

Appendix D: Surface Misclassification Rates and Bias

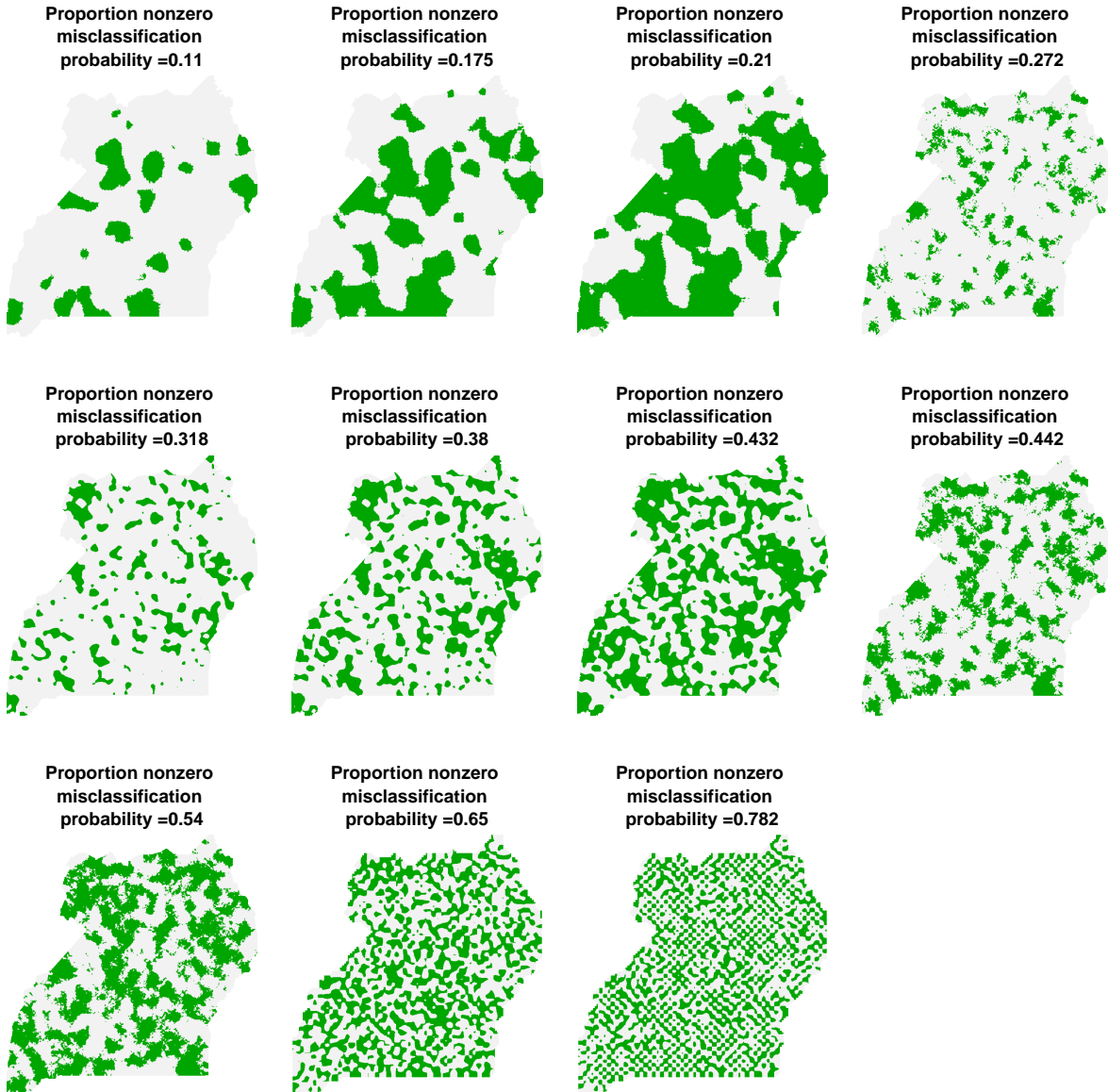


Figure 1: Binary raster surfaces generated for simulation studies. Continuous raster surfaces representing varying levels of smoothness, i.e. spatial autocorrelation ($\rho \in [-0.95, 0.95]$), were discretized into categorical surfaces that represented rare, moderately prevalent, and prevalent cell types (approximated 15, 30, and 45% coverage, respectively). The resulting surfaces, along with associated misclassification probabilities are presented here.

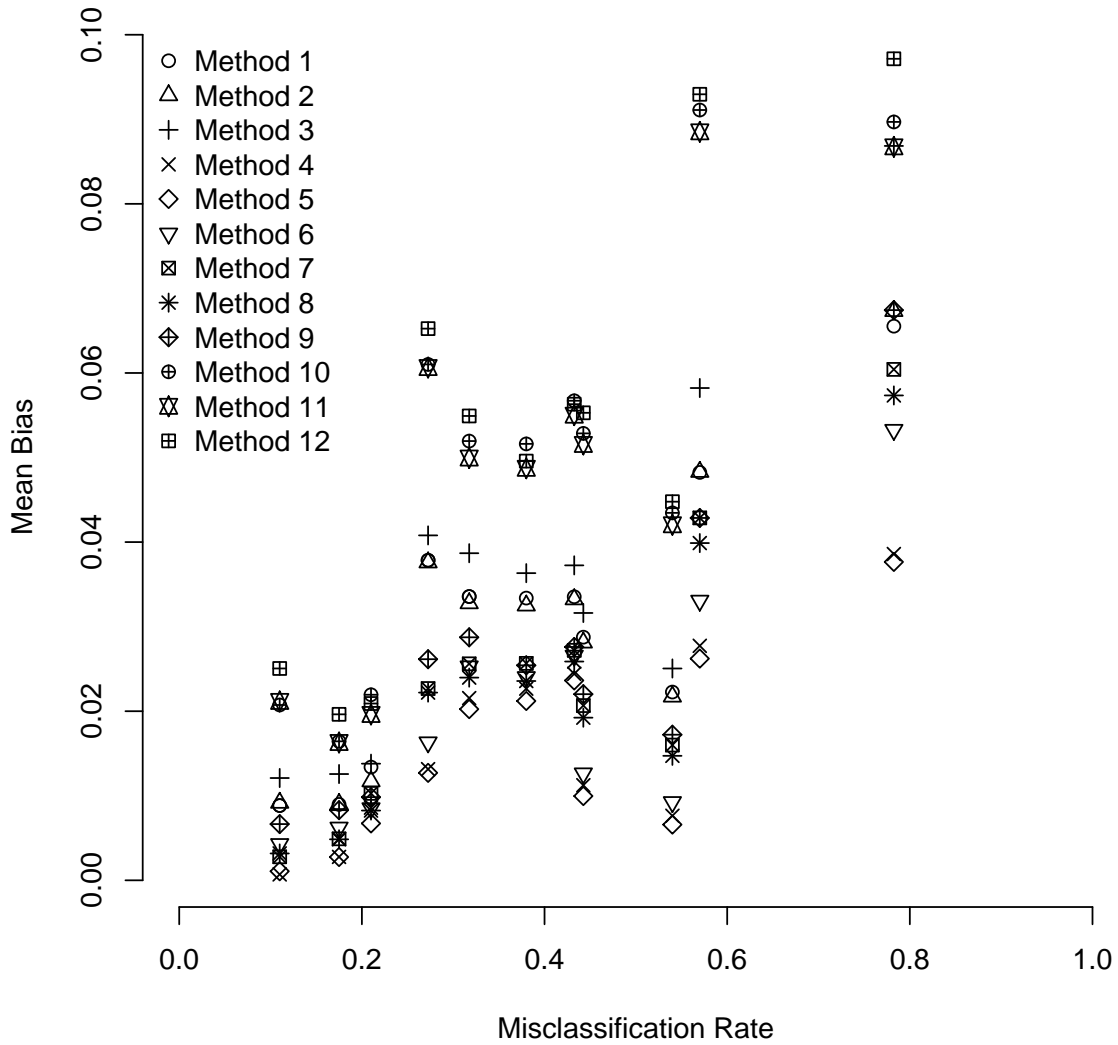


Figure 2: Relationship between bias and surface misclassification rates. Bias of effect estimates increased with misclassification rate of categorical rasters across all methods, i.e. neighborhood definitions. Methods 1–3 correspond to use of 1 km rural buffer means with 1, 2, and 5 km urban buffer means, respectively. Methods 4–6 correspond to use of 5 km rural buffer means with 1, 2, and 5 km urban buffer means, respectively. Methods 7–9 correspond to use of 10 km rural buffer means with 1, 2, and 5 km urban buffer means, respectively. Methods 10–12 correspond to use of 20 km rural buffer means with 1, 2, and 5 km urban buffer means, respectively.