ENDEMIC PLANTS OF THE WAIMA RANGE - WESTERN NORTHLAND

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A survey of the Waima endemics, *Olearia* "Waima" and *Coprosma waima,* has recently been carried out by Thomas Donovan and Karina Joiner, on contract to the Department of Conservation.

The objective of the survey was to gain population information and to establish the distribution of these plants for management purposes. Additional information was gathered on phenology, habitat and possible threats to these plants. The information gathered will be used as baseline data by which to monitor the plants in the future.

Coprosma waima and *Olearia* "Waima", both ranked as 'vulnerable' (Cameron et al. 1995), are very limited in their distribution. The known populations of both species occur along 6 km of the Waima Range, from west of the Hauturu Highpoint to Mt Misery. The majority of the individuals occur at over 500 m asl on the southern side of the range. The site is one of the coldest in Northland and annual rainfall is high.

Coprosma waima occurs in the canopy of scrub and in the understorey of forest where the canopy cover is incomplete (Druce 1989). It grows to a height of 3 m, and its most distinctive feature is its subsessile leaves. *Coprosma waima* shows a close relationship to *Coprosma grandifolia* (Druce 1989), having many similar characters; in particular, almost identical stipules. The two species also appear to have similar flowering and fruiting times. At the time of Druce's 1989 publication no intermediaries had been seen, but since then two specimens of *Coprosrna grandifolia* x *C. waima* have been recorded.

Olearia "Waima" is a canopy species growing to 7 m in height, often on steep exposed faces where its trunks will often grow horizontally or obliquely, giving rise to vertical lateral branches which give the appearance of being main trunks of separate trees.
Druce (1989) records the known distribution of *Coprosma waima* of that time as being restricted to the cliffs of the Hauturu highpoint. He estimated the cliff area to be less than 1 ha and estimated the number of *Coprosma waima* to be less than 100 individuals. Since then further populations of both *Coprosma waima* and *Olearia* "Waima" have been recorded from 4-5 km to the east of Hauturu, below Te Raupua (Northland's highest point) and below Mt Misery (Forester 1989). This year's April survey located a total of 88 *Coprosma waima* individuals and an estimated 140 *Olearia* 'Waima" plants; however the steep topography of the area meant that a thorough population survey was not possible. Several *Coprosma waima* individuals were located in trackside sites and the known range of the species has been extended.

Coprosma waima appears to have a wide population age structure with a number of seedlings and saplings noted. *Olearia* "Waima" appears to have a more aged population with a gap in the 1-3 m height range; this may be due to past browsing pressure.

Olearia 'Waima" and *Coprosma waima* sites were inspected for goat, possum and insect browse. Possum sign seemed to be at a low level at the sites and no goat sign was observed at the sites or on tracks in the area. This was in contrast to signs of heavy goat and possum damage to both the endemic plant species in the late 1980s (Forester 1989). An aerial 1080 poison operation was undertaken in the area in 1994. Several *Olearia* "Waima" individuals had old bark damage, possibly from goats in the past. Many also had new epicormic growth. A moderate amount of insect damage was considered to be the cause of some dieback.

Other threats to the Waima endemic plants, besides browsers, include weed invasion and habitat change which could affect the specific requirements of these species. There are currently no invasive weed species present at the various sites. It is anticipated that ongoing monitoring of the Waima endemic plants and general forest health monitoring will alert managers to any threats to the plants' survival.

It remains a mystery whether the endemic plants of

the Waima Range are ancient remnants which were perhaps once widespread. The Waima Range appears to be a "hotspot" for endemism, there being several species of land-snail endemic to the area, two of which are recorded specifically from the Hauturu highpoint site. Another addition has recently been made to the interesting flora of the Waima Range with the discovery of a large *Dianella* which is regarded as a distinct taxon and has been tag-named *Dianella* "Waima".

Acknowledgements

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References

Druce, A. P. 1989: *Coprosma waima* (Rubiaceae) - a new species from northern New Zealand. *New Zealand Journal of Botany, 27:* 119-128.

Forester, L. J. 1989: Rare Plants of Waima Forest. *Forest and Bird 20 (4).*

Donovan, T.; Joiner K. 1999: *Olearia* "Waima" and *Coprosma waima* Survey in the Waima Forest, Department of Conservation, Unpublished Report.

Wrapping up the cutty-grasses (*Gahnia* spp., Cyperaceae)

Rhys Gardner

In two previous articles I have described anatomical features of some of these plants, emphasizing that it is possible to name even bits of vegetative material. Here is a summary of this work, and some new information for *Morelotia affinis*, *Gahnia lacera*, and *G. rigida*.

Remember: the blade of the leaf is twisted (except in *M. affinis*) so that its underside, or abaxial surface, comes to face the light; the adaxial side, usually furrowed, is minutely papillate and is either smooth or scabrid; the ligule is a curving adaxial scale across the top of the sheath. When looking at the adaxial ridges with a hand-lens (x20 is better than x10), bend the leaf over a finger and get strong light on it from the side. Crushing the nuts to detect their taste should be done cautiously; sucking them is often sufficient, especially for *G. pauciflora*.

Morelotia affinis

The old leaves persist on the plant, with the sheaths twisting and contracting into a loose spiral, something not seen in any of the other species. Another unique feature is the lack of a ligule. The blades are rarely more than c. 8 mm wide and have a prominent pale midrib on the abaxial surface (and a corresponding V-shaped adaxial groove). The nuts are black, tasteless, and relatively small, like those of G. lacera, but they are ovoid whereas the nuts of the latter are obovoid.

Gahnia lacera

The blades of this plant reach up to c. 8(-11) mm wide; the adaxial grooves are shallow and the ridges here are smooth on their sides and top. Unlike all the following species, this plant has a distinct midrib, pale and raised adaxially, and just above the ligule there is a zone of short pointed hairs. The sheath is distinctive in its scattered papillae, like spots of resin.

Gahnia pauciflora and *G. procera* (see Gardner 1996)

The blades of these plants are much alike when dried, both being "medium-sized", that is, seldom more than 10 mm wide. The easiest way to name an unknown one of these is to match it to a known one. But they can be distinguished with a good handlens - the adaxial ridges of G. pauciflora have "whaleback" projections scattered along their edges and tops, which are not seen in *G. procera*. Also, under the microscope, the papillae on the sides of the ridges appear more or less regularly cylindrical in the former species, but contorted-annulate in the latter. The nuts of these and the following three species are flavoured, in varying degrees, of vanilla (or, say some, crystallized violets).