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AGERATINA AT WAIPOUA AND TARANGA/MAROTENE ISLANDS

(Short Answers in Conservation Science)

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Dr Ray Pierce
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Dear Ray

RE: AGERATINA AT WAIPOIJA AND TARANGA/MAROTENE ISLANDS

Mexican devil *(Ageratina adenophora)* is only partially shade tolerant and will eventually be succeeded by healthy regenerating bush, where this is allowed to occur (or naturally occurs). However, where sites are being disturbed (erosion, severe browsing damage, human activities) then Mexican devil will find niches to thrive in. In addition, there will always be habitat that is undisturbed, pristine or near pristine, that Mexican devil can invade. Bush edges, farmland, headland, bluffs, swamp edges, streamsides, etc. all offer low cover that suits this weed. Therefore, if infestation levels are low, I would recommend eradication measures be undertaken, especially if it is not highly likely that the sites will be reinfested by wind blown seed.

On the Poor Knights the soil is very light, dry and often moving. Plant densities at ground level are very low, probably because of very high Nitrogen levels (via guano), moving soils (via petrel activities), low rainfall and the low number of actual species found on islands. This offers an enhanced opportunity for Mexican devil to germinate, just as it has for Inkweed, Scotch thistle and Pampas. I do not know the state of the soil on the Hen and Chickens but if it is similar to the Poor Knights then a very real weed potential exists. Although Inkweed and Scotch thistle and some other adventive species are succeeded by native plants, Mexican devil would probably severely interrupt the natural successional process in these lighter soils.

Mistflower *(Ageratina riparia)* is normally much more of a problem in forest as it is more shade tolerant. However, I believe it also has a higher moisture requirement as, with one small exception, it has failed to establish on the Poor Knights. If the Hen and Chickens are wetter forests then Mistflower would probably present more of a problem. However, it is worth noting that Mexican devil seems to be more aggressive than Mistflower on the Poor Knights. Weed rankings may need to be altered for island habitats.

Control of both species is the same. Either the plants can be hand-pulled (this actually worked very easily on the Knights) or the vegetation can be sprayed with Escort herbicide, 5 grams per 10 litre knapsack. Spray nozzles should be very fine and a light mist coverage should be attempted with no runoff. The addition of Pulse or Boost is recommended, at 10 ml per 10 litres. The risk to native vegetation is extremely high, as Escort is efficacious against a wide range of non-monocot species. Almost all dicots (except Solonaceae) and all podocarps

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would be killed by 50% coverage by Escort. Therefore, staff would need to be very careful how they operate, spraying only from extremely close quarters.

In addition, Escort has a soil life of 3 - 8 weeks - this is dependent on soil porosity, rainfall and application rate - and is freely taken up by surface feeding roots. That is why fine nozzles and light misting spraying techniques must be used to ensure no runoff onto soil. Escort that is taken up by plants is metabolised within the plant and does not leach out. Furthermore, Escort in the soil breaks down to simple organic molecules (a sulphate, Carbon dioxide, water, etc.).

Escort has a very low toxicity to animal life (insects, vertebrates, protozoa, etc.) and is rated safe to use by staff. Because of the 3 - 8 week residual period, any revegetation programmes would need to be held back for at least two months. Spraying in late autumn - early winter is recommended as rainfall will shorten this return time and allow for native seedlings germinating in late winter to become established.

Escort is also particularly severe on ferns of all types. Even a few drips of spray onto the soil next to a large Mamaku can destroy it so extreme care must be taken. A lot of small ground ferns tend to get hit when spraying is done and they usually re-establish well within six months but the trunked ferns take many years to regrow.

It is difficult to recommend a definite strategy for the Hen and Chickens without actually looking at the problem but if, as stated above, they are at all like the Poor Knights (very dry, relatively open forest) then eradication measures should be quite easily undertaken.

At Waipoua, the Mistflower presents a much more daunting problem. The areas are not isolated or easily defined and the neighbouring sources of reinfestation cannot currently be enforceably controlled. In addition, the forest is denser and wetter, ideal habitat for Mistflower. Because of the size of the problem, I would recommend only one small catchment be treated (e.g. the Wairau) along its entire length. Unfortunately, the catchments run east to west but the prevailing wind is west to east so it would probably be of little benefit to treat, say, the upper catchments only of the streams. Wind blown seed would tend to reinfest from the west. However, roadsides would be my first target as seed tends to be blown along roads by cars and wind, which can infest new catchments readily.

Control is as stated above. Damage to desirable species would probably be less than on offshore islands.

I hope this is of assistance. There is no charge for this service (Ref. NUA 93/7).

Yours sincerely

Jack Craw
Noxious Plant Officer