FIRST DEFINITIVE LIST OF BAY OF PLENTY VASCULAR FLORA PUBLISHED

Sarah Beadel and Paul Cashmore

A group of Rotorua Botanical Society botanists have recently published a checklist of indigenous and naturalised vascular plant taxa currently known to be present in the Bay of Plenty, or to have been present in the past, being the culmination of more than five years of research (Beadel *et al.* 2009).

For the purposes of this project, the extent of the Bay of Plenty was defined as including the following ecological districts: Te Aroha, Mayor Island, Motiti, White Island, Tauranga, Otanewainuku, Rotorua Lakes, Te Teko, Taneatua, Opotiki, Kaingaroa, Whirinaki, Ikawhenua, Waimana, Waioeka, and Motu. A map of the ecological district boundaries is provided in the report. Nomenclature of taxa generally follows names in the New Zealand Plant Conservation Network (NZPCN) website, as at November 2008.

The checklist was compiled largely from written material (published and unpublished) up to 2006 and herbarium vouchers (reference with the acronym for the herbarium in which the specimen is lodged) up to 2008. In addition, references to selected publications and reports post-2006 and personal observations of some of the authors have been included. Sources for all records have been identified.

The checklist has been produced as a printed version and also as a more comprehensive electronic version. These two versions are identical in terms of the species records for each ecological district. The electronic version, however, also includes herbarium voucher numbers where these exist and some additional references to written records of species occurrences. For reasons of space, these additional voucher records and references were not included in the printed version. The checklist is intended to be a working document, to inspire field botanists to discover and record more of the natural diversity of the flora of the Bay of Plenty.

Publication was sponsored by Wildland Consultants Ltd, Department of Conservation, Natural Talent Design, and Environment Bay of Plenty.

Some of the key findings follow:

- The total number of vascular plant species recorded in the Bay of Plenty is 2,053, comprising 1,036 native and 1,017 exotic naturalised species, with only marginally more native plant species than naturalised species in the Region. The number of naturalised species will continue to increase over time as more species escape from cultivation and establish in the wild, so that in the near future naturalised species will surpass native plant species in terms of numbers.

- Highest diversity of plant species (both native and naturalised): Rotorua Lakes Ecological District: 1,310 species. This reflects the diversity of habitats present - freshwater lakes, rivers, forest and recently-formed volcanic landscapes (see Table 1).

- Lowest diversity of plant species in total (both native and naturalised): these are all islands, namely Motiti Ecological District (which includes Karewa Island off Matakana Island and nearby Motunau (Plate Island)), White Island Ecological District (which includes Rurima Island and Moutohora (Whale Island)), and Tuhua (Mayor Island). This low diversity is a combination of the small size of these areas relative to the much larger ecological districts on the mainland, coupled with fewer native and naturalised species able to colonise them due to distances from the mainland.

- Highest diversity of native plant species: Motu Ecological District - 621 species, reflecting the range of habitats present, from the coast to the mountain tops of the Raukumara Ranges.

- Highest diversity of naturalised plant species: Rotorua Lakes Ecological District - 714 species, followed by Tauranga Ecological District - 525. For

Tauranga and Rotorua it reflects the large number of species that have become naturalised (wild) from these large urban centres. This number is likely to continue expanding, particularly for Tauranga City, as urban areas continue to expand.

- Highest ratio of native to naturalised plant species - Te Aroha Ecological District - 79% of the total flora is native species. Whirinaki Ecological District is close behind on 78%.

- Four ecological districts have more naturalised exotic plant species than native species: Motiti, Tauranga, Te Teko, and Rotorua. In the case of Motiti and Te Teko, this reflects the high degree of modification for agriculture, with few areas of indigenous vegetation remaining. For Tauranga and Rotorua it reflects the large number of exotic species that have naturalised (wild) from garden escapes.

Copies of the report can be obtained from the Rotorua Botanical Society for $20 plus postage and packaging.
Refer to the website http://www.wildlands.co.nz/botanical.htm or contact Sarah Crump 07 3497 412 scrump@doc.govt.nz.

For further information contact Sarah Beadel sarah@wildlands.co.nz 021 924 476

REFERENCE

Beadel S.M., Ecroyd C., de Lange P., Cashmore P., Shaw W., and Crump S. 2009: Checklist of indigenous and naturalised vascular plants in the Bay of Plenty. *Rotorua Botanical Society Special Issue No. 2.* 99 pp.

Table 1: Numbers of indigenous and naturalised vascular plant taxa recorded to date in each ecological district in the Bay of Plenty. A ratio of indigenous:naturalised taxa is also given.

Ecological District	Total Size of ED (ha)	Indigenous	Naturalised[1]	Indigenous: Naturalised Ratio[2]
Te Aroha	35,349	509	138	3.69
Mayor Island[3]	1,314	290	151	1.92
Motiti[3]	717	119	136	0.88
Tauranga	85,676	392	525	0.75
Otanewainuku	188,690	549	295	1.86
Rotorua Lakes	139,219	597	714	0.84
White Island[3]	524	224	144	1.56
Te Teko	31,796	220	305	0.72
Taneatua	63,770	448	353	1.27
Opotiki	21,778	318	261	1.22
Kaingaroa	262,229	527	195	2.70
Whirinaki	41,933	396	111	3.57
Ikawhenua	112,282	415	143	2.90
Waimana	102,629	345	110	3.14
Waioeka	92,542	340	119	2.86
Motu	260,607	621	310	2.00

1. Includes naturalised indigenous species.
2. Ratio of indigenous to naturalised taxa.
3. Land area only (i.e. excludes ocean).