

Westgate, M. J., Driscoll, D. A. and Lindenmayer, D. B. 2012. Can the intermediate disturbance hypothesis and information on species traits predict anuran responses to fire? – *Oikos* 121: 1516–1524.

## Appendix 1

### Supplementary information on variable properties and model selection

Table A1. Matrix of Pearsons correlations between predictor variables.

	hydroperiod	width	%forest	n.trees	mean FRI
width	0.18				
%forest	0.20	0.25			
n.trees	0.01	-0.23	0.02		
mean FRI	0.26	0.17	0.05	-0.08	
max FRI	0.21	0.09	0.00	-0.15	0.87

Table A2. AICc rankings of plausible detection covariates in candidate single species occupancy models.

Species	Formula	nPars	negLogLike	AICc	$\Delta$ AICc	Weight
<i>Litoria freycineti</i>	~(kbdi) ~ 1	3	26.41	59.42	0.00	0.42
	~(temp) ~ 1	3	26.61	59.82	0.40	0.35
	~1 ~ 1	2	29.14	62.57	3.15	0.09
<i>Litoria jervisiensis</i>	~(temp) ~ 1	3	50.49	107.58	0.00	0.67
	~(date) ~ 1	3	51.21	109.02	1.44	0.33
	~1 ~ 1	2	58.03	120.35	12.77	0.00
<i>Litoria nudidigitus</i>	~(kbdi) ~ 1	3	46.64	99.87	0.00	0.57
	~(temp) ~ 1	3	47.10	100.79	0.92	0.36
	~1 ~ 1	2	50.86	106.00	6.13	0.03
<i>Litoria peronii</i>	~(temp) ~ 1	3	69.65	145.90	0.00	0.89
	~(date) ~ 1	3	71.85	150.29	4.40	0.10
	~1 ~ 1	2	76.70	157.69	11.80	0.00
<i>Crinia signifera</i>	~(kbdi) ~ 1	3	139.33	285.25	0.00	0.98
	~(temp) ~ 1	3	144.30	295.20	9.95	0.01
	~(date) ~ 1	3	144.48	295.55	10.30	0.01
	~1 ~ 1	2	146.56	297.42	12.16	0.00
<i>Limnodynastes peronii</i>	~(temp) ~ 1	3	56.60	119.81	0.00	0.42
	~(date) ~ 1	3	56.73	120.06	0.25	0.37
	~1 ~ 1	2	59.09	122.47	2.66	0.11
<i>Paracrinia haswelli</i>	~(date) ~ 1	3	65.56	137.73	0.00	1.00
	~(temp) ~ 1	3	74.38	155.37	17.64	0.00
	~l(date + date^2) ~ 1	3	75.32	157.23	19.51	0.00
	~(humd) ~ 1	3	76.66	159.92	22.19	0.00
	~1 ~ 1	2	81.01	166.32	28.59	0.00
<i>Uperoleia tyleri</i>	~(temp) ~ 1	3	86.01	178.62	0.00	0.24
	~1 ~ 1	2	87.30	178.89	0.27	0.21

Table A3. AICc rankings of models containing only vegetation or hydrological predictors.

Species	Formula	nPars	negLogLike	AICc	$\Delta$ AICc	Weight
<i>Crinia signifera</i>	~(kbdi) ~ n.trees	4	137,97	284,97	0,00	0,23
	~(kbdi) ~ 1	3	139,33	285,25	0,28	0,20
	~(kbdi) ~ width	4	138,14	285,30	0,33	0,20
	~(kbdi) ~ width + n.trees	5	137,45	286,47	1,50	0,11
	~(kbdi) ~ hydro	4	139,28	287,59	2,62	0,06
	~(kbdi) ~ forest	4	139,33	287,68	2,71	0,06
	~(kbdi) ~ width + forest	5	138,09	287,75	2,78	0,06
	~(kbdi) ~ width + hydro	5	138,12	287,82	2,85	0,06
	~(kbdi) ~ width × hydro	6	137,82	289,92	4,95	0,02
	~(kbdi) ~ forest × hydro	6	139,18	292,63	7,66	0,01
<i>Limnodynastes peronii</i>	~(temp) ~ width	4	52,86	114,75	0,00	0,39
	~(temp) ~ width + hydro	5	51,88	115,34	0,59	0,29
	~(temp) ~ width + forest	5	52,86	117,30	2,55	0,11
	~(temp) ~ width × hydro	6	51,83	117,94	3,19	0,08
	~(temp) ~ hydro	4	54,92	118,87	4,11	0,05
	~(temp) ~ n.trees	4	55,09	119,20	4,45	0,04
	~(temp) ~ 1	3	56,60	119,81	5,06	0,03
	~(temp) ~ forest	4	56,38	121,79	7,04	0,01
	~(temp) ~ forest × hydro	6	54,50	123,26	8,51	0,01
<i>Paracrinia haswelli</i>	~(date) ~ width × hydro	6	52,47	119,21	0,00	0,84
	~(date) ~ width + hydro	5	55,96	123,49	4,28	0,10
	~(date) ~ width + n.trees	5	57,00	125,59	6,37	0,03
	~(date) ~ width	4	58,87	126,76	7,55	0,02
	~(date) ~ width + forest	5	58,54	128,66	9,45	0,01
	~(date) ~ hydro	4	61,52	132,07	12,85	0,00
	~(date) ~ n.trees	4	63,06	135,15	15,94	0,00
	~(date) ~ forest × hydro	6	60,84	135,94	16,73	0,00
	~(date) ~ forest	4	64,28	137,58	18,36	0,00
	~(date) ~ 1	3	65,56	137,73	18,51	0,00
<i>Uperoleia tyleri</i>	~1 ~ width × hydro	5	78,21	168,00	0,00	0,51
	~1 ~ width	3	81,75	170,10	2,10	0,18
	~1 ~ width + n.trees	4	80,81	170,65	2,65	0,14
	~1 ~ width + forest	4	81,23	171,49	3,49	0,09
	~1 ~ width + hydro	4	81,44	171,91	3,91	0,07
	~1 ~ n.trees	3	85,61	177,82	9,81	0,00
	~1 ~ 1	2	87,30	178,89	10,89	0,00
	~1 ~ hydro	3	86,43	179,46	11,46	0,00
	~1 ~ forest	3	87,30	181,19	13,19	0,00

Table A3 (cont.):

Species	Formula	nPars	negLogLike	AICc	$\Delta$ AICc	Weight
<i>Litoria freycineti</i>	~(kbdi) ~ 1	3	26,41	59,42	0,00	0,33
	~(kbdi) ~ forest	4	25,78	60,58	1,16	0,18
	~(kbdi) ~ hydro	4	26,23	61,48	2,07	0,12
	~(kbdi) ~ width	4	26,32	61,66	2,24	0,11
	~(kbdi) ~ n.trees	4	26,38	61,79	2,37	0,10
	~(kbdi) ~ width + forest	5	25,47	62,51	3,09	0,07
	~(kbdi) ~ width + hydro	5	26,17	63,91	4,49	0,03
	~(kbdi) ~ width + n.trees	5	26,27	64,11	4,69	0,03
	~(kbdi) ~ forest $\times$ hydro	6	25,46	65,20	5,78	0,02
	~(kbdi) ~ width $\times$ hydro	6	26,11	66,50	7,08	0,01
<i>Litoria jervisiensis</i>	~(temp) ~ width + hydro	5	40,53	92,64	0,00	0,48
	~(temp) ~ width $\times$ hydro	6	39,81	93,88	1,25	0,26
	~(temp) ~ width	4	42,98	94,98	2,34	0,15
	~(temp) ~ width + forest	5	42,57	96,71	4,08	0,06
	~(temp) ~ width + n.trees	5	42,94	97,46	4,83	0,04
	~(temp) ~ hydro	4	46,44	101,90	9,26	0,00
	~(temp) ~ forest $\times$ hydro	6	45,58	105,43	12,80	0,00
	~(temp) ~ forest	4	49,02	107,06	14,42	0,00
	~(temp) ~ 1	3	50,49	107,58	14,95	0,00
	~(temp) ~ n.trees	4	50,44	109,90	17,26	0,00
<i>Litoria nudidigitus</i>	~(kbdi) ~ forest	4	44,93	98,89	0,00	0,20
	~(kbdi) ~ width + forest	5	43,67	98,92	0,03	0,20
	~(kbdi) ~ hydro	4	45,42	99,86	0,97	0,12
	~(kbdi) ~ 1	3	46,64	99,87	0,99	0,12
	~(kbdi) ~ width + hydro	5	44,40	100,38	1,49	0,10
	~(kbdi) ~ n.trees	4	45,85	100,72	1,83	0,08
	~(kbdi) ~ width	4	45,95	100,93	2,04	0,07
	~(kbdi) ~ forest $\times$ hydro	6	43,90	102,06	3,18	0,04
	~(kbdi) ~ width $\times$ hydro	6	44,02	102,31	3,43	0,04
	~(kbdi) ~ width + n.trees	5	45,50	102,58	3,70	0,03
<i>Litoria peronii</i>	~(temp) ~ width $\times$ hydro	6	53,86	121,98	0,00	0,52
	~(temp) ~ width + hydro	5	55,28	122,14	0,16	0,48
	~(temp) ~ hydro	4	61,45	131,93	9,94	0,00
	~(temp) ~ width	4	62,56	134,14	12,16	0,00
	~(temp) ~ forest $\times$ hydro	6	60,91	136,09	14,10	0,00
	~(temp) ~ width + forest	5	62,26	136,09	14,11	0,00
	~(temp) ~ width + n.trees	5	62,45	136,47	14,49	0,00
	~(temp) ~ forest	4	68,37	145,76	23,78	0,00
	~(temp) ~ 1	3	69,65	145,90	23,91	0,00

Table A4. Summary of model parameters for top-ranked

occupancy/detection models for eight species. Statistics from the final step of our model selection procedure are given in Table 2 (see main text).

Species	Occupancy ( $\psi$ )					Detection ( $\rho$ )				
	Variable	Est.	SE	z	P	Variable	Est.	SE	z	P
<i>Litoria freycineti</i>	Intercept	-1.89	0.64	-2.94	0.003	Intercept	-1.88	0.74	-2.55	0.011
	Max FRI	-0.70	0.55	-1.28	0.200	SMD	1.54	0.95	1.63	0.104
<i>Litoria jervisiensis</i>	Intercept	-2.36	0.73	-3.23	0.001	Intercept	-0.04	0.34	-0.12	0.90
	Width	1.70	0.65	2.63	0.009	Temperature	-1.06	0.33	-3.23	0.001
	Hydroperiod	1.27	0.68	1.85	0.064					
<i>Litoria nudidigitus</i>	Intercept	-1.74	0.54	-3.21	0.001	Intercept	-0.81	0.40	-2.04	0.041
	Forest	0.91	0.55	1.66	0.097	SMD	0.94	0.37	2.55	0.011
	Mean FRI	-0.87	0.51	-1.72	0.085					
<i>Litoria peronii</i>	Intercept	-1.56	0.66	-2.36	0.018	Intercept	0.28	0.27	1.03	0.304
	Width	1.09	0.77	1.41	0.160	Temperature	0.83	0.25	3.38	0.001
	Hydroperiod	2.45	1.08	2.28	0.023					
	Interaction	1.93	1.32	1.46	0.145					
<i>Crinia signifera</i>	Intercept	3.26	1.07	3.04	0.002	Intercept	0.77	0.16	4.87	0.000
	Number of trees	-1.27	0.95	-1.33	0.184	SMD	-0.60	0.16	-3.64	0.000
	Max FRI	-1.17	0.79	-1.47	0.140					
<i>Limnodynastes peronii</i>	Intercept	-1.38	0.51	-2.69	0.007	Intercept	-0.81	0.35	-2.28	0.023
	Width	1.13	0.54	2.10	0.035	Temperature	-0.52	0.24	-2.15	0.031
	Max FRI	0.87	0.51	1.69	0.092					
<i>Paracrinia haswelli</i>	Intercept	-1.18	0.61	-1.93	0.054	Intercept	-0.29	0.29	-0.98	0.327
	Width	1.71	0.82	2.08	0.037	Date	-1.51	0.34	-4.51	0.000
	Hydroperiod	1.64	0.91	1.80	0.071					
	Interaction	2.34	1.24	1.88	0.060					
	Max FRI	1.42	0.79	1.79	0.073					
<i>Uperoleia tyleri</i>	Intercept	-0.78	0.45	-1.74	0.083	Intercept	0.38	0.22	1.72	0.086
	Width	1.35	0.58	2.34	0.020					
	Hydroperiod	0.14	0.47	0.28	0.776					
	Interaction	1.10	0.59	1.87	0.061					
	Max FRI	0.87	0.51	1.71	0.088					