Most of the ephemeral dune ponds were encircled by a narrow carpet of native herbs, especially *Myriophyllum votchii* and *Carex pumila*. One hollow was filled with oioi. A charaphyte (a stonewort – type of green algae), *Chara globularis*, was present lining the bottoms of some of the more permanently wet hollows. A few wading birds were seen in the hollows: pied stilt, white-faced heron, and Paul spotted a bittern.

Then a brisk walk back along the beach into the strong wind (but thankfully no rain), negotiating Karekare Point should have been easier with the lower tide, but the bare sand in front of the rocky point was suddenly immersed by a forceful wave catching some unaware! An advantage of having some of the local residents along resulted in a brief story plus photos about the trip by Julia Moore in the local newspaper **-** Karekare Billboard News (March 2004: 4).

Special features: seeing monocots in such dominance and diversity (monocot spp. numbered 90% of the dicot total – which is unusually high), native herb fields, open wild dunes close to Auckland, which keep on changing in size, topography and species.

Acknowledgements

Bot Soc participants for a good stormy day out, Paul Asquith for his extra bird observations, Shirley Tomlinson for her sketch, Peter Johnston for the information on the tree lupin dieback, and Matt Renner for comments on the draft text.

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Field Trip: Brookfields Reserve and Oteha Stream. 17/04/04

Chris McKain, Leslie Haines and Mike Wilcox

Attendees: Amy Bazely, Harry Beacham, Steve Benham, Jenny Christianson, Lisa Clapperton, Brian Cumber, Jo Fillery, Leslie Haines (recorder), Anne Grace, Fran Hintz, Ian Hintz, Sandra Jones, Elaine Marshall, Alistair McArthur, Chris McKain (leader), John Millett, Margaret Peart, Clive Shirley, Mike Wilcox, Tony Williams, Dominik Wecke, Michael Wecke and Maureen Young.

The fieldtrip to Brookfields Reserve took us behind the Albany shops and through the carpark with the 'Albany chooks' of all varieties, then down through pittosporum plantings to Lucas Creek. We made our way along a rough track beside the Oteha Stream that starts at East Coast Bays and is part of the Greville Rd Basin catchment feeding into Lucas Creek and the Waitemata Harbour. Oteha Stream is still tidal for part of the way and there were the occasional mangroves and patches of saltmarsh plants such as *Apodasmia similis* (oioi) and *Samolus repens*, with small islands of flax (*Phormium tenax*) and *Plagianthus divaricatus* (saltmarsh ribbonwood).

The majority of the Oteha Stream Reserve though is regenerating gumland forest that is probably about 100 years since major disturbance. *Kunzea ericoides* is dominant in parts, but as we moved upstream *Phyllocladus trichomanoides* reaching heights of about 15m became common, with occasional totara. Understorey is typical *Melicytus ramiflorus, Myrsine australis, Coprosma robusta, C. grandifolia, C. rhamnoides, Geniostoma ligustrifolium*, and *Cyathea dealbata.* At the stream edges, *Sophora chathamica and Schefflera digitata* are common.

The ground cover was healthy with many seedlings, *Uncinia uncinata, U. banksii and Carex lambertiana* amongst others. There are seven *Carex* species in the area and we enjoyed trialling Chris' Auckland *Carex* key that was then under development (McKain, 2004). Some lively discussions compared the ecology and taxonomic features of *C. dissita* and *C. lambertiana.* Typical of urban reserves (especially where they are a narrow strip between a commercial area and a