

Ecography

**E6871**

Bateman, B. L., VanDerWal, J. and Johnson, C. 2011.  
Nice weather for bettongs: using weather events,  
not climate means, in species distribution models. –  
Ecography 34: xxx–xxx.

**Supplementary material**

## Appendix 1

Table A1a. **Top Models selected using the Bayesian information criterion (BIC) for northern bettong core versus northern bettong southern margin.** All temperature variables are in °C and rainfall variables are in mm. Variability is represented by standard deviation (SD) and averages by the mean (x). BIC model weights ( $w_i$ ) and model accuracy vaules are presented.

Variable	Variable	Variable	BIC	$w_i$	Accuracy
Minimum Temperature SD			11.96	0.54	1
Minimum Temperature SD	Daily Rainfall of Drought		17.94	0.03	1
Minimum Temperature SD	Temperature Range SD		17.94	0.03	1
Minimum Temperature SD	Length of Drought SD		17.94	0.03	1
Minimum Temperature SD	Number of Droughts		17.94	0.03	1
Minimum Temperature SD	Length of Drought x		17.94	0.03	1
Minimum Temperature SD	Number of Heat Waves		17.94	0.03	1
Minimum Temperature SD	Rainfall SD		17.94	0.03	1
Minimum Temperature SD	Minimum Rainfall Drought		17.94	0.03	1
Minimum Temperature SD	Heat Wave Length x		17.94	0.03	1
Minimum Temperature SD	Rainfall SD		17.94	0.03	1
Minimum Temperature SD	Heat Wave Length SD		17.94	0.03	1
Minimum Temperature SD	Temperature Range x		17.94	0.03	1
Minimum Temperature SD	Maximum Temperature SD		17.94	0.03	1
Minimum Temperature SD	Maximum Temperature x		17.94	0.03	1
Minimum Temperature SD	Minimum Temperature SD		17.94	0.03	1
Minimum Temperature SD	Total Degree Days > 28°C		17.94	0.03	1
Minimum Temperature SD	Rainfall of Drought x		17.94	0.03	1

**Table A1b. Top Models selected using the Bayesian information criterion (BIC) for northern bettong versus the rufous bettong.** All temperature variables are in °C and rainfall variables are in mm. Variability is represented by standard deviation (SD) and averages by the mean (x). BIC model weights ( $w_i$ ) and model accuracy vaules are presented.

Variable	Variable	Variable	Variable	Variable	BIC	$w_i$	Accuracy
Minimum Temperature SD	Rainfall SD	Length of Heat Wave x	Length of Drought x	Daily Rainfall of Drought	318.30	0.29	0.97
Minimum Temperature SD	Maximum Temperature x	Rainfall SD	Length of Drought x	Daily Rainfall of Drought	320.10	0.12	0.97
Minimum Temperature SD	Maximum Temperature x	Rainfall SD			320.85	0.08	0.97
Minimum Temperature SD	Maximum Temperature x	Rainfall SD	Daily Rainfall of Drought		321.60	0.06	0.97
Minimum Temperature SD	Rainfall SD	Length of Heat Wave x	Daily Rainfall of Drought		321.72	0.05	0.97
Minimum Temperature SD	Rainfall SD	Length of Heat Wave x	Number of Droughts	Daily Rainfall of Drought	321.77	0.05	0.97
Minimum Temperature SD	Maximum Temperature x	Rainfall SD	Number of Droughts	Daily Rainfall of Drought	322.40	0.04	0.97
Minimum Temperature SD	Temperature Range x	Temperature Range SD	Rainfall SD		322.49	0.04	0.97
Minimum Temperature SD	Rainfall SD	Length of Heat Wave x	Rainfall of Drought x	Daily Rainfall of Drought	323.23	0.02	0.97
Minimum Temperature SD	Maximum Temperature x	Temperature Range SD	Rainfall SD		323.89	0.02	0.97
Minimum Temperature x	Minimum Temperature SD	Rainfall SD	Daily Rainfall of Drought		324.15	0.02	0.97
Minimum Temperature SD	Maximum Temperature x	Rainfall SD	Rainfall of Drought x	Daily Rainfall of Drought	324.15	0.02	0.97
Minimum Temperature x	Minimum Temperature SD	Temperature Range x	Temperature Range SD	Rainfall SD	324.28	0.01	0.97
Minimum Temperature SD	Maximum Temperature x	Temperature Range x	Temperature Range SD	Rainfall SD	324.28	0.01	0.97
Minimum Temperature SD	Rainfall SD	Total Degree Days > 28°C	Length of Drought x	Daily Rainfall of Drought	324.38	0.01	0.97
Minimum Temperature SD	Maximum Temperature x	Temperature Range SD	Rainfall SD	Daily Rainfall of Drought	324.78	0.01	0.97
Minimum Temperature x	Minimum Temperature SD	Rainfall SD	Length of Drought x	Daily Rainfall of Drought	325.09	0.01	0.97

**Table A1c. Top Models selected using the Bayesian information criterion (BIC) for northern bettong presence versus northern bettong absence in the southern margin.** All temperature variables are in °C and rainfall variables are in mm. Variability is represented by standard deviation (SD) and averages by the mean (x). BIC model weights ( $w_i$ ) and model accuracy values are presented.

Variable	Variable	Variable	Variable	BIC	$w_i$	Accuracy
Maximum Temperature SD	Rainfall x	Number of Droughts		14.95	0.18	1.00
Rainfall x	Rainfall of Drought x	Minimum Rainfall of Drought		14.95	0.18	1.00
Minimum Temperature x	Rainfall of Drought x	Minimum Rainfall of Drought		14.95	0.18	1.00
Minimum Temperature x	Number of Heat Waves	Total Degree Days > 28°C	Daily Rainfall of Drought	18.69	0.03	1.00
Minimum Temperature x	Temperature Range x	Length of Drought x	Length of Drought SD	18.69	0.03	1.00
Maximum Temperature x	Temperature Range x	Length of Drought x	Length of Drought SD	18.69	0.03	1.00
Minimum Temperature x	Temperature Range SD	Rainfall x	Rainfall of Drought x	18.69	0.03	1.00
Minimum Temperature x	Minimum Temperature SD	Length of Drought x	Length of Drought SD	18.69	0.03	1.00
Rainfall x	Number of Heat Waves	Rainfall of Drought x	Minimum Rainfall of Drought	18.69	0.03	1.00
Rainfall x	Length of Drought SD	Rainfall of Drought x	Minimum Rainfall of Drought	18.69	0.03	1.00
Minimum Temperature x	Rainfall x	Rainfall of Drought x	Minimum Rainfall of Drought	18.69	0.03	1.00
Length of Heat Wave SD	Length of Drought x	Length of Drought SD	Minimum Rainfall of Drought	18.69	0.03	1.00
Minimum Temperature x	Length of Drought SD	Rainfall of Drought x	Minimum Rainfall of Drought	18.69	0.03	1.00
Rainfall SD	Number of Heat Waves	Rainfall of Drought x	Minimum Rainfall of Drought	18.69	0.03	1.00
Number of Heat Waves	Rainfall of Droughts x	Minimum Rainfall of Drought	Daily Rainfall of Drought	18.69	0.03	1.00
Maximum Temperature SD	Number of Heat Waves	Rainfall of Drought x	Minimum Rainfall of Drought	18.69	0.03	1.00
Minimum Temperature x	Maximum Temperature SD	Rainfall of Drought x	Minimum Rainfall of Drought	18.69	0.03	1.00
Minimum Temperature x	Rainfall of Drought x			20.14	0.01	0.98
Minimum Temperature x	Rainfall SD	Rainfall of Drought x		21.43	0.01	0.95

## Appendix 2

Video A2. GLM weather models in geographical space from 1980–2006 for northern bettongs core versus northern bettongs southern range edge.

The core, Lamb Range, represents 'stable northern bettong weather' represented by red here and the southern range edge, the Coane Range weather, is represented by green.

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## Appendix 3

Video A3. GLM weather models in geographical space from 1980–2006 for northern bettongs versus rufous bettongs

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