

# Florida For-Hire At-Sea Observer Survey

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Florida Fish and Wildlife Conservation Commission, Marine Fisheries  
Research



# Background

- Discards and discard mortality
- Time series
  - Began in 2009
  - State funding in 2020
  - RER support in 2022
- Statewide coverage
- Focus on GOM methods and results



**RETURN 'EM  
RIGHT**



# Methods: Vessel Participation

- Voluntary participation
- Vessel registry created from federal for-hire telephone survey list
- Contact via phone or site visits
- Identifying reef fish targeting boats and signing up
- Main selling points:
  - Payment/additional customer, opportunity to actively participate in management/stakeholder participation, and angler engagement
- Builds stakeholder trust



# Methods: Assignments

- Stratified random draw based on regional observer coverage
- Pulls from registered and cooperative vessels list
- Inconsistent frequency of offshore trips
- Weekly sample draw of at least 3 headboats and at least 6 charters

VSL_TYPE	VSL_NAME	REGION	smpl_wk	Control
C	LADY KELLEY	PC	27	1
C	CAPT HANK	PC	27	2
C	PATRIOT	PC	27	3
H	TREASURE ISLAND	PC	27	4
C	ALL THE WAY	PC	27	5
H	JUBILEE	PC	27	6
H	CAPT. ANDERSON	PC	27	7
C	FREEDOM	PC	27	8
C	GOTTA BELIEVE	PC	27	9



# Methods: Field Operations

- Purchase the trip fare (advertised rate for headboats, \$100 flat rate per sampler for charters)
- Secure a non-inhibiting sampling space with access to the catch
- Observe and record fishing effort and tag discards
- Collect opportunistic samples



# Methods: Reef Fish Tagging Project

- High priority reef fish tagged prior to discarding
- Conventional dart tags with unique identifier number and tag return hotline phone number and email
- Tag return cards
- All reports awarded with a T-shirt and catch info
- Sources of information: Posted signs, Agency website, T-shirts
- Website tag reporting

**REWARD FOR TAGGED REEF FISH**  
**All tag returns will receive a free t-shirt**

*Tagged fish are being released in Florida waters. This project is part of a scientific effort to evaluate reef fish survival and movement patterns.*

If you catch a tagged reef fish, please call the Tag Hotline at 1-800-367-4461 or e-mail [tagreturn@MyFWC.com](mailto:tagreturn@MyFWC.com)

Please provide the following information:

- Name, address and phone number
- Tag prefix and number
- Fish length and species
- Date and location of capture
- Was fish harvested or released?
- If released, was tag removed?

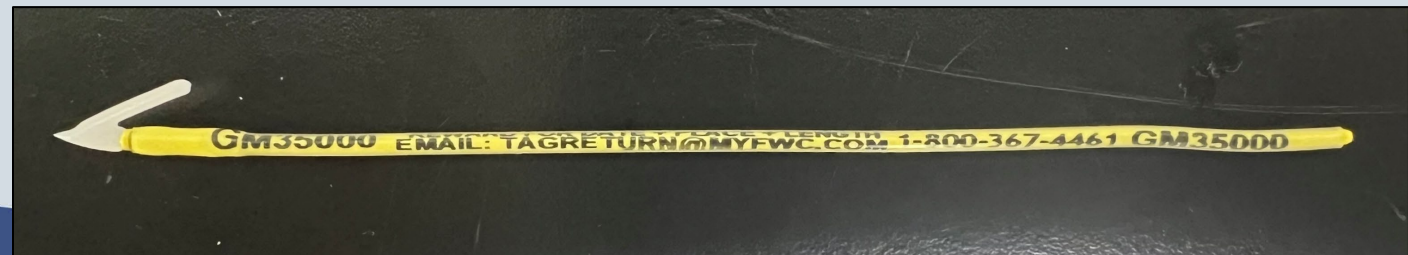
**Please Obey All Fishing Regulations**



Total Length Measurement (tail pinched)

Shopper art © Diane Rome Public

Florida Fish and Wildlife Conservation Commission



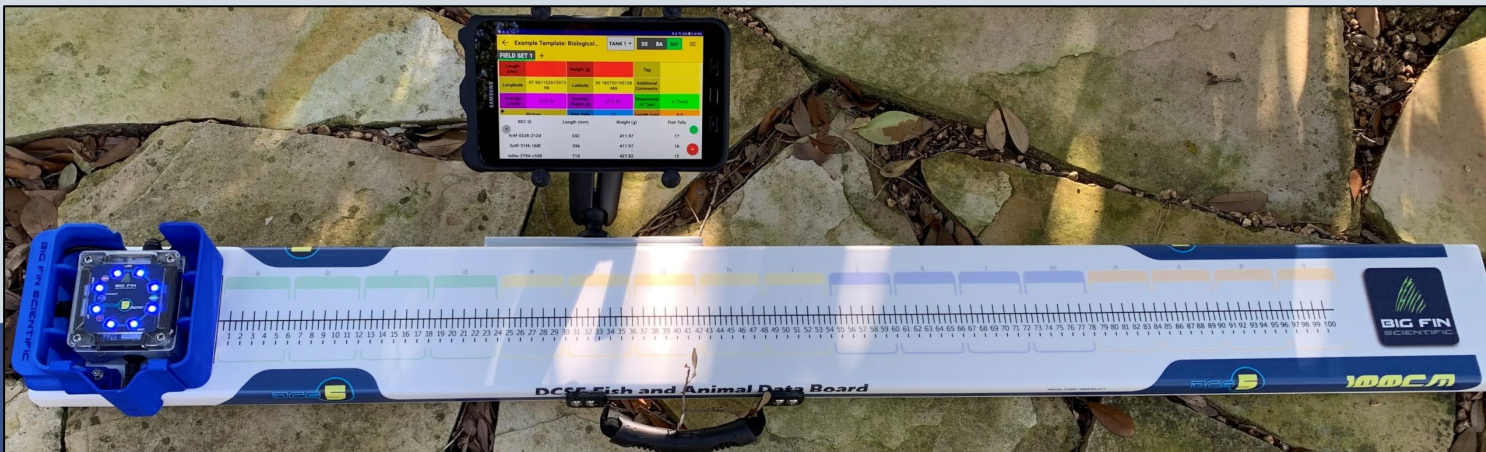
# Methods: Data Entry and QA/QC

- Electronic Measuring Systems

- Collect real-time data using tablets and magnetic measuring boards
- Editing, electronic submission, review and final corrections
- Finalize ~ 1 to 3 months

- Paper

- Manual recording of data and measurements
- Editing, mail submission, review and correction, entering, proofing for keystroke errors, final corrections
- Finalize ~ 6 to 12 months



# Data Structure

- 4 levels
  - Trip level (per observer trip)
  - Station level (per fishing site/mode)
  - Angler level
  - Fish level
- Recapture Reports



# Data: Trip Level



- Date
- Region
- # of Crew
- # of Anglers
- # of Riders
- Departure time
- Arrival time
- Trip duration (quarter hour)
- Trip target
  - Reef fish, pelagics, or both
- Vessel ID
- Vessel Type
  - Charter, headboat, or multiday\*
- Weather
  - Wind
  - Cloud Cover
  - Precipitation
  - Swell
  - Time Period



# Data: Station Level

- Fishing Mode
  - Anchored, hovering, trolling, drifting, or sightcasting
- Chumming\*
  - None, surface, bottom, manufactured, etc.
- Start lat and long
- End lat and long
  - Location data rounded to the minute (aprox. 1 square mile)
- Avg. Bottom Depth
- Target species (families of fish and %)
- Zone and subzone
  - Statistical zone, federal or state waters
- Bottom Habitat Type
  - Natural reef, artificial, sand, or mixed
- Potential Predation
  - Observers recorded presence of sharks, goliath grouper, barracuda, or marine mammals at sites
- Turtle interactions?
  - Recording hooking, entanglement or boat strikes of sea turtles
- Observed Subset of Anglers



# Data: Angler Level

- Angler Number
  - Unique identifier (01-20)
- Rig Type
  - Describes the specific orientation of hook(s) and how it fishes (ex: chicken rig vs Carolina rig)
- Number of hooks
- Hook sizes (determined using standardized hook chart)
- Hook type
  - Circle, J-hook, Treble, other
- Offset
  - Is the hook offset by more than 10°
- Start fishing time
- End fishing time
- Cumulative break time\*



# Data: Fish Level



- Species
- Midline length (mm)
- Disposition
  - Released, kept to eat, used for bait, depredated
- Hook position
  - Lip, throat, gut, gill, eye, foul, wrapped
- Barotrauma
  - Increasing severity from 0 (none) to 4 (catastrophic)
- Release condition
  - Good, fair, bad, dead, eaten by predator
- Recompression
  - If the fish was recompressed, what tool, and to what depth
- Venting
  - If the fish was vented, where, and by what tool
- Tag status and number



# Data: Recapture Reports

- Tag number
  - Species
  - Date of recapture
  - Size
  - Vessel Type (private, charter, headboat)\*
  - Location (freq. approx.)
  - Depth\*
  - Bottom Type\*\*
  - Disposition
  - If released:
    - Vented or recompressed?
- All associated contact info for t-shirt distribution

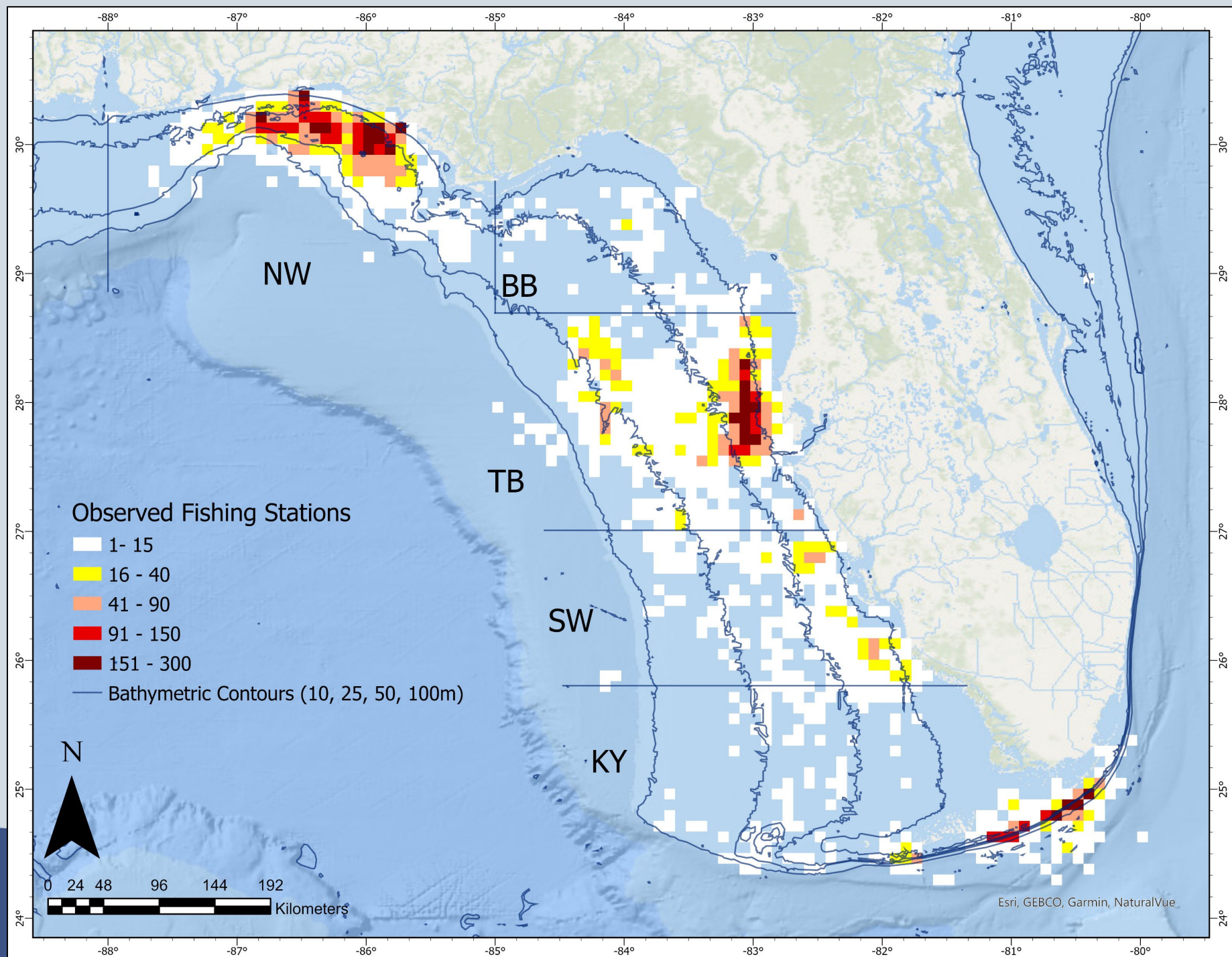


# Cooperative Vessels

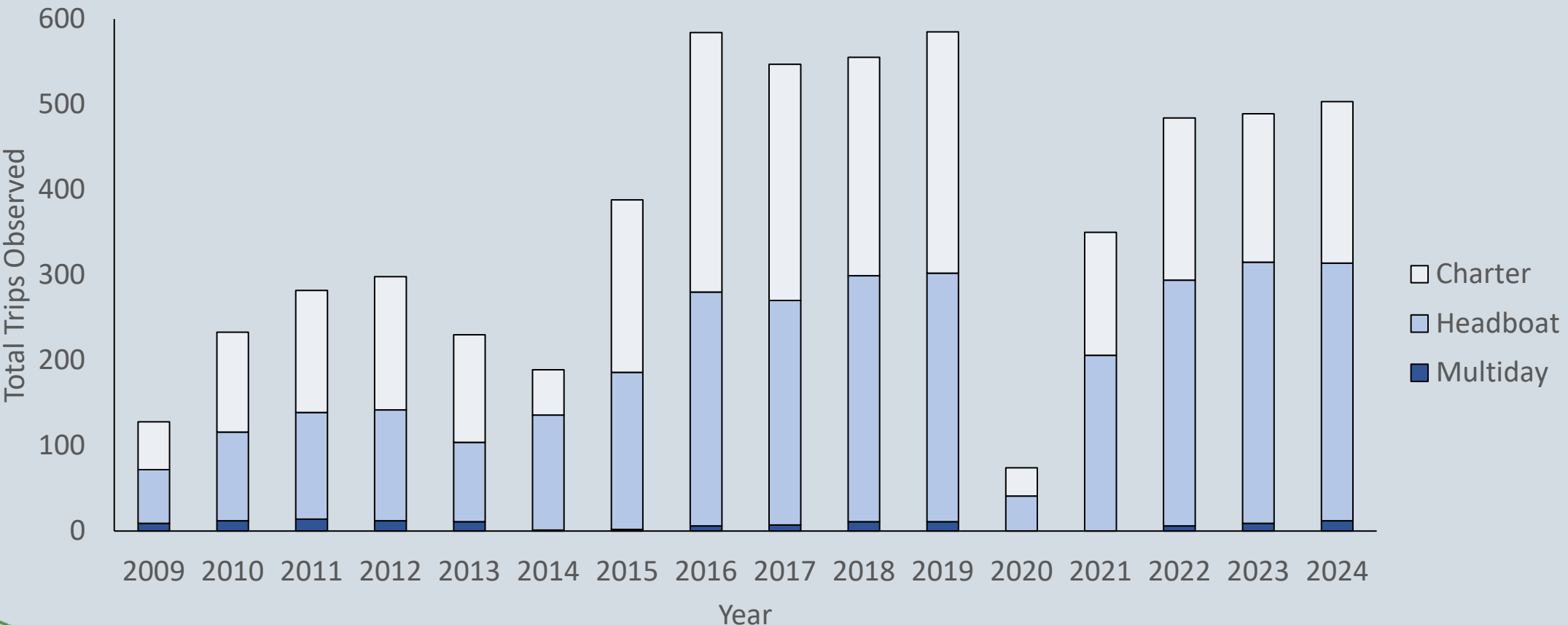
FL GOM Cooperative Vessels				
Region	Type	# registered	Total fed permits	% cooperative
NW	C	52	170	30.6
	H	12	15	80.0
BB	C	4	18	22.0
	C	17	107	15.9
TB	H	13	16	81.3
	C	12	39	30.8
SW	H	5	6	83.3
	C	15	157	9.6
KY	H	6	9	66.7



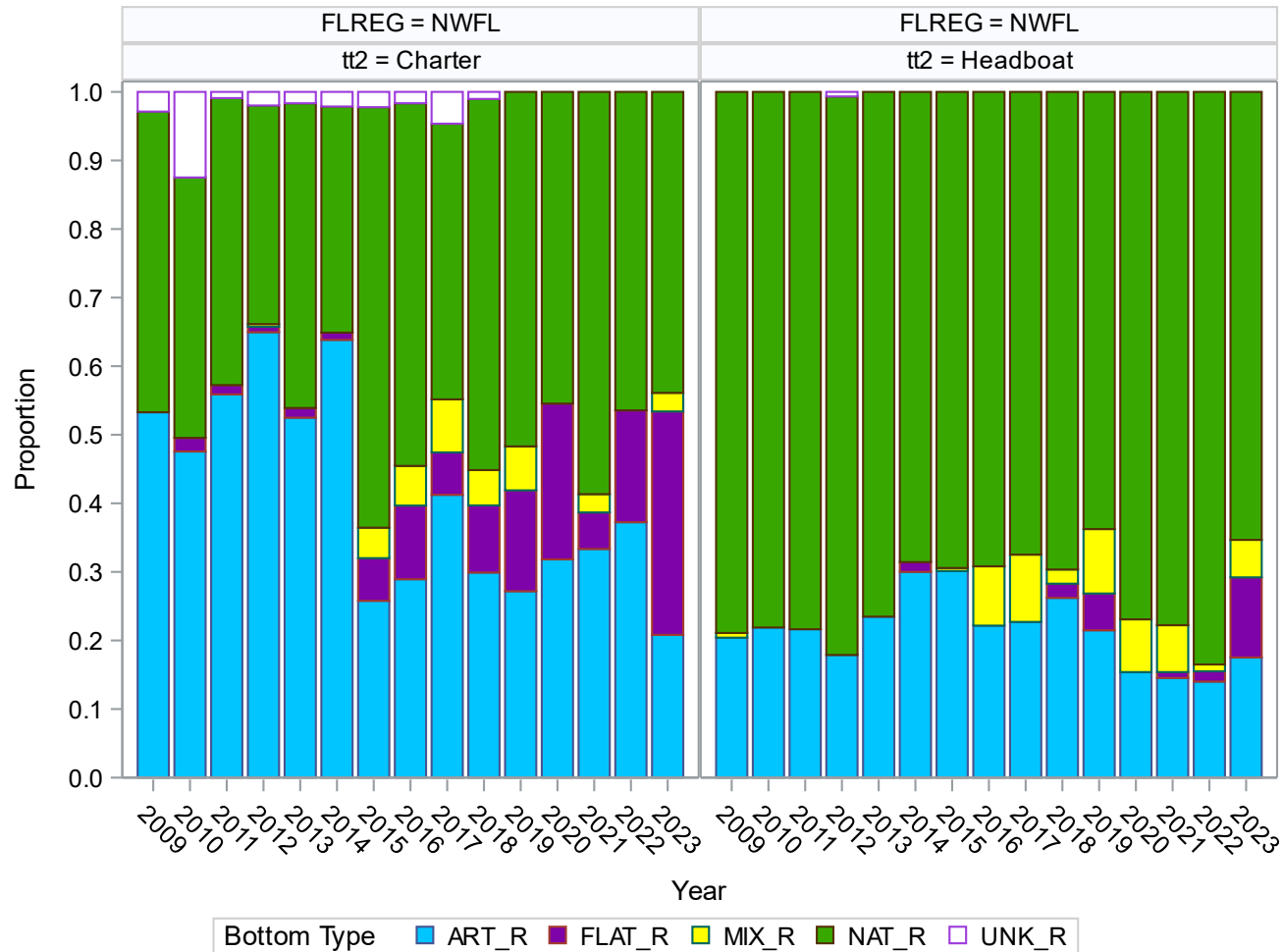
# Coverage



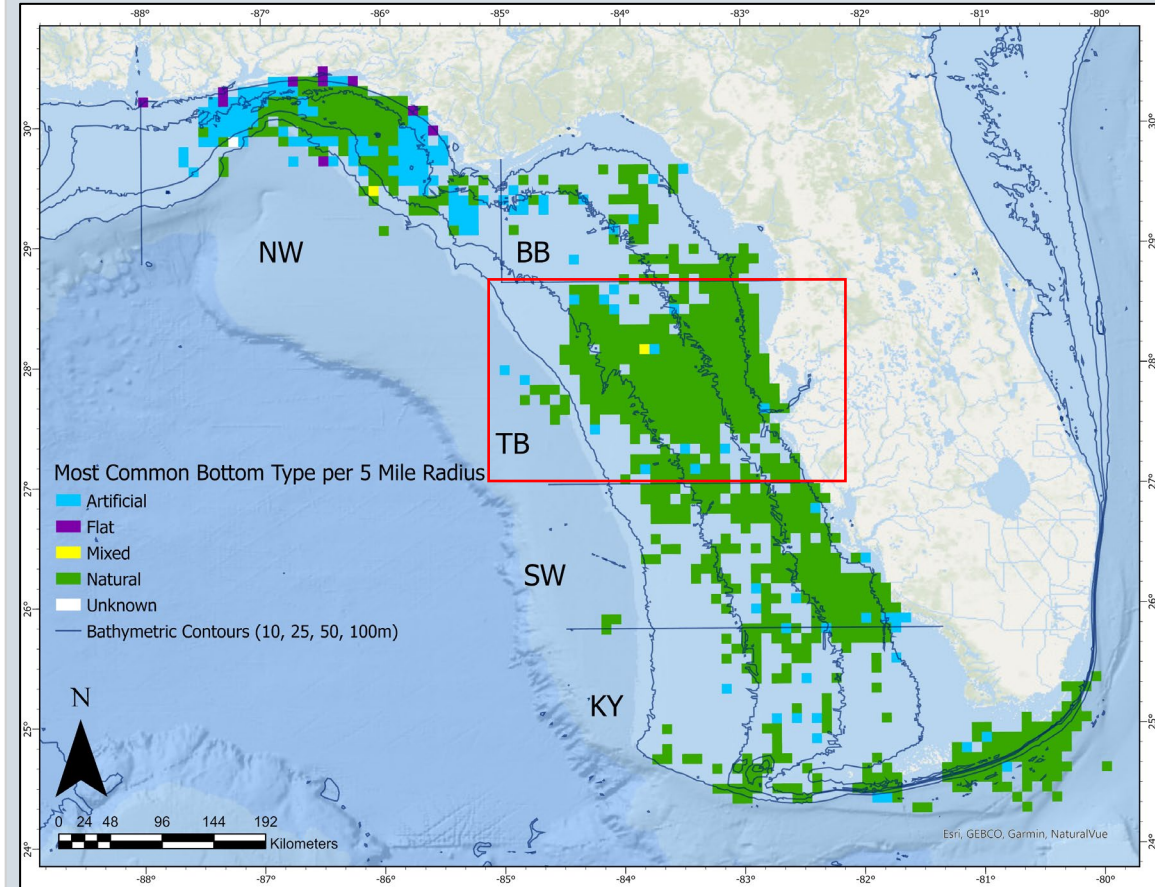
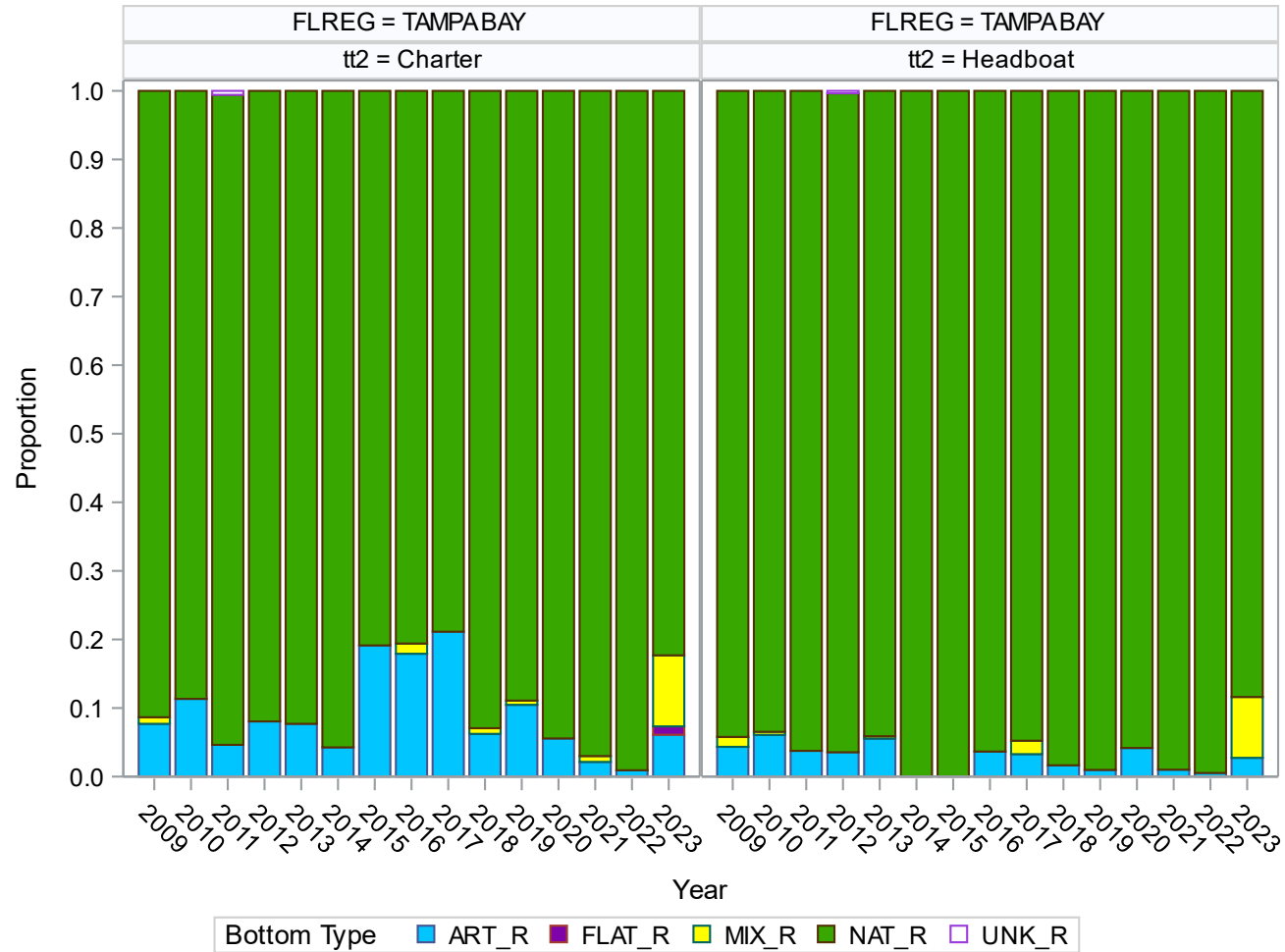
# Trips per Year



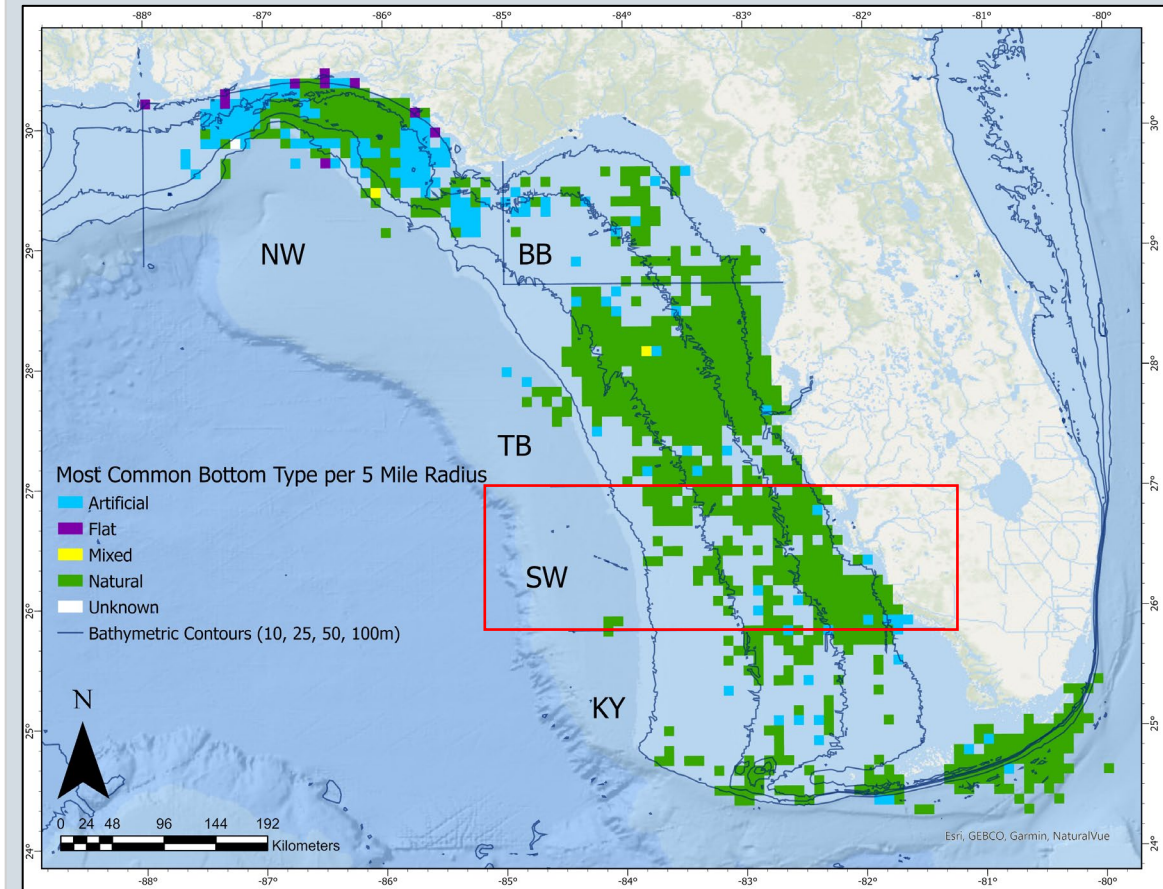
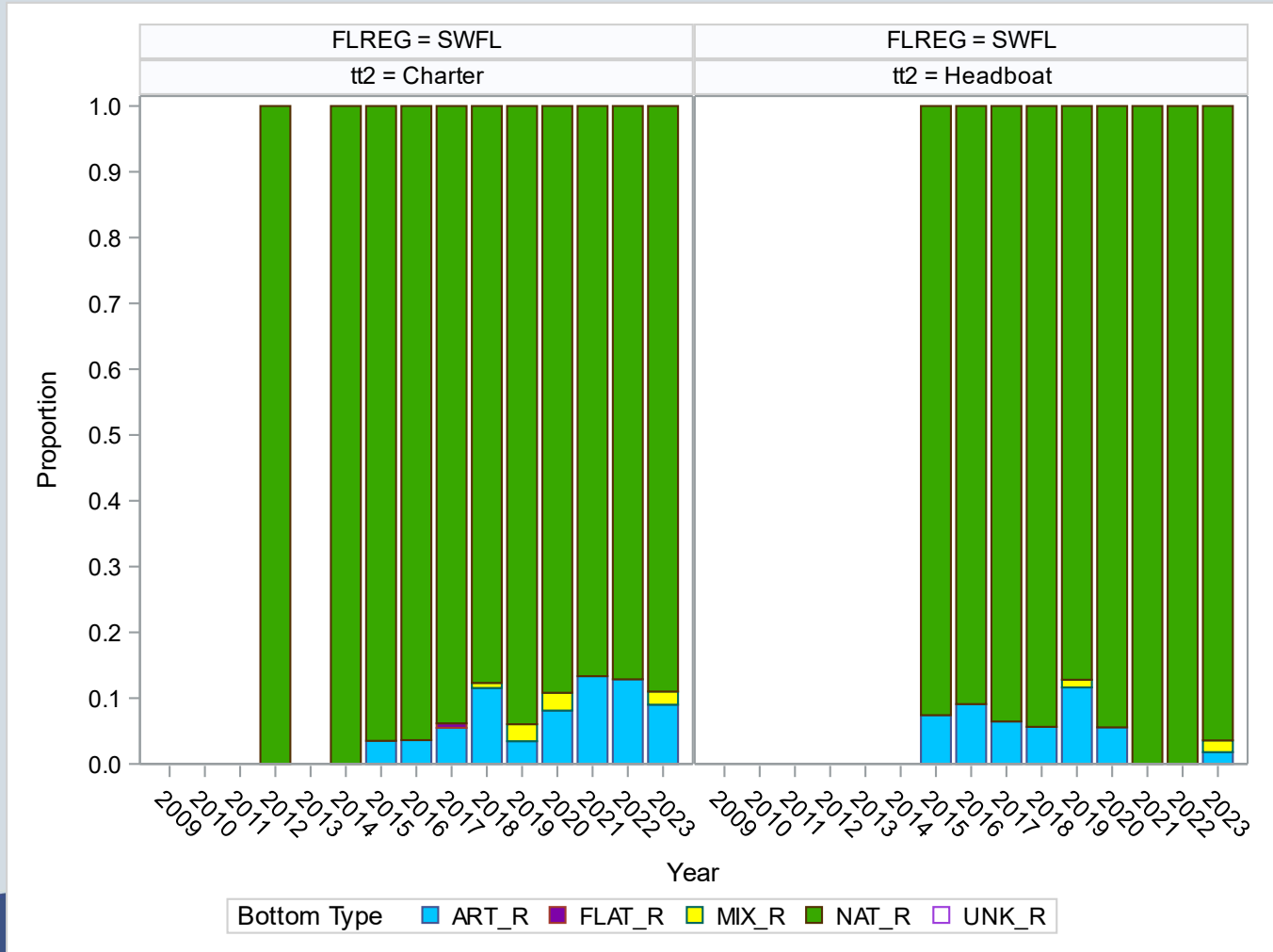
# Artificial vs. Natural Bottom Use (Northwest)



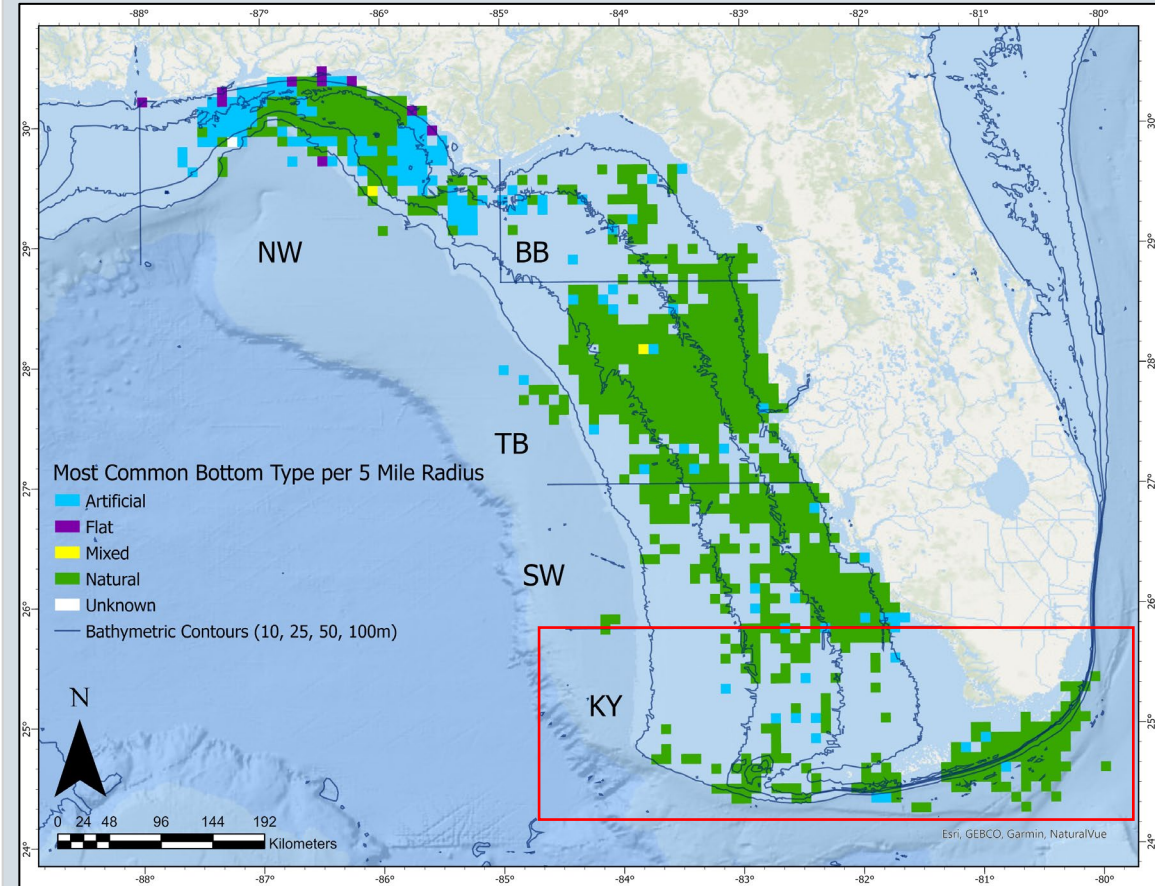
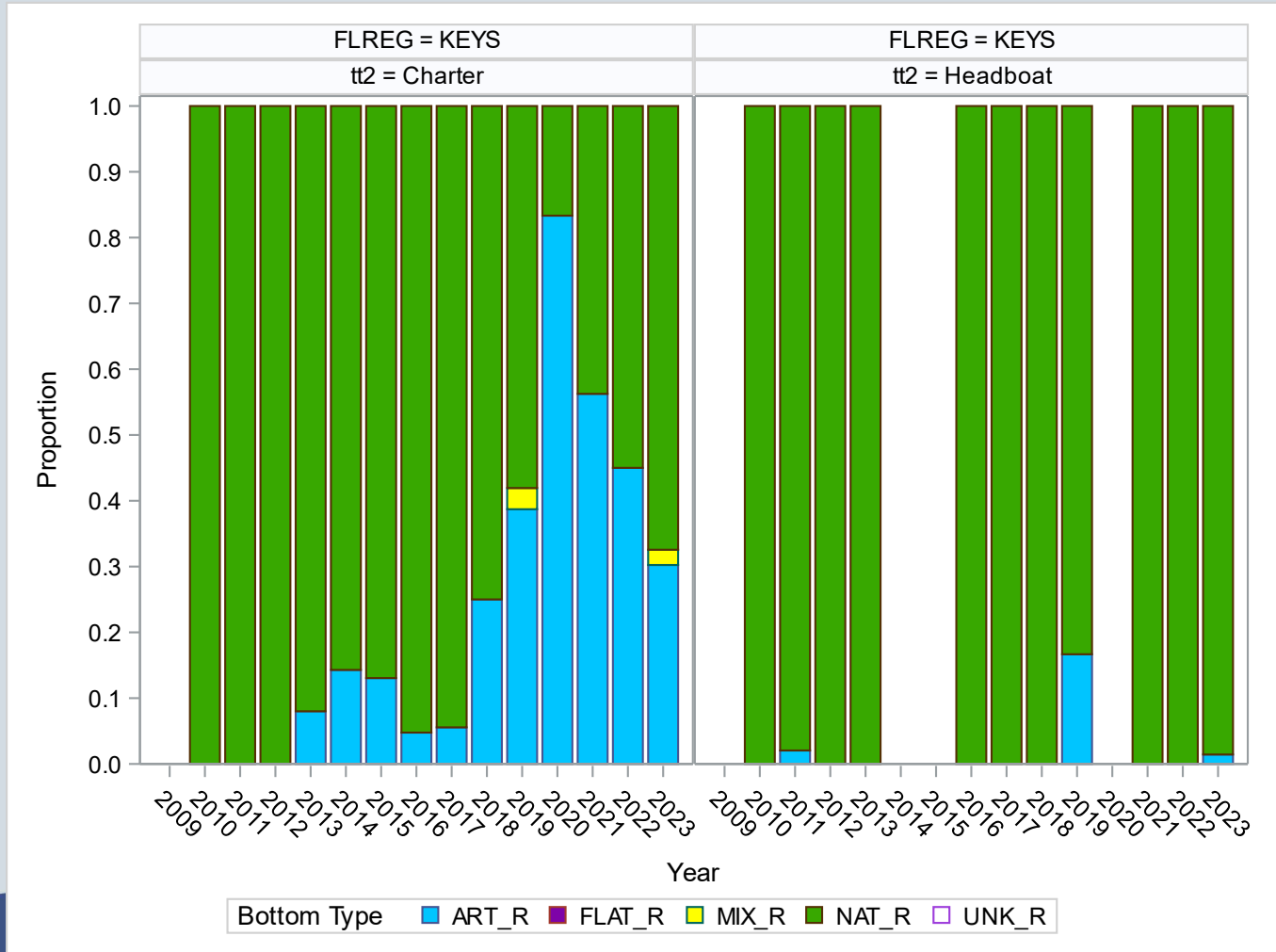
# Artificial vs. Natural Bottom Use (Tampa Bay)



# Artificial vs. Natural Bottom Use (Southwest)



# Artificial vs. Natural Bottom Use (Keys)

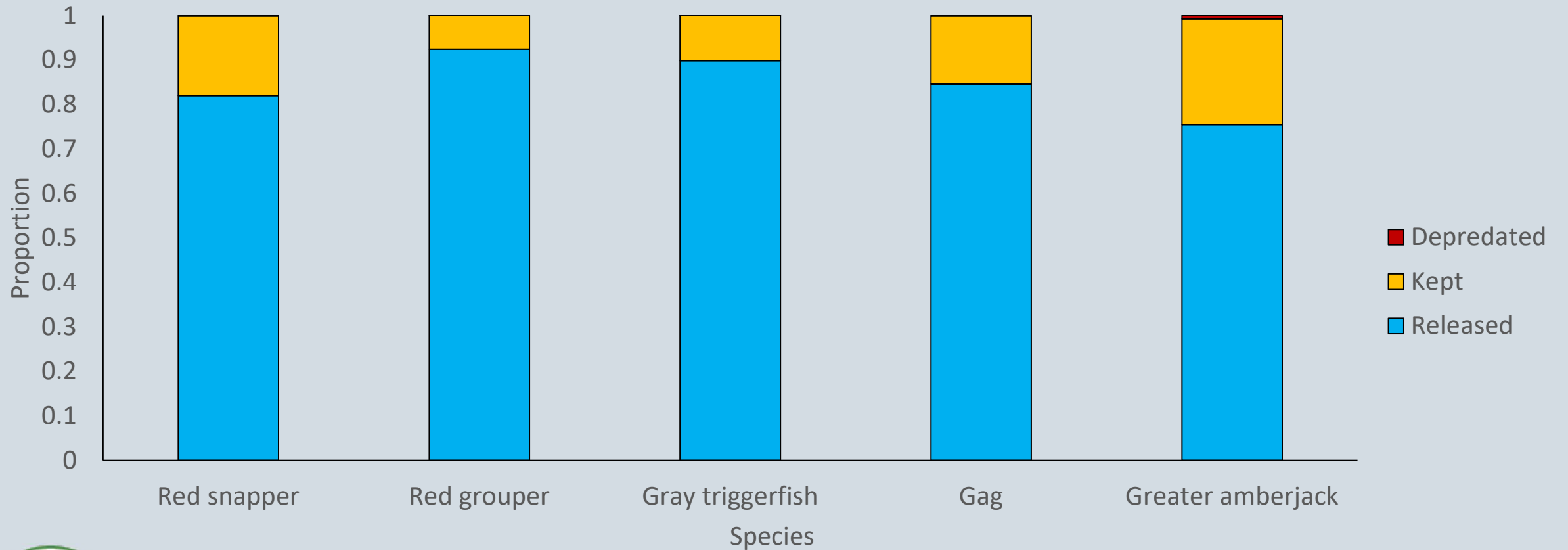


# Catch and Discards Statistics

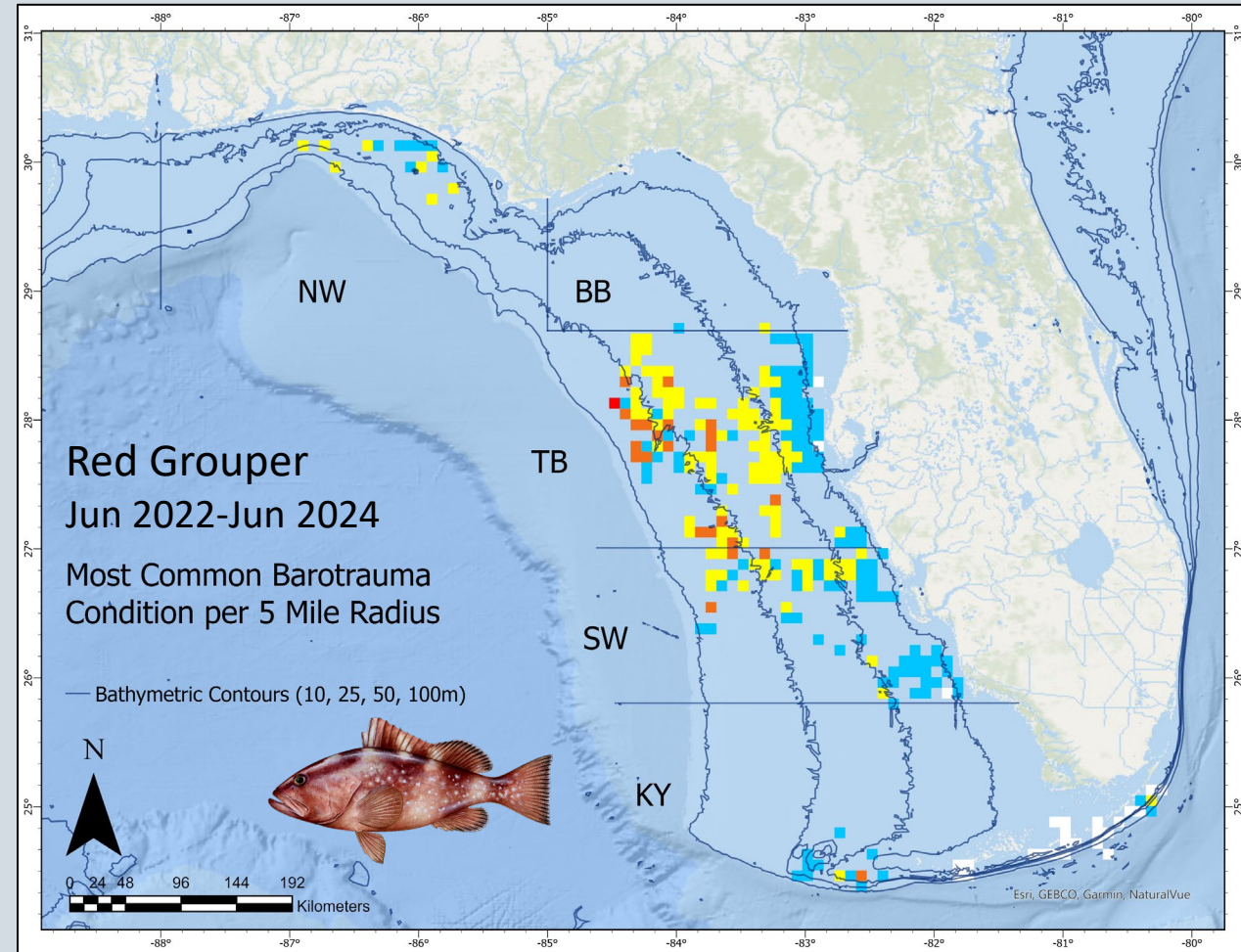
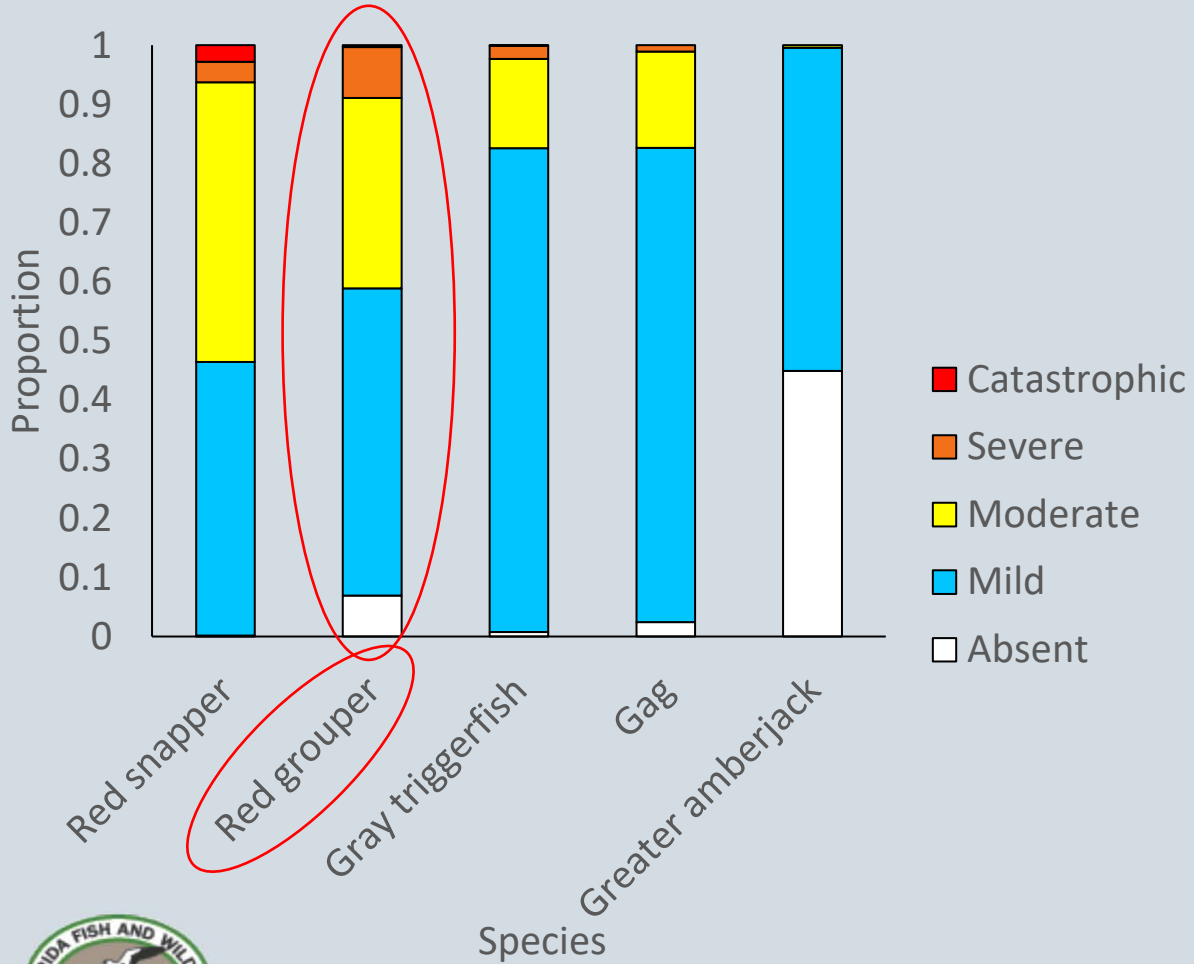
- Total Observed Fish: 455,979
- # Harvested: 242,364 (53%)
- # Discarded: 212,959 (47%)
  - Regulated Discards: 161,370 (76%)



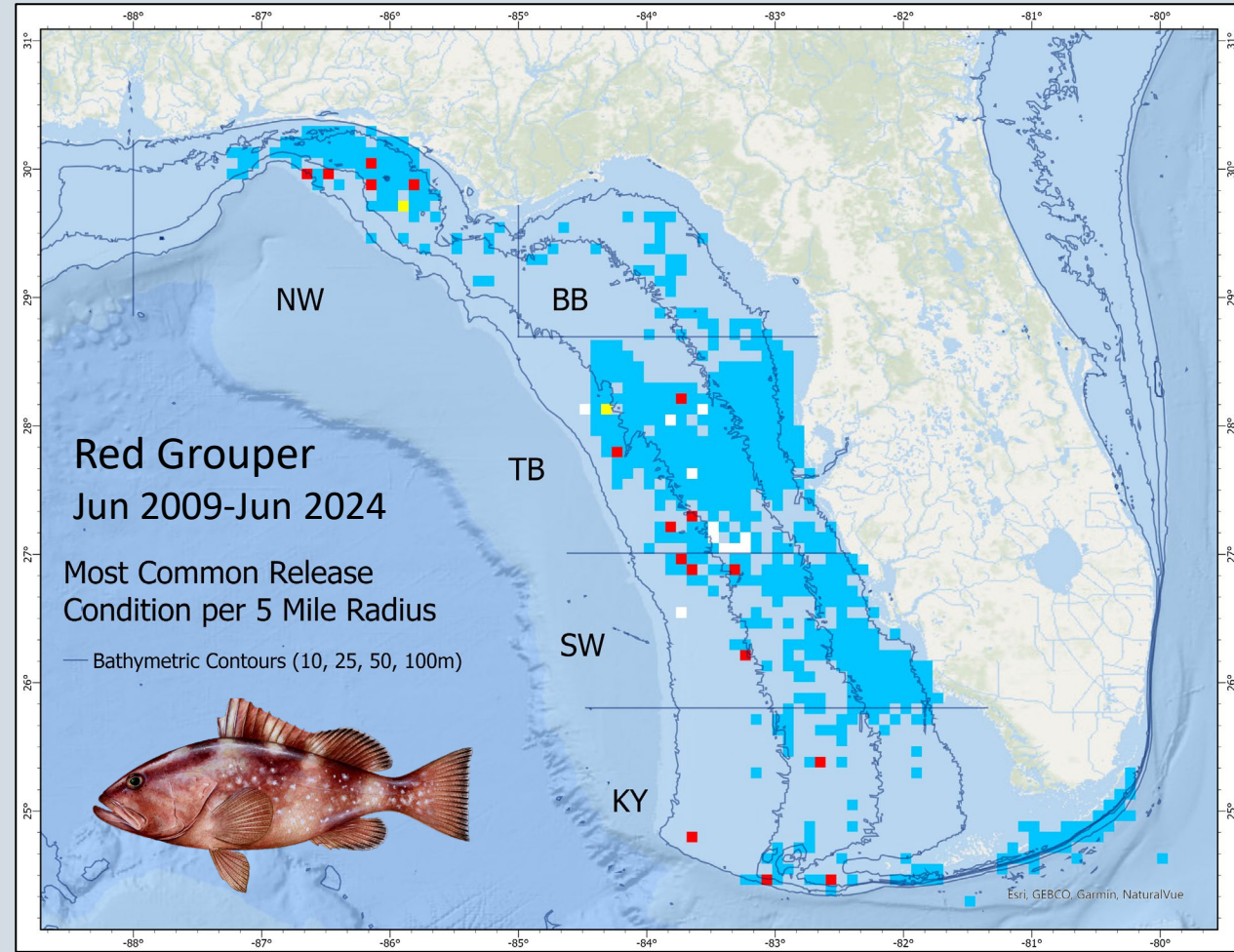
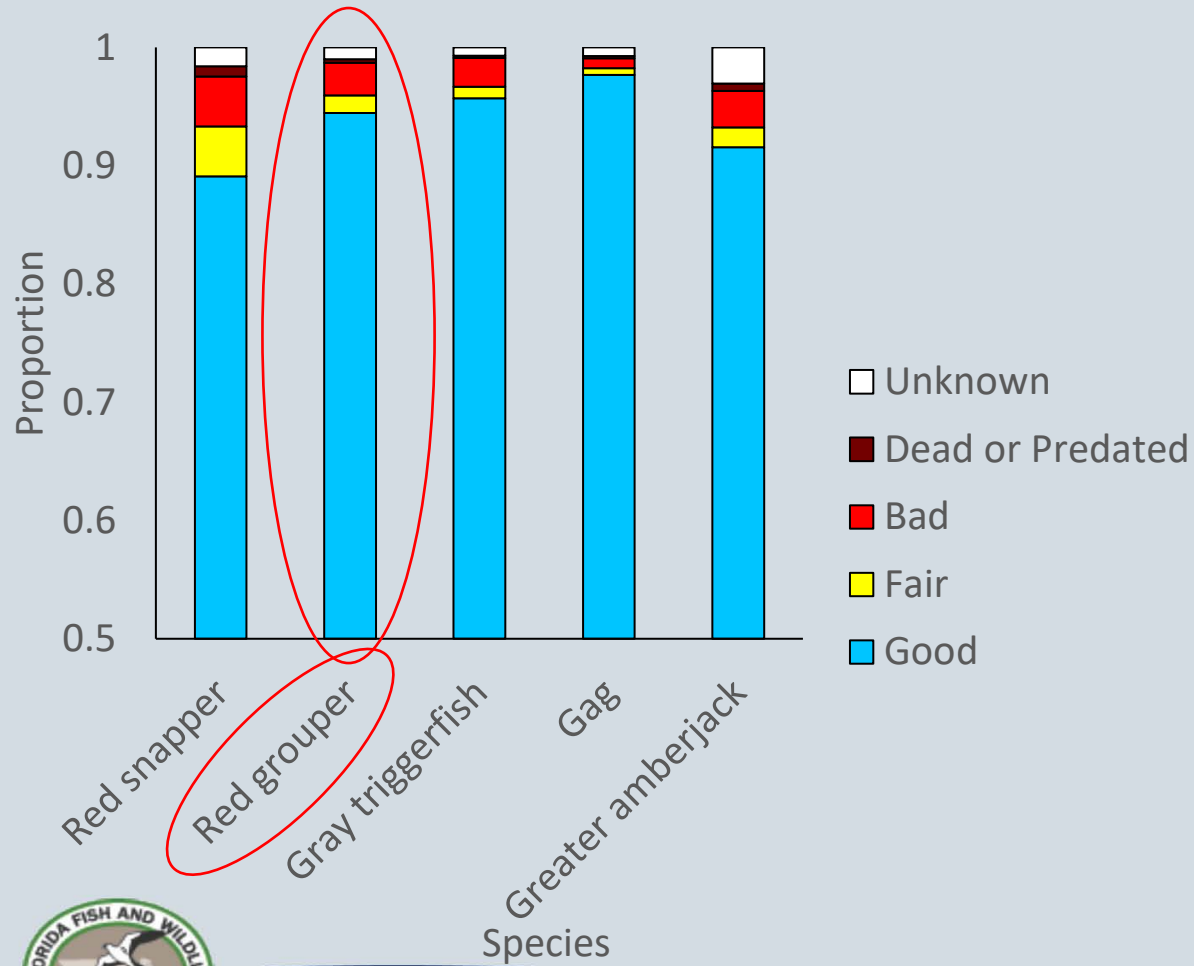
# Catch Disposition



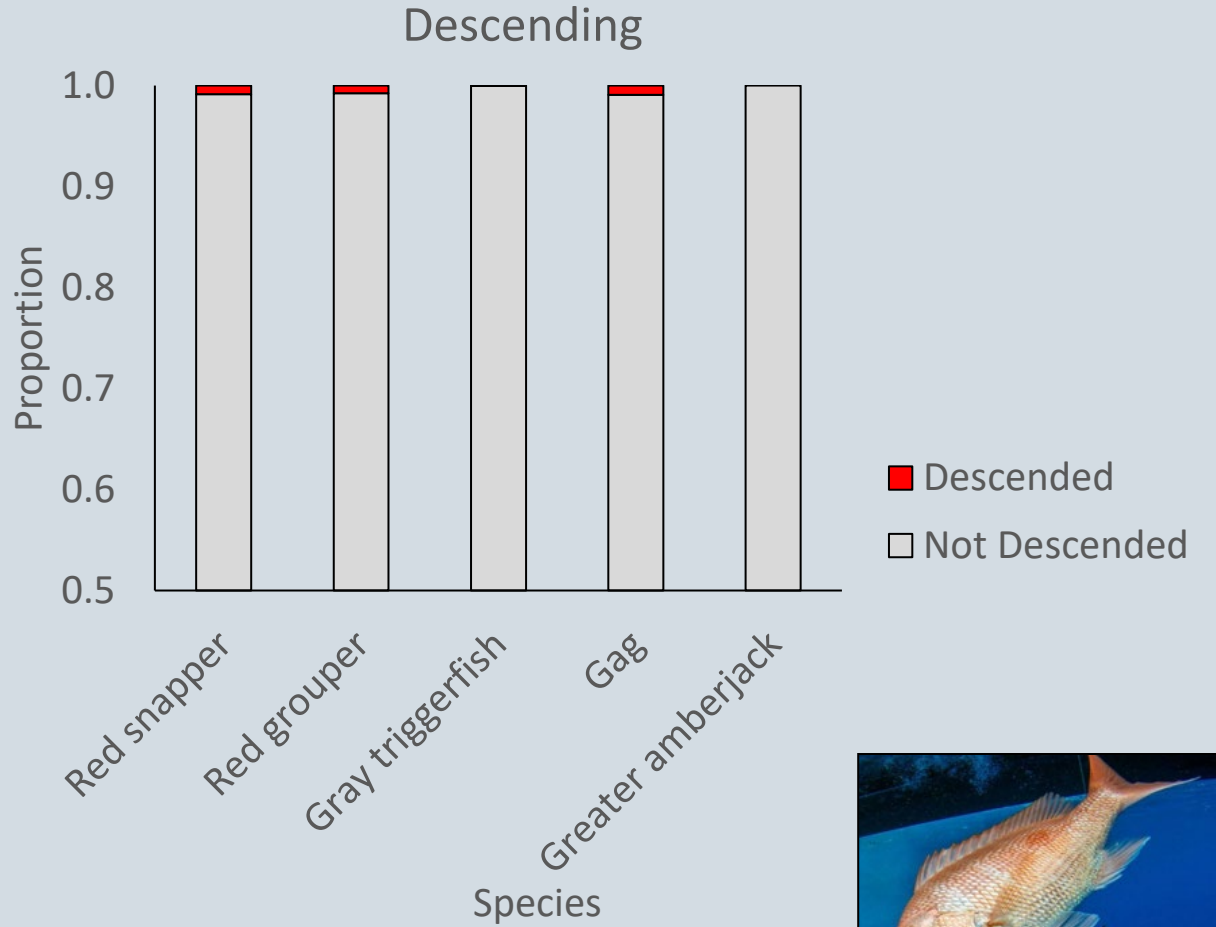
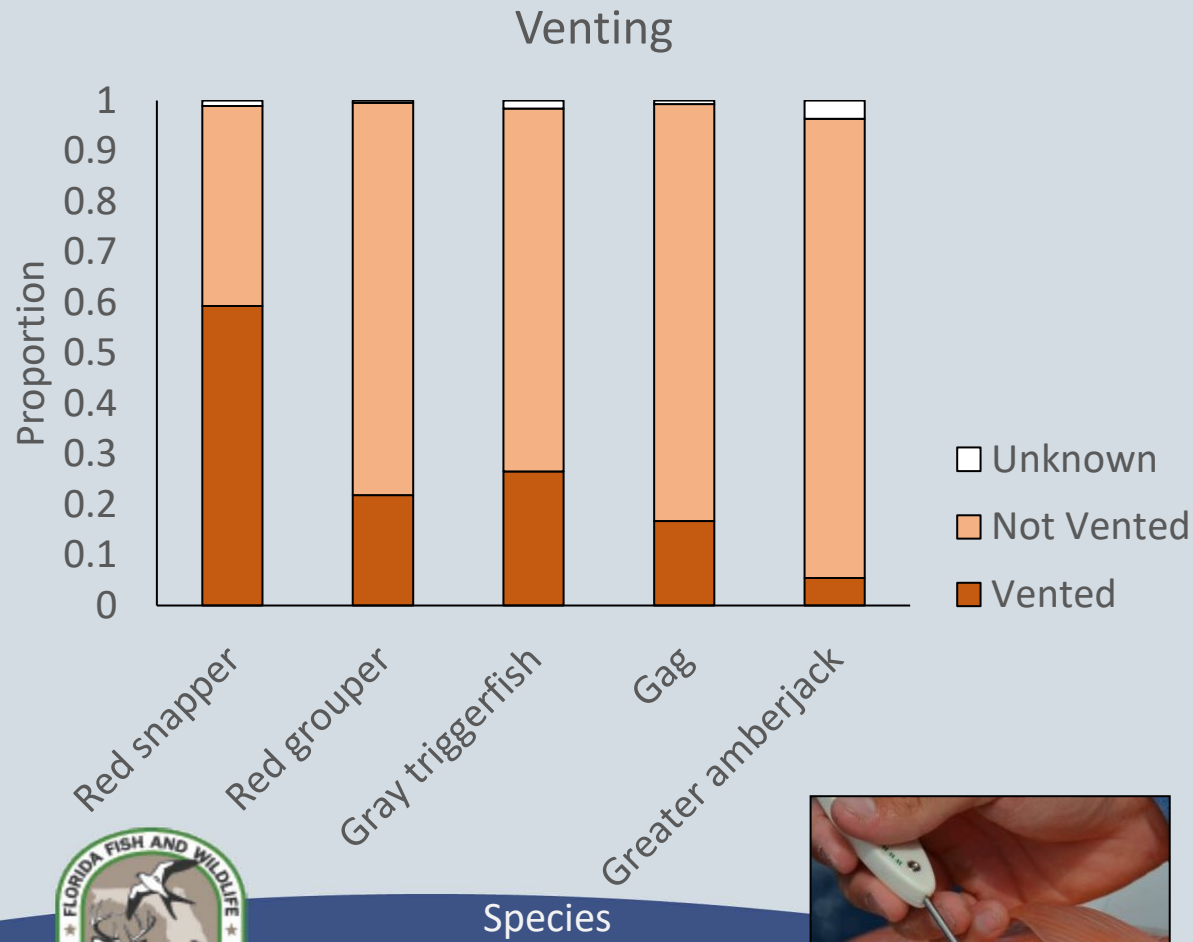
# Barotrauma



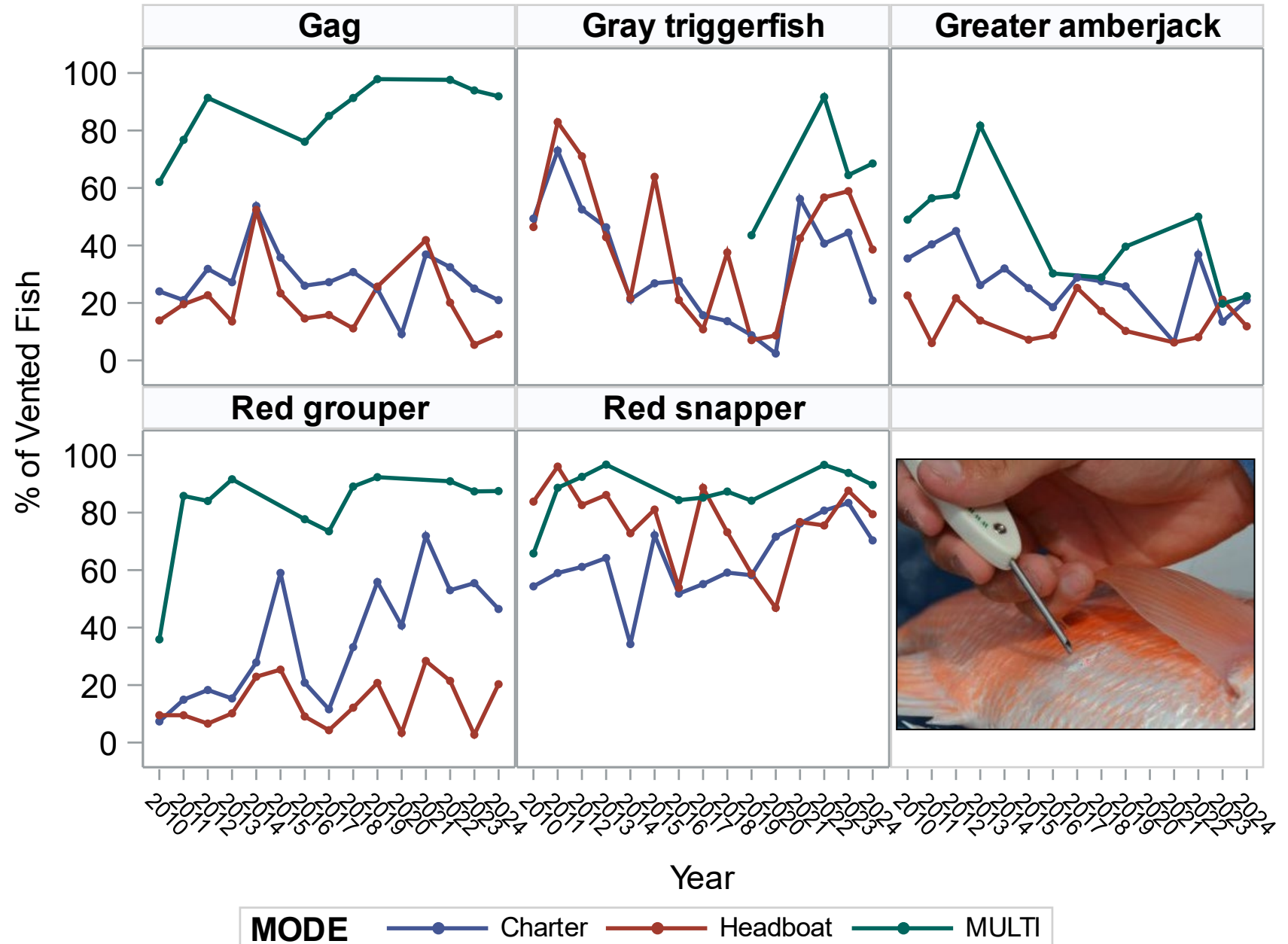
# Release Condition



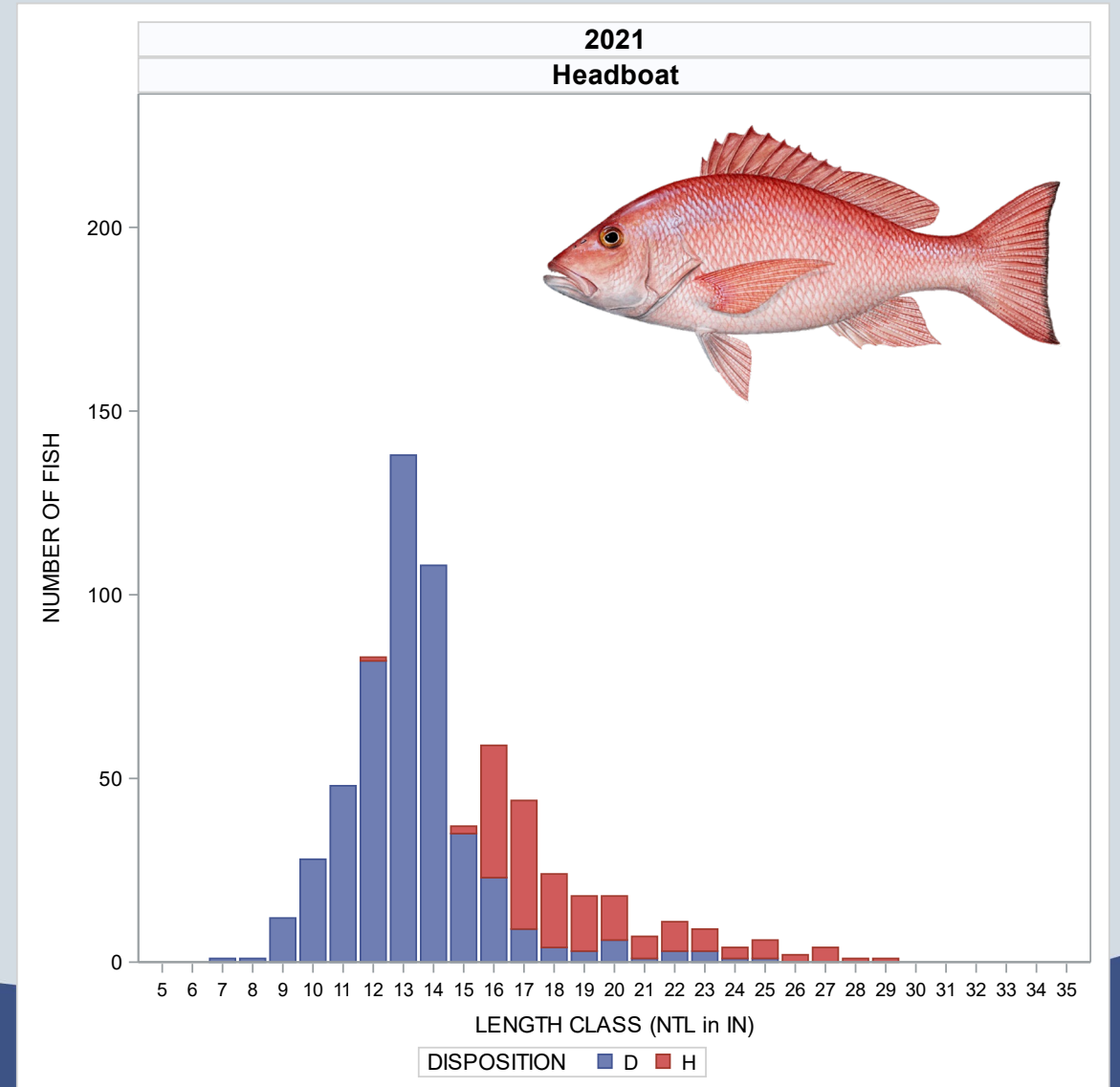
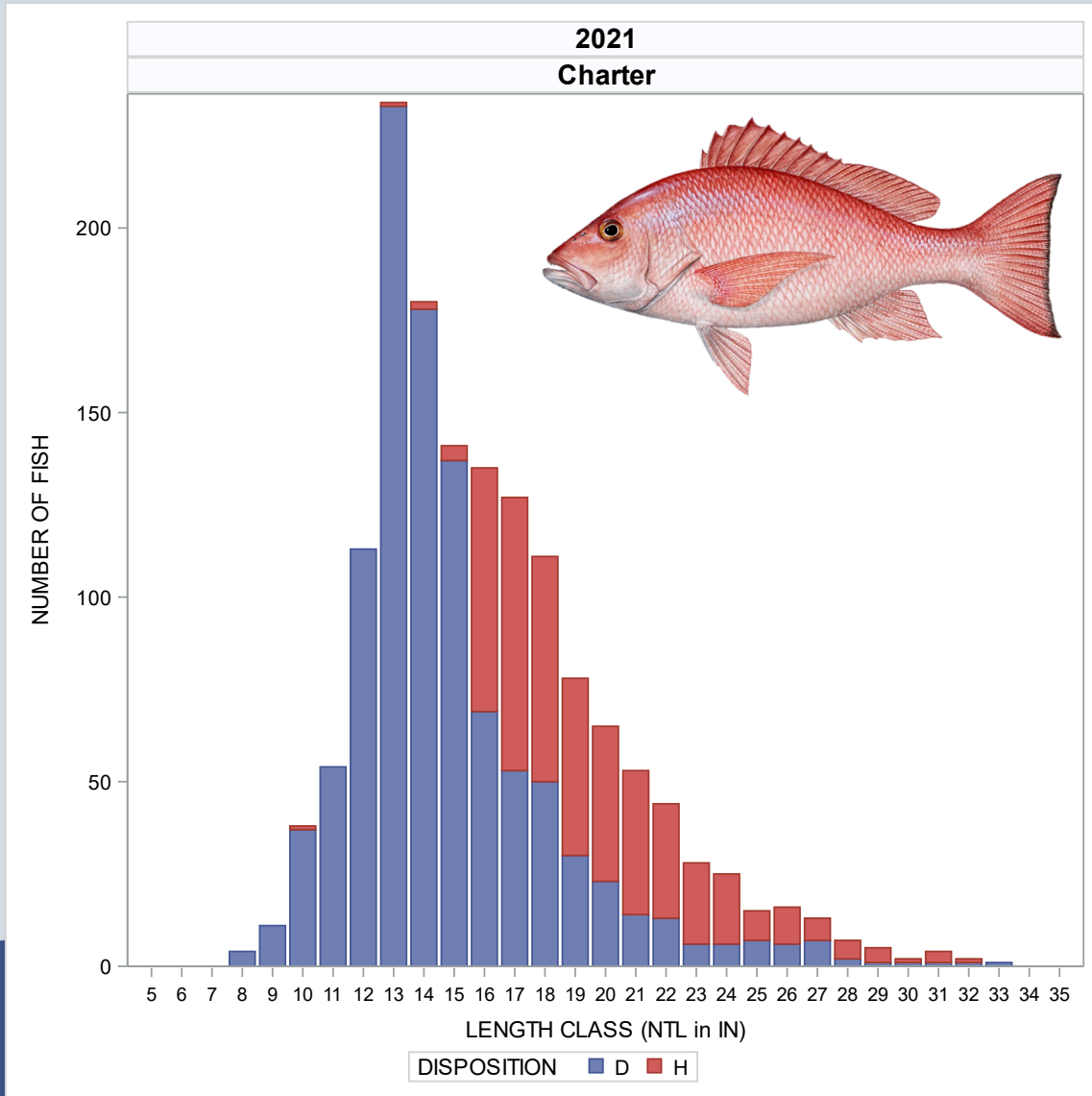
# Best Release Practices Overview



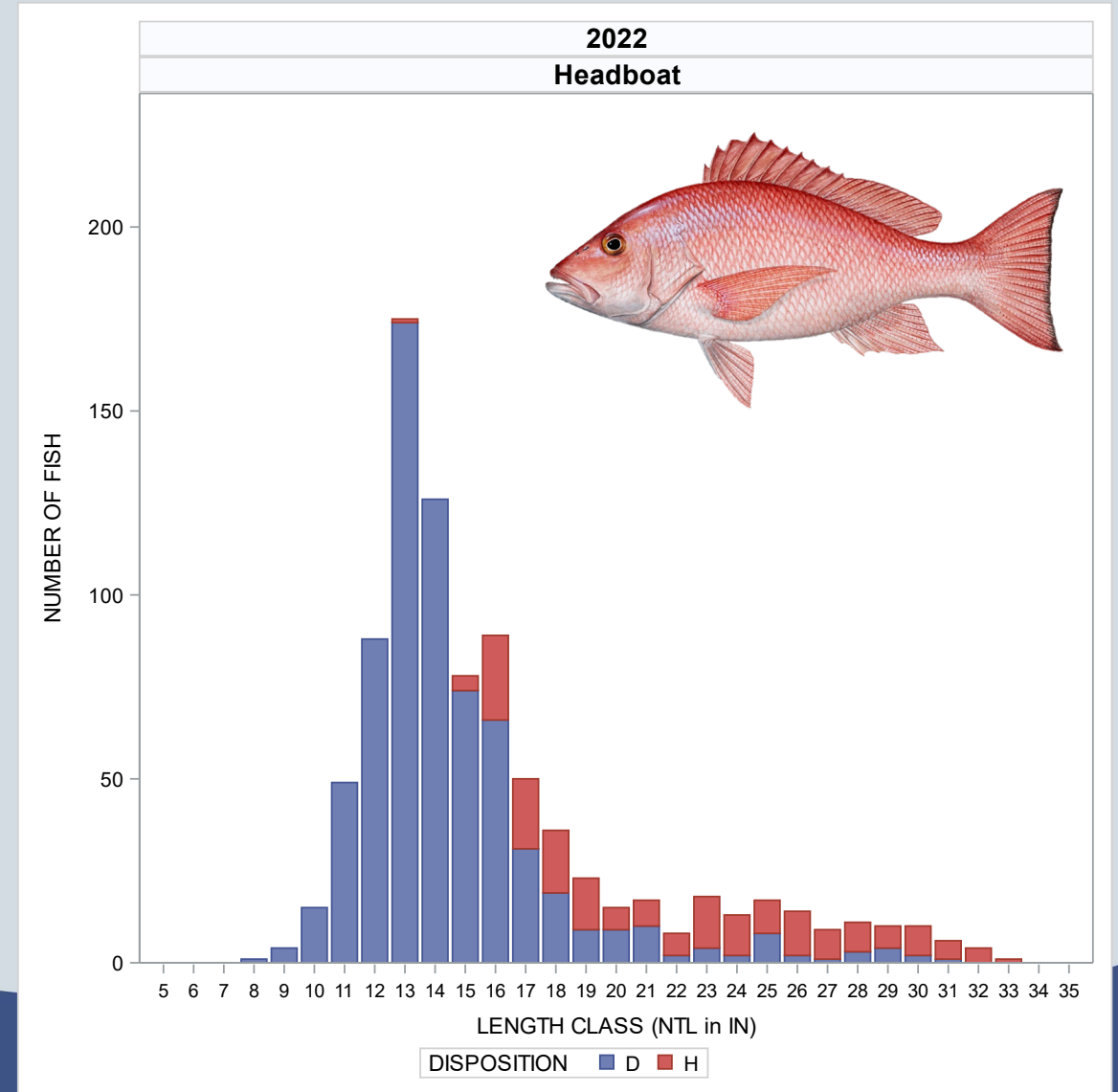
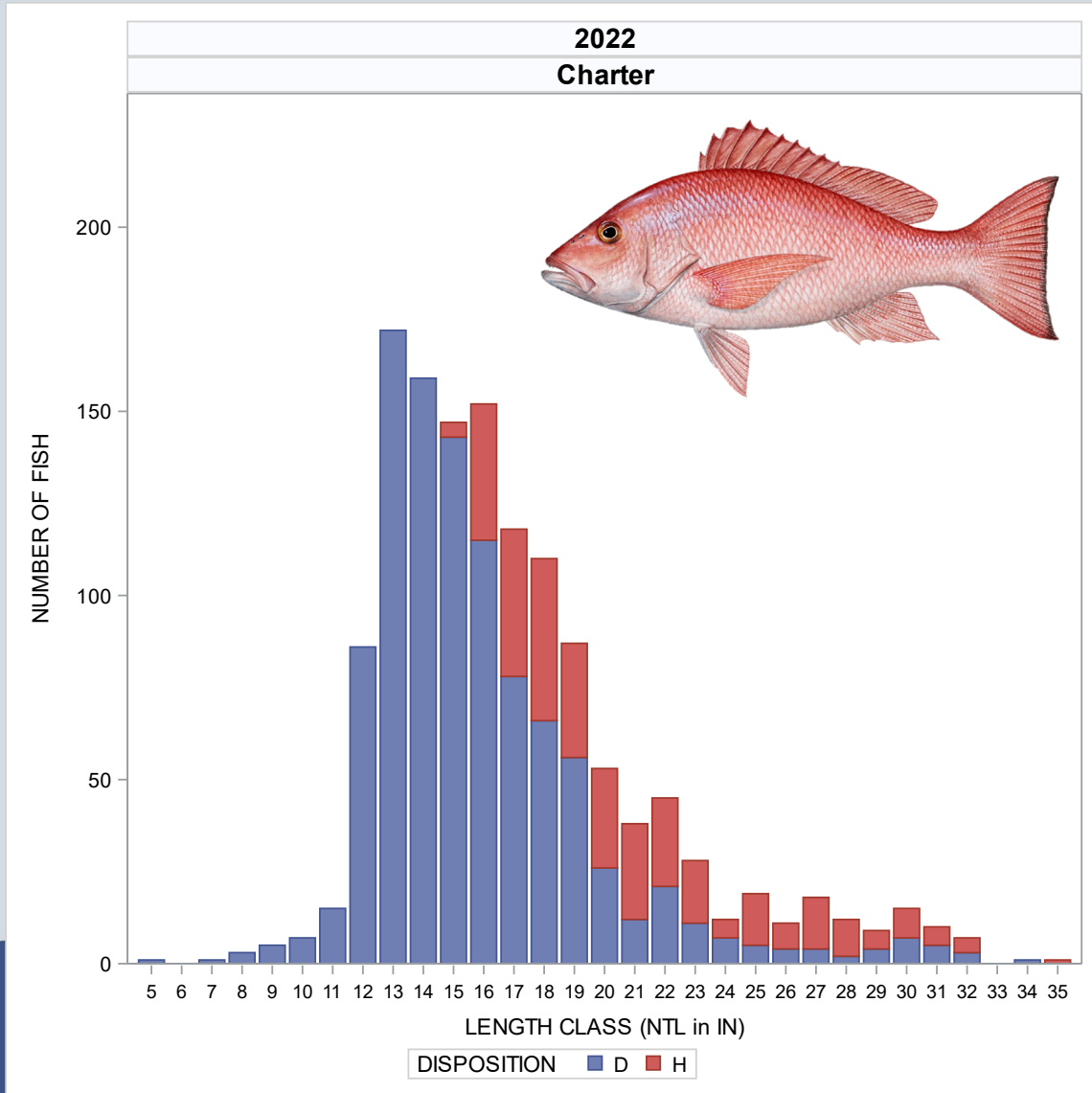
# Venting Trends



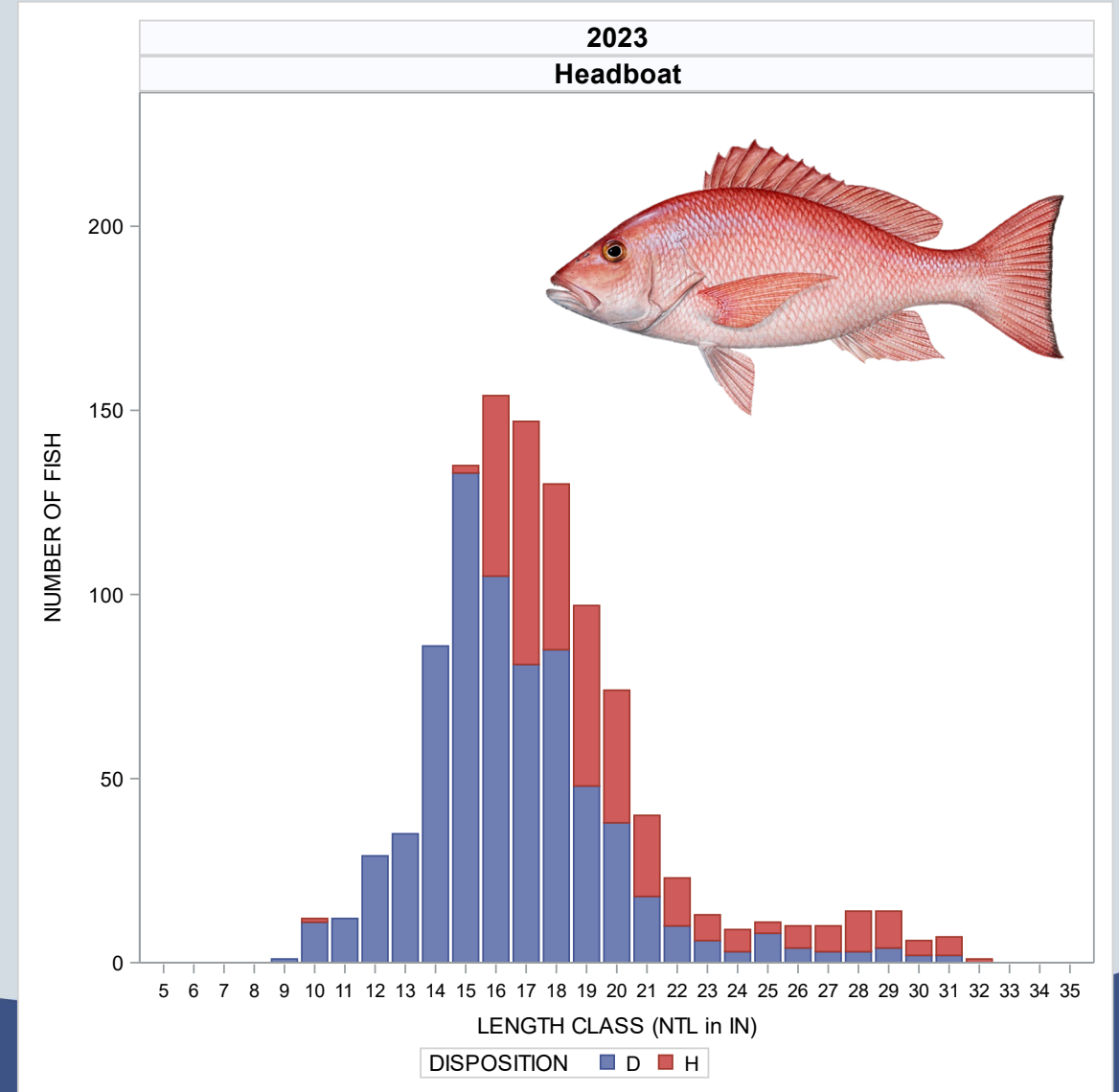
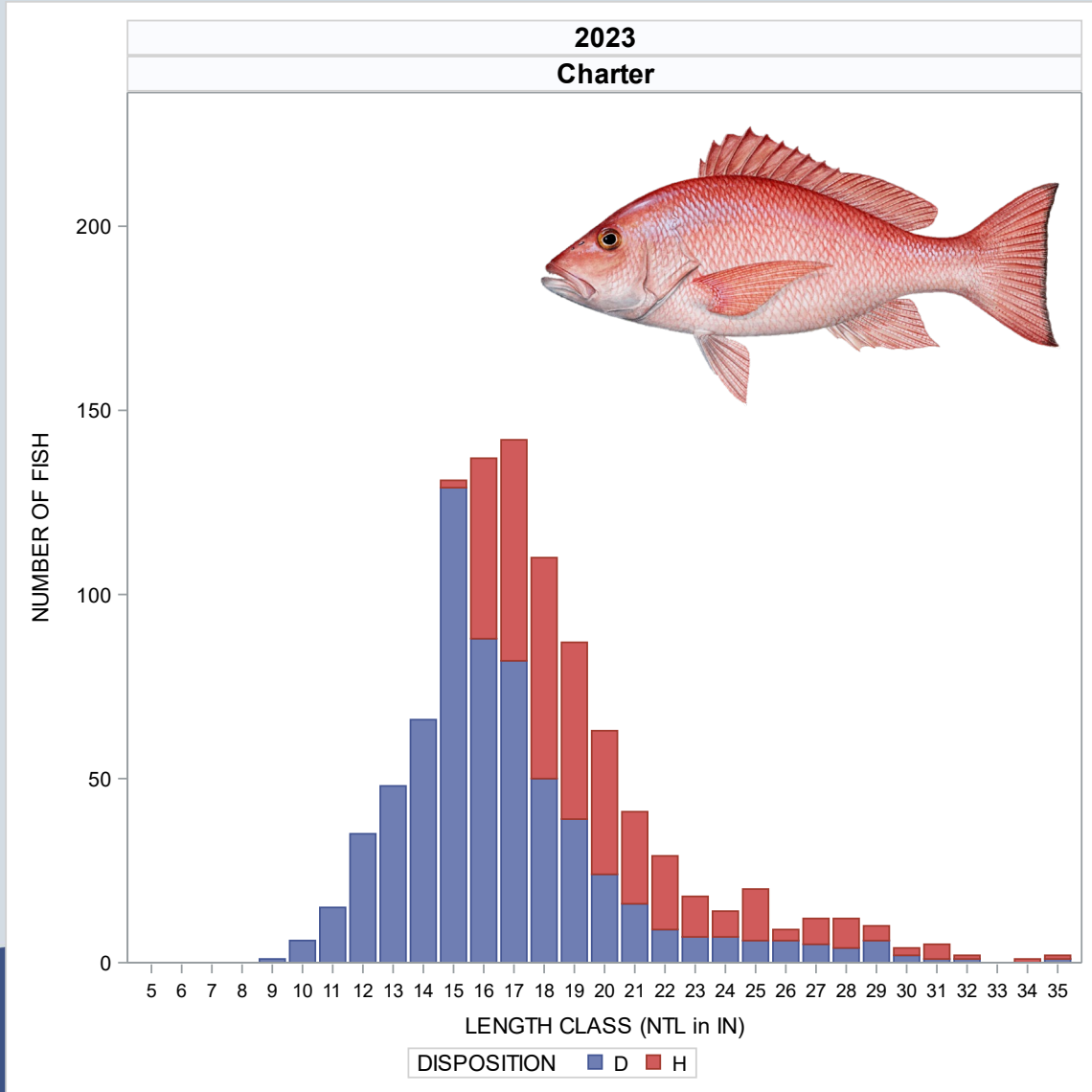
# Length Distributions – Red Snapper 2021



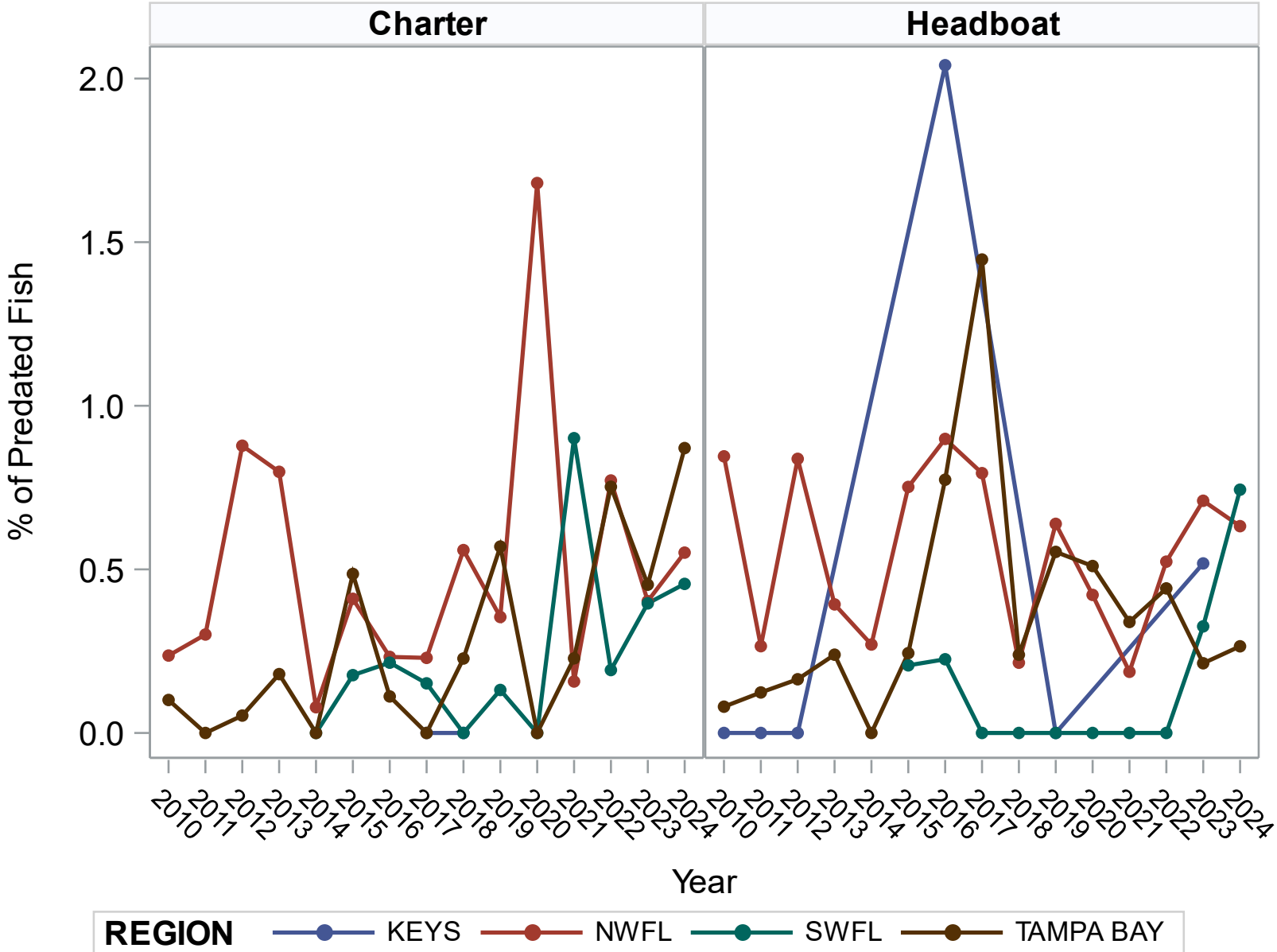
# Length Distributions – Red Snapper 2022



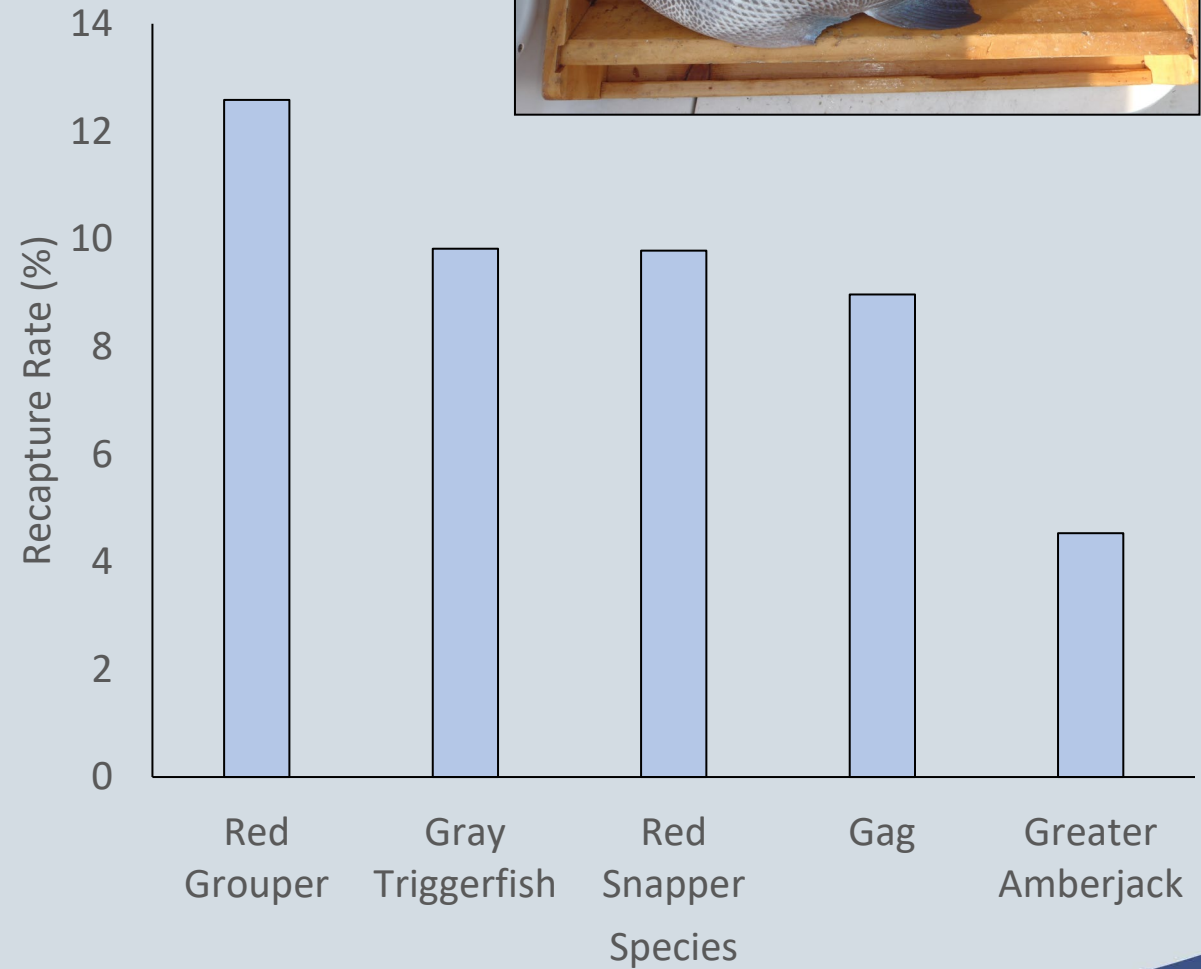
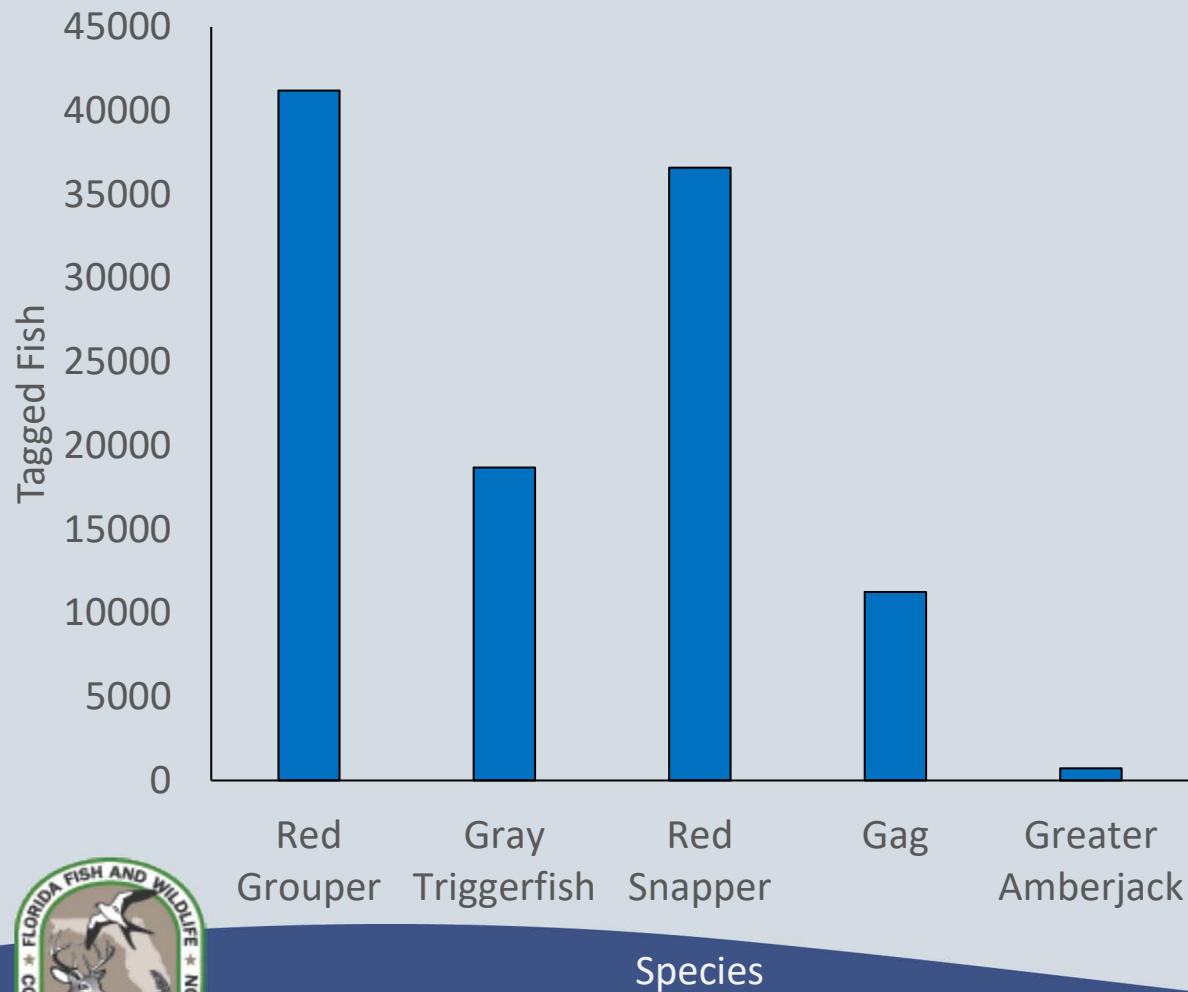
# Length Distributions – Red Snapper 2023



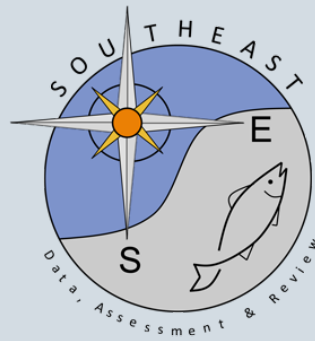
# Predation Rates



# Tags and Recaptures



# Data Uses



- Reef Fish SEDARs
  - Age Composition – harvested fish
  - Size Composition – discarded fish
  - Condition and survival of discarded fish
  - Abundance indices (rarely)
- Return 'Em Right
  - Best Release Practices
- External Data Requests
  - Predators (Sharks and Mammal interactions)
  - Regulatory discard modeling
  - Release mortality modeling
- Internal projects
  - Mark/recapture survivability analysis
  - Describing the for-hire fishery
- Future applications
  - CPUE/DPUE ?

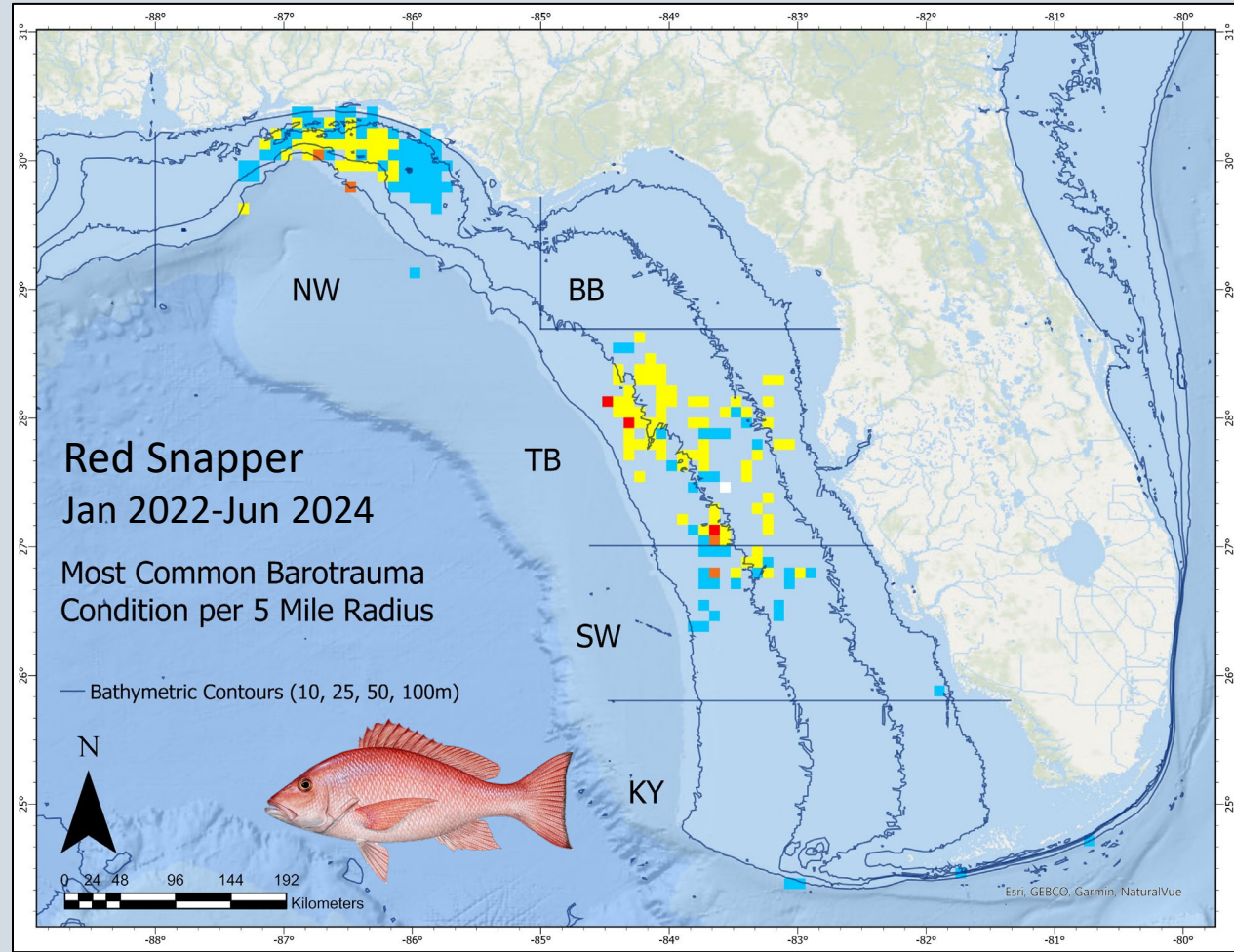
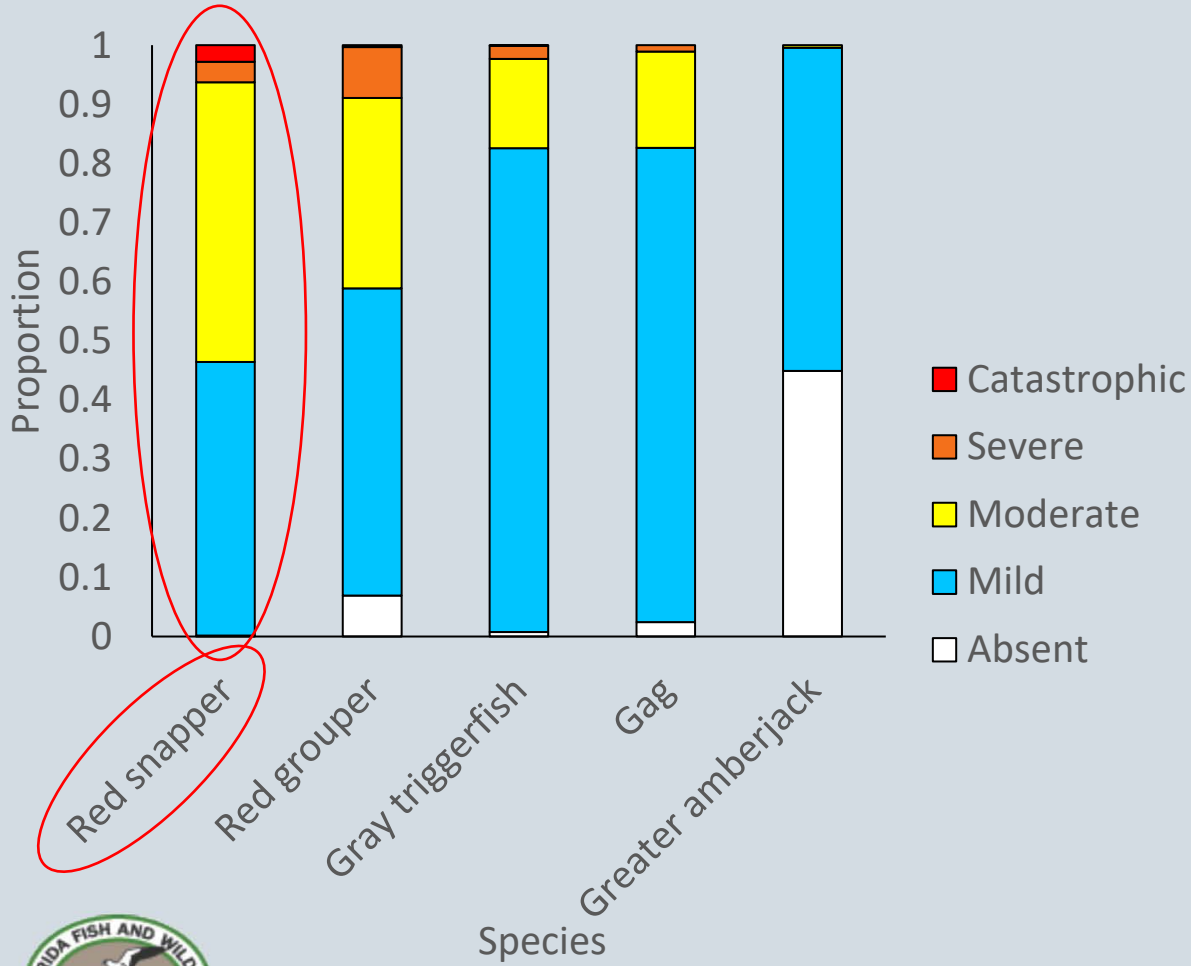


# Summary

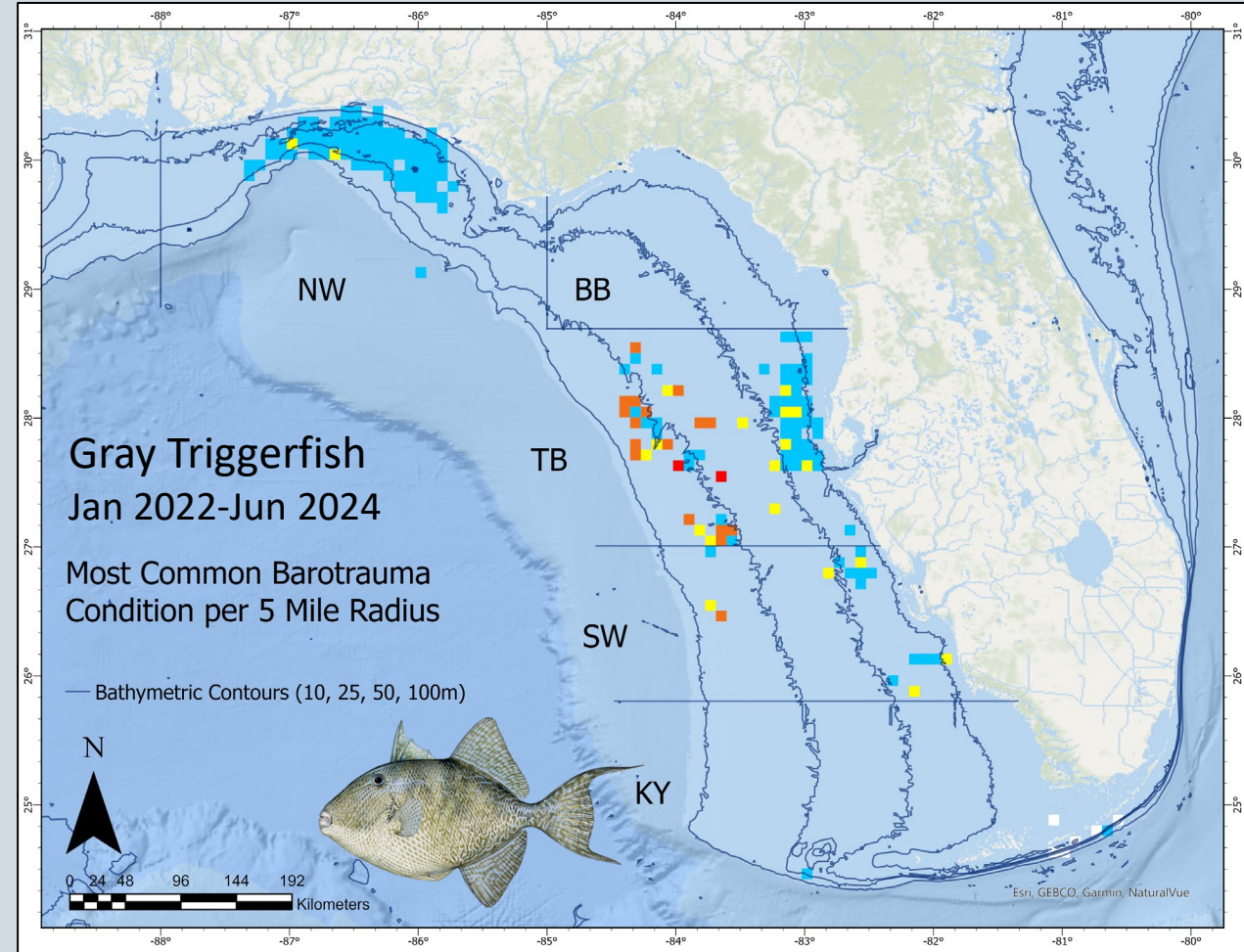
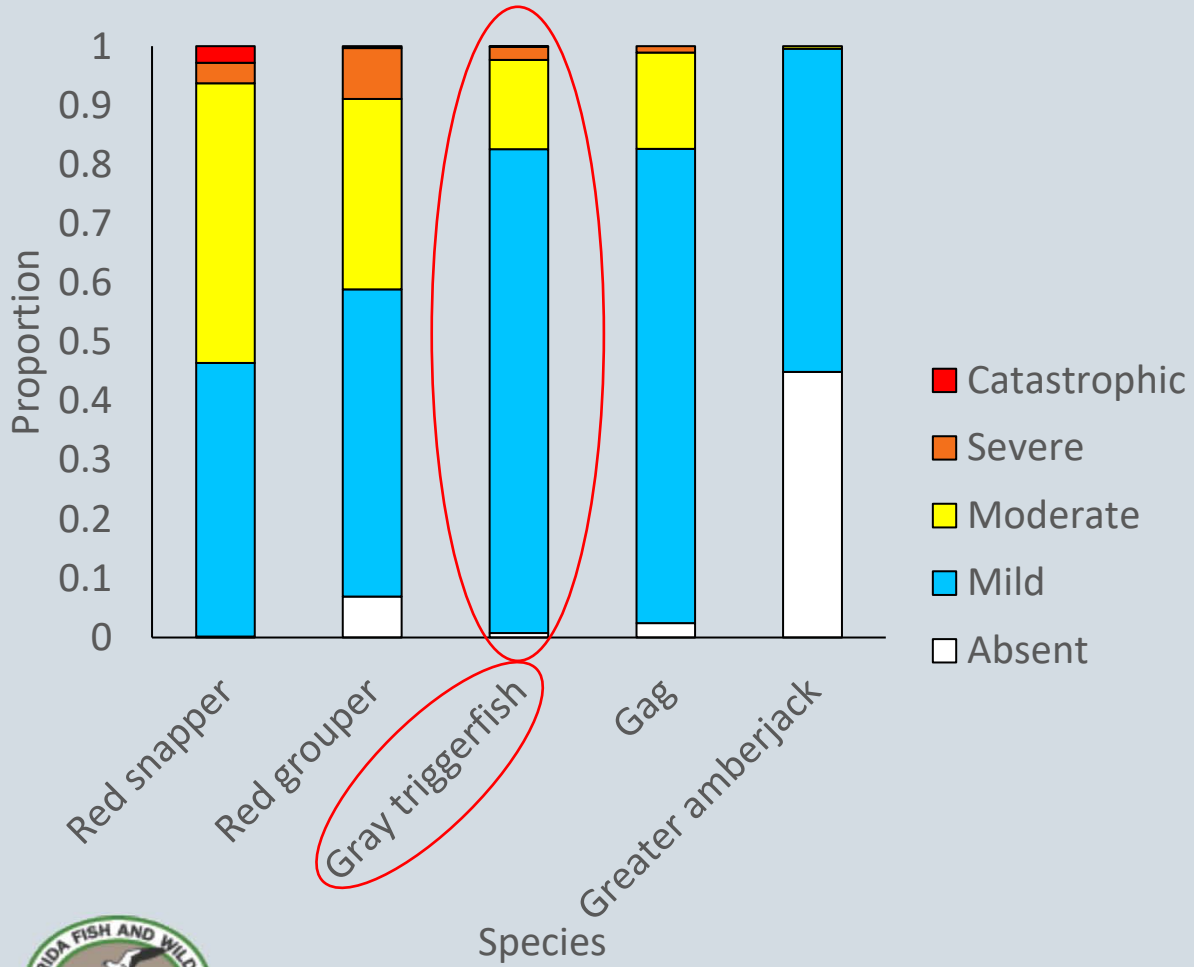
- For-Hire At-Sea Observer Survey is a high-quality dataset leveraging fisher cooperation, focused on directly observed discard information.
- Return 'Em Right greatly expanded Gulf sampling efforts in Florida and directly facilitates interstate sharing and collaboration of data and methods
- Several applications including assessing best release practices, modeling discard mortality, and describing for-hire fishing behavior space/time trends.



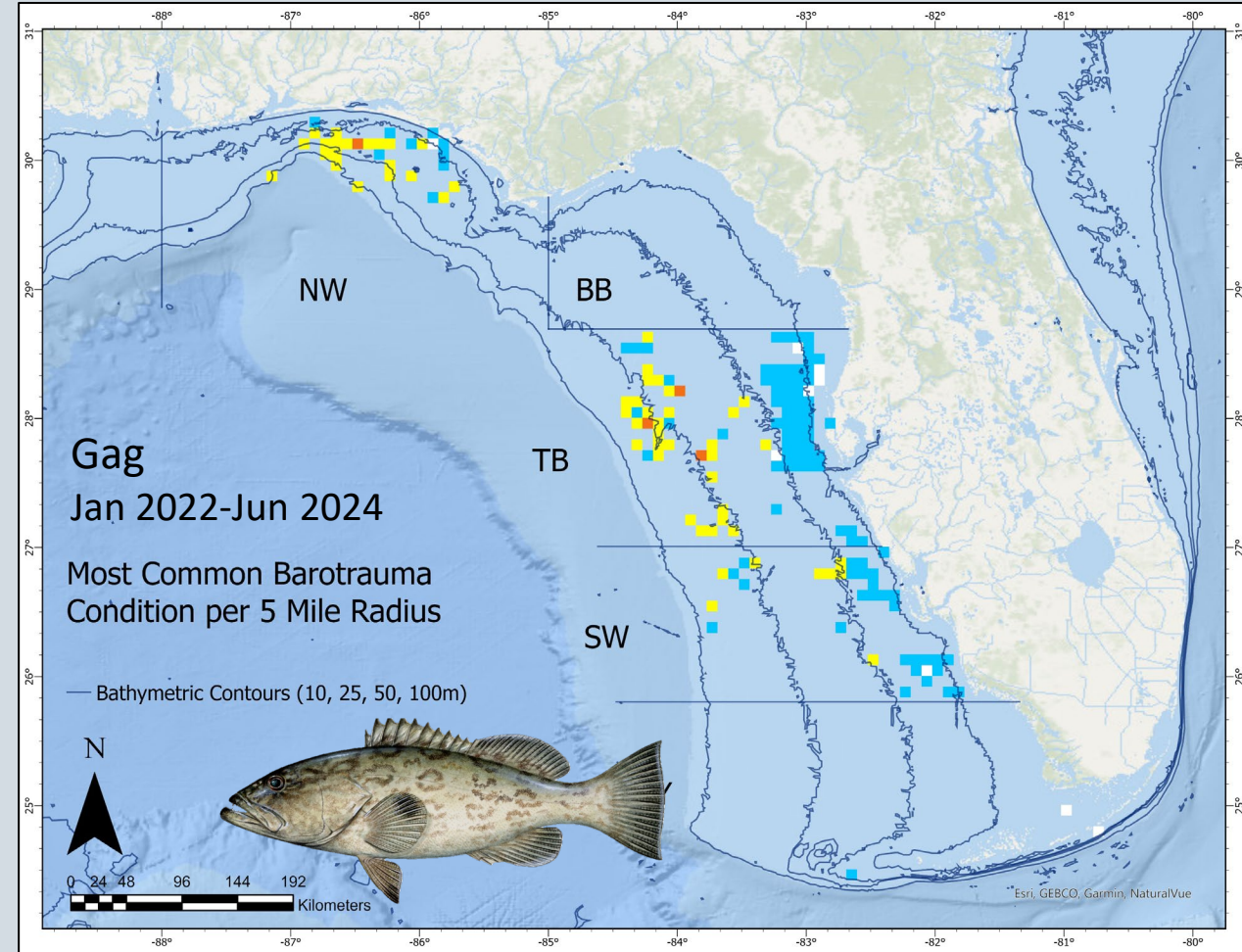
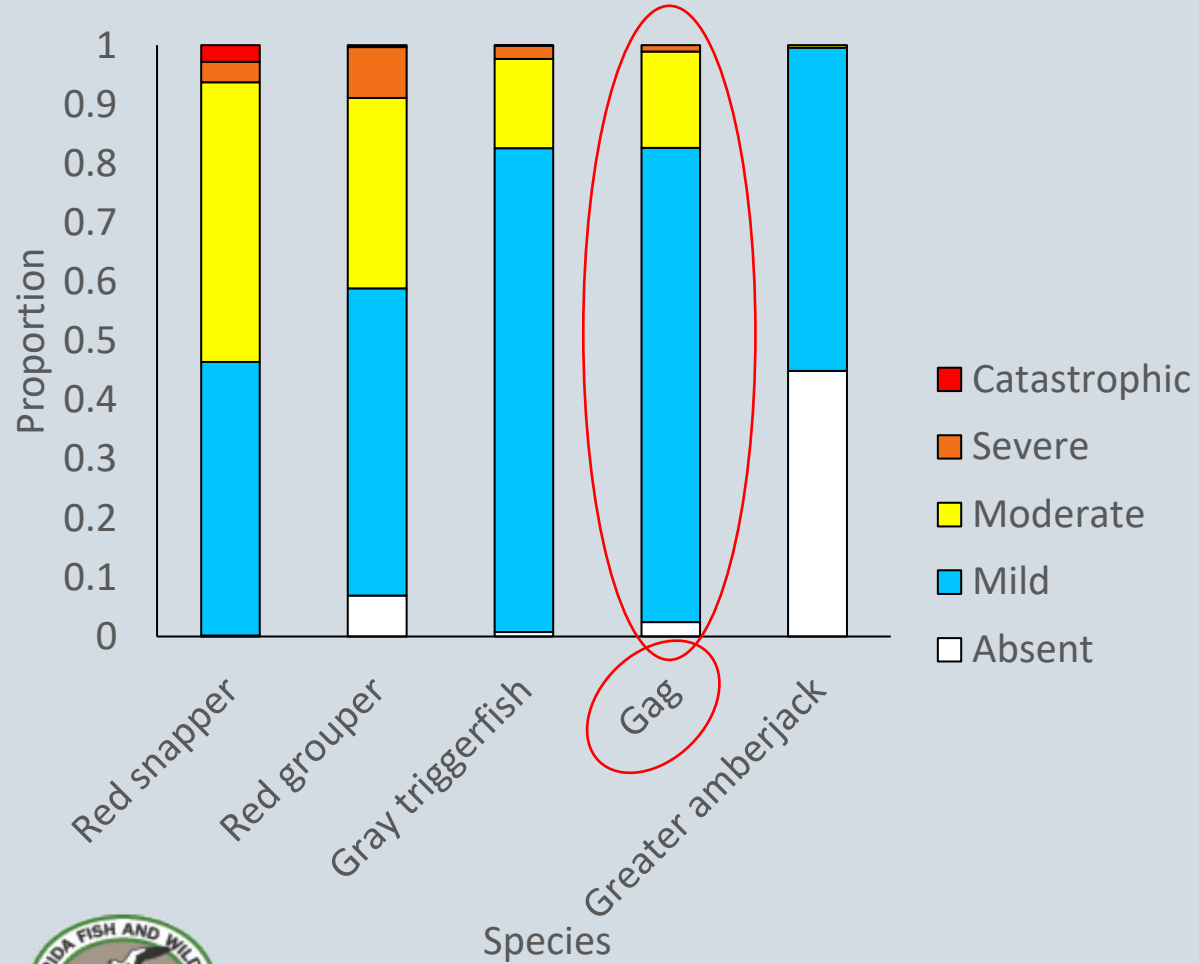
# Barotrauma



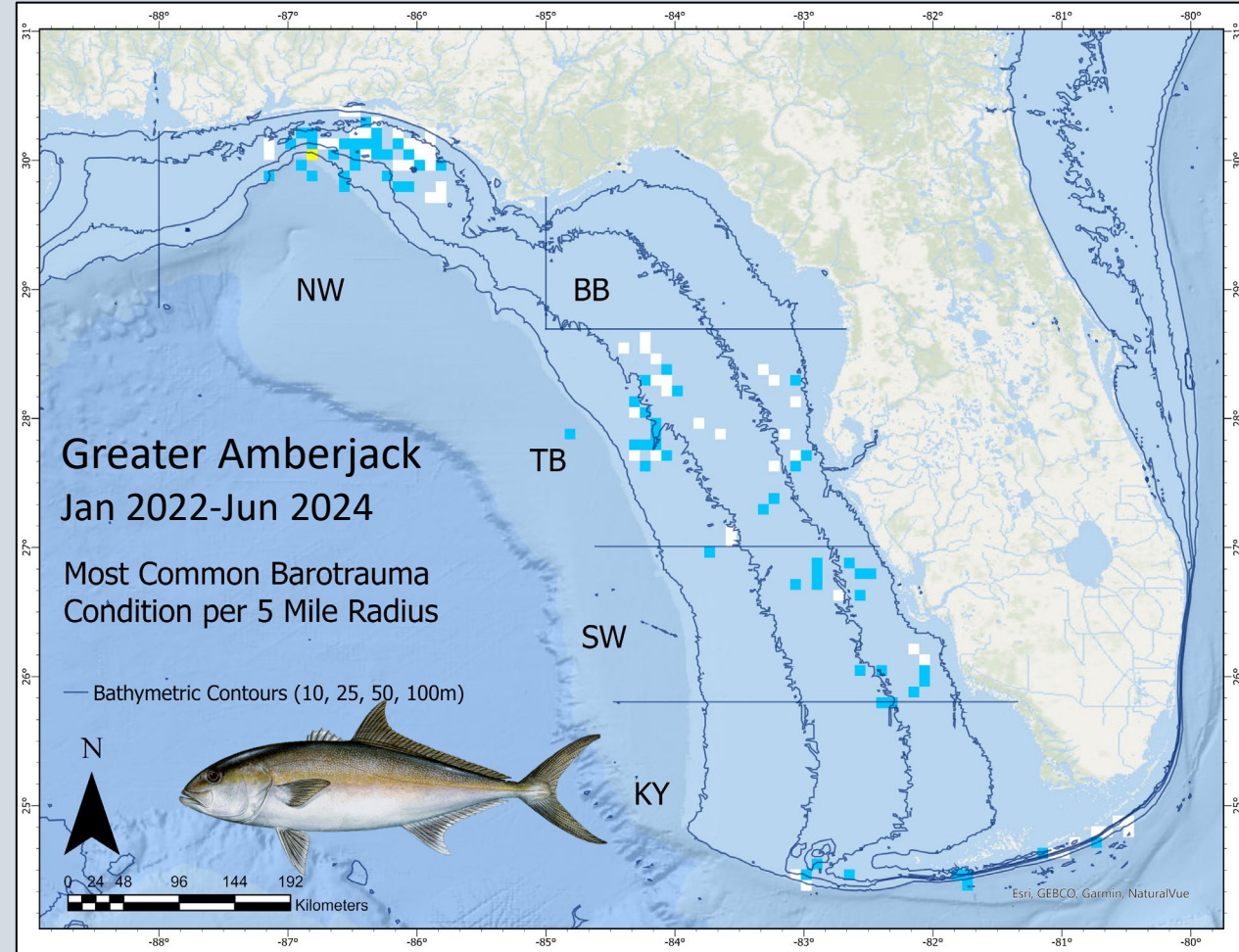
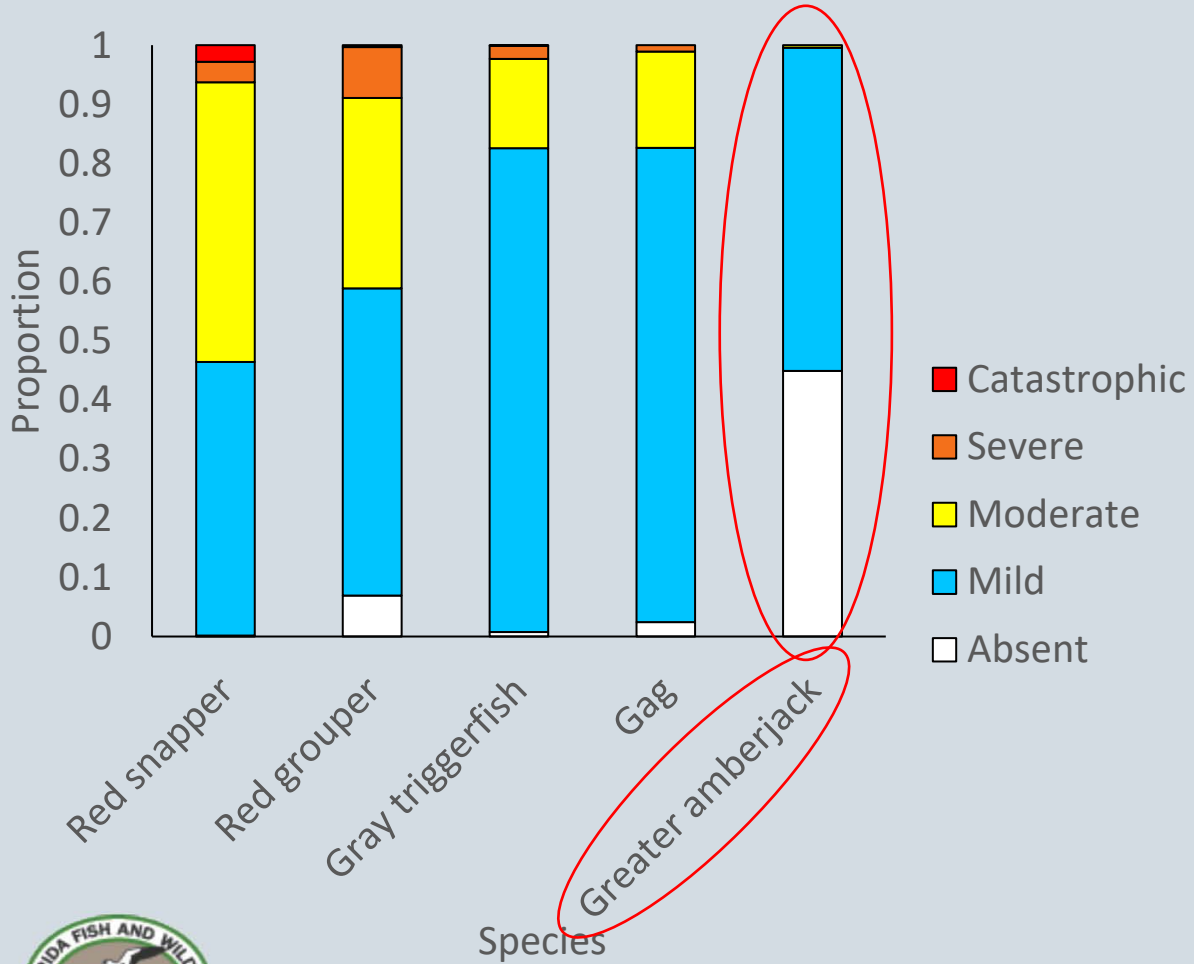
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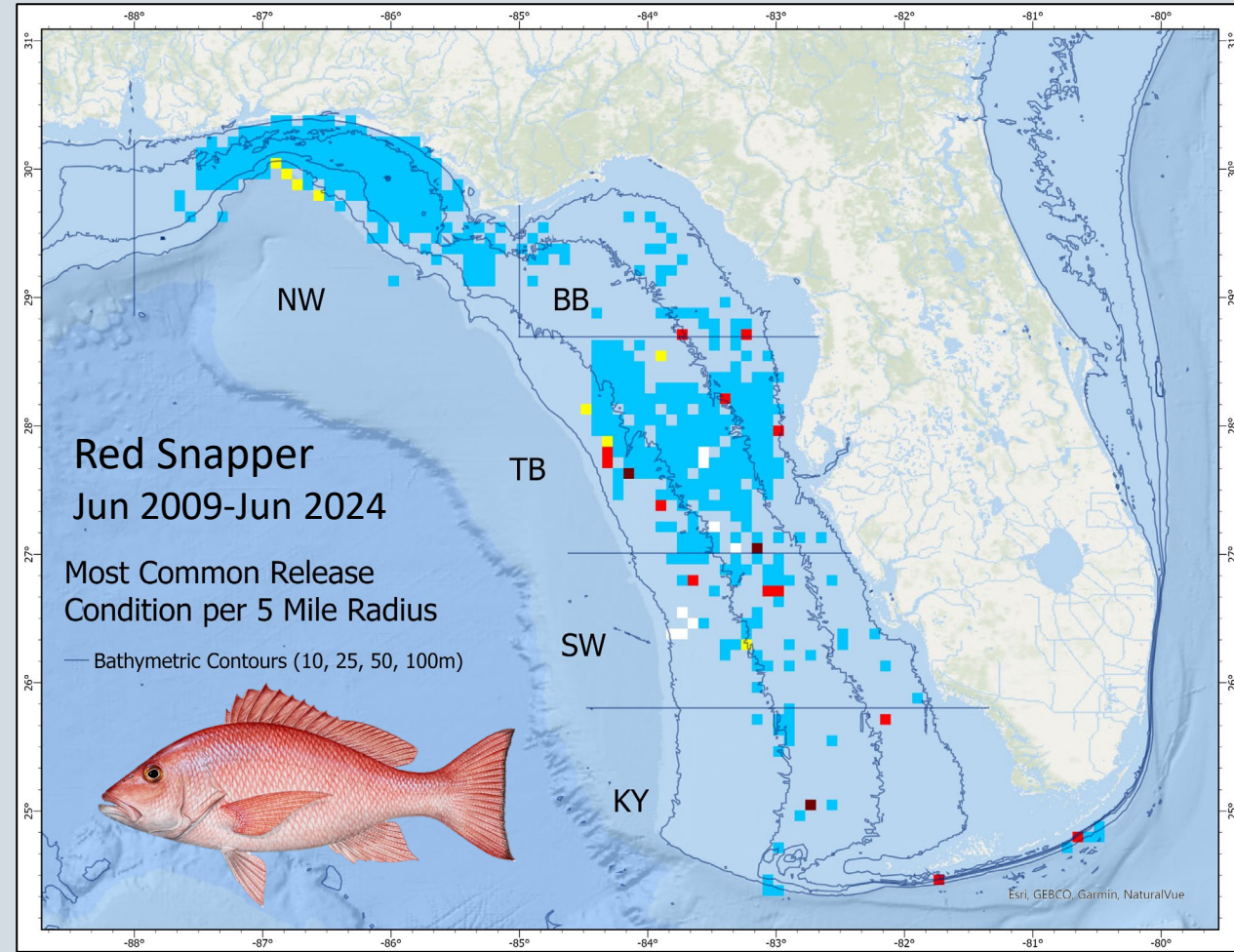
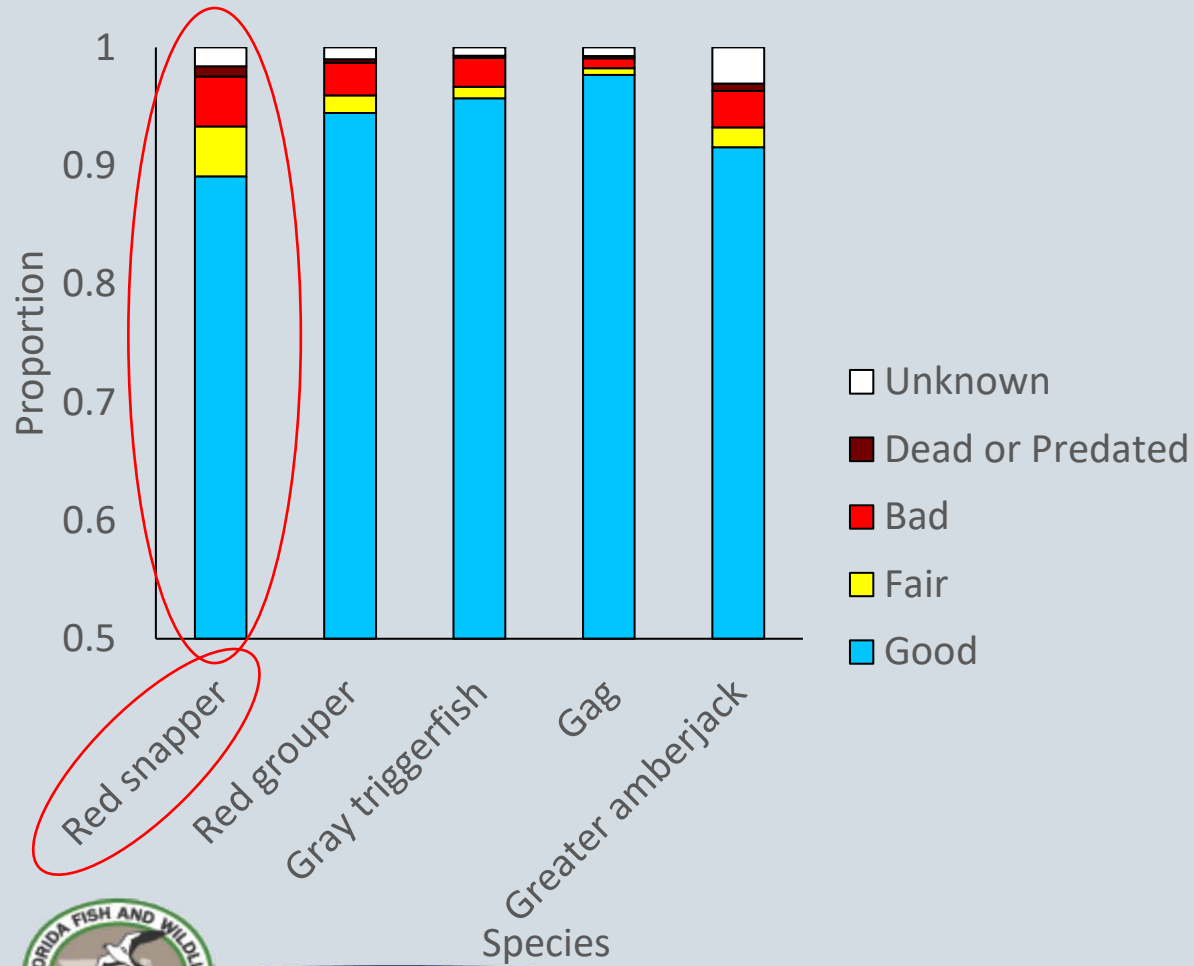
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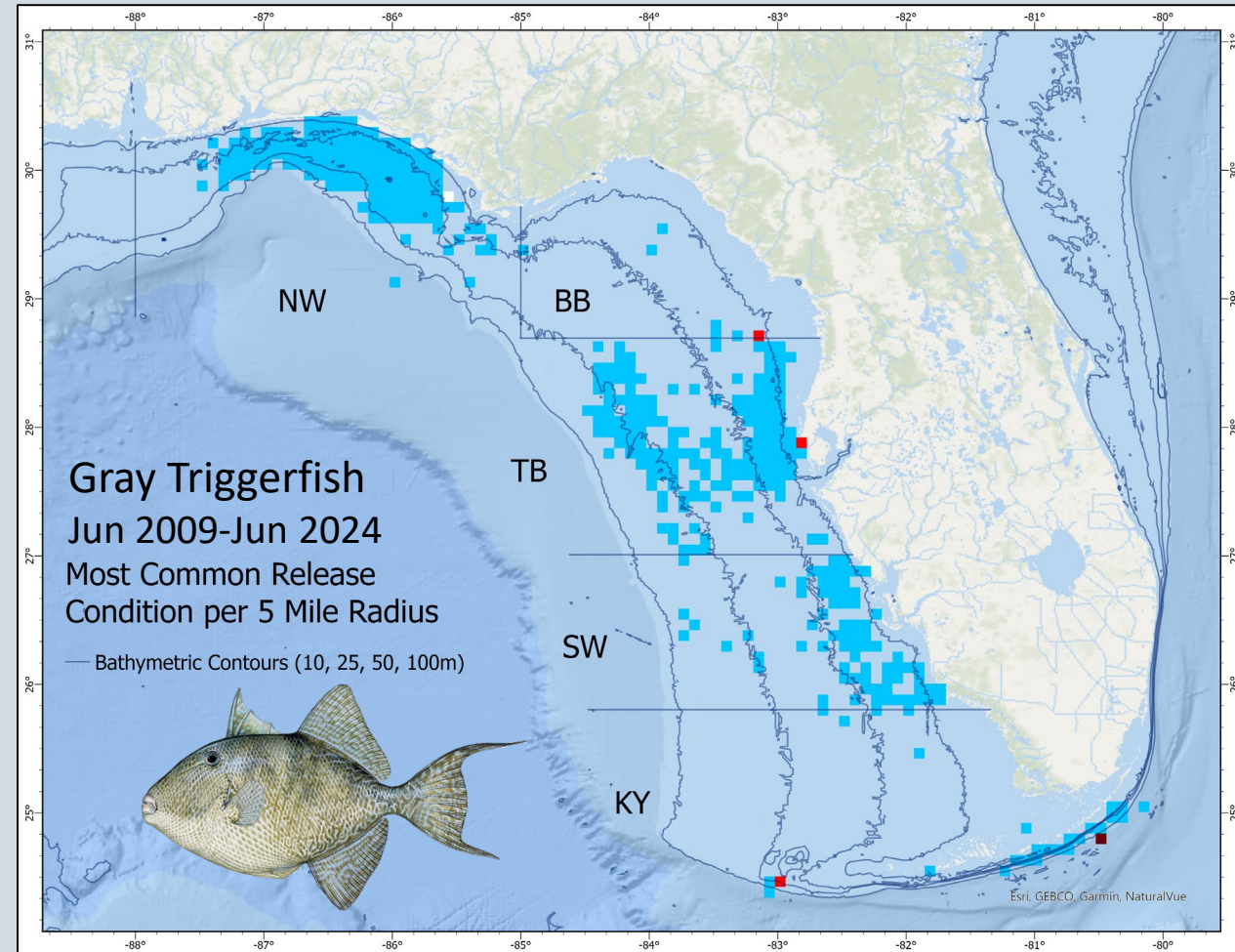
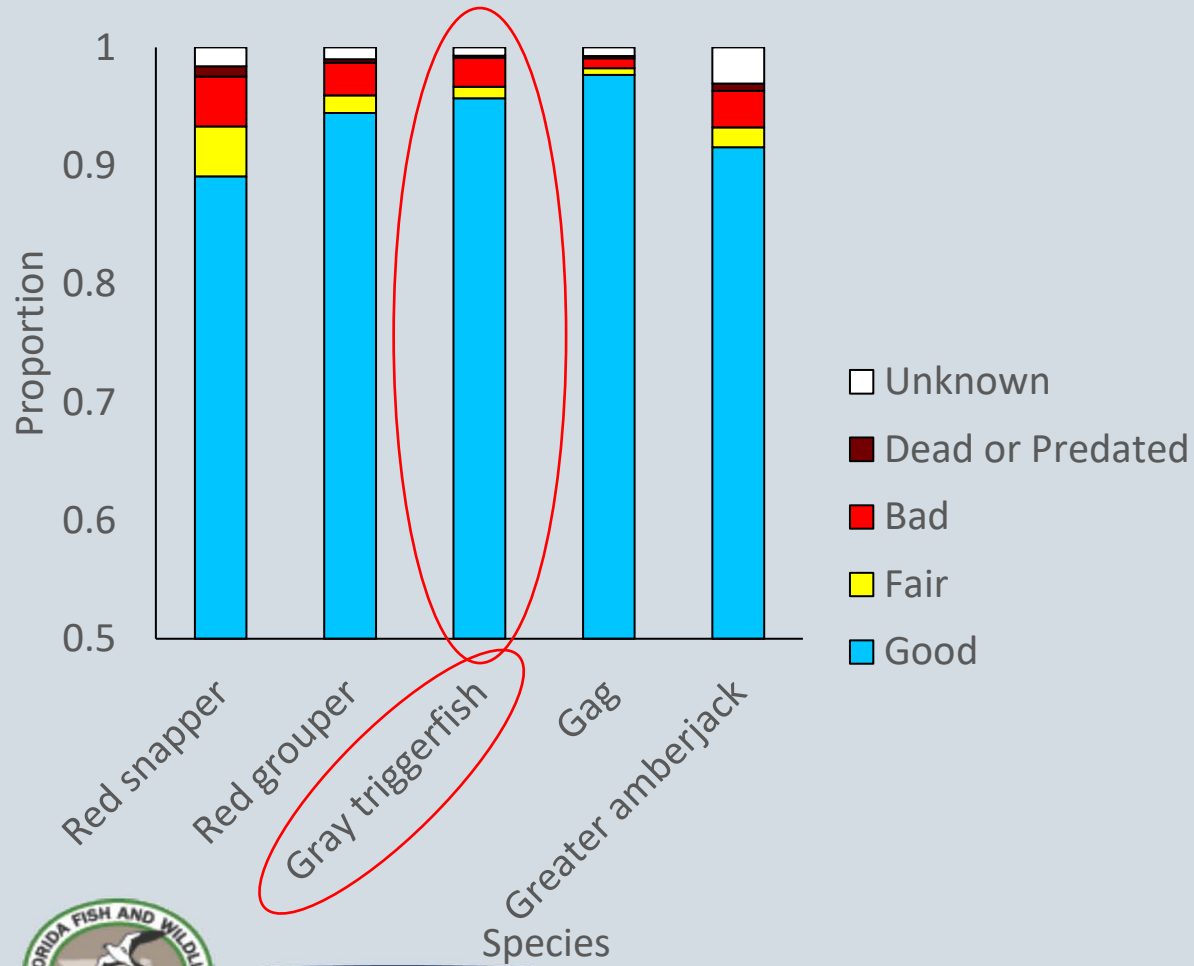
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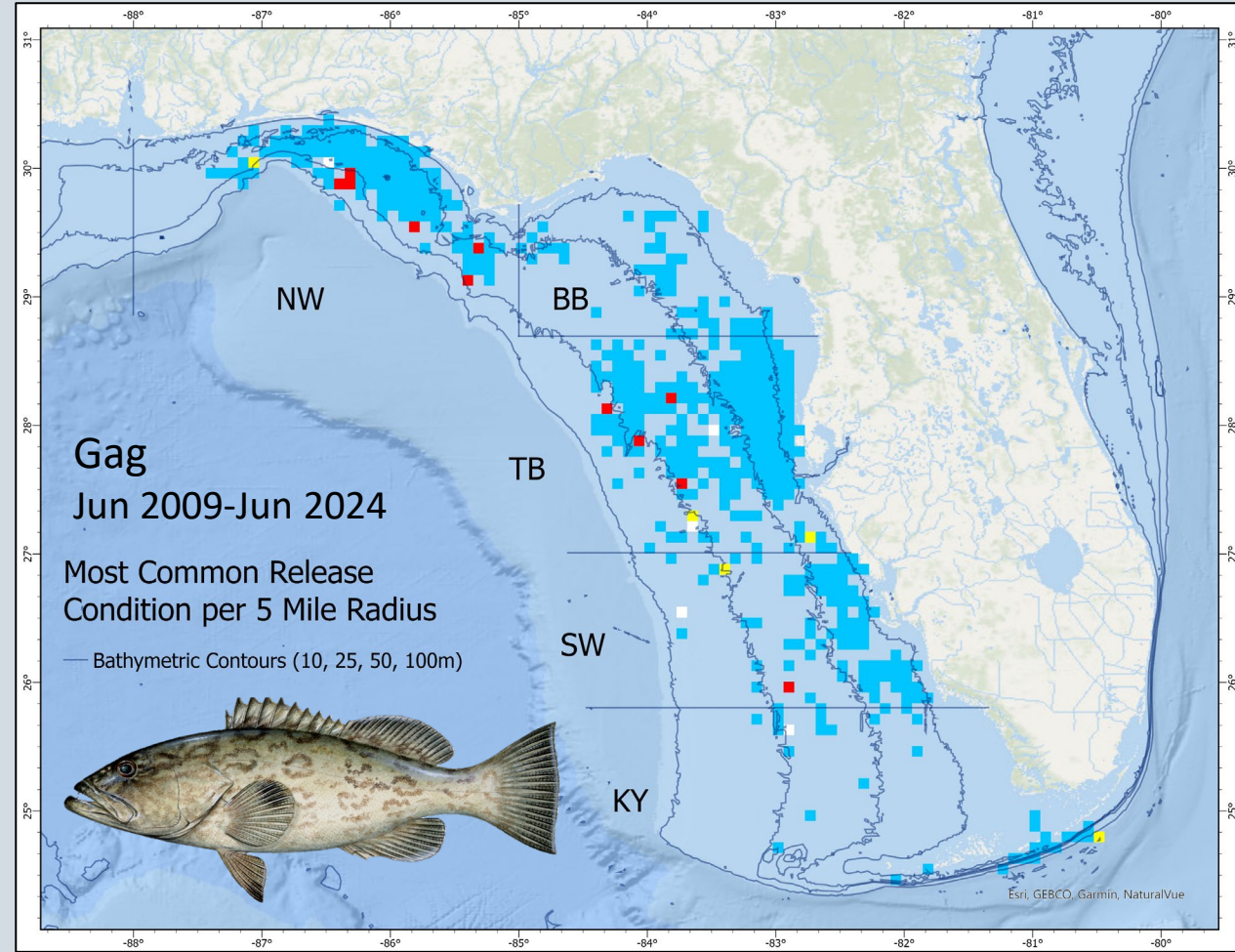
# Release Condition



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