

Supplementary Material:

Appendix S1. Confusion matrix of species distribution model. Projected range size and resampled environment are the predicted number of 0.5 degree pixels occupied by each species in New Zealand

Species	Dehiscence	Potential Geographic Area (% of New Zealand Land Area)	Potential Environmental Area (% of New Zealand Resampled Physical Environments)	True Positive	True Negative	False Positive	False Negative	Projected Range Size	Projected Range Size (Resampled Environment)
<i>Chionochloa acicularis</i>	Dehiscent	11.08	9.61	285	237	28	5	49278	28716
<i>Chionochloa beddiei</i>	Non	37.35	26.13	9	210	55	0	148343	69672
<i>Chionochloa bromoides</i>	Non	5.85	5.49	16	254	11	0	21536	13831
<i>Chionochloa cheesemaniae</i>	Non	46.6	32.31	88	182	83	0	185097	85323
<i>Chionochloa conspicua</i> subsp. <i>conspicua</i>	Dehiscent	24.6	16.96	953	922	191	167	101824	46472
<i>Chionochloa conspicua</i> subsp. <i>cunninghamii</i>	Dehiscent	21.66	14.78	321	344	27	41	52051	24264
<i>Chionochloa crassiuscula</i> subsp. <i>crassiuscula</i>	Dehiscent	1.09	0.75	15	262	3	0	4312	2028
<i>Chionochloa crassiuscula</i> subsp. <i>directa</i>	Dehiscent	5.59	5.06	70	251	14	3	22219	13338
<i>Chionochloa crassiuscula</i> subsp. <i>torta</i>	Dehiscent	16.1	15.37	521	445	85	9	64145	40707
<i>Chionochloa flavescens</i> subsp. <i>brevis</i>	Dehiscent	36.22	29.73	327	225	93	11	143855	78707
<i>Chionochloa flavescens</i> subsp. <i>flavescens</i>	Dehiscent	8.72	5.3	104	261	4	12	77957	35489
<i>Chionochloa flavescens</i> subsp. <i>hirta</i>	Dehiscent	19.47	16.45	159	224	41	4	77597	43886
<i>Chionochloa flavescens</i> subsp. <i>lupeola</i>	Dehiscent	6.49	6.4	148	258	7	21	13804	8589
<i>Chionochloa flavicans</i> f. <i>flavicans</i>	Dehiscent	33.99	22.44	50	204	61	1	50631	21056
<i>Chionochloa juncea</i>	Non	10.52	7.17	63	250	15	0	39865	18246
<i>Chionochloa macra</i>	Dehiscent	0.19	0.09	586	478	105	31	31139	22480

<i>Chionochloa nivifera</i>	Non	16.23	17.49	10	251	14	0	24940	17146
<i>Chionochloa oreophila</i>	Non	6.28	6.49	211	237	28	18	46662	33713
<i>Chionochloa pallens</i> subsp. <i>pallens</i>	Non	21.67	19.31	311	255	63	13	92315	53052
<i>Chionochloa pallens</i> subsp. <i>pilosa</i>	Non	21.16	20.85	545	469	114	37	527	791
<i>Chionochloa rigida</i> subsp. <i>amara</i>	Dehiscent	17.63	16.49	328	269	49	8	78046	47620
<i>Chionochloa rigida</i> subsp. <i>rigida</i>	Dehiscent	28.18	27.04	706	627	168	83	93158	57058
<i>Chionochloa rubra</i> subsp. <i>cuprea</i>	Non	46.67	39.42	528	323	207	8	185350	104370
<i>Chionochloa rubra</i> subsp. <i>occulta</i>	Dehiscent	13.67	11.57	266	238	27	16	56113	31290
<i>Chionochloa rubra</i> var. <i>inermis</i>	Dehiscent	1.86	1.17	16	261	4	0	7366	3068
<i>Chionochloa rubra</i> var. <i>rubra</i>	Dehiscent	43.86	29.25	162	201	64	7	157307	66828
<i>Chionochloa spiralis</i>	Dehiscent	3.93	3.82	31	252	13	0	15611	9933
<i>Chionochloa teretifolia</i>	Dehiscent	9.09	7.09	97	228	37	3	68159	39349
<i>Chionochloa vireta</i>	Dehiscent	9.05	8.85	19	243	22	0	35247	22997
<i>Rytidosperma auriculatum</i>	Non	27	45.38	4	5	5	0	107223	120256
<i>Rytidosperma australe</i>	Dehiscent	17.74	18.69	25	31	4	10	70466	49518
<i>Rytidosperma biannulare</i>	Non	16.17	17.36	58	52	8	2	64232	46005
<i>Rytidosperma buchananii</i>	Dehiscent	39.92	42	87	59	47	19	158540	111290
<i>Rytidosperma caespitosum</i>	Non	27.82	45.81	22	11	12	1	110503	121409
<i>Rytidosperma clavatum</i>	Non	58.07	62.82	59	33	34	8	230626	166484
<i>Rytidosperma corinum</i>	Dehiscent	49.38	52.86	26	13	13	0	196139	140078
<i>Rytidosperma erianthum</i>	Non	15.81	34.22	3	8	2	0	62795	90686
<i>Rytidosperma exiguum</i>	Non	32.98	37.1	5	7	3	0	130982	98323
<i>Rytidosperma geniculatum</i>	Non	18.74	28.41	3	8	2	0	74446	75287
<i>Rytidosperma gracile</i>	Non	70.99	58.31	248	76	189	17	281964	154530
<i>Rytidosperma horrens</i>	Dehiscent	5.19	5.24	3	9	1	0	20605	13884
<i>Rytidosperma maculatum</i>	Dehiscent	11.61	28.32	25	27	1	3	46096	75060
<i>Rytidosperma merum</i>	Non	42.17	49.62	37	18	20	1	167492	131489
<i>Rytidosperma nigricans</i>	Non	52.43	42.17	52	28	24	0	208239	111752

Rytidosperma nudum	Dehiscent	3.95	4.32	5	10	0	3	15680	11439
Rytidosperma petrosum	Dehiscent	40.23	44.39	4	5	5	0	159793	117628
Rytidosperma pilosum	Non	20.97	24.28	30	26	8	4	83301	64329
Rytidosperma pulchrum	Dehiscent	28.34	22.14	8	8	2	0	112544	58668
Rytidosperma pumilum	Dehiscent	37.67	42.55	81	54	31	4	149602	112750
Rytidosperma racemosum	Non	55.68	61.23	87	45	45	3	221155	162267
Rytidosperma setifolium	Dehiscent	26.78	25.08	181	179	54	52	106354	66450
Rytidosperma telmaticum	Non	19.74	24.25	18	17	2	1	78414	64273
Rytidosperma tenue	Non	39	36.26	8	7	3	0	154910	96079
Rytidosperma tenuius	Non	6.63	10.21	11	10	1	0	26316	27046
Rytidosperma thomsonii	Dehiscent	29.49	36.02	115	90	34	9	117120	95455
Rytidosperma unarede	Non	56.62	60.38	97	59	53	15	224868	160001
Rytidosperma viride	Dehiscent	34.22	19.23	16	13	4	1	135910	50958