

New combinations in Australasian *Zostera* (Zosteraceae)

Surrey W.L. Jacobs¹, Donald H. Les² and Michael L. Moody³

¹National Herbarium of New South Wales, Mrs Macquaries Road, Sydney, NSW 2000, Australia;

Author for correspondence: surrey.jacobs@rbgsyd.nsw.gov.au

²Department of Ecology and Evolutionary Biology, University of Connecticut, Storrs,
Connecticut 06269-3043, USA

³Indiana University, Department of Biology, Jordan Hall 142, 1001 E. 3rd St., Bloomington,
Indiana 47405, USA

Abstract

The new combinations *Zostera muelleri* subsp. *capricorni* (Ascherson) S.W.L.Jacobs, *Z. muelleri* subsp. *mucronata* (Hartog) S.W.L.Jacobs and *Z. muelleri* subsp. *novazelandica* (Setchell) S.W.L.Jacobs are provided for species recently recommended to be treated as a single species.

Introduction

Les et al. (2002) provided ITS, *trnK* and *rbcL* sequences of numerous samples of the family Zosteraceae, concentrating on the Australasian taxa. These were supported by a cladogram derived from morphological data. All results indicated that:

(i) there was no support for retaining *Heterozostera* as a distinct genus unless subgenus *Zosterella* (which contains all of the other Australasian *Zostera* taxa) was raised to genus level (Tomlinson & Pozluszny 2001); and

(ii) there was no support for maintaining the species *Zostera capricorni*, *Z. muelleri*, *Z. mucronata* and *Z. novazelandica* and that these could not be reliably and consistently distinguished from each other. The recommendation was that they be treated as one species, *Z. capricorni* (though *Z. muelleri* has priority and is the name that should have been recommended).

Neither conclusion is novel (Phillips & Meñez 1988). Les et al. (2002) present the most detailed analysis of characters and the most recent review. The results provide no support for the solution suggested by Tomlinson & Pozluszny (2001) and suggest some sorting of specimens on a geographical basis. While some of these loose groups have morphological markers, they do not all have useful markers. Those markers that are discernible are not completely reliable and there is some breakdown between them, especially where two groups overlap. Nonetheless experienced practitioners can and do make distinctions most of the time, except for the indicated molecular differences within *Z. muelleri* s. str. In response to those results (Les et al. 2002) and to reduce

the probability of losing valuable field information, we here recognise the four taxa as subspecies of *Z. muelleri*, the earliest available name for the group. Subspecies is an appropriate level of recognition as the taxa are sorted geographically and there is a considerable (?uncomfortable) degree of character overlap between them.

Zostera muelleri Irmisch ex Asch., *Linnaea* 35: 168 (1867)

Type (fide Hartog 1970:90): “Melbourne, at the mouth of the river Yarra, “Australia Felix”, fl., November 1852, *F. von Mueller* (Type, MEL, P)”.

Zostera muelleri subsp. ***muelleri***

Zostera muelleri subsp. ***capricorni*** (Asch.) S.W.L.Jacobs, ***comb. et stat. nov.***

Basionym: *Zostera capricorni* Ascherson, *Sitzungsber. Ges. Naturf. Freunde Berlin*: 11 (1876)

Type (fide Hartog 1970:85): “Moreton Bay, 10-10-1875, *Naumann* (Type, UC)”.

Zostera muelleri subsp. ***mucronata*** (Hartog) S.W.L.Jacobs, ***comb. et stat. nov.***

Basionym: *Zostera mucronata* Hartog, *Verh. Kon. Ned. Akad. Wetensch., Afd. Natuurk. Tweede Reeks* 59 (1): 91-92 (1970)

Type citation: “Mandurah [W.A., small bay near the bridge], in sandy estuary, 16-8-1950, *G.G. Smith* 274” (holo L; iso PERTH-U!).

Zostera muelleri subsp. ***novazelandica*** (Setch.) S.W.L.Jacobs ***comb. et stat. nov.***

Basionym: *Zostera novazelandica* Setchell (1933: 816).

Type citation: “Bluff, [lower littoral zone,] N.Z., *W.A. Setchell*, Mar 11 1927 Herb U Calf 313091” (holo UC).

A discussion of lectotypes is currently in press with *Flora of Australia* (John Kuo pers. comm.).

References

- Hartog, C den (1970) The sea-grasses of the World. *Verhandelingen der Koninklijke Nederlandse Akademie van Wetenschappen, afdeling Natuurkunde Tweede Reeks* 59, no. 1.
- Les DH, Moody ML, Jacobs SWL & Bayer RJ (2002) Systematics of seagrasses (Zosteraceae) in Australia and New Zealand. *Systematic Botany* 27: 468–484.
- Phillips RC & Meñez EG (1988) Seagrasses. *Smithsonian Contributions to the Marine Sciences* no. 34.
- Setchell WA (1933) A preliminary survey of the species of *Zostera*. *Proceedings of the National Academy of Sciences Washington* 19: 810–817.
- Tomlinson PB & Pozluszny U (2001) Generic limits in the seagrass family Zosteraceae. *Taxon* 50: 429–437.

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