Characterization of US Caribbean Shark and Pelagic Fisheries

Pilot sampling of the for-hire sector, St. Thomas, USVI

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- Pelagic species, Highly Migratory Species (HMS)
    - species that moves through the EEZ of 2+ countries and international waters
- Management plans commonly developed by Federal, Regional, or International bodies
    - Regulations passed down from regional plans, may not be suitable in all cases though
    - Or results in unmanaged species
- Improper management can be just as bad as unmanaged
- Species can take a long time to recover, and management can come too late – can result in fishing bans, fisheries closures, or spatial/temporal closures

Background: Pelagics, Sharks and the US Caribbean

- Federally managed reef fish and invertebrates are primary focus of data collection, mainly from inshore commercial fisheries, and analyses

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Data Gap + Research Interest = [Pilot] Project

• A pilot project was developed in early 2024 to characterize the shark and pelagic fisheries in the US Virgin Islands (USVI) and Puerto Rico.

• Broadly, the project involves two main components:

1) **Analysis of existing catch, landing and discard data** from available sources including: HMS Logbook data, HMS Observer data, MRIP, MER, CCL

2) **Port sampling pilot** study, cross-sector (commercial, for-hire, recreational) .

Project: pilot sampling approach

To explore existing gaps:

- Developed a pilot project, in coordination with various experts, to develop strong methods that can be applied moving forward.

- With the data from the various collection programs, we want to target species and collection methods to be used towards Marine Strategy Evaluation (MSE)

- How can we get the data so that it can be applied in a consistent way? Feasible? Usable for stock assessments, management decisions of course, and can be universal enough that even across sectors the information can still be usable.

- **Objective of the project**: characterize the US Caribbean shark and pelagic fisheries:
  - Magnitude
  - Seasonality
  - Catch composition: landed and discarded species
  - Fishing effort

- **Purpose of this presentation**: provide a high-level summary of this project and a results from pilot sampling
  - Data still being tackled and underway – still analyzing potential analyses

For the next several minutes I will present the field work component

Methods: port sampling St. Thomas, USVI

WHERE: St. Thomas, US Virgin Islands

WHO: All fishing sectors

WHAT: Scoping approach to develop best methods to collect data on landed sharks and pelagics

HOW: US Virgin Islands Division of Fish and Wildlife (DFW) facilitated introductions (and so much more)

Methods: Data collection

Operational
    Fishing location
    Fishing method(s)
    Trip duration
    Fishing duration

Composition
    Species
    Length (fork and total)
    Weight
    Subsampling as
    necessary

Discarding practices
    Species discarded
    Quantities discarded
    Reason
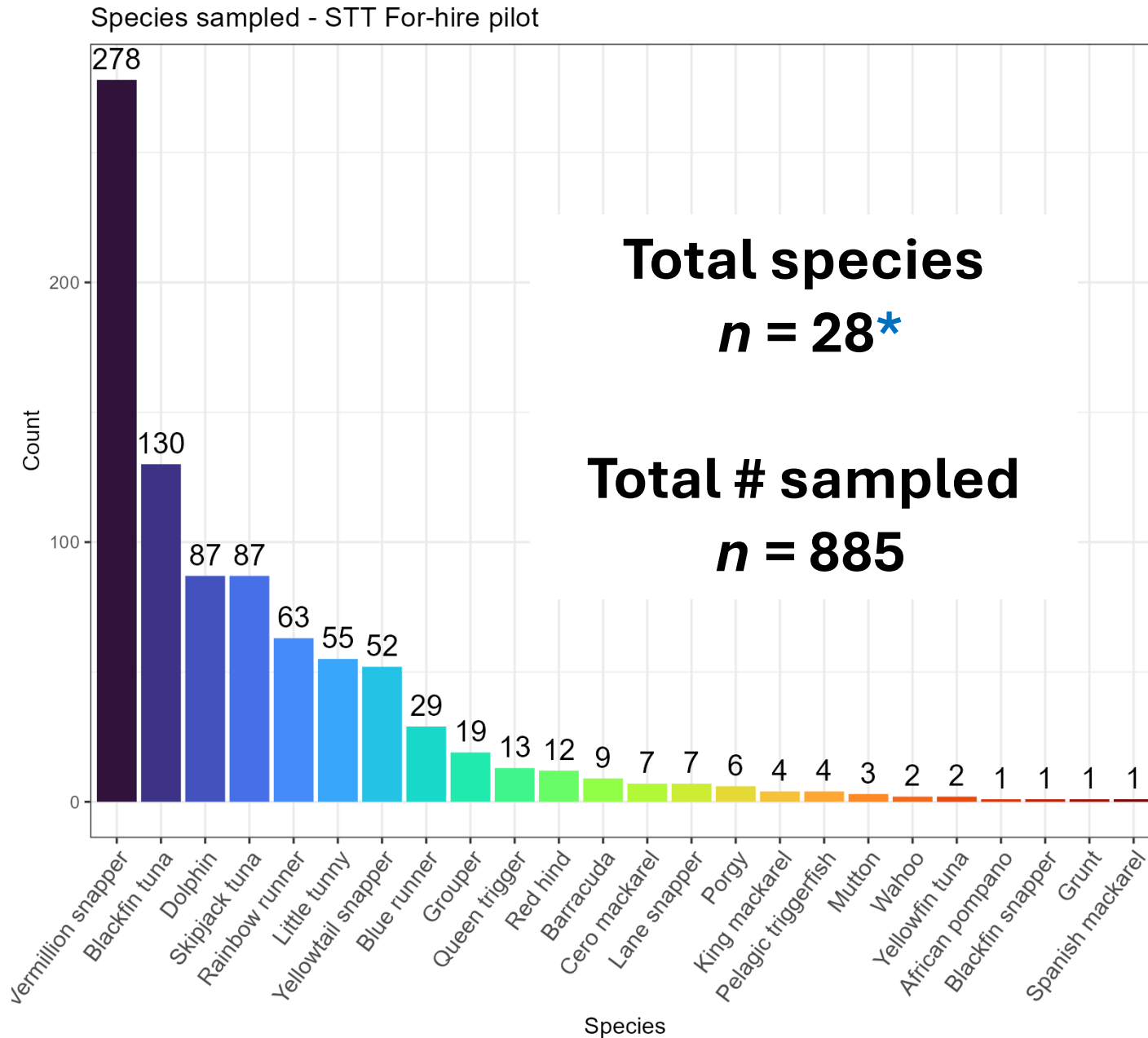Depredation
    Catch lost?
    Species lost
    Species responsible

Results: Species – counts

Species sampled - STT For-hire pilot

Total species
n = 28*****

Total # sampled
n = 885

Total surveys:
n = 113
• 12 'no catch'
Total captains involved
n = 11

Species

Vermillion snapper	Cero mackarel
Blackfin tuna	Lane snapper
Dolphin	Porgy
Skipjack tuna	King mackarel
Rainbow runner	Pelagic triggerfish
Little tunny	Mutton
Yellowtail snapper	Wahoo
Blue runner	Yellowfin tuna
Grouper	African pompano
Queen trigger	Blackfin snapper
Red hind	Grunt
Barracuda	Spanish mackarel

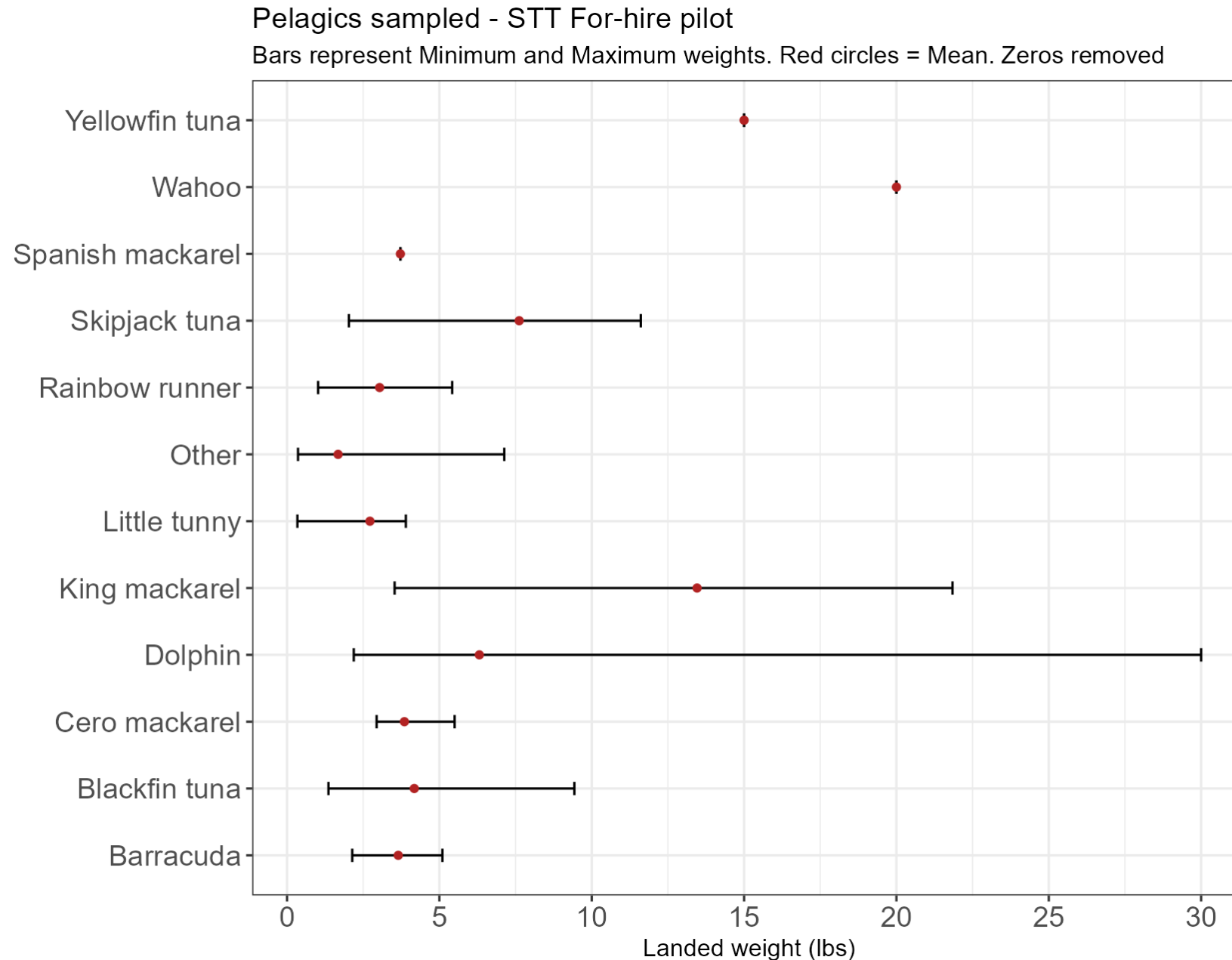***** Some species, e.g., groupers, have been grouped for display purposes
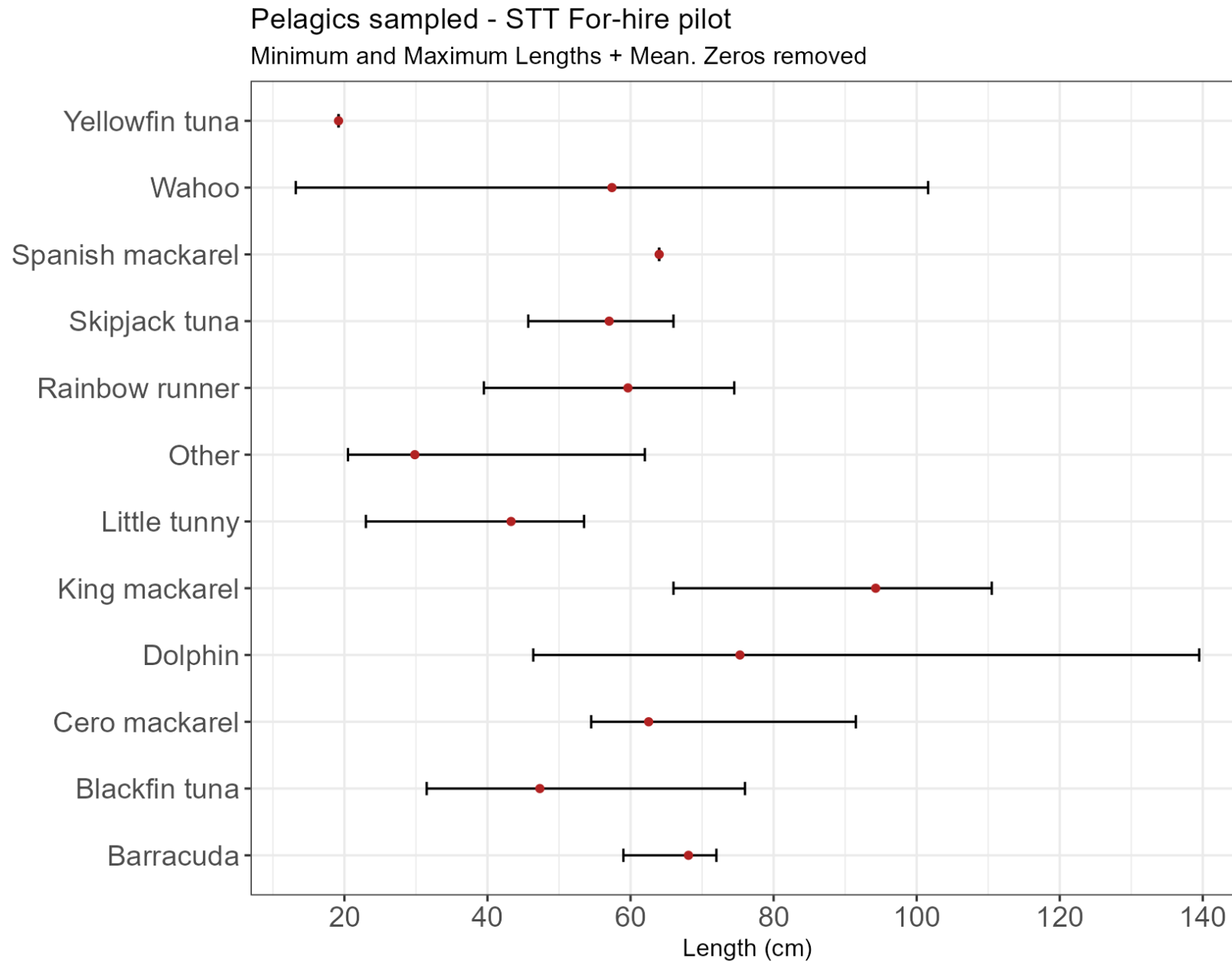
Results: Species – counts and weights
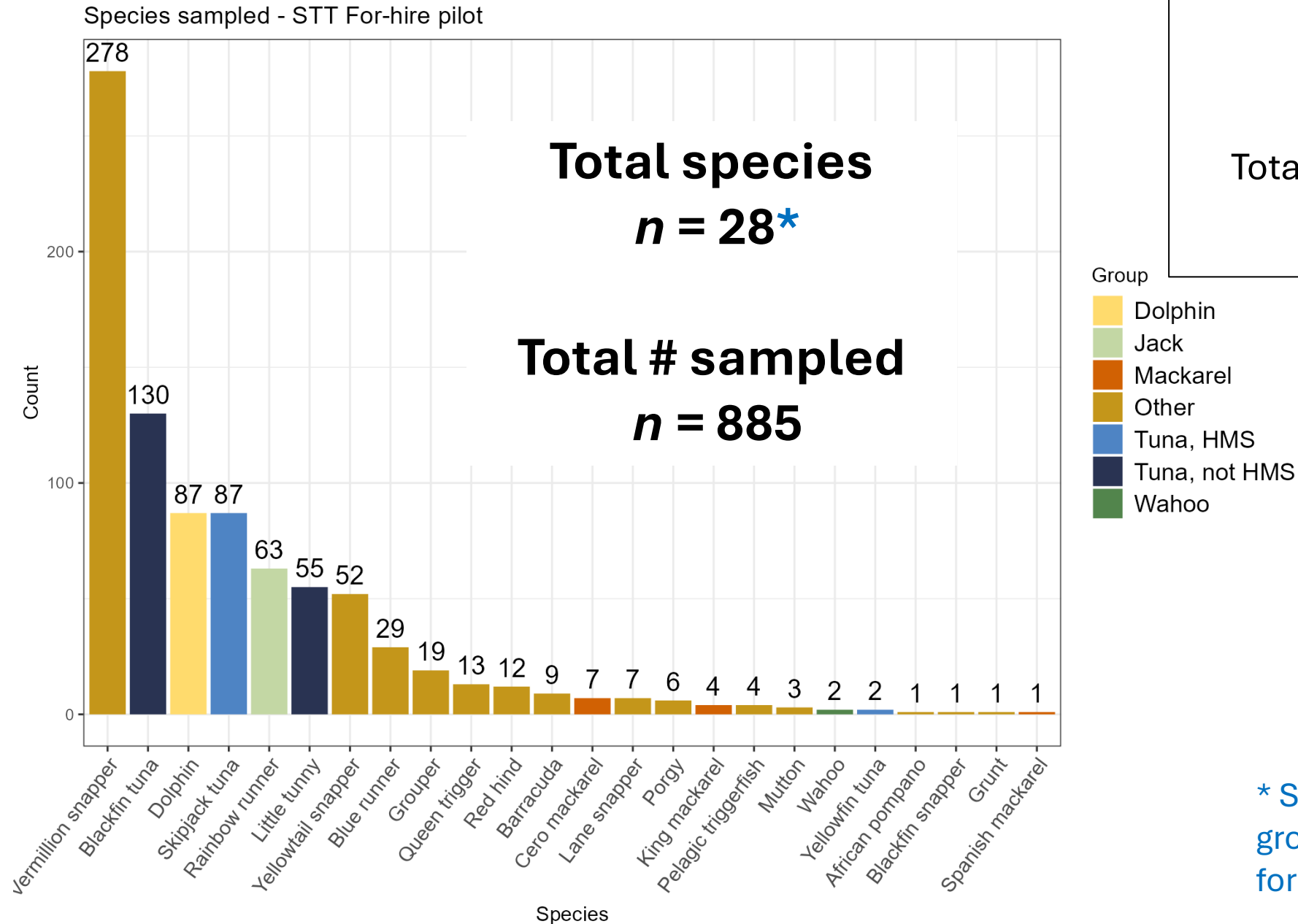
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Group
- Dolphin
- Jack
- Mackarel
- Other
- Tuna, HMS
- Tuna, not HMS
- Wahoo

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for display purposes

Results: Pelagics – Weights, min/max

Pelagics sampled - STT For-hire pilot

Bars represent Minimum and Maximum weights. Red circles = Mean. Zeros removed

Results: Pelagics – Length, min/max

Pelagics sampled - STT For-hire pilot
Minimum and Maximum Lengths + Mean. Zeros removed

Total weight (lbs) and counts: Pelagic species
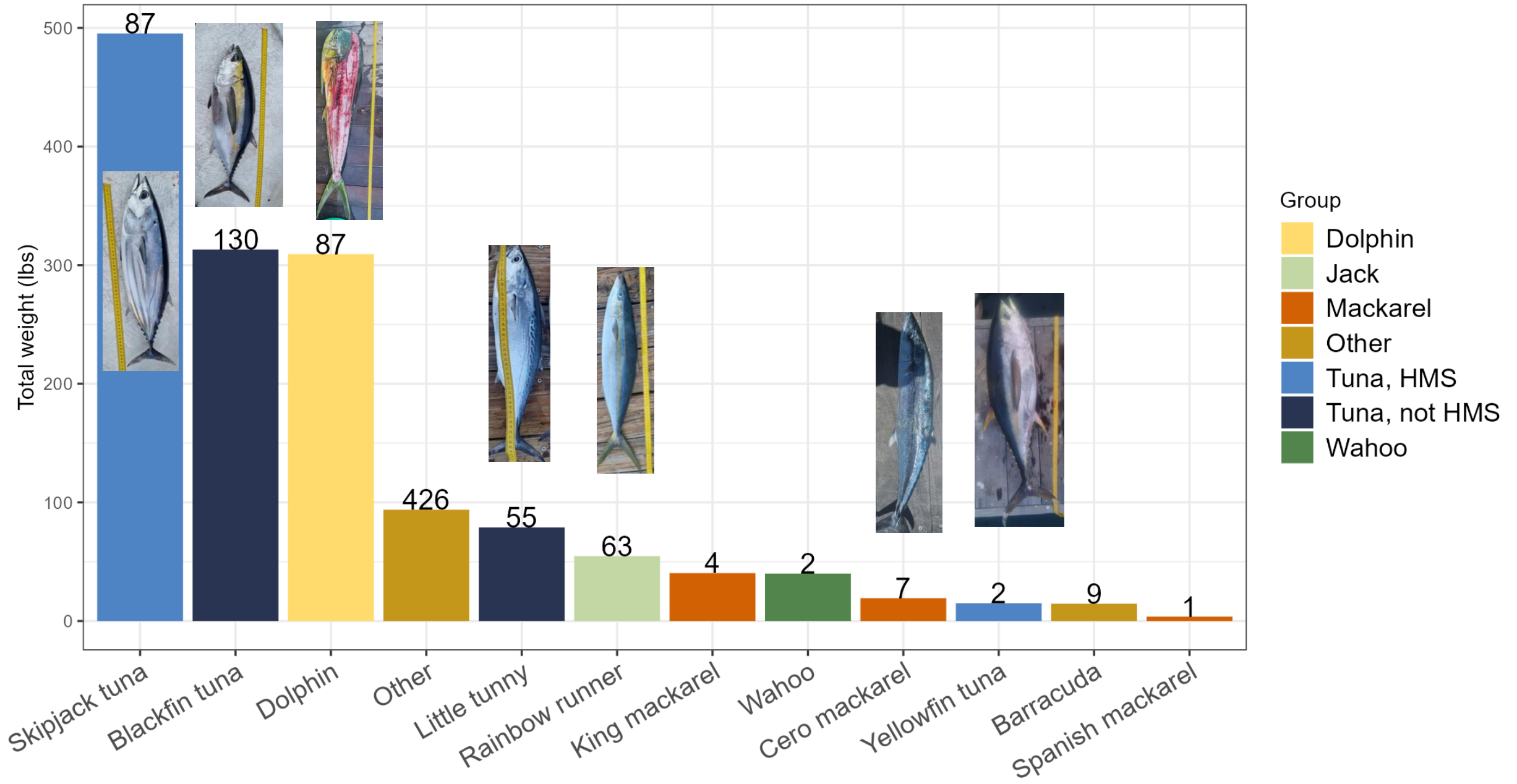
- For-hire sampling data represents a previously under/unsampled sector. A good foundation to move forward and develop methodology.

- Sampling for-hire is an important consideration for pelagics, sharks, data-limited scenarios and species

- Considerations:
  - Effort – differences across sectors, standardize methods and sampling stratification with that in mind

- These summaries do not include analyses of all the other data

- An ongoing effort, aimed at cooperation and collaboration, to collect data in a way that can be replicated, and importantly, useable and contributing to progress

- Expand spatial and temporal coverage:

- Seasonality
  - Expand sampling, seasons where different species are targeted – e.g., sharks
- Expand USVI sampling coverage – islands and sectors

- 'Capture' the total catch – the issue of unlanded catch is an ever-present challenge. Combining data sources can alleviate this

- Capture mortality – another source of uncertainty, particularly for sensitive species, e.g., some sharks (hammerheads), juvenile pelagics, e.g., sailfish