

Oikos

**o20813**

Peay, K. G., Dickie, I. A., Wardle, D. A., Bellingham, P. J. and Fukami, T. 2013. Rat invasion of islands alters fungal community structure, but not wood decomposition rates. – *Oikos* 122: 258–264.

Appendix A1

Background data on islands used in this study, as described by Fukami et al. 2006.

Island name	Island status	Longitude Latitude	Area (ha)	Elevation (m)	Distance 1 (km)	Distance 2 (km)	Distance 3 (m)	Rat invasion*
Tawhiti Rahi	rat-free	174°71'E 35°45'S	158.2	191	21.79	21.79	130, 130	never
Aorangaia	rat-free	174°74'E 35°48'S	5.6	102	21.53	0.20	80, 40	never
Aorangi	rat-free	174°72'E 35°48'S	107.1	216	20.64	0.36	190, 165	never
Archway	rat-free	174°74'E 35°49'S	6.3	97	20.84	0.11	30, 30	never
Middle	rat-free	175°84'E 36°60'S	13.5	85	8.30	1.67	80, 80	never
Green	rat-free	175°85'E 36°64'S	2.5	50	7.22	0.84	30, 30	never
Ohinaiti	rat-free	175°88'E 36°71'S	5.9	40	5.31	0.53	60, 55	never
Ruamahuanui	rat-free	176°09'E 36°95'S	32.4	160	19.99	15.70	130, 130	never
Ruamahuaitei	rat-free	176°06'E 36°97'S	25.2	180	18.14	1.94	115, 80	never
Aiguilles	rat-invaded	175°39'E 36°03'S	72.7	120	47.67	0.13	240, 205	<i>R. rattus</i>
Goat	rat-invaded	174.8°E 36.26'S	13.4	60	0.14	0.14	130, 30	<i>R. rattus</i>
Motu-karamarama	rat-invaded	175°37'E 36°68'S	10.1	71	3.34	0.46	70, 70	<i>R. norvegicus</i>
Motuhoropapa	rat-invaded	174.96'E 36.69'S	8.6	50	13.64	0.19	80, 70	<i>R. norvegicus</i> †
Otata	rat-invaded	174°97'E 36°69'S	16.8	67	14.90	2.29	70, 65	<i>R. norvegicus</i> †
Motuoruhi	rat-invaded	175.38'E 36°73'S	58.0	169	2.80	1.52	20, 15	<i>R. norvegicus</i> or <i>R. rattus</i>
Motutapere	rat-invaded	175°4'E 36°78'S	45.6	175	2.51	0.57	80, 70	<i>R. rattus</i>

Motueka	rat-invaded	175°8'E 36°82'S	6.2	46	1.20	1.68	30, 30	<i>R. norvegicus</i> or <i>R. rattus</i>
Hauturu	rat-invaded	175°89'E 37°21'S	10.3	85	0.54	0.54	150, 55	<i>R. norvegicus</i> ‡

Distance 1, distance to mainland (North Island of New Zealand). Distance 2, distance to nearest larger island (including North Island). Distance 3, distance from shore of plots. \*Rat-invaded islands are likely to have also been invaded by the Pacific rat *R. exulans*. †Exterminated in 1987, 1991, and 2002. ‡The mouse *Mus musculus* is also present.

## Appendix A2

Final statistical models predicting species richness and decomposition of experimental wood branches on rat invaded and uninvaded islands. Model selection was done using linear mixed effects with the top down method advocated in Zuur (2009).

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Model 1: Fungal species richness

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Variable	DF	F -value (p)
Inoculation (I)	2, 202	0.58 (0.56)
Rat status (R)	1, 16	0.00 (0.99)
Initial weight (W)	1, 202	8.42 (0.004)
I × R	2, 202	2.69 (0.07)
I × W	2, 202	4.26 (0.02)

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Model 2: Decomposition

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Variable	DF	F-value (p)
Inoculation (I)	2, 203	3.26 (0.04)
Initial weight (W)	1, 203	16.52 (<0.001)
Species richness (S)	1, 203	41.07 (<0.001)

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