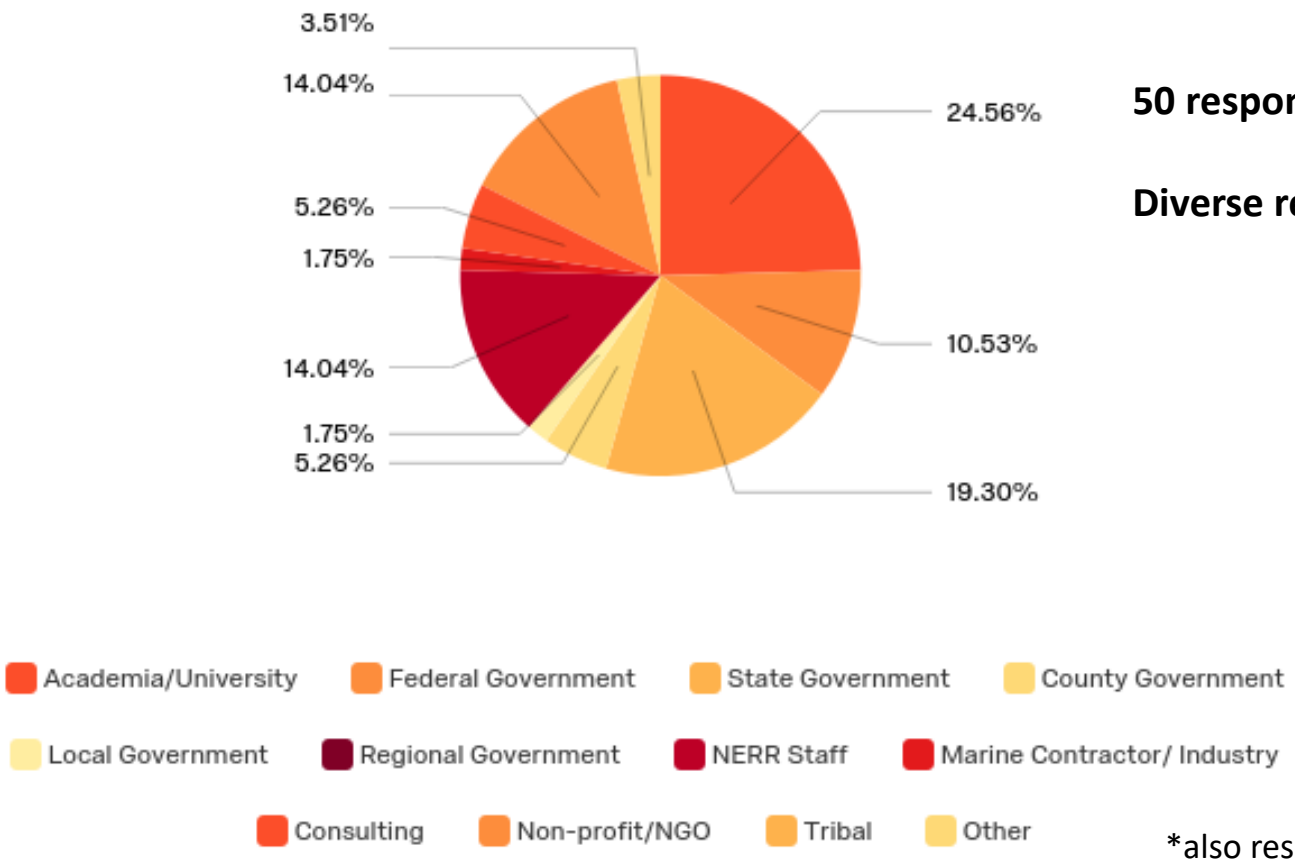
Edges of Our Estuaries

Summary of the Expert Survey

Sector Distribution



50 respondents

Diverse representation

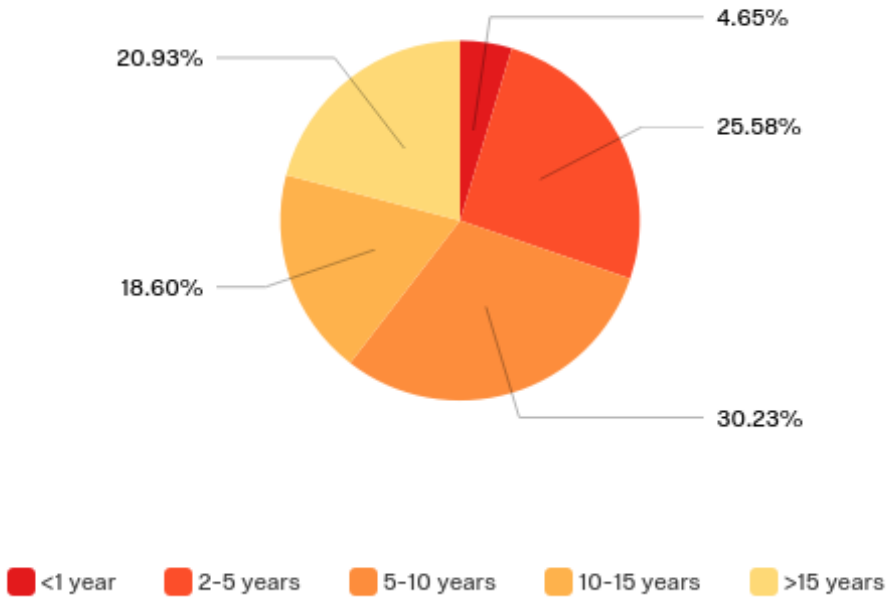
*also responses from CCA and arts sector

Organizations Represented

- SC DNR
- ACE Basin NERR
- UGA-Skidaway Institute of Oceanography
- University of Florida
- East Carolina University
- NOAA National Marine Fisheries Service
- Rookery Bay NERR
- University of North Florida
- Florida International University
- FDEP
- East Carolina University
- NOAA OCM
- Whitney Laboratory for Marine Bioscience – UF
- Brevard Zoo
- GADNR-CRD
- Tomoka Marsh Aquatic Preserve
- USACE
- Flagler College
- Reef Ball Foundation / Reef Innovations / J W McFarlane's
- Flagler County
- Florida Oceanographic Society
- Florida State Parks
- UNC Chapel Hill
- Florida Fish and Wildlife Conservation Commission
- National Park Service
- CCA
- Black Hammock's Marsh
- Marine Discovery Center
- St. Johns County
- Florida International University
- Matanzas Riverkeeper
- SCDNR
- GTM Research Reserve

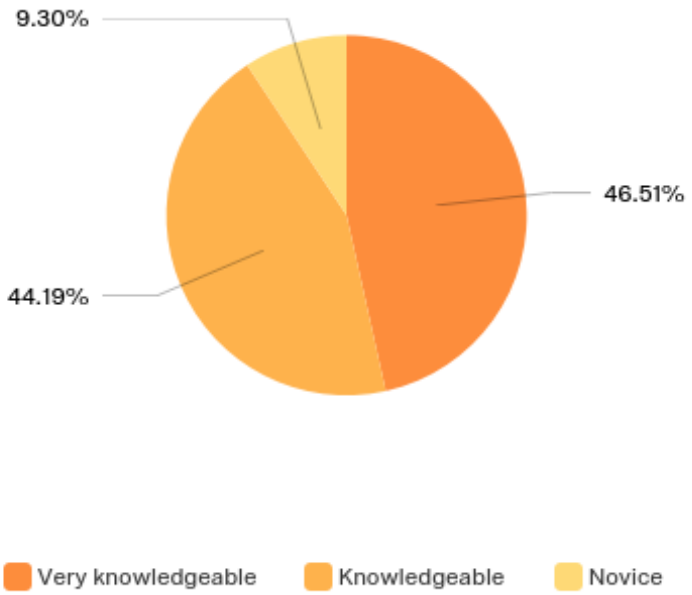
Years of Experience

2/3 have >5 year of experience

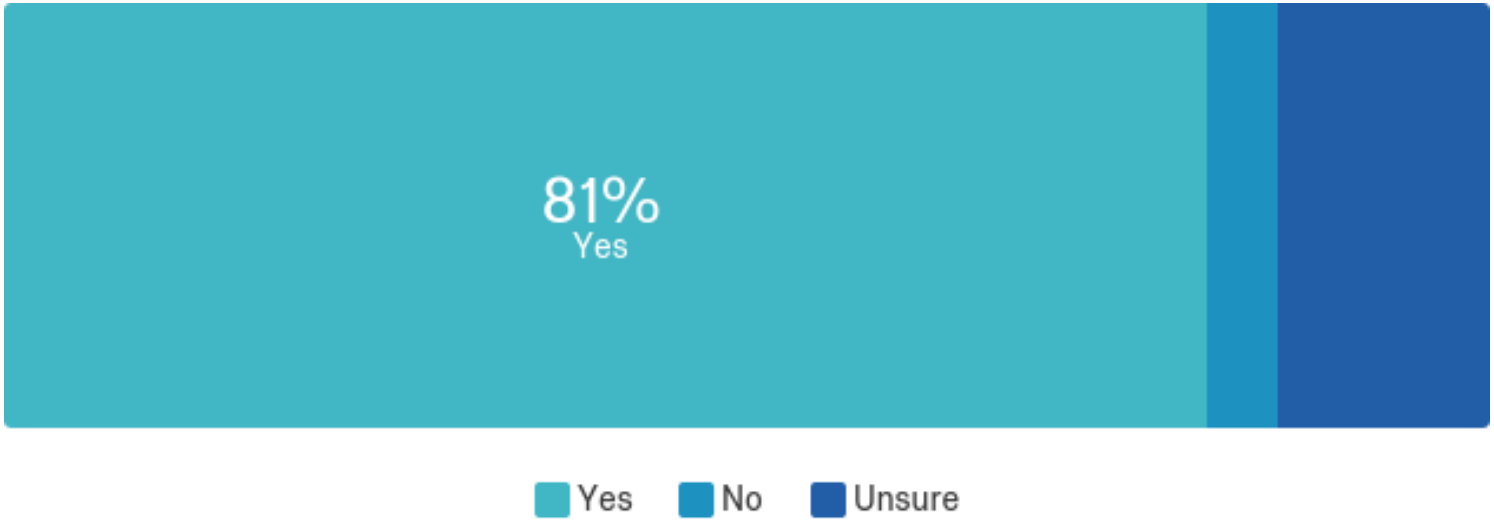


Level of Knowledge

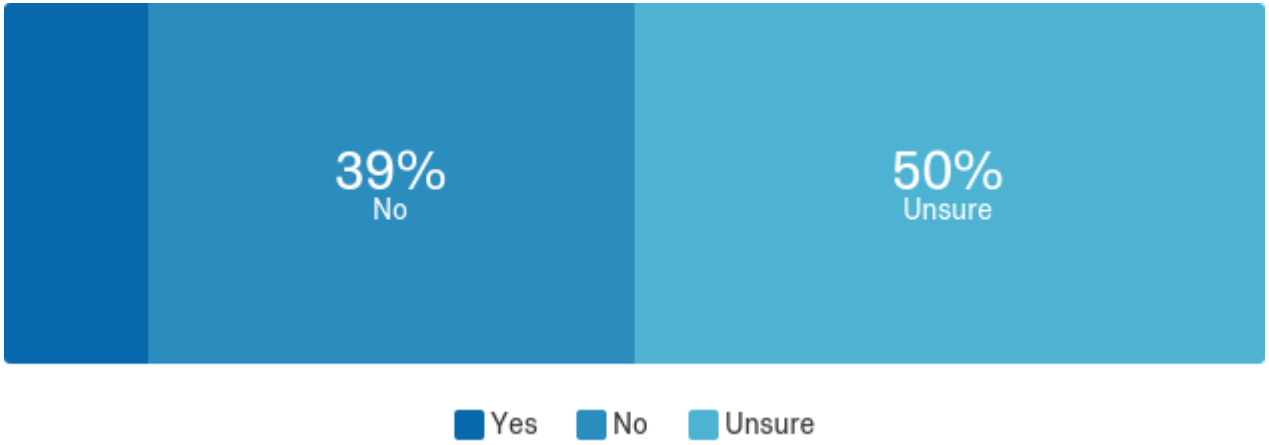
<10 % are self-described ‘novices’



Could boat wakes be causing erosion on parts of the estuary shoreline?



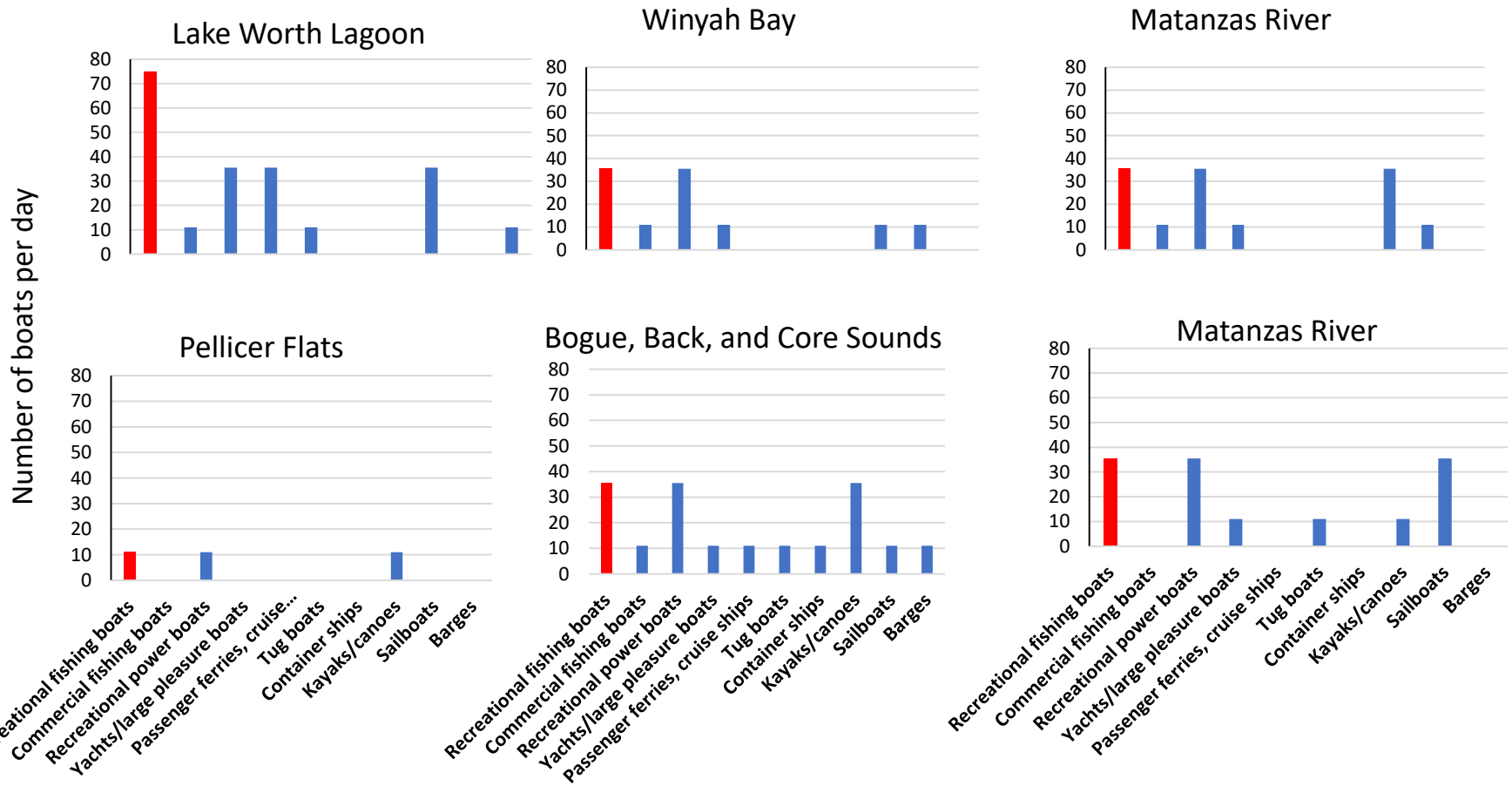
Is this traffic monitored?



Who is saying yes?

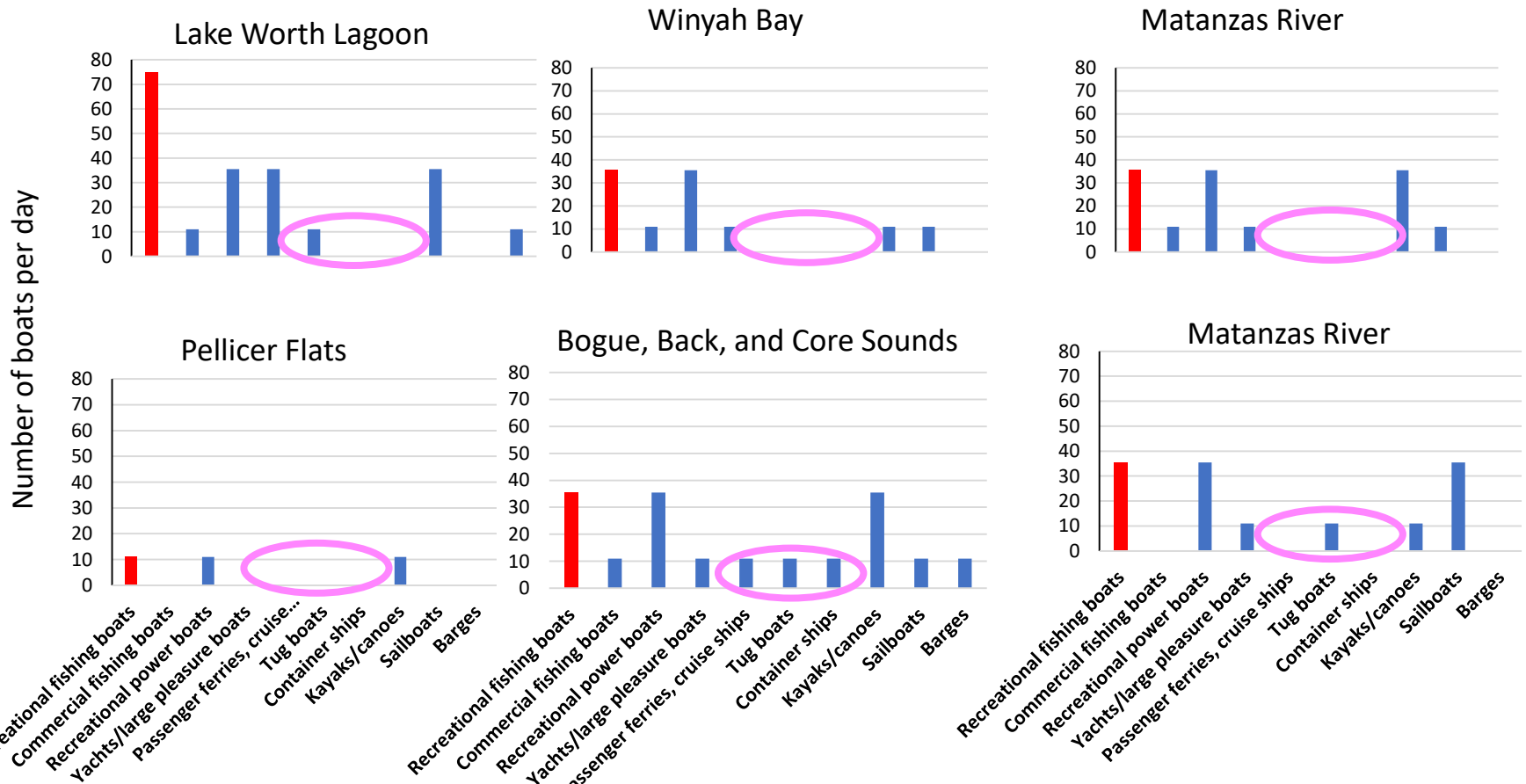
- Rookery Bay/10,000 Isles
- Matanzas River
- Masonboro Sound and Cape Fear
- Indian River Lagoon
- Altamaha River Estuary

Variation in boat composition across estuaries and respondents:
Recreational fishing boats

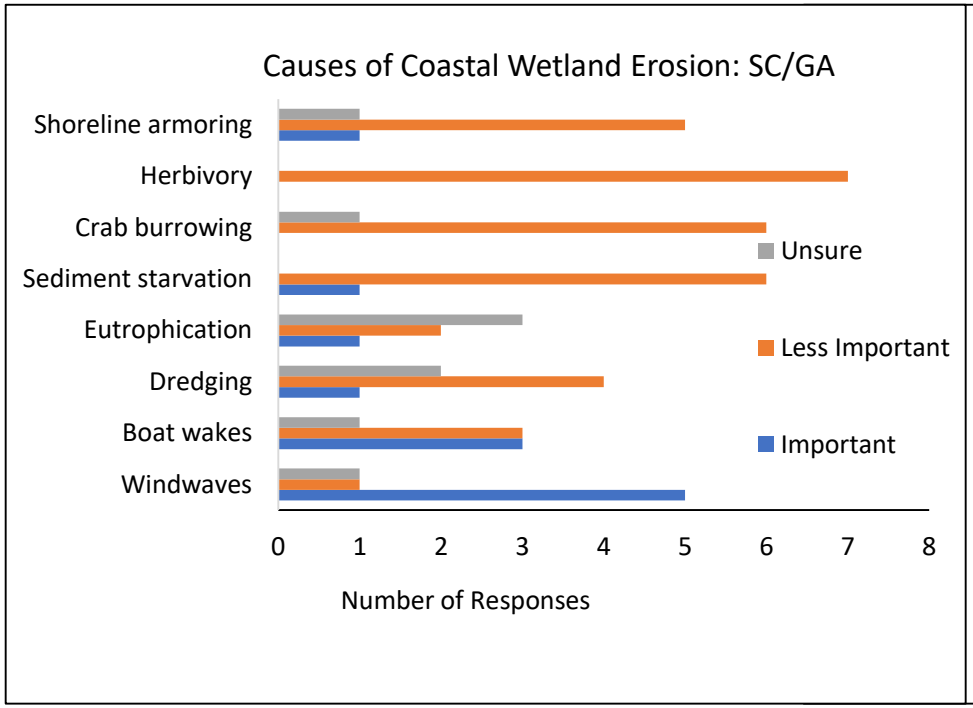


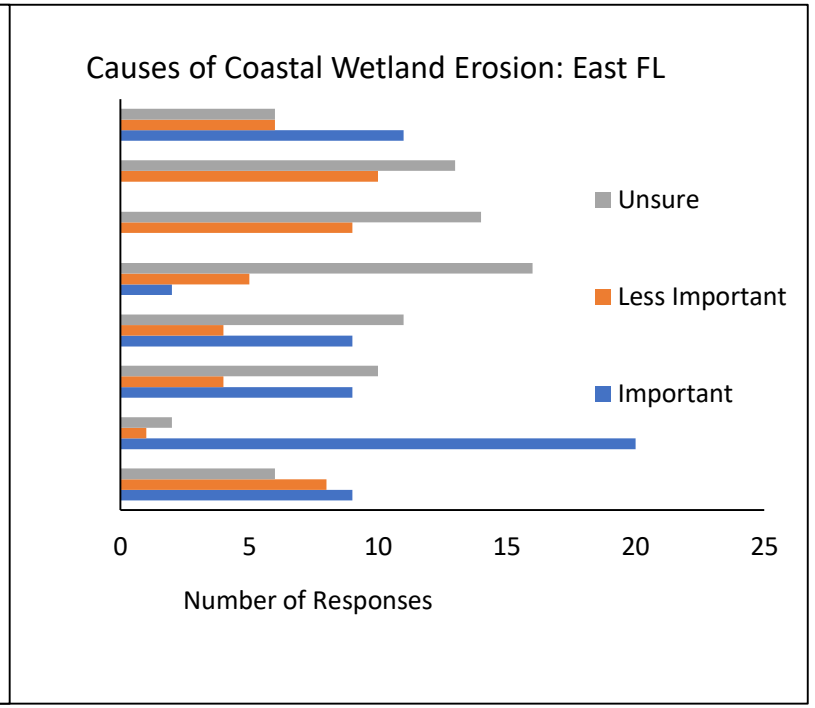
Variation in boat composition across estuaries and respondents:

Commercial ferries, tug boats and container ships



Causes of coastal erosion





High degree of uncertainty about eutrophication and dredging in both regions

Wind waves and boat wakes both highlighted as important drivers across regions

Your task: synthesize what you've learned here & what you know

- Break out into regional groups:
  1. NC
  2. SC/GA
  3. Northeast FL
  4. NCentral-East FL
  5. SCentral-East FL
  6. Southeast FL
  7. Southwest FL
  8. West FL, AL & MS
- Discuss '5 Overarching Questions' + 'Directed Questions'
  - Directed questions should help you answer overarching questions
- Handouts provide summaries of survey responses for your region
- We know the sample size very low for survey for some regions
  - Try to avoid scrutinizing survey responses & simply use them to guide discussion
- Holistic, region-scale synthesis, not site-to-site variation

5 Overarching Questions

1. What are the 3-4 most significant threats to coastal wetland and oyster reef persistence in your region?

2. What are the top 3-4 major management challenges you are facing with regards to sustaining coastal wetlands and oyster reefs?

3. What are the top 3-4 most important research needs for understanding shoreline dynamics and planning future management?

4. What implemented management strategies have been 'successful' in sustaining coastal wetlands and oyster reefs in your region?

5. What management actions have been attempted but not succeeded?

Tips

- Being unsure is okay…
  - We need to know what we don’t know!
  - Highlight & prioritize these unknowns as research gaps
- If you hit a challenging question, discuss for 5-10 min, but move on!
  - Facilitator: this is your task to keep conversation going
- Respect others’ opinions

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Discussion Regions

What are the 3-4 most significant threats to coastal wetland and oyster reef persistence in your region?

Region	Significant Threats
NC	Coastal development; increased ocean exchange; species range expansions
SC/GA	Harvesting pressure (esp. recreational); sedimentation; SLR (coastal squeeze); boat wakes; climate change (invasives, drought, storms); hardened shorelines
EF1	Water quality; boat wakes; shoreline armoring; urban/ coastal development
EF2	ICW (dredging, boating, channelization); sedimentation; sea level rise; developmental pressure
EF3	Boat wakes; development (everything); unsustainable development; climate change
EF4	Altered hydrology/ development; nutrient loads/ HABs; wake/ wave energy; sea level rise
SF	Urban development; altered hydrology; water quality; climate change and storm events
WF/AL/MS	

What are the top 3-4 major management challenges you are facing with regards to sustaining coastal wetlands and oyster reefs?

Region	Management Challenges
NC	Public/ political opposition to regulation/ mgmt. initiatives; scientific uncertainty; balancing stakeholder priorities
SC/GA	Regulation of oyster harvest/ husbandry; shell supply and alternatives that are cheap/ easy for large scale implementation; abandoned vessels; shoreline management regulations (streamlining green options); education
EF1	Rules and regulations; sharing data; staff and funding
EF2	Developing successful restoration and maintenance strategies in high-energy environments; lack of trend data; regionally low priority for regulation
EF3	Political will; enforcement; ease of obtaining exemptions; public outreach/ education
EF4	Political will/ leadership (outdated infrastructure, funding, stakeholder by-in, land acquisition, incentive programs); water management priorities; scale and layout of IRL system; permitting process/ timeline
SF	Freshwater management (funding, political will, conflicting interests); climate change and SLR; Septic systems and AG runoff; managing population growth
WF/AL/MS	

What are the top 3-4 most important research needs for understanding shoreline dynamics and planning future management?

Region	Research Needs
NC	Long-term trends in shoreline dynamics; interdisciplinary evaluation of shoreline processes/ dynamics; socio-economic cost-benefit analysis of alternative management options (i.e.: coastal retreat)
SC/GA	Harvest oysters in SC (carrying capacity); oyster reef extent/ coverage; synthesis/ analysis of oyster data; marsh accretion rates; better understanding of barrier island dynamics; potential impacts of grazing on erosion in marshes; impacts from boats; value of recreation; beneficial use of dredge material; improved knowledge of predator pops.
EF1	Baseline data (causation; collection consistency); data sharing; funding; permits– streamline between agencies
EF2	Resource trend data; boat traffic and wake data; sedimentation patterns and rates
EF3	Wave energy/ boat wakes; oysters (predation interaction, thresholds); sedimentation flow/ transport; social science (community understanding, values; citizen scientists)
EF4	Wave/ wake energy dynamics; understanding long-term success of restoration (LS monitoring handbook); quantification of threats; understanding and testing of new techniques
SF	Coordinated long-term monitoring of restorations and natural habitats; sediment and hydrological monitoring; pulse events/ research; best management practices for restoration activities
WF/AL/MS	

What implemented management strategies have been 'successful' and 'unsuccessful' in sustaining coastal wetlands and oyster reefs in your region?

Region	Successful	Unsuccessful
NC	Conservation of wetlands through section 404 of Clean Water Act; living shoreline implementation (when allowed); prohibition/ restriction of shoreline hardening/ coastal development on oceanfront	Subtidal oyster restoration efforts; no take/ sanctuary designation for oysters; efforts to streamline living shoreline permitting
SC/GA	Collaboration between DNR and CZMP on permitting and regulations for living shorelines; crab traps, oyster bags, oyster castles for living shorelines	Curlex; coir logs
EF1	Unknown; lack of data	Materials
EF2	Community engagement; land conservation	Living shorelines in high-energy areas
EF3	Prioritizing the importance of; upping outreach; living shorelines (mixed success, but lots of knowledge)	Changing publics opinions of living shorelines vs bulkheads; no wake zones (haven't been able to implement); sanctuary; enforcement
EF4	Collaborative working groups; grassroots driven referendums; large scale hydraulic restoration; existing land acquisition programs; division of labor	Local ordinances with no enforcement; restoration with no followup or long term evaluation; habitat restoration without addressing upstream/ root issues
SF	Mangrove restoration through proper hydrology and elevation; spoil islands habitat creation; adding substrate for oyster colonization	Tires as reefs; mangrove planting at wrong elevation; restoration in inappropriate conditions (poor site selection)
WF/AL/MS		

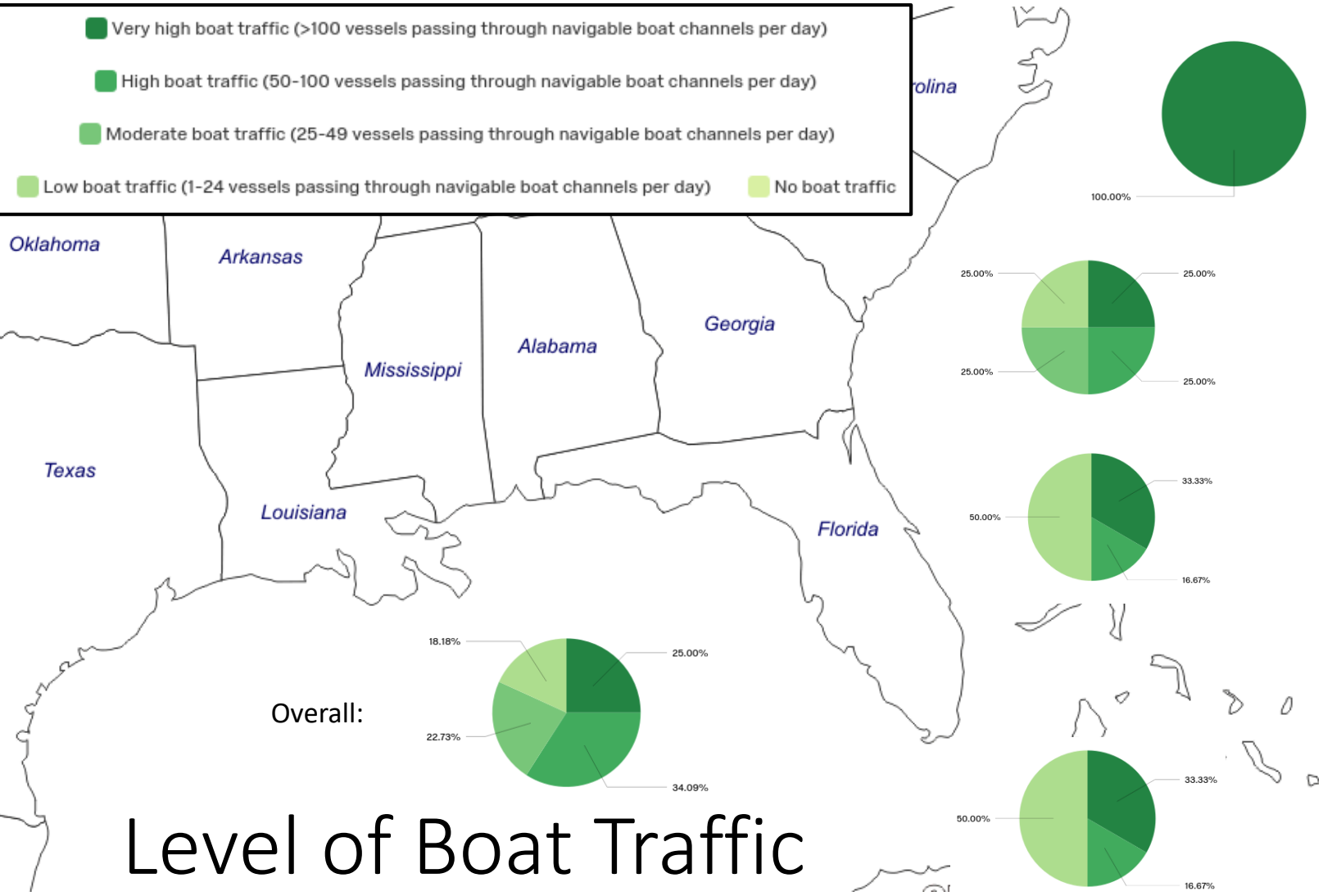
Where we are going:

Peer-reviewed manuscript that:

- Describes current variation in estuary structure, condition & stressors across southeastern US
- Summarizes how management is responding to stressors
- Identifies critical gaps in knowledge about estuary condition, stressors & management effectiveness
- Highlights need for collaborative science where research is tailored to management needs & managers are engaged in the science

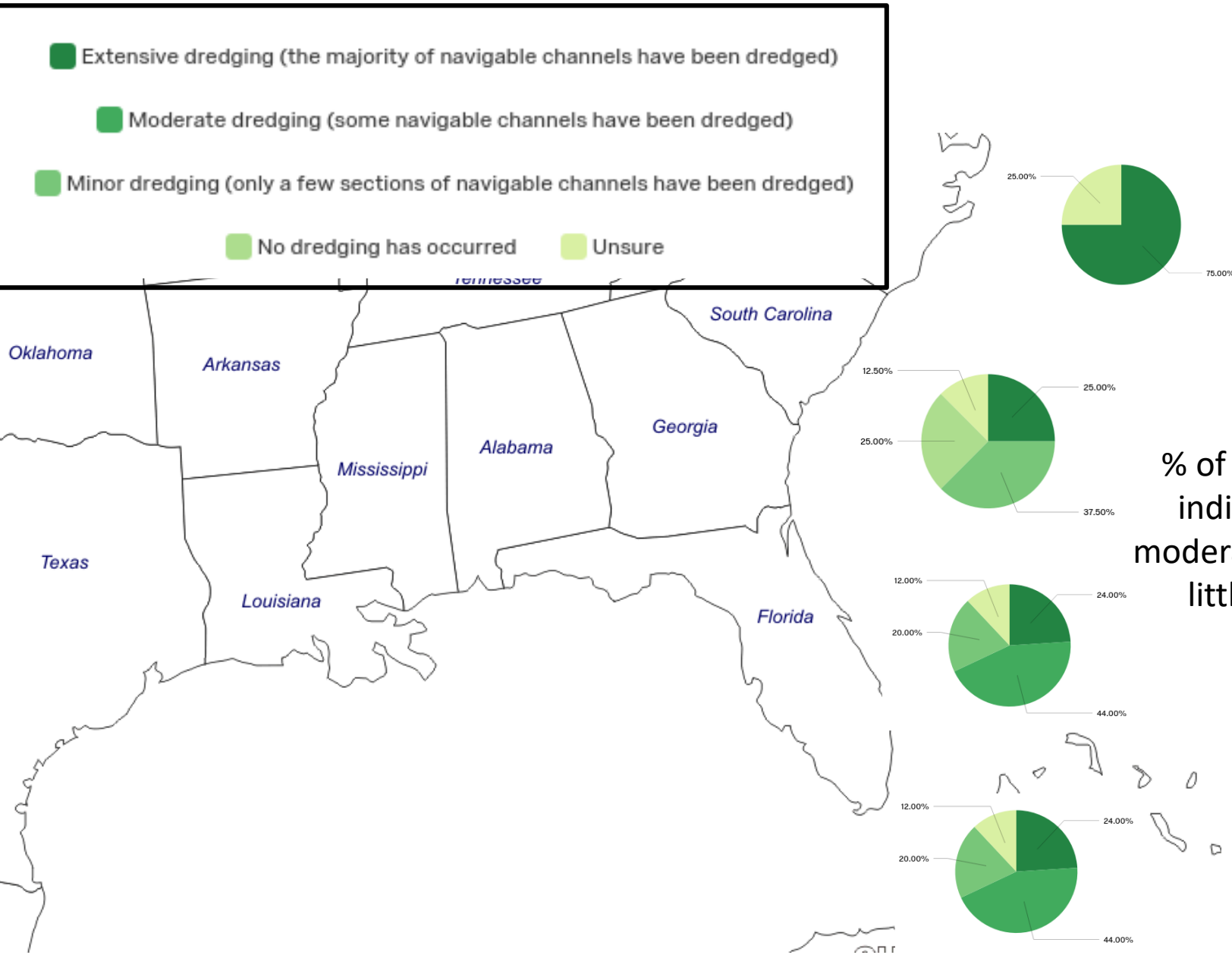
Serve as a resource for all of us to motivate future management & research initiatives and funding

The facilitated discussion will provide us with content for all sections



Overall:

Level of Boat Traffic



% of respondents indicating high, moderate, minor and little dredging

Extent of Dredging