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No room to move: bat response to rainforest expansion into long-unburnt eucalypt forest

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Supplementary Material

Table S1: Functional identity of midstorey trees, shrubs and vines (mature height >5m, DBH <10cm) recorded during the study. Functional identify adapted from habitat descriptions (Harden 1990; Harden et al. 2006; Harden et al. 2007): rainforest (rainforest or its margins), sclerophyll (predominantly open-forest or woodland), wattles (separate group comprising Acacia species).

Species	Functional Group[1 2 3]
Acacia disparrima	wattles
Acacia leiocalyx	wattles
Allocasuarina littoralis	sclerophyll
Alphitonia excelsa	rainforest
Angophora woodsiana	sclerophyll
Banksia integrifolia	sclerophyll
Banksia oblongifolia	sclerophyll
Callistemon salignus	sclerophyll
Corymbia intermedia	sclerophyll
Duboisia myoporoides	rainforest
Eucalyptus microcorys	sclerophyll
Eucalyptus resinifera subsp. *hemilampra*	sclerophyll
Eucalyptus siderophloia	sclerophyll
Eucalyptus signata	sclerophyll
Eucalyptus tereticornis	sclerophyll
Glochidion ferdinandi	rainforest
Hibbertia scandens	rainforest
Leptospermum trinervium	sclerophyll

Species	Functional Group[1 2 3]
Lophostemon confertus	sclerophyll
Lophostemon suaveolens	sclerophyll
Melaleuca quinquenervia	sclerophyll
Melaleuca sieberi	sclerophyll
Parsonsia straminea	sclerophyll
Persoonia stradbrokensis	sclerophyll
Polyscias sambucifolia	rainforest
Psychotria loniceroides	rainforest
Smilax australis	rainforest
Trochocarpa laurina	rainforest

[1] Harden G. J. (1990) *Flora of New South Wales: volume 1*. UNSW Press, Kensington.

[1] Harden G. J., McDonald B., McDonald W. J. F. & Williams J. B. (2006) *Rainforest trees and shrubs: a field guide to their identification in Victoria, New South Wales and subtropical Queensland using vegetative features*. Gwen Harden Publishing, Nambucca Heads.

[1] Harden, G., McDonald, B., & Williams, J. (2007). *Rainforest climbing plants: a field guide to their identification.* Gwen Harden Publishing, Nambucca Heads.

Table S2. PERMANOVA analyses results comparing total bat activity (passes night^{-1}), species richness, community composition and guild composition across the factors of fire and midstorey type: degrees of freedom (df), F-value by permutation (Pseudo-F), P-values based on 999 permutations (lowest P-value possible 0.001).

Response variable	**Treatment**	**df**	**Sum Sq.**	**Pseudo-F**	***p***
Total bat activity	*Fire*	1	1.5	3.36	0.070
	Midstorey(fire)	1	2.8	6.25	0.027
	Residuals	21	9.4		
Bat species richness	*Fire*	1	0.4	7.99	0.005
	Midstorey(fire)	1	0.4	9.42	0.006
	Residuals	21	1.0		
Bat community composition	*Fire*	1	2550	4.27	0.002
	Midstorey(fire)	1	2441	4.09	0.007
	Residuals	21	12528		
Guild composition	*Fire*	1	1169	3.21	0.031
	Midstorey(fire)	1	1478	4.06	0.034
	Residuals	21	7652		
Insect biomass	*Fire*	1	0.1	0.80	0.397
	Midstorey(fire)	1	1	0.01	0.943
	Residuals	21	3.6		
Insect community composition	*Fire*	1	240.4	0.73	0.461
	Midstorey(fire)	1	181.1	0.55	0.541
	Residuals	21	6917.9		

Table S3. Mean values (± *SE*) for prey availability including results of tests of significance (Conover-Iman post-hoc tests with Bonferroni correction).

	Midstorey type					
Insect Biomass (g)	Open	Sclerophyll	Rainforest	Open vs. sclerophyll	Open vs rainforest	Sclerophyll vs. rainforest
Total (both strata)	1.35±0.24	1.75±0.44	1.83±0.59	ns	ns	ns
Total (understorey)	0.85±0.19	1.21±0.46	1.15±0.61	ns	ns	ns
Total (canopy)	0.5±0.15	0.54±0.17	0.68±0.14	ns	ns	ns
Coleoptera (total)	1.03±0.24	1.46±0.4	1.38±0.56	ns	ns	ns
Coleoptera (understorey)	0.65±0.19	1.1±0.44	0.95±0.58	ns	ns	ns
Coleoptera (canopy)	0.38±0.14	0.36±0.16	0.44±0.14	ns	ns	ns
Lepidoptera (total)	0.25±0.07	0.16±0.05	0.32±0.08	ns	ns	ns
Lepidoptera (understorey)	0.17±0.04	0.07±0.04	0.14±0.04	ns	ns	ns
Lepidoptera (canopy)	0.08±0.04	0.09±0.02	0.18±0.05	ns	ns	ns
Diptera (total)	0.03±0.01	0.04±0.01	0.02±0	ns	ns	ns
Diptera (understorey)	0.01±0	0.02±0.01	0.01±0	ns	ns	ns
Diptera (canopy)	0.02±0.01	0.02±0.01	0.01±0	ns	ns	0.05
Orthoptera (total)	0±0	0.05±0.05	0.05±0.03	ns	ns	ns
Orthoptera (understorey)	0±0	0±0	0.02±0.02	ns	ns	ns
Orthoptera (canopy)	0±0	0.05±0.05	0.03±0.03	ns	ns	ns