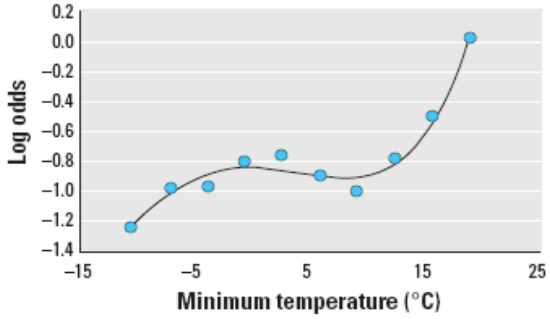

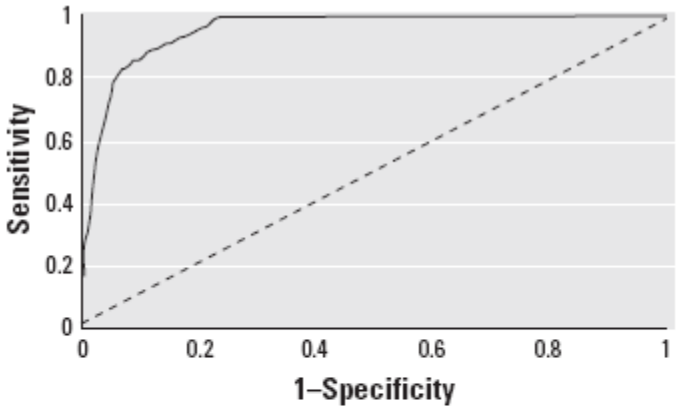

Figure 1. Relationship between the occurrence of black-legged tick presence at a site and minimum temperature (top) and evaluation of model (bottom). From Brownstein et al. 2003 Env. Hlth Perspect. **Top Panel:** Log odds plot for relationship between *I. Scapularis* population maintenance and minimum temperature (T). Minimum temperature showed a strong positive association with odds of an established *I. Scapularis* population. According to good-ness of fit testing, the relationship was fit best by a fourth order polynomial regression (R^2 = 0.97) Log odds = 0.0000067^4 + 0.00027^3-$0.0027T^2$ + 0..0002T – 0.8412. **Bottom Panel:** ROC Plot describing the accuracy of the autologistic model. This method graphs sensitivity versus 1-specificity over all possible cutoff probabilities. The AUC is a measure of overall fit, where 0.5 {a 1:1 line} indicates a chance performance {dashed line}. The plot for the autologistic model significantly outperformed the chance model with an accuracy of 0.95 {p<0.00005}.

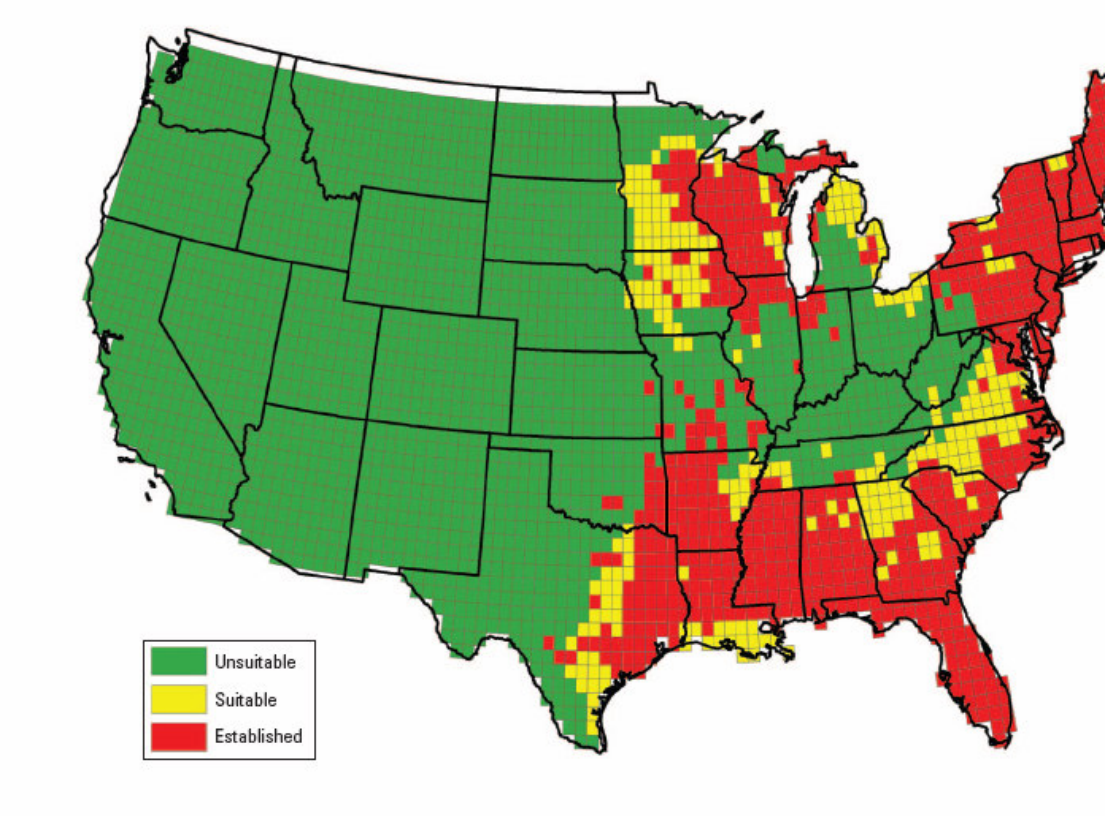

Figure 2. Forecast geographic distribution of the black-legged tick vector east of the 100th meridian in the United States for DSSPL. From Brownstein et al (2003) Envr. Hlth. Perspect. 2a. New distribution map for *I. Scapularis* in the United States. To determine whether a given cell can support *I. Scapularis* populations, a probability cutoff point for habitat suitability from the autologistic model was assessed by sensitivity analysis. A threshold of 21% probability of establishment was selected, giving a sensitivity of 97% and a specificity of 86%. This cutoff was used to reclassify the reported distribution map {Dennis et al. 1998}. The autologistic model defined 81% of the reported locations {n=427} as established and 14% of the absent areas {n=2,327} as suitable. All other reported and absent areas were considered unsuitable. All areas previously defined as established maintained the same classification.

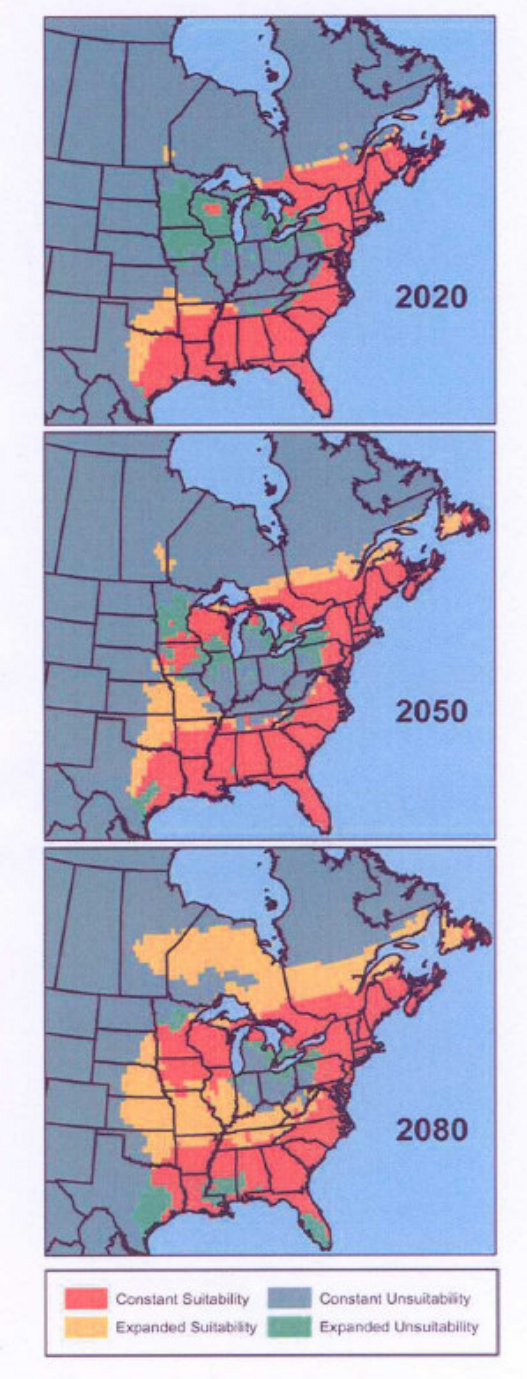

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Figure 3. Forecast change in black-legged tick distribution in Eastern and Central North America under climate change scenarios using DSSPL. From Brownstein et al (2005a) EcoHealth