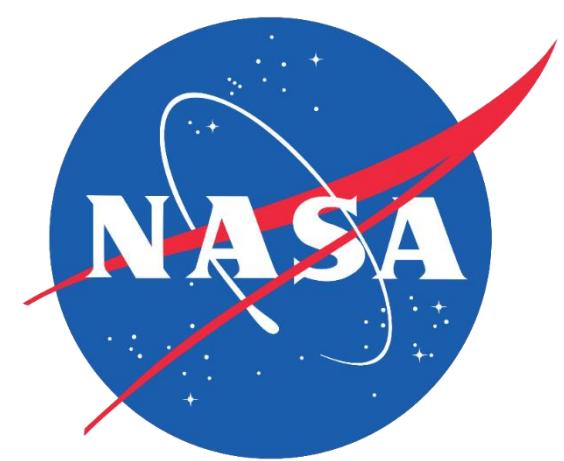


Coastal South Carolina Water Resources II



Assessing Unprotected Wetlands to Identify Priority Conservation Areas for Community Protection Against Flood Events in South Carolina

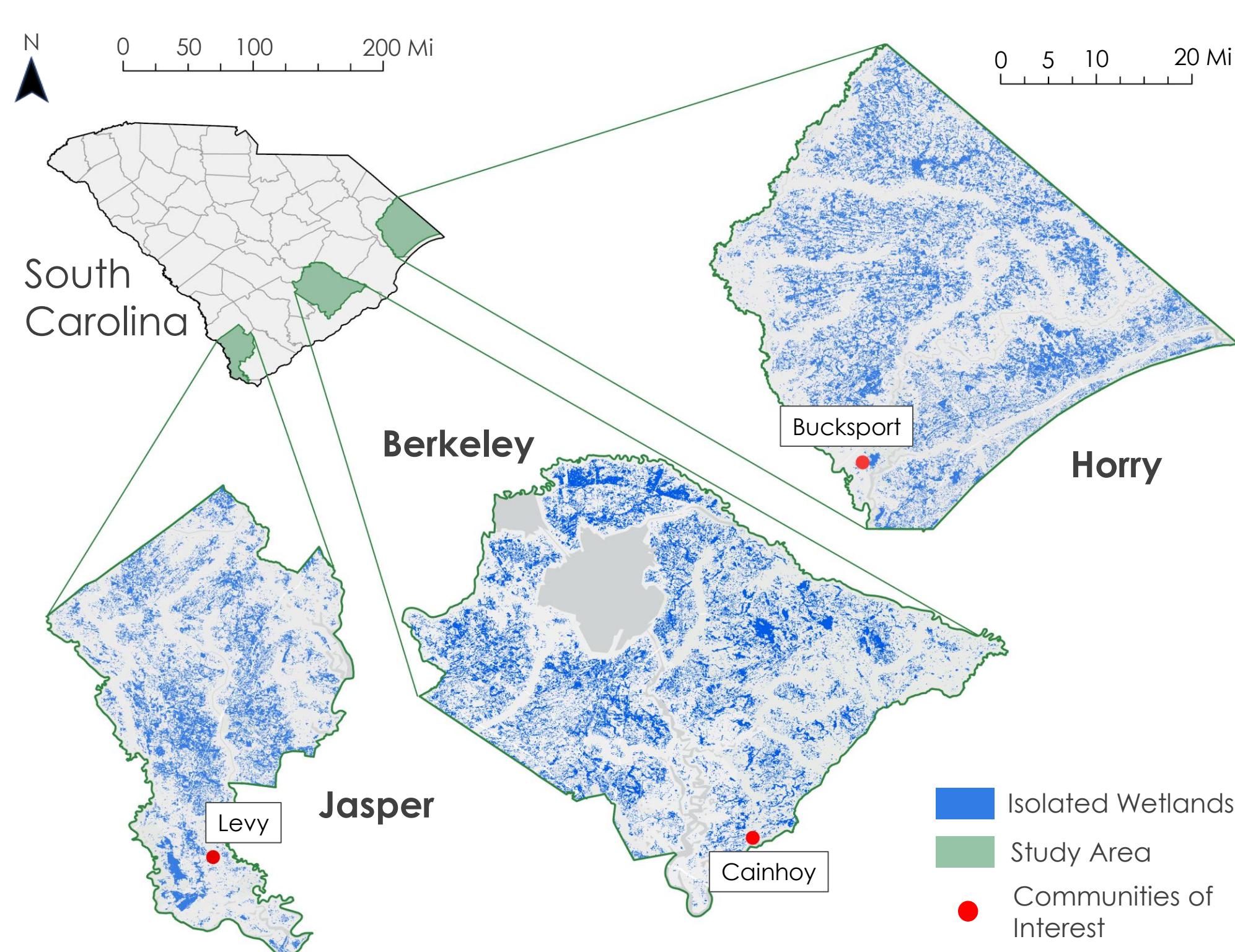
Project Synopsis

Partnering with the Coastal Conservation League, we identified isolated freshwater wetlands in areas of high flood risk and assessed social vulnerability to flooding in Jasper, Horry, and Berkeley counties, South Carolina. Using Landsat 7, Landsat 8, and Sentinel-1 Earth observations, we created a weighted overlay map of flood risk highlighting isolated wetlands and a bivariate map showcasing the relationship between flood risk and social vulnerability. Both maps will help the Coastal Conservation League prioritize the conservation of areas with isolated wetlands that protect communities through flood mitigation.

Objectives

- Identify isolated freshwater wetlands in regions with high flood risk to highlight priority wetlands for conservation
- Assess social vulnerability and flood risk of partner-identified communities of interest

Study Area



Sources: ESRI, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

Earth Observations



Landsat 7 ETM+

Landsat 8 OLI

Sentinel-1 C-SAR

Project Partner

- Coastal Conservation League

Team Members



Asa Julien



Jake Ferus

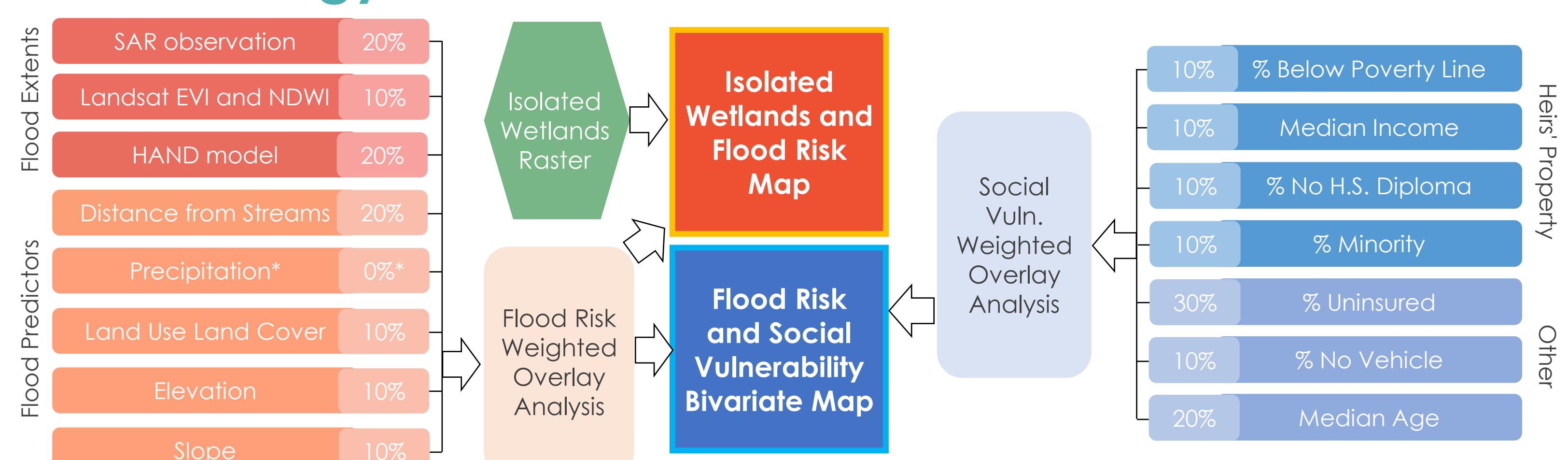


Karen Wang

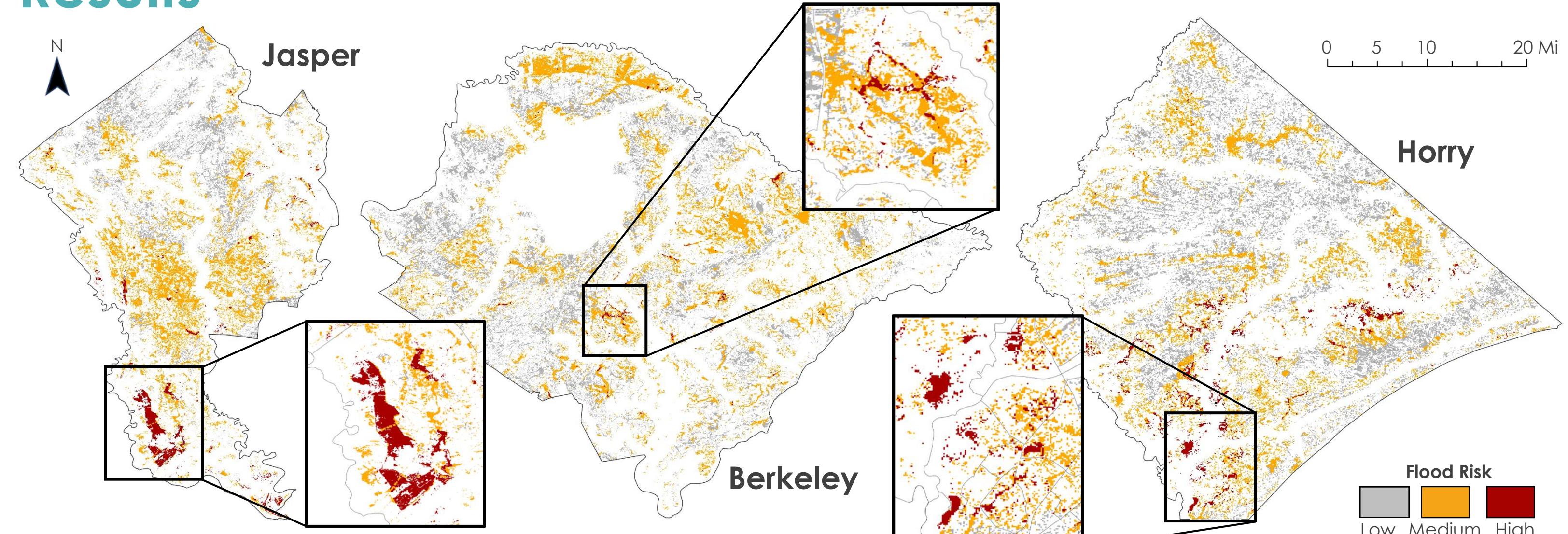


Sydney Brown

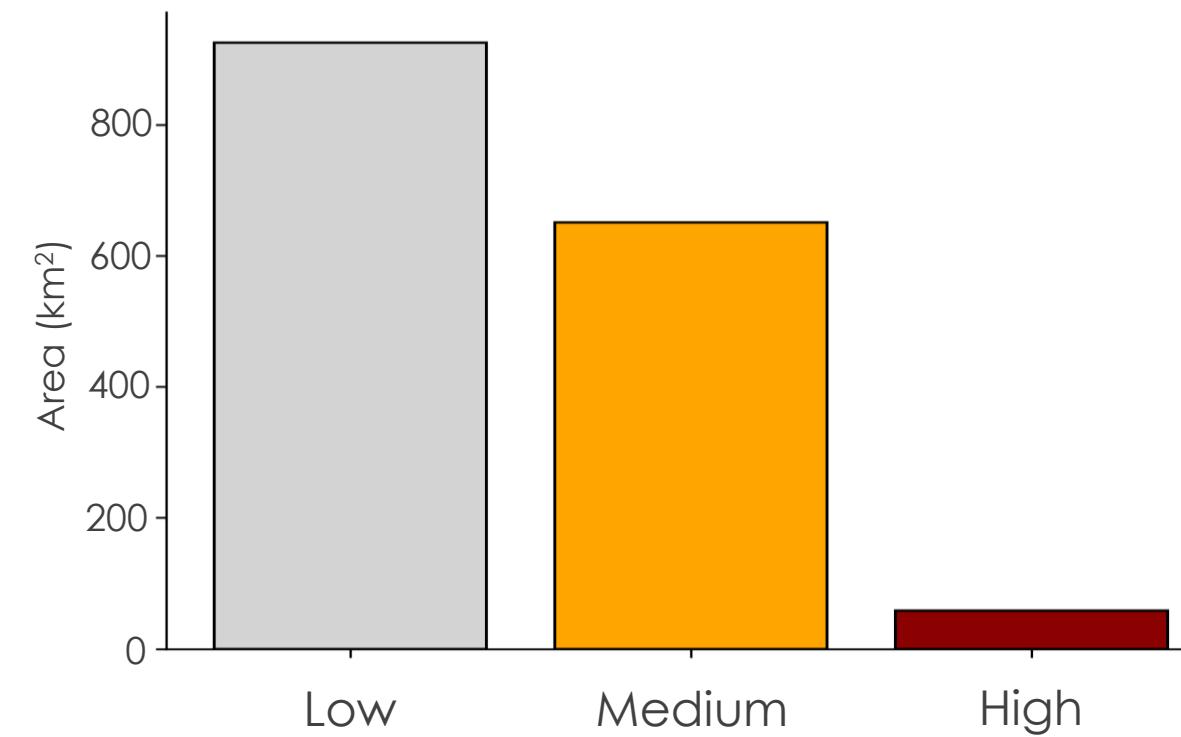
Methodology



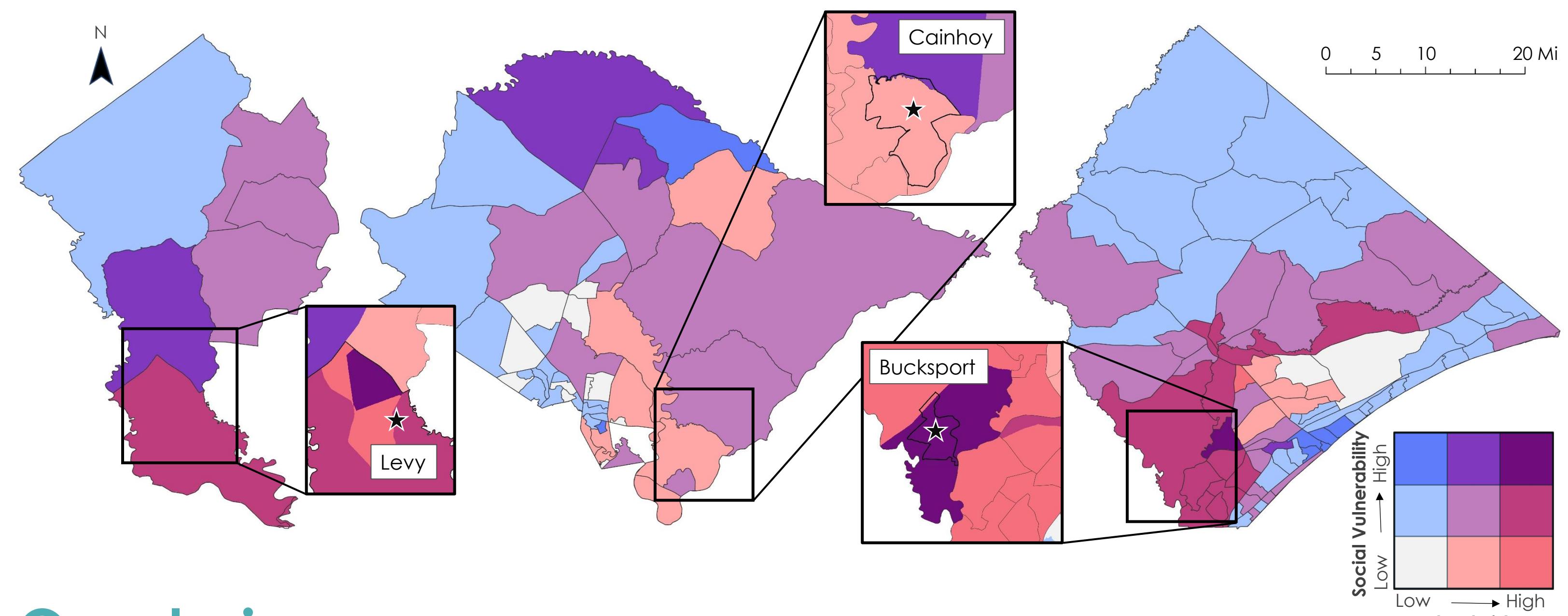
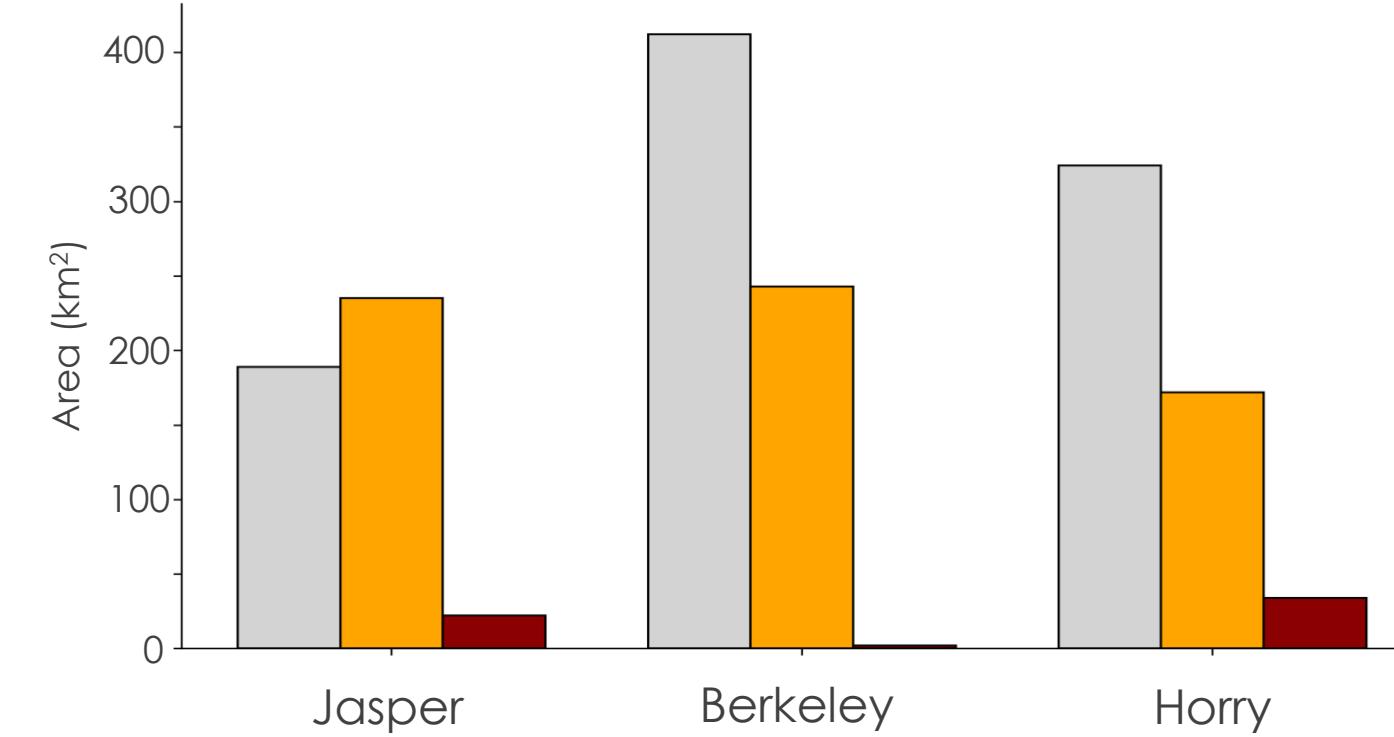
Results



Isolated Wetlands Combined



Isolated Wetlands by County



Conclusions

- 43% of isolated freshwater wetlands were in areas with medium-to-high-risk flood zones. Two of the communities of interest, Levy and Bucksport, were located near isolated wetlands in high-risk flood zones.
- Partner-identified communities of interest had medium to high flood risk and social vulnerability.
- Combining optical and active radar data allows our partner to quickly prioritize wetland conservation in specific locations to address large-scale flooding resilience.

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