Economic Vulnerability to Climate Change

Task 3.3 Progress. Westchester, Nassau, and Suffolk Counties

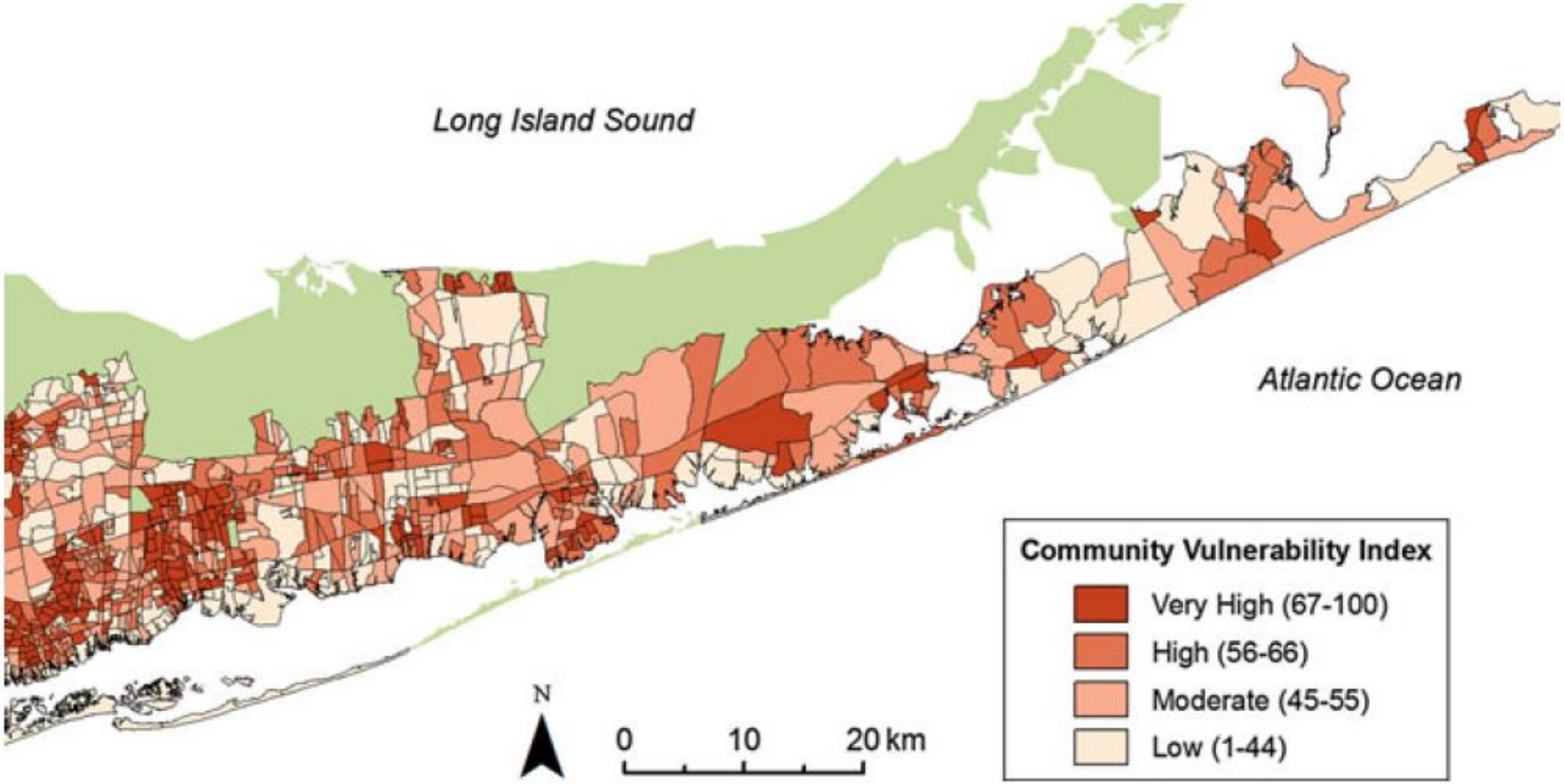
Overall Plan

- Evaluate existing tools
- Determine gaps in tools/needed data and items to add to indices
- Obtain needed datasets
- Develop models and conduct analyses
- Generate maps where applicable indicating priority areas
- Review potential investment strategies for those areas

Tools Reviewed To Date

- Social Vulnerability Index (SoVI)
  - University of South Carolina
  - Social vulnerability
  - 29 variables at county level including economic variables (e.g., per capita income, median house value, percent poverty)
  - 27 at tract level
- Nature Conservancy Coastal Resilience Study in Suffolk County
  - Specific work conducted for Suffolk County, Long Island (southern shore)
  - Combines various tools (Coastal Vulnerability and Assessment Tool (CVAT), SoVI, HazUS (economic losses from floods))
  - Generates a Community Vulnerability Index combining social vulnerability and Index of Critical Infrastructure and Facilities
  - Maps those areas at highest vulnerability

Suffolk County Research (Shephard et al. 2012)



Source: Shephard et al. Nat Hazards. 2012: 727-745.

Gaps/Questions Currently Identified

- Social vulnerability considered for counties in question, room for more economic information
- Tools available to assess one component of economic value at risk from flooding and storms (HazUS – building value lost)
- Need to consider addition of environment-related assets and economic value of those assets (e.g., beaches, boat ramps for fishing)
- Identify industry composition in counties and contributions of those industries to economic output
  - Are these industries more or less vulnerable?

Gaps/Questions Currently Identified (cont'd)

- Future demographic trends (what will be there to be impacted in future)
  - How can we model this?
- Future losses of coastal ecosystems and services and values provided by the ecosystems (e.g., marshes that cannot migrate, fish, benthic populations that move elsewhere)
  - How will loss of these ecosystems and associated services feed back into economy?
  - Need understanding of current relationships between ecosystem assets and beneficiaries
- How will contamination events from storms lead to economic losses?
  - What are source facilities at risk for release in storm and what is their spatial relationship to population centers, economic assets?

Next Steps

- Gather datasets (e.g., socioeconomic variables, NPS, state environmental assets, Superfund sites, IMPLAN data) for Nassau, Suffolk, and Westchester counties
  - Review 2012 Census data for use
- Begin to populate map layers
- Conceptualize initial linkages between industries and environmental assets
- Determine feasibility of projections of future demographic trends