

Characterization of Commercial Reef Fish Catch and Bycatch off the SE coast of the U.S.

A Cooperative Research Program

Objective

- Characterize entire commercial catch
- Catch composition
 - Species composition
 - Length and abundances within species
- Disposition of released fish
 - Discard mortality rates per species
 - Percentage of fish discarded

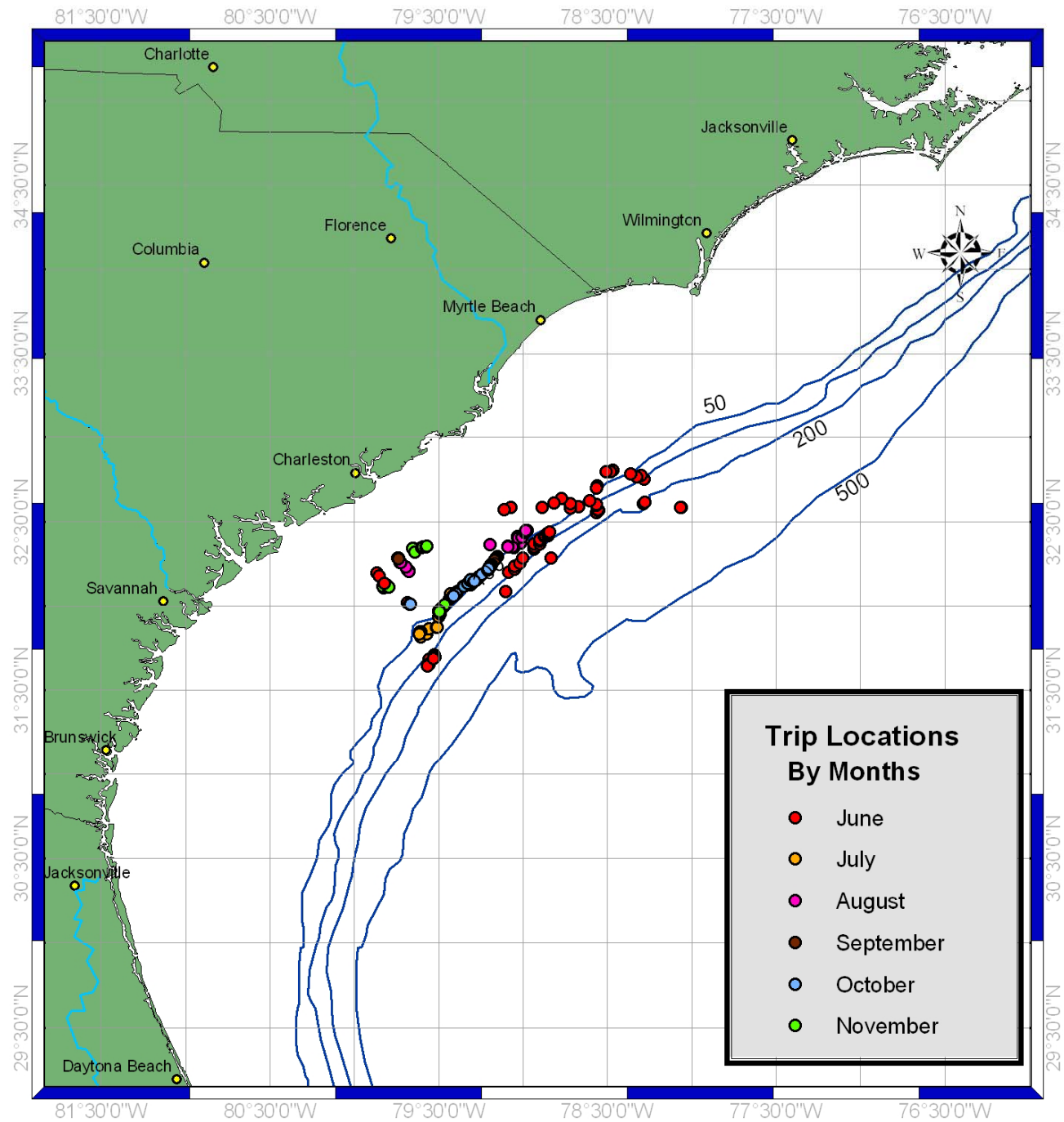
Methods

- Cooperation of commercial fisherman
 - Shelf-break fisherman
 - Primary target “B-liners”
 - Fishing gear: Bandit Reels
- Records location of each capture
- Records species’ length and disposition

Collection Information

- June – November: 10 trips
 - 47 fishing days
- 364 unique collections (date/location)
 - Avg 36 coll/trip
- ~19,300 specimens recorded





Results

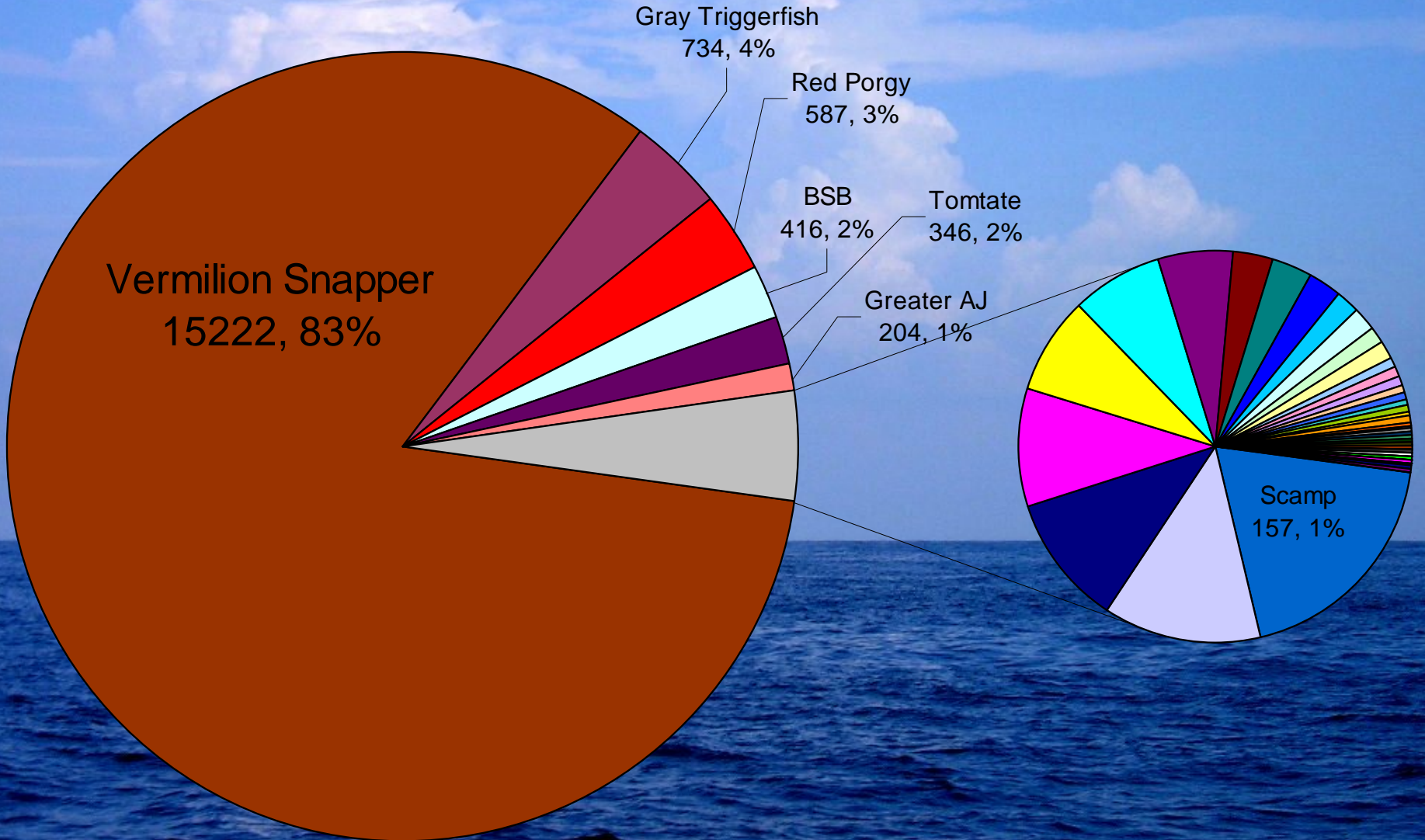


Species Composition


- 60 Species (23 families)
 - 17 commonly caught species (>50% of trips)
- Top 95% by abundance:
 - Vermilion Snapper, Gray Triggerfish, Red Porgy, Black Sea Bass, Tomtate, and Greater Amberjack

*June Trip: targeted Snowy Grouper (484/487)

Species Composition



Does not include the Snowy Grouper trip

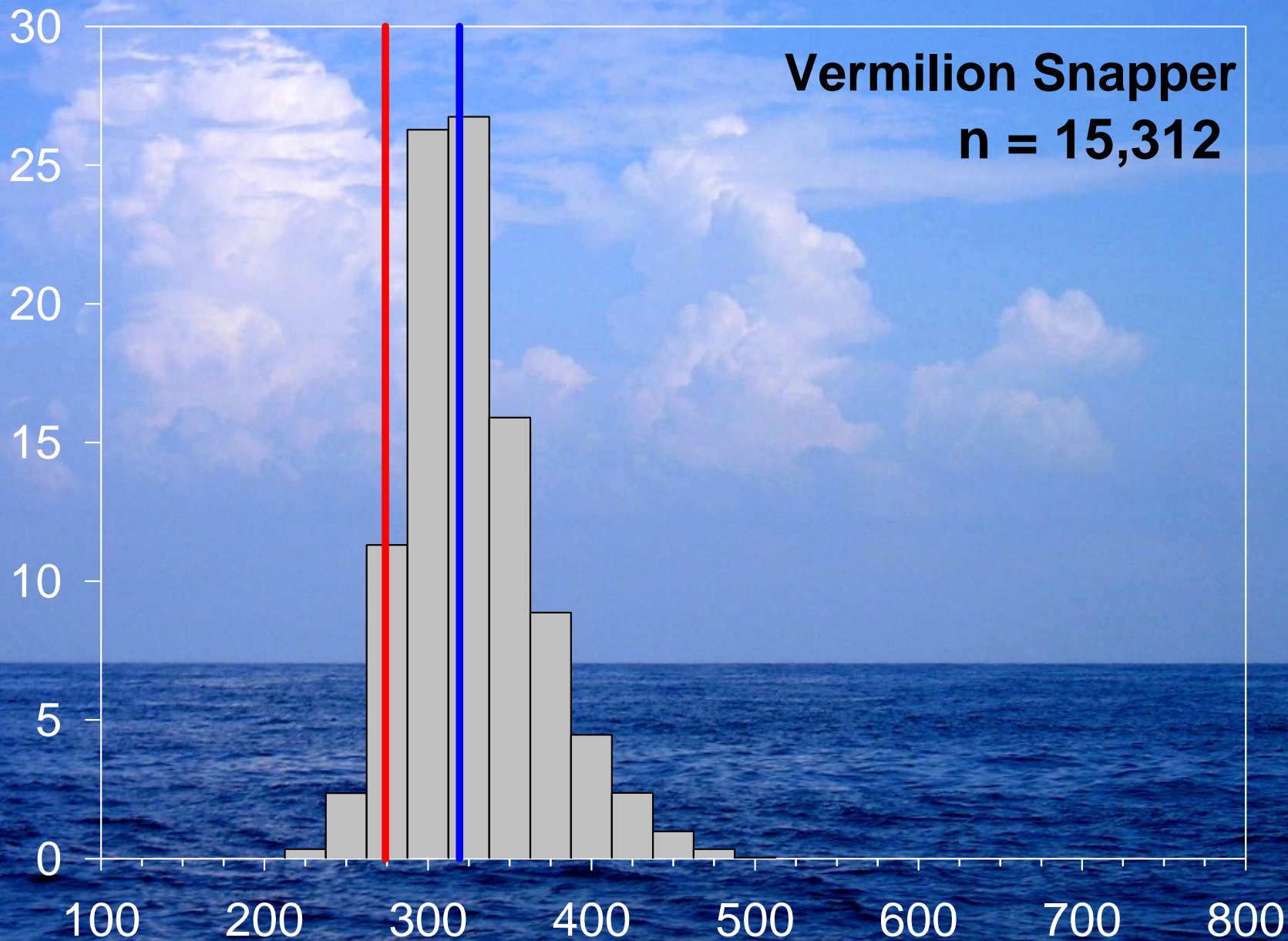


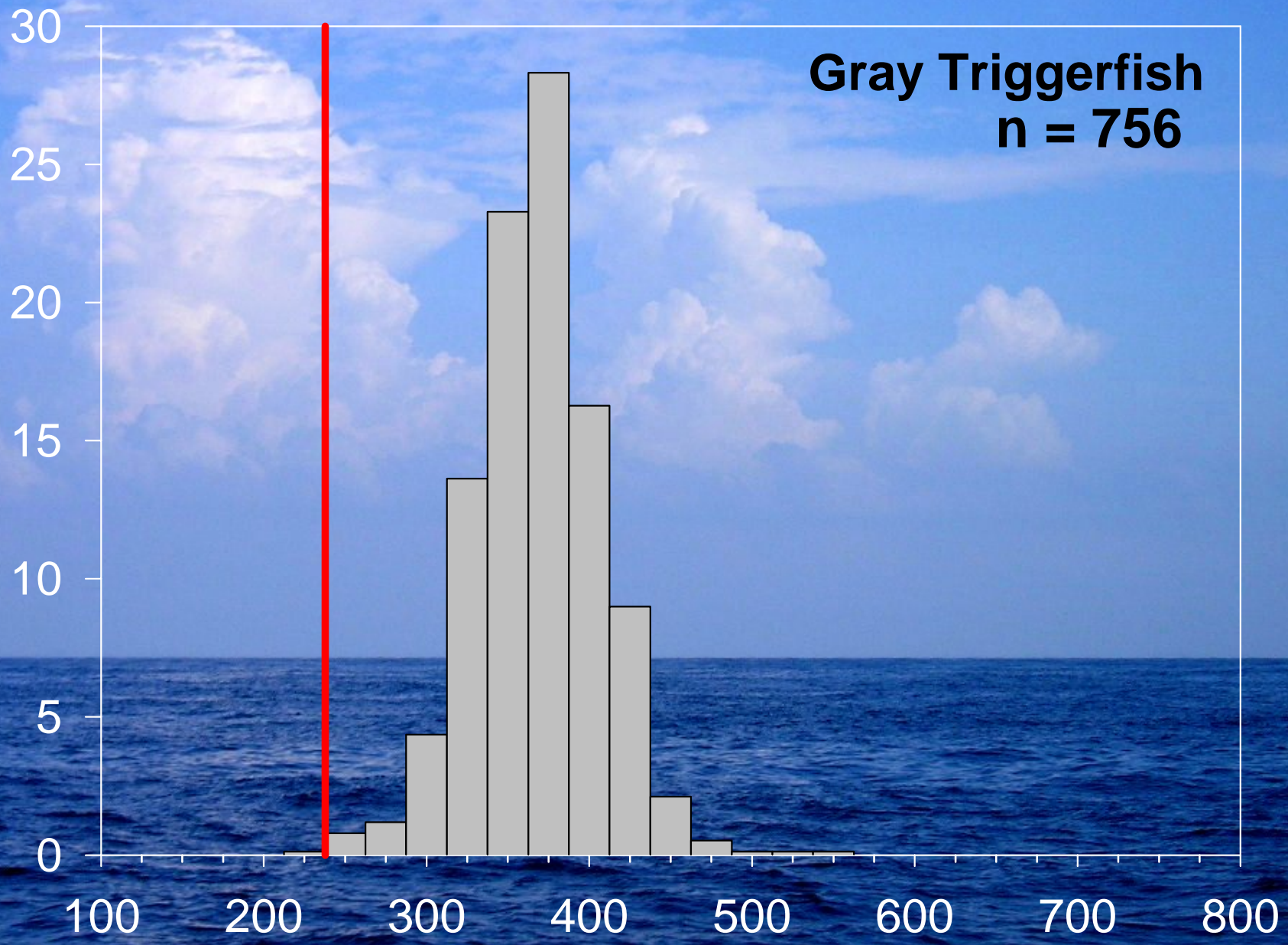
Size frequencies

Both landed and discarded

Percent Frequency

Vermilion Snapper
n = 15,312

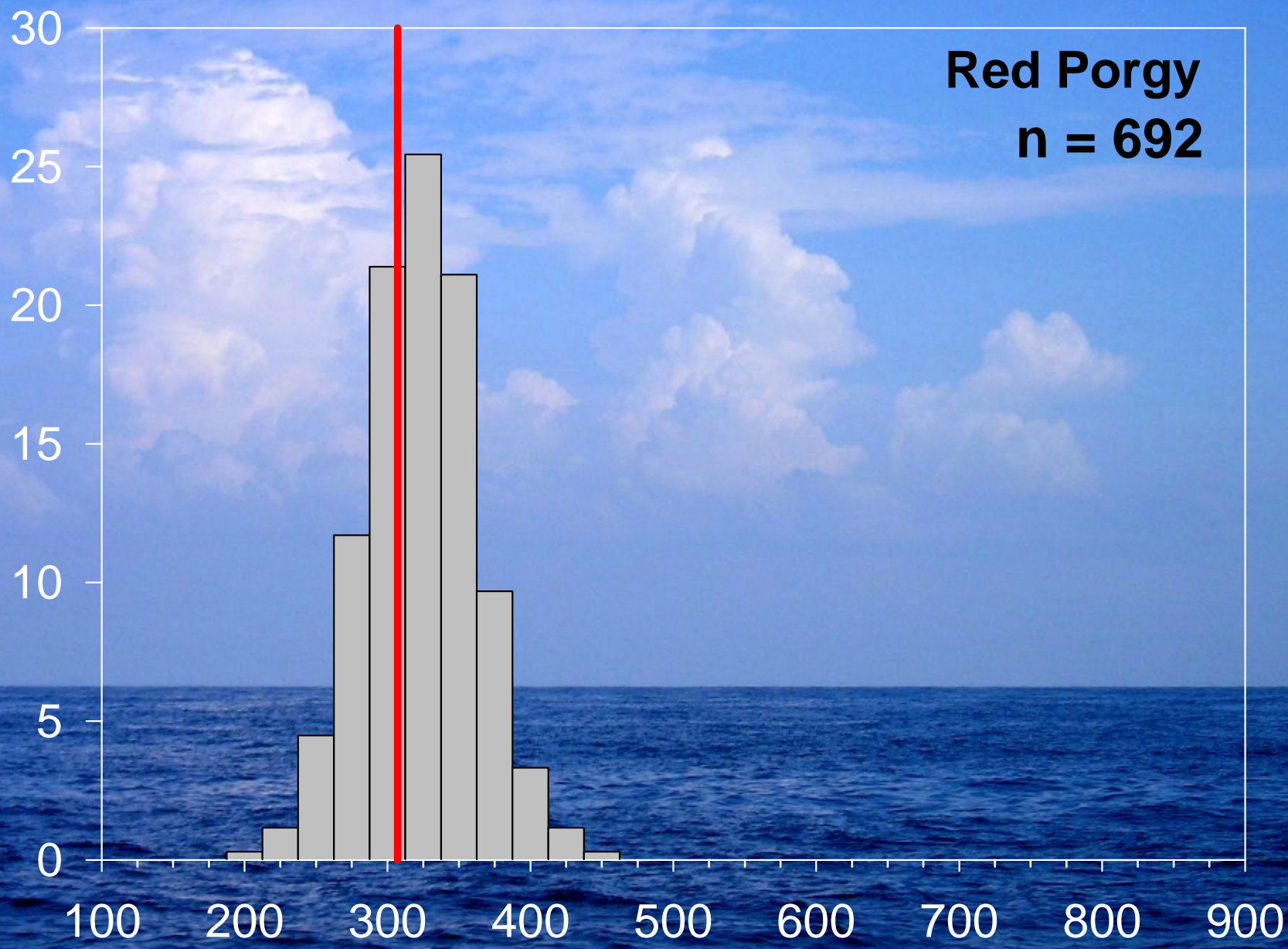




Gray Triggerfish
n = 756

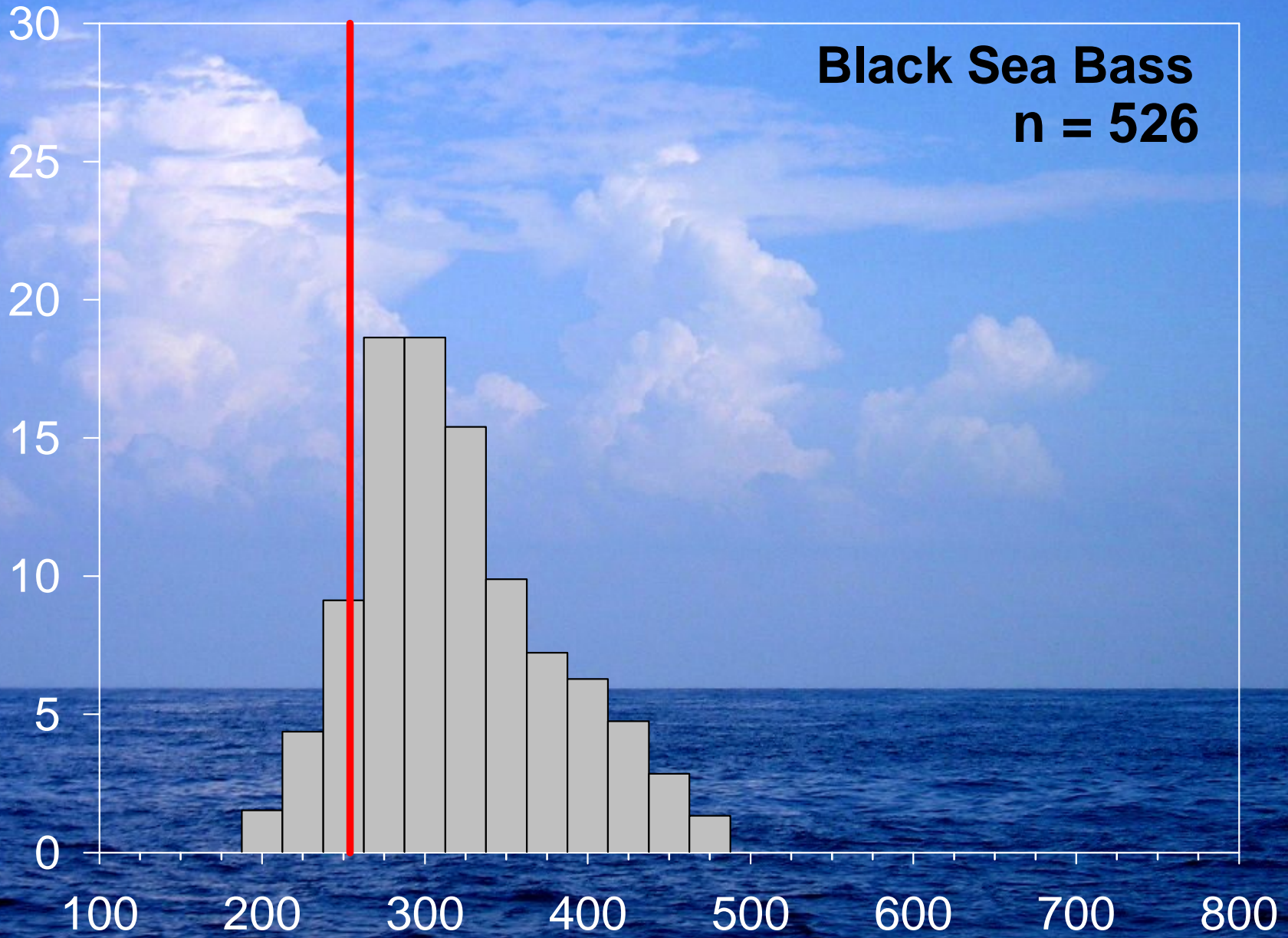
Percent Frequency

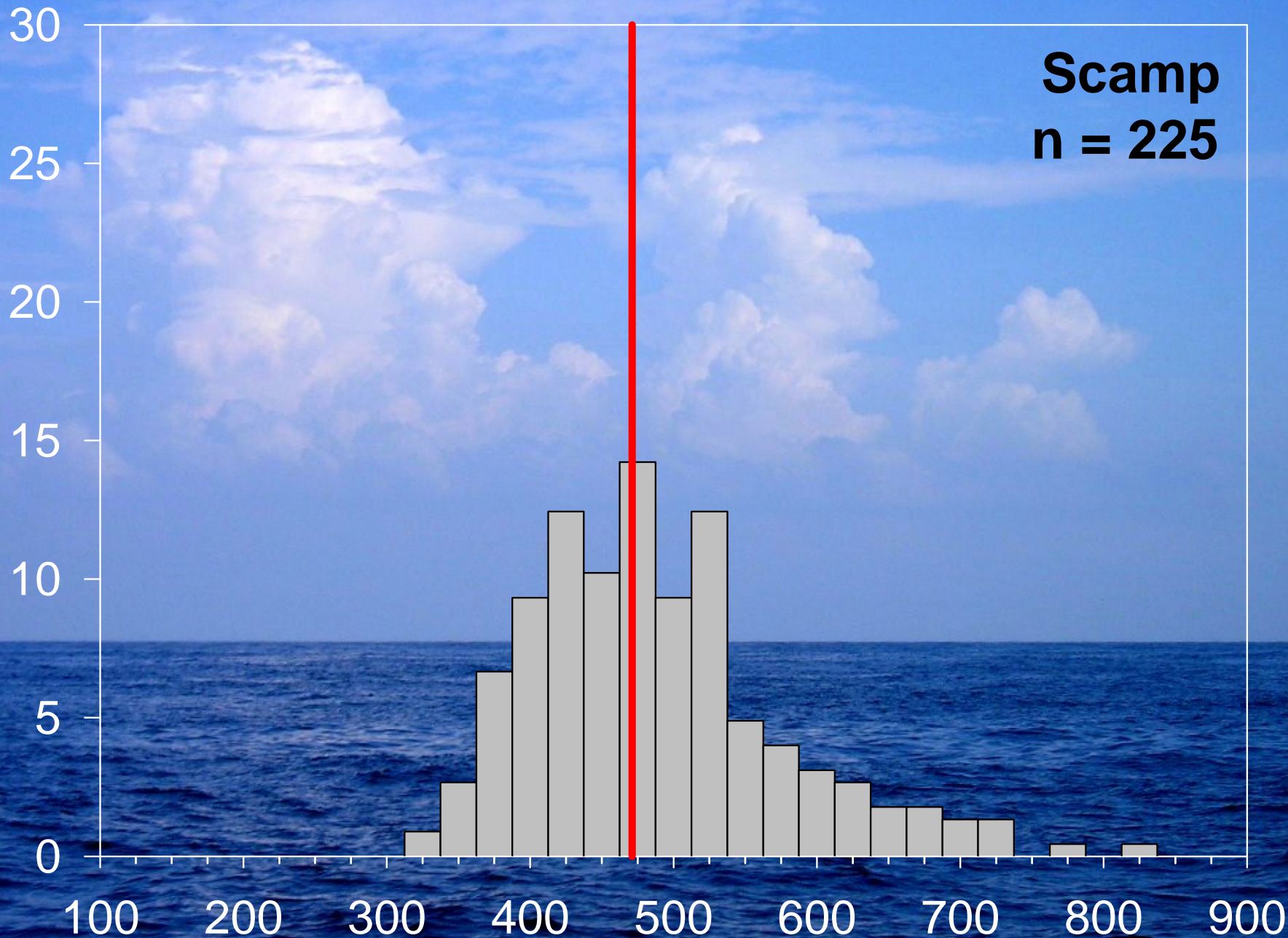
Red Porgy
n = 692

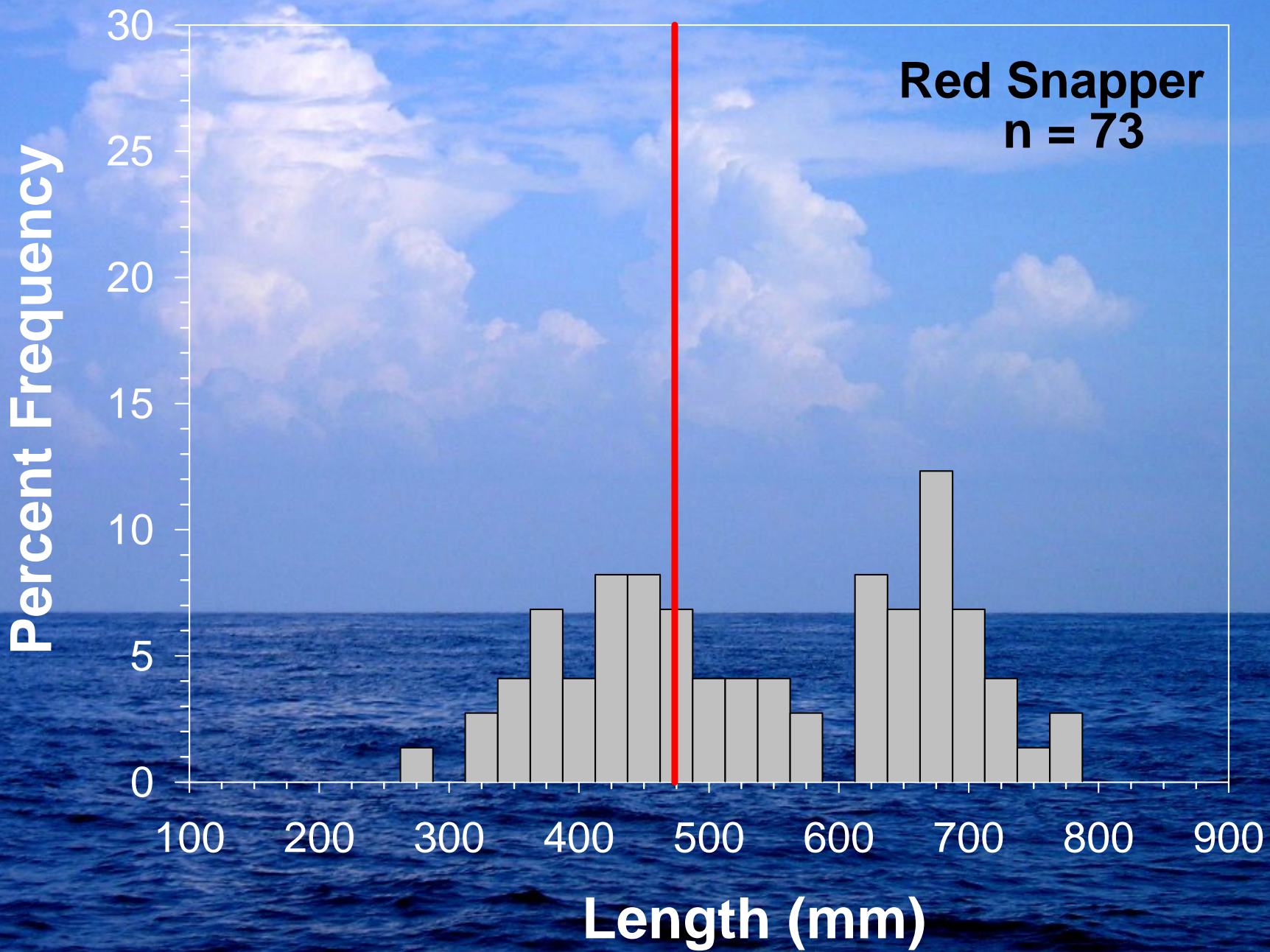


Percent Frequency

Black Sea Bass
n = 526







Disposition Status

- Kept (landed)
- Dead upon capture
- Release Dispositions
 - Floated at the surface
 - Floated then slowly went down
 - Slowly went down
 - Rapidly went down

Considered
Dead

Catch Distribution

| Common | Total | Kept (Bait) | Discard (Dead/Live) |
|-------------------|-------|--------------|---------------------|
| Vermilion Snapper | 15314 | 13747 (1078) | 1552 (773/779) |
| Gray Triggerfish | 756 | 729 (0) | 27 (25/2) |
| Red Porgy | 693 | 323 (78) | 368 (308/60) |
| Black Sea Bass | 526 | 433 (0) | 93 (65/28) |
| Snowy Grouper | 487 | 486 (0) | 1 (1/0) |
| Tomtate | 355 | 264 (49) | 91 (62/29) |
| Scamp | 225 | 131 (5) | 94 (92/2) |
| Greater Amberjack | 214 | 162 (0) | 51 (47/4) |
| Bank Sea Bass | 99 | 56 (9) | 43 (23/20) |
| White Grunt | 92 | 91 (0) | 1 (1/0) |
| Red Snapper | 73 | 42 (0) | 31 (29/2) |

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Catch Distribution (Percentage)

| Common | Percent Kept (bait) | Percent Discarded |
|-------------------|---------------------|-------------------|
| Vermilion Snapper | 90 (7) | 10 |
| Gray Triggerfish | 96 (0) | 4 |
| Red Porgy | 47 (11) | 53 |
| Black Sea Bass | 82 (0) | 18 |
| Snowy Grouper | 99 (0) | 0 |
| Tomtate | 74 (14) | 26 |
| Scamp | 58 (2) | 42 |
| Greater Amberjack | 76 (0) | 24 |
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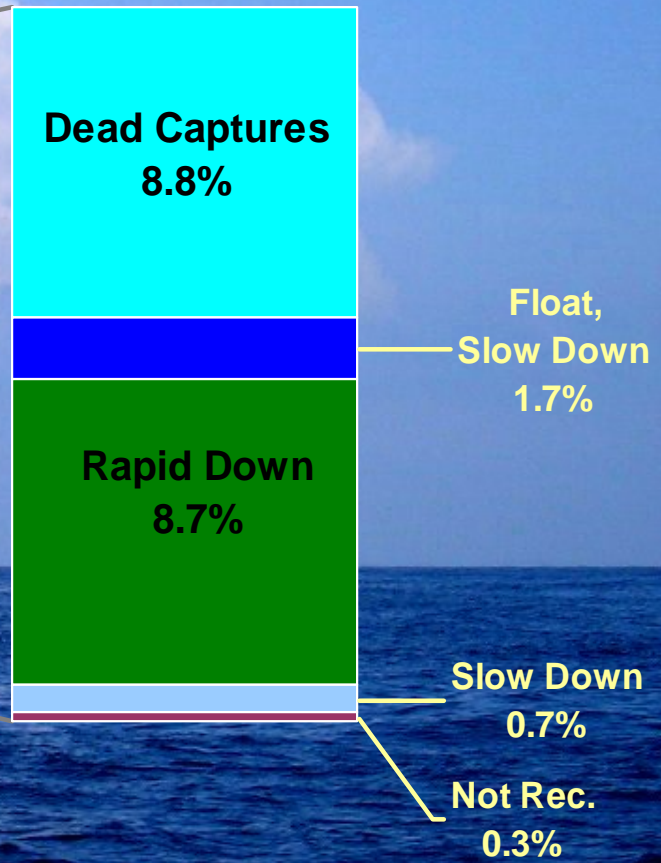
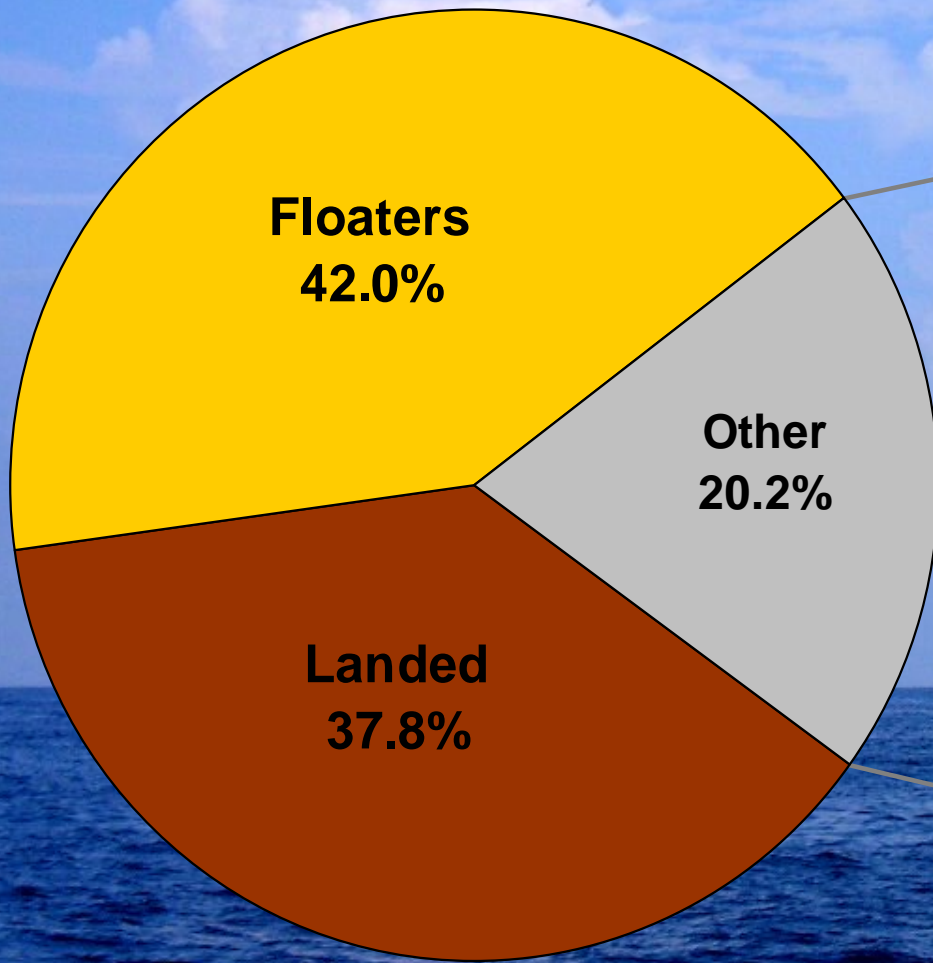
Catch Distribution (Percentage)

| Common | Percent Kept (bait) | Percent Discarded | Percent Dead | Percent Live |
|-------------------|---------------------|-------------------|--------------|--------------|
| Vermilion Snapper | 90 (7) | 10 | 50 | 50 |
| Gray Triggerfish | 96 (0) | 4 | 93 | 7 |
| Red Porgy | 47 (11) | 53 | 84 | 16 |
| Black Sea Bass | 82 (0) | 18 | 70 | 30 |
| Snowy Grouper | 99 (0) | 0.2 | 100 | 0 |
| Tomtate | 74 (14) | 26 | 68 | 32 |
| Scamp | 58 (2) | 42 | 98 | 2 |
| Greater Amberjack | 76 (0) | 24 | 92 | 8 |
| Bank Sea Bass | 57 (9) | 43 | 53 | 47 |
| White Grunt | 99 (0) | 1 | 100 | 0 |
| Red Snapper | 58 (0) | 42 | 94 | 6 |

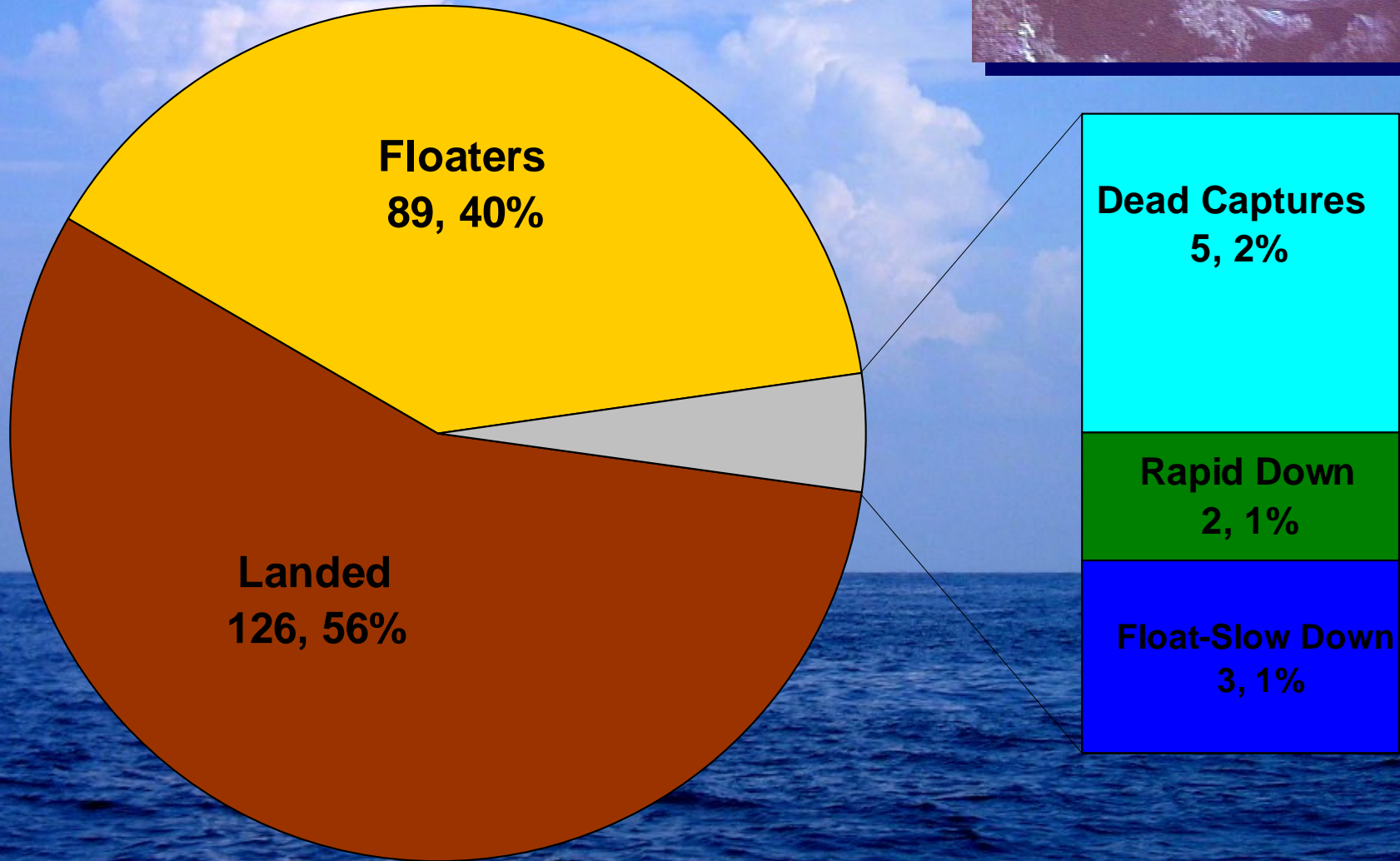
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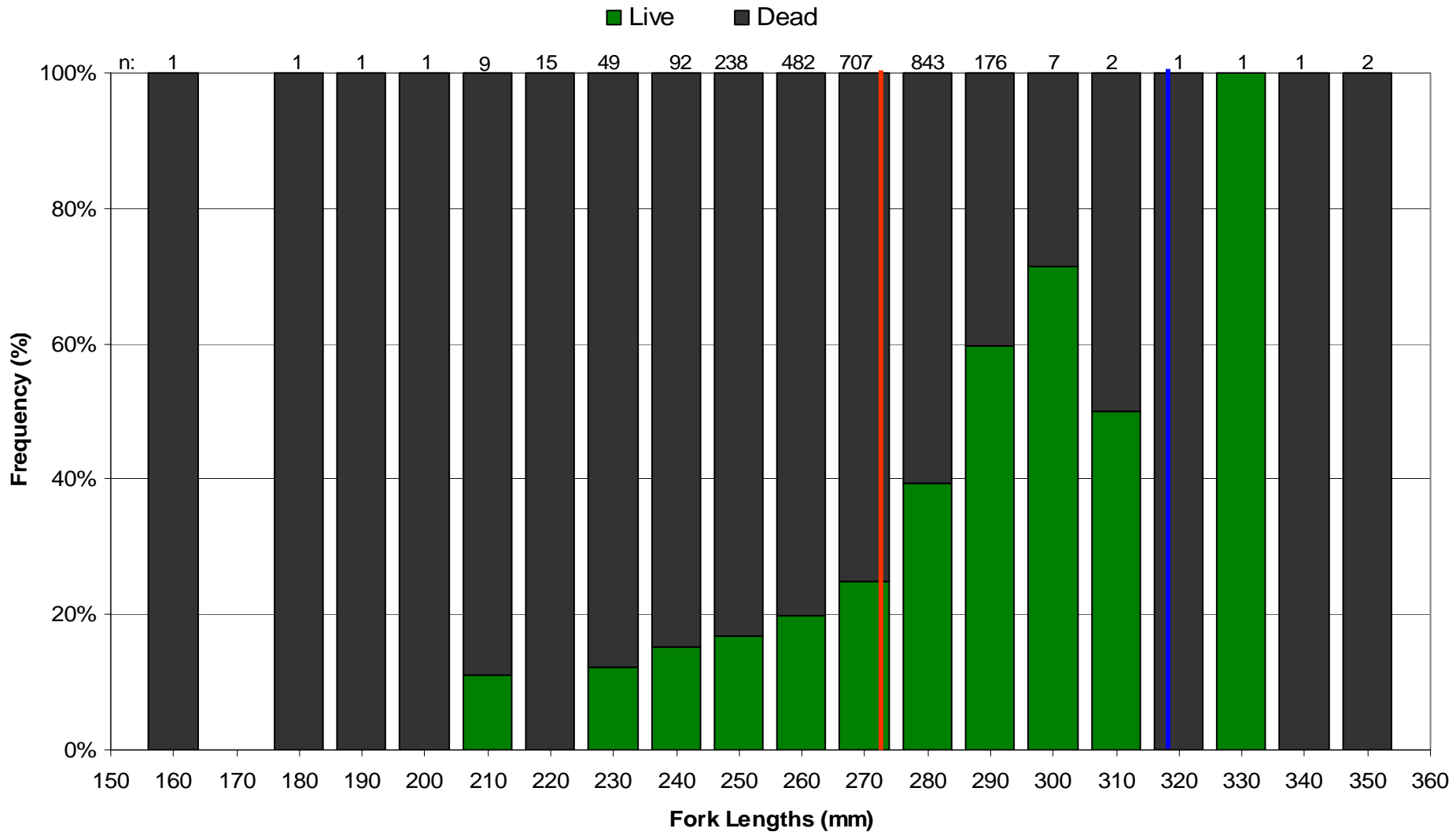
Red Porgy



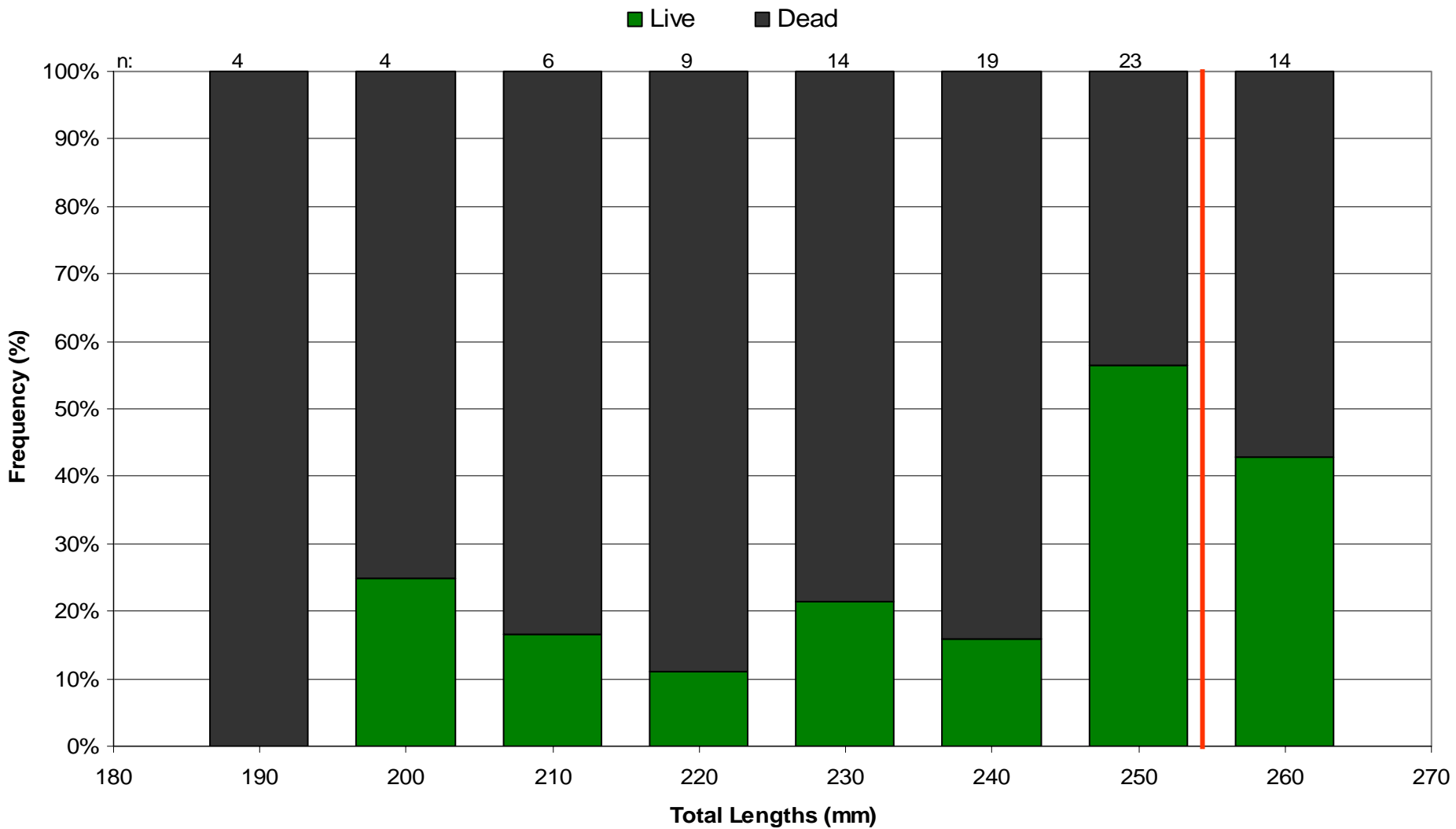
Scamp



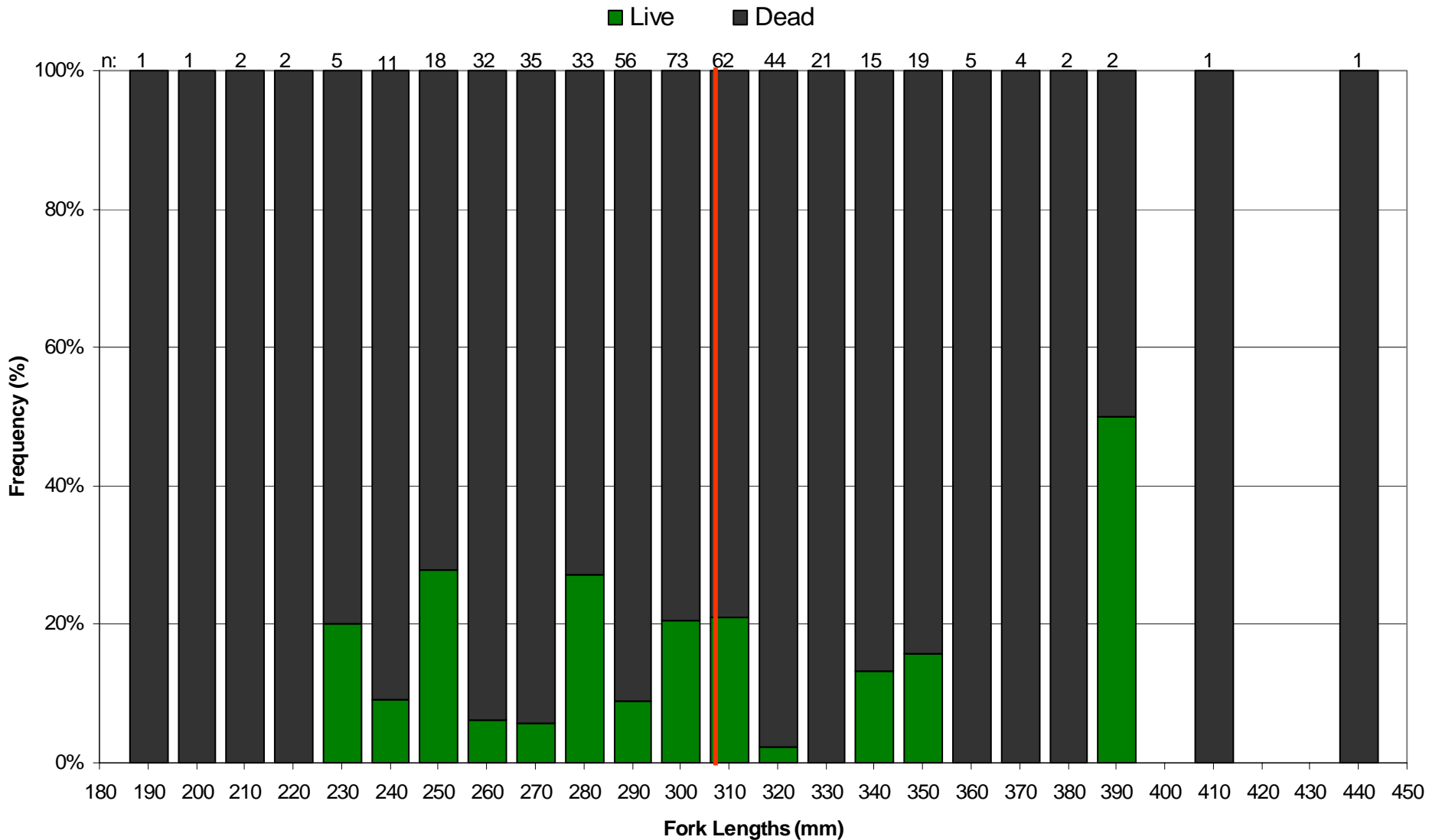
Release Mortality: Vermilion Snapper



Release Mortality: Black Sea Bass



Release Mortality: Red Porgy



Conclusions: Species Composition

- Although many species caught (~60), there are ~17 commonly caught species.
- Little 'bycatch'
- Gen. catches targeted species

Conclusions: Lengths

- Catches wide variety of lengths
 - 113 – 1477 mm; Avg. = 332 mm
- Effectively targets 200 – 400 mm range
 - Legal sized: Vermilion snapper, BSB and Gray triggerfish
 - Leads to catching more 'undersize' specimens for Red Porgy and Scamp

Conclusions: Discards & Mortality

- Many commonly caught species have low discards
- Red Porgy, Red Snapper and Scamp have high discard AND mortality rates
- Vermilion has higher mortality in smaller specimens
- Red Porgy has high mortality regardless of size

Future Research Directions

- Compare with other data sources
 - State TIP data
 - MARMAP port sampling data
- Continue study with more fisherman targeting different species and areas
- Next CRP study: “Life history parameters of kept vs. discarded fish captured by commercial fishermen”
 - **Age, sex, maturity, length and weights**
 - **Vermilion Snapper, Red Porgy and Scamp**



Questions