Appendix C: Power Analysis Results for the Occurrence Probability Model

Caption for figures:
Power curves (top panel) show the estimated power to detect a hotspot/coldspot of various effect sizes for each sample size (number of transect segments) from 1 to 200. Red solid, dashed, and dotted lines represent the estimated power to detect a hotspot of 3, 10, and 20 times the reference prevalence, respectively. Blue solid, dashed, and dotted lines represent the estimated power to detect a coldspot of \( \frac{1}{3} \), \( \frac{1}{10} \), and \( \frac{1}{20} \) times the reference prevalence, respectively. Red lines that are absent indicate that the estimated power to detect a hotspot was undefined because the effect size times the reference prevalence was greater than one. Boxplots (bottom panel) show the distribution of estimated power to detect a hotspot/coldspot of various effect sizes based on the number of transect segments surveyed within each grid cell for each spatial resolution. The number of grid cells with survey effort and the percentage of grid cells that achieve 80% power to detect a hotspot/coldspot are shown below the horizontal axis.

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