NOTES ON THE FLORA OF THE CHATHAM, BOUNTY AND ANTIPODES ISLANDS

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The following are some notes taken on the flora of the above islands during a 10 day expedition undertaken from 27th December 1999 – 5 January 2000 aboard the *Akademik Shokalskiy*, a polar research vessel operated by Heritage Expeditions (NZ) Ltd.

Chatham Islands

The first thing which strikes you about the native flora of the main Chatham Island is the lack of it. The many low-lying parts of the island have been extensively cleared for farming (Given & Williams 1984; Atkinson 1996). These areas are now clothed in exotic pasture grasses with the only indigenous element being scattered trees of the endemic Chatham Island akeake (*Olearia traversii)* and in places *Corynocarpus laevigatus* – known on the Chathams as kopi, rather than karaka. There are also extensive peaty areas of burnt over bracken *(Pteridium esculentum)* and umbrella fern *(Gleichenia dicarpa)* which are used as rough grazing.

One of the largest natural areas protected is the Tuku Nature Reserve at the southern end of the main island. We visited this reserve for an afternoon and on this visit the following details on the flora of the reserve were noted.The edges of the reserve where it adjoins private land consists largely of young regenerating vegetation – scattered pouteretere (*Cyathodes robusta)* emergent over bracken-blackberry (*Rubus fruticosus* agg.)-*Blechnum* spp. In slightly older vegetation occurs tarahinau (*Dracophyllum arboreum)* with pouteretere and Chatham Island karamu (*Coprosma chathamica)* with hokataka (*Corokia macrocarpa)* sometimes present.

When entering the mature forest the natural vegetation patterns become clearer. The drier ridges are dominated by pure tarahinau forest forming a canopy of 4-8m in height.

The understorey in this vegetation type is sparse – only wheki (*Dicksonia squarrosa)* and *Blechnum novae-zelandiae* occur in the acidic leaf litter.

Areas off the main ridges consist of mixed broadleaf forest - mainly tarahinau – hoho (*Pseudopanax chathamicus)* – Chathams Island matipo (*Myrsine chathamica)* forest with wheki, ponga *(Cyathea dealbata)* and hokataka common in the understorey. In the gullies hoho, Chathams Island matipo, wheki and ponga are the predominant species with scattered karaka. Small areas of karaka forest are present in the area of reserve we visited. Species common in the understorey in this forest type included wheki-ponga (*Dicksonia* aff. *fibrosa),* kawakawa *(Macropiper excelsum),* Chatham Island ribbonwood *(Plagianthus chathamicus)* and Chatham Island mahoe *(Melicytus chathamicus). Urtica australis* was also noted here.

The following day we travelled to the northern end of the island. Here on the coast we visited a remnant of karaka forest in the Hapupu Historic Reserve which is famous for its dendroglyphs (tree carvings) on the karaka trees. This reserve was a good example of conservation efforts underway on the island to protect the few remaining forest remnants. This area had been protected and fenced off from stock in 1980 (Munn 1996). This was evident by the abundance of Chatham Island mahoe in the understorey with many karaka seedlings present. This reserve formed a continuous vegetation sequence from forest through to dunes. Chathams Island matipo was particularly common where the forest graded into dune shrubland. Apart from this few other species were present. Many moribund stands of karaka were present in the area, probably a function of the extreme coastal environment and years of grazing under the stands.

The dune systems themselves are very extensive on the main Chatham Island. Most have not been modified by development like so many on the mainland although some have been or are still being grazed. Probably the biggest impact has been the introduction of marram *(Ammophila arenaria)* which has colonised extensive areas of the dune systems. On visiting the beach at Hapupu marram was the dominant species. However several

other species were also common, particularly harestail *(Lagurus ovatus),* knobby sedge *(Isolepis nodosa), Leucopogon* aff. *parviflorus* and sand pimelea *(Pimelea arenaria).* These species are particularly common in the backdunes. It was particularly interesting to note the abundance of sand pimelea, in full flower at the time. This species is uncommon on mainland New Zealand (Given 1996). It is so common in the coastal areas of the main Chatham Island that it even grows in amongst exotic pasture.

In Kaingaroa village a large patch of the endemic sow thistle (*Embergeria grandifolia)* was seen growing in wasteland near one of the dwellings with other scattered plants around the village. This is a large leaved herb with large pale yellow daisy heads. Another large endemic herb which was not seen in its natural environment was the Chatham Island forget-me-not (*Myosotidium hortensia).* This species, like the sow thistle is now very uncommon on the Chathams as a result of grazing from introduced animals (Given & Williams 1984; Wilson & Given 1989; Given 1996). The only specimens we saw were planted.

During the visit a note was kept on naturalised exotic weed species seen. Apart from the exotic pasture grasses which dominate the lowlands the most widespread and conspicuous weed on the island seems to be gorse (*Ulex europaeus)* which has become more common in recent years (R. Richards *pers. comm.*). Blackberry is also present in many bracken dominated areas. Other species noted include Himalayan honeysuckle *(Leycesteria formosa),* sow thistle *(Sonchus oleraceus),* scotch thistle *(Cirsium vulgare),* boxthorn *(Lycium ferocissimum)* and cotoneaster *(Cotoneaster glaucophyllus).* In and around Kaingaroa village montbretia *(Crocosmia x crocosmiiflora)*, three-cornered garlic *(Allium triquetrum),* and an unidentified mallow species were naturalised. As mentioned before harestail and marram are widespread in the extensive dune areas. Undoubtedly there are more exotic species present which were not recorded, however the Chatham Islands do not seem to have a large exotic flora relative to the mainland. Fortunately the isolation of the Chathams has prevented the introduction of most of the serious weed species from mainland New Zealand. Given the distance of the Chathams from mainland New

Zealand probably all the weed species present have been introduced either deliberately or accidentally by humans.

Bounty Islands

In the subantarctics, the Bounty Islands are a grouping of over 20 small islands known more for their wildlife than plant life. While these islands contain thousands of fur seals, penguins and other seabird species they are completely devoid of any vascular plants. Only algae and lichens have been recorded. This is a result of the hard rock and climate and the inability of soil to form with the constant traffic from birds and fur seals (DoC 1991; DoC 1998). However we did see abundant bullkelp *(Durvillaea antarctica)* festooned around the wave zone of the island.

Antipodes Islands

After several days at sea and not seeing any plant life on the Bounties I was looking forward to the botanical wonders of the Antipodes Islands. As with the Bounties these islands are Nature Reserves and landing was not permitted for our party, therefore opportunities for botanising were limited. The tops of the Antipodes were also shrouded in heavy sea fog for the whole time we were anchored offshore which limited our ability to botanise through binoculars. However zodiac cruising along the shoreline enabled us to see some of the vegetation present on the main Antipodes Island.

There is no forest on the Antipodes islands, only tussock grassland of *Poa litorosa* with patches of *Coprosma antipoda* shrubland and gullies of tall prickly shield fern *(Polystichum vestitum)* interspersed with several species of megaherbs (Newton 1980; DoC 1991; DoC 1998).

The towering cliffs make an impressive site when viewed at close range from a zodiac. Here on the cliffs we saw lots of *Poa littorosa* with patches of prickly shield fern. However the highlight of this brief visit to the Antipodes was seeing two of the megaherbs. The Antipodes carrot (*Anistome antipoda)* and *Stilbocarpa polaris* were sparsely scattered along

the coastal cliffs. Unfortunately the Antipodes carrot was not in flower but the large leaves and yellow cauliflower like umbels of *Stilbocarpa polaris* could be seen quite clearly through the fog. Unfortunately we only saw a fraction of the flora recorded from the Antipodes. Notable species not seen include the megaherb *Pleurophyllum criniferum* and the endemic *Gentiana antipoda* which are present on these islands (DoC 1991).

In summary, this trip provided a reasonable insight into the flora and management issues associated with the Chatham Islands. While we think of the Chathams as relatively pristine and untouched in reality the low lying nature of most of the islands has enabled massive changes to the flora to take place through habitat clearance for farming and the effect of grazing animals. Thankfully though, efforts are now being made to conserve what is left. At the other end of the spectrum were the Bounty and Antipodes Islands where a combination of climate, topography, remoteness and soils (or lack of) have prevented humans from imposing virtually any modifications on the habitats of these islands. It was good to be able to see ecosystems functioning largely the same as they would have been before humans arrived in New Zealand.

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