

Ecography

ECOG-04728

Lany, N. K., Zarnetske, P. L., Finley, A. O. and McCullough, D. G. 2019. Complimentary strengths of spatially-explicit and multi-species distribution models. – Ecography doi: 10.1111/ecog.04728

Supplementary material

Complimentary strengths of spatially-explicit vs. multi-species distribution models

Appendix 1

Table A1: Proportion of stands containing each focal species in 35,569 forest stands inventoried on state and national forest land in Michigan.

USDA species code	Latin name	Common Name	N_{stands}	Prevalence
PIST	<i>Pinus strobus</i>	eastern white pine	10274	0.289
THOC2	<i>Thuja occidentalis</i>	northern white-cedar	6536	0.184
PIBA2	<i>Pinus banksiana</i>	jack pine	5573	0.157
ACSA3	<i>Acer saccharum</i>	sugar maple	4667	0.131
TSCA	<i>Tsuga canadensis</i>	eastern hemlock	2460	0.069
BEAL2	<i>Betula alleghaniensis</i>	yellow birch	2021	0.057

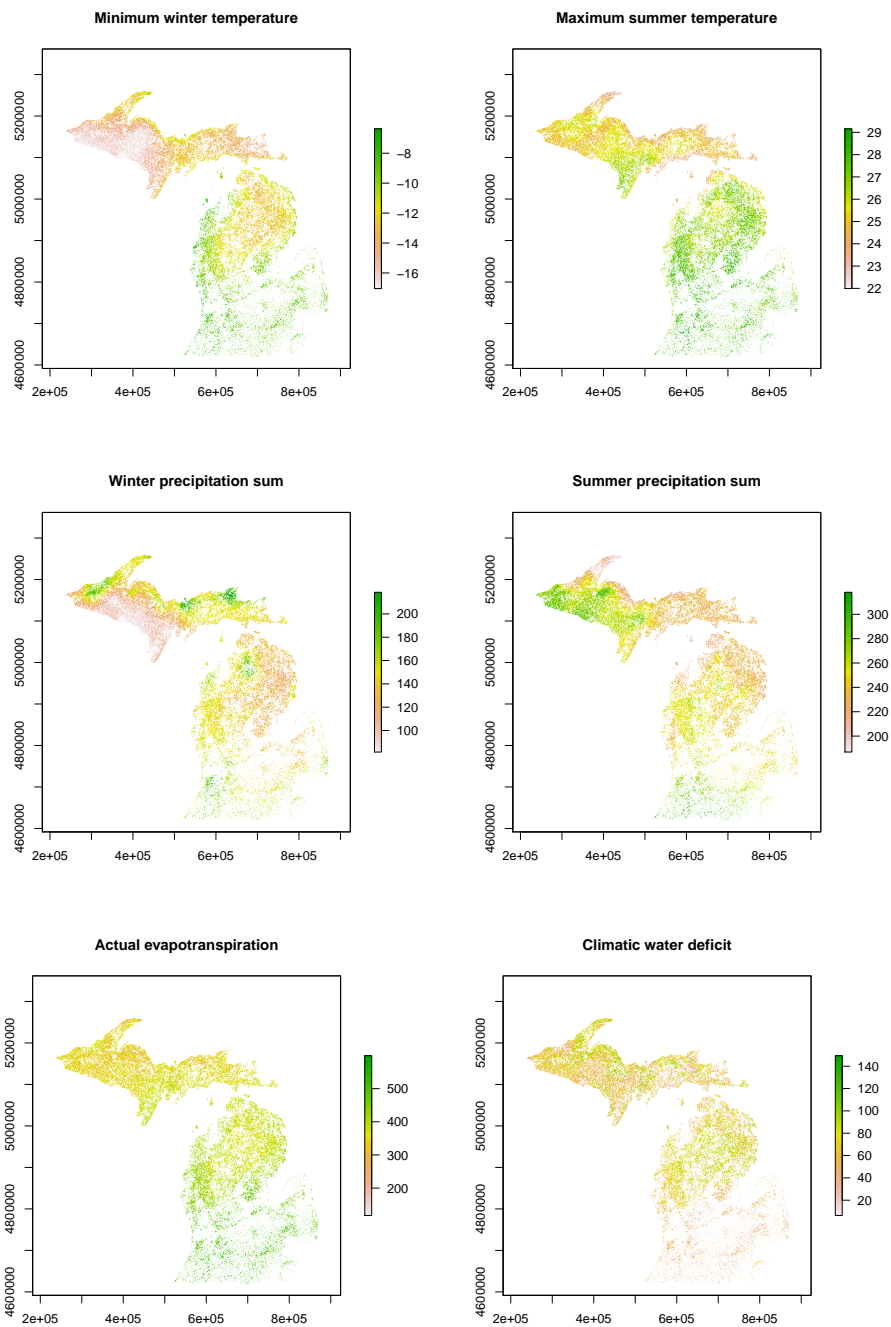


Figure A1: The six abiotic covariates all showed large-scale spatial structure. Temperatures are shown in °C. Precipitation, , evapotranspiration and water deficit are shown in *mm*. Only data from pixels classified as ‘forested’ by the United States National Land Cover Database were included in analyses.

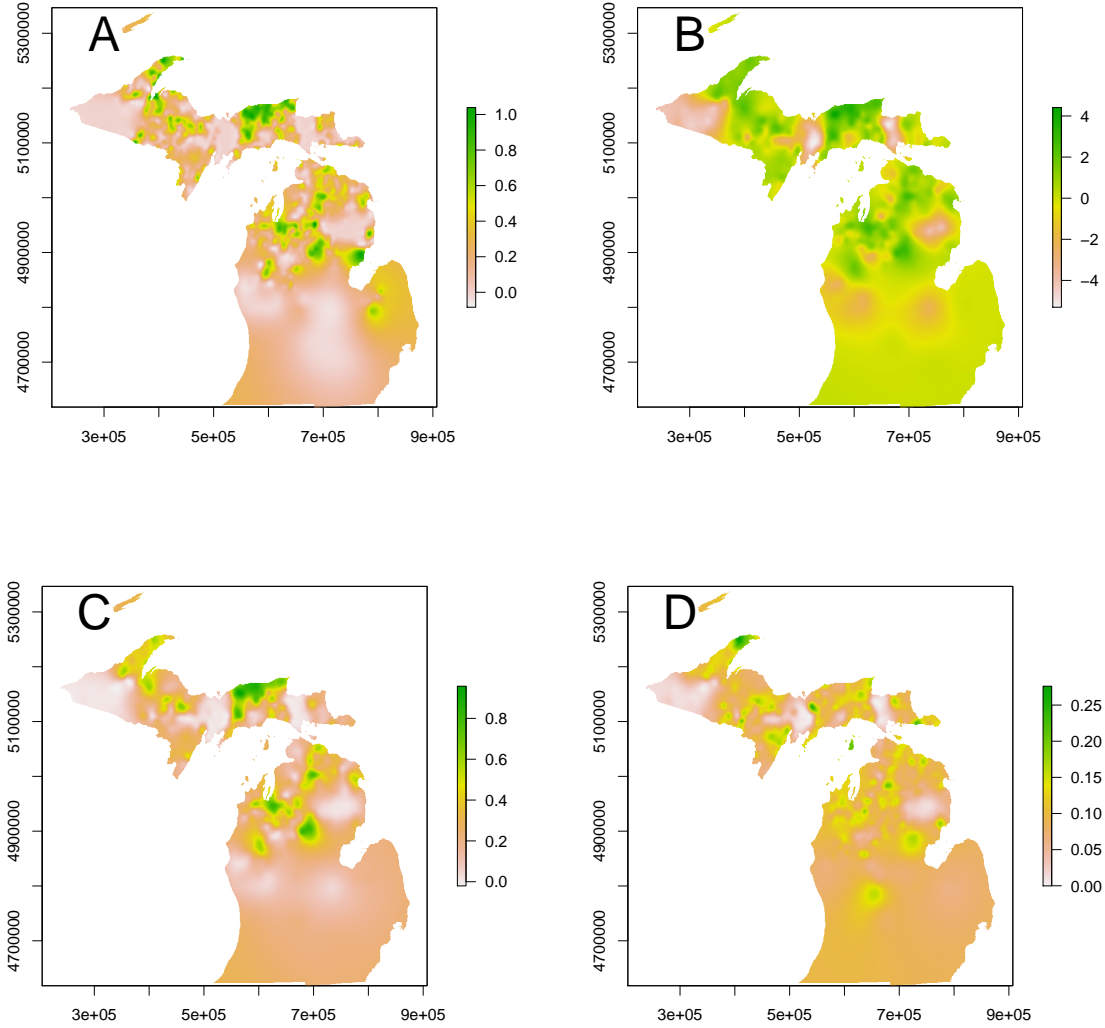


Figure A2: Interpolated occurrence data (A), spatial random effects (B), predicted occurrence probability (C), and prediction uncertainty (D) for *Pinus strobus*. Fitted values and spatial random effects made with a spatially-explicit univariate model with dimension reduction to 300 knots. Knots were assigned using a k-means clustering algorithm.

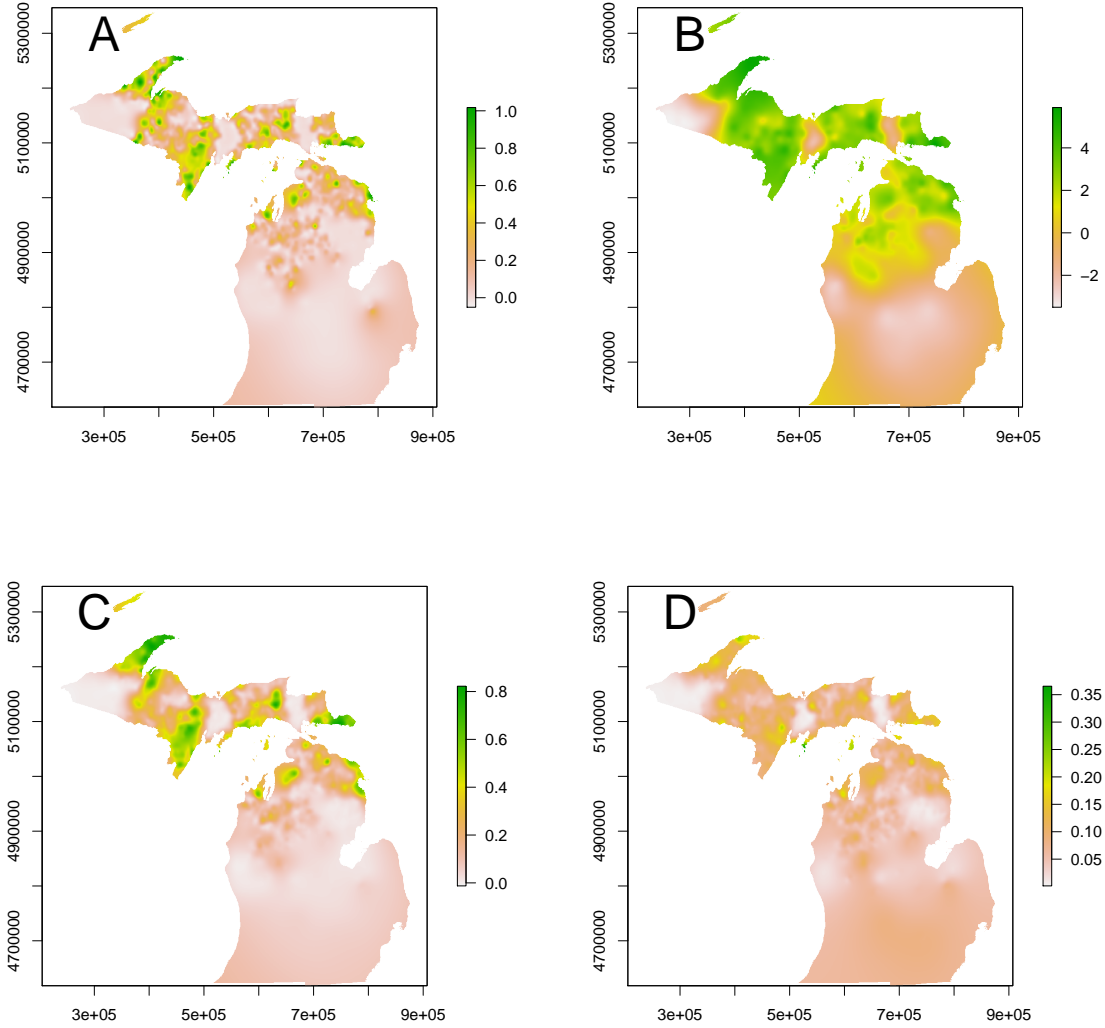


Figure A3: Interpolated occurrence data (A), spatial random effects (B), predicted occurrence probability (C), and prediction uncertainty (D) for *Thuja occidentalis*. Fitted values and spatial random effects made with a spatially-explicit univariate model with dimension reduction to 300 knots. Knots were assigned using a k-means clustering algorithm.

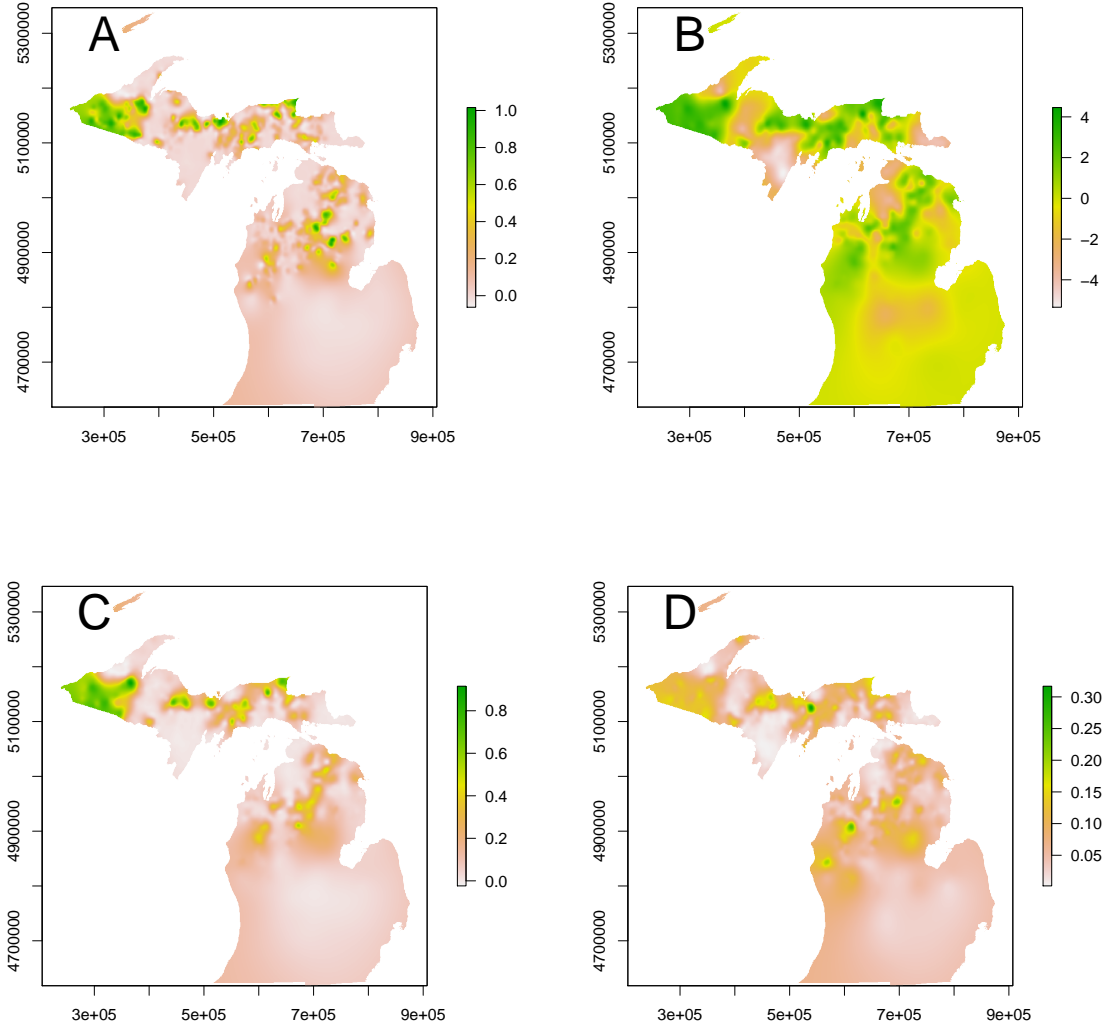


Figure A4: Interpolated occurrence data (A), spatial random effects (B), predicted occurrence probability (C), and prediction uncertainty (D) for *Pinus banksiana*. Fitted values and spatial random effects made with a spatially-explicit univariate model with dimension reduction to 300 knots. Knots were assigned using a k-means clustering algorithm.

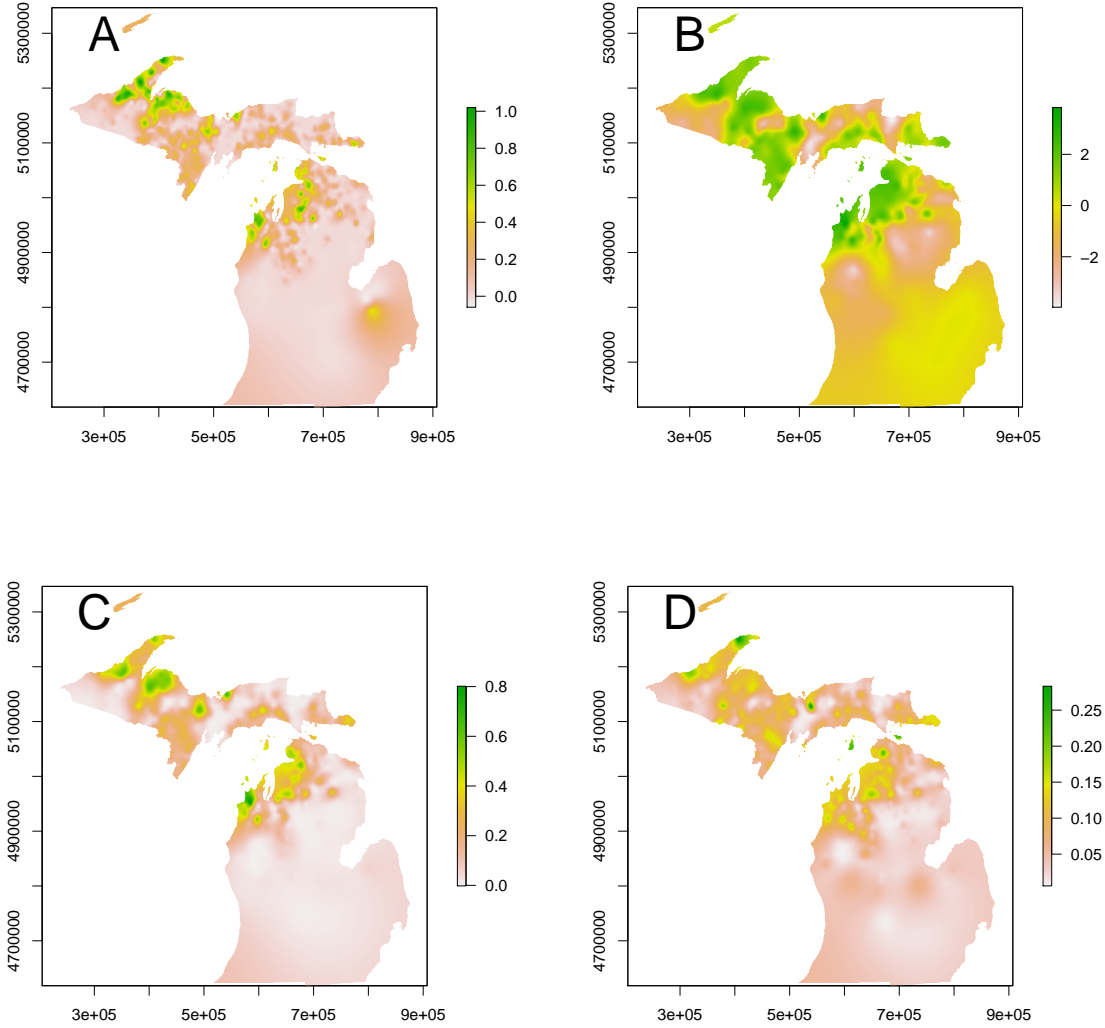


Figure A5: Interpolated occurrence data (A), spatial random effects (B), predicted occurrence probability (C), and prediction uncertainty (D) for *Acer saccharum*. Fitted values and spatial random effects made with a spatially-explicit univariate model with dimension reduction to 300 knots. Knots were assigned using a k-means clustering algorithm.

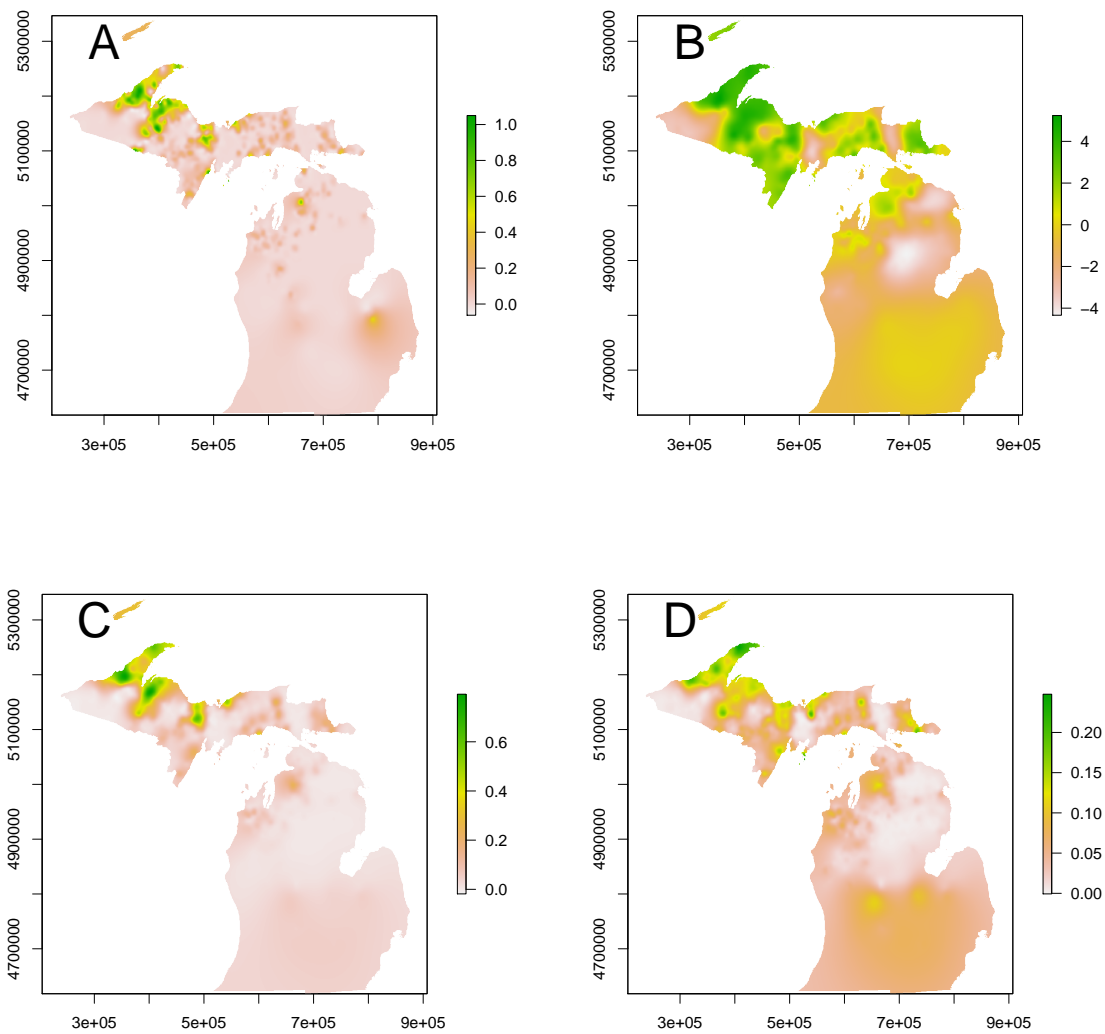


Figure A6: Interpolated occurrence data (A), spatial random effects (B), predicted occurrence probability (C), and prediction uncertainty (D) for *Betula alleghaniensis*. Fitted values and spatial random effects made with a spatially-explicit univariate model with dimension reduction to 300 knots. Knots were assigned using a k-means clustering algorithm.