Latitudinal Gradient and False Spring Risk

Figure 1: Number of False Springs (False Spring occurs when: $Tmin <= -3$ after ($GDD >= 250$ & $DOY >= 75$)) across a latitudinal gradient in Europe from 1965-2015. More red dots have fewer false springs, whereas blue dots have more false springs. The size of the dot corresponds to frequency of false springs over the 50 year time frame. False spring events were calculated by using meteorological data from NOAA climate data (https://www.ncdc.noaa.gov/cdo-web/search?datasetid=GHCND). Growing degree days were considered anything over 5°C. A false spring event would not count if it was before mid March (Augspurger, 2013) and if there were not at least 250 growing degree days before the daily minimum temperature went below -3°C.

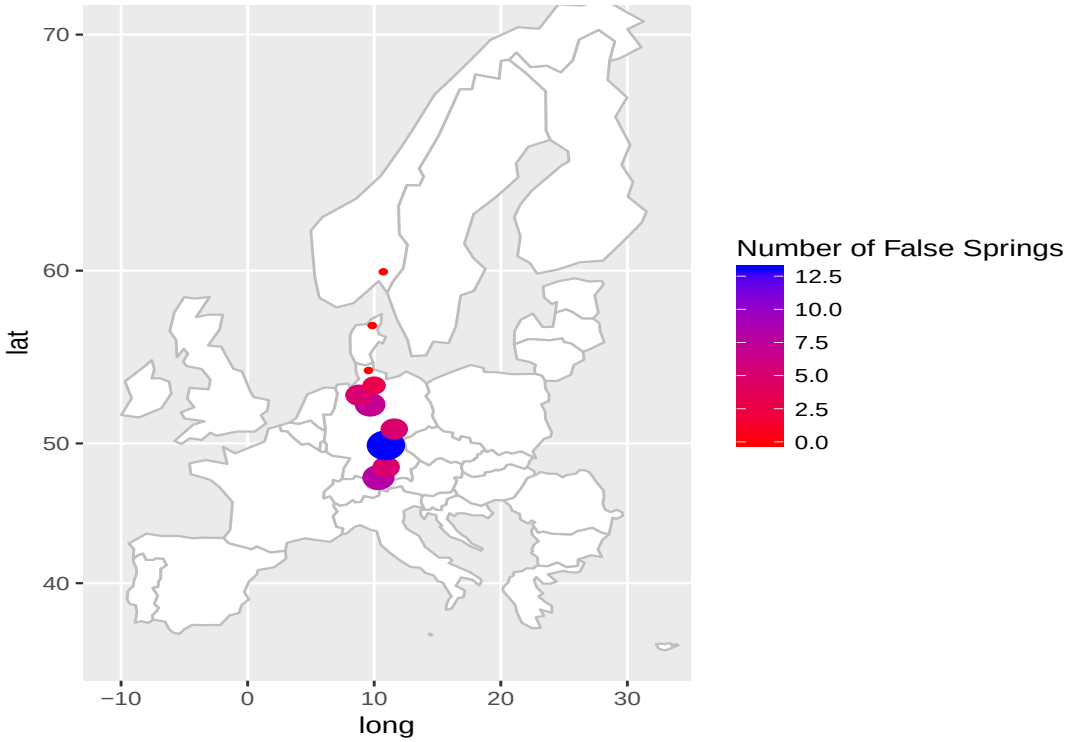


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Table 1: The results from a linear regression model analyzing the relationship between latitude and frequency of false springs.

	Dependent variable:
	Latitude
new	-0.692^{**}
	(0.213)
Constant	55.952^{***}
	(1.291)
Observations	10
R^2	0.568
Adjusted R^2	0.515
Residual Std. Error	2.651 (df = 8)
F Statistic	10.538^{**} (df = 1; 8)
Note:	*p<0.1; **p<0.05; ***p<0.01

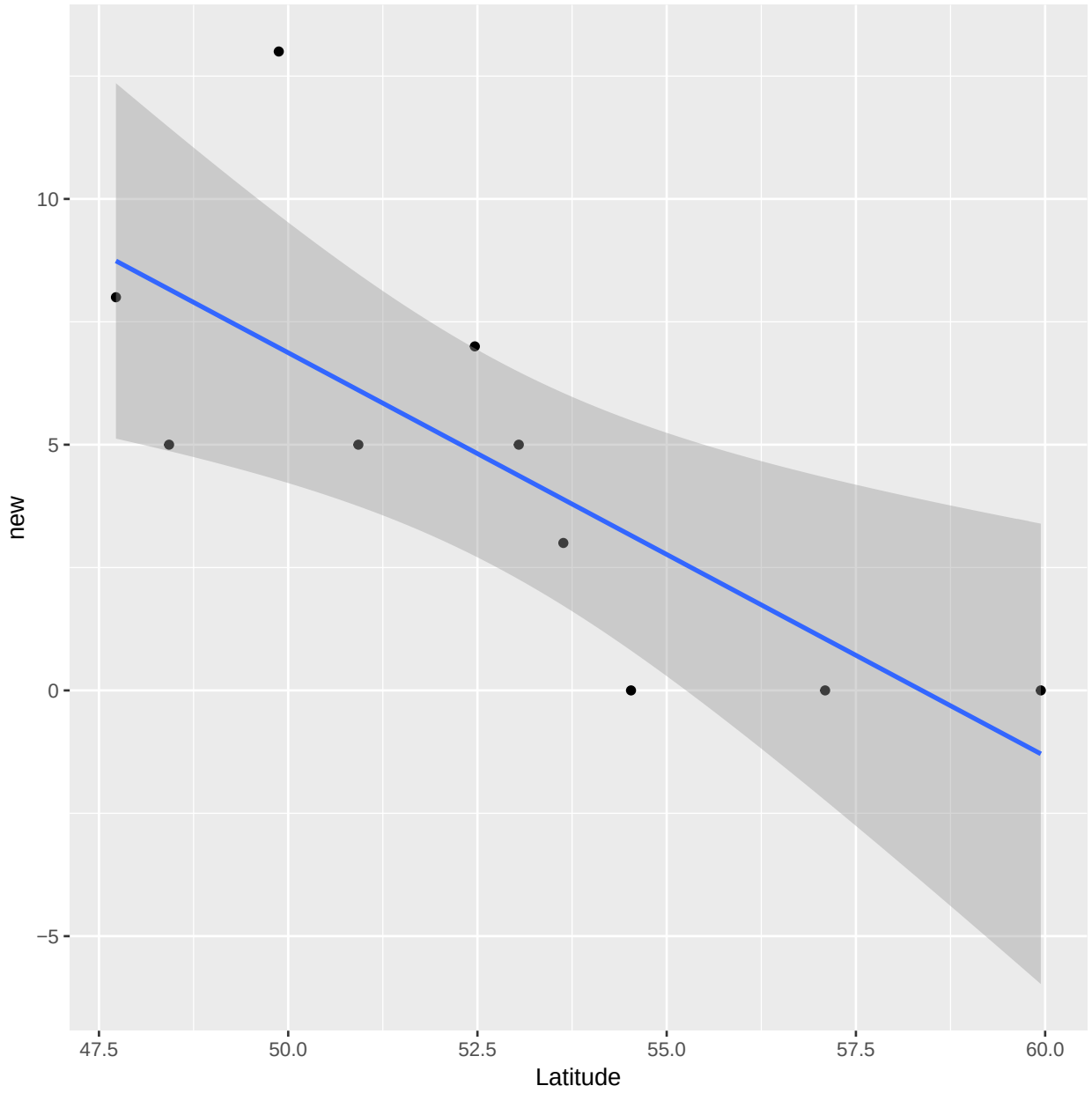

Figure 2: A scatterplot indicating number of false springs over a fifty year period (from 1965 to 2015) across a latitudinal gradient.

References

Augspurger, C.K. (2013) Reconstructing patterns of temperature, phenology, and frost damage over 124 years: Spring damage risk is increasing. *Ecology* **94**, 41–50.