



Community Social Vulnerability Indicators Efforts in the Caribbean

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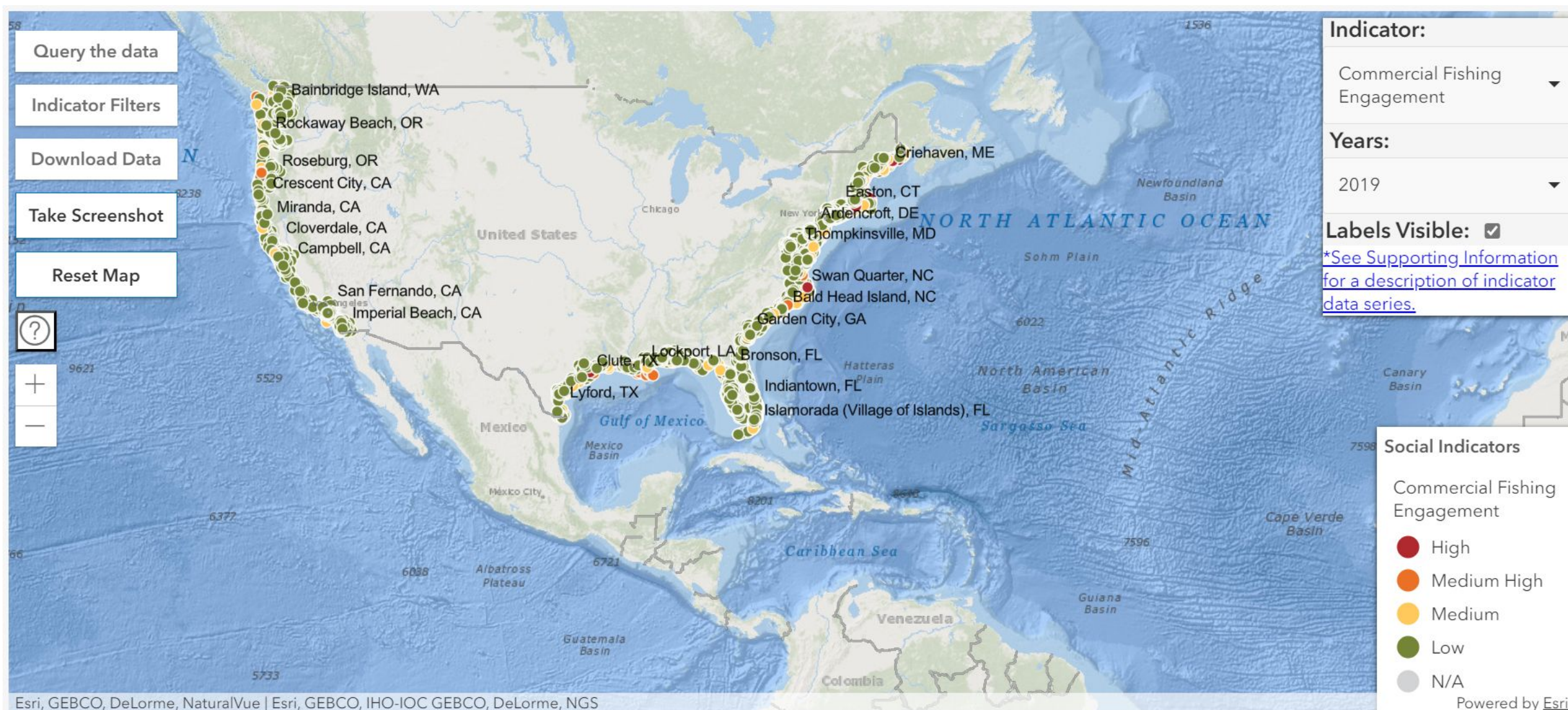
CSV I Background

NOAA Fisheries Community Social Vulnerability Indicators Toolbox has 14 social, economic, and climate change indicators that characterize and evaluate a community's vulnerability and resilience to disturbances (regulations, extreme weather, oil spills, sea level rise, etc.)

(Based on Jepson and Colburn 2013)

Fishing Engagement and Reliance Indicators	Environmental Justice Indicators	Gentrification Pressure Indicators	Economic Indicators	Climate Change Indicators
Commercial Fishing Engagement	Poverty	Housing Disruption	Labor Force Structure	Sea Level Rise Risk
Commercial Fishing Reliance	Population Composition	Retiree Migration	Housing Characteristics	Storm Surge Risk
Recreational Fishing Engagement	Personal Disruption	Urban Sprawl		
Recreational Fishing Reliance				

NOAA Social Indicators Tool



Esri, GEBCO, DeLorme, NaturalVue | Esri, GEBCO, IHO-IOC GEBCO, DeLorme, NGS

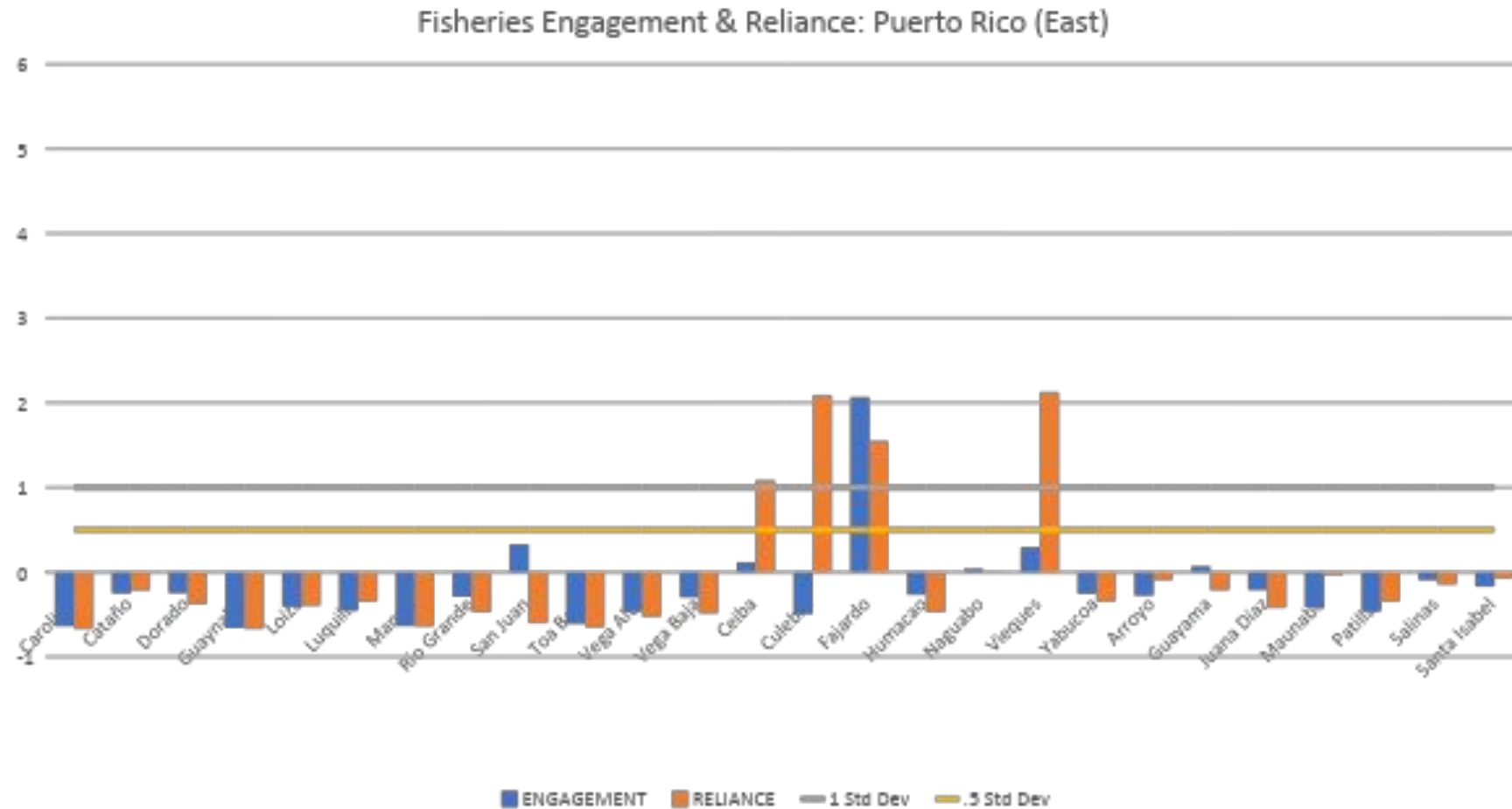
Source: <https://www.st.nmfs.noaa.gov/data-and-tools/social-indicators/>

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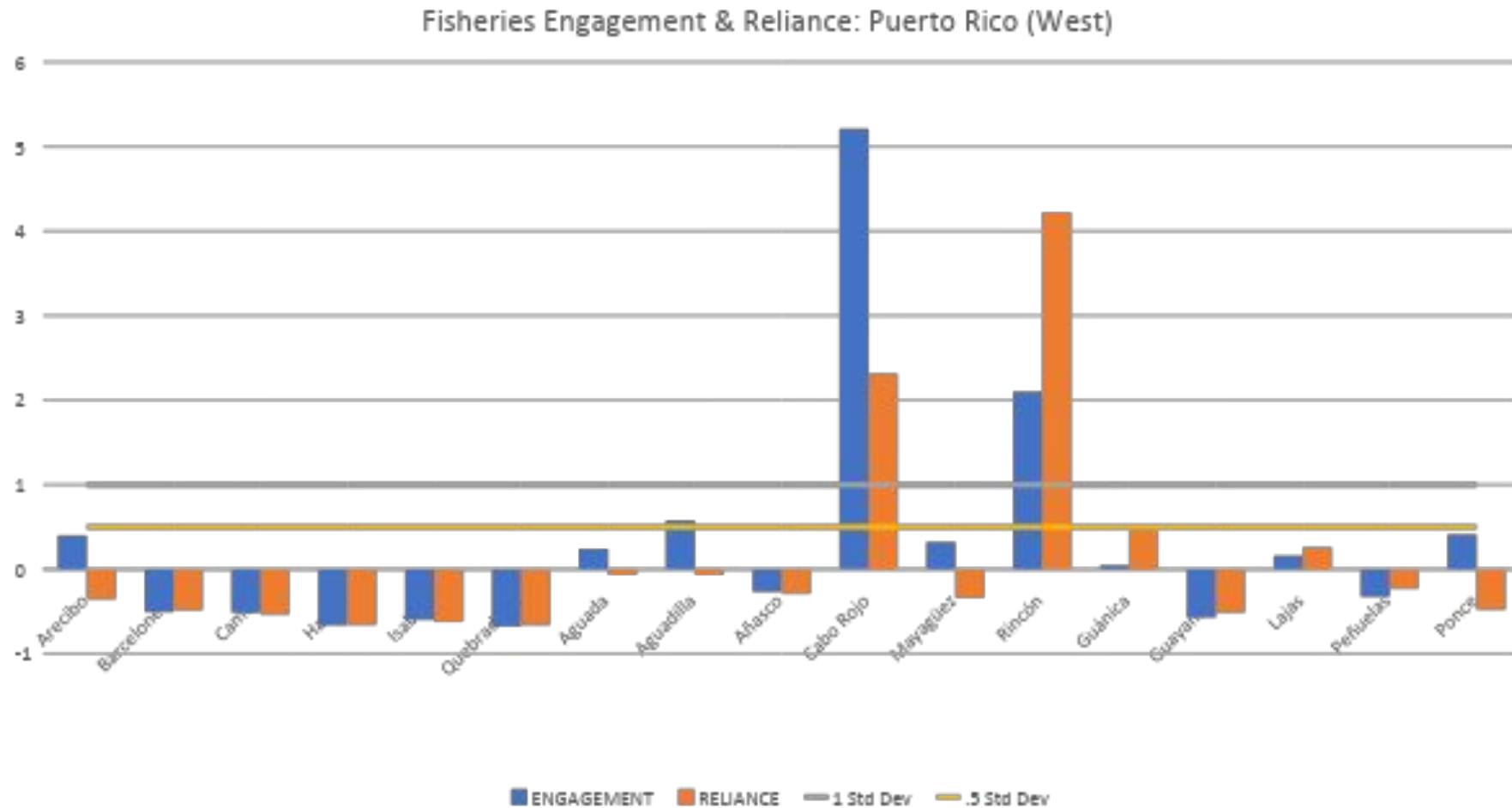
CSVI U.S. Caribbean

CSVI	Characterization	Data Source
<i>Fishing Engagement and Reliance Indicators</i>		
Commercial Fishing Engagement	Measures the presence of commercial fishing through fishing activity as shown through permits, fish dealers*, and vessel landings.	NOAA Fisheries Databases: Commercial landings 5-year average 2016-2020, permit numbers
Commercial Fishing Reliance	Measures the presence of commercial fishing in relation to the population size of a community through fishing activity	NOAA Fisheries Databases: Commercial landings 5-year average 2016-2020, permit numbers; Census: Population by Municipality/Subdistrict
<i>Environmental Justice Indicators</i>		
Poverty	Is expressed as those receiving assistance, families below the poverty line, and individuals older than 65 and younger than 18 in poverty	Census 2010 and 2020
Population Composition	Corresponds to the demographic makeup of a community including race, marital status, age, and ability to speak English.	Census 2010 and 2020
Personal Disruption	Captures unemployment status, educational attainment, poverty, and marital status.	Census 2010 and 2020
<i>Gentrification Pressure Indicators</i>		
Retiree Migration	Characterizes communities with a higher concentration of retirees and elderly people in the population including households with inhabitants over 65 years, population receiving social security or retirement income, and level of participation in the work force.	Census 2020
<i>Economic Indicators</i>		
Labor Force Structure	Characterizes the availability of employment including females employed, population in the labor force, self-employment, and social security recipients.	Census 2010 and 2020
Housing Characteristics	Is a measure of infrastructure vulnerability to coastal hazards including median rent and mortgage, number of rooms, and presence of mobile homes.	Census 2010 and 2020

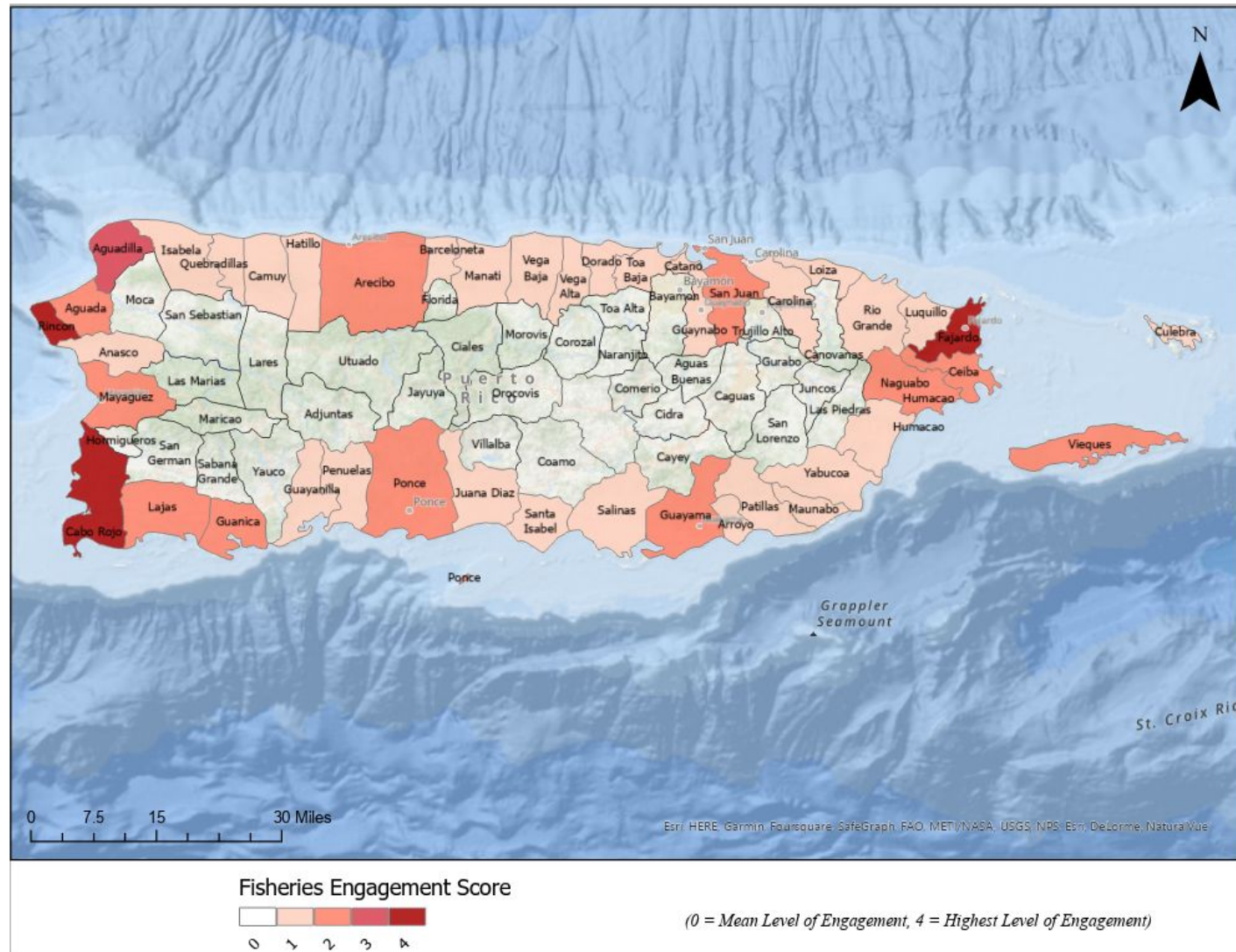
Puerto Rico Commercial Fishing Engagement & Reliance



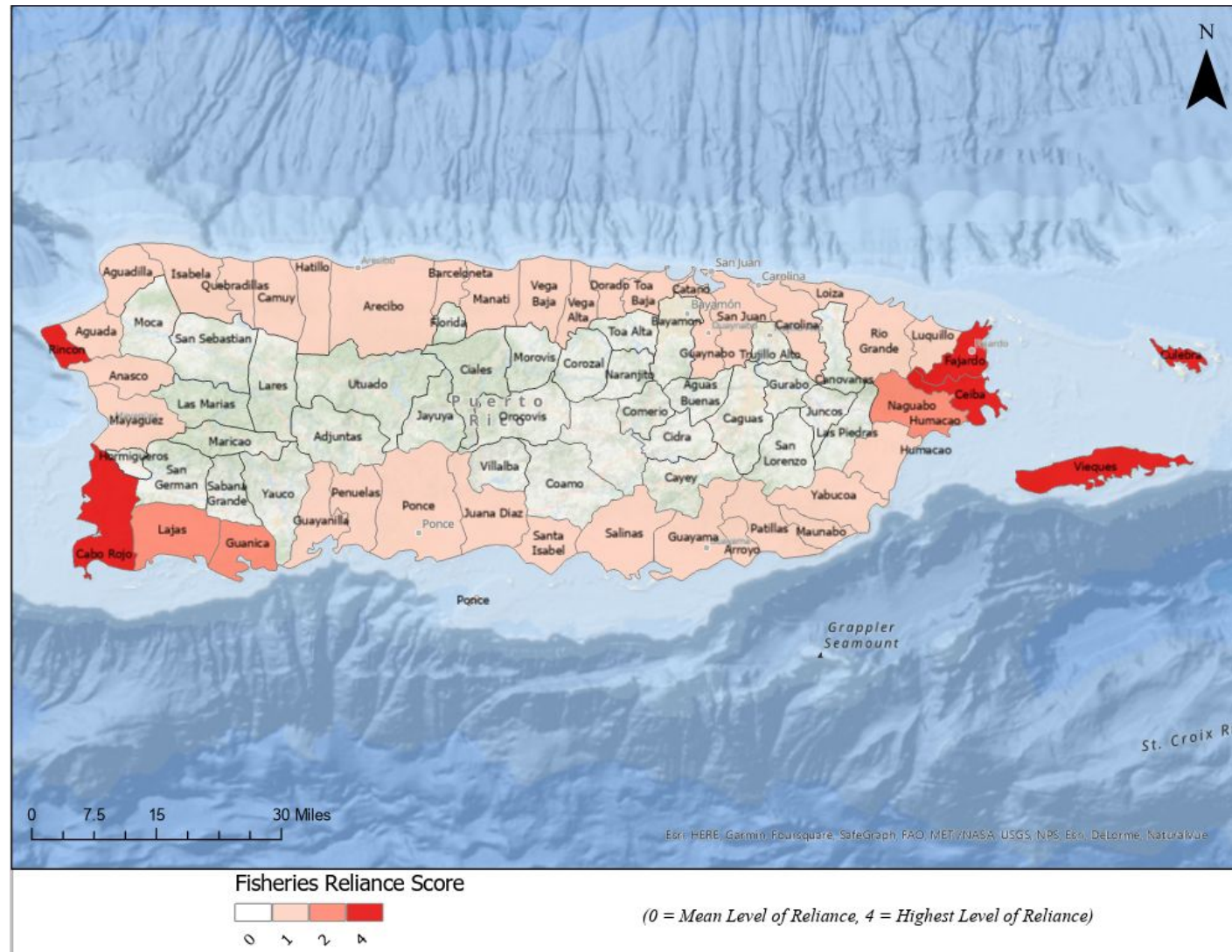
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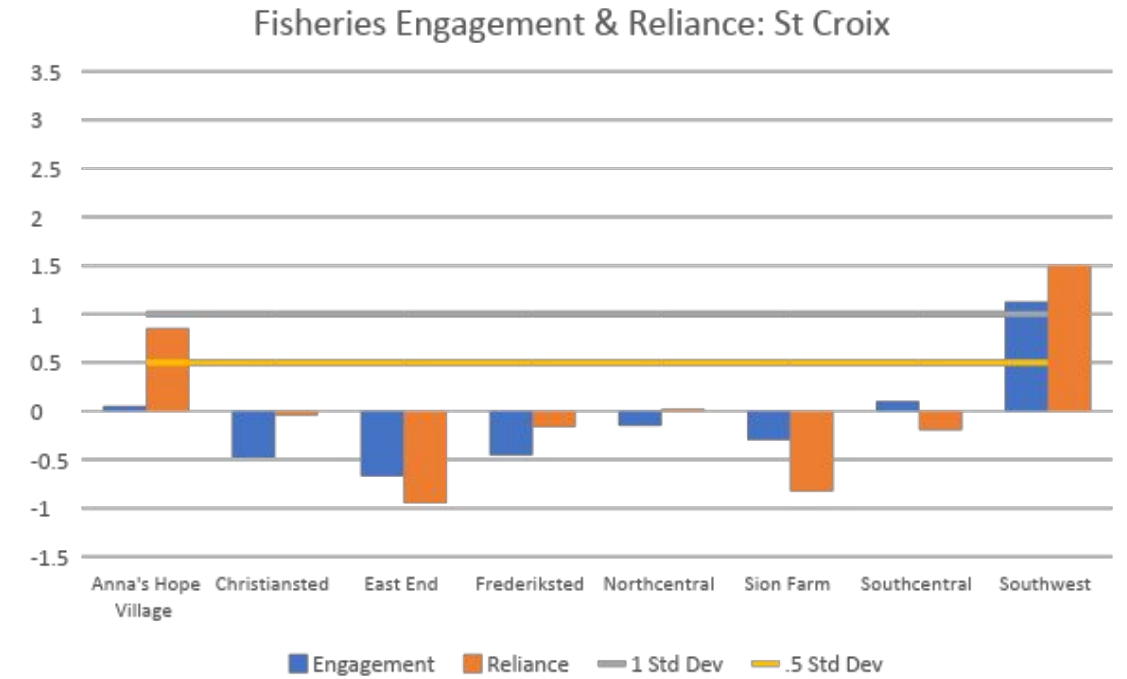
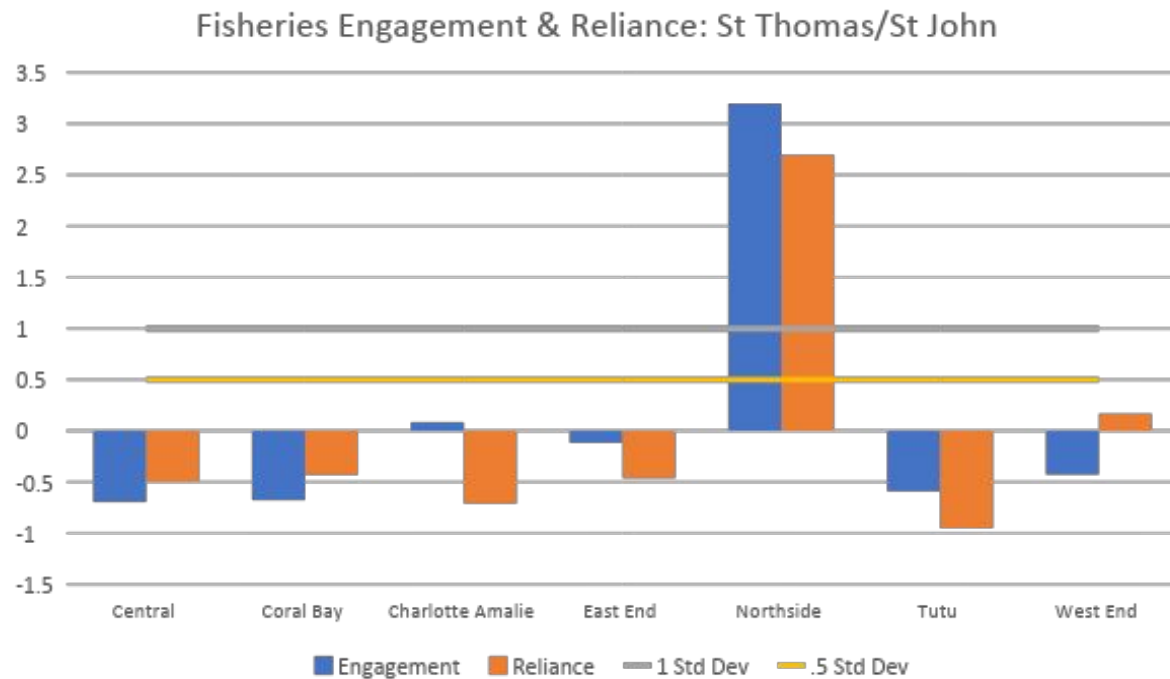
Puerto Rico Commercial Fishing Engagement



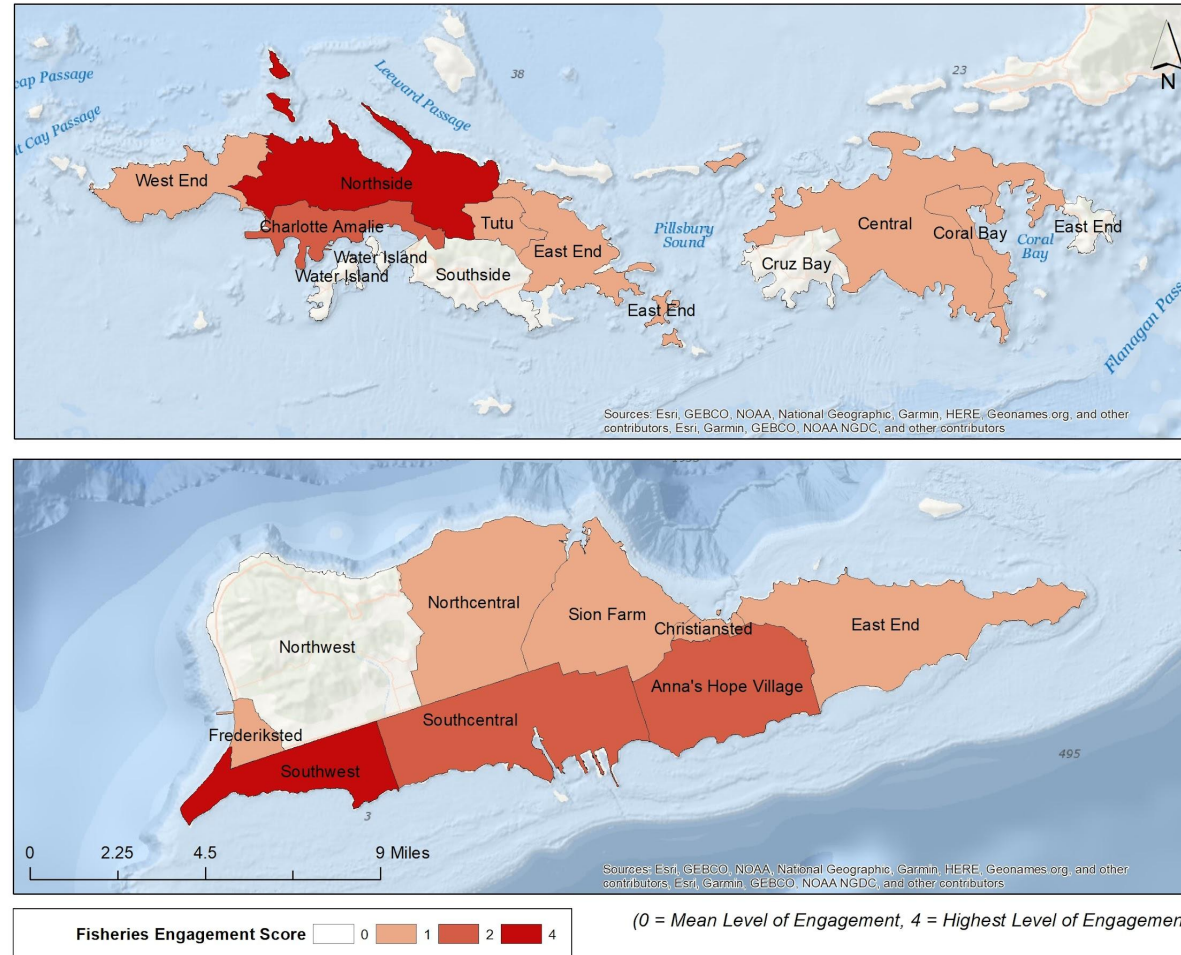
Puerto Rico Commercial Fishing Reliance



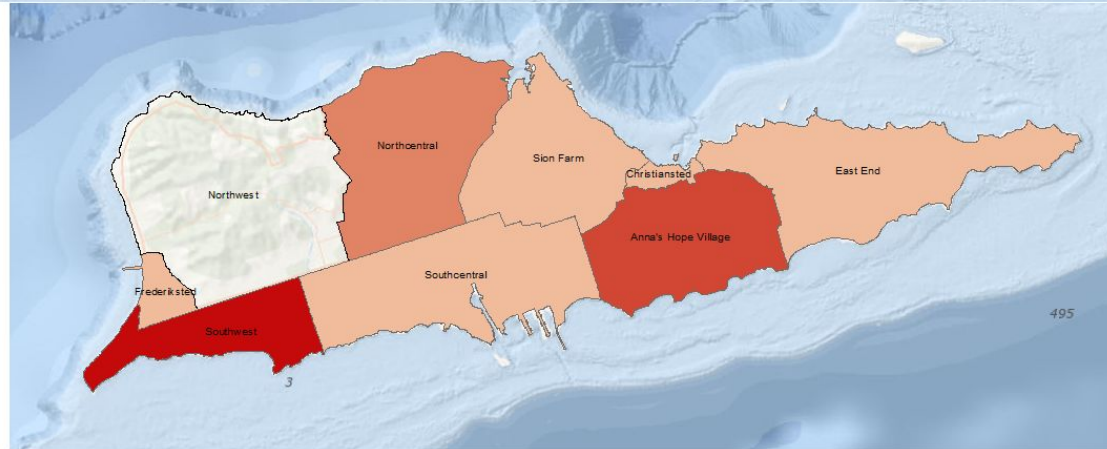
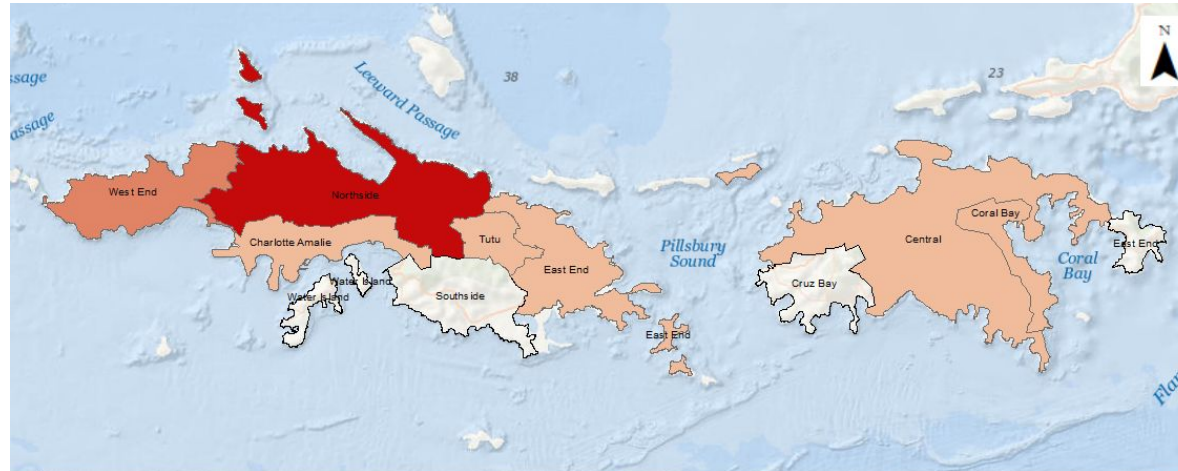
USVI Commercial Fishing Engagement & Reliance



USVI Commercial Fishing Engagement



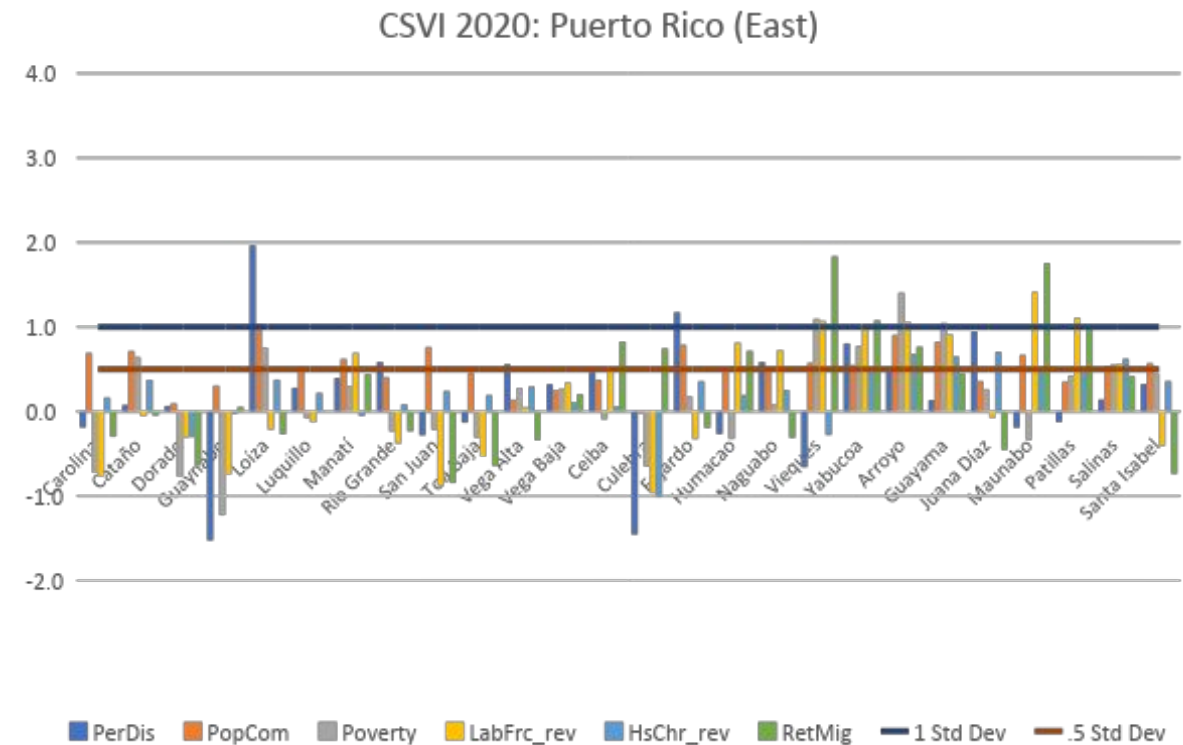
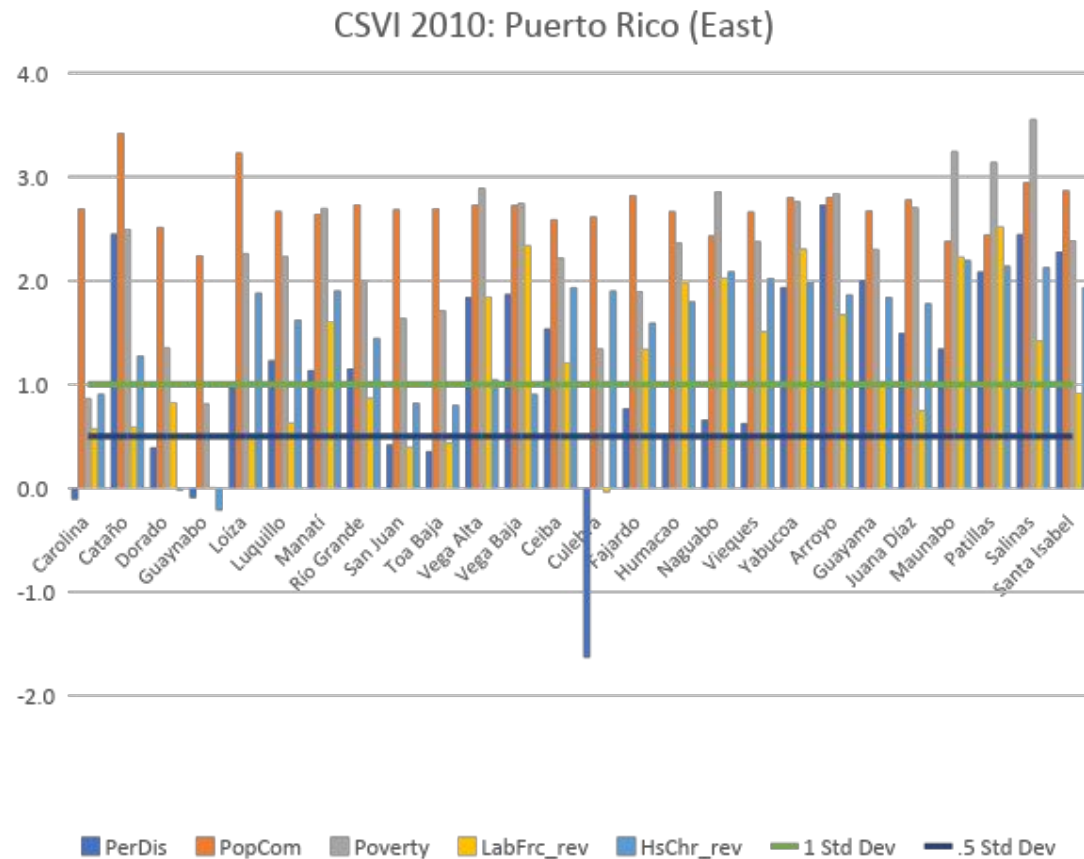
USVI Commercial Fishing Reliance



(Not to scale)

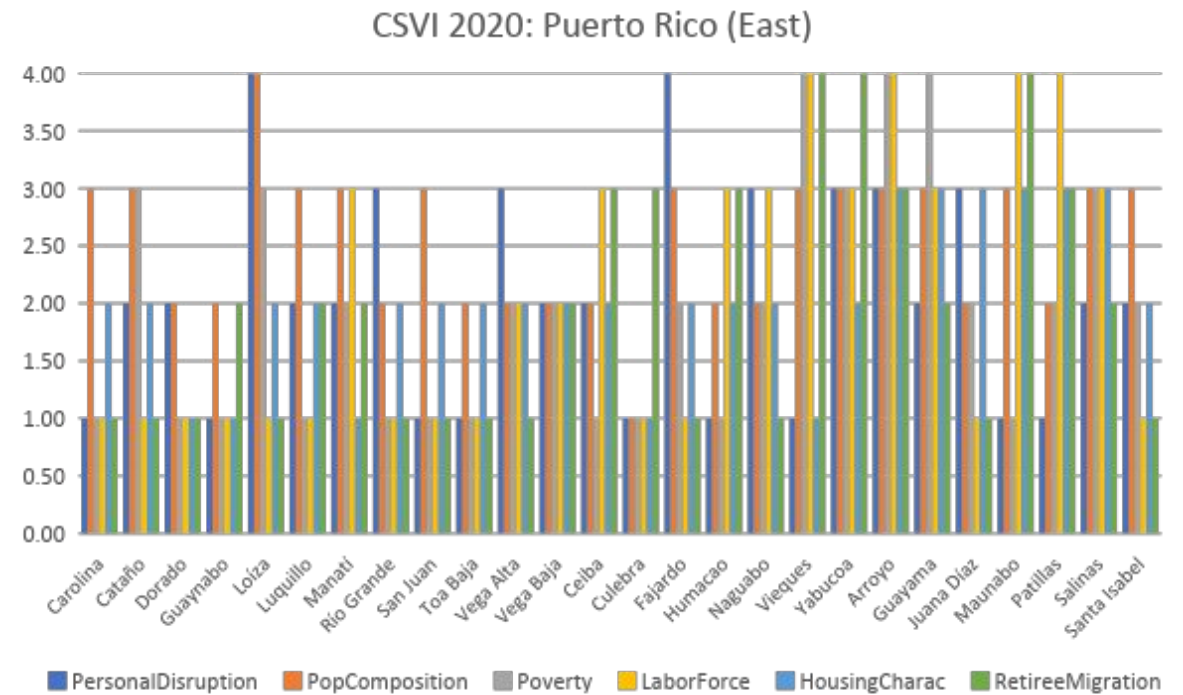
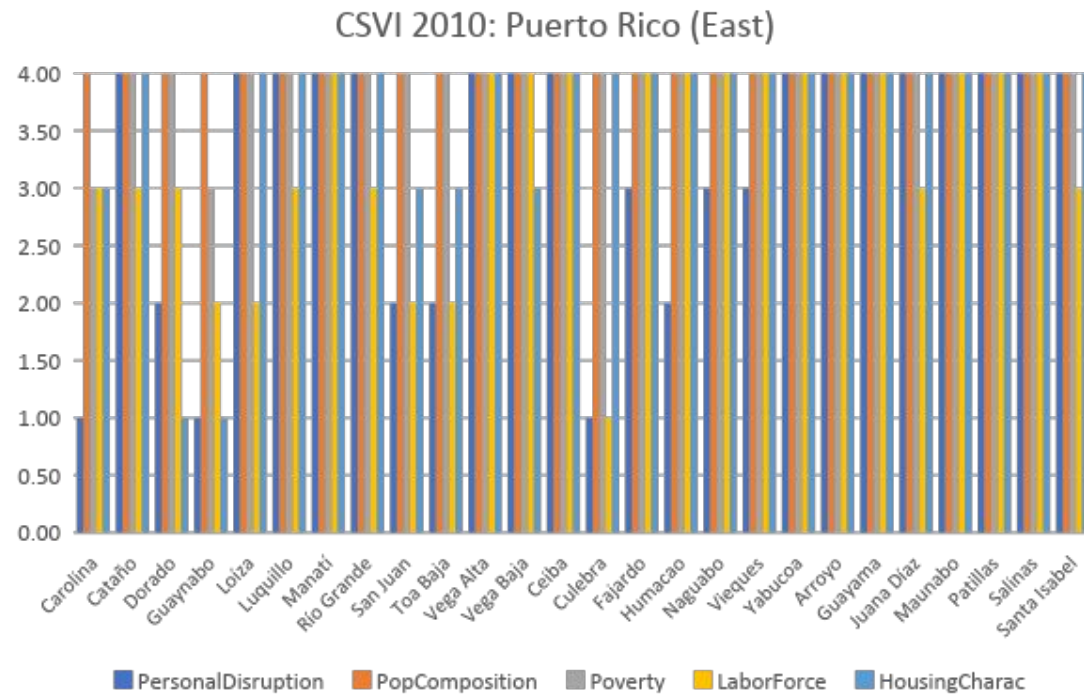


Puerto Rico CSVI 2010/2020 (Standardized Scores)



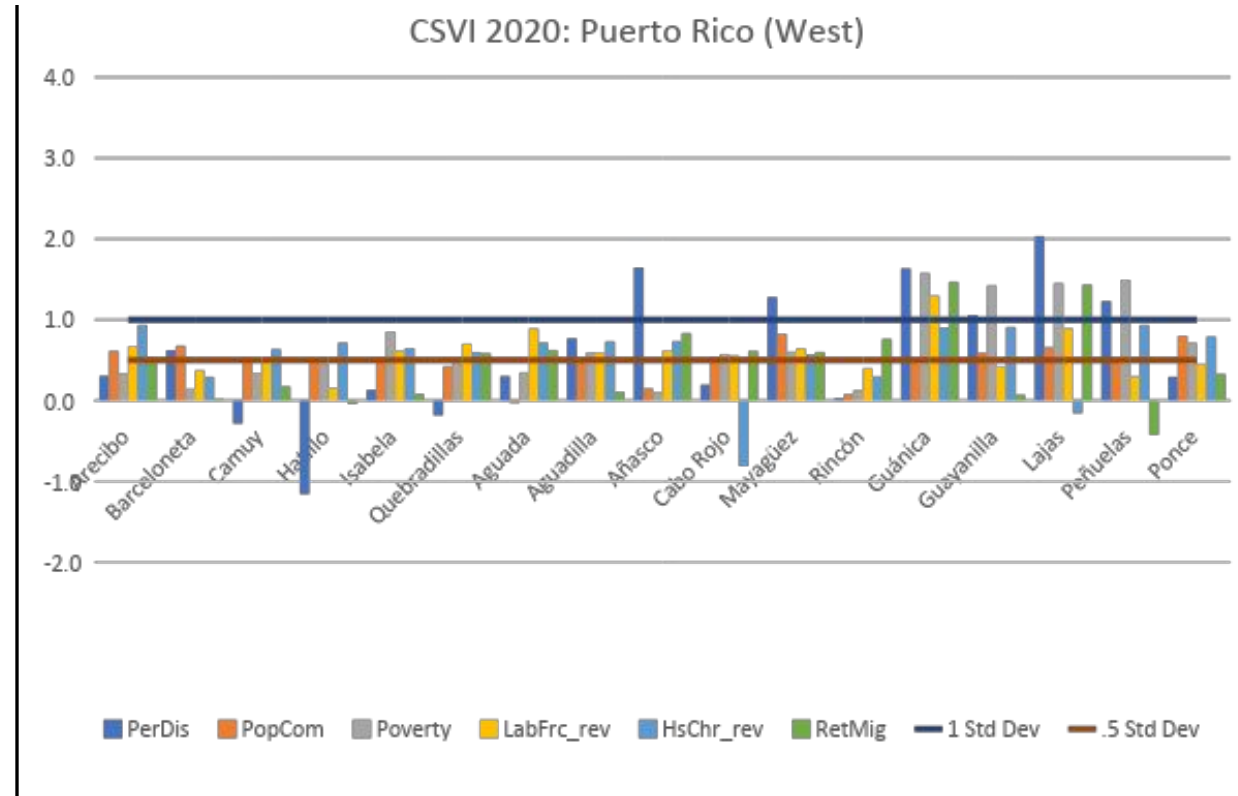
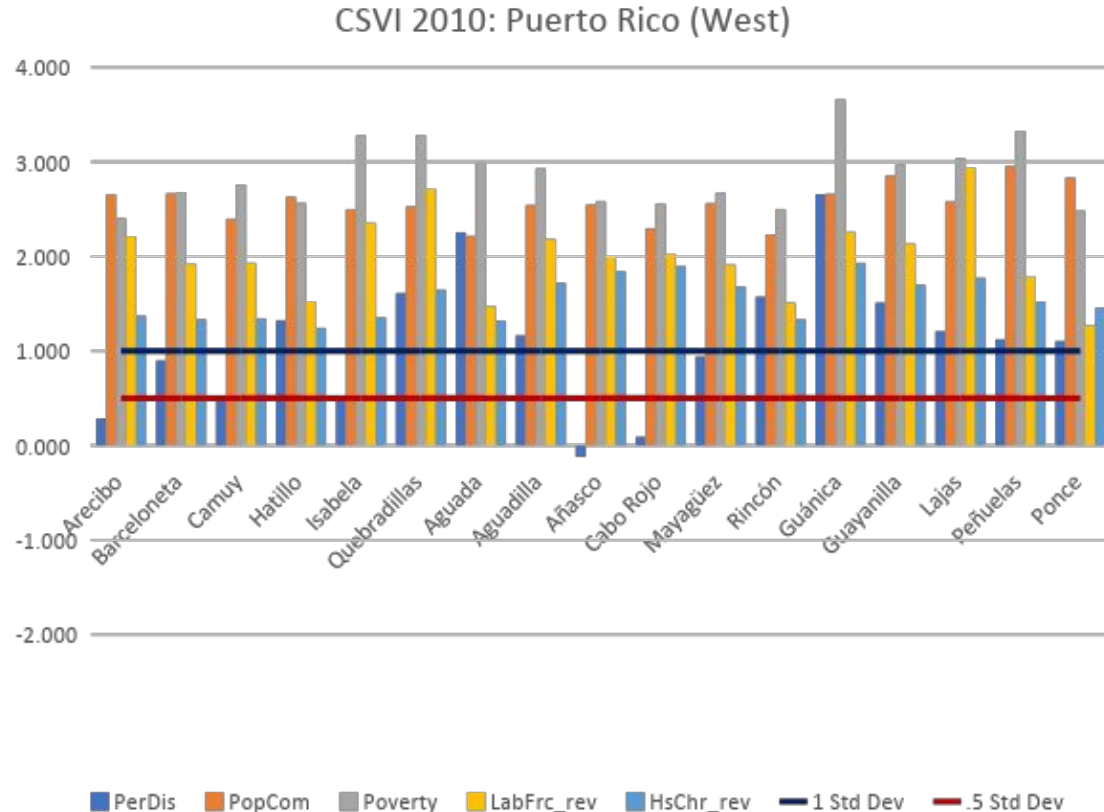
EJ Indicators: Personal Disruption; Population Composition; Poverty
 Economic Indicators: Labor Force; Housing Characteristics
 Gentrification Pressure: Retiree Migration (2020 only)

Puerto Rico CSVI 2010/2020 (1=Low; 2=Moderate; 3=High; 4=Very High)



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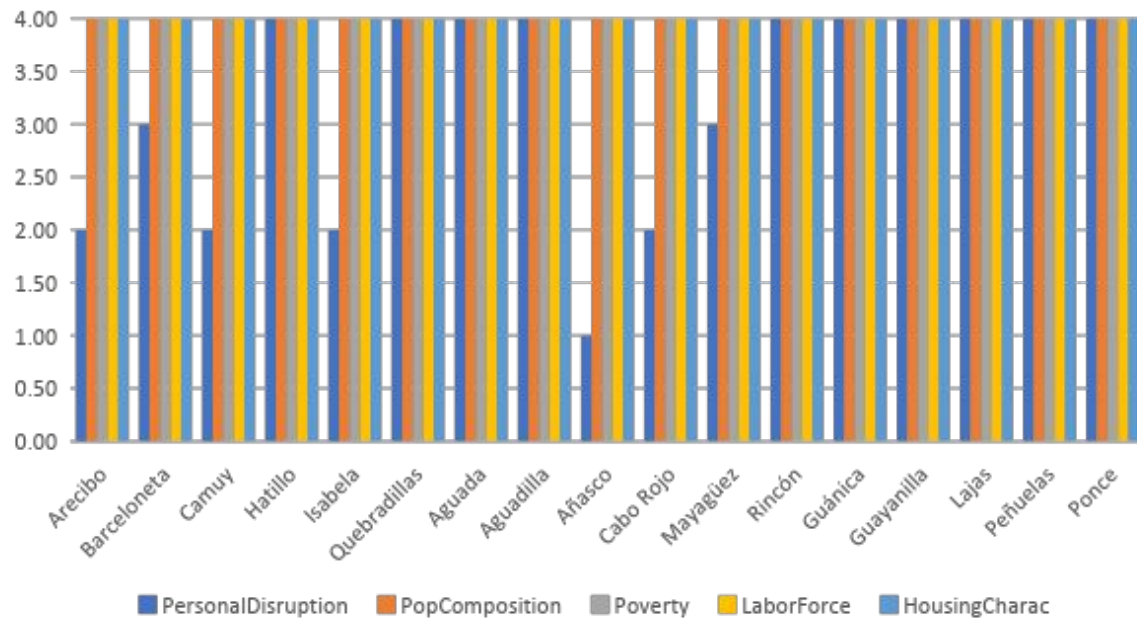
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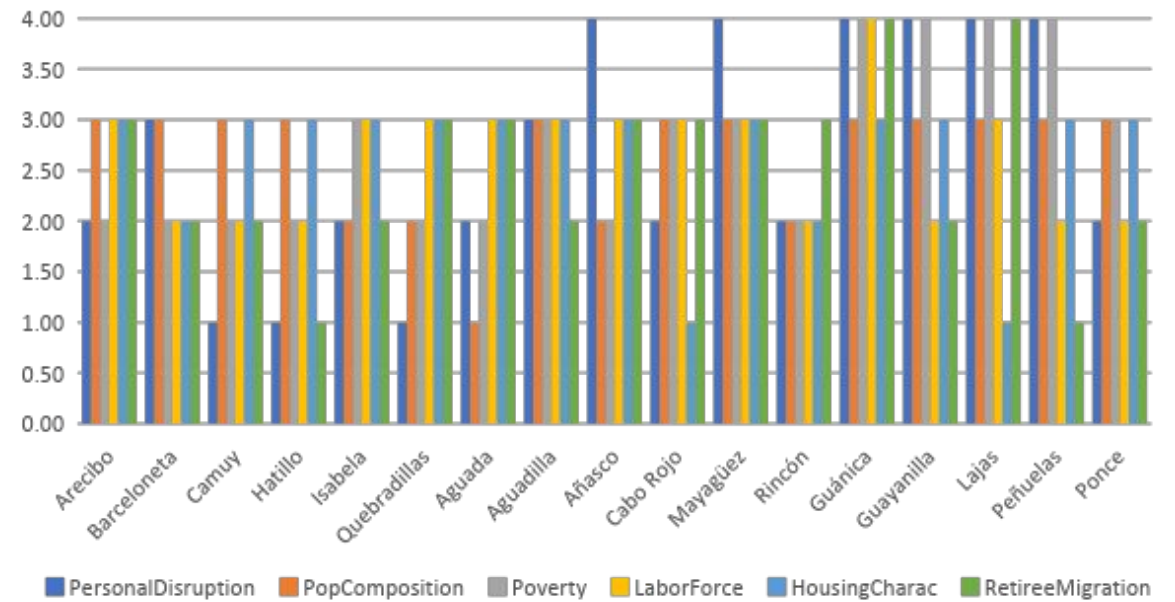
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CSVI 2010: Puerto Rico (West)

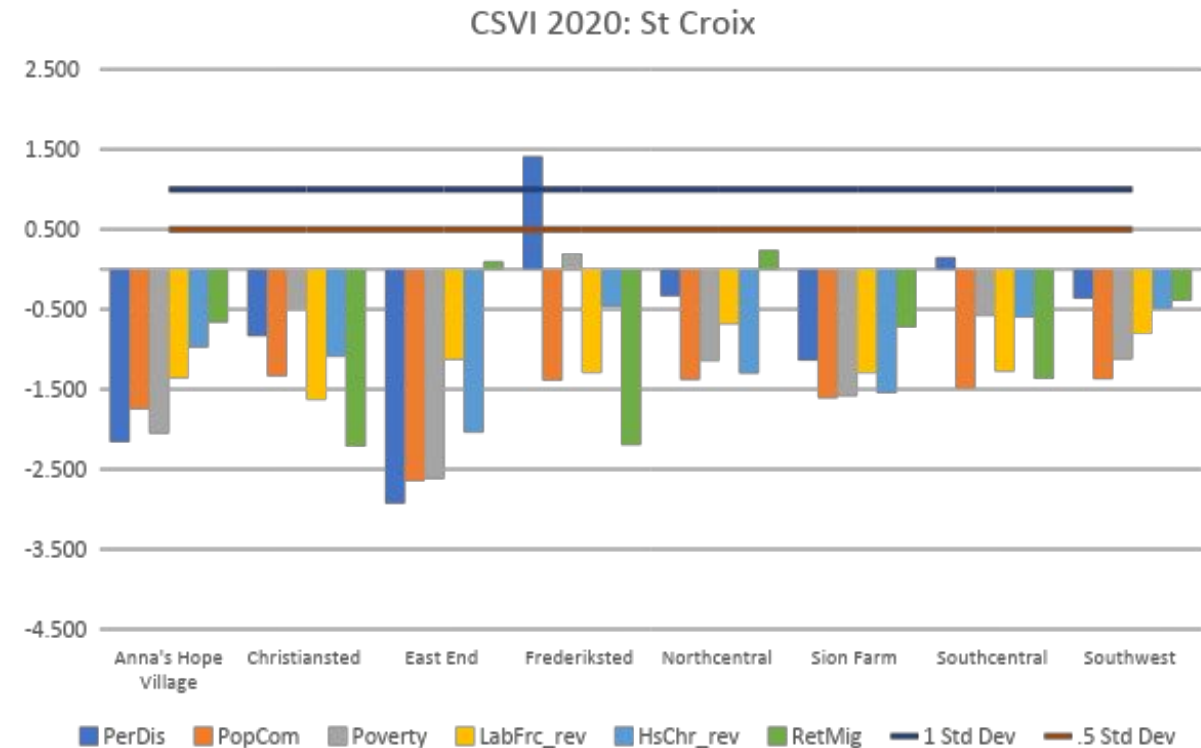
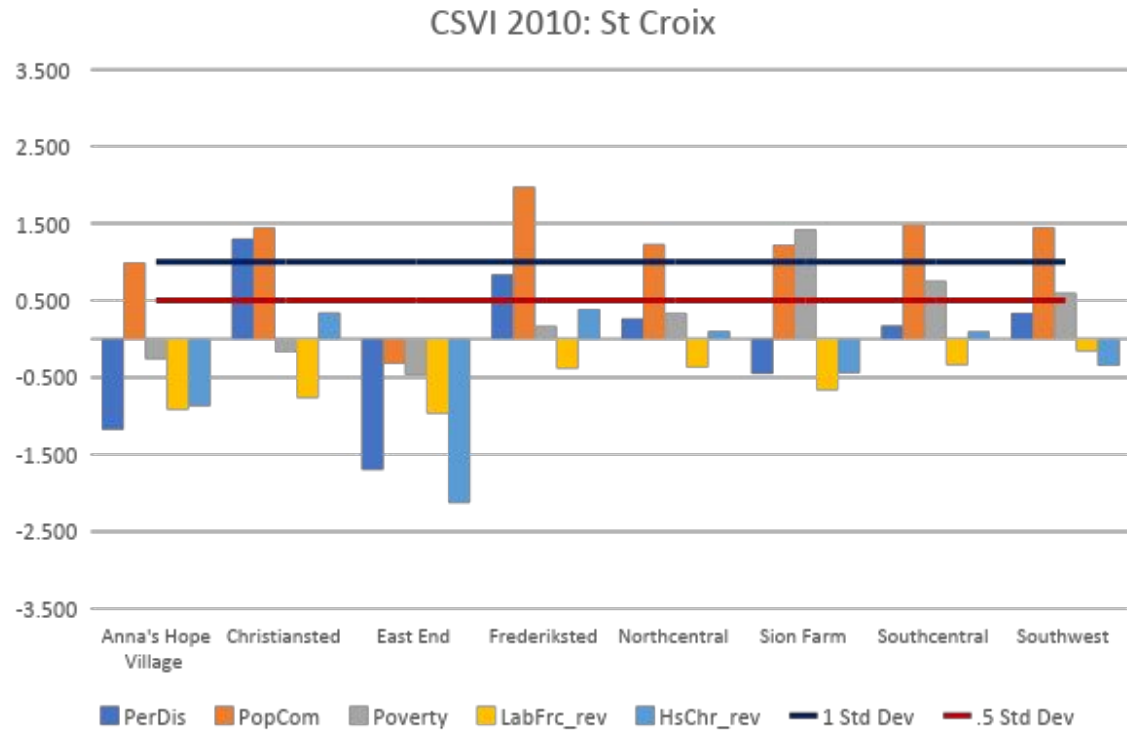


CSVI 2020: Puerto Rico (West)



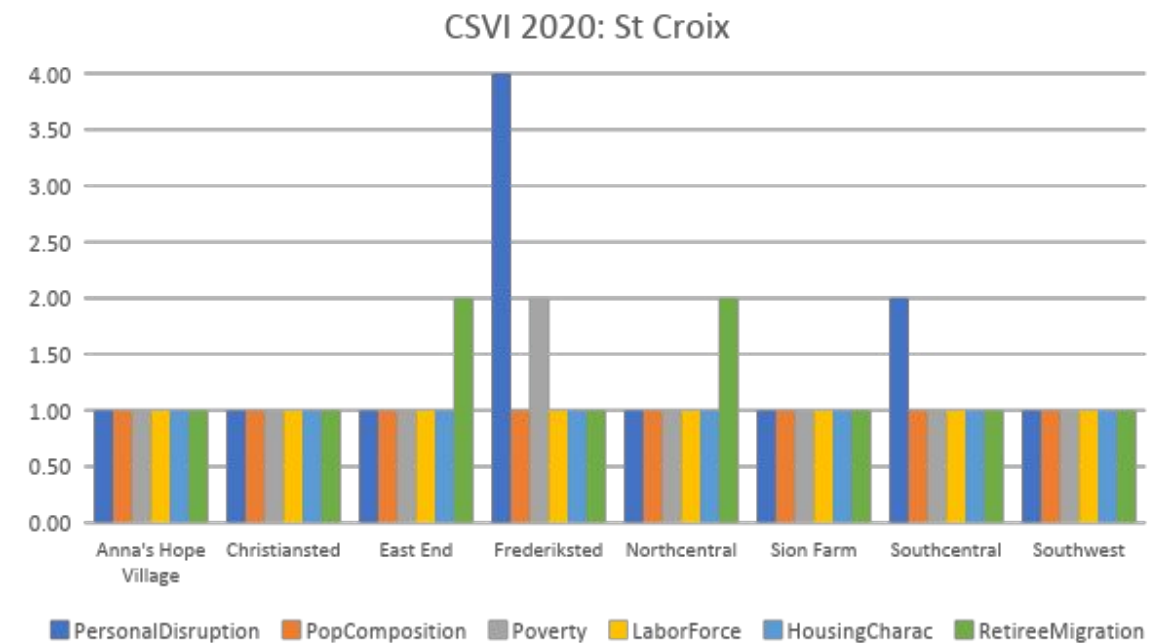
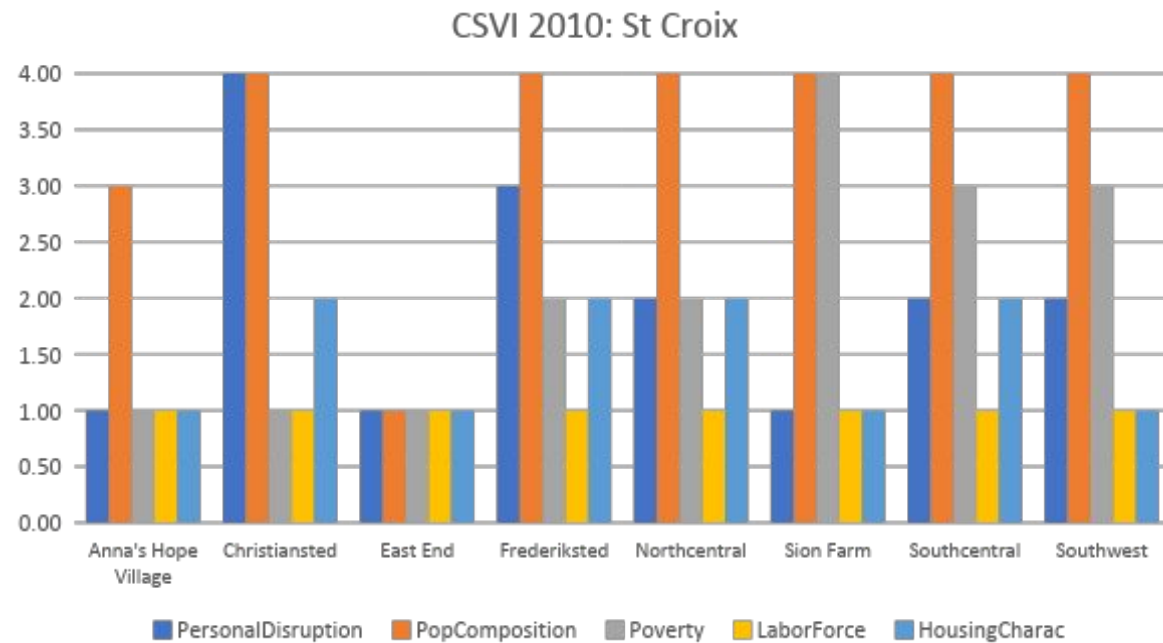
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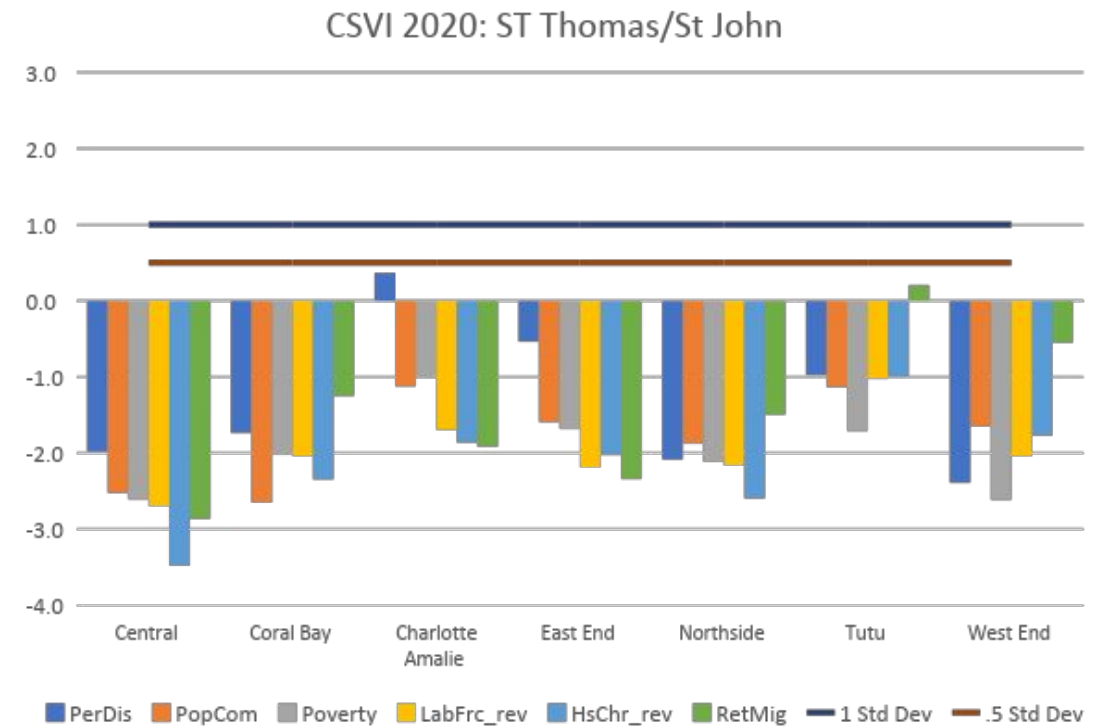
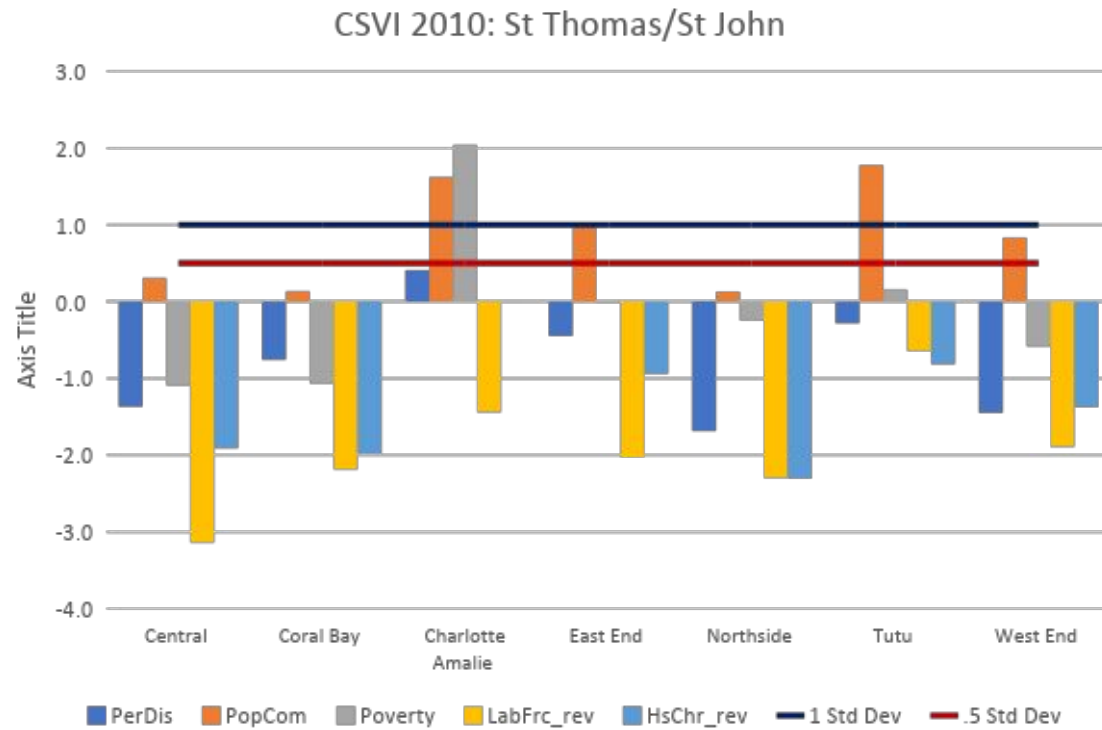
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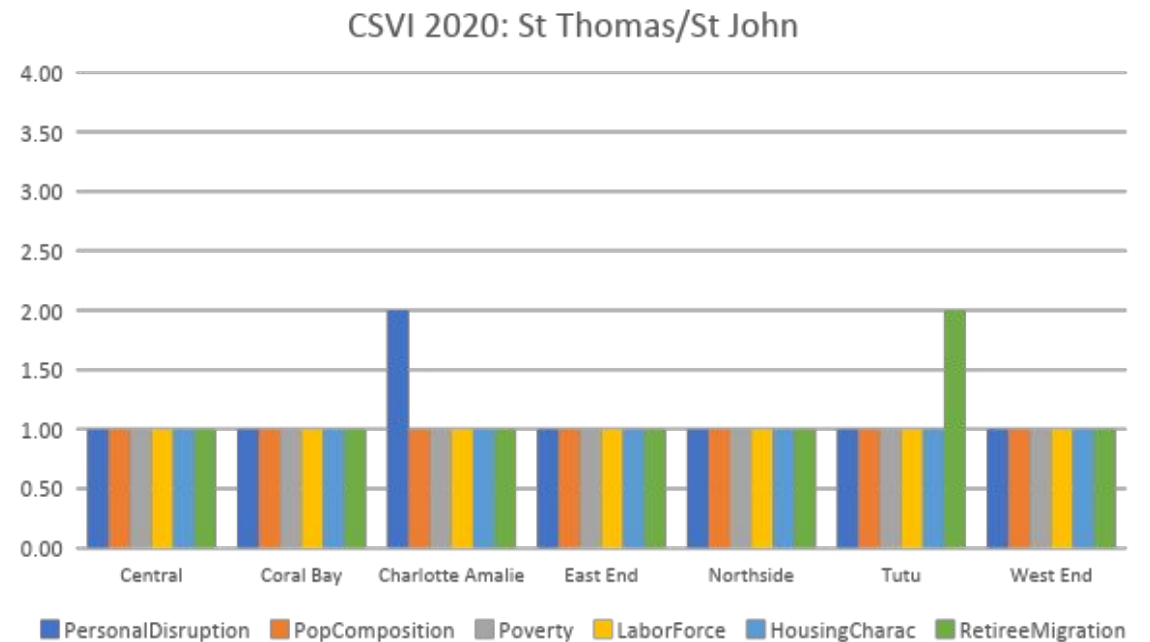
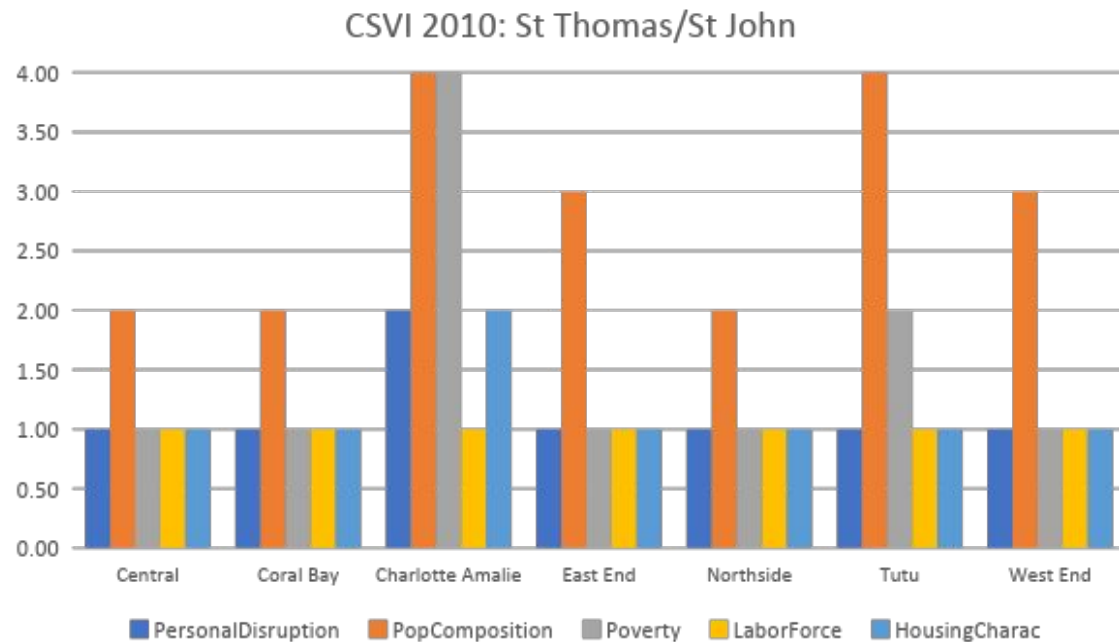
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Next steps

- Understand factors affecting trends observed (2010–2020)
- Validation; “groundtruthing” efforts
- Data challenges (landings at the community level) and data gaps (recreational fisheries)
- Strategies to integrate CSVI into EBFM efforts

Thank you!

