

# SOUTH ATLANTIC COASTAL STUDY (SACS) NORTHEAST FLORIDA FOCUS AREA KEY FINDINGS AND PRODUCTS

U.S. Army Corps of Engineers  
Jacksonville District

October 15<sup>th</sup>, 2021



US Army Corps  
of Engineers®



# PRESENTATION OUTLINE



## 1 Background and Overview of SACS

- Scope and Authority
- Focus Area Selection
- Stakeholder Coordination

## 2 Existing Federal GSRM Projects in Region Northeast Florida Focus Area

- Sub-Focus Area Selection
- Northeast Florida Hazards

## 3 Sub-Focus Areas

- Risk Characterization
- Action Strategy Development
- Tributary Evaluation and Comparison

## 4 Recommendations

- Follow-on Feasibility Study Recommendations
- Additional Northeast Florida Recommendations

**“Every dollar spent before an event saves four to five dollars in reconstruction costs after.”**

*– National Research Council, 2014*

**“Joint planning with stakeholders across sectors, regions, and jurisdictions can help identify critical risks arising from interaction among systems ahead of time.”**

*– National Climate Assessment, 2018*



# STUDY AUTHORITY

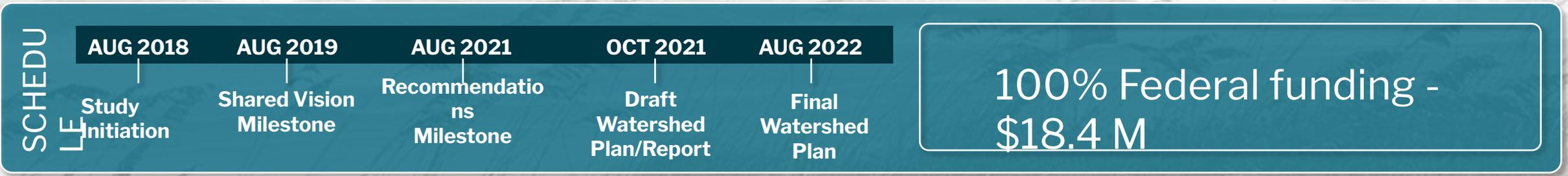
## Section 1204, WRDA 2016



- Identify risks and vulnerabilities to **increased hurricane and storm damage as a result of sea level rise (SLR)**.
- **Emphasize regional sediment management** practices to sustain/enhance current coastal storm risk management measures.
- **Recommend measures** to address coastal vulnerability of areas affected by sea level rise.
- Develop **a long-term strategy to address increased hurricane/storm damages resulting from sea level rise**, enhance resiliency and lower risks in –
  - populated areas
  - areas of concentrated economic development; and
  - areas with vulnerable environmental resources
- Submit a report recommending specific and detailed actions.

## STUDY GUIDANCE

- Follow planning guidance applicable to watershed assessments
- Model the study after the North Atlantic Coast Comprehensive Study (NACCS)
- Data shall be evaluated consistent with the NACCS to the maximum extent practicable



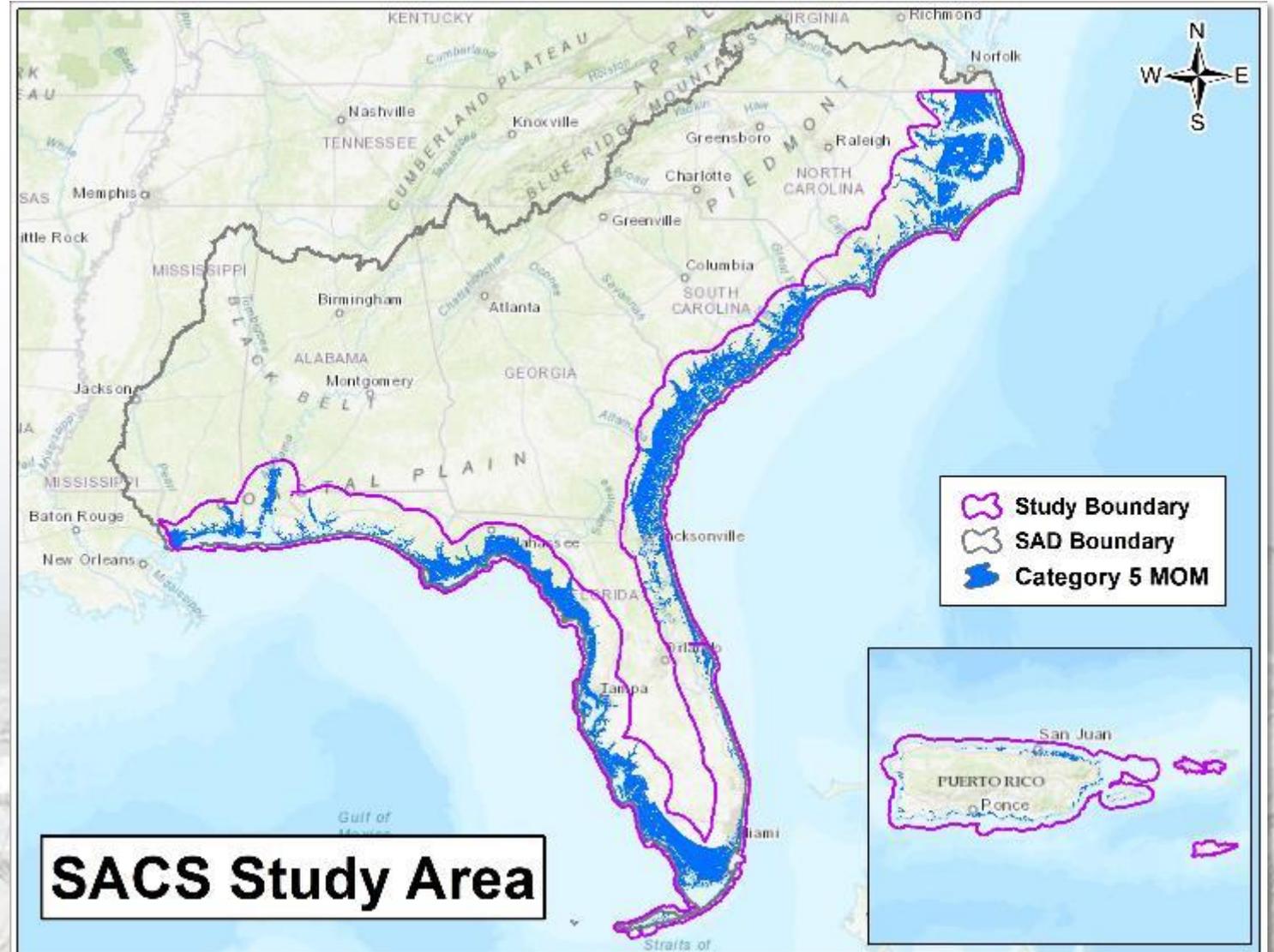


# STUDY AREA



Over 65,000 miles of tidally influenced coastline in the South Atlantic Division (SAD) area of responsibility affected by sea level rise (SLR) where hurricane and storm damages are occurring or are forecast to occur.

Florida has over 1,200 miles of ocean shoreline and over 12,400 miles of tidally-influenced shoreline largely contributing to the coastal storm risk.





# Focus Area Selection

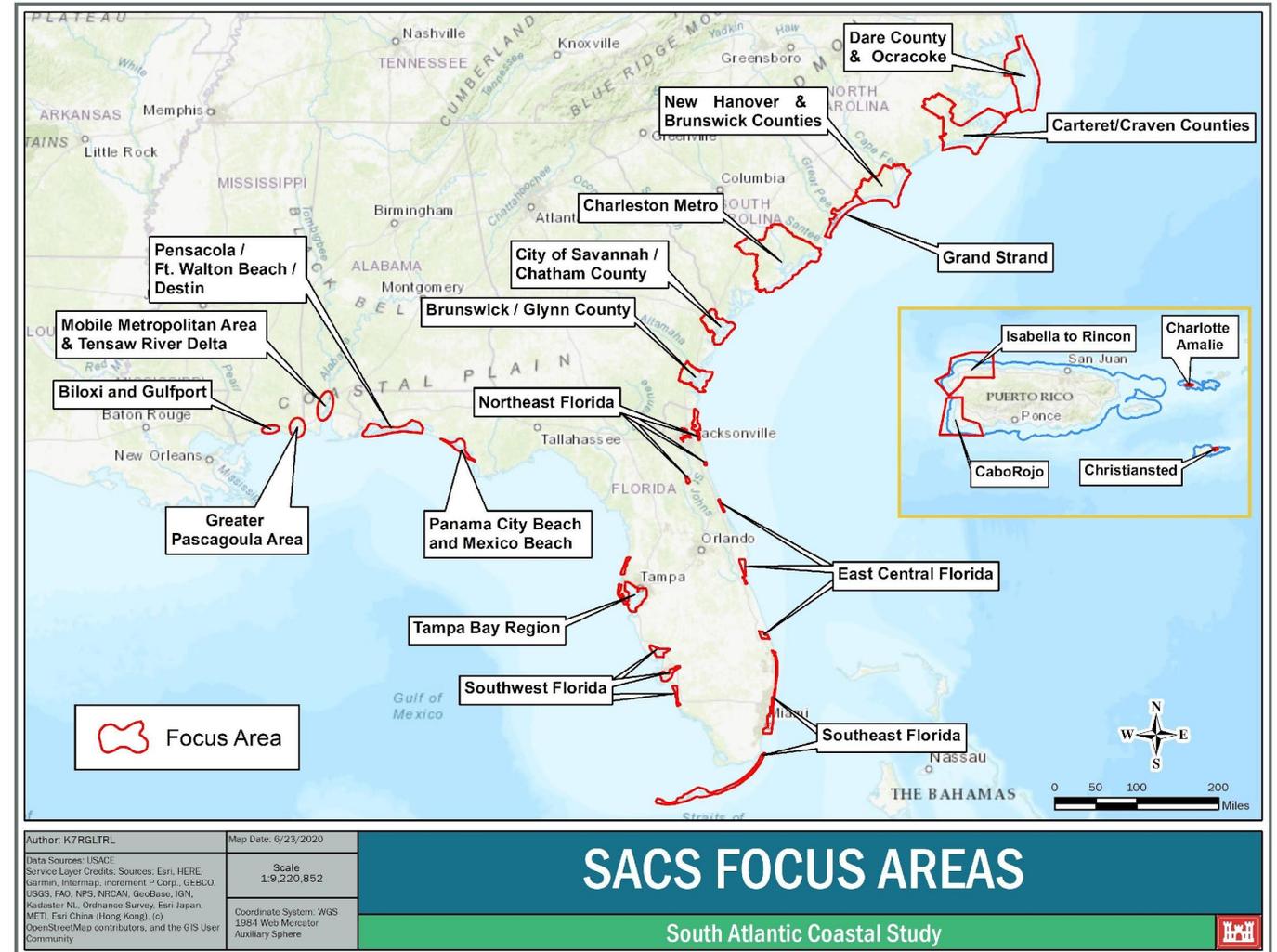


## State and Territory Appendices

- 6 state appendices
  - North Carolina
  - South Carolina
  - Georgia
  - Florida
  - Alabama
  - Mississippi
- 2 Territories
  - Puerto Rico
  - U.S. Virgin Islands

## Focus Areas:

- Geographic area(s) highly vulnerable to storm damages as a result of SLR that warrants additional analysis in the State/Territory Appendix
- At least one per state/territory
- 21 Total
- 7 in Florida
  - 5 in Jacksonville District
  - 2 in Mobile District

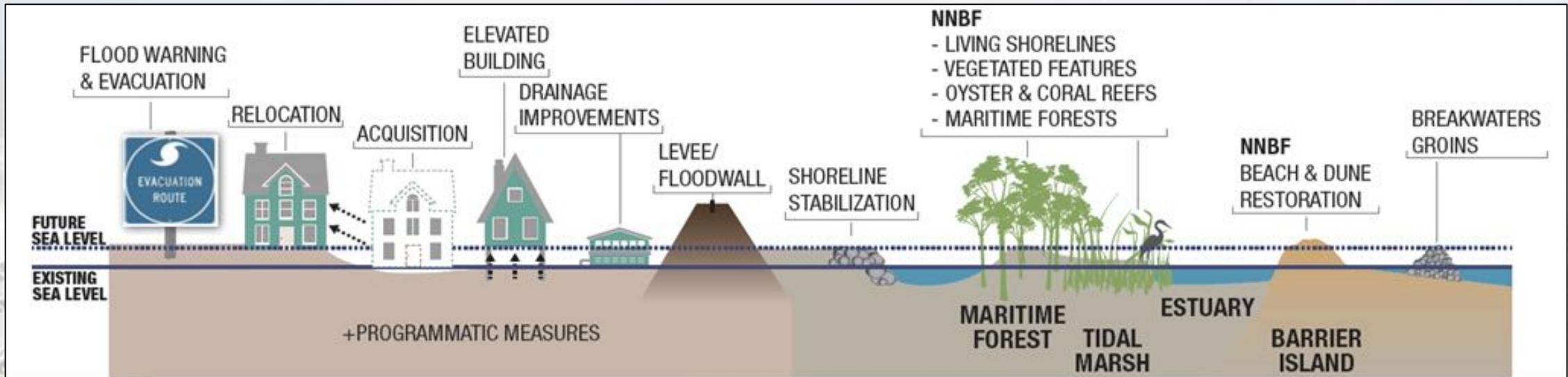




# STAKEHOLDER COORDINATION



- Regional SACS Northeast Florida Workshop held in 2019 for the Florida Appendix
- Series of 3 Workshops held in 2020 for each Focus Area
  - Kickoff Workshop
  - Action Strategy Development Workshop
  - Wrap-Up Workshop
- Identified Structural, Non-Structural, and Natural and Nature-Based Features (NNBF)
- Actions to reduce risk from coastal storms and sea level rise to:
  - populated areas
  - areas of concentrated economic development; and
  - areas with vulnerable environmental resources





# Existing Federal CSRM Projects in Northeast Florida

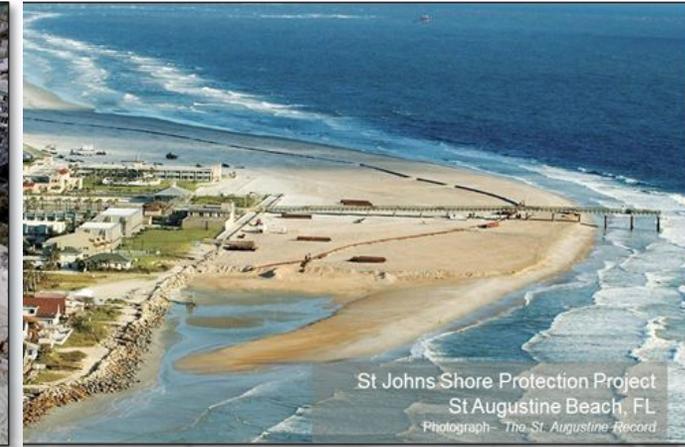


Nassau County Shore Protection Project

Duval County Shore Protection Project

St. Johns County Shore Protection Project – St. Augustine Beach, Vilano Beach

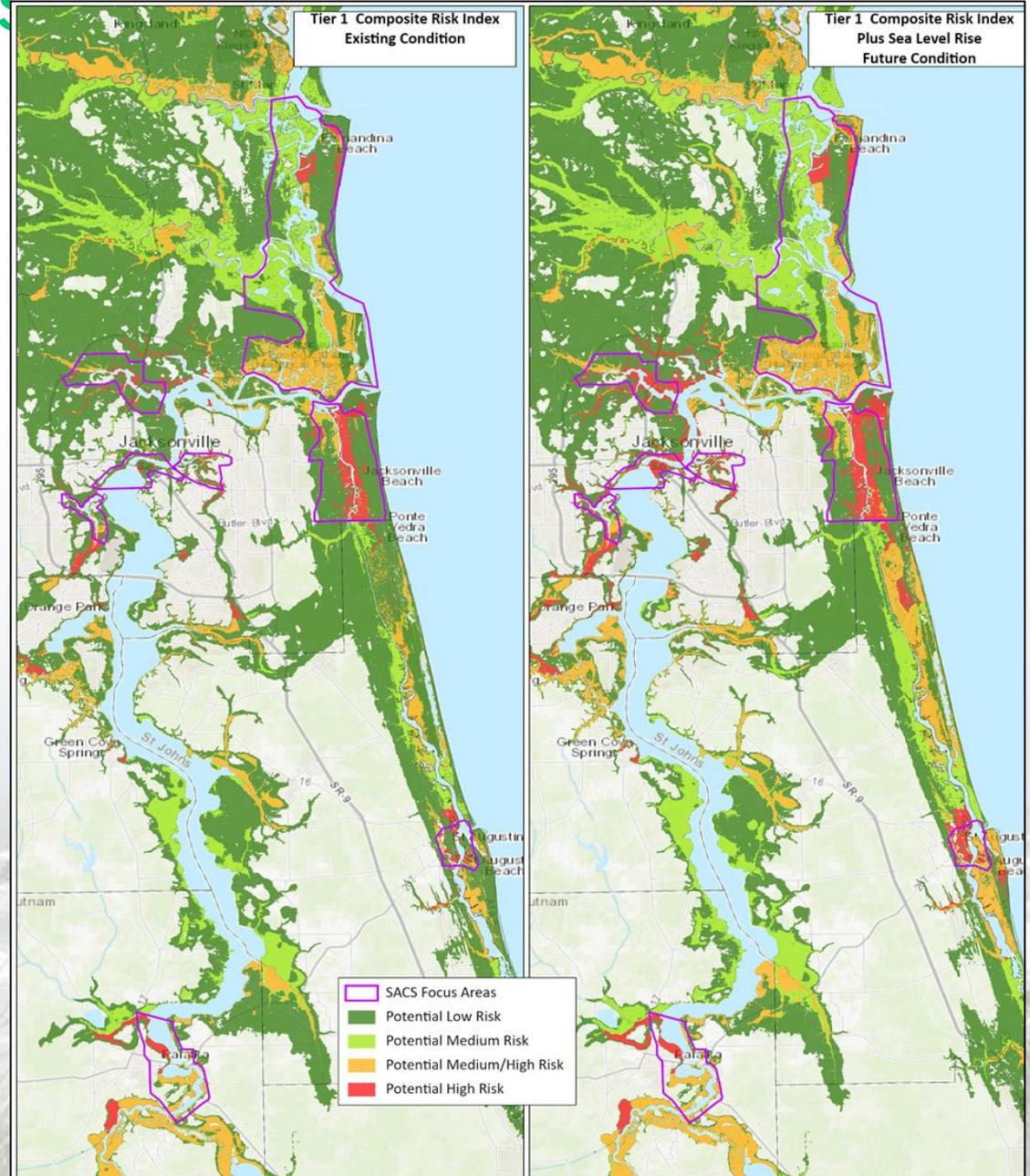
Coastal Storm Risk Management (CSRM) for Flagler County, FL





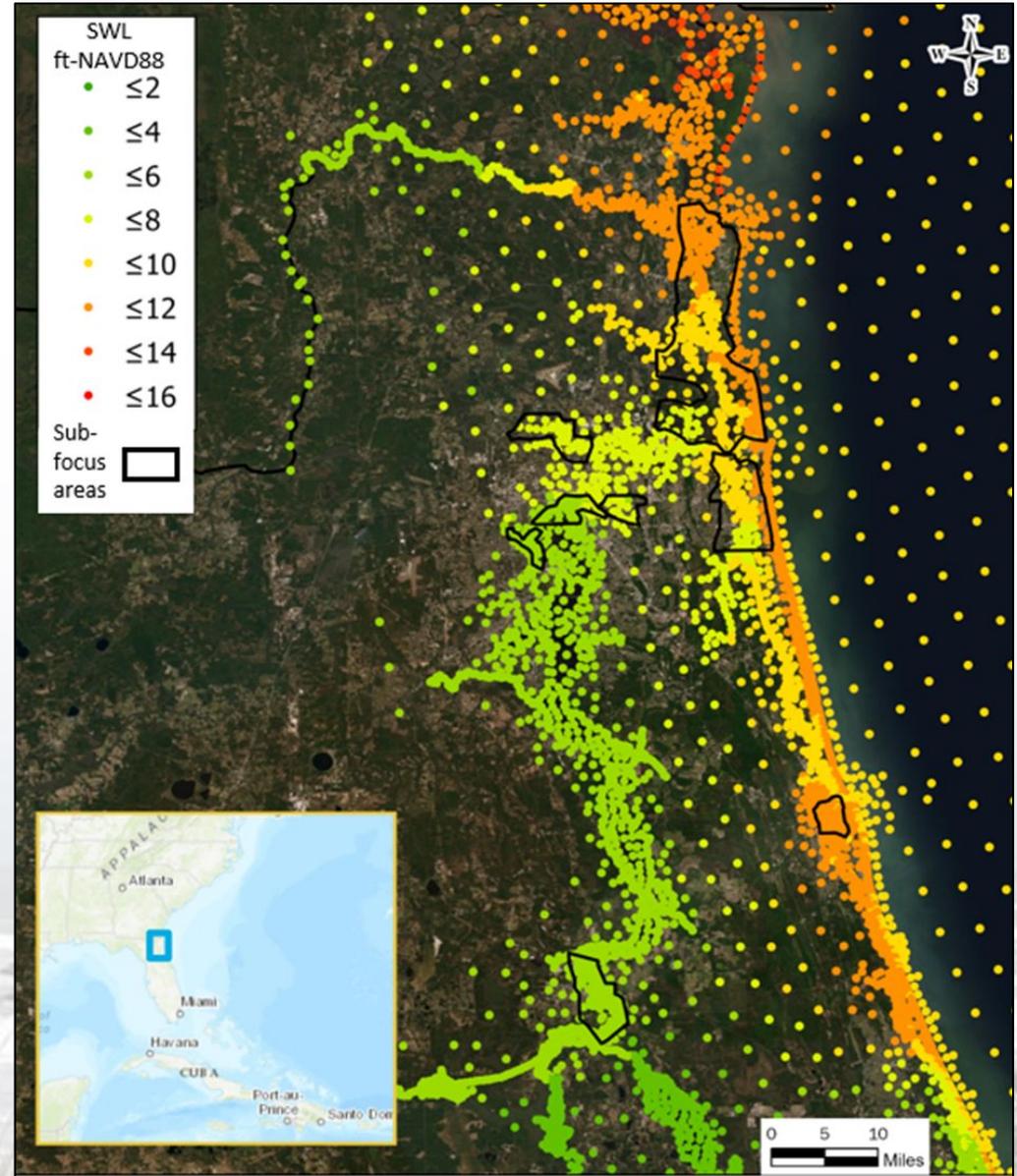
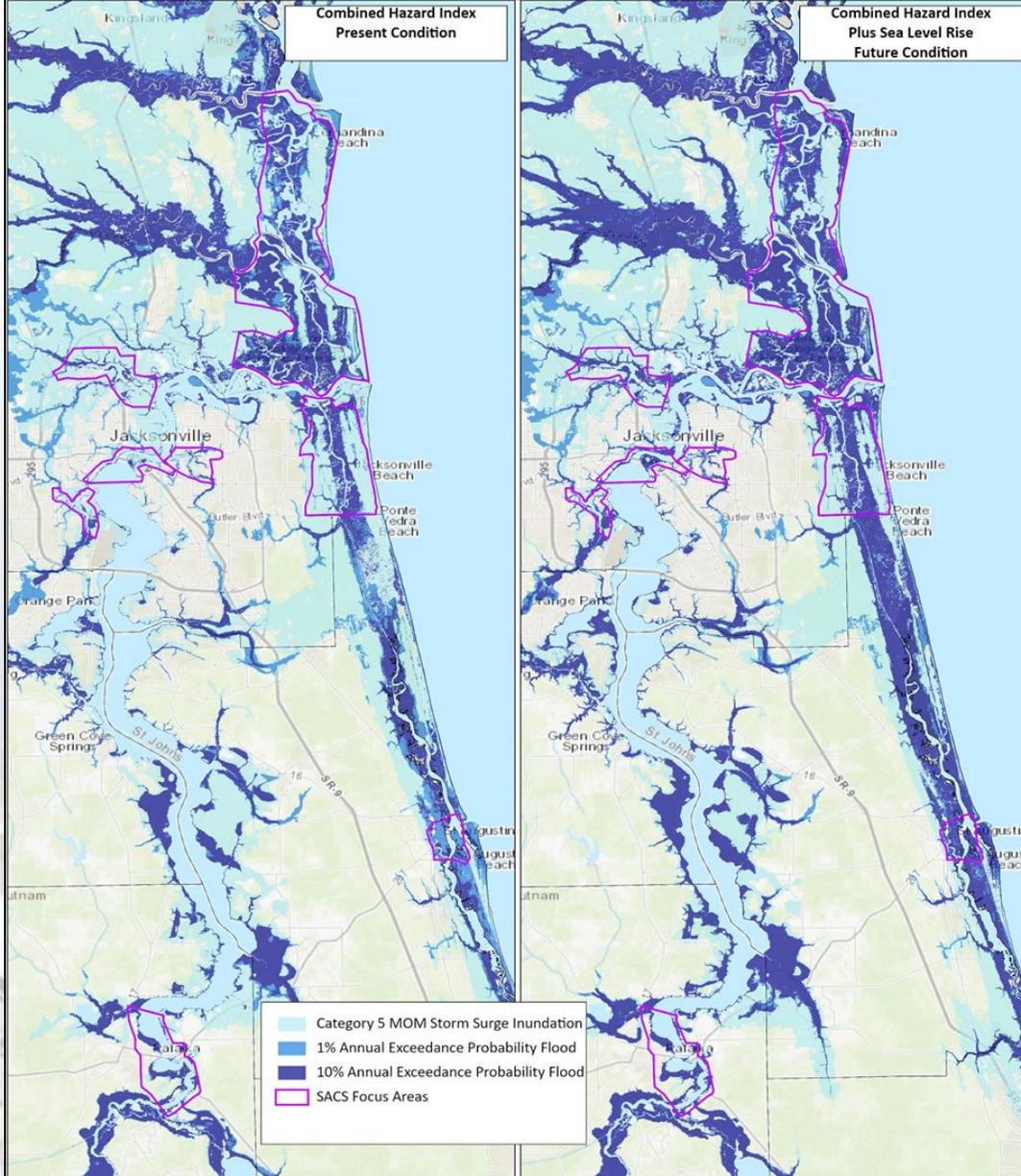
# Northeast Florida Focus Area

Sub-Focus Areas were selected based on the Tier 1 Risk Assessment, grouping of problems/hazards, economic damages, and surrounding priority environmental areas





# Northeast Florida Hazards



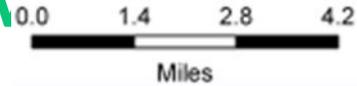
Author: k3ernawaj  
 Data Sources: USACE  
 Service Layer Credits: World Topographic Map Services; Esri, HERE, Garmin, Intermap, Swirexcess IP Corp., GEBCO, USGS, FAO, NPS, URCAN, Geobase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community  
 Map Date: 6/1/2021  
 Coordinate System: WGS 1984 Web Mercator Auxiliary Sphere

**CHS Northeast FL**  
**SWL SLC0 - 1% AEP (ft, NAVD88)**  
 South Atlantic Coastal Study

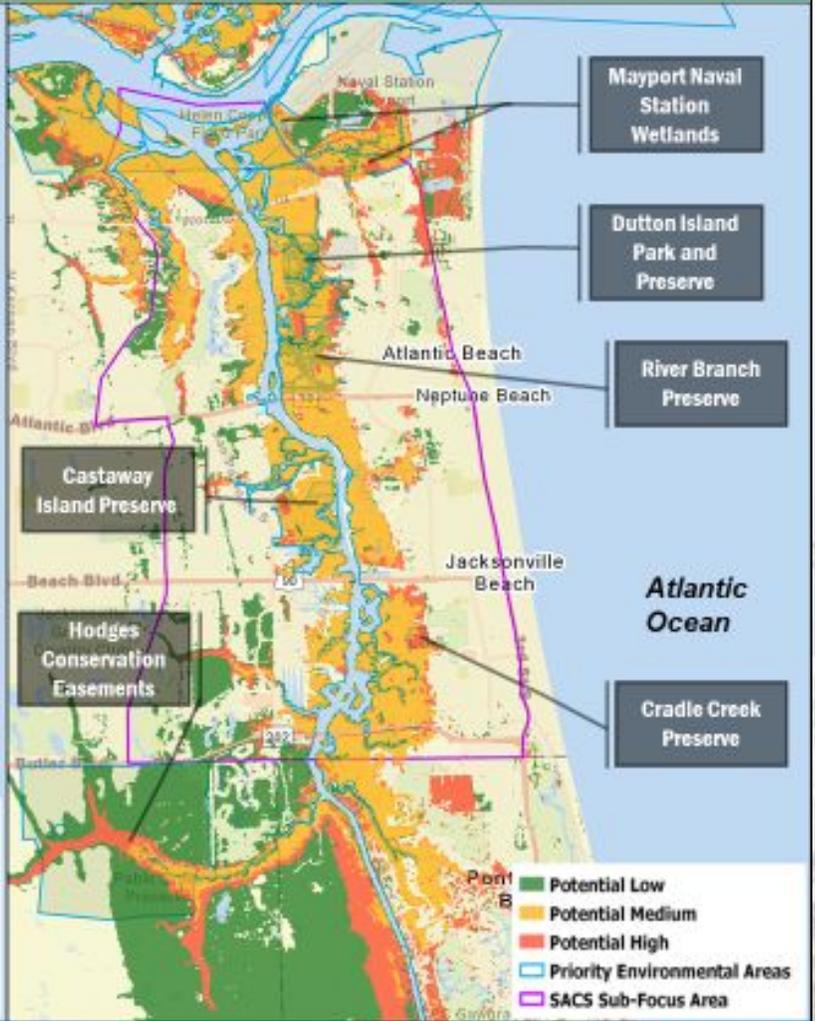
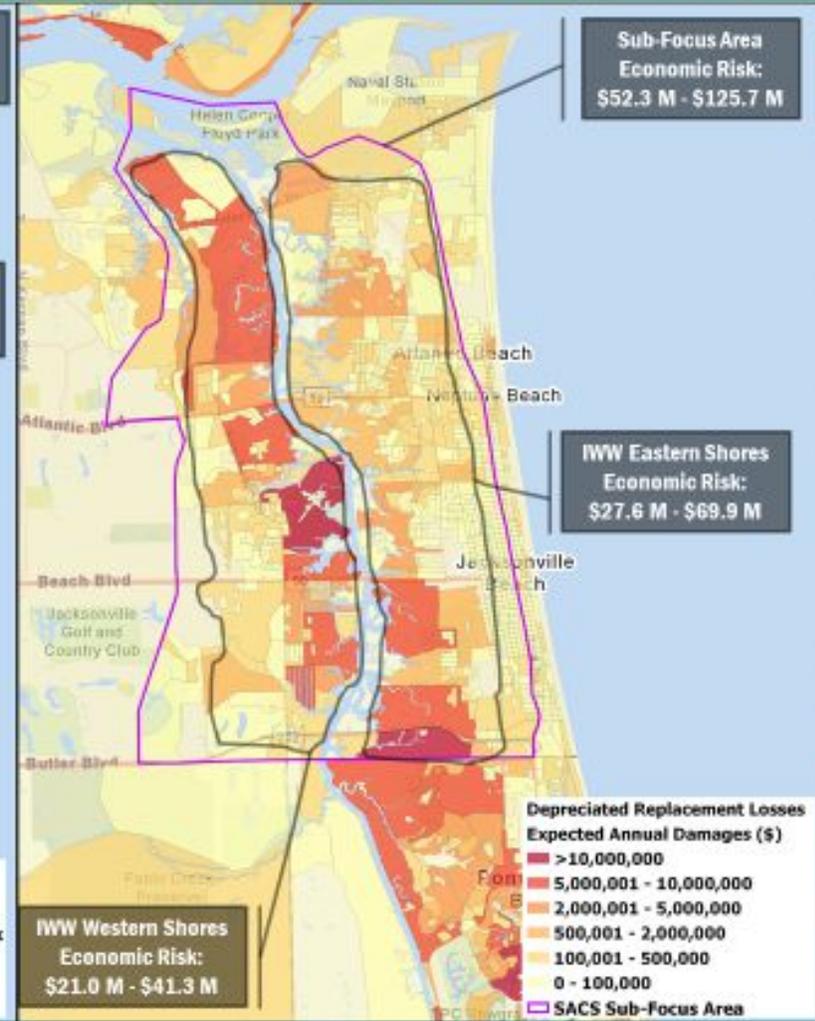
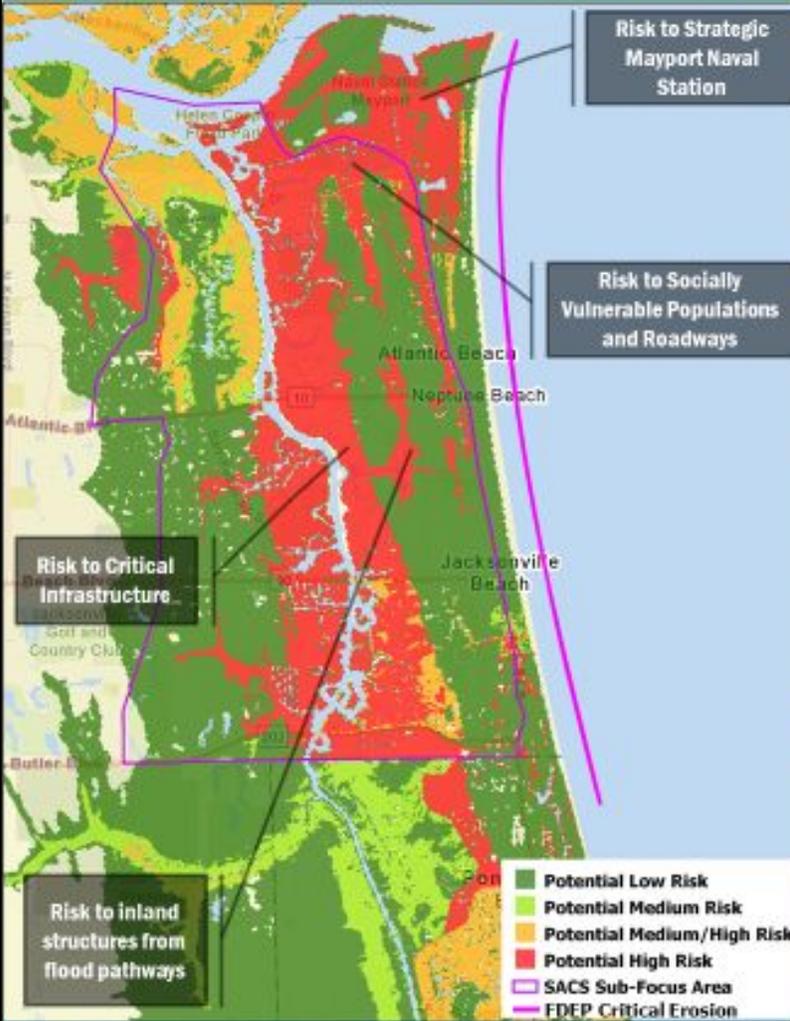




# Duval County Intracoastal Waterway



## SACS Tier 1 Composite Risk Index (Future Condition)    SACS Tier 2 Economic Risk Assessment (Future Condition)    SACS Tier 2 Environmental Resource Inundation Risk





# Duval County Intracoastal Waterway (IWW)



## Ongoing/Planned Actions:

- Beach and Nearshore Placement
- Maintenance Dredging of Federal Channels
- Conservation of Lands
- Vulnerability Assessments (City of Atlantic Beach, Mayport, etc.)

## Needed Action

- Non-structural measures (e.g., elevation, floodproofing)
- Zoning of lands
- Enhance NNBF (Thin-Layer Placement)
- Structural measures where appropriate (critical infrastructure)



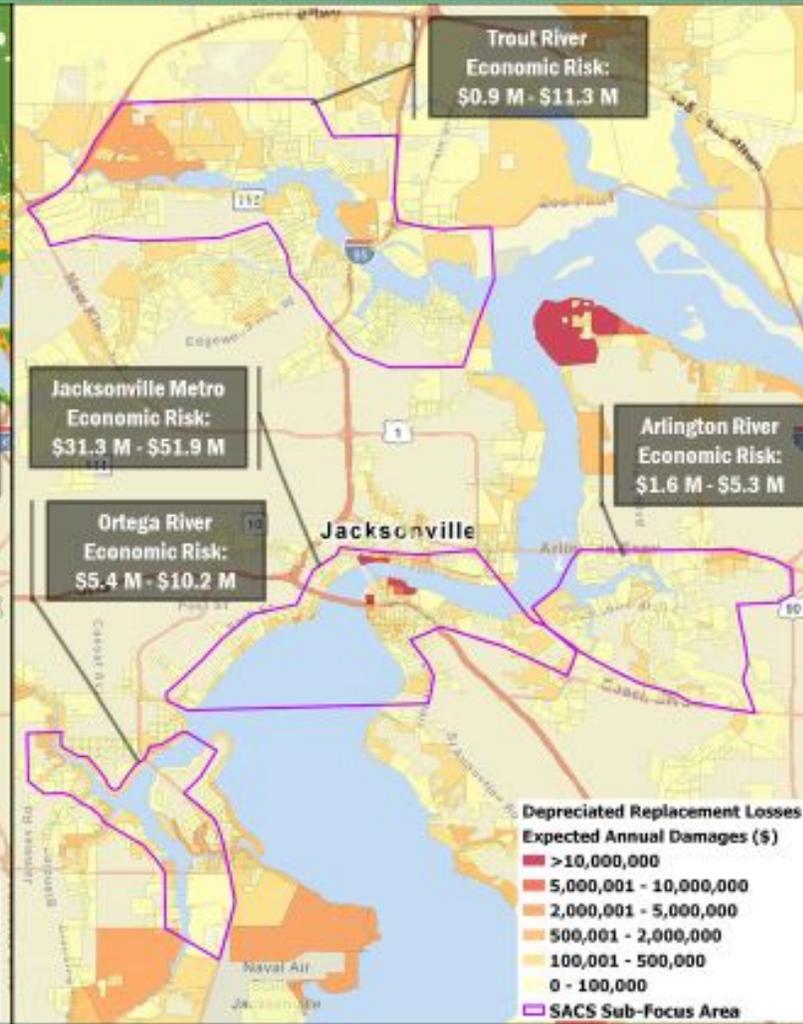
# St. Johns River and Tributaries (Jacksonville Metro, Trout River, Arlington River, Ortega |



SACS Tier 1 Composite Risk Index (Future Condition)

SACS Tier 2 Economic Risk Assessment (Future Condition)

SACS Tier 2 Environmental Resource Inundation Risk

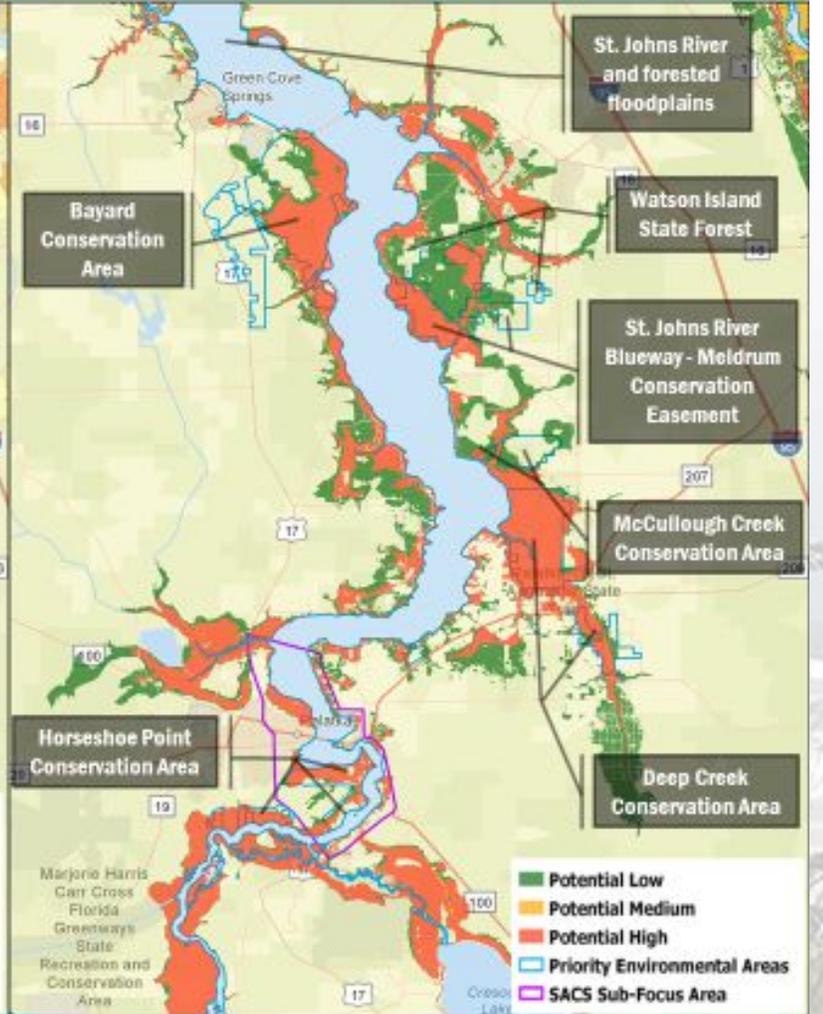
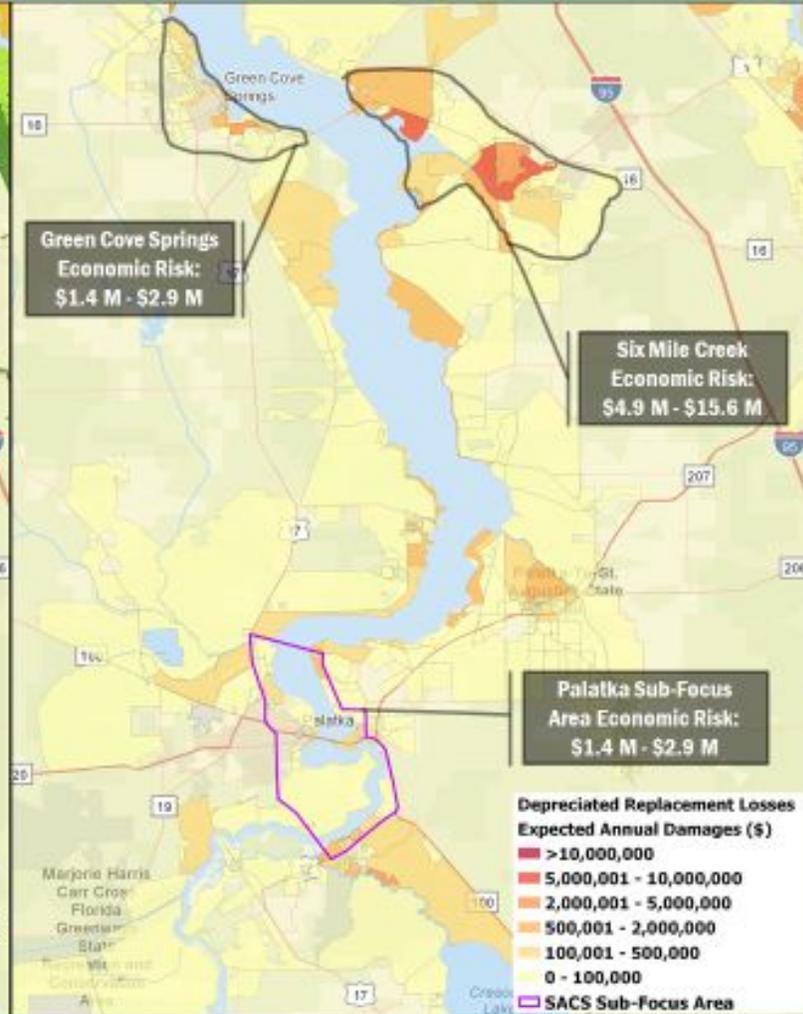
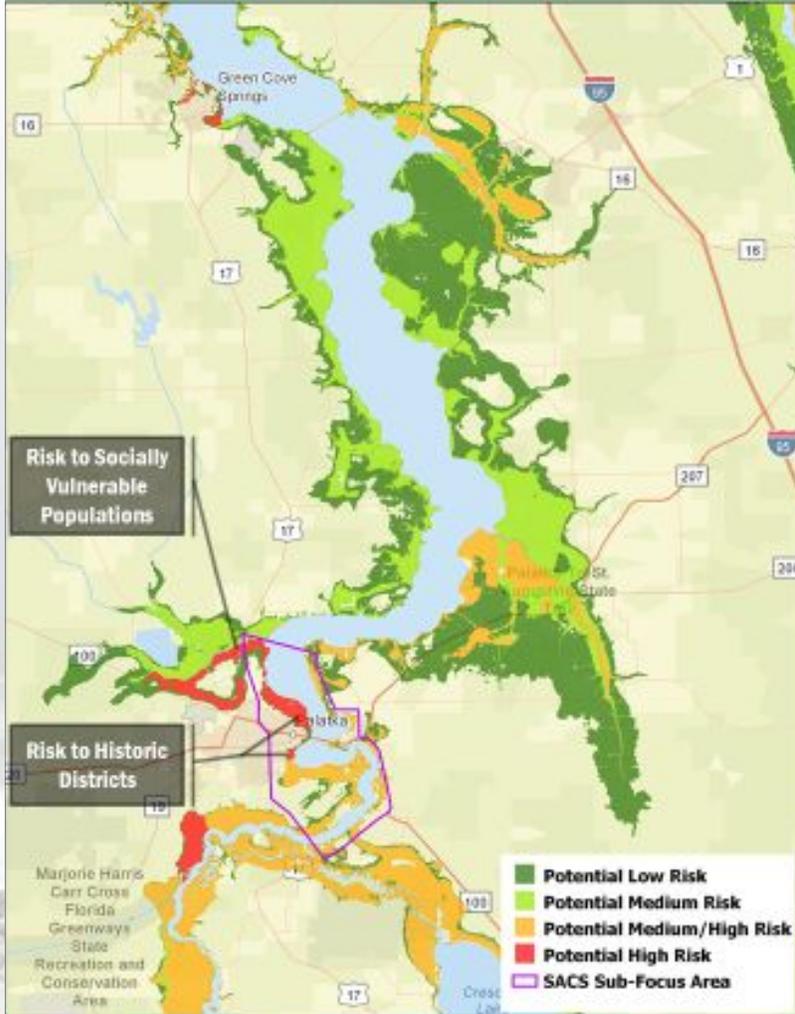




# Palatka and Lower St. Johns River

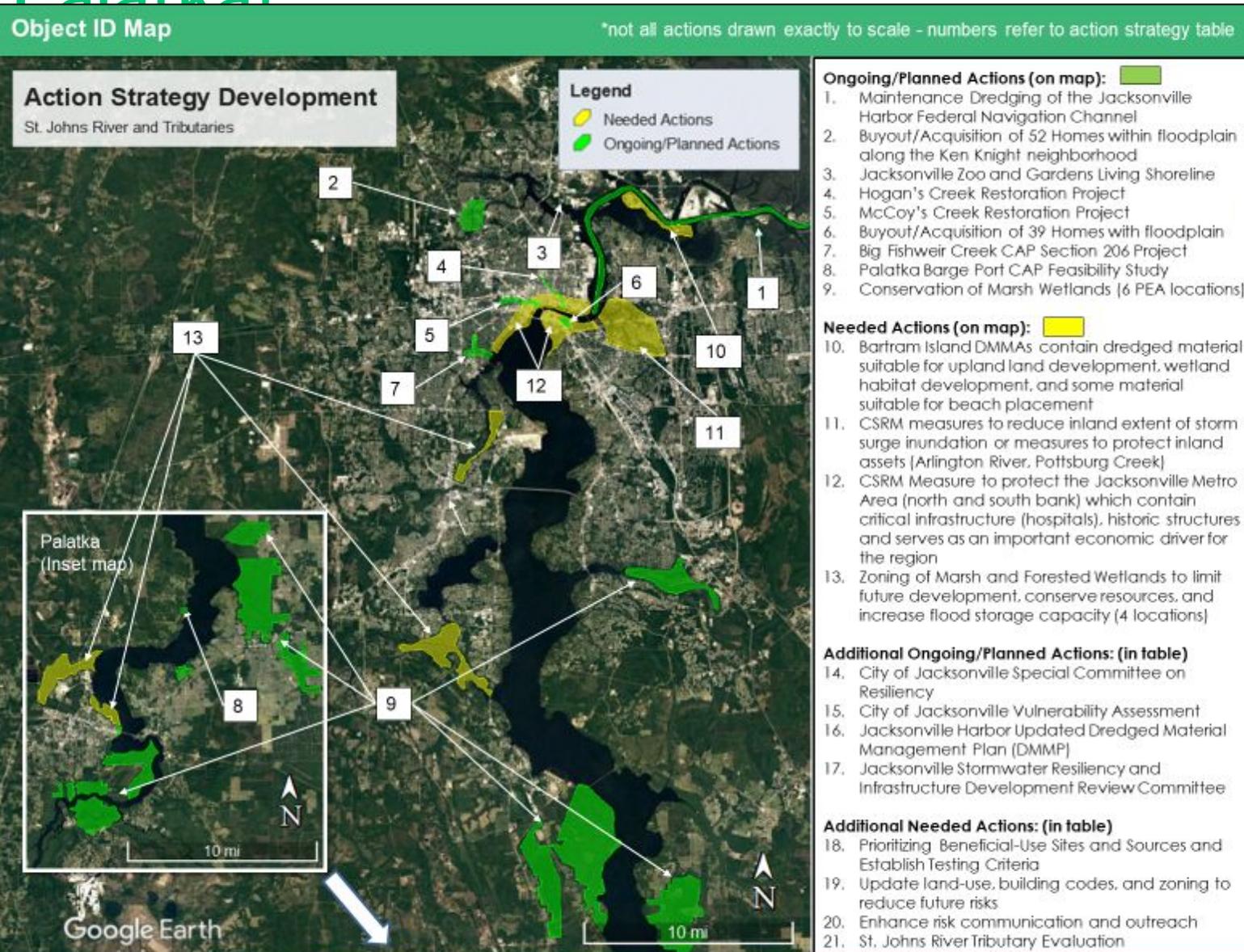


SACS Tier 1 Composite Risk Index (Future Condition)    SACS Tier 2 Economic Risk Assessment (Future Condition)    SACS Tier 2 Environmental Resource Inundation Risk





# St. Johns River and Tributaries (Jacksonville Metro Trout River, Arlington River, Ortega River, and Palatka)



## Ongoing/Planned Actions:

- Jacksonville Harbor
- Buyout/Acquisition
- Tributary Restoration
- Conservation of Floodplains
- City of Jacksonville Vulnerability Assessment
- City of Jacksonville Special Committee on Resiliency

## Needed Actions:

- CSRM measures to reduce risk to infrastructure along river and tributaries
- Zoning of Lands within Floodplains
- Utilize Dredged Material from DMMA's
- Protection of Strategic Military Installations
- Protections of critical infrastructure
- St Johns River Tributary Evaluation



# St. Johns River Tributary Evaluation and Comparison



## Impaired Tributaries:

- Arlington River/Pottsburg Creek
- Black Creek
- Goodbys Creek
- Cedar River
- Trout River
- Ribault River
- Moncrief Creek
- Julington Creek
- Craig Creek
- Broward River



Flooding along Pottsburg Creek during

<https://www.jacksonville.com/news/public-safety/2017-09-11/flooding-and-downed-trees-cause-problems-along-pottsburg-creek-and>



Flooding in the Ken Knight Neighborhood along the Ribault River

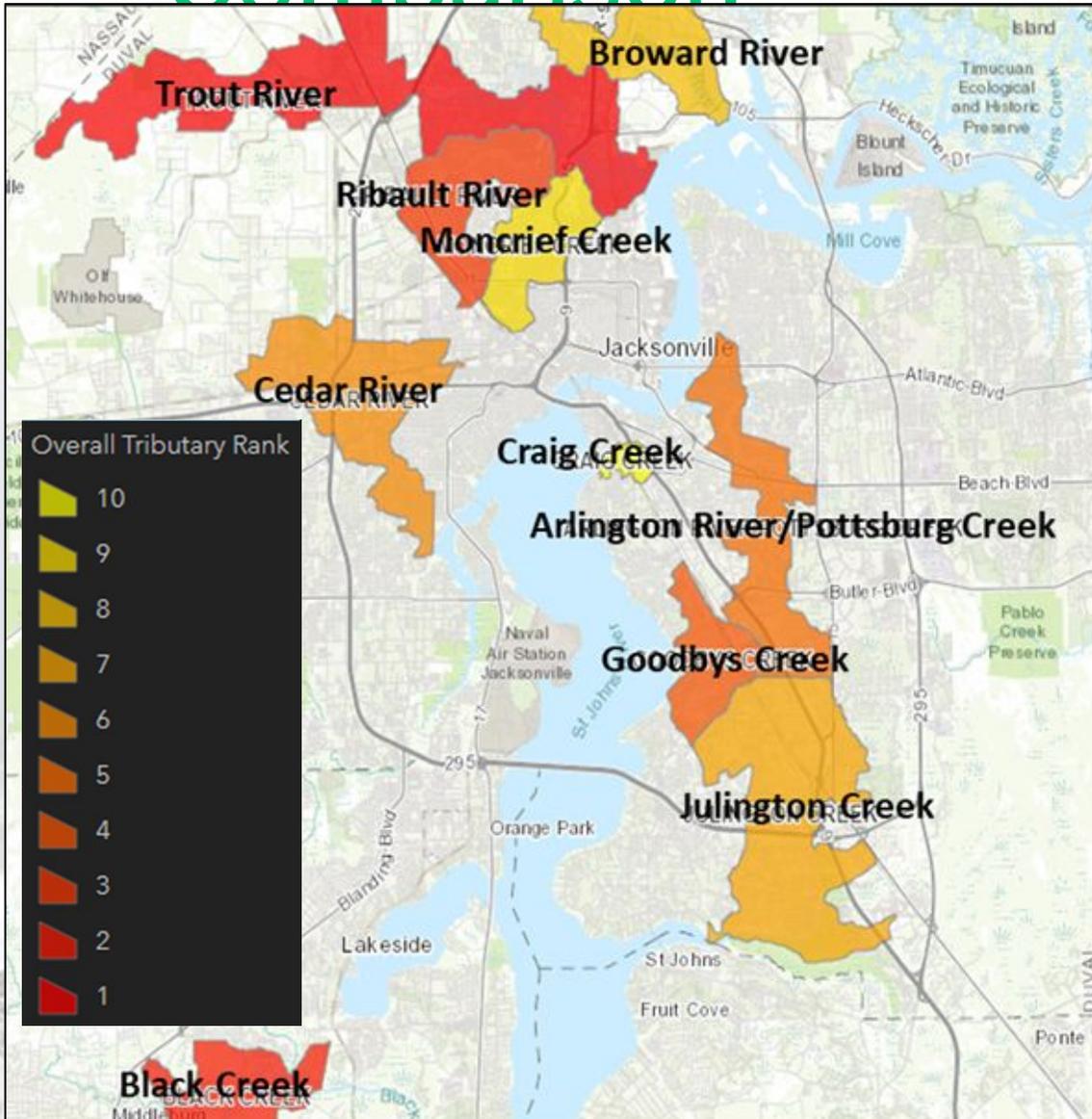
<https://www.news4jax.com/news/local/2020/09/11/jacksonville-proposes-5m-buyout-of-flood-prone-ken-knight-dri-ve-homes-2/>

## Exposure Considerations:

- Social Vulnerability Index
- SACS Tier 1 Infrastructure Index Rank
- SACS Tier 2 Existing Conditions Economic Risk Rank
- SACS Tier 2 Future Conditions Economic Risk Rank
- 2010 Census Population Density
- 1% AEP (100-year) Flood Hazard Rank
- 10% AEP (10-year) Flood Hazard Rank
- 1% AEP (100-year) Flood Hazard Rank Future Condition
- 10% AEP (10-year) Flood Hazard Rank Future Condition
- FWS Critical Habitat Area Rank
- NFWF Resiliency Hub Tributary Rank



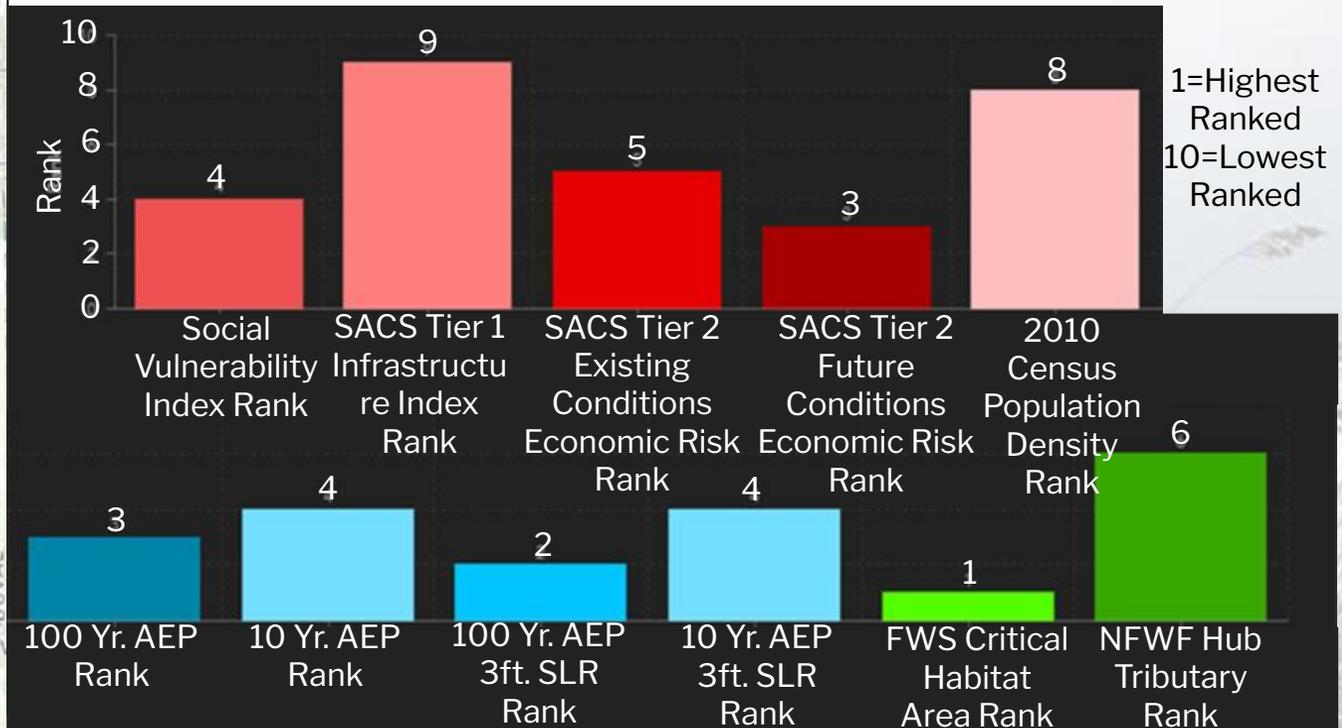
# St. Johns River Tributary Evaluation and Comparison



Trout River Ranking: 1 of 10 (Overall Composite Ranking)

- Consideration equally weighted and ranked against one another based on percent areas
- Water Body Identifications (WBID) used as boundaries

SAJ Northeast Florida Tributary Ranking Dashboard can be accessed at:  
<https://sacs.maps.arcgis.com/apps/opsdashboard/index.html#/01fe77f88aa844beaad7f83560523d9c>



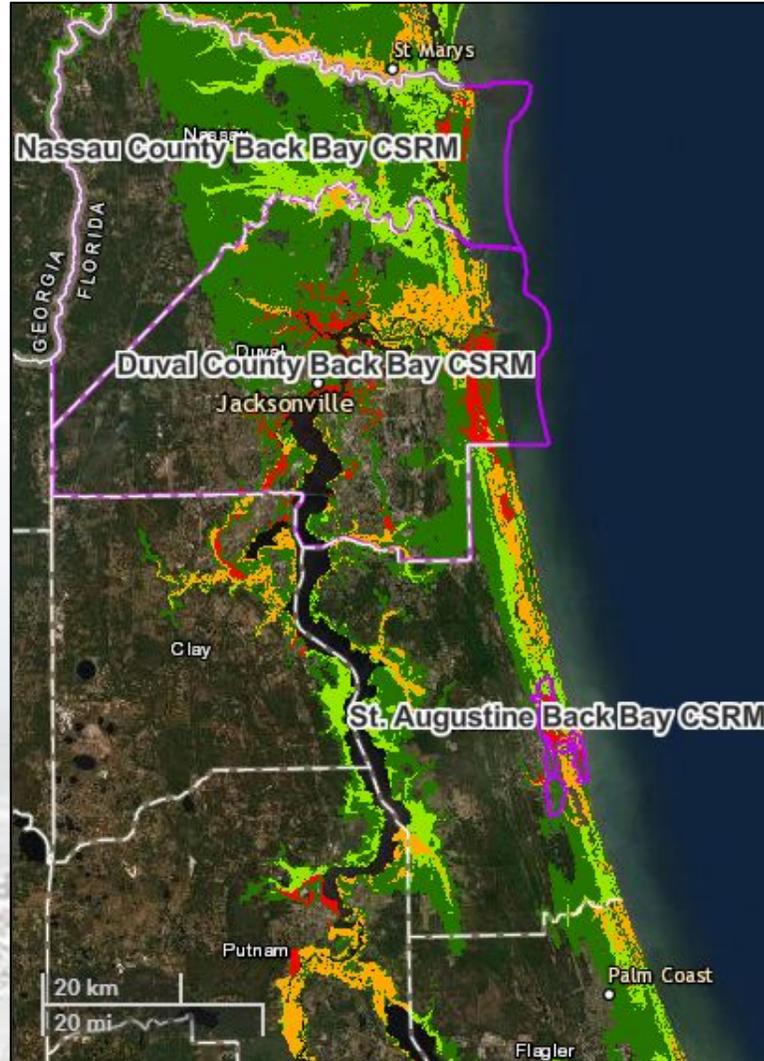


# Study Recommendations



## Follow-on Feasibility Study Recommendations

- Tidally-influenced waterbodies
- WRDA 2020 directives
- Economically disadvantaged areas
- Vulnerable environmental resources
- Critical infrastructure
- Economic damages
- Consider storm-induced precipitation and compound flooding considerations
- Duval County Back Bay CSRM
  - St. Johns River and Tributaries
  - Intracoastal Waterway (IWW)
- City of St. Augustine Back Bay CSRM
  - St. Augustine Inlet
  - Matanzas River
  - San Sebastian River
- Nassau County Back Bay CSRM
  - St. Mary's River Entrance
  - Atlantic Intracoastal Waterway (AIWW)
  - Nassau Sound
- Continuation of Duval County SPP
  - Period of Federal participation ending



## Additional High-Risk Locations

- Palatka (Putnam County)
- Fleming Island (Clay County)
- Palm Valley (St. Johns County)

## Regional Sediment Management Recommendations:

- Greater utilization of nearshore placement
  - Sediment quality standards
  - Less construction costs
- Investigation of additional offshore sand sources
- Prioritize beneficial-use of non-beach quality material
  - Thin Layer Placement on marshes
  - Northeast Florida RSM Guide (ongoing)



Thin-Layer Placement of Marshes



# QUESTIONS

**SACS DRAFT NORTHEAST FLORIDA FOCUS AREA ACTION STRATEGY REPORT IS  
AVAILABLE AT:  
[HTTPS://WWW.SAD.USACE.ARMY.MIL/SACS/](https://www.sad.usace.army.mil/sacs/)**

**PUBLIC COMMENT PERIOD RUNS FROM 10/15/2021 – 11/16/2021**

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