

Environmental predictors of livestock predation: a lion's tale

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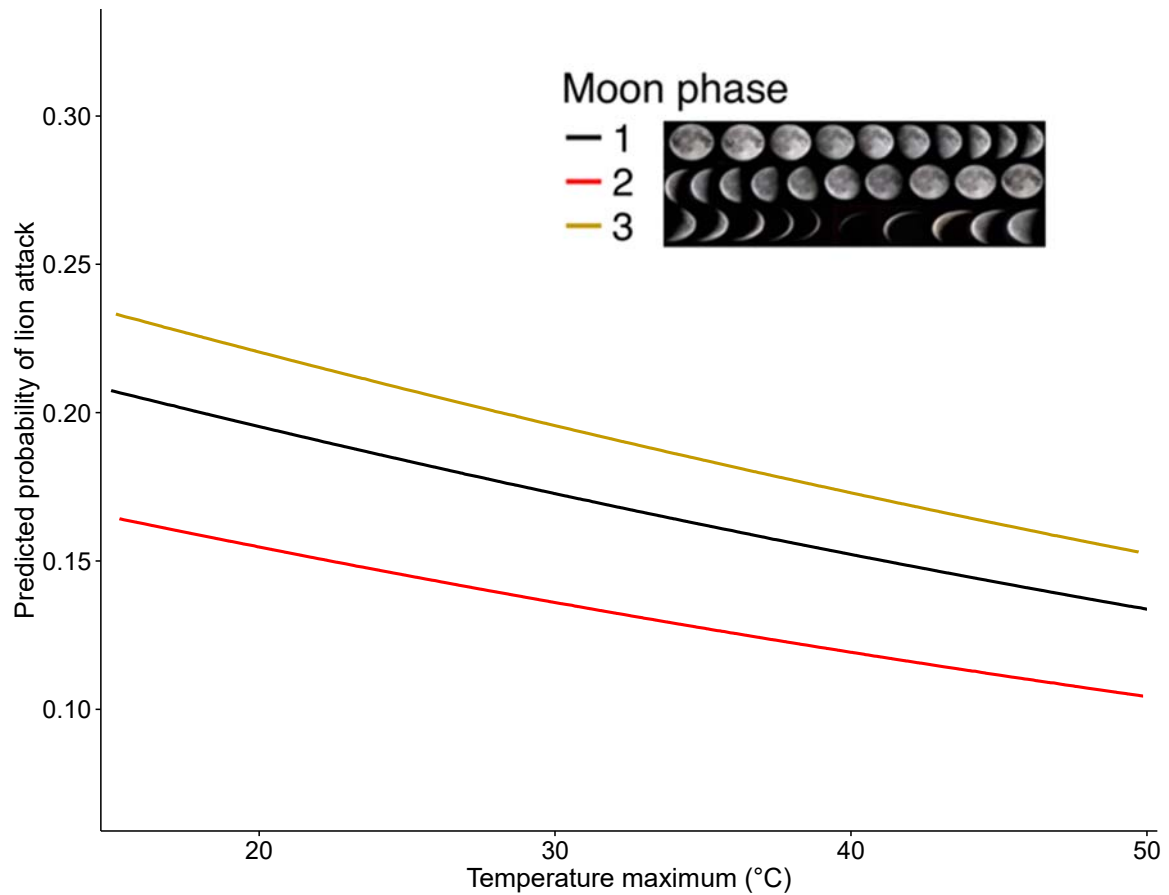
SUPPLEMENTARY TABLE 1 Yearly summaries of the number of lion–livestock incidents, number of livestock involved, and associated cost with environmental variables for Pandamatenga during 2010–2015.

Year	Incidents	Livestock attacked	Cost (BWP)	Mean temperature (°C)	Extreme minimum temperature (°C)	Extreme maximum temperature (°C)	Total rainfall (mm)
2010	80	103	275,500	23.44	0.72	42.11	No data
2011	43	53	152,850	23.33	−0.89	41.61	No data
2012	80	140	309,550	23.33	0.39	40.50	No data
2013	52	86	197,150	23.28	5.11	40.72	675.7
2014	81	126	309,800	23.44	0.50	37.72	491.0
2015	48	64	145,350	23.78	4.89	41.00	307.6

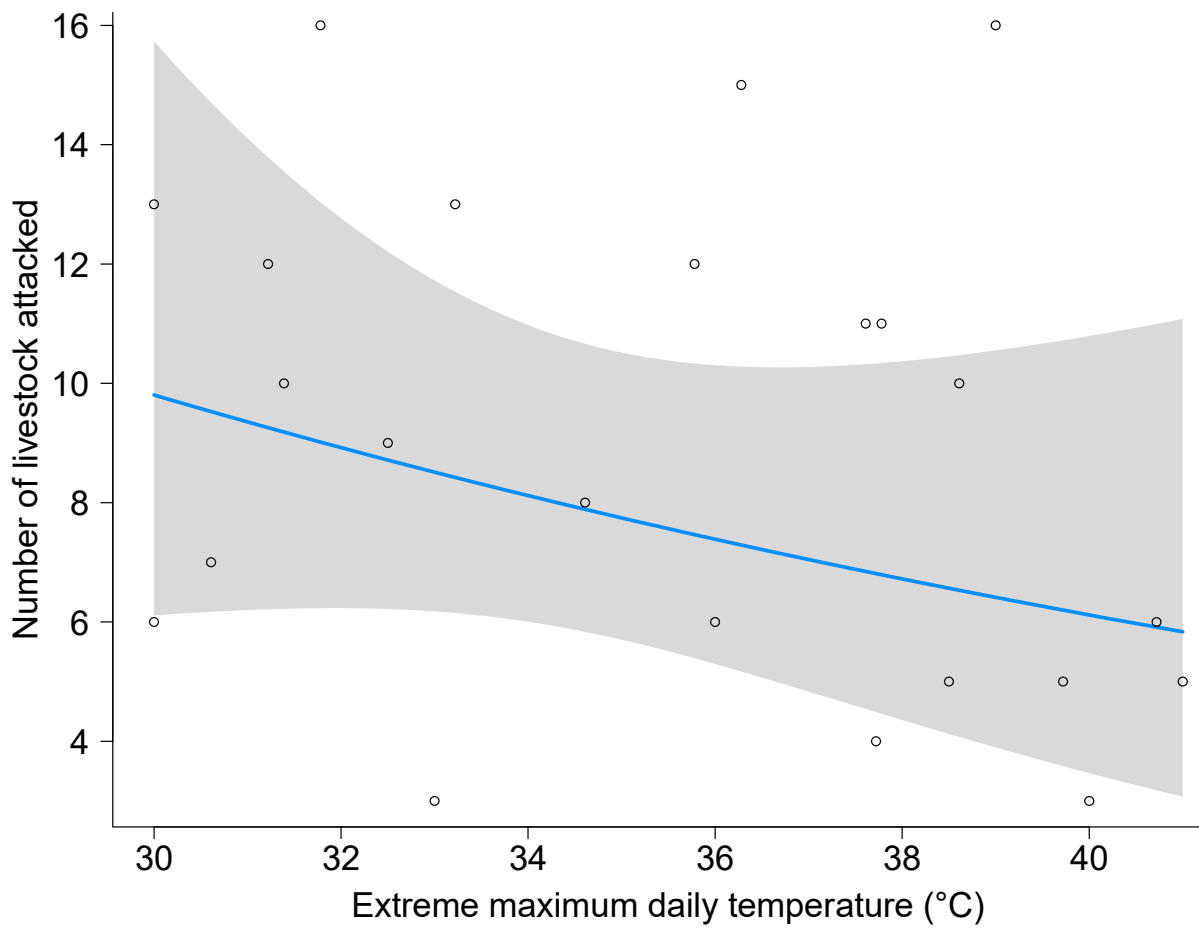
SUPPLEMENTARY TABLE 2 Odds of a lion–livestock incident in Pandamatenga based on different moon phases and change in temperature.

Environmental variable	Odds of an incident	Confidence levels	
		2.5 %	97.5 %
Moon phase 1	0.303	0.21	0.44
Moon phase 2	0.229	0.16	0.33
Moon phase 3	0.351	0.24	0.50
Minimum temperature (°C)	0.975 ¹	0.96	1.00

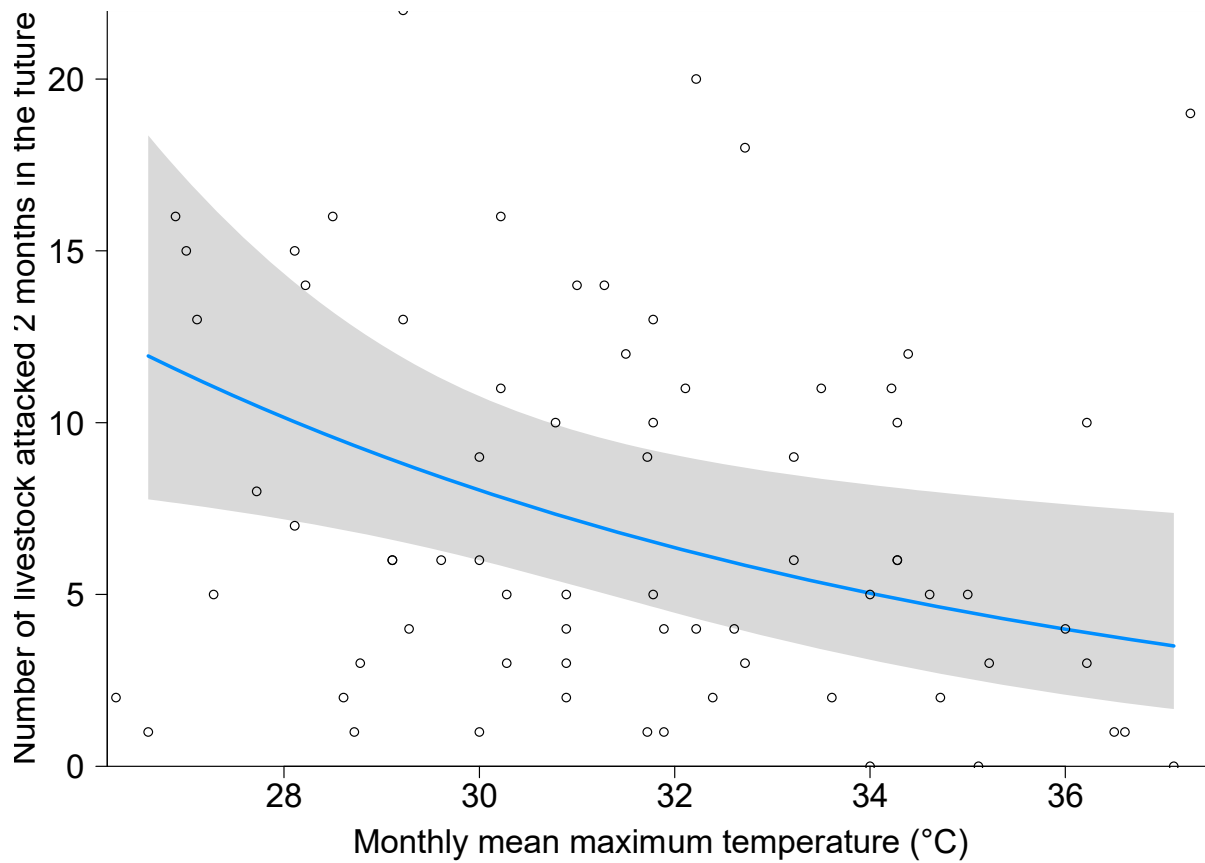
¹This value is the odds ratio per degree increase in temperature.



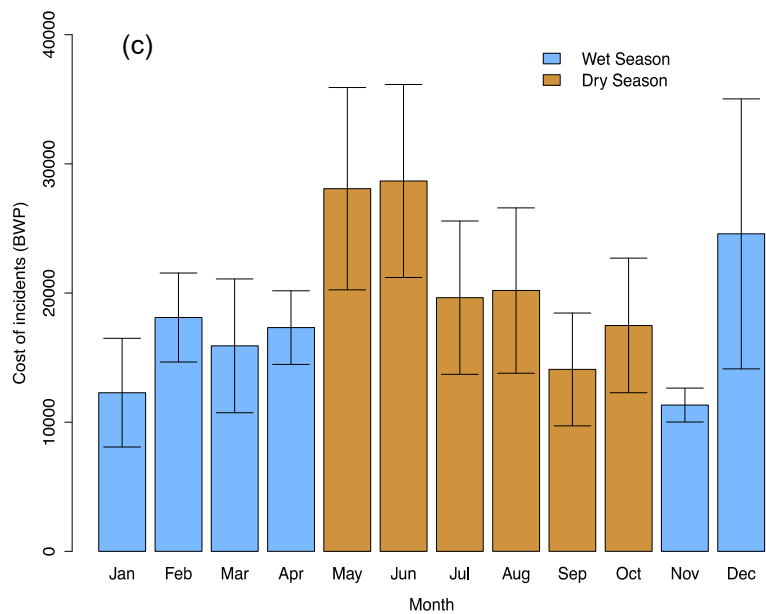
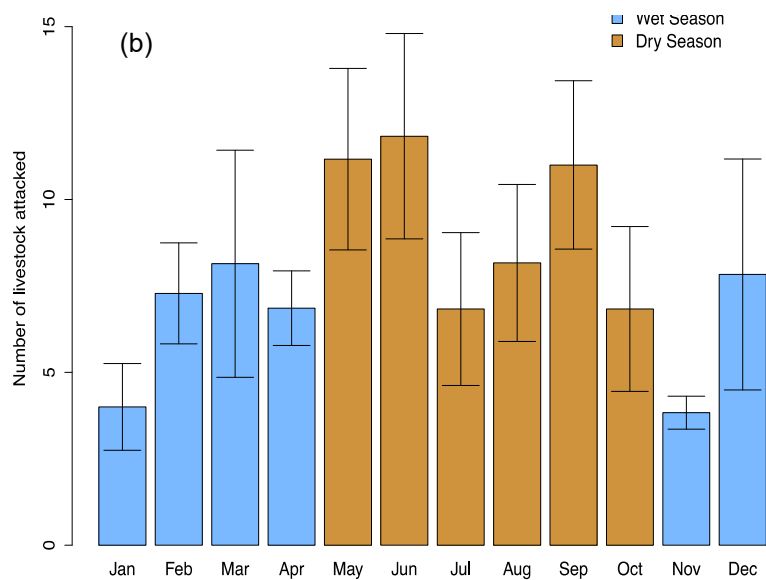
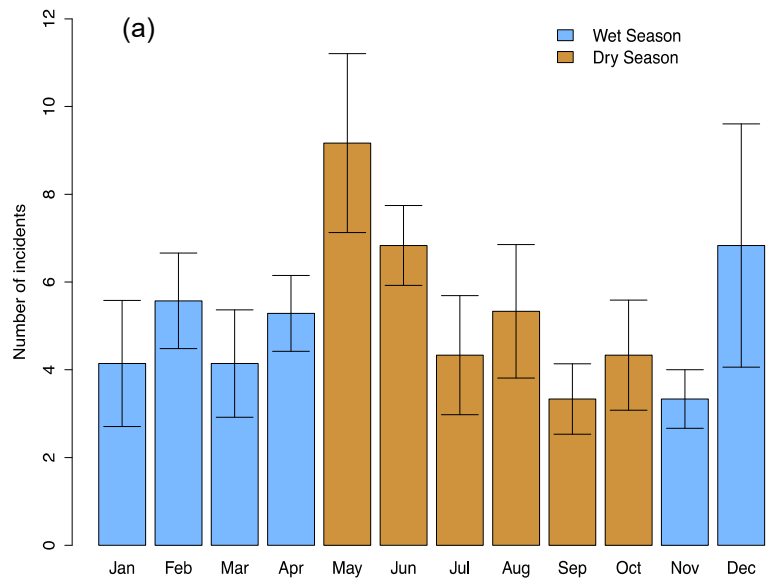
SUPPLEMENTARY FIG. 1 The predicted probability (with 95% confidence limits) of a lion–livestock attack in Pandamatenga based on the maximum temperature (°C) of a given day under different moon phases: phase 1 is the full moon and subsequent 9 days, phase 2 is the 10 days prior to the full moon, and phase 3 includes the intermediary days.



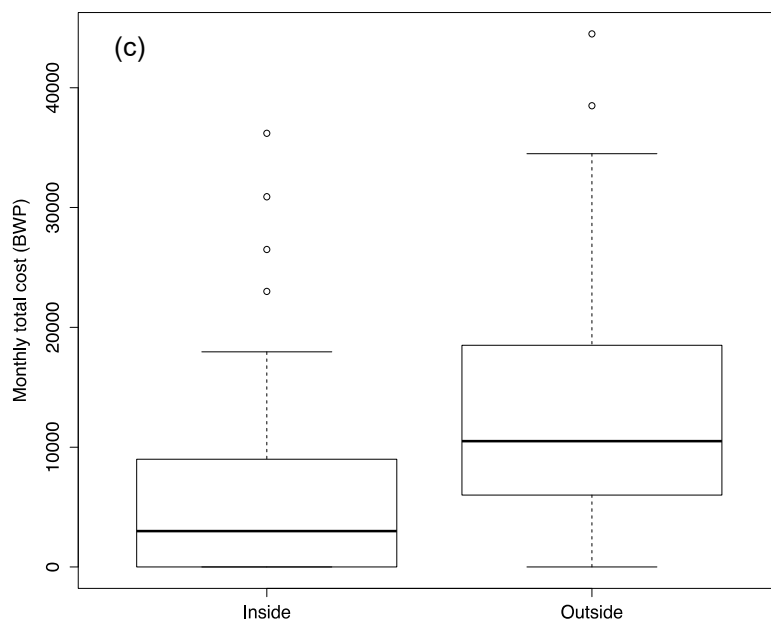
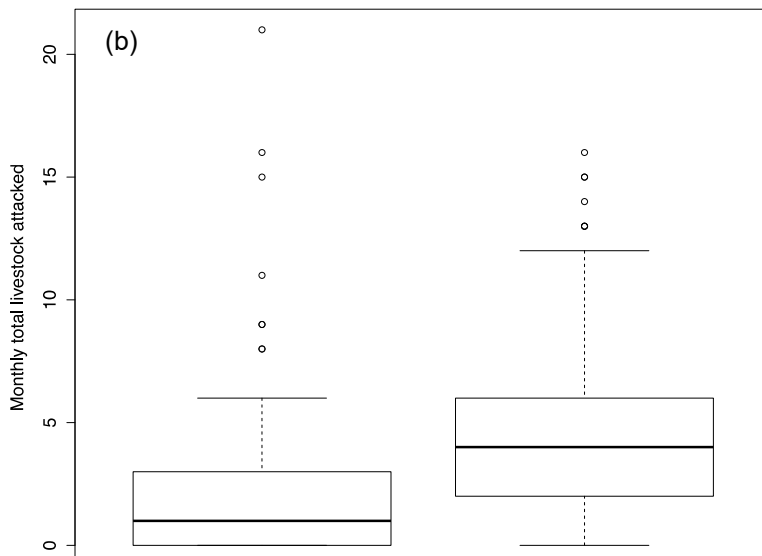
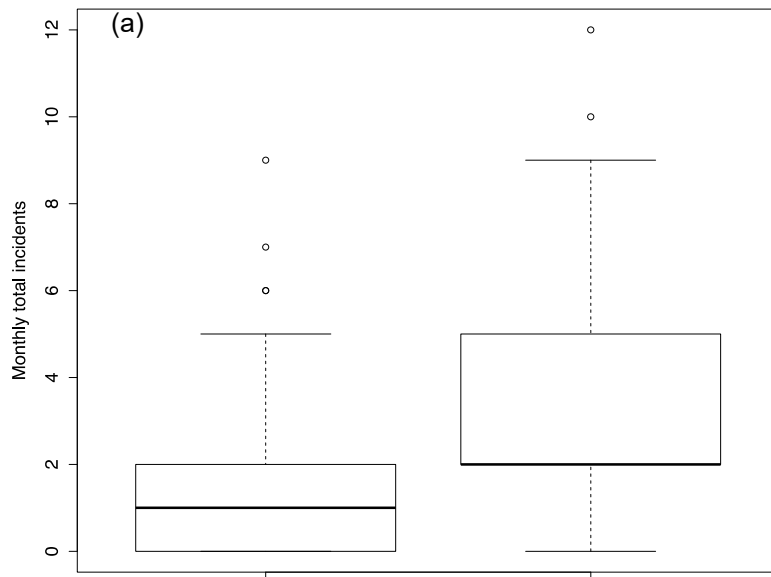
SUPPLEMENTARY FIG. 2 The effect of extreme maximum daily temperature (°C) on the number of livestock attacked by lions in Pandamatenga per month using fitted generalized linear model lines and Wald 95% confidence intervals based on standard errors.



SUPPLEMENTARY FIG. 3 The effect of monthly mean maximum daily temperature (°C) on the number of livestock attacked by lions in Pandamatenga 2 months into the future, using fitted generalized linear model lines and Wald 95% confidence intervals based on standard errors returned by the *R* function *predict.glm*.



SUPPLEMENTARY FIG. 4
 Monthly means of lion-livestock attacks between seasons from 2010-2016 in Pandamatenga, showing (a) the number of incidents, (b) livestock involved, and (c) the associated cost with standard error bars.



SUPPLEMENTARY FIG. 5
 Comparison of monthly summaries of (a) the number incidents, (b) livestock attacked and (c) the associated cost of lion–livestock attacks taking place inside and outside farmers kraals in Pandamatenga during 2010–2016.