



FLORA OF NEW ZEALAND

MOSSES

INTRODUCTION



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Fascicle I – AUGUST 2022

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Introduction

"Every botanist who prepares a Flora starts from the standpoint reached by his predecessors" (Cheeseman 1906). We too stand on the shoulders of our predecessors, particularly those of G.O.K. Sainsbury and H.N. Dixon. Sainsbury, a retired Wairoa lawyer, produced his modestly titled "A Handbook of the New Zealand Mosses" more than 60 years ago (Sainsbury 1955). Earlier, Dixon had produced his six part *Studies in the Bryology of New Zealand* (Dixon 1913–1929).

Our intent for this eFlora is to provide an updated account of the mosses documented from the three main islands of New Zealand (N.Z.), its inshore islands, and those offshore islands (including the Kermadec Is and Macquarie I.) traditionally included in the New Zealand Botanical Region. Each family treatment comprises a numbered fascicle, uploaded, as they become available, as a printable and dated PDF file (see www.nzflora.info/publications.html). Simultaneously, treatments are added to the New Zealand eFlora website (home page www.nzflora.info). High quality line drawings from the pens of botanical artists Rebecca Wagstaff and Rod Seppelt form part of each treatment.

In large degree the family concepts presented in this eFlora reflect those of Goffinet et al. (2009). Their concepts build on traditional classifications (e.g., Brotherus 1924, 1925), and reflect advances in understanding using morphological, cladistic, and molecular systematic methods. Variations from the family concepts of Goffinet et al. (2009) are discussed under the appropriate family treatments.

Within each family, genera are presented alphabetically. Generic descriptions are omitted if the genus is monotypic. Within each genus, species are also presented alphabetically. For some large and complex genera a synopsis of infrageneric classification is presented. A brief discussion for each genus and family provides historical and phytogeographical context for the group.

For each species (or intraspecific taxon) the taxonomic synonyms cited are those we consider relevant to N.Z., and usually include only names that have been applied to N.Z. collections in either published accounts or N.Z. herbaria. Species descriptions are derived primarily from N.Z. collections kept in N.Z. herbaria unless explicitly stated otherwise. The Allan Herbarium (CHR) at Manaaki Whenua – Landcare Research, Lincoln and the herbarium of the Museum of New Zealand Te Papa Tongarewa (WELT) were always consulted when preparing descriptions and distribution information, and the Herbarium of the Auckland War Memorial Museum (AK) usually consulted. In many instances material in overseas herbaria (especially BM, HO, and NY) was also examined. For family and generic descriptions, reference was often made to published monographs or revisions, especially when our experience of the taxon was parochial or when sporophytes or other structures could not be found in N.Z. material.

A list of published illustrations for each taxon is given but it is not exhaustive. In general between one and five illustrations from published works are cited, with illustration quality and accessibility to N.Z. workers being major considerations. In exceptional cases (e.g., for a highly variable species) a larger number may be cited.

The N.Z. distribution of each species (or intraspecific taxon) is outlined using Land Districts (L.D.) as the basic geographic unit. A map outlining the N.Z. Land Districts is included with each eFlora fascicle. The North Island L.D. are delimited with greater precision on the New Zealand Map Series 311A North Island Edition 1 (1983) map. The South Island L.D. are delimited on the New Zealand Map Series 311A South Island Edition 1 (1983) map.

In general, if three or fewer localities for a species (or variety) have been confirmed from a L.D., then those 1–3 localities are detailed in the distribution statement. If more than three localities from a L.D. have been confirmed, the taxon is considered to be "common" there and no further detail is provided. However, if the confirmed localities in a single L.D. constitute a major portion of the distribution for an otherwise poorly documented species, more localities per L.D. may be cited.

A map of the New Zealand Botanical Region is included with each eFlora fascicle. The region includes the Kermadec Is (c. 29° 15' S, 178° 00' W) in the extreme north-east, the Chatham Is (c. 44° 00' S, 176° 30' W) in the extreme east and Macquarie I. (c. 54° 30' S, 158° 57' E) in the extreme south-west. All of the southern offshore islands to the north-east of Macquarie I. and to the south-west of the Chatham Is (Antipodes Is, Auckland Is, Bounty Is, Campbell I., and Snares Is) are included. Macquarie I. is included despite its being politically a part of Australia. Some islands or island groups, because they have often received special attention from collectors, are cited individually in species distributions. Included are islands of North Auckland L.D. (Three Kings Is, Poor Knights Is, Hen and Chicken Is, Little Barrier I., Great Barrier I., and Rangitoto I.) and in some cases Mayor I. and D'Urville I. Precise localities from within these islands are not usually cited.

An attempt to assign each species to a distribution element, based partly on published records, has been made for each species. World distributions are summarised with areas cited roughly in order of

increasing distance from N.Z. Tasmanian occurrences are cited separately from those of mainland Australia, and the latter are usually not given further detail. An asterisk (*) denotes a region from which material has been confirmed by the author of the treatment.

Habitat notes are provided for each species (or intraspecific taxon). These notes are based on information from confirmed herbarium material and the author's field experience. An elevation range for one or both main islands and notes on frequent ecological associates are presented. The term "growth form" is used throughout for morphological variations that, in our opinion, are environmentally induced and hence not worthy of formal taxonomic recognition. "Growth form" is used in preference to "forma" or "morphotype".

The discussion for each species often focuses on its variability in N.Z., or ways in which N.Z. material differs from that in other parts of the species' range. In many instances problems of typification or the history of the species in N.Z. are discussed. We also provide notes on features that distinguish the species from closely related or superficially similar taxa. Brief etymological notes are also provided. In instances where the derivation or meaning of a generic name or species epithet is obscure, we have referred to a variety of published sources, but have, with kind permission, made particular use of David Meagher's "An etymology of Australian bryophyte genera" (Meagher 2011).

We have decided to omit a comprehensive technical glossary from the Moss eFlora as a whole. Instead we refer the reader to Malcolm and Malcolm's (2006) masterly and beautifully illustrated compendium of bryological terminology. We find, with few exceptions, that the definitions provided by the Malcolms agree with, or improve upon, our understanding of a particular term. The technical vocabulary employed in this eFlora conforms to the usages proposed by the Malcolms. Their "Mosses and Other Bryophytes, an Illustrated Glossary" is widely available, published in N.Z., and modestly priced. The few terms that are not defined by the Malcolms, or which we use in a markedly different sense from them, will be treated in a supplementary glossary attached to the appropriate family treatment.

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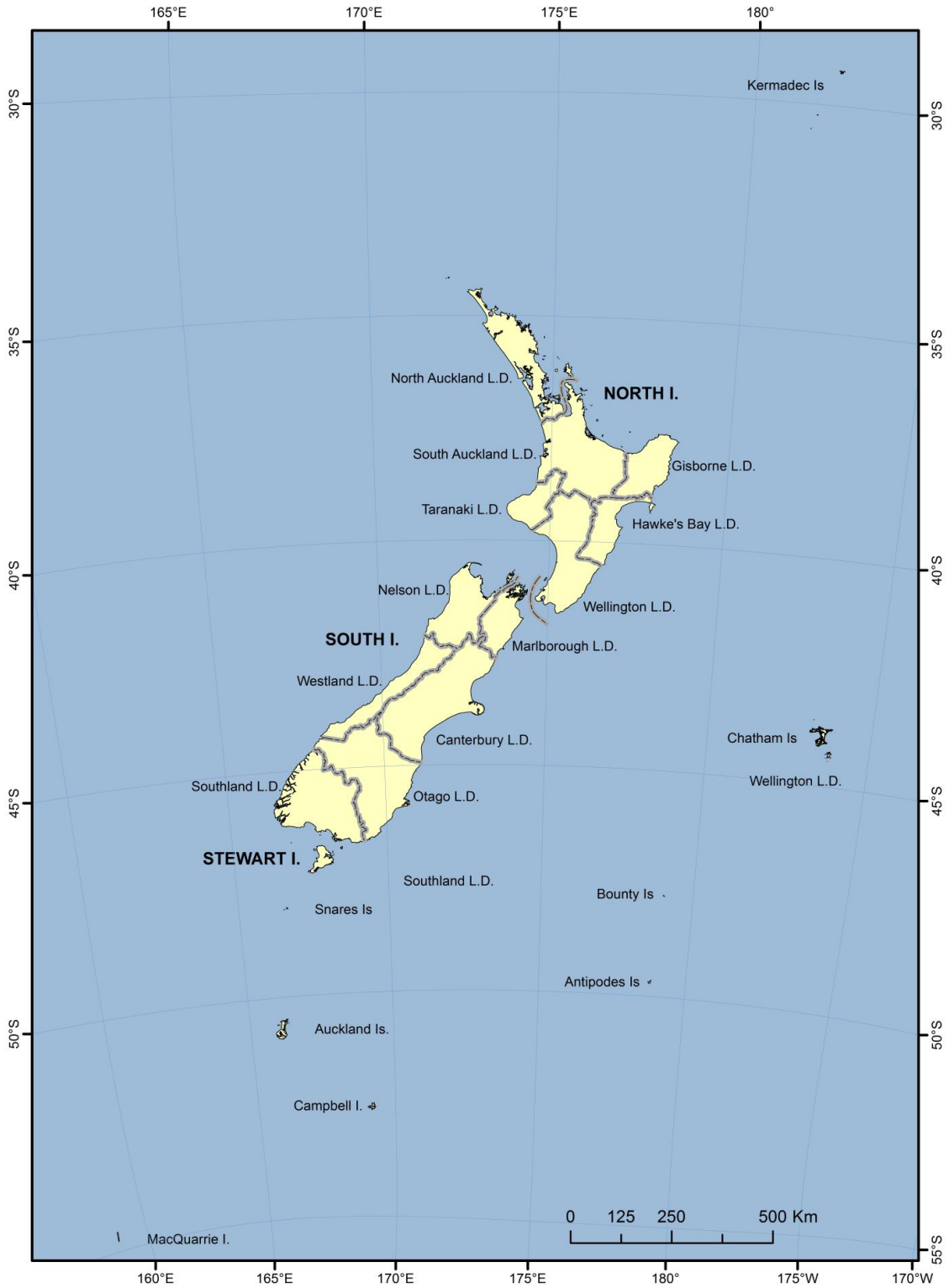
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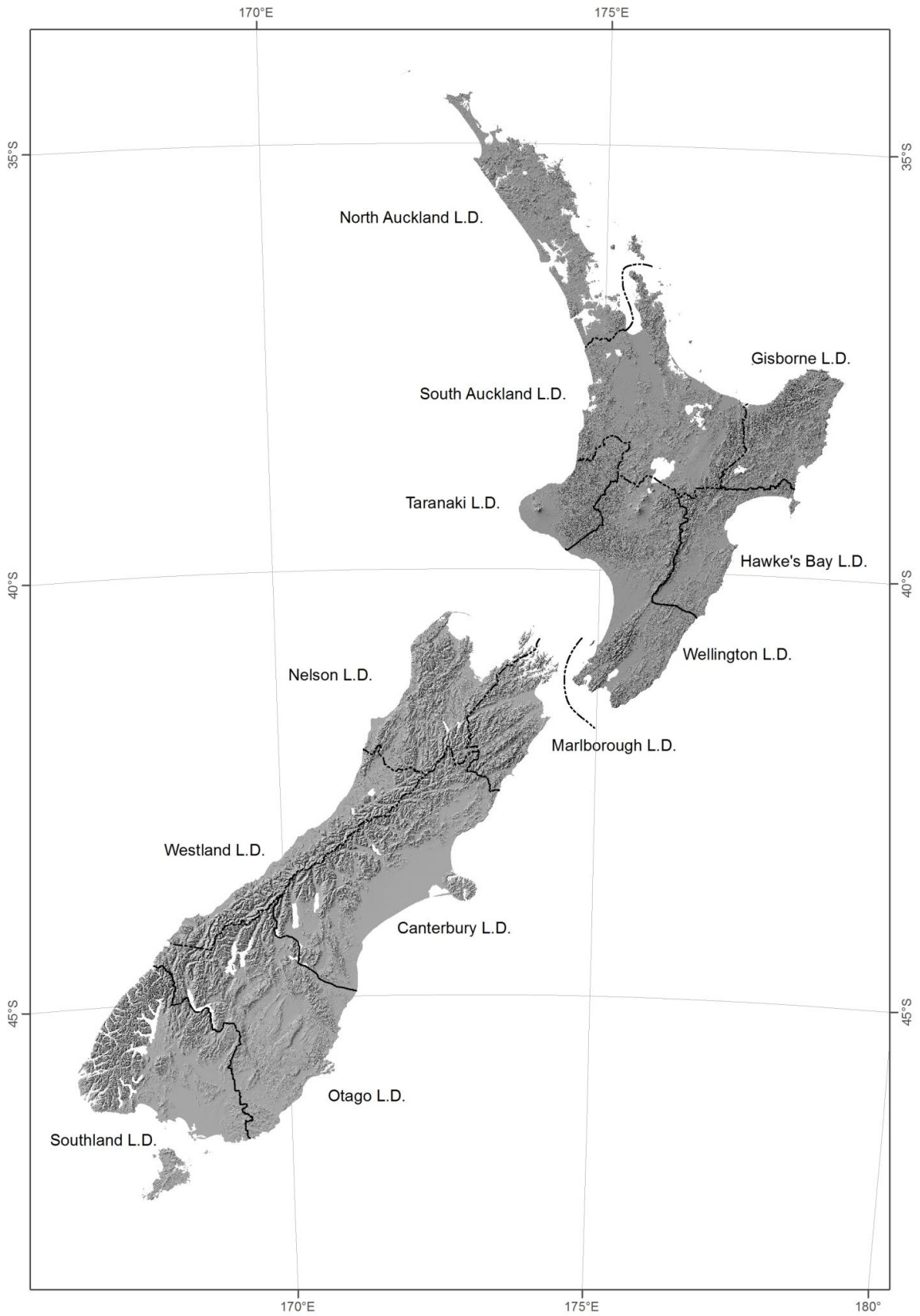
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Map 1: Map of New Zealand and offshore islands showing Land District boundaries



Map 2: Map of main islands of New Zealand showing Land District boundaries

Image Information

Image
Map 1
Map 2

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