



NEW ZEALAND THREAT CLASSIFICATION SERIES 11

Conservation status of New Zealand hornworts and liverworts, 2014

Peter J. de Lange, David Glenny, John Braggins, Matt Renner, Matt von Konrat, John Engel, Catherine Reeb and Jeremy Rolfe



New Zealand Government

Department of
Conservation
Te Papa Atawhai

Cover: *Chaetophyllopsis whiteleggei*, Nationally Endangered, growing under alpine tangle fern (*Gleichenia alpina*) on the southern slopes of Mount Ruapehu. Note that the image shows the plant at many times its actual size. *Photo: Jeremy Rolfe*

New Zealand Threat Classification Series is a scientific monograph series presenting publications related to the New Zealand Threat Classification System (NZTCS). Most will be lists providing NZTCS status of members of a plant or animal group (e.g. algae, birds, spiders). There are currently 23 groups, each assessed once every 5 years. After each five-year cycle there will be a report analysing and summarising trends across all groups for that listing cycle. From time to time the manual that defines the categories, criteria and process for the NZTCS will be reviewed. Publications in this series are considered part of the formal international scientific literature.

This report is available from the departmental website in pdf form. Titles are listed in our catalogue on the website, refer www.doc.govt.nz under *Publications*, then *Science & technical*.

© Copyright September 2015, New Zealand Department of Conservation

ISSN 2324-1713 (web PDF)

ISBN 978-0-478-15051-3 (web PDF)

This report was prepared for publication by the Publishing Team; editing and layout by Lynette Clelland. Publication was approved by the Deputy Director-General, Science and Policy, Department of Conservation, Wellington, New Zealand.

Published by Publishing Team, Department of Conservation, PO Box 10420, The Terrace, Wellington 6143, New Zealand.

In the interest of forest conservation, we support paperless electronic publishing.

CONTENTS

Abstract	1
<hr/>	
1. Summary	2
<hr/>	
2. Conservation status of the New Zealand hornwort and liverwort flora	10
<hr/>	
2.1 Taxonomically determinate	10
Extinct (0)	10
Data Deficient (149)	10
Threatened (15)	14
Nationally Critical (7)	14
Nationally Endangered (5)	14
Nationally Vulnerable (3)	15
At Risk (99)	15
Declining (3)	15
Recovering (0)	16
Relict (2)	16
Naturally Uncommon (94)	17
Non-resident Native (0)	19
Migrant (0)	19
Vagrant (0)	19
Coloniser	19
Not Threatened (437)	19
Introduced and Naturalised (9)	28
2.2 Taxonomically indeterminate	29
Data Deficient (22)	29
Threatened (1)	29
Nationally Critical (1)	29
At Risk (11)	29
Naturally Uncommon (11)	29
Not Threatened (4)	30
3. Acknowledgements	30
<hr/>	
4. References	31
<hr/>	

Conservation status of New Zealand hornworts and liverworts, 2014

Peter J. de Lange¹, David Glenny², John Braggins³, Matt Renner⁴,
Matt von Konrat⁵, John Engel⁵, Catherine Reeb⁶ and Jeremy Rolfe⁷

¹ Science and Policy Group, Department of Conservation, Private Bag 68908, Newton, Auckland 1145, New Zealand (panel chair)
pdelange@doc.govt.nz

² Allan Herbarium, Systematics Team, Landcare Research, PO Box 40, Lincoln 7640, New Zealand

³ Auckland Museum Herbarium, Private bag 92018, Auckland 1142, New Zealand

⁴ National Herbarium of New South Wales, Mrs Macquaries Road, Sydney, New South Wales 2000, Australia

⁵ The Field Museum, 1400 South Lake Shore Drive, Chicago, Illinois 60605-2496, USA

⁶ Museum National D'histoire Naturelle, Département Systématique et Evolution Case postale 39, UMR CNRS 7205, Paris, France-75005

⁷ Science and Policy Group, Department of Conservation, PO Box 10420, Wellington, New Zealand

Abstract

The conservation status of the New Zealand hornwort and liverwort flora is reassessed using the New Zealand Threat Classification System (NZTCS). A full list is presented, along with a statistical summary and brief notes on the most important changes. This list replaces all previous NZTCS lists for New Zealand hornworts and liverworts which previously had been part of a generic bryophyte conservation status assessment that included mosses.

Keywords: New Zealand Threat Classification System, NZTCS, conservation status, hornwort, liverwort, Acrobolbaceae, Aneuraceae, Anthocerotaceae, Balantiopsaceae, Cephaloziellaceae, Frullaniaceae, Geocalycaceae, Jungermanniaceae, Lejeuneaceae, Lepidolaenaceae, Lepidoziaceae, Metzgeriaceae, Pallaviciniaceae, Plagiochilaceae, Pseudolepicoleaceae, Radulaceae, Ricciaceae, Schistochilaceae, New Zealand flora

© Copyright September 2015, Department of Conservation. This paper may be cited as:

de Lange, P.J.; Glenny, D.; Braggins, J.; Renner, M.; von Konrat, M.; Engel, J.; Reeb, C.; Rolfe, J. 2015: Conservation status of New Zealand hornworts and liverworts, 2014. *New Zealand Threat Classification Series 11*. Department of Conservation, Wellington. 31 p.

1. Summary

This list updates the New Zealand hornwort and liverwort flora threat listings of Glenny et al. (2011) and is also the first published comprehensive conservation assessment published for these plants within the New Zealand Botanical Region (as defined by Allan (1961), but excluding Macquarie Island). Conservation status assessments are provided for 709 taxa at the rank of species and below, using names that are accepted by the panel as of 31 October 2014. Assessments are also provided for a further 38 taxonomically indeterminate and/or informally recognised ('tag-named', hereafter referred to as 'indeterminate') entities, but these indeterminate entities are not considered in the discussion below. The priority for these plants is formal taxonomic resolution.

The conservation assessments are based on the NZTCS manual (Townsend et al. 2008), as were those of Glenny et al. (2011). Past bryophyte assessments (Glenny et al. 2011; Hitchmough 2002; Hitchmough et al. 2007) included mosses as well as liverworts and hornworts. This report is confined to liverworts and hornworts only; mosses will be reported separately. The previous assessment considered only those taxa with a very small number of herbarium accessions. This report is the first to assess the status of the entire liverwort and hornwort flora. Tables 1 and 2 summarise the changes in status between the hornwort and liverwort listings presented in Glenny et al. (2011) and the present document. Name changes, additions and deletions that have occurred since Glenny et al. 2011 are listed in Tables 3, 4 and 5.

With the exception of *Petallophyllum preissii*, there has been little targeted survey effort on Threatened and Data Deficient liverworts and hornworts. The flora is still very much in the process of being formally described, and there are few New Zealand-based hepaticologists actively surveying for these plants. This is reflected in the composition of the membership of this conservation status assessment panel (the authors of this report). This sparse survey effort informed the decision to transfer ten rarely collected taxa from threatened categories to Data Deficient.

Nevertheless, no hornwort or liverwort taxon has changed conservation status as a result of an observed change to its population(s) since the 2009 assessment. One taxon, *Isolembidium anomalum* var. *cucullatum* (E.A.Hodgs.) J.J.Engel R.M.Schust. was this time assessed as 'Threatened—Nationally Critical' as a result of improved knowledge about its distribution and population size and, therefore, greater concern about its conservation status. Previously it was assessed as 'At Risk—Naturally Uncommon' in Glenny et al. (2011). However, doubts remain about the taxonomic distinctiveness of *I. anomalum* var. *cucullatum* and this has resulted in it also being listed as taxonomically indeterminate.

Table 1. Statistical summary of the status of New Zealand hornwort and liverwort taxa and indeterminate entities assessed in 2010 (Glenny et al. 2011) and 2014 (this document).

CATEGORY	GLENNY ET AL. 2011	DE LANGE ET AL. 2015
Data Deficient	116	171
Threatened—Nationally Critical	17	8
Threatened—Nationally Endangered	7	5
Threatened—Nationally Vulnerable	3	3
At Risk—Declining	1	3
At Risk—Relict	2	2
At Risk—Naturally Uncommon	75	105
Non-resident Native—Coloniser	1	0
Not Threatened	471	441
Introduced and Naturalised	9	9
Total	702	747

Table 2. Statistical summary of status changes of hornwort and liverwort taxa and taxonomically indeterminate entities between 2010 (Glenny et al. 2011, figures in roman type) and 2014 (this document, figures in bold type).

CONSERVATION STATUS 2014	CONSERVATION STATUS 2010	DETERMINATE	INDETERMINATE	TOTAL
DATA DEFICIENT		149	22	171
	Data Deficient	77	15	92
	Nationally Critical	9	0	9
	Nationally Endangered	1	0	1
	Naturally Uncommon	2	0	2
	Coloniser	1	0	1
	Not Threatened	23	3	26
	Not listed	36	4	40
THREATENED		15	1	16
Nationally Critical		7	1	8
	Data Deficient	1	0	1
	Nationally Critical	6	0	6
	Naturally Uncommon	0	1	1
Nationally Endangered		5	0	5
	Nationally Critical	1	0	1
	Nationally Endangered	4	0	4
Nationally Vulnerable		3	0	3
	Nationally Vulnerable	3	0	3
AT RISK		99	11	110
Declining		3	0	3
	Nationally Endangered	1	0	1
	Not Threatened	1	0	1
	Not listed	1	0	1
Relict		2	0	2
	Nationally Endangered	1	0	1
	Relict	1	0	1
Naturally Uncommon		94	11	105
	Data Deficient	9	2	11
	Relict	0	1	1
	Naturally Uncommon	61	6	67
	Not Threatened	19	1	20
	Not listed	5	1	6
NOT THREATENED		437	4	441
	Data Deficient	5	0	5
	Declining	1	0	1
	Naturally Uncommon	3	0	3
	Not Threatened	420	1	421
	Not listed	8	3	11
INTRODUCED AND NATURALISED		9	0	9
	Introduced and naturalised	9	0	9
Total		709	38	747

Table 3. Name changes affecting New Zealand hornwort and liverwort species between the publication of Glenny et al. (2011) and this document.

NAME AND AUTHORITY IN GLENNY ET AL. 2011	NAME AND AUTHORITY IN DE LANGE ET AL. 2015	FAMILY
<i>Anastrophyllum novazelandiae</i> R.M.Schust.	<i>Anastrophyllum auritum</i> (Lehm.) Steph.	Anastrophyllaceae
<i>Andrewsianthus cuspidatus</i> R.M.Schust.	<i>Andrewsianthus marionensis</i> (S.W.Arnell) Grolle	Scapaniaceae
<i>Cheilolejeunea mariana</i> (Gottsche) B.Thiers & Gradstein	<i>Archilejeunea planiuscula</i> (Mitt.) Steph.	Lejeuneaceae
<i>Nephrolejeunea carcharias</i> M.A.M.Renner	<i>Austrolejeunea carcharias</i> (M.A.M.Renner) M.A.M.Renner	Lejeuneaceae
<i>Brevianthus flavus</i> (Grolle) R.M.Schust. & J.J.Engel	<i>Brevianthus flavus</i> subsp. <i>crenulatus</i> J.J.Engel	Brevianthaceae
<i>Cephaloziella densifolia</i> R.M.Schust.	<i>Cephaloziella densifolia</i> R.M.Schust. var. <i>densifolia</i>	Cephaloziellaceae
<i>Telaranea elegans</i> (Colenso) J.J.Engel & G.L.Sm.	<i>Ceramanus elegans</i> (Colenso) E.D.Cooper	Lepidoziaceae
<i>Telaranea perfragilis</i> J.J.Engel & G.L.Sm.	<i>Ceramanus perfragilis</i> (J.J.Engel & G.L.Sm.) E.D.Cooper	Lepidoziaceae
<i>Telaranea tuberifera</i> J.J.Engel & R.M.Schust.	<i>Ceramanus tuberifera</i> (J.J.Engel & R.M.Schust.) E.D.Cooper	Lepidoziaceae
<i>Cheilolejeunea</i> (a) AK303444: Rekohu	<i>Cheilolejeunea</i> (b) (AK 303444; Rekohu)	Lejeuneaceae
<i>Cheilolejeunea</i> (b) AK297632: Lady Alice Island	<i>Cheilolejeunea</i> (c) (AK 297632; Lady Alice Island)	Lejeuneaceae
<i>Cheilolejeunea</i> (c) AK303450: Surville Cliffs	<i>Cheilolejeunea</i> (d) (AK 327851; Surville Cliffs)	Lejeuneaceae
<i>Cheilolejeunea imbricata</i> (Nee.) Hatt.	<i>Cheilolejeunea</i> (e) (AK 287598; Kermadec)	Lejeuneaceae
<i>Cheilolejeunea krakakammae</i> (Lindenb.) R.M.Schust.	<i>Cheilolejeunea comitans</i> (Hook.f. & Taylor) R.M.Schust.	Lejeuneaceae
<i>Clasmatocolea</i> sp. WELT H10578: Garibaldi Ridge	<i>Clasmatocolea bisexualis</i> Glenny & J.J.Engel	Lophocoleaceae
<i>Chiloscyphus helmsianus</i> (Steph.) J.J.Engel & R.M.Schust.	<i>Cryptolophocolea helmsiana</i> (Steph.) L.Soderstr.	Lophocoleaceae
<i>Chiloscyphus leucophyllus</i> (Hook.f. & Taylor) Gottsche, Lindenb. & Nees	<i>Cryptolophocolea leucophylla</i> (Hook.f. & Taylor) L.Soderstr.	Lophocoleaceae
<i>Chiloscyphus mittenianus</i> (Colenso) J.J.Engel var. <i>mittenianus</i>	<i>Cryptolophocolea mitteniana</i> (Colenso) L.Soderstr. var. <i>mitteana</i>	Lophocoleaceae
<i>Chiloscyphus mittenianus</i> var. <i>obtusus</i> J.J.Engel	<i>Cryptolophocolea mitteniana</i> var. <i>obtusata</i> (J.J.Engel) L. Soderstr.	Lophocoleaceae
<i>Chiloscyphus mittenianus</i> var. <i>symmetricus</i> J.J.Engel	<i>Cryptolophocolea mitteniana</i> var. <i>symmetrica</i> (J.J.Engel) L.Soderstr.	Lophocoleaceae
<i>Chiloscyphus multipennus</i> (Hook.f. & Taylor) J.J.Engel & R.M.Schust.	<i>Cryptolophocolea pallida</i> (Mitt.) L.Soderstr.	Lophocoleaceae
<i>Chiloscyphus spiniferus</i> Hook.f. & Taylor	<i>Cryptolophocolea spinifera</i> (Hook.f. & Taylor) L.Soderstr.	Lophocoleaceae
<i>Chiloscyphus trialatus</i> Gottsche	<i>Cryptolophocolea trialata</i> (Gottsche) L.Soderstr.	Lophocoleaceae
<i>Chiloscyphus tuberculatus</i> J.J.Engel	<i>Cryptolophocolea tuberculata</i> (J.J.Engel) L.Soderstr.	Lophocoleaceae
<i>Jamesoniella kirkii</i> Steph.	<i>Cuspidatula kirkii</i> (Steph.) Feldberg, Váña, Hentschel et Heinrichs	Adelanthaceae
<i>Frullania aterrima</i> (Hook.f. & Taylor) Hook.f. & Taylor var. <i>aterrima</i>	<i>Frullania aterrima</i> Hook.f. & Taylor	Frullaniaceae
<i>Frullania</i> aff. <i>rostrata</i> CHR 587423; Arthur Range	<i>Frullania colliculosa</i> von Konrat, Braggins, Hentschel & Heinrichs	Frullaniaceae
<i>Frullania subrostrata</i> S.Hatt.	<i>Frullania hodgsoniae</i> von Konrat, Braggins, Hentschel & Heinrichs	Frullaniaceae
<i>Frullania</i> sp. CHR 587424: Stewart Island	<i>Frullania knightbridgei</i> von Konrat & de Lange	Frullaniaceae
<i>Goebelobryum</i> aff. <i>unguiculatum</i> CHR 527492: Charleston	<i>Goebelobryum vermiculare</i> J.J.Engel & Glenny	Acrobolbaceae
<i>Paraschistochila conchophylla</i> (E.A.Hodgs. & Allison) R.M.Schust.	<i>Gottschea conchophylla</i> (E.A.Hodgs. & Allison) Grolle & Zijlstra var. <i>conchophylla</i>	Schistochilaceae
<i>Paraschistochila pinnatifolia</i> (Hook) R.M.Schust.	<i>Gottschea pinnatifolia</i> (Hook.) Nees	Schistochilaceae
<i>Heteroscyphus dentammophilus</i> J.J.Engel & Merrill	<i>Heteroscyphus dentammophilus</i> J.J.Engel & G.L.Sm.	Lophocoleaceae
<i>Cyanolophocolea echinella</i> (Lindenb. & Gottsche) R.M.Schust var. <i>echinellus</i>	<i>Heteroscyphus echinellus</i> (Lindenb. & Gottsche) J.J.Engel & Xiaol.He var. <i>echinellus</i>	Lophocoleaceae
<i>Heteroscyphus fissistipus</i> (Hook.f. & Taylor) Schiffn.	<i>Heteroscyphus fissistipus</i> (Hook.f. & Taylor) Schiffn. var. <i>fissistipus</i>	Lophocoleaceae
<i>Heteroscyphus multispinus</i> (E.A.Hodgs. & Allison) J.J.Engel & R.M.Schust.	<i>Heteroscyphus fissistipus</i> var. <i>multispinus</i> (E.A.Hodgs. & Allison) J.J.Engel	Lophocoleaceae
<i>Heteroscyphus mononuculus</i> J.J.Engel	<i>Heteroscyphus mononuculus</i> J.J.Engel var. <i>mononuculus</i>	Lophocoleaceae
<i>Heteroscyphus planiusculus</i> (Hook.f. & Taylor) Engel	<i>Heteroscyphus planiusculus</i> (Hook.f. & Taylor) J.J.Engel	Lophocoleaceae
<i>Heteroscyphus triacanthus</i> (Hook.f. & Taylor) Schiffn.	<i>Heteroscyphus triacanthus</i> (Hook.f. & Taylor) Schiffn. var. <i>triacanthus</i>	Lophocoleaceae

Continued on next page

Table 3 continued

NAME AND AUTHORITY IN GLENNY ET AL. 2011	NAME AND AUTHORITY IN DE LANGE ET AL. 2015	FAMILY
<i>Telaranea nivicola</i> R.M.Schust.	<i>Kurzia nivicola</i> (R.M.Schust.) E.D.Cooper	Lepidoziaceae
<i>Lamellocolea</i> sp. CHR 606036: Watsons Creek	<i>Lamellocolea intergrostia</i> J.J.Engel & Glenny	Lophocoleaceae
<i>Lejeunea</i> (a) AK 291280	<i>Lejeunea</i> aff. <i>flava</i> (a) (AK 291280; Waitakere)	Lejeuneaceae
<i>Lejeunea</i> (b) WELT H6349; Auckland Islands	<i>Lejeunea</i> aff. <i>flava</i> (b) (WELT H06349; Auckland Islands)	Lejeuneaceae
<i>Taxilejeunea colensoana</i> Steph.	<i>Lejeunea colensoana</i> (Steph.) M.A.M.Renner	Lejeuneaceae
<i>Stenolejeunea acuminata</i> R.M.Schust.	<i>Lejeunea hawaikiana</i> M.A.M.Renner & de Lange	Lejeuneaceae
<i>Lejeunea hodgsoniae</i> Grolle ined.	<i>Lejeunea hodgsoniana</i> Grolle ex R.J.Lewington, Bever. & M.A.M.Renner	Lejeuneaceae
<i>Jubulopsis novae-zelandiae</i> (E.A.Hodgs. & S.W.Arnell) R.M.Schust.	<i>Lepidolaena novae-zelandiae</i> (E.A.Hodgs. & S.W.Arnell) von Konrat, L.Soderstr. & A.Hagborg	Lepidolaenaceae
<i>Heteroscyphus erraticus</i> (W.Martin & E.A.Hodgs.) J.J.Engel & R.M.Schust.	<i>Leptoscyphus erraticus</i> (W.Martin & E.A.Hodgs.) J.J.Engel	Lophocoleaceae
<i>Heteroscyphus physanthus</i> (Hook.f. & Taylor) Schiffn.	<i>Leptoscyphus physanthus</i> (Hook.f. & Taylor) J.J.Engel	Lophocoleaceae
<i>Lopholejeunea</i> sp. (WELT H10473; Northland)	<i>Lopholejeunea plicatiscypha</i> (Hook.f. & Taylor) Steph.	Lejeuneaceae
<i>Telaranea patentissima</i> var. <i>ampliata</i> J.J.Engel & G.L.Sm.	<i>Neolepidozia patentissima</i> var. <i>ampliata</i> (J.J.Engel & G.L.Sm.) E.D.Cooper	Lepidoziaceae
<i>Telaranea patentissima</i> var. <i>zebrina</i> J.J.Engel & G.L.Sm.	<i>Neolepidozia patentissima</i> var. <i>zebrina</i> (J.J.Engel & G.L.Sm.) E.D.Cooper	Lepidoziaceae
<i>Telaranea pennata</i> J.J.Engel & G.L.Sm.	<i>Neolepidozia pennata</i> (J.J.Engel & G.L.Sm.) E.D.Cooper	Lepidoziaceae
<i>Telaranea praenitens</i> (Lehm. & Lindenb.) E.A.Hodgs. var. <i>praenitens</i>	<i>Neolepidozia praenitens</i> (J.J.Engel & G.L.Sm.) var. <i>praenitens</i>	Lepidoziaceae
<i>Telaranea tetrapila</i> var. <i>cancellata</i> (Colenso) J.J.Engel & G.L.Sm.	<i>Neolepidozia praenitens</i> var. <i>cancellata</i> (J.J.Engel & G.L.Sm.) E.D.Cooper	Lepidoziaceae
<i>Telaranea praenitens</i> var. <i>dentifolia</i> J.J.Engel & G.L.Sm.	<i>Neolepidozia praenitens</i> var. <i>dentifolia</i> (J.J.Engel & G.L.Sm.) E.D.Cooper	Lepidoziaceae
<i>Telaranea tetrapila</i> (Hook.f. & Taylor) J.J.Engel & G.L.Sm. var. <i>tetrapila</i>	<i>Neolepidozia tetrapila</i> (Steph.) E.D.Cooper var. <i>tetrapila</i>	Lepidoziaceae
<i>Telaranea tetrapila</i> var. <i>roseana</i> (Steph.) J.J.Engel & G.L.Sm.	<i>Neolepidozia tetrapila</i> var. <i>roseana</i> (Steph.) E.D.Cooper	Lepidoziaceae
<i>Telaranea tridactylis</i> (Lehm. & Lindenb.) J.J.Engel & G.L.Sm.	<i>Neolepidozia tridactylis</i> (Lehm. & Lindenb.) E.D.Cooper	Lepidoziaceae
<i>Hyalolepidozia microphylla</i> R.M.Schust. ex J.J.Engel	<i>Paracromastigum microphyllum</i> (R.M.Schust. ex J.J.Engel) E.D.Cooper	Lepidoziaceae
<i>Phaeoceros coriaceus</i> (Steph.) E.O.Campb.	<i>Phaeomegaceros coriaceus</i> (Steph.) R.J.Duff, J.C.Villareal, Cargill & Renzaglia	Dendrocerotaceae
<i>Phaeoceros hirticalyx</i> (Steph.) Haseg.	<i>Phaeomegaceros hirticalyx</i> (Steph.) R.J.Duff, J.C.Villareal, Cargill & Renzaglia	Dendrocerotaceae
<i>Plagiochila</i> aff. <i>obscura</i> AK 302647: Chatham Islands	<i>Plagiochila arbuscula</i> var. <i>rekohuensis</i> J.J.Engel & G.L.Sm.	Plagiochilaceae
<i>Plagiochila retrospectans</i> (Nees ex Spreng.) Lindenb.	<i>Plagiochila fuscella</i> (Hook.f. & Taylor) Taylor & Hook.f. var. <i>fuscella</i>	Plagiochilaceae
<i>Plagiochila hatcheri</i> J.J.Engel	<i>Plagiochila incurvicolla</i> (Hook.f. & Taylor) Hook.f. & Taylor var. <i>incurvicolla</i>	Plagiochilaceae
<i>Plagiochilion proliferum</i> (Mitt.) R.M.Schust.	<i>Plagiochilion prolifer</i> (Mitt.) R.M.Schust.	Plagiochilaceae
<i>Lophozia autoica</i> R.M.Schust.	<i>Protolophozia autoica</i> (R.M.Schust.) Vana & L.Soderstr.	Scapaniaceae
<i>Lophozia monoica</i> (E.A.Hodgs.) J.J.Engel	<i>Protolophozia monoica</i> (E.A.Hodgs.) Vána et L.Söderstr.	Scapaniaceae
<i>Lophozia nivicola</i> R.M.Schust.	<i>Protolophozia nivicola</i> (R.M.Schust.) Vána et L.Söderstr.	Scapaniaceae
<i>Lophozia subalpina</i> (R.M.Schust.) R.M.Schust.	<i>Protolophozia subalpina</i> (R.M.Schust.) Vána et L.Söderstr.	Scapaniaceae
<i>Radula papulosa</i> Steph.	<i>Radula acutiloba</i> Steph.	Radulaceae
<i>Radula dentifolia</i> Grolle	<i>Radula cuspidata</i> Steph.	Radulaceae
<i>Microlejeunea ocellata</i> (Herzog) Grolle	<i>Rectolejeunea ocellata</i> Herzog	Lejeuneaceae
<i>Riccardia</i> aff. <i>wattsiana</i> (Steph.) Hewson	<i>Riccardia</i> aff. <i>wattsiana</i> (AK 305772; New Zealand)	Aneuraceae
<i>Riccardia australis</i> (Hook.f. & Leveille) E.A. Br.	<i>Riccardia filicina</i> (Colenso) E.A.Hodgs.	Aneuraceae
<i>Schistochila pluriciliata</i> R.M.Schust. & J.J.Engel	<i>Schistochila pluriciliata</i> R.M.Schust. & J.J.Engel	Schistochilaceae
<i>Anastrophyllum papillosum</i> J.J.Engel & Braggins	<i>Schizophyllopsis papillosa</i> (J.J.Engel & Braggins) Vana & L.Soderstr.	Anastrophyllaceae

Continued on next page

Table 3 continued

NAME AND AUTHORITY IN GLENNY ET AL. 2011	NAME AND AUTHORITY IN DE LANGE ET AL. 2015	FAMILY
<i>Stolonivector fiordlandiae</i> (E.A.Hodgs.) J.J.Engel	<i>Stolonivector fiordlandiae</i> (E.A.Hodgs.) J.J.Engel var. <i>fiordlandiae</i>	Lophocoleaceae
<i>Cryptochila acinacifolia</i> (Hook.f. & Taylor) Grolle	<i>Syzygiella acinacifolia</i> (Hook.f. & Taylor) Feldberg, Váňa, Hentschel et Heinrichs	Adelanthaceae
<i>Jamesoniella colorata</i> (Lehm.) Schiffn.	<i>Syzygiella colorata</i> (Lehm.) Feldberg, Váňa, Hentschel et Heinrichs	Adelanthaceae
<i>Cryptochila nigrescens</i> (Steph.) Grolle	<i>Syzygiella nigrescens</i> (Steph.) Feldberg, Váňa, Hentschel et Heinrichs	Adelanthaceae
<i>Cryptochila pseudocclusa</i> (E.A.Hodgs.) R.M.Schust.	<i>Syzygiella pseudocclusa</i> (E.A.Hodgs.) Feldberg, Váňa, Hentschel et Heinrichs	Adelanthaceae
<i>Cryptochila grandiflora</i> (Lindenb. & Gottsche) Grolle	<i>Syzygiella sonderi</i> (Lindenb. & Gottsche) Feldberg, Váňa, Hentschel et Heinrichs	Adelanthaceae
<i>Jamesoniella tasmanica</i> (Hook.f. & Taylor) Steph.	<i>Syzygiella tasmanica</i> (Hook.f. et Taylor) Feldberg, Váňa, Hentschel et Heinrichs	Adelanthaceae
<i>Herzogobryum teres</i> (Carrington & Pearson) Grolle	<i>Syzygiella teres</i> (Carrington & Pearson) Vana	Adelanthaceae
<i>Telaranea lindenbergii</i> var. <i>papillata</i> J.J.Engel & G.L.Sm.	<i>Tricholepidozia lindenbergii</i> var. <i>papillata</i> (J.J.Engel & G.L.Sm.) E.D.Cooper	Lepidoziaceae
<i>Telaranea tetradactyla</i> (Hook.f. & Taylor) E.A.Hodgs.	<i>Tricholepidozia tetradactyla</i> (Hook.f. & Taylor) E.D.Cooper	Lepidoziaceae
<i>Xenothallus vulcanicola</i> R.M.Schust.	<i>Xenothallus vulcanicolus</i> R.M.Schust.	Pallaviciniaceae

Table 4. Names newly added since Glennly et al. 2011.

NAME AND AUTHORITY	FAMILY
<i>Acrolejeunea pycnoclada</i> (Taylor) Schiffner subsp. <i>pycnoclada</i>	Lejeuneaceae
<i>Acromastigum divaricatum</i> (Nees) A.Evans	Lepidoziaceae
<i>Acromastigum interstisiale</i> E.A.Br. & M.A.M.Renner	Lepidoziaceae
<i>Andrewsianthus stellatus</i> R.M.Schust.	Scapaniaceae
<i>Austrolejeunea secunda</i> M.A.M.Renner	Lejeuneaceae
<i>Cephaloziella densifolia</i> var. <i>dubia</i> R.M.Schust.	Cephaloziellaceae
<i>Cephaloziella</i> sp. (c) (WELT H013199; Tahora Tunnel)	Cephaloziellaceae
<i>Ceratolejeunea belangeriana</i> (Gottsche in Gottsche et al.) Steph.	Lejeuneaceae
<i>Cheilolejeunea</i> (h) (AK 284270; Unuwahao)	Lejeuneaceae
<i>Cheilolejeunea ceylanica</i> (Gottsche) R.M.Schust. et Kachroo	Lejeuneaceae
<i>Cheilolejeunea trifaria</i> (Reinw., Blume et Nees) Mizut.	Lejeuneaceae
<i>Chiloscyphus canaliculatus</i> var. <i>concaucus</i> J.J.Engel	Lophocoleaceae
<i>Clasmatocolea verrucosa</i> J.J.Engel	Lophocoleaceae
<i>Cololejeunea grossepapillosa</i> (Horik.) N.Kitag.	Lejeuneaceae
<i>Cryptolophocolea aculeata</i> (Mitt.) L.Soderstr.	Lophocoleaceae
<i>Drepanolejeunea</i> aff. <i>aucklandica</i> (AK 287338; Spraggs Bush)	Lejeuneaceae
<i>Frullania</i> aff. <i>rostrata</i> (P.J. de Lange 11245, F; "coastal northern North Island")	Frullaniaceae
<i>Frullania chevalieri</i> (R.M.Schust.) R.M.Schust.	Frullaniaceae
<i>Frullania toropuku</i> von Konrat, de Lange et Larrain	Frullaniaceae
<i>Frullania truncatistyla</i> von Konrat, Hentschel, Heinrichs et Braggins	Frullaniaceae
<i>Gackstroemia novae-zelandiae</i> R.M.Schust. & J.J.Engel	Lepidolaenaceae
<i>Gottschea conchophylla</i> var. <i>multidentata</i> J.J.Engel	Schistochilaceae
<i>Heteroscyphus assurgentifolius</i> J.J.Engel	Lophocoleaceae
<i>Heteroscyphus circumdentatus</i> (W.Martin & E.A.Hodgs.) J.J.Engel & R.M.Schust. var. <i>circumdentatus</i>	Lophocoleaceae
<i>Heteroscyphus circumdentatus</i> var. <i>clasmatacoleoides</i> J.J.Engel & G.L.Sm.	Lophocoleaceae
<i>Heteroscyphus deceptifrons</i> J.J.Engel	Lophocoleaceae
<i>Heteroscyphus echinellus</i> var. <i>hyalinus</i> J.J.Engel	Lophocoleaceae
<i>Heteroscyphus fissistipus</i> var. <i>repandus</i> J.J.Engel	Lophocoleaceae
<i>Heteroscyphus gunnianus</i> (Mitt.) J.J.Engel & R.M.Schust.	Lophocoleaceae
<i>Heteroscyphus mononuculus</i> var. <i>ammophilopsis</i> J.J.Engel	Lophocoleaceae
<i>Heteroscyphus mononuculus</i> var. <i>bilobus</i> J.J.Engel	Lophocoleaceae
<i>Heteroscyphus parallelifolius</i> (Mitt.) J.J.Engel	
<i>Heteroscyphus stoloniferus</i> J.J.Engel	Lophocoleaceae
<i>Heteroscyphus triacanthus</i> var. <i>magnistipulatus</i> J.J.Engel	Lophocoleaceae
<i>Lejeunea</i> (s) (AK 306857; Surville Cliffs)	Lejeuneaceae
<i>Lejeunea oracola</i> M.A.M.Renner	Lejeuneaceae
<i>Lejeunea rhigophila</i> M.A.M.Renner	Lejeuneaceae
<i>Lepidozia bragginsiana</i> E.D.Cooper & M.A.M.Renner	Lepidoziaceae
<i>Lopholejeunea</i> (a) (AK 327822; New Zealand (<i>Lopholejeunea plicatiscypha</i> of Hamlin 1972))	Lejeuneaceae
<i>Lopholejeunea knightii</i> Steph.	Lejeuneaceae
<i>Marsupidium papillosum</i> J.J.Engel & Glennly	Acrobolbaceae
<i>Notoscyphus lutescens</i> (Lehm. & Lindenb.) Mitt.	Geocalycaceae
<i>Plagiochila circinalis</i> var. <i>hemicardia</i> (Hook.f. & Taylor) J.J.Engel & G.L.Sm.	Plagiochilaceae
<i>Plagiochila circumdentata</i> var. <i>carinata</i> J.J.Engel & G.L.Sm.	Plagiochilaceae
<i>Plagiochila colensoi</i> var. <i>quinquespina</i> (Steph.) J.J.Engel & G.L.Sm.	Plagiochilaceae
<i>Plagiochila deltoidea</i> var. <i>densa</i> J.J.Engel & G.L.Sm.	Plagiochilaceae
<i>Plagiochila fuscella</i> var. <i>novae-zelandiae</i> (E.A.Hodgs.) J.J.Engel & G.L.Sm.	Plagiochilaceae
<i>Plagiochila gigantea</i> var. <i>inermis</i> J.J.Engel & G.L.Sm.	Plagiochilaceae
<i>Plagiochila incurvicolla</i> var. <i>lonchoscypha</i> (Herzog) J.J.Engel & G.L.Sm.	Plagiochilaceae
<i>Plagiochila microdictyon</i> Mitt.	Plagiochilaceae
<i>Plagiochila subflabellata</i> Colenso	Plagiochilaceae

Continued on next page

Table 4 continued

NAME AND AUTHORITY	FAMILY
<i>Radula allisonii</i> Castle	Radulaceae
<i>Radula demissa</i> M.A.M.Renner	Radulaceae
<i>Radula novae-hollandiae</i> Hampe	Radulaceae
<i>Radula weymouthiana</i> Steph.	Radulaceae
<i>Stolonivector fiordlandiae</i> var. <i>nodulosus</i> J.J.Engel	Lophocoleaceae
<i>Telaranea</i> (a) (CHR 604513; Whakamaru)	Lepidoziaceae
<i>Thysananthus spathulistipus</i> (Reinw., Blume & Nees) Lindenb.	Lejeuneaceae

Table 3. Names from Glenny et al. (2011) that have been rejected from this document as being taxonomically indistinct.

NAME AND AUTHORITY IN GLENNY ET AL. 2011	NAME AND AUTHORITY IN DE LANGE ET AL. 2015	FAMILY
<i>Acromastigum brachyphyllum</i> A.Evans	<i>Acromastigum anisostomum</i> (Lehm. & Lindenb.) A.Evans	Lepidoziaceae
<i>Acroscyphella nitidissima</i> (R.M.Schust.) N.Kitag & Grolle	<i>Acroscyphella phoenicorhiza</i> (Grolle) N.Kitag. & Grolle	Balantiopsaceae
<i>Anastrophyllum schismoides</i> var. <i>crassulum</i> J.J.Engel	<i>Anastrophylopsis subcomplicata</i> (Lehm. & Lindenb.) Vana & L.Soderstr.	Anastrophyllaceae
<i>Cryptostipula inundata</i> R.M.Schust.	<i>Hepatostolonophora paucistipula</i> (Rodw.) J.J.Engel	Lophocoleaceae
<i>Frullania aterrima</i> var. <i>rostrata</i> (R.M.Schust.) S.Hatt.	<i>Frullania hodgsoniae</i> von Konrat, Braggins, Hentschel & Heinrichs	Frullaniaceae
<i>Lopholejeunea nigricans</i> (Lindenb.) Schiffn.	<i>Lopholejeunea</i> (a) (AK 327822; New Zealand (<i>Lopholejeunea plicatiscypha</i> of Hamlin 1972))	Lejeuneaceae
<i>Nephrolejeunea</i> aff. <i>hamata</i>	<i>Austrolejeunea hamata</i> (Grolle) Pócs	Lejeuneaceae
<i>Petalophyllum australe</i> Colenso	<i>Petalophyllum preissii</i> Lehm.	Fossombroniaceae
<i>Radula cordiloba</i> subsp. <i>erigens</i> M.A.M.Renner & Braggins	<i>Radula javanica</i> Gottsche, Lindenb. & Nees	Radulaceae
<i>Radula parviretis</i> E.A.Hodgs.	<i>Radula strangulata</i> Taylor	Radulaceae
<i>Treubia</i> aff. <i>tasmanica</i> AK 312821: Mt Euclid	<i>Treubia pygmaea</i> R.M.Schust.	Treubiaceae
<i>Treubia lacunosoides</i> Pfeiffer, W.Frey & M.Stech	<i>Treubia lacunosa</i> (Colenso) Prosk.	Treubiaceae

As with past listings, no taxon has been judged as ‘Extinct’; although several taxa listed as ‘Data Deficient’ (such as *Petallophyllum hodgsoniae*) could be placed here, and would have been but for the lack of sufficient survey.

Previously, Glenny et al. (2011) had treated *Drepanolejeunea pentadactyla* (Mont.) Steph. as a ‘Coloniser’. Here we assess this species as ‘Data Deficient’. Our argument is that for a species to be assessed as a ‘Coloniser’, evidence is first needed to demonstrate an actual arrival and as this species was discovered by chance and it has yet to be properly surveyed for, we now feel that it is better treated as ‘Data Deficient’.

Accordingly, 149 taxa have been assessed as ‘Data Deficient’, whereas 93 were assessed as such by Glenny et al. (2011). Of these 149 species, 23 had previously been listed as ‘Not Threatened’, 10 had been listed as ‘Threatened’ (9 Nationally Critical, 1 Nationally Endangered), 2 had been listed as ‘At Risk: Naturally Uncommon’ and 1 had been listed as ‘Coloniser’. Of the Data Deficient taxa, 36 are new to the list since Glenny et al. (2011). Although 25 taxa were assessed as ‘Threatened’ by Glenny et al. (2011), this listing recognises only 15. A critical issue for any assessment is the reliability of the data provided to undertake an assessment; our uncertainty is reflected by the use of the qualifier ‘DP’ [Data Poor] for 11 of those taxa assessed as ‘Threatened’.

As a reflection of the current taxonomic knowledge of the New Zealand hornwort and liverwort flora, this listing includes 58 taxa that are new to the list. Of these, 36 are listed as ‘Data Deficient’, 9 ‘Not Threatened’, 4 ‘At Risk: Naturally Uncommon’ and 1 ‘At Risk: Declining’. Recent gains have

come from monographs of *Acromastigum*, *Chiloscyphus*, *Heteroscyphus*, and *Radula* (e.g. Engel 2010, 2013, 2014; Renner et al. 2013, 2014; Brown & Renner 2014; Renner 2014). Further changes to New Zealand hornwort and liverwort floras are anticipated as revisions of the Aneuraceae, Frullaniaceae, Lejeuneaceae, Lophocoleaceae continue. Field work is disclosing hitherto unrecognised diversity in less well explored parts of the New Zealand Botanical Region, e.g. the Kermadec Islands (Renner & de Lange 2011; Braggins et al. 2014) where a range of mostly tropical genera and species have been newly recognised since the last listing of the New Zealand hornwort and liverwort flora (Glenny & Fife 2012).

These changes highlight the importance of supporting ongoing biosystematic research effort into these plants. It is therefore concerning that resident New Zealand biosystematic knowledge is still so limited and poorly resourced that we are reliant on international experts to help resolve taxonomic issues. Biosystematics aside, conservation assessments are also hampered by the lack of active field workers with the necessary skills to be able to recognise the plants listed here.

2. Conservation status of the New Zealand hornwort and liverwort flora

Taxa are assessed according to the criteria of Townsend et al. (2008), grouped by conservation status, then alphabetically by scientific name. For non-endemic species that are threatened internationally, the IUCN category is listed alongside the NZTCS listing. Categories are ordered by degree of loss, with Extinct at the top of the list and Not Threatened at the bottom, above Introduced and Naturalised. The Data Deficient list is inserted between Extinct and Threatened. Although the true status of Data Deficient taxa will span the entire range of available categories, taxa are in that list mainly because they are very seldom seen, so most are likely to end up being considered threatened and some may already be extinct. The Data Deficient list is likely to include many of the most threatened species in New Zealand.

See Townsend et al. (2008) for details of criteria and qualifiers, which are abbreviated as follows:

CD	Conservation Dependent
De	Designated
DP	Data Poor
EF	Extreme Fluctuations
EW	Extinct in the Wild
IE	Island Endemic
Inc	Increasing
OL	One Location
PD	Partial Decline
RF	Recruitment Failure
RR	Range Restricted
SO	Secure Overseas
SO?	Uncertainty as to whether the New Zealand taxon is conspecific with the Secure Overseas taxon
S?O	Uncertainty as to whether the overseas taxon is secure
Sp	Sparse
St	Stable
TO	Threatened Overseas

2.1 Taxonomically determinate

Extinct (0)

Taxa for which there is no reasonable doubt—following repeated surveys in known or expected habitats at appropriate times (diurnal, seasonal and annual) and throughout the taxon’s historic range—that the last individual has died.

No taxonomically determinate hornwort and liverwort taxa are listed in this category.

Data Deficient (149)

Taxa that are suspected to be threatened, or in some instances, possibly extinct but are not definitely known to belong to any particular category due to a lack of current information about their distribution and abundance. It is hoped that listing such taxa will stimulate research to find out the true category (for a fuller definition see Townsend et al. 2008).

Data Deficient hornworts and liverworts continued on next page

NAME AND AUTHORITY	FAMILY	QUALIFIERS
<i>Acrolejeunea allisonii</i> Gradst.	Lejeuneaceae	Sp
<i>Acrolejeunea pycnoclada</i> (Taylor) Schiffner subsp. <i>pycnoclada</i>	Lejeuneaceae	OL, SO
<i>Acromastigum divaricatum</i> (Nees) A.Evans	Lepidoziaceae	
<i>Allisoniella nigra</i> subsp. <i>nigra</i> var. <i>acutiloba</i> J.J.Engel	Cephaloziellaceae	OL
<i>Allisoniella nigra</i> subsp. <i>novaezelandiae</i> fo. <i>subobtusa</i> R.M.Schust.	Cephaloziellaceae	OL
<i>Allisoniella nigra</i> subsp. <i>novaezelandiae</i> R.M.Schust. fo. <i>novaezelandiae</i>	Cephaloziellaceae	OL
<i>Andrewsianthus hodgsoniae</i> (R.M.Schust.) R.M.Schust. ex J.J.Engel	Scapaniaceae	OL
<i>Archilejeunea planiuscula</i> (Mitt.) Steph.	Lejeuneaceae	OL, SO
<i>Austrolejeunea carcharias</i> (M.A.M.Renner) M.A.M.Renner	Lejeuneaceae	
<i>Austrolejeunea secunda</i> M.A.M.Renner	Lejeuneaceae	
<i>Bazzania accreta</i> (Lehm. & Lindenb.) Trevis.	Lepidoziaceae	SO
<i>Bragginsella anomala</i> R.M.Schust.	Lophocoleaceae	OL
<i>Cephalozia badia</i> (Gottsche) Steph.	Cephaloziaceae	SO
<i>Cephalozia pachygyne</i> R.M.Schust.	Cephaloziaceae	
<i>Cephalozia schusteriana</i> J.J.Engel	Cephaloziaceae	
<i>Cephaloziella aenigmatica</i> R.M.Schust.	Cephaloziellaceae	
<i>Cephaloziella byssacea</i> (Roth) Warnst. subsp. <i>byssacea</i>	Cephaloziellaceae	
<i>Cephaloziella crassigyna</i> (R.M.Schust.) R.M.Schust.	Cephaloziellaceae	
<i>Cephaloziella densifolia</i> R.M.Schust. var. <i>densifolia</i>	Cephaloziellaceae	
<i>Cephaloziella densifolia</i> var. <i>dubia</i> R.M.Schust.	Cephaloziellaceae	
<i>Cephaloziella exigua</i> R.M.Schust.	Cephaloziellaceae	OL
<i>Cephaloziella grandiretis</i> (R.M.Schust.) R.M.Schust.	Cephaloziellaceae	OL
<i>Cephaloziella hispidissima</i> R.M.Schust.	Cephaloziellaceae	S?O
<i>Cephaloziella invisita</i> R.M.Schust.	Cephaloziellaceae	S?O
<i>Cephaloziella muelleriana</i> R.M.Schust.	Cephaloziellaceae	OL
<i>Cephaloziella nothogena</i> R.M.Schust.	Cephaloziellaceae	DP, OL
<i>Cephaloziella pellucida</i> R.M.Schust.	Cephaloziellaceae	OL
<i>Cephaloziella pseudocrassigyna</i> R.M.Schust. ex J.J.Engel	Cephaloziellaceae	
<i>Cephaloziella pulcherrima</i> subsp. <i>sphagnicola</i> R.M.Schust.	Cephaloziellaceae	
<i>Cephaloziella rufobrunnea</i> R.M.Schust.	Cephaloziellaceae	
<i>Cephaloziella varians</i> (Gottsche) Steph. var. <i>subantarctica</i> (R.M.Schust.) R.M.Schust. ex J.J.Engel	Cephaloziellaceae	
<i>Ceramanus elegans</i> (Colenso) E.D.Cooper	Lepidoziaceae	
<i>Ceramanus tuberifera</i> (J.J.Engel & R.M.Schust.) E.D.Cooper	Lepidoziaceae	
<i>Ceratolejeunea belangeriana</i> (Gottsche in Gottsche et al.) Steph.	Lejeuneaceae	OL, SO
<i>Cheilolejeunea ceylanica</i> (Gottsche) R.M.Schust. et Kachroo	Lejeuneaceae	DP, OL, SO
<i>Cheilolejeunea implexicaulis</i> (Hook.f. & Taylor) R.M.Schust.	Lejeuneaceae	
<i>Cheilolejeunea intertexta</i> (Lindenb.) Steph.	Lejeuneaceae	
<i>Cheilolejeunea novaezelandiae</i> R.M.Schust.	Lejeuneaceae	
<i>Cheilolejeunea trifaria</i> (Reinw., Blume et Nees) Mizut.	Lejeuneaceae	SO
<i>Chiloscyphus anisobus</i> J.J.Engel & Glenny	Lophocoleaceae	
<i>Chiloscyphus canaliculatus</i> var. <i>concaucus</i> J.J.Engel	Lophocoleaceae	
<i>Chiloscyphus hattorii</i> J.J.Engel	Lophocoleaceae	
<i>Chiloscyphus herzogii</i> J.J.Engel & R.M.Schust.	Lophocoleaceae	
<i>Chiloscyphus rupicola</i> (Steph.) J.J.Engel & R.M.Schust.	Lophocoleaceae	
<i>Chiloscyphus septatus</i> J.J.Engel	Lophocoleaceae	OL
<i>Chiloscyphus trichocoleoides</i> Glenny, J.J.Engel & He-Nygrén	Lophocoleaceae	OL
<i>Clasmatocolea bisexualis</i> Glenny & J.J.Engel	Lophocoleaceae	
<i>Clasmatocolea verrucosa</i> J.J.Engel	Lophocoleaceae	S?O
<i>Cololejeunea cardiocarpa</i> (Nees & Mont.) R.M.Schust.	Lejeuneaceae	OL, SO
<i>Cololejeunea cucullifolia</i> (Herzog) E.A.Hodgs.	Lejeuneaceae	Sp

Continued on next page

NAME AND AUTHORITY	FAMILY	QUALIFIERS
<i>Cololejeunea ellipsoidea</i> R.M.Schust.	Lejeuneaceae	OL
<i>Cololejeunea grossepapillosa</i> (Horik.) N.Kitag.	Lejeuneaceae	
<i>Cololejeunea pulchella</i> var. <i>stylifera</i> R.M.Schust.	Lejeuneaceae	OL
<i>Cryptolophocolea leucophylla</i> (Hook.f. & Taylor) L.Soderstr.	Lophocoleaceae	
<i>Drepanolejeunea pentadactyla</i> (Mont.) Steph.	Lejeuneaceae	OL, SO
<i>Drepanolejeunea vesiculosa</i> subsp. <i>euvesiculosa</i> Herzog	Lejeuneaceae	
<i>Frullania apiculata</i> (Gottsche, Lindenb. & Nees) Gottsche, Lindenb. & Nees	Frullaniaceae	OL
<i>Frullania colliculosa</i> von Konrat, Braggins, Hentschel & Heinrichs	Frullaniaceae	OL
<i>Frullania knightbridgei</i> von Konrat & de Lange	Frullaniaceae	RR
<i>Frullania svihlana</i> S.Hatt.	Frullaniaceae	
<i>Frullania toropuku</i> von Konrat, de Lange et Larrain	Frullaniaceae	
<i>Frullania truncatistyla</i> von Konrat, Hentschel, Heinrichs et Braggins	Frullaniaceae	
<i>Gottschea conchophylla</i> var. <i>multidentata</i> J.J.Engel	Schistochilaceae	
<i>Gymnomitrium strictum</i> var. <i>inaequale</i> R.M.Schust.	Gymnomitriaceae	
<i>Haplomitrium minutum</i> (E.O.Campb.) J.J.Engel & R.M.Schust.	Haplomitriaceae	
<i>Herzogobryum atrocapillum</i> (Hook.f. & Taylor) Grolle	Gymnomitriaceae	OL, SO
<i>Herzogobryum filiforme</i> R.M.Schust.	Gymnomitriaceae	S?O
<i>Herzogobryum vermiculare</i> (Schiffn.) Grolle	Gymnomitriaceae	SO
<i>Heteroscyphus assurgentifolius</i> J.J.Engel	Lophocoleaceae	
<i>Heteroscyphus circumdentatus</i> (W.Martin & E.A.Hodgs.) J.J.Engel & R.M.Schust. var. <i>circumdentatus</i>	Lophocoleaceae	SO?
<i>Heteroscyphus circumdentatus</i> var. <i>clasmatacoleoides</i> J.J.Engel & G.L.Sm.	Lophocoleaceae	
<i>Heteroscyphus compactus</i> (Colenso) R.M.Schust.	Lophocoleaceae	
<i>Heteroscyphus conjugatus</i> (Mitt.) J.J.Engel & R.M.Schust.	Lophocoleaceae	SO
<i>Heteroscyphus deceptifrons</i> J.J.Engel	Lophocoleaceae	
<i>Heteroscyphus fissistipus</i> var. <i>repandus</i> J.J.Engel	Lophocoleaceae	
<i>Heteroscyphus furcistipulus</i> (E.A.Hodgs.) J.J.Engel & R.M.Schust.	Lophocoleaceae	
<i>Heteroscyphus gunnianus</i> (Mitt.) J.J.Engel & R.M.Schust.	Lophocoleaceae	S?O
<i>Heteroscyphus hastatus</i> (E.A.Hodgs.) J.J.Engel & R.M.Schust.	Lophocoleaceae	
<i>Heteroscyphus lingulatus</i> (Colenso) J.J.Engel & R.M.Schust.	Lophocoleaceae	
<i>Heteroscyphus mononucleus</i> var. <i>ammophilopsis</i> J.J.Engel	Lophocoleaceae	
<i>Heteroscyphus mononucleus</i> var. <i>bilobus</i> J.J.Engel	Lophocoleaceae	
<i>Heteroscyphus parallelofolius</i> (Mitt.) J.J.Engel	Lophocoleaceae	
<i>Heteroscyphus polycladus</i> (Hook.f. & Taylor) R.M.Schust.	Lophocoleaceae	
<i>Heteroscyphus splendidus</i> (E.A.Hodgs.) J.J.Engel & R.M.Schust.	Lophocoleaceae	
<i>Heteroscyphus triacanthus</i> var. <i>magnistipulatus</i> J.J.Engel	Lophocoleaceae	
<i>Isopaches bicrenatus</i> (Schmid. ex Hoffm.) H.Buch	Anastrophyllaceae	OL, S?O
<i>Kurzia dendroides</i> (Carrington & Pearson) Grolle	Lepidoziaceae	TO
<i>Kurzia helophila</i> var. <i>flaccida</i> R.M.Schust. ex J.J.Engel	Lepidoziaceae	OL
<i>Kurzia moniliformis</i> J.J.Engel	Lepidoziaceae	
<i>Lejeunea cyanophora</i> R.M.Schust.	Lejeuneaceae	
<i>Lejeunea rhigophila</i> M.A.M.Renner	Lejeuneaceae	
<i>Lepidozia novae-zelandiae</i> var. <i>heterostipa</i> R.M.Schust.	Lepidoziaceae	
<i>Lepidozia novae-zelandiae</i> var. <i>minima</i> R.M.Schust.	Lepidoziaceae	OL
<i>Leptoscyphus beckettianus</i> (Steph.) R.M.Schust. ex J.J.Engel	Lophocoleaceae	
<i>Leptoscyphus innovatus</i> (E.A.Hodgs.) J.J.Engel	Lophocoleaceae	
<i>Lobatirricardia subaquatica</i> (R.M.Schust.) Nebel	Aneuraceae	
<i>Lopholejeunea knightii</i> Steph.	Lejeuneaceae	
<i>Lophozioipsis excisa</i> (Dicks.) Konstant. & Vilnet	Jungermanniaceae	
<i>Metzgeria alpina</i> R.M.Schust. & J.J.Engel	Metzgeriaceae	DP, Sp
<i>Neolepidozia patentissima</i> var. <i>ampliata</i> (J.J.Engel & G.L.Sm.) E.D.Cooper	Lepidoziaceae	

Continued on next page

NAME AND AUTHORITY	FAMILY	QUALIFIERS
<i>Neolepidozia patentissima</i> var. <i>zebrina</i> (J.J.Engel & G.L.Sm.) E.D.Cooper	Lepidoziaceae	
<i>Neolepidozia pennata</i> (J.J.Engel & G.L.Sm.) E.D.Cooper	Lepidoziaceae	
<i>Notoscyphus lutescens</i> (Lehm. & Lindenb.) Mitt.	Geocalycaceae	OL, SO
<i>Pachyschistochila papillifera</i> (R.M.Schust.) R.M.Schust. & J.J.Engel	Schistochilaceae	OL
<i>Paracromastigum fiordlandiae</i> R.M.Schust. & J.J.Engel	Lepidoziaceae	
<i>Pedinophyllum monoicum</i> (Steph.) Grolle	Plagiochilaceae	DP
<i>Petalophyllum hodgsoniae</i> Crandall-Stotler & C.H.Ford	Petalophyllaceae	
<i>Phaeomegaceros coriaceus</i> (Steph.) R.J.Duff, J.C.Villareal, Cargill & Renzaglia	Dendrocerotaceae	
<i>Plagiochila arbuscula</i> var. <i>rekohuensis</i> J.J.Engel & G.L.Sm.	Plagiochilaceae	IE, OL
<i>Plagiochila banksiana</i> var. <i>echinophora</i> Inoue & R.M.Schust.	Plagiochilaceae	
<i>Plagiochila circinalis</i> var. <i>hemicaudia</i> (Hook.f. & Taylor) J.J.Engel & G.L.Sm.	Plagiochilaceae	
<i>Plagiochila circumdentata</i> var. <i>carinata</i> J.J.Engel & G.L.Sm.	Plagiochilaceae	
<i>Plagiochila colensoi</i> var. <i>quinquespina</i> (Steph.) J.J.Engel & G.L.Sm.	Plagiochilaceae	
<i>Plagiochila deltoidea</i> var. <i>densa</i> J.J.Engel & G.L.Sm.	Plagiochilaceae	
<i>Plagiochila fragmentissima</i> Inoue & R.M.Schust.	Plagiochilaceae	OL
<i>Plagiochila gigantea</i> var. <i>inermis</i> J.J.Engel & G.L.Sm.	Plagiochilaceae	
<i>Plagiochila incurvicolla</i> (Hook.f. & Taylor) Hook.f. & Taylor var. <i>incurvicolla</i>	Plagiochilaceae	
<i>Plagiochila incurvicolla</i> var. <i>lonchoscypha</i> (Herzog) J.J.Engel & G.L.Sm.	Plagiochilaceae	
<i>Plagiochila microdictyon</i> Mitt.	Plagiochilaceae	
<i>Plagiochila subflabellata</i> Colenso	Plagiochilaceae	
<i>Protolophozia monoica</i> (E.A.Hodgs.) Váňa et L.Söderstr.	Scapaniaceae	
<i>Protolophozia multicuspidata</i> (Hook.f. et Taylor) Váňa et L.Söderstr.	Scapaniaceae	
<i>Protolophozia nivicola</i> (R.M.Schust.) Váňa et L.Söderstr.	Scapaniaceae	OL
<i>Protolophozia subalpina</i> (R.M.Schust.) Váňa et L.Söderstr.	Scapaniaceae	
<i>Ptychanthus stephensonianus</i> (Mitt.) Steph.	Lejeuneaceae	
<i>Riccardia alcicornis</i> (Hook.f. & Taylor) Trevis.	Aneuraceae	S?O
<i>Riccardia exilis</i> E.A.Br.	Aneuraceae	
<i>Riccardia intercellula</i> E.A.Br.	Aneuraceae	DP, OL
<i>Riccardia pseudodendroceros</i> R.M.Schust.	Aneuraceae	
<i>Riccardia umida</i> E.A.Br.	Aneuraceae	IE, OL
<i>Riccia bullosa</i> Link	Ricciaceae	
<i>Riccia sorocarpa</i> Bisch.	Ricciaceae	
<i>Scapania nemorosa</i> (L.) Dumort.	Scapaniaceae	SO
<i>Scapania undulata</i> (L.) Dumort.	Scapaniaceae	SO
<i>Schizophyllopsis papillosa</i> (J.J.Engel & Braggins) Vana & L.Soderstr.	Anastrophyllaceae	
<i>Stolonivector fiordlandiae</i> (E.A.Hodgs.) J.J.Engel var. <i>fiordlandiae</i>	Lophocoleaceae	
<i>Stolonivector fiordlandiae</i> var. <i>nodulosus</i> J.J.Engel	Lophocoleaceae	
<i>Stolonivector obtusilobus</i> J.J.Engel	Lophocoleaceae	
<i>Telaranea fragillifolia</i> (R.M.Schust.) J.J.Engel & G.L.Sm.	Lepidoziaceae	
<i>Temnoma angustifolium</i> R.M.Schust.	Pseudolepicoleaceae	
<i>Temnoma palmatum</i> var. <i>laxifolium</i> R.M.Schust.	Pseudolepicoleaceae	
<i>Temnoma quadripartitum</i> var. <i>pseudopungens</i> R.M.Schust.	Pseudolepicoleaceae	
<i>Temnoma quadripartitum</i> var. <i>randii</i> (S.W.Arnell) R.M.Schust.	Pseudolepicoleaceae	SO
<i>Thysananthus spathulistipus</i> (Reinw., Blume & Nees) Lindenb.	Lejeuneaceae	SO
<i>Triandrophyllum symmetricum</i> J.J.Engel	Herbertaceae	
<i>Tricholepidozia lindenbergii</i> var. <i>mellea</i> (J.J.Engel & G.L.Sm.) E.D.Cooper	Lepidoziaceae	
<i>Tricholepidozia lindenbergii</i> var. <i>papillata</i> (J.J.Engel & G.L.Sm.) E.D.Cooper	Lepidoziaceae	
<i>Tritomaria exsecta</i> subsp. <i>novaezealandiae</i> J.J.Engel	Scapaniaceae	OL
<i>Xenothallus vulcanicolus</i> R.M.Schust.	Pallaviciniaceae	

Threatened (15)

Taxa that meet the criteria specified by Townsend et al. (2008) for the categories Nationally Critical, Nationally Endangered and Nationally Vulnerable.

Nationally Critical (7)

Criteria for Nationally Critical:

A—very small population (natural or unnatural)

A(1) <250 mature individuals, regardless of cause

A(2) ≤2 subpopulations, ≤200 mature individuals in the larger subpopulation

A(3) Total area of occupancy ≤1 ha (0.01 km²)

B—small population (natural or unnatural) with a high ongoing or predicted decline

B(1/1) 250–1000 mature individuals, predicted decline 50–70%

B(2/1) ≤5 subpopulations, ≤300 mature individuals in the largest subpopulation, predicted decline 50–70%

B(3/1) Total area of occupancy ≤10 ha (0.1 km²), predicted decline 50–70%

C—population (irrespective of size or number of subpopulations) with a very high ongoing or predicted decline (>70%)

C Predicted decline >70%

NAME AND AUTHORITY	FAMILY	CRITERIA	QUALIFIERS
<i>Allisoniella scottii</i> (R.M.Schust.) R.M.Schust.	Cephaloziellaceae	A(3)	DP, RR, Sp
<i>Frullania wairua</i> von Konrat & Braggins	Frullaniaceae	A(3)	OL
<i>Isolembidium anomalum</i> (Rodway) Grolle var. <i>anomalum</i>	Lepidoziaceae	B(3/1)	DP, S?O
<i>Isopachtes pumicicola</i> (Berggr.) Bakelin	Anastrophyllaceae	A(3)	DP
<i>Petalophyllum preissii</i> Lehm.	Petalophyllaceae	A(1)	OL
<i>Pseudolophocolea denticulata</i> R.M.Schust. & J.J.Engel	Lophocoleaceae	A(3)	DP, RR, Sp
<i>Seppeltia succuba</i> Grolle	Pallaviciniaceae	A(3)	OL, RR, Sp, TO

Nationally Endangered (5)

Criteria for Nationally Endangered:

A—small population (natural or unnatural) that has a low to high ongoing or predicted decline

A(1/1) 250–1000 mature individuals, predicted decline 10–50%

A(2/1) ≤5 subpopulations, ≤300 mature individuals in the largest subpopulation, predicted decline 10–50%

A(3/1) Total area of occupancy ≤10 ha (0.1 km²), predicted decline 10–50%

B—small stable population (unnatural)

B(1/1) 250–1000 mature individuals, stable population

B(2/1) ≤5 subpopulations, ≤300 mature individuals in the largest subpopulation, stable population

B(3/1) Total area of occupancy ≤10 ha (0.1 km²), stable population

C—moderate population and high ongoing or predicted decline

C(1/1) 1000–5000 mature individuals, predicted decline 50–70%

C(2/1) ≤15 subpopulations, ≤500 mature individuals in the largest subpopulation, predicted decline 50–70%

C(3/1) Total area of occupancy ≤100 ha (1 km²), predicted decline 50–70%

Nationally Endangered hornworts and liverworts continued on next page

NAME AND AUTHORITY	FAMILY	CRITERIA	QUALIFIERS
<i>Calypogeia sphagnicola</i> (S.W.Arnell & J.Perss.) Warnst. & Loeske	Calypogeiaceae	B(3/1)	DP, RR, SO
<i>Castanoclobos julaceus</i> (J.J.Engel) J.J.Engel & Glenny	Trichocoleaceae	B(3/1)	DP, SO, Sp
<i>Chaetophyllopsis whiteleggei</i> (Carrington & Pearson) R.M.Schust.	Scapaniaceae	B(3/1)	DP, RR, S?O, Sp
<i>Goebelobryum unguiculatum</i> (Hook.f. & Taylor) Grolle	Acrobolbaceae	A(3/1)	RR, SO
<i>Neogrollea notabilis</i> E.A.Hodgs.	Lepidoziaceae	A(2/1)	DP, RR, Sp, T?O

Nationally Vulnerable (3)

Criteria for Nationally Vulnerable:

A—small, increasing population (unnatural)

A(1/1) 250–1000 mature individuals, predicted increase >10%

A(2/1) ≤5 subpopulations, ≤300 mature individuals in the largest subpopulation, predicted increase >10%

A(3/1) Total area of occupancy ≤10 ha (0.1 km²), predicted increase >10%

B—moderate, stable population (unnatural)

B(1/1) 1000–5000 mature individuals, stable population

B(2/1) ≤15 subpopulations, ≤500 mature individuals in the largest subpopulation, stable population

B(3/1) Total area of occupancy ≤100 ha (1 km²), stable population

C—moderate population, with population trend that is declining

C(1/1) 1000–5000 mature individuals, predicted decline 10–50%

C(2/1) ≤15 subpopulations, ≤500 mature individuals in the largest subpopulation, predicted decline 10–50%

C(3/1) Total area of occupancy ≤100 ha (1 km²), predicted decline 10–50%

D—moderate to large population, and moderate to high ongoing or predicted decline

D(1/1) 5000–20 000 mature individuals, predicted decline 30–70%

D(2/1) ≤15 subpopulations and ≤1000 mature individuals in the largest subpopulation, predicted decline 30–70%

D(3/1) Total area of occupancy ≤1000 ha (10 km²), predicted decline 30–70%

E—large population, and high ongoing or predicted decline

E(1/1) 20 000–100 000 mature individuals, predicted decline 50–70%

E(2/1) Total area of occupancy ≤10 000 ha (100 km²), predicted decline 50–70%

NAME AND AUTHORITY	FAMILY	CRITERIA	QUALIFIERS
<i>Acromastigum verticale</i> (Steph.) E.A.Hodgs.	Lepidoziaceae	C(3/1)	DP, PD, RR
<i>Saccogynidium decurvum</i> (Mitt.) Grolle	Geocalycaceae	D(3/1)	DP, S?O
<i>Telaranea inaequalis</i> J.J.Engel & G.L.Sm.	Lepidoziaceae	D(3/1)	DP, S?O

At Risk (99)

Taxa that meet the criteria specified by Townsend et al. (2008) for Declining, Recovering, Relict and Naturally Uncommon.

Declining (3)

Taxa that do not qualify as ‘Threatened’ because they are buffered by large population size and/or a slower rate of decline than the trigger points.

Criteria for Declining:

A—moderate to large population and low ongoing or predicted decline

A(1/1) 5000–20 000 mature individuals, predicted decline 10–30%

A(2/1) Total area of occupancy \leq 1000 ha (10 km²), predicted decline 10–30%

B—large population and low to moderate ongoing or predicted decline

B(1/1) 20 000–100 000 mature individuals, predicted decline 10–50%

B(2/1) Total area of occupancy \leq 10 000 ha (100 km²), predicted decline 10–50%

C—very large population and low to high ongoing or predicted decline

C(1/1) $>$ 100 000 mature individuals, predicted decline 10–70%

C(2/1) Total area of occupancy $>$ 10 000 ha (100 km²), predicted decline 10–70%

NAME AND AUTHORITY	FAMILY	CRITERIA	QUALIFIERS
<i>Acromastigum interstisiale</i> E.A.Br. & M.A.M.Renner	Lepidoziaceae	B(2/1)	DP, RR, SO
<i>Ricciocarpos natans</i> (L.) Corda	Ricciaceae	A(2/1)	DP, SO
<i>Targionia hypophylla</i> L.	Targioniaceae	B(2/1)	DP

Recovering (O)

Taxa that have undergone a documented decline within the last 1000 years and now have an ongoing or predicted increase of $>$ 10% in the total population or area of occupancy, taken over the next 10 years or three generations, whichever is longer. Note that such taxa that are increasing but have a population size of $<$ 1000 mature individuals (or total area of occupancy of $<$ 10 ha) are listed in one of the Threatened categories, depending on their population size (for more details see Townsend et al. (2008)).

Criteria for Recovering:

A 1000–5000 mature individuals or total area of occupancy \leq 100 ha (1 km²), and predicted increase $>$ 10%

B 5000–20 000 mature individuals or total area of occupancy \leq 1000 ha (10 km²), and predicted increase $>$ 10%

No taxonomically determinate hornwort and liverwort taxa are listed in this category.

Relict (2)

Taxa that have undergone a documented decline within the last 1000 years, and now occupy $<$ 10% of their former range and meet one of the following criteria:

Criteria for Relict:

A 5000–20 000 mature individuals; population stable (\pm 10%)

B $>$ 20 000 mature individuals; population stable or increasing at $>$ 10%.

The range of a relictual taxon takes into account the area currently occupied as a ratio of its former extent. Relict can also include taxa that exist as reintroduced and self-sustaining populations within or outside their former known range (for more details see Townsend et al. (2008)).

NAME AND AUTHORITY	FAMILY	CRITERIA	QUAIFIERS
<i>Goebelobryum vermiculare</i> J.J.Engel & Glenny	Acrobolbaceae	A	S?O
<i>Radula acutiloba</i> Steph.	Radulaceae	A	DP, S?O

Naturally Uncommon (94)

Taxa whose distribution is confined to a specific geographical area or which occur within naturally small and widely scattered populations, where this distribution is not the result of human disturbance.

NAME AND AUTHORITY	FAMILY	QUALIFIERS
<i>Acrobolbus spinifolius</i> R.M.Schust.	Acrobolbaceae	DP, Sp
<i>Acrolejeunea mollis</i> (Hook.f. & Taylor) Schiffn.	Lejeuneaceae	DP, Sp
<i>Acrolejeunea securifolia</i> (Endl.) Steph. subsp. <i>securifolia</i>	Lejeuneaceae	DP, RR, SO, Sp
<i>Acromastigum mooreanum</i> (Steph.) E.A.Hodgs.	Lepidoziaceae	DP, SO, Sp
<i>Acroscyphella phoenicorhiza</i> (Grolle) N.Kitag. & Grolle	Balantiopsidaceae	S?O, Sp
<i>Allisoniella recurva</i> R.M.Schust.	Cephaloziellaceae	DP, Sp
<i>Anastrophyllum auritum</i> (Lehm.) Steph.	Anastrophyllaceae	DP, SO, Sp
<i>Andrewsianthus perigonalis</i> (Hook.f. & Taylor) R.M.Schust.	Scapaniaceae	Sp
<i>Archeophylla schusteri</i> (E.A.Hodgs. & Allison) R.M.Schust.	Pseudolepicoleaceae	DP, Sp
<i>Austrolejeunea hispida</i> R.M.Schust.	Lejeuneaceae	Sp
<i>Balantiopsis verrucosa</i> J.J.Engel & G.L.Sm.	Balantiopsidaceae	DP
<i>Bazzania exempta</i> J.J.Engel	Lepidoziaceae	DP
<i>Bazzania okaritana</i> Meagher & Glenny	Lepidoziaceae	DP
<i>Brevianthus flavus</i> subsp. <i>crenulatus</i> J.J.Engel	Brevianthaceae	Sp
<i>Cephaloziella subspinosa</i> R.M.Schust.	Cephaloziellaceae	DP, Sp
<i>Chiloscyphus erosus</i> J.J.Engel	Lophocoleaceae	DP, Sp
<i>Chloranthesia berggrenii</i> (Herzog) R.M.Schust.	Lepidoziaceae	DP, Sp
<i>Cololejeunea appressa</i> (A.Evans) Benedix	Lejeuneaceae	RR, Sp
<i>Cololejeunea floccosa</i> (Lehm. & Lindenb.) Steph.	Lejeuneaceae	RR, SO, Sp
<i>Cololejeunea inflexifolia</i> R.M.Schust.	Lejeuneaceae	DP
<i>Cryptolophocolea tuberculata</i> (J.J.Engel) L.Soderstr.	Lophocoleaceae	RR, Sp
<i>Drepanolejeunea tematensis</i> (Gottsche) Steph.	Lejeuneaceae	DP, S?O, Sp
<i>Dumortiera hirsuta</i> (Sw.) Nees	Dumortieraceae	SO, Sp
<i>Eoisotachis stephanii</i> (E.S.Salmon) R.M.Schust.	Balantiopsidaceae	RR, Sp
<i>Frullania chevalieri</i> (R.M.Schust.) R.M.Schust.	Frullaniaceae	DP, SO, Sp
<i>Haplomitrium ovalifolium</i> R.M.Schust.	Haplomitriaceae	Sp
<i>Harpalejeunea filicuspis</i> (Steph.) Mizut.	Lejeuneaceae	DP, S?O, Sp
<i>Herzogianthus vaginatus</i> (Herzog) R.M.Schust.	Chaetophyllopsaceae	DP
<i>Heteroscyphus argutus</i> (Reinw., Blume & Nees) Schiffn.	Lophocoleaceae	RR, SO
<i>Heteroscyphus stoloniferus</i> J.J.Engel	Lophocoleaceae	DP, RR, Sp
<i>Hygrolembidium triquetrum</i> J.J.Engel & R.M.Schust.	Lepidoziaceae	Sp
<i>Isophyllaria attenuata</i> (Rodw.) E.A.Hodgs.	Pseudolepicoleaceae	SO, Sp
<i>Isotachis olivacea</i> R.M.Schust.	Balantiopsaceae	DP, Sp
<i>Isotachis plicata</i> J.J.Engel	Balantiopsaceae	DP, Sp
<i>Isotachis westlandica</i> (E.A.Hodgs.) R.M.Schust.	Balantiopsaceae	RR
<i>Kurzia nivicola</i> (R.M.Schust.) E.D.Cooper	Lepidoziaceae	DP, Sp
<i>Kurzia tenax</i> (Grev.) Grolle	Lepidoziaceae	DP, RR, S?O
<i>Lejeunea anisophylla</i> Mont.	Lejeuneaceae	DP, SO, Sp
<i>Lejeunea exilis</i> (Reinw., Blume & Nees) Grolle	Lejeuneaceae	SO
<i>Lejeunea hawaikiana</i> M.A.M.Renner & de Lange	Lejeuneaceae	DP, RR, Sp
<i>Lejeunea schusteri</i> Grolle	Lejeuneaceae	DP, SO, Sp
<i>Lembidium longifolium</i> R.M.Schust.	Lepidoziaceae	RR
<i>Lepidolaena novae-zelandiae</i> (E.A.Hodgs. & S.W.Arnell) von Konrat, L.Soderstr. & A.Hagborg	Lepidolaenaceae	Sp
<i>Lepidozia acantha</i> J.J.Engel	Lepidoziaceae	DP, Sp
<i>Lepidozia bragginsiana</i> E.D.Cooper & M.A.M.Renner	Lepidoziaceae	DP, Sp

Continued on next page

NAME AND AUTHORITY	FAMILY	QUALIFIERS
<i>Lepidozia fugax</i> J.J.Engel	Lepidoziaceae	DP, Sp
<i>Lepidozia glaucophylla</i> (Hook.f. & Taylor) Gottsche, Lindenb. & Nees	Lepidoziaceae	SO, Sp
<i>Lepidozia laevifolia</i> var. <i>alpina</i> R.M.Schust. & J.J.Engel	Lepidoziaceae	DP, RR, Sp
<i>Lepidozia serrulata</i> J.J.Engel	Lepidoziaceae	DP, T?O
<i>Lopholejeunea plicatiscypha</i> (Hook.f. & Taylor) Steph.	Lejeuneaceae	RR, Sp
<i>Marsupidium plagiophiloides</i> J.J.Engel & Glenny	Acrobolbaceae	DP, Sp
<i>Metzgeria crassipilis</i> (Lindb.) A.Evans	Metzgeriaceae	DP, SO, Sp
<i>Metzgeria scobina</i> Mitt.	Metzgeriaceae	S?O, Sp
<i>Metzgeria submarginata</i> M.L.So	Metzgeriaceae	DP, RR
<i>Mnioloma novaezelandiae</i> J.J.Engel	Calypogeiaceae	DP, Sp
<i>Neohodgsonia mirabilis</i> (Perss.) Perss.	Marchantiaceae	DP, Sp
<i>Neolepidozia tridactylis</i> (Lehm. & Lindenb.) E.D.Cooper	Lepidoziaceae	SO, Sp
<i>Nothoceros giganteus</i> (Lehm. & Lindenb.) Haseg. ex J.C.Villareal, Hässel & Salazar Allen	Dendrocerotaceae	DP, Sp
<i>Pachyschistochila trispiralis</i> (R.M.Schust.) R.M.Schust. & J.J.Engel	Schistochilaceae	DP, Sp
<i>Pachyschistochila virescens</i> (R.M.Schust.) R.M.Schust. & J.J.Engel	Schistochilaceae	DP, Sp
<i>Pallavicinia rubristipa</i> Schiffn.	Pallaviciniaceae	DP, S?O
<i>Phaeoceros delicatus</i> E.O.Campbell & Outred	Notothyladaceae	DP, Sp
<i>Plagiochasma rupestre</i> (J.R.Forst. & G. Forst.) Steph.	Aytoniaceae	DP, SO, Sp
<i>Plagiochila baylisii</i> Inoue & R.M.Schust.	Plagiochilaceae	RR
<i>Plagiochila bazzanioides</i> J.J.Engel & G.L.Sm.	Plagiochilaceae	DP, Sp
<i>Plagiochila caducifolia</i> Inoue & R.M.Schust.	Plagiochilaceae	Sp
<i>Plagiochila pacifica</i> Mitt.	Plagiochilaceae	OL
<i>Plagiochila virido-nigra</i> (E.A.Hodgs.) Inoue	Plagiochilaceae	
<i>Porella pulcherrima</i> S.Hatt.	Porellaceae	DP, Sp
<i>Protolophozia autoica</i> (R.M.Schust.) Vana & L.Soderstr.	Scapaniaceae	DP, Sp
<i>Radula javanica</i> Gottsche, Lindenb. & Nees	Radulaceae	SO
<i>Radula marginata</i> Taylor	Radulaceae	DP, RR, Sp
<i>Radula novae-hollandiae</i> Hampe	Radulaceae	DP, OL, SO, Sp
<i>Radula ratkowskiana</i> K.Yamada	Radulaceae	DP, Sp
<i>Radula splendida</i> M.A.M.Renner & N.Devos	Radulaceae	DP, Sp
<i>Radula weymouthiana</i> Steph.	Radulaceae	Sp
<i>Rectolejeunea ocellata</i> Herzog	Lejeuneaceae	DP, SO, Sp
<i>Riccardia furtiva</i> E.A.Br. & Braggins	Aneuraceae	RR, S?O
<i>Riccardia multicorpora</i> E.A.Br.	Aneuraceae	RR
<i>Riccia crozalsii</i> Levier	Ricciaceae	DP, EF, RR, SO, Sp
<i>Schistochila nitidissima</i> R.M.Schust.	Schistochilaceae	RR
<i>Schistochila pellucida</i> R.M.Schust. & J.J.Engel	Schistochilaceae	RR, Sp
<i>Schistochila pluriciliata</i> R.M.Schust. & J.J.Engel	Schistochilaceae	
<i>Stolonivector clasmatooleoides</i> J.J.Engel	Lophocoleaceae	
<i>Stolonivector waipouensis</i> J.J.Engel	Lophocoleaceae	DP, RR, Sp
<i>Syzygiella acinacifolia</i> (Hook.f. & Taylor) Feldberg, Váňa, Hentschel et Heinrichs	Adelanthaceae	DP, Sp
<i>Trichotemnoma corrugatum</i> (Steph.) R.M.Schust.	Trichotemnaceae	DP
<i>Verdoornia succulenta</i> R.M.Schust.	Verdoorniaceae	Sp
<i>Wettsteinia schusteriana</i> Grolle	Adelanthaceae	DP, Sp
<i>Zoopsis argentea</i> var. <i>flagelliformis</i> (Colenso) R.M.Schust.	Lepidoziaceae	Sp
<i>Zoopsis bicurris</i> Glenny & E.A.Br.	Lepidoziaceae	RR, Sp
<i>Zoopsis ceratophylla</i> (Spruce) Hamlin	Lepidoziaceae	Sp
<i>Zoopsis matawaia</i> M.A.M.Renner	Lepidoziaceae	DP, RR, Sp
<i>Zoopsis nitida</i> Glenny, Braggins & R.M.Schust.	Lepidoziaceae	DP, RR, Sp

Non-resident Native (0)

Taxa whose natural presence in New Zealand is either discontinuous (Migrant) or sporadic or temporary (Vagrant) or which have succeeded in recently (since 1950) establishing a resident breeding population (Coloniser).

Migrant (0)

Taxa that predictably and cyclically visit New Zealand as part of their normal life cycle (a minimum of 15 individuals known or presumed to visit per annum) but do not breed here.

No taxonomically determinate hornwort and liverwort taxa are listed in this category.

Vagrant (0)

Taxa whose occurrences, though natural, are sporadic and typically transitory, or migrants with fewer than 15 individuals visiting New Zealand per annum.

No taxonomically determinate hornwort and liverwort taxa are listed in this category.

Coloniser

Taxa that otherwise trigger Threatened categories because of small population size, but have arrived in New Zealand without direct or indirect help from humans and have been successfully reproducing in the wild only since 1950.

No taxonomically determinate hornwort and liverwort taxa are listed in this category.

Not Threatened (437)

Resident native taxa that have large, stable populations.

NAME AND AUTHORITY	FAMILY	QUALIFIERS
<i>Acrobolbus cinerascens</i> (Lehm. & Lindenb.) Bastow	Acrobolbaceae	
<i>Acrobolbus concinnus</i> (Mitt.) Grolle	Acrobolbaceae	
<i>Acrobolbus lophocoleoides</i> (Mitt.) Mitt.	Acrobolbaceae	
<i>Acrobolbus ochrophyllus</i> (Hook.f. & Taylor) R.M.Schust.	Acrobolbaceae	
<i>Acrochila biserialis</i> (Lehm. & Lindenb.) Grolle	Plagiochilaceae	
<i>Acrolophozia pectinata</i> R.M.Schust.	Gymnomitriaceae	
<i>Acromastigum anisostomum</i> (Lehm. & Lindenb.) A.Evans	Lepidoziaceae	
<i>Acromastigum cavifolium</i> R.M.Schust.	Lepidoziaceae	
<i>Acromastigum colensoanum</i> (Mitt.) A.Evans	Lepidoziaceae	
<i>Acromastigum cunninghamii</i> (Steph.) A.Evans	Lepidoziaceae	S?O
<i>Acromastigum marginatum</i> E.A.Hodgs.	Lepidoziaceae	
<i>Adelanthus falcatus</i> (Hook.) Mitt.	Adelanthaceae	
<i>Adelanthus gemmiparus</i> (R.M.Schust.) E.A.Hodgs.	Adelanthaceae	
<i>Adelanthus ocellus</i> (Hook.f. & Taylor) Carrington	Adelanthaceae	
<i>Allisonia cockaynei</i> (Steph.) R.M.Schust.	Allisoniaceae	
<i>Anastrophylopsis subcomplicata</i> (Lehm. & Lindenb.) Vana & L.Soderstr.	Anastrophyllaceae	S?O
<i>Andrewsianthus marionensis</i> (S.W.Arnell) Grolle	Scapaniaceae	
<i>Aneura</i> aff. <i>novaeguineensis</i> (AK 304683; Te Akau)	Aneuraceae	
<i>Aneura orbiculata</i> Colenso	Aneuraceae	
<i>Aneura pinguis</i> (L.) Dumort.	Aneuraceae	
<i>Anthelia juratzkana</i> (Limpr.) Trevis.	Antheliaceae	
<i>Anthoceros laminifer</i> Steph.	Anthocerotaceae	
<i>Anthoceros muscoides</i> Colenso	Anthocerotaceae	
<i>Asterella australis</i> (Hook.f. & Taylor) Verd.	Aytoniaceae	

Continued on next page

NAME AND AUTHORITY	FAMILY	QUALIFIERS
<i>Asterella tenera</i> (Mitt.) R.M.Schust.	Aytoniaceae	
<i>Austrolejeunea conchophylla</i> (Grolle) Pócs	Lejeuneaceae	
<i>Austrolejeunea fragilis</i> (R.M.Schust.) R.M.Schust.	Lejeuneaceae	
<i>Austrolejeunea hamata</i> (Grolle) Pócs	Lejeuneaceae	
<i>Austrolejeunea olgae</i> (R.M.Schust.) R.M.Schust.	Lejeuneaceae	
<i>Austrolejeunea papillosa</i> (Glenny) Pócs	Lejeuneaceae	
<i>Austrolophozia paradoxa</i> R.M.Schust.	Acrobolbaceae	
<i>Balantiopsis convexiuscula</i> Berggr.	Balantiopsidaceae	
<i>Balantiopsis diplophylla</i> (Hook.f. & Taylor) Mitt. var. <i>diplophylla</i>	Balantiopsidaceae	
<i>Balantiopsis diplophylla</i> var. <i>hockenii</i> (Berggr.) J.J.Engel & G.L.Sm.	Balantiopsidaceae	
<i>Balantiopsis lingulata</i> R.M.Schust.	Balantiopsidaceae	
<i>Balantiopsis montana</i> (Colenso) J.J.Engel & G.L.Sm.	Balantiopsidaceae	
<i>Balantiopsis rosea</i> Berggr.	Balantiopsidaceae	
<i>Balantiopsis tumida</i> Berggr.	Balantiopsidaceae	
<i>Bazzania adnexa</i> (Lehm. & Lindenb.) Trevis. var. <i>adnexa</i>	Lepidoziaceae	
<i>Bazzania engelii</i> Glenny	Lepidoziaceae	
<i>Bazzania hochstetteri</i> (Reicht.) E.A.Hodgs.	Lepidoziaceae	
<i>Bazzania involuta</i> (Mont.) Trevis. var. <i>involuta</i>	Lepidoziaceae	
<i>Bazzania involuta</i> var. <i>submutica</i> (Lindenb. & Gottsche) J.J.Engel & G.L.Sm.	Lepidoziaceae	
<i>Bazzania mittenii</i> (Steph.) Steph.	Lepidoziaceae	
<i>Bazzania monilineris</i> (Lehm. & Lindenb.) Trevis.	Lepidoziaceae	
<i>Bazzania nitida</i> (F.Weber) Grolle	Lepidoziaceae	
<i>Bazzania nova</i> J.J.Engel & G.L.Sm.	Lepidoziaceae	
<i>Bazzania novae-zealandiae</i> (Mitt.) Besch. & C.Massal.	Lepidoziaceae	
<i>Bazzania tayloriana</i> (Mitt.) Kuntze	Lepidoziaceae	
<i>Blepharidophyllum vertebrale</i> (Gottsche, Lindenb. & Nees) C.Massal.	Blepharidophyllaceae	
<i>Cephalomitron aterrimum</i> (Steph.) R.M.Schust.	Cephalozellaceae	
<i>Cephalozia austrigena</i> R.M.Schust. ex J.J.Engel	Cephalozaceae	
<i>Cephaloziella exiliflora</i> (Taylor) R.M.Schust.	Cephalozellaceae	
<i>Cephaloziella pulcherrima</i> R.M.Schust. subsp. <i>pulcherrima</i>	Cephalozellaceae	
<i>Ceramanus perfragilis</i> (J.J.Engel & G.L.Sm.) E.D.Cooper	Lepidoziaceae	
<i>Chandonanthus squarrosus</i> (Hook.) Schiffn.	Anastrophyllaceae	
<i>Cheilolejeunea albovirens</i> (Hook.f. & Taylor) E.A.Hodgs.	Lejeuneaceae	
<i>Cheilolejeunea campbelliensis</i> (Steph.) R.M.Schust.	Lejeuneaceae	
<i>Cheilolejeunea comitans</i> (Hook.f. & Taylor) R.M.Schust.	Lejeuneaceae	SO
<i>Cheilolejeunea hamlinii</i> Grolle	Lejeuneaceae	
<i>Cheilolejeunea mimosa</i> (Hook.f. & Taylor) R.M.Schust.	Lejeuneaceae	SO
<i>Chiloscyphus aperticaulis</i> J.J.Engel	Lophocoleaceae	
<i>Chiloscyphus austrigenus</i> subsp. <i>okaritanus</i> (Steph.) J.J.Engel	Lophocoleaceae	
<i>Chiloscyphus bispinosus</i> (Hook.f. & Taylor) J.J.Engel & R.M. Schust.	Lophocoleaceae	
<i>Chiloscyphus calcareus</i> (Steph.) J.J.Engel & R.M.Schust.	Lophocoleaceae	
<i>Chiloscyphus canaliculatus</i> Gottsche, Lindenb. & Nees var. <i>canaliculatus</i>	Lophocoleaceae	
<i>Chiloscyphus cuspidatus</i> (Nees) J.J.Engel & R.M.Schust.	Lophocoleaceae	
<i>Chiloscyphus lentus</i> (Hook.f. & Taylor) J.J.Engel & R.M.Schust.	Lophocoleaceae	
<i>Chiloscyphus muricatus</i> (Lehm.) J.J.Engel & R.M.Schust.	Lophocoleaceae	
<i>Chiloscyphus novae-zeelandiae</i> (Lehm. & Lindenb.) J.J.Engel & R.M.Schust. var. <i>novae-zeelandiae</i>	Lophocoleaceae	
<i>Chiloscyphus novae-zeelandiae</i> var. <i>grandistipulus</i> (Schiffn.) J.J.Engel	Lophocoleaceae	
<i>Chiloscyphus novae-zeelandiae</i> var. <i>meridionalis</i> (Steph.) J.J.Engel	Lophocoleaceae	
<i>Chiloscyphus parvispinus</i> J.J.Engel	Lophocoleaceae	
<i>Chiloscyphus perpusillus</i> (Hook.f. & Taylor) J.J.Engel	Lophocoleaceae	

Continued on next page

NAME AND AUTHORITY	FAMILY	QUALIFIERS
<i>Chiloscyphus semiteres</i> (Lehm.) Lehm. & Lindenb. var. <i>semiteres</i>	Lophocoleaceae	
<i>Chiloscyphus subporosus</i> (Mitt.) J.J.Engel & R.M.Schust. var. <i>subporosus</i>	Lophocoleaceae	
<i>Chiloscyphus subporosus</i> var. <i>inflexifolius</i> (Steph.) J.J.Engel	Lophocoleaceae	
<i>Chiloscyphus villosus</i> (Steph.) J.J.Engel & R.M.Schust.	Lophocoleaceae	
<i>Clandarium xiphophyllum</i> (Grolle) R.M.Schust.	Blepharidophyllaceae	
<i>Clasmatocolea crassiretis</i> (Herzog) Grolle	Lophocoleaceae	
<i>Clasmatocolea humilis</i> (Hook.f. & Taylor) Grolle var. <i>humilis</i>	Lophocoleaceae	
<i>Clasmatocolea inflexispina</i> (Hook.f. & Taylor) J.J.Engel	Lophocoleaceae	
<i>Clasmatocolea notophylla</i> (Hook.f. & Taylor) Grolle	Lophocoleaceae	
<i>Clasmatocolea strongylophylla</i> (Hook.f. & Taylor) Grolle	Lophocoleaceae	
<i>Clasmatocolea vermicularis</i> (Lehm.) Grolle	Lophocoleaceae	
<i>Cololejeunea hodgsoniae</i> (Herzog) E.A.Hodgs.	Lejeuneaceae	
<i>Cololejeunea laevigata</i> (Mitt.) R.M.Schust.	Lejeuneaceae	
<i>Cololejeunea minutissima</i> (Sm.) Schiffn.	Lejeuneaceae	
<i>Cololejeunea pulchella</i> (Mitt.) R.M.Schust. var. <i>pulchella</i>	Lejeuneaceae	
<i>Colura pulcherrima</i> var. <i>bartlettii</i> Ast	Lejeuneaceae	
<i>Colura saccophylla</i> E.A.Hodgs. & Herzog	Lejeuneaceae	
<i>Cryptolophocolea aculeata</i> (Mitt.) L.Soderstr.	Lophocoleaceae	
<i>Cryptolophocolea helmsiana</i> (Steph.) L.Soderstr.	Lophocoleaceae	
<i>Cryptolophocolea mitteniana</i> (Colenso) L.Soderstr. var. <i>mitteana</i>	Lophocoleaceae	
<i>Cryptolophocolea mitteniana</i> var. <i>obtusa</i> (J.J.Engel) L. Soderstr.	Lophocoleaceae	
<i>Cryptolophocolea mitteniana</i> var. <i>symmetrica</i> (J.J.Engel) L.Soderstr.	Lophocoleaceae	
<i>Cryptolophocolea pallida</i> (Mitt.) L.Soderstr.	Lophocoleaceae	
<i>Cryptolophocolea spinifera</i> (Hook.f. & Taylor) L.Soderstr.	Lophocoleaceae	
<i>Cryptolophocolea trialata</i> (Gottsche) L.Soderstr.	Lophocoleaceae	
<i>Cuspidatula kirkii</i> (Steph.) Feldberg, Váňa, Hentschel et Heinrichs	Adelanthaceae	
<i>Cuspidatula monodon</i> (Lehm.) Steph.	Adelanthaceae	
<i>Dendroceros granulatus</i> Mitt.	Dendrocerotaceae	
<i>Dendroceros validus</i> Steph.	Dendrocerotaceae	
<i>Dendromastigophora flagellifera</i> (Hook.f.) R.M.Schust.	Mastigophoraceae	
<i>Dinckleria fruticella</i> (Hook.f. & Taylor) J.J.Engel & Heinrichs	Plagiochilaceae	
<i>Dinckleria pleurata</i> (Hook.f. & Taylor) Trevis.	Plagiochilaceae	
<i>Diplasiolejeunea plicatiloba</i> (Hook.f. & Taylor) Grolle	Lejeuneaceae	
<i>Diplasiolejeunea pusilla</i> Grolle	Lejeuneaceae	
<i>Diplophyllum dioicum</i> R.M.Schust.	Scapaniaceae	
<i>Diplophyllum gemmiparum</i> J.J.Engel & G.L.Sm.	Scapaniaceae	
<i>Diplophyllum novum</i> J.J.Engel & G.L.Sm.	Scapaniaceae	
<i>Diplophyllum obtusifolium</i> subsp. <i>domesticum</i> (Gottsche) Vana	Scapaniaceae	
<i>Diplophyllum verrucosum</i> R.M.Schust.	Scapaniaceae	
<i>Drepanolejeunea aucklandica</i> Steph.	Lejeuneaceae	
<i>Drucella integristipula</i> (Steph.) E.A.Hodgs.	Lepidoziaceae	SO
<i>Echinolejeunea papillata</i> (Mitt.) R.M.Schust.	Lejeuneaceae	
<i>Eotrichocolea polyacantha</i> (Hook.f. & Taylor) R.M.Schust.	Trichocoleaceae	
<i>Fossombronia australis</i> Mitt.	Fossombroniaceae	
<i>Fossombronia pusilla</i> (L.) Nees	Fossombroniaceae	
<i>Fossombronia reticulata</i> Steph.	Fossombroniaceae	
<i>Fossombronia wondraczekii</i> (Corda) Dumort.	Fossombroniaceae	
<i>Frullania allanii</i> E.A.Hodgs.	Frullaniaceae	
<i>Frullania anomala</i> E.A.Hodgs.	Frullaniaceae	
<i>Frullania aterrima</i> Hook.f. & Taylor	Frullaniaceae	

Continued on next page

NAME AND AUTHORITY	FAMILY	QUALIFIERS
<i>Frullania congesta</i> Gottsche, Lindenb. & Nees	Frullaniaceae	
<i>Frullania deplanata</i> Mitt.	Frullaniaceae	
<i>Frullania falciloba</i> Taylor ex Lehm.	Frullaniaceae	
<i>Frullania fugax</i> (Hook.f. & Taylor) Gottsche, Lindenb. & Nees	Frullaniaceae	
<i>Frullania hodgsoniae</i> von Konrat, Braggins, Hentschel & Heinrichs	Frullaniaceae	
<i>Frullania incumbens</i> Mitt.	Frullaniaceae	
<i>Frullania media</i> (E.A.Hodgs.) S.Hatt.	Frullaniaceae	
<i>Frullania monocera</i> (Hook.f. & Taylor) Gottsche, Lindenb. & Nees	Frullaniaceae	
<i>Frullania nicholsonii</i> E.A.Hodgs.	Frullaniaceae	
<i>Frullania patula</i> Mitt.	Frullaniaceae	
<i>Frullania ptychantha</i> Mont.	Frullaniaceae	
<i>Frullania pycnantha</i> (Hook.f. & Taylor) Gottsche, Lindenb. & Nees	Frullaniaceae	
<i>Frullania reptans</i> Mitt.	Frullaniaceae	
<i>Frullania rostellata</i> Mitt.	Frullaniaceae	
<i>Frullania rostrata</i> (Hook.f. & Taylor) Hook.f. & Taylor	Frullaniaceae	
<i>Frullania scandens</i> Mont.	Frullaniaceae	
<i>Frullania setchellii</i> Pearson	Frullaniaceae	
<i>Frullania solanderiana</i> Colenso	Frullaniaceae	
<i>Frullania spinifera</i> Taylor	Frullaniaceae	
<i>Frullania squarrosula</i> (Hook.f. & Taylor) Gottsche, Lindenb. & Nees	Frullaniaceae	
<i>Frullania subhampeana</i> E.A.Hodgs.	Frullaniaceae	
<i>Gackstroemia alpina</i> R.M.Schust.	Lepidolaenaceae	
<i>Gackstroemia novae-zelandiae</i> R.M.Schust. & J.J.Engel	Lepidolaenaceae	
<i>Gackstroemia weindorferi</i> (Herzog) Grolle	Lepidolaenaceae	
<i>Geocalyx caledonicus</i> Steph.	Geocalycaceae	
<i>Goebeliella cornigera</i> (Mitt.) Steph.	Goebeliellaceae	
<i>Gottschea conchophylla</i> (E.A.Hodgs. & Allison) Grolle & Zijlstra var. <i>conchophylla</i>	Schistochilaceae	
<i>Gottschea pinnatifolia</i> (Hook.) Nees	Schistochilaceae	
<i>Gottschea tuloides</i> (Hook.) Nees	Schistochilaceae	
<i>Gymnomitrium cuspidatum</i> (Berggr.) R.M.Schust.	Gymnomitriaceae	
<i>Gymnomitrium strictum</i> (Berggr.) R.M.Schust. var. <i>strictum</i>	Gymnomitriaceae	
<i>Haplomitrium gibbsiae</i> (Steph.) R.M.Schust.	Haplomitriaceae	
<i>Harpalejeunea latitans</i> (Hook.f. & Taylor) Grolle	Lejeuneaceae	
<i>Hepatostolonophora paucistipula</i> (Rodw.) J.J.Engel	Lophocoleaceae	
<i>Hepatostolonophora rotata</i> (Hook.f. & Taylor) J.J.Engel var. <i>rotata</i>	Lophocoleaceae	
<i>Hepatostolonophora rotata</i> var. <i>perssonii</i> (R.M.Schust.) J.J.Engel	Lophocoleaceae	
<i>Herbertus oldfieldianus</i> (Steph.) Rodway	Herbertaceae	
<i>Heteroscyphus allodontus</i> (Hook.f. & Taylor) J.J.Engel & R.M.Schust.	Lophocoleaceae	
<i>Heteroscyphus ammophilus</i> (Colenso) R.M.Schust.	Lophocoleaceae	
<i>Heteroscyphus biciliatus</i> (Hook.f. & Taylor) J.J.Engel	Lophocoleaceae	
<i>Heteroscyphus billardierei</i> (Schwägr.) Schiffn.	Lophocoleaceae	
<i>Heteroscyphus coalitus</i> (Hook.) Schiffn.	Lophocoleaceae	
<i>Heteroscyphus colensoi</i> (Mitt.) Schiffn.	Lophocoleaceae	
<i>Heteroscyphus cuneistipulus</i> (Steph.) Schiffn.	Lophocoleaceae	
<i>Heteroscyphus dentammophilus</i> J.J.Engel & G.L.Sm.	Lophocoleaceae	
<i>Heteroscyphus echinellus</i> (Lindenb. & Gottsche) J.J.Engel & Xiaol.He var. <i>echinellus</i>	Lophocoleaceae	
<i>Heteroscyphus echinellus</i> var. <i>hyalinus</i> J.J.Engel	Lophocoleaceae	
<i>Heteroscyphus fissistipus</i> (Hook.f. & Taylor) Schiffn. var. <i>fissistipus</i>	Lophocoleaceae	
<i>Heteroscyphus fissistipus</i> var. <i>multispinus</i> (E.A.Hodgs. & Allison) J.J.Engel	Lophocoleaceae	

Continued on next page

NAME AND AUTHORITY	FAMILY	QUALIFIERS
<i>Heteroscyphus knightii</i> (Steph.) J.J.Engel & R.M.Schust.	Lophocoleaceae	
<i>Heteroscyphus lyallii</i> (Mitt.) R.M.Schust.	Lophocoleaceae	
<i>Heteroscyphus mononuculus</i> J.J.Engel var. <i>mononuculus</i>	Lophocoleaceae	
<i>Heteroscyphus normalis</i> (Steph.) R.M.Schust.	Lophocoleaceae	
<i>Heteroscyphus planiusculus</i> (Hook.f. & Taylor) J.J.Engel	Lophocoleaceae	
<i>Heteroscyphus renistipulus</i> (Steph.) Schiffn.	Lophocoleaceae	
<i>Heteroscyphus sinuosus</i> (Hook.) Schiffn.	Lophocoleaceae	
<i>Heteroscyphus supinus</i> (Hook.f. & Taylor) R.M.Schust.	Lophocoleaceae	
<i>Heteroscyphus triacanthus</i> (Hook.f. & Taylor) Schiffn. var. <i>triacanthus</i>	Lophocoleaceae	
<i>Hygrolembidium acrocladum</i> (Berggr.) R.M.Schust.	Lepidoziaceae	
<i>Hygrolembidium australe</i> (Steph.) Grolle	Lepidoziaceae	
<i>Hygrolembidium rigidum</i> R.M.Schust. & J.J.Engel	Lepidoziaceae	
<i>Hymenophyton flabellatum</i> (Labill.) Trevis.	Hymenophytaceae	
<i>Hymenophyton leptopodium</i> (Hook.f. & Taylor) A.Evans	Hymenophytaceae	
<i>Isotachis intortifolia</i> (Hook.f. & Taylor) Gottsche	Balantiopsaceae	
<i>Isotachis lyallii</i> Mitt.	Balantiopsaceae	
<i>Isotachis minima</i> Pearson	Balantiopsaceae	
<i>Isotachis montana</i> Colenso	Balantiopsaceae	
<i>Jackiella curvata</i> Allison & E.A.Hodgs.	Jackiellaceae	
<i>Jensenia connivens</i> (Colenso) Grolle	Pallaviciniaceae	
<i>Kurzia calcarata</i> (Steph.) Grolle	Lepidoziaceae	
<i>Kurzia compacta</i> (Steph.) Grolle	Lepidoziaceae	
<i>Kurzia helophila</i> R.M.Schust. var. <i>helophila</i>	Lepidoziaceae	
<i>Kurzia hippuroides</i> (Hook.f. & Taylor) Grolle var. <i>hippuroides</i>	Lepidoziaceae	
<i>Kurzia hippuroides</i> var. <i>ornata</i> J.J.Engel & G.L.Sm.	Lepidoziaceae	
<i>Kymatolejeunea bartlettii</i> Grolle	Lejeuneaceae	
<i>Lamellocolea granditexta</i> (Steph.) J.J.Engel	Lophocoleaceae	
<i>Leiomitra lanata</i> (Hook.) R.M.Schust.	Trichocoleaceae	
<i>Lejeunea colensoana</i> (Steph.) M.A.M.Renner	Lejeuneaceae	
<i>Lejeunea flava</i> (Sw.) Nees	Lejeuneaceae	
<i>Lejeunea gracilipes</i> (Taylor) Steph.	Lejeuneaceae	
<i>Lejeunea helmsiana</i> Steph.	Lejeuneaceae	
<i>Lejeunea hodgsoniana</i> Grolle ex R.J.Lewington, P.Beveridge & M.A.M.Renner	Lejeuneaceae	
<i>Lejeunea oracula</i> M.A.M.Renner	Lejeuneaceae	
<i>Lejeunea primordialis</i> (Hook.f. & Taylor) Gottsche, Lindenb. & Nees	Lejeuneaceae	
<i>Lejeunea subelobata</i> Carrington & Pearson	Lejeuneaceae	
<i>Lejeunea tumida</i> Mitt.	Lejeuneaceae	
<i>Lembidium nutans</i> (Hook.f. & Taylor) Mitt.	Lepidoziaceae	
<i>Lepicolea attenuata</i> (Mitt.) Steph.	Lepicoleaceae	
<i>Lepicolea scolopendra</i> (Hook.) Trevis.	Lepicoleaceae	
<i>Lepidogyna hodgsoniae</i> (Grolle) R.M.Schust.	Lepidolaenaceae	
<i>Lepidolaena berggrenii</i> E.A.Hodgs.	Lepidolaenaceae	
<i>Lepidolaena clavigera</i> (Hook.) Trevis.	Lepidolaenaceae	
<i>Lepidolaena palpebrifolia</i> (Hook.) Trevis.	Lepidolaenaceae	
<i>Lepidolaena reticulata</i> (Hook.f. & Taylor) Trevis.	Lepidolaenaceae	
<i>Lepidolaena taylorii</i> (Gottsche) Trevis.	Lepidolaenaceae	
<i>Lepidozia bidens</i> J.J.Engel	Lepidoziaceae	
<i>Lepidozia bisbifida</i> Steph.	Lepidoziaceae	
<i>Lepidozia concinna</i> Colenso	Lepidoziaceae	
<i>Lepidozia digitata</i> Herzog	Lepidoziaceae	
<i>Lepidozia elobata</i> R.M.Schust.	Lepidoziaceae	

Continued on next page

NAME AND AUTHORITY	FAMILY	QUALIFIERS
<i>Lepidozia glaucescens</i> J.J.Engel	Lepidoziaceae	
<i>Lepidozia hirta</i> Steph.	Lepidoziaceae	
<i>Lepidozia kirkii</i> Steph.	Lepidoziaceae	
<i>Lepidozia laevifolia</i> (Hook.f. & Taylor) Gottsche, Lindenb. & Nees var. <i>laevifolia</i>	Lepidoziaceae	
<i>Lepidozia laevifolia</i> var. <i>acutiloba</i> J.J.Engel	Lepidoziaceae	
<i>Lepidozia microphylla</i> (Hook.) Lindenb.	Lepidoziaceae	
<i>Lepidozia novae-zelandiae</i> Steph. var. <i>novae-zelandiae</i>	Lepidoziaceae	
<i>Lepidozia obtusiloba</i> Steph. var. <i>obtusiloba</i>	Lepidoziaceae	
<i>Lepidozia obtusiloba</i> var. <i>parvula</i> J.J.Engel	Lepidoziaceae	
<i>Lepidozia ornata</i> J.J.Engel	Lepidoziaceae	
<i>Lepidozia pendulina</i> (Hook.) Lindenb.	Lepidoziaceae	
<i>Lepidozia procera</i> Mitt.	Lepidoziaceae	
<i>Lepidozia pumila</i> J.J.Engel	Lepidoziaceae	
<i>Lepidozia setigera</i> Steph.	Lepidoziaceae	
<i>Lepidozia spinosissima</i> (Hook.f. & Taylor) Mitt.	Lepidoziaceae	
<i>Lepidozia ulothrix</i> (Schwägr.) Lindenb.	Lepidoziaceae	
<i>Leptolejeunea elliptica</i> subsp. <i>subacuta</i> (A.Evans) R.M.Schust.	Lejeuneaceae	SO
<i>Leptophyllopsis laxa</i> (Mitt.) R.M.Schust. ex Hamlin	Lophocoleaceae	
<i>Leptoscyphus australis</i> (Hook.f. & Taylor) R.M.Schust.	Lophocoleaceae	
<i>Leptoscyphus erraticus</i> (W.Martin & E.A.Hodgs.) J.J.Engel	Lophocoleaceae	
<i>Leptoscyphus physanthus</i> (Hook.f. & Taylor) J.J.Engel	Lophocoleaceae	
<i>Lethocolea pansa</i> (Taylor) G.A.M.Scott & K.Beckmann	Acrobolbaceae	
<i>Lobatirricardia alterniloba</i> (Hook.f. & Taylor) Furuki	Aneuraceae	
<i>Lobatirricardia coronopus</i> subsp. <i>australis</i> (R.M.Schust.) Nebel, Preussing, Schäf.-Verw. & D.Quandt	Aneuraceae	
<i>Lopholejeunea colensoi</i> Steph.	Lejeuneaceae	
<i>Marchantia berteriana</i> Lehm. & Lindenb.	Marchantiaceae	
<i>Marchantia foliacea</i> Mitt.	Marchantiaceae	
<i>Marchantia macropora</i> Mitt.	Marchantiaceae	
<i>Marchantia pileata</i> Mitt.	Marchantiaceae	
<i>Marsupella sprucei</i> (Limpr.) Bernet	Gymnomitriaceae	
<i>Marsupidium epiphytum</i> Colenso	Acrobolbaceae	
<i>Marsupidium knightii</i> Mitt.	Acrobolbaceae	
<i>Marsupidium papillosum</i> J.J.Engel & Glenny	Acrobolbaceae	
<i>Marsupidium perpusillum</i> (Colenso) E.A.Hodgs. var. <i>perpusillum</i>	Acrobolbaceae	
<i>Marsupidium perpusillum</i> var. <i>denticulatum</i> J.J.Engel & Glenny	Acrobolbaceae	
<i>Marsupidium setulosum</i> (Mitt.) Watts	Acrobolbaceae	
<i>Marsupidium surculosum</i> (Nees) Schiffn	Acrobolbaceae	
<i>Thysananthus anguiformis</i> (Hook.f. & Taylor) Taylor ex Gottsche, Lindenb. & Nees	Lejeuneaceae	
<i>Megaceros denticulatus</i> (Lehm.) Steph.	Dendrocerotaceae	
<i>Megaceros flagellaris</i> (Mitt.) Steph.	Dendrocerotaceae	
<i>Megaceros leptohymenius</i> (Hook.f. & Taylor) Steph.	Dendrocerotaceae	
<i>Megaceros pellucidus</i> (Colenso) E.A.Hodgs.	Dendrocerotaceae	
<i>Megalembidium insulanum</i> (W.Martin & E.A.Hodgs.) R.M.Schust.	Lepidoziaceae	
<i>Metahygrobiella drucei</i> R.M.Schust.	Cephaloziaceae	
<i>Metalejeunea cucullata</i> (Reinw., Blume & Nees) Grolle	Lejeuneaceae	
<i>Metzgeria bartlettii</i> Kuwah.	Metzgeriaceae	
<i>Metzgeria flavovirens</i> Colenso	Metzgeriaceae	
<i>Metzgeria furcata</i> (L.) Dumort.	Metzgeriaceae	

Continued on next page

NAME AND AUTHORITY	FAMILY	QUALIFIERS
<i>Metzgeria leptoneura</i> Spruce	Metzgeriaceae	
<i>Metzgeria rigida</i> Lindb.	Metzgeriaceae	
<i>Metzgeria saccata</i> Mitt.	Metzgeriaceae	
<i>Monoclea forsteri</i> Hook.	Monocleaceae	
<i>Neolepidozia gibbsiana</i> (Steph.) E.D.Cooper	Lepidoziaceae	
<i>Neolepidozia hodgsoniae</i> (J.J.Engel & G.L.Sm.) E.D.Cooper	Lepidoziaceae	
<i>Neolepidozia meridiana</i> (E.A.Hodgs.) E.D.Cooper	Lepidoziaceae	
<i>Neolepidozia paludicola</i> (E.A.Hodgs.) E.D.Cooper	Lepidoziaceae	
<i>Neolepidozia patentissima</i> (Hook.f. & Taylor) E.D.Cooper var. <i>patentissima</i>	Lepidoziaceae	
<i>Neolepidozia praenitens</i> (J.J.Engel & G.L.Sm.) var. <i>praenitens</i>	Lepidoziaceae	
<i>Neolepidozia praenitens</i> var. <i>cancellata</i> (J.J.Engel & G.L.Sm.) E.D.Cooper	Lepidoziaceae	
<i>Neolepidozia praenitens</i> var. <i>dentifolia</i> (J.J.Engel & G.L.Sm.) E.D.Cooper	Lepidoziaceae	
<i>Neolepidozia tetrapila</i> (Steph.) E.D.Cooper var. <i>tetrapila</i>	Lepidoziaceae	
<i>Neolepidozia tetrapila</i> var. <i>roseana</i> (Steph.) E.D.Cooper	Lepidoziaceae	
<i>Nothogymnomitrium erosum</i> (Carrington & Pearson) R.M.Schust.	Gymnomitriaceae	
<i>Pachyglossa tenacifolia</i> (Hook.f. & Taylor) Herzog & Grolle	Lophocoleaceae	
<i>Pachyschistochila altissima</i> (E.A.Hodgs.) R.M.Schust. & J.J.Engel subsp. <i>altissima</i>	Schistochilaceae	
<i>Pachyschistochila berggrenii</i> J.J.Engel & R.M.Schust.	Schistochilaceae	
<i>Pachyschistochila childii</i> R.M.Schust. & J.J.Engel	Schistochilaceae	
<i>Pachyschistochila colensoana</i> (Steph.) R.M.Schust. & J.J.Engel	Schistochilaceae	
<i>Pachyschistochila latiloba</i> R.M.Schust. & J.J.Engel	Schistochilaceae	
<i>Pachyschistochila nivicola</i> R.M.Schust. & J.J.Engel	Schistochilaceae	
<i>Pachyschistochila parvistipula</i> (Rodw.) R.M.Schust. & J.J.Engel	Schistochilaceae	
<i>Pachyschistochila subhyalina</i> (R.M.Schust.) R.M.Schust. & J.J.Engel var. <i>subhyalina</i>	Schistochilaceae	
<i>Pachyschistochila subhyalina</i> var. <i>grandidentata</i> J.J.Engel & R.M.Schust.	Schistochilaceae	
<i>Pachyschistochila succulenta</i> J.J.Engel & R.M.Schust.	Schistochilaceae	
<i>Pallavicinia innovans</i> Steph.	Pallaviciniaceae	
<i>Pallavicinia lyellii</i> (Hook.) Gray	Pallaviciniaceae	
<i>Pallavicinia tenuinervis</i> (Hook.f. & Taylor) Trevis.	Pallaviciniaceae	
<i>Pallavicinia xiphoides</i> (Hook.f. & Taylor) Trevis.	Pallaviciniaceae	
<i>Paracromastigum drucei</i> (R.M.Schust.) R.M.Schust.	Lepidoziaceae	
<i>Paracromastigum furcifolium</i> (Steph.) R.M.Schust.	Lepidoziaceae	
<i>Paracromastigum macrostipum</i> (Steph.) R.M.Schust.	Lepidoziaceae	
<i>Paracromastigum microphyllum</i> (R.M.Schust. ex J.J.Engel) E.D.Cooper	Lepidoziaceae	
<i>Phaeoceros carolinianus</i> (Michx.) Prosk.	Notothyladaceae	
<i>Phyllohallia nivicola</i> E.A.Hodgs.	Phyllohalliaceae	
<i>Plagiochila aculeata</i> (Hook.f. & Taylor) Gottsche, Lindenb. & Nees	Plagiochilaceae	
<i>Plagiochila annotina</i> Lindenb.	Plagiochilaceae	
<i>Plagiochila arbuscula</i> (Brid. ex Lehm.) Lindenb. var. <i>arbuscula</i>	Plagiochilaceae	
<i>Plagiochila banksiana</i> Gottsche var. <i>banksiana</i>	Plagiochilaceae	
<i>Plagiochila circinalis</i> (Lehm. & Lindenb.) Lehm. & Lindenb. var. <i>circinalis</i>	Plagiochilaceae	
<i>Plagiochila circumdentata</i> Steph. var. <i>circumdentata</i>	Plagiochilaceae	
<i>Plagiochila colensoi</i> Hook.f. & Taylor var. <i>colensoi</i>	Plagiochilaceae	
<i>Plagiochila deltoidea</i> Lindenb. var. <i>deltoidea</i>	Plagiochilaceae	
<i>Plagiochila fasciculata</i> Lindenb.	Plagiochilaceae	
<i>Plagiochila fuscella</i> (Hook.f. & Taylor) Taylor & Hook.f. var. <i>fuscella</i>	Plagiochilaceae	
<i>Plagiochila fuscella</i> var. <i>novae-zelandiae</i> (E.A.Hodgs.) J.J.Engel & G.L.Sm.	Plagiochilaceae	
<i>Plagiochila gigantea</i> Lindenb. var. <i>gigantea</i>	Plagiochilaceae	
<i>Plagiochila gregaria</i> (Hook.f. & Taylor) Hook.f. & Taylor	Plagiochilaceae	

Continued on next page

NAME AND AUTHORITY	FAMILY	QUALIFIERS
<i>Plagiochila intertexta</i> Hook.f. & Taylor	Plagiochilaceae	
<i>Plagiochila radiculosa</i> Mitt.	Plagiochilaceae	
<i>Plagiochila ramosissima</i> (Hook.) Lindenb.	Plagiochilaceae	
<i>Plagiochila rutlandii</i> Steph.	Plagiochilaceae	
<i>Plagiochila stephensoniana</i> Mitt.	Plagiochilaceae	
<i>Plagiochila strombifolia</i> Taylor	Plagiochilaceae	
<i>Plagiochilion conjugatum</i> (Hook.) R.M.Schust.	Plagiochilaceae	
<i>Plagiochilion prolifer</i> (Mitt.) R.M.Schust.	Plagiochilaceae	
<i>Podomitrium phyllanthus</i> (Hook.) Mitt.	Pallaviciniaceae	
<i>Porella elegantula</i> (Mont.) E.A.Hodgs.	Porellaceae	
<i>Pseudocephalozia lepidozoides</i> R.M.Schust.	Lepidoziaceae	
<i>Pseudocephalozia paludicola</i> R.M.Schust.	Lepidoziaceae	
<i>Pseudomarsupidium piliferum</i> (Steph.) Herzog ex Grolle	Adelanthaceae	
<i>Psiloclada clandestina</i> Mitt. subsp. <i>clandestina</i>	Lepidoziaceae	
<i>Ptilidium ciliare</i> (L.) Hampe	Ptilidiaceae	
<i>Radula allisonii</i> Castle	Radulaceae	
<i>Radula aneurysmalis</i> (Hook.f. & Taylor) Gottsche, Lindenb. & Nees	Radulaceae	
<i>Radula australiana</i> K.Yamada	Radulaceae	
<i>Radula cuspidata</i> Steph.	Radulaceae	
<i>Radula demissa</i> M.A.M.Renner	Radulaceae	
<i>Radula grandis</i> Steph.	Radulaceae	
<i>Radula multiamentula</i> E.A.Hodgs.	Radulaceae	
<i>Radula physoloba</i> Mont.	Radulaceae	
<i>Radula plicata</i> Mitt.	Radulaceae	
<i>Radula pseudoscripta</i> M.A.M.Renner	Radulaceae	
<i>Radula sainsburiana</i> E.A.Hodgs. & Allison	Radulaceae	
<i>Radula strangulata</i> Hook.f. & Taylor	Radulaceae	
<i>Radula tasmanica</i> Steph.	Radulaceae	
<i>Radula uvifera</i> (Hook.f. & Taylor) Gottsche, Lindenb. & Nees	Radulaceae	
<i>Reboulia hemisphaerica</i> subsp. <i>australis</i> R.M.Schust.	Aytoniaceae	
<i>Riccardia aequicellularis</i> (Steph.) Hewson	Aneuraceae	
<i>Riccardia aequitexta</i> (Steph.) E.A.Br.	Aneuraceae	
<i>Riccardia alba</i> (Colenso) E.A.Br.	Aneuraceae	
<i>Riccardia asperulata</i> R.M.Schust.	Aneuraceae	
<i>Riccardia bipinnatifida</i> (Colenso) Hewson	Aneuraceae	
<i>Riccardia breviala</i> E.A.Br.	Aneuraceae	
<i>Riccardia cochleata</i> (Hook.f. & Taylor) Kuntze	Aneuraceae	
<i>Riccardia colensoi</i> (Steph.) W.Martin	Aneuraceae	
<i>Riccardia crassa</i> (Schwägr.) C.Massal.	Aneuraceae	
<i>Riccardia eriocaula</i> (Hook.) C.Massal.	Aneuraceae	
<i>Riccardia filicina</i> (Colenso) E.A.Hodgs.	Aneuraceae	
<i>Riccardia lobulata</i> (Colenso) E.A.Hodgs.	Aneuraceae	
<i>Riccardia marginata</i> (Colenso) Pearson	Aneuraceae	
<i>Riccardia nitida</i> (Colenso) E.A.Hodgs.	Aneuraceae	
<i>Riccardia papulosa</i> (Steph.) E.A.Br.	Aneuraceae	
<i>Riccardia pennata</i> E.A.Br.	Aneuraceae	
<i>Riccardia perspicua</i> E.A.Br.	Aneuraceae	
<i>Riccardia pusilla</i> (Steph.) E.A.Br.	Aneuraceae	
<i>Riccia fluitans</i> L.	Ricciaceae	DP, SO
<i>Saccogynidium australe</i> (Mitt.) Grolle	Geocalycaceae	
<i>Schistochila appendiculata</i> (Hook.) Trevis.	Schistochilaceae	

Continued on next page

NAME AND AUTHORITY	FAMILY	QUALIFIERS
<i>Schistochila balfouriana</i> (Hook.f. & Taylor) Steph.	Schistochilaceae	
<i>Schistochila chlorophylla</i> (Colenso) J.J.Engel & R.M.Schust.	Schistochilaceae	
<i>Schistochila ciliata</i> (Mitt.) Steph.	Schistochilaceae	
<i>Schistochila glaucescens</i> (Hook.) A.Evans	Schistochilaceae	
<i>Schistochila kirkiana</i> Steph.	Schistochilaceae	
<i>Schistochila lehmanniana</i> (Lindenb.) Carrington & Pearson	Schistochilaceae	
<i>Schistochila monticola</i> R.M.Schust.	Schistochilaceae	
<i>Schistochila muricata</i> E.A.Hodgs. & Allison	Schistochilaceae	
<i>Schistochila nobilis</i> (Hook.) Trevis.	Schistochilaceae	
<i>Schistochila pseudociliata</i> R.M.Schust.	Schistochilaceae	
<i>Schistochila repleta</i> (Hook.f. & Taylor) Steph.	Schistochilaceae	
<i>Siphonolejeunea nudipes</i> (Hook.f. & Taylor) Herzog var. <i>nudipes</i>	Lejeuneaceae	
<i>Siphonolejeunea nudipes</i> var. <i>magnicarinata</i> E.A.Hodgs.	Lejeuneaceae	
<i>Solenostoma cryptogynum</i> R.M.Schust. ex J.J.Engel	Jungermanniaceae	
<i>Solenostoma hodgsoniae</i> (Grolle) J.J.Engel	Jungermanniaceae	
<i>Solenostoma inundatum</i> (Hook.f. & Taylor) Mitt.	Jungermanniaceae	
<i>Solenostoma novazelandiae</i> R.M.Schust.	Jungermanniaceae	
<i>Solenostoma orbiculatum</i> (Colenso) R.M.Schust.	Jungermanniaceae	
<i>Solenostoma rufflorum</i> (Colenso) R.M.Schust.	Jungermanniaceae	
<i>Solenostoma totopapillosum</i> (E.A.Hodgs.) R.M.Schust.	Jungermanniaceae	
<i>Symphyogyna hymenophyllum</i> (Hook.) Mont. & Nees	Pallaviciniaceae	
<i>Symphyogyna subsimplex</i> Mitt.	Pallaviciniaceae	
<i>Symphyogyna tenuinervis</i> (Hook.f. & Taylor) Grolle	Pallaviciniaceae	
<i>Symphyogyna undulata</i> Colenso	Pallaviciniaceae	
<i>Syzygiella colorata</i> (Lehm.) Feldberg, Váña, Hentschel et Heinrichs	Adelanthaceae	
<i>Syzygiella nigrescens</i> (Steph.) Feldberg, Váña, Hentschel et Heinrichs	Adelanthaceae	
<i>Syzygiella pseudocclusa</i> (E.A.Hodgs.) Feldberg, Váña, Hentschel et Heinrichs	Adelanthaceae	
<i>Syzygiella sonderi</i> (Lindenb. & Gottsche) Feldberg, Váña, Hentschel et Heinrichs	Adelanthaceae	
<i>Syzygiella tasmanica</i> (Hook.f. et Taylor) Feldberg, Váña, Hentschel et Heinrichs	Adelanthaceae	
<i>Syzygiella teres</i> (Carrington & Pearson) Vana	Adelanthaceae	
<i>Telaranea granulata</i> J.J.Engel & G.L.Sm.	Lepidoziaceae	DP
<i>Telaranea herzogii</i> (E.A.Hodgs.) E.A.Hodgs.	Lepidoziaceae	
<i>Telaranea pallescens</i> (Grolle) J.J.Engel & G.L.Sm.	Lepidoziaceae	
<i>Telaranea quadriseta</i> (Steph.) J.J.Engel & G.L.Sm.	Lepidoziaceae	
<i>Telaranea quinquespina</i> (J.J.Engel & G.L.Sm.) J.J.Engel & G.L.Sm.	Lepidoziaceae	
<i>Telaranea trilobata</i> (R.M.Schust.) J.J.Engel & G.L.Sm.	Lepidoziaceae	
<i>Temnoma palmatum</i> (Lindb.) R.M.Schust. var. <i>palmatum</i>	Pseudolepicoleaceae	
<i>Temnoma palmatum</i> var. <i>cuneatum</i> R.M.Schust.	Pseudolepicoleaceae	
<i>Temnoma palmatum</i> var. <i>pseudospiniferum</i> R.M.Schust.	Pseudolepicoleaceae	
<i>Temnoma paucisetigerum</i> R.M.Schust.	Pseudolepicoleaceae	
<i>Temnoma pulchellum</i> (Hook.) Mitt.	Pseudolepicoleaceae	
<i>Temnoma quadrifidum</i> (Mitt.) E.A.Hodgs. & Allison	Pseudolepicoleaceae	
<i>Temnoma quadripartitum</i> (Hook.) Mitt. var. <i>quadripartitum</i>	Pseudolepicoleaceae	
<i>Tetracymbaliella cymbalifera</i> (Hook.f. & Taylor) Grolle	Geocalyceae	
<i>Tetracymbaliella decipiens</i> (Gottsche) Grolle	Geocalyceae	
<i>Treubia lacunosa</i> (Colenso) Prosk.	Treubiaceae	
<i>Treubia pygmaea</i> R.M.Schust.	Treubiaceae	
<i>Triandrophyllum subtrifidum</i> (Hook.f. & Taylor) Fulford & Hatcher var. <i>subtrifidum</i>	Herbertaceae	
<i>Trichocolea hatcheri</i> E.A.Hodgs.	Trichocoleaceae	

Continued on next page

NAME AND AUTHORITY	FAMILY	QUALIFIERS
<i>Trichocolea mollissima</i> (Hook.f. & Taylor) Gottsche	Trichocoleaceae	
<i>Trichocolea rigida</i> R.M.Schust.	Trichocoleaceae	
<i>Tricholepidozia lindenbergii</i> (Gottsche) E.D.Cooper var. <i>lindenbergii</i>	Lepidoziaceae	
<i>Tricholepidozia lindenbergii</i> var. <i>complanata</i> (J.J.Engel & G.L.Sm.) E.D.Cooper	Lepidoziaceae	
<i>Tricholepidozia martinii</i> (E.A.Hodgs.) E.D.Cooper	Lepidoziaceae	
<i>Tricholepidozia pulcherrima</i> (Steph.) E.D.Cooper subsp. <i>pulcherrima</i>	Lepidoziaceae	
<i>Tricholepidozia remotifolia</i> (E.A.Hodgs.) E.D.Cooper	Lepidoziaceae	
<i>Tricholepidozia tetradactyla</i> (Hook.f. & Taylor) E.D.Cooper	Lepidoziaceae	
<i>Tylimanthus saccatus</i> (Hook.) Mitt.	Acrobolbaceae	
<i>Tylimanthus tenellus</i> (Taylor) Mitt. var. <i>tenellus</i>	Acrobolbaceae	
<i>Tylimanthus tenellus</i> var. <i>diversifolius</i> J.J.Engel	Acrobolbaceae	
<i>Zoopsisidella caledonica</i> (Steph.) R.M.Schust.	Lepidoziaceae	
<i>Zoopsis argentea</i> (Hook.f. & Taylor) Hook.f. var. <i>argentea</i>	Lepidoziaceae	
<i>Zoopsis leitgebiana</i> (Carrington & Pearson) Bastow	Lepidoziaceae	
<i>Zoopsis macrophylla</i> R.M.Schust.	Lepidoziaceae	
<i>Zoopsis setulosa</i> Leitg.	Lepidoziaceae	

Introduced and Naturalised (9)

Taxa that have become naturalised in the wild after being deliberately or accidentally introduced into New Zealand by human agency.

NAME AND AUTHORITY	FAMILY
<i>Lunularia cruciata</i> (L.) Dumort.	Lunulariaceae
<i>Marchantia polymorpha</i> L. subsp. <i>polymorpha</i>	Marchantiaceae
<i>Marchantia polymorpha</i> subsp. <i>ruderalis</i> Bischl. & Boissel.-Dub.	Marchantiaceae
<i>Riccia bifurca</i> Hoffm.	Ricciaceae
<i>Riccia ciliata</i> Hoffm.	Ricciaceae
<i>Riccia crystallina</i> L.	Ricciaceae
<i>Riccia glauca</i> L.	Ricciaceae
<i>Riccia nigrella</i> DC.	Ricciaceae
<i>Riccia spongiosula</i> Na Thalang	Ricciaceae

2.2 Taxonomically indeterminate

This section includes described taxa whose taxonomic status is uncertain and requires further investigation, and also possibly distinct hornworts and liverworts whose taxonomic status has yet to be determined.

Data Deficient (22)

NAME AND AUTHORITY	FAMILY	QUALIFIERS
<i>Andrewsianthus stellatus</i> R.M.Schust.	Scapaniaceae	
<i>Aneura</i> aff. <i>rodwayi</i> (CHR 572016; South Cape)	Aneuraceae	OL
<i>Bazzania adnexa</i> var. <i>aucklandica</i> (Lindenb. & Gottsche) J.J.Engel & G.L.Sm.	Lepidoziaceae	
<i>Cephaloziella</i> sp. (c) (WELT H013199; Tahora Tunnel)	Cephaloziellaceae	
<i>Cephaloziella</i> sp. (subg. <i>Evansia</i>) (CHR 593765; Chatham Islands)	Cephaloziellaceae	
<i>Cheilolejeunea</i> (b) (AK 303444; Rekohu)	Lejeuneaceae	OL
<i>Cheilolejeunea</i> (c) (AK 297632; Lady Alice Island)	Lejeuneaceae	OL
<i>Cheilolejeunea</i> (h) (AK 284270; Unuwahao)	Lejeuneaceae	
<i>Chiloscyphus mediifrons</i> J.J.Engel & Braggins	Lophocoleaceae	OL
<i>Cololejeunea</i> (a) (CHR 104332; Pelorus Bridge)	Lejeuneaceae	
<i>Drepanolejeunea</i> (a) (CHR 604609; Herekino)	Lejeuneaceae	
<i>Lamellocolea intergrostia</i> J.J.Engel & Glenny	Lophocoleaceae	OL
<i>Lejeunea</i> aff. <i>flava</i> (b) (WELT H06349; Auckland Islands)	Lejeuneaceae	
<i>Microlejeunea</i> sp. (AK 300169; Mt Rowe)	Lejeuneaceae	
<i>Phaeomegaceros hirticalyx</i> (Steph.) R.J.Duff, J.C.Villareal, Cargill & Renzaglia	Dendrocerotaceae	OL, S?O
<i>Porella</i> sp. (CHR 523835; Whakamahahi)	Porellaceae	
<i>Protolophozia druceae</i> (Grolle et E.A.Hodgs.) Váňa et L.Söderstr.	Scapaniaceae	
<i>Protolophozia herzogiana</i> (E.A.Hodgs. et Grolle) Váňa et L.Söderstr.	Scapaniaceae	
<i>Radula</i> (a) (F; Campbell Island)	Radulaceae	IE, OL
<i>Riccardia</i> aff. <i>pallidivirens</i> (AKU 71079; Campbell Island)	Aneuraceae	SO
<i>Riccardia</i> aff. <i>papulosa</i> (AK 298538; Mt Rowe)	Aneuraceae	OL
<i>Telaranea</i> (a) (CHR 604513; Whakamaru)	Lepidoziaceae	

Threatened (1)

Nationally Critical (1)

NAME AND AUTHORITY	FAMILY	CRITERIA	QUALIFIERS
<i>Isolembidium anomalum</i> var. <i>cucullatum</i> (E.A.Hodgs.) J.J.Engel & R.M.Schust.	Lepidoziaceae	B(3/1)	Sp

At Risk (11)

Naturally Uncommon (11)

NAME AND AUTHORITY	FAMILY	QUALIFIERS
<i>Cephaloziella</i> aff. <i>pulcherrima</i> (AK 282469; Rangitoto Island)	Cephaloziellaceae	DP, OL
<i>Cheilolejeunea</i> (d) (AK 327851; Surville Cliffs)	Lejeuneaceae	RR, Sp

Continued on next page

NAME AND AUTHORITY	FAMILY	QUALIFIERS
<i>Cheilolejeunea</i> (e) (AK 287598; Kermadec)	Lejeuneaceae	RR, Sp
<i>Cololejeunea falcidentata</i> R.M.Schust.	Lejeuneaceae	DP, RR, Sp
<i>Herzogianthus sanguineus</i> R.M.Schust.	Herzogianthaceae	Sp
<i>Lejeunea</i> (a) (WELT H010386; Waitomo)	Lejeuneaceae	DP, RR
<i>Lejeunea</i> (s) (AK 306857; Surville Cliffs)	Lejeuneaceae	OL, Sp
<i>Porella</i> aff. <i>viridissima</i> (CHR 528937; Banks Peninsula)	Porellaceae	RR, S?O
<i>Riccardia</i> aff. <i>wattsiana</i> (AK 305772; New Zealand)	Aneuraceae	DP, RR, Sp
<i>Siphonolejeunea</i> (a) (CHR 603079; Banks Peninsula)	Lejeuneaceae	DP, Sp
<i>Siphonolejeunea</i> (b) (AK 302659; Waipoua)	Lejeuneaceae	RR

Not Threatened (4)

NAME AND AUTHORITY	FAMILY	QUALIFIERS
<i>Drepanolejeunea</i> aff. <i>aucklandica</i> (AK 287338; Spraggs Bush)	Lejeuneaceae	
<i>Frullania</i> aff. <i>rostrata</i> (P.J. de Lange 11245, F; "coastal northern North Island")	Frullaniaceae	
<i>Lejeunea</i> aff. <i>flava</i> (a) (AK 291280; Waitakere)	Lejeuneaceae	
<i>Lopholejeunea</i> (a) (AK 327822; New Zealand (<i>Lopholejeunea plicatiscypha</i> of Hamlin 1972))	Lejeuneaceae	

3. Acknowledgements

The authors thank the curators of the following herbaria: AK, CHR, F, MPN, P, WAIK, WELT, for assistance with specimens and help with our enquiries. We also thank Rodney Lewington and Peter Beveridge for their observations on that difficult Lejeuneaceous genus *Cheilolejeunea*—even if our decisions may not tally with their suggested tag naming system for need of consistency with past threat listings.

4. References

- Allan, H.H. 1961: Flora of New Zealand, Volume I. Government Printer, Wellington. 1085 p.
- Braggins, J.E.; Renner, M.A.M.; de Lange P.J. 2014: Additions to the liverwort flora of the Kermadec Islands, New Zealand Botanical Region. *Telopea* 17: 183–194.
- Brown, E.A.; Renner, M.A.M. 2014: The genus *Acromastigum* in Australia. *Telopea* 17: 251–293
- de Lange, P.J.; Norton, D.A.; Courtney, S.P.; Heenan, P.B.; Barkla, J.W.; Cameron, E.K.; Hitchmough, R.; Townsend, A.J. 2009: Threatened and uncommon plants of New Zealand (1998 revision). *New Zealand Journal of Botany* 47: 61–96.
- Engel, J.J. 2010: Austral Hepaticae 45. A Monograph of the Genus *Chiloscyphus* Corda (Lophocoleaceae) for Australasia. *Fieldiana, Botany, new series*, 48: 1–209.
- Engel, J.J. 2013: Studies on Lophocoleaceae XXII. New taxa and combinations in New Zealand *Heteroscyphus* Schiffn. *Polish Botanical Journal* 58: 95–106.
- Engel J.J. 2014: Studies on Lophocoleaceae XXIII. Novelty in *Heteroscyphus* Schiffn. together with refinements in *Cryptolophocolea* L.Soderstr. Crand.-Stotl., Stolter et Vana and *Leptoscyphus* Mitt. *Nova Hedwigia* 99: 157–170.
- Glenny, D.J.; Fife, A.J. 2012: Phylum Bryophyta—hornworts, liverworts and mosses. Pp. 382–410 in Gordon, D.P. (Ed.): New Zealand inventory of biodiversity, Vol. 3. Kingdoms Bacteria, Protozoa, Chromista, Plantae, Fungi. Canterbury University Press, Christchurch.
- Glenny, D.J.; Fife, A.J.; Brownsey, P.J.; Renner, M.A.M.; Braggins, J.E.; Beever, J.E.; Hitchmough, R. 2011: Threatened and uncommon bryophytes of New Zealand (2010 Revision). *New Zealand Journal of Botany* 49: 305–327.
- Renner, M.A.M. 2014: *Radula* subg. *Radula* in Australasia and the Pacific (Jungermanniopsida). *Telopea* 17: 107–167.
- Renner, M.A.M.; de Lange, P.J. 2011: Additions to the Lejeuneaceae Flora of New Zealand: new species from the Kermadec Islands and range extensions of New Zealand species into the South Pacific. *New Zealand Journal of Botany* 49: 421–433.
- Renner, M.A.M.; Devos, N.; Patiño, J.; Brown, E.A.; Orme, A.; Elgey, M.; Wilson, T.C.; Gray, L.J.; von Konrat, M.J. 2013: Integrative taxonomy resolves the cryptic and pseudo-cryptic *Radula buccinifera* complex (Porellales, Jungermanniopsida), including two reinstated and five new species. *PhytoKeys* 27: 1–113
- Townsend, A.J.; de Lange, P.J.; Duffy, C.A.J.; Miskelly, C.M.; Molloy, J.; Norton, D.A. 2008: New Zealand Threat Classification System manual. Department of Conservation, Wellington. 35 p.