

Flood Hazard Visual Essay

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Human Geography with GIS

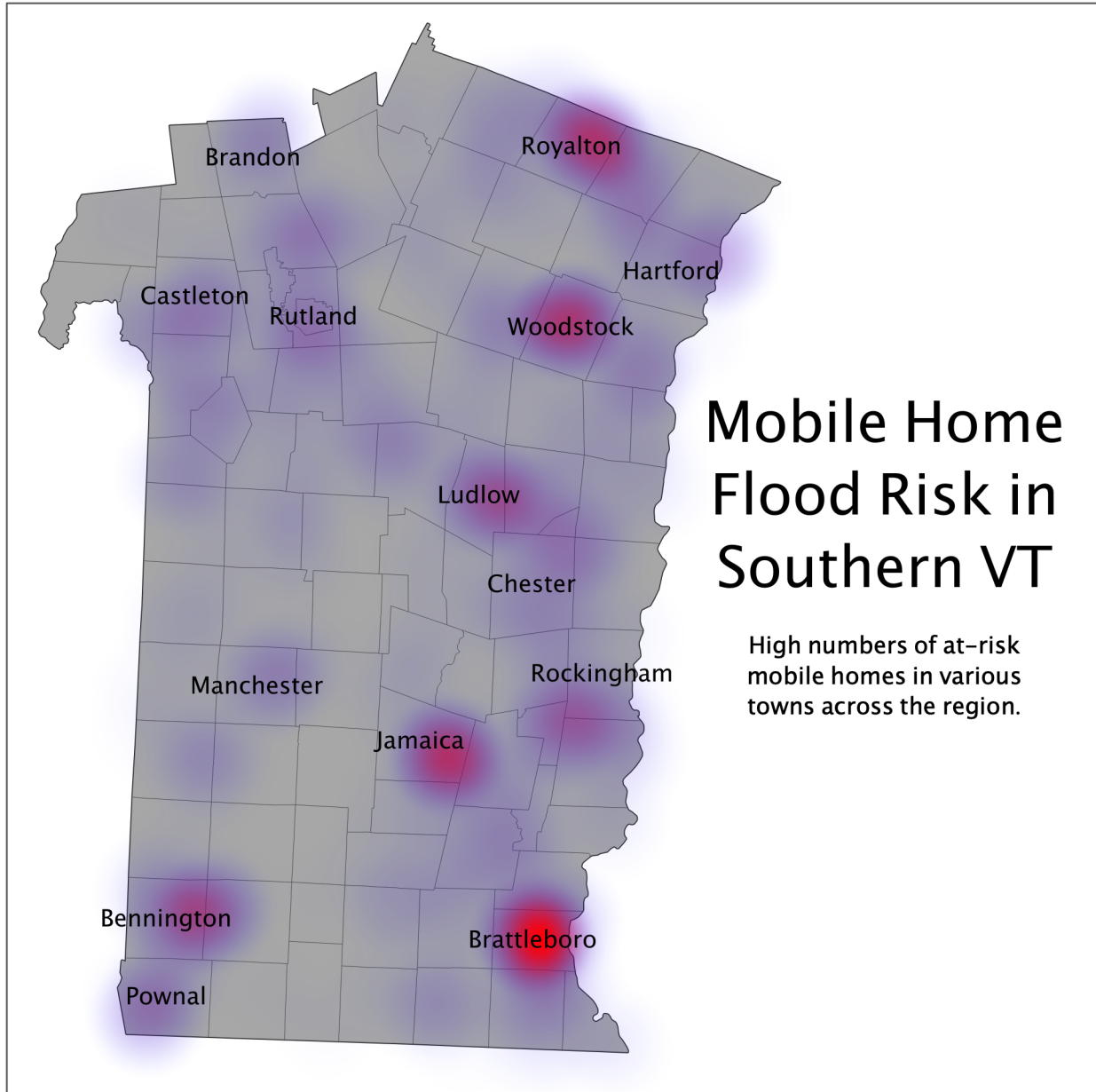


Figure 1. The flooding from Tropical Storm Irene in 2011 caused significant property damage in southern Vermont, especially among mobile homes. This event illustrated the effects of widespread mobile home placement in flood-prone areas. Large concentrations of the state's mobile homes exist in river corridors, regions wherein a river's path may one day go. In southern Vermont, this is especially true of Brattleboro, Jamaica, Royalton, and Woodstock. These mobile homes are at severe risk of flood damage as river meanders change over time.

Table 1. The towns of Woodford and Woodstock are among those with the highest proportions of mobile homes in these river corridors. Another way to measure flood risk is based on the floodplains identified by FEMA. These show the area of land that is likely to flood from storms during a period of time. This is a different type of flood risk and as such, only one town, Jamaica, ranks high in both metrics. Interestingly, a town's poverty rate does not correlate strongly with the number or percent of mobile homes in either of these areas.

	County	Poverty Rate	River Corridor Mobile Homes	Floodplain Mobile Homes
<i>Towns with Highest Percent of Mobile Homes in River Corridors</i>				
Woodford	Bennington	11.58%	23 (85%)	0 (0%)
Woodstock	Windsor	9.23%	47 (67%)	17 (24%)
Sandgate	Bennington	15.75%	4 (57%)	0 (0%)
Jamaica	Windham	14.78%	49 (49%)	42 (42%)
Killington	Rutland	4.78%	6 (46%)	0 (0%)
<i>Towns with Highest Percent of Mobile Homes in FEMA Flood Zones</i>				
Windsor	Windsor	11.87%	4 (6%)	27 (43%)
Jamaica	Windham	14.78%	49 (49%)	42 (42%)
Proctor	Rutland	3.78%	2 (13%)	6 (40%)
Wilmington	Windham	7.84%	8 (9%)	36 (38%)
Pownal	Bennington	9.39%	27 (8%)	132 (37%)
Southern VT		11.20%	985 (13%)	849 (11%)

Table 2. While the vast majority of mobile homes in the region are not at risk of flooding, many are. River corridor analysis returned slightly more at-risk homes than floodplain analysis. There is a good deal of overlap between these two types of risk, as being identified as at-risk of one type of flooding drastically increases the risk of a home being identified by the other metric. That said, most mobile homes in river corridors are not in floodplain areas and vice versa, so neither assessment of flood-risk should be ignored.

	Number of Mobile Homes	Percent of Mobile Homes
Corridor Risk	985	13.09%
<i>Corridor Only</i>	547	55.53%
<i>Dual Risk</i>	438	44.47%
FEMA Risk	849	11.29%
<i>FEMA Only</i>	411	48.41%
<i>Dual Risk</i>	438	51.59%
Dual Risk	438	5.82%
Not at Risk	6126	81.44%
Total	7522	100%

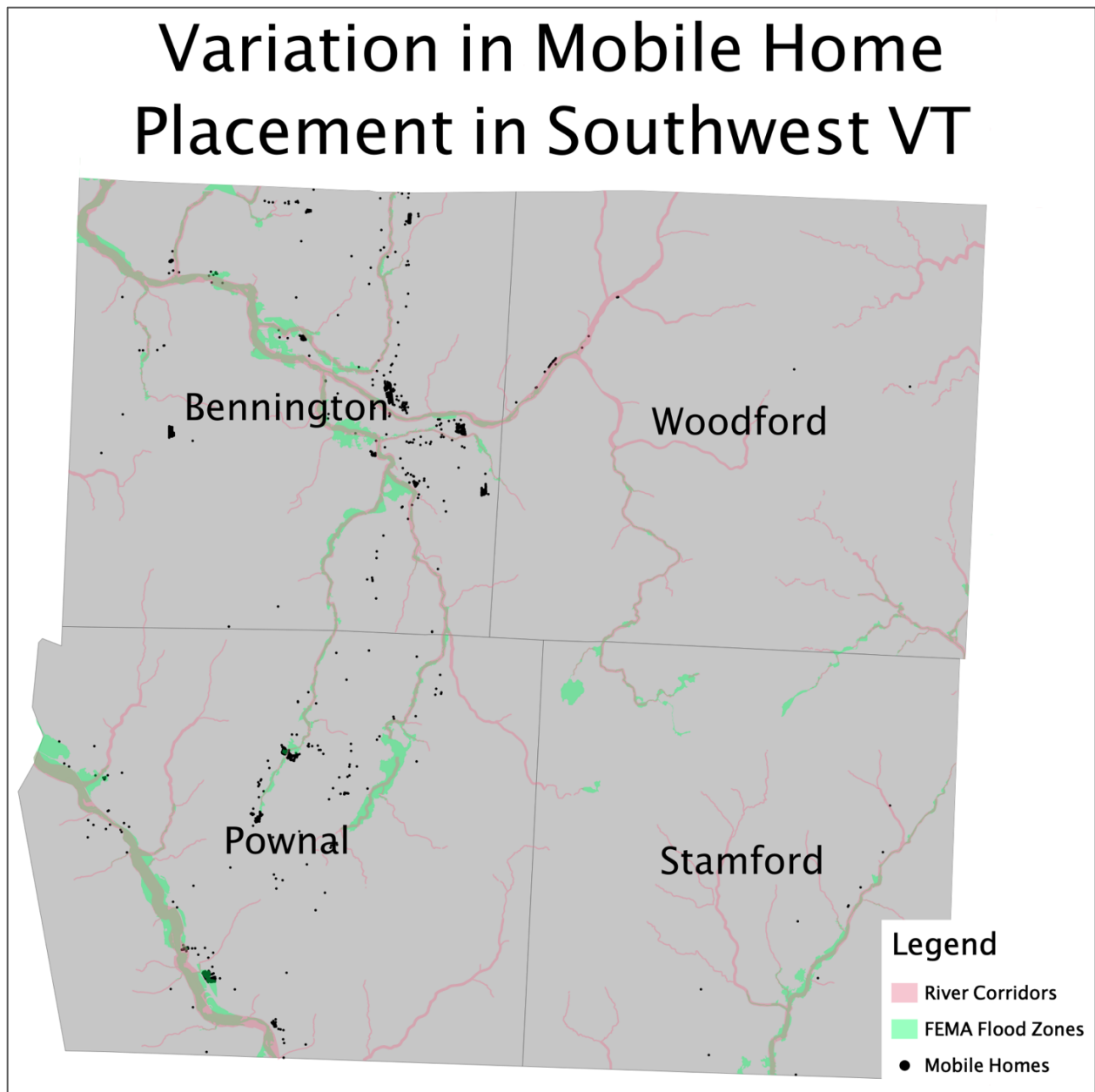


Figure 2. No towns better exemplify the differences between the two flood risk metrics than those in the southwestern corner of the state. All but two mobile homes in Woodford lie along one river corridor that is much wider than the corresponding floodplain, and as such FEMA does not identify these homes as at-risk of flooding. Pownal, on the other hand, has two large mobile home parks located in floodplain zones, but just outside the river corridors. Most mobile home parks in Bennington, conversely, are not located in an at-risk area.

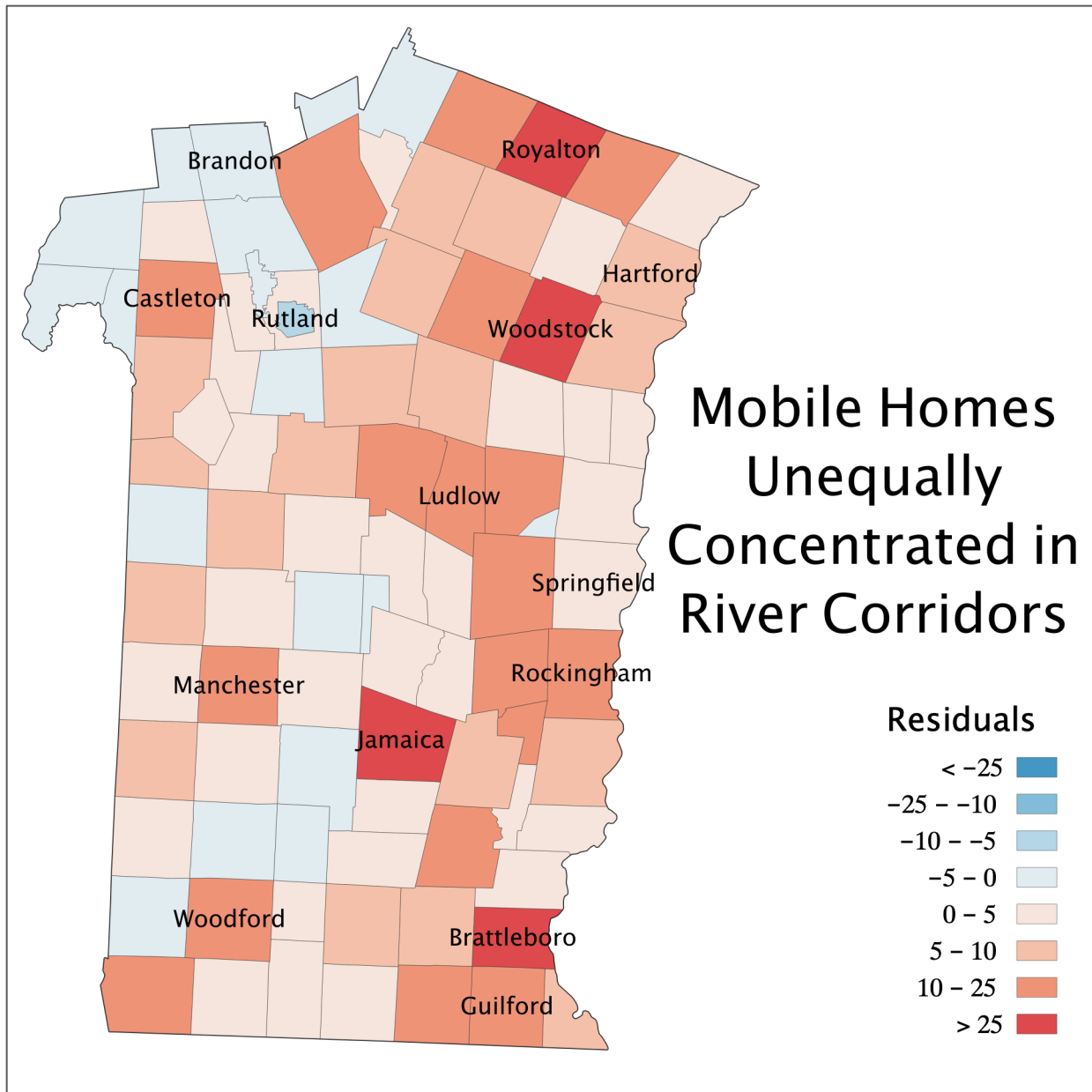


Figure 3. Data about the exact locations of mobile homes are essential in flood-risk analyses because, despite the low percent of at-risk mobile homes overall, they are still disproportionately likely to be found in at-risk areas. Estimating the number of at-risk mobile homes based on census data underestimates the true risk in the vast majority of southern Vermont towns. This is especially true of Brattleboro, Jamaica, Royalton, and Woodstock, which all have over 25 at-risk mobile homes more than would be assumed based on these estimates.

References and Data Sources

Baker, D., S. D. Hamshaw, and K. A. Hamshaw. 2014. Rapid flood exposure assessment of Vermont mobile home parks following Tropical Storm Irene. *Natural Hazards Review* 15 (1):27–37.

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U.S. Census American Community Survey 2014-2018.

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