

## Supplementary Materials for **Snakebites are associated with poverty, weather fluctuations, and El Niño**

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Published 11 September 2015, *Sci. Adv.* **1**, e1500249 (2015)

DOI: 10.1126/sciadv.1500249

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Table S1. Summary statistics for the GWR model (the global model indicates a linear regression model without considering spatial heterogeneity).

Table S2. Time series model selection.

Supplementary Materials

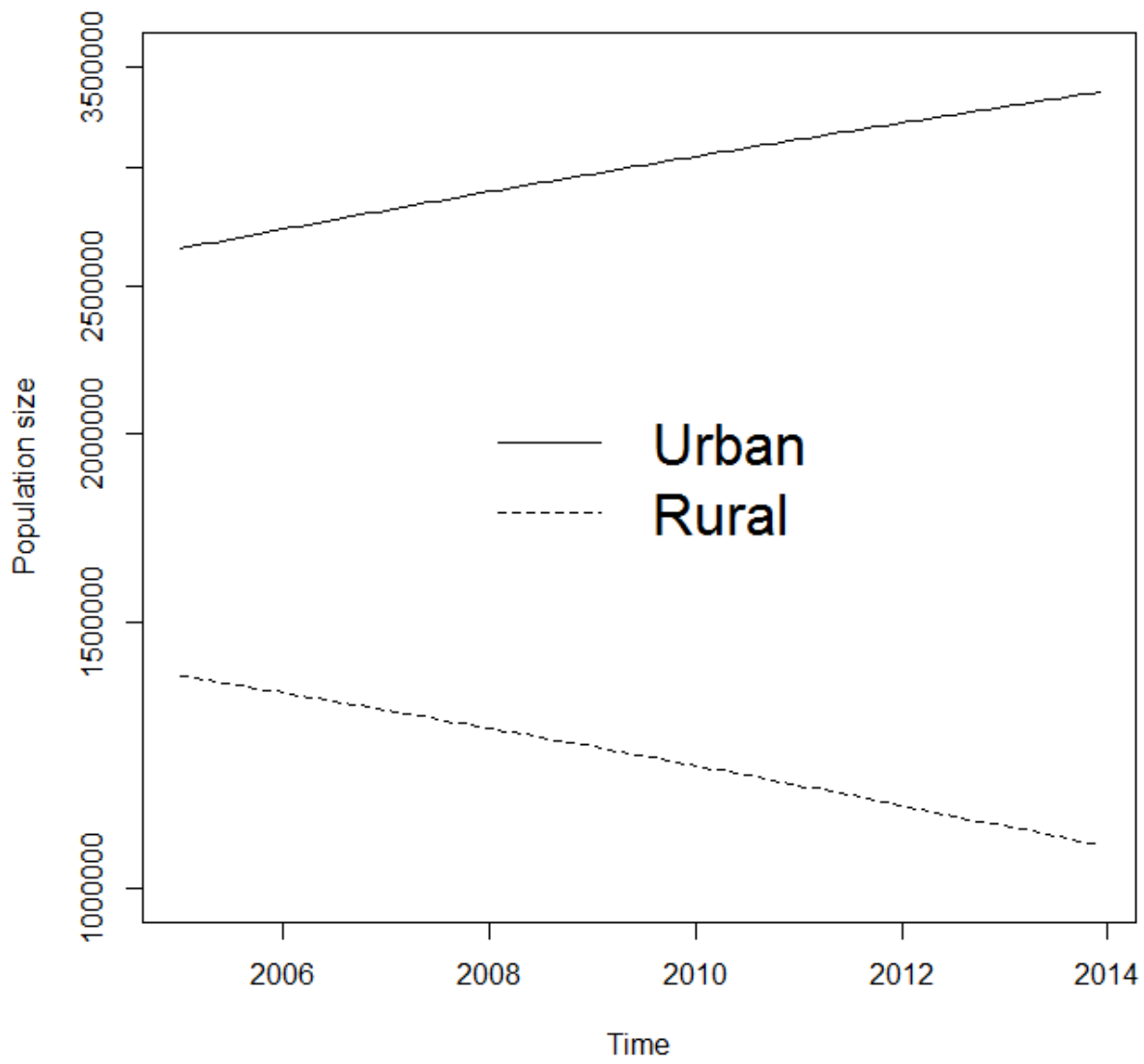
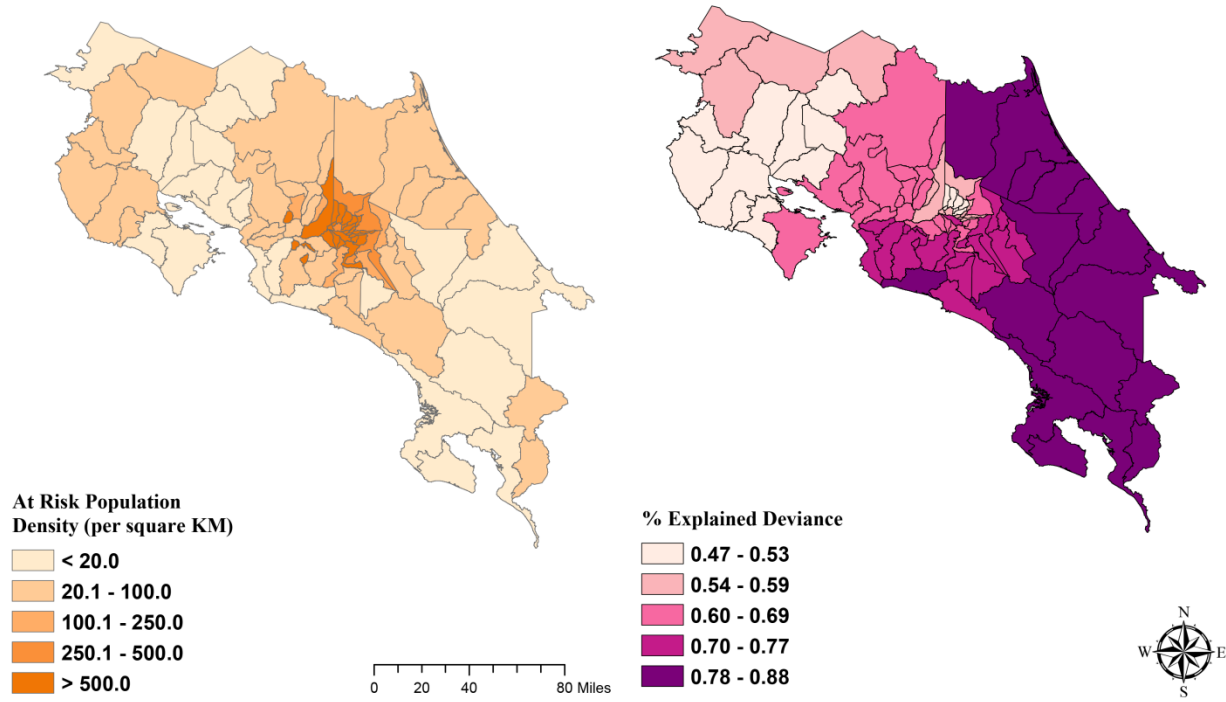


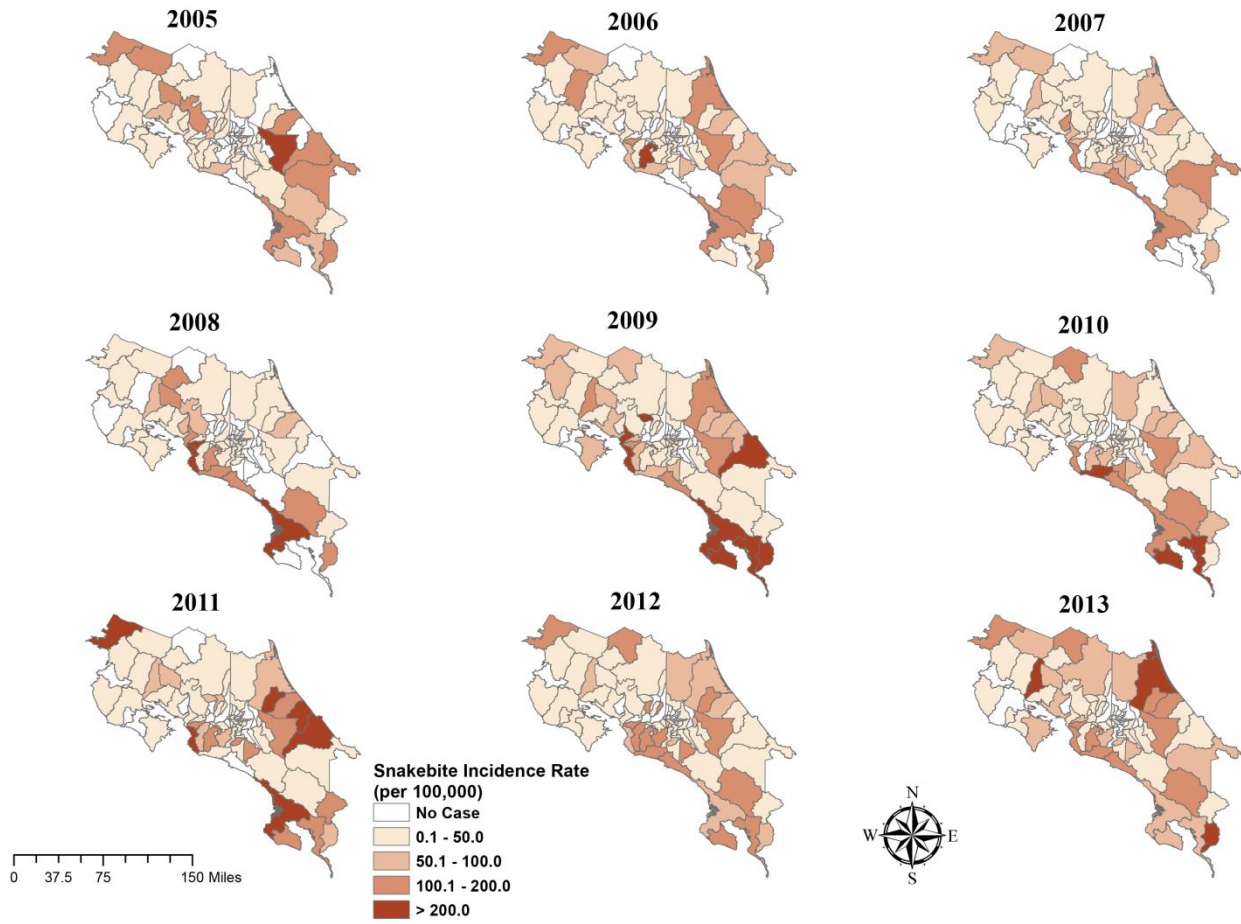
Fig. S1. Rural and urban population trends in CR from 2000 to 2013.

A

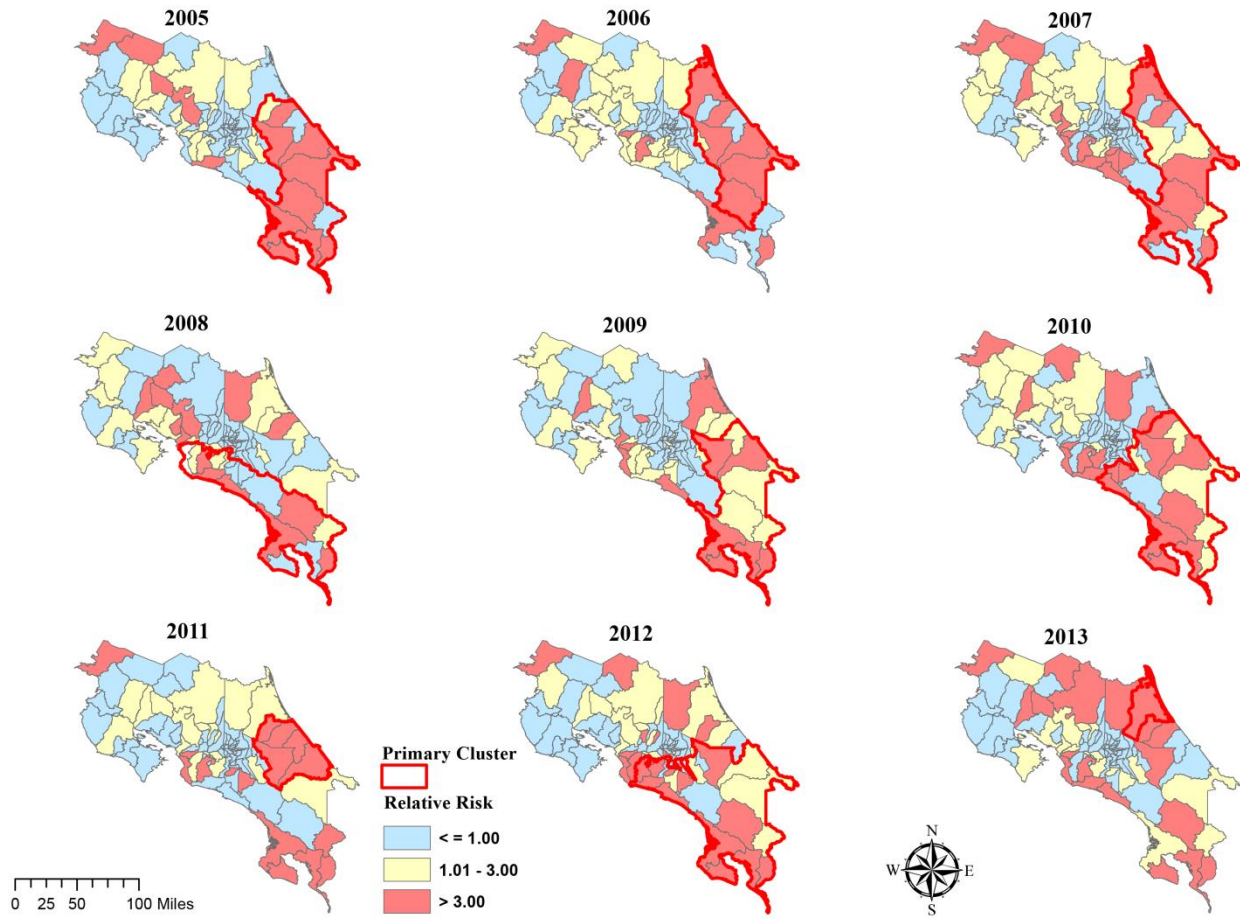
B



**Fig. S2. (A) At-risk population density by canton. (B) Model diagnostics of GWR.**



**Fig. S3. Annual snakebite incidence rate in CR, by canton, from 2005 to 2013.**



**Fig. S4. Snakebite incidence hot spots in CR from 2005 to 2013; annual clusters have red boundaries.**

**Table S1 Summary statistics of GWR model ( the global model indicates a linear regression model without considering spatial heterogeneity).**

Summary of Coefficients

Global Model	Estimate	SE	z(Est/SE)
Intercept	-6.26	0.0157	-397.93
Destitute Housing	0.29	0.0183	15.59
Elevation	-0.68	0.0176	-38.66
Poverty Gap	0.36	0.0148	24.09
Precipitation	0.28	0.0117	24.2

GWR	Mean	STD	Min	Max	Range
Intercept	-5.76	0.37	-6.79	-5.02	1.77
Destitute Housing	0.46	0.29	-0.37	1.11	1.47
Elevation	-0.51	0.34	-1.18	0.06	1.24
Poverty Gap	0.66	0.44	-0.38	1.34	1.72
Precipitation	-0.52	0.54	-2.36	0.29	2.65

Model Diagnostics

Source	Deviance	Explained Deviance (%)
Global Model	5386.01	56.2
GWR Model	2188.78	82.2
Difference	3197.23	-

**Table S2 Model Selection for the best autoregressive model explaining monthly snakebite incidence in Costa Rica.** The Akaike Information Criterion, AIC, for the best model (minimum AIC), is bolded. AR indicates an autoregressive component, SAR indicates a seasonal autoregressive component, Temp is for temperature, Rain is rainfall.

Model Structure (Lag in months)	AIC
AR(1), SAR(3)	153
AR(1), SAR(7)	152
AR(1)	160
SAR(3)	157
SAR(7)	161
<b>AR(1), SAR(3), Temp(1), Rain(11)</b>	<b>139</b>
SAR(3), Temp(1), Rain(11)	143
AR(1), SAR(7), Temp(1), Rain(11)	144
SAR(7), Temp(1), Rain(11)	142