Depredation on Descender Devices: A Gulf-Wide Investigation

Amanda Jargowsky[1]

Alena Anderson[1]

Danielle McAree[1]

Matthew Jargowsky[1]

Angela Collins[2,3]

Matthew Streich[4]

Nicholas Haddad[3,5]

Michael Sipos[5]

Marcus Drymon[1]

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[1]Mississippi State University

[2]University of Florida IFAS Extension

[3]Florida Sea Grant

[4]Harte Research Institute of Gulf of Mexico Studies

[5]Return 'Em Right

Post-Release Survival

… is a challenge to effective conservation and management

… is complicated by barotrauma (often fatal)

DESCEND Act

Venting and descending are considered best practices for mitigating barotrauma

Fishermen must be prepared to use a venting tool or descender device when fishing for reef fishes

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Stakeholder Buy-In

Requiring possession of venting tools or descender devices does not guarantee their use

Any benefits rely on anglers embracing their use

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Depredation on *Descent*?

Depredation: the partial or complete removal of a captured species by a non-target species

… is an escalating problem in need of mitigation

Angler concerns apply to fishes being caught (i.e., ascending) *and* to fishes being released with descenders (i.e., descending)

- ➢ Additional chances for depredation

Depredation on *Descent*?

"I have used the descending device with the FWC projects, and I am not crazy about it, and I'm not for it being mandated. Right at this particular time, if I put a descending device on my boat, I'm going to have a fifty-five-gallon drum of them, because, everything we descend down, that thing is going to be eaten off by a shark."

"As far as the descending devices… unless you're going to give them to us by the barrels, we are not going to be able to keep up with them."

"The descending device, like everybody else has been saying, it's going to take a pile of them, and that's all I can say."

Resource managers must proactively address these concerns!

Preliminary Work

Opportunistic comparison – two Red Snapper camera datasets, Alabama Artificial Reef Zone

What is the frequency of depredation on descender devices?

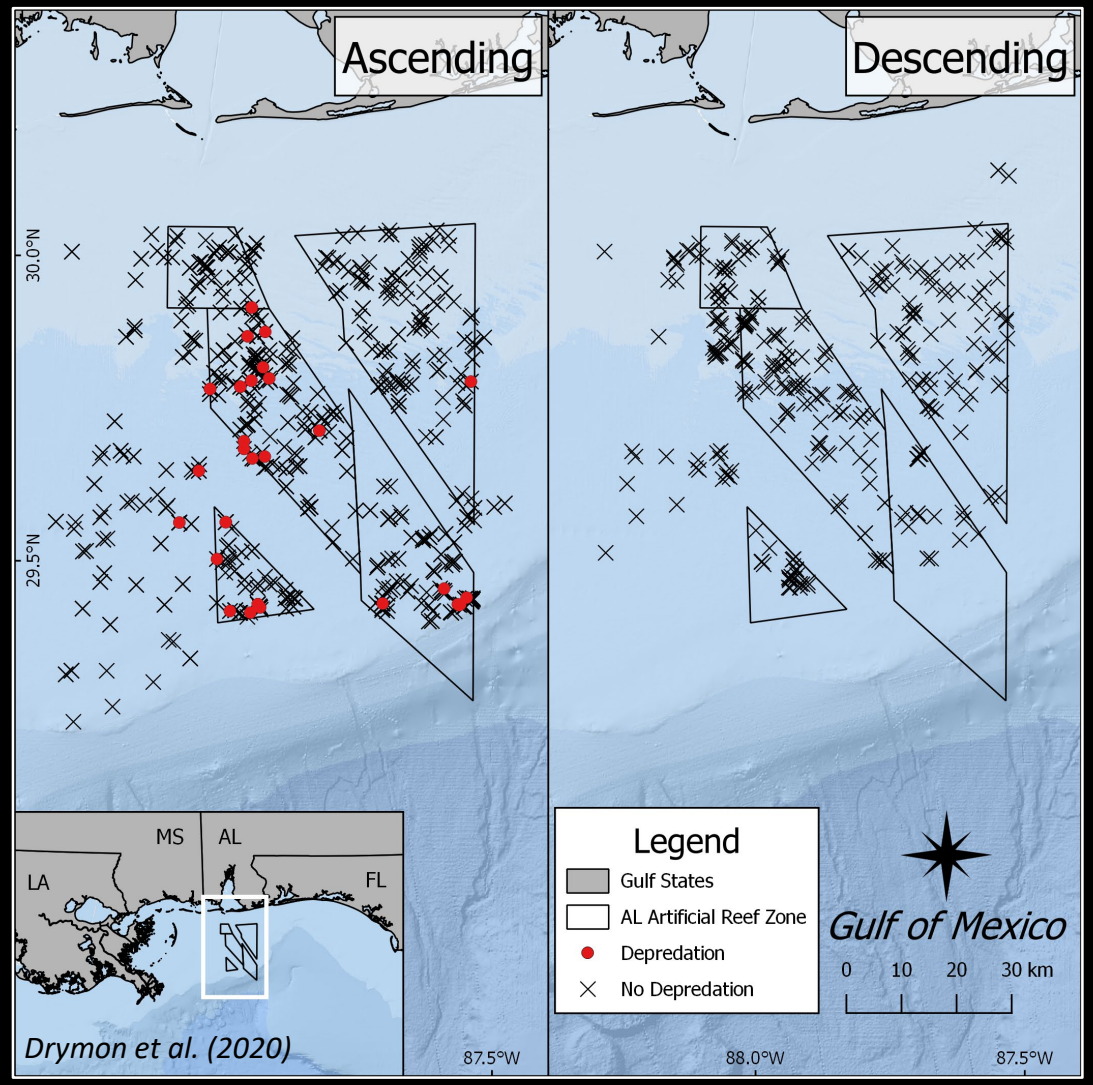
Vertical longline, mark-recapture (hook-and-line)

2016-2018

Ascending fish (n = 1,483): 69 depredations

Descending fish (n = 1,096): 0 depredations!

Limitations: small study area, single-species focus, fishery-independent approach



Purpose

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To document **depredation rates on descending fishes** across the U.S. Gulf of Mexico

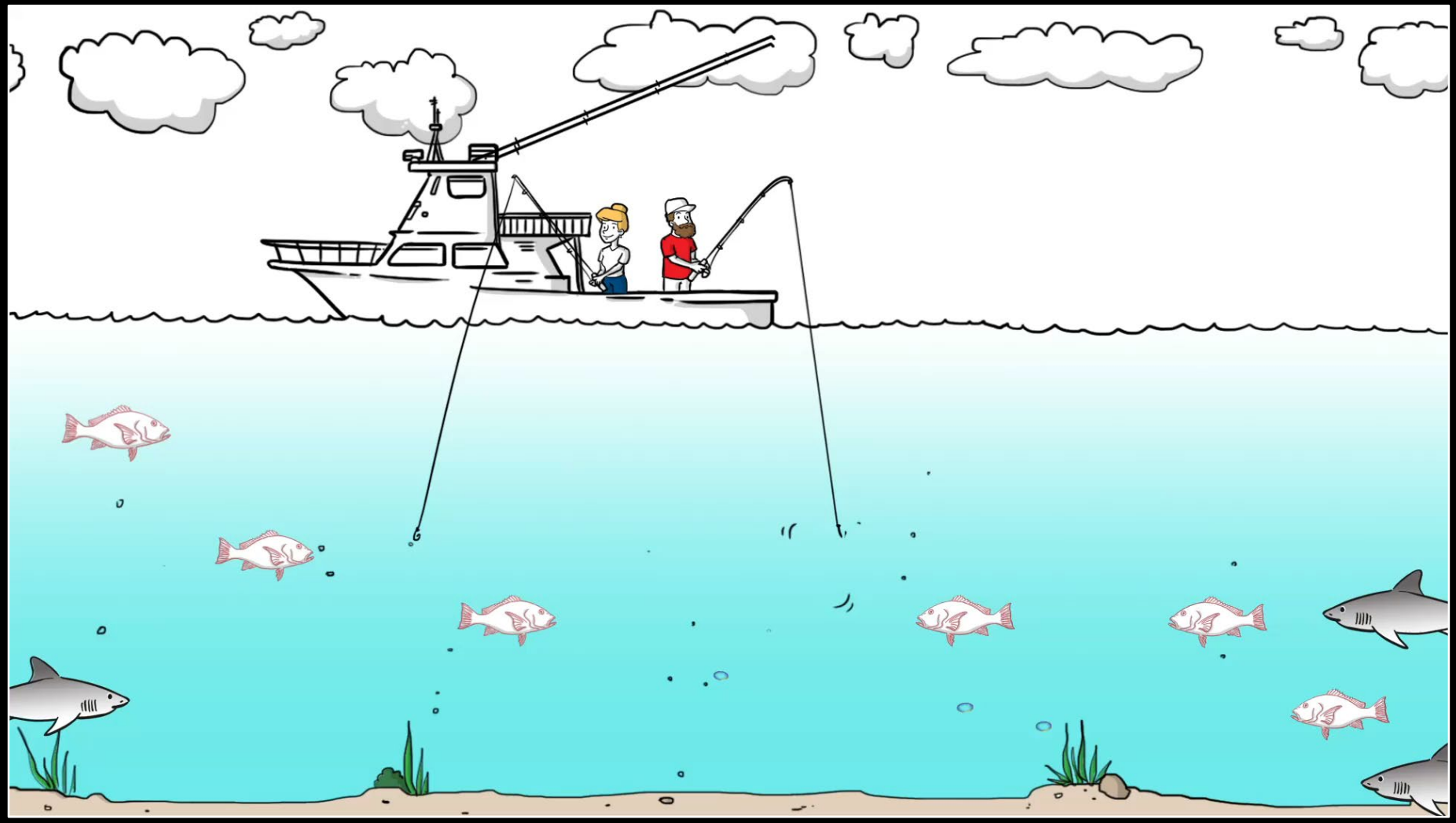
and

identify **species responsible for depredation**

Protocols

Generated written protocol and “whiteboard” protocol video

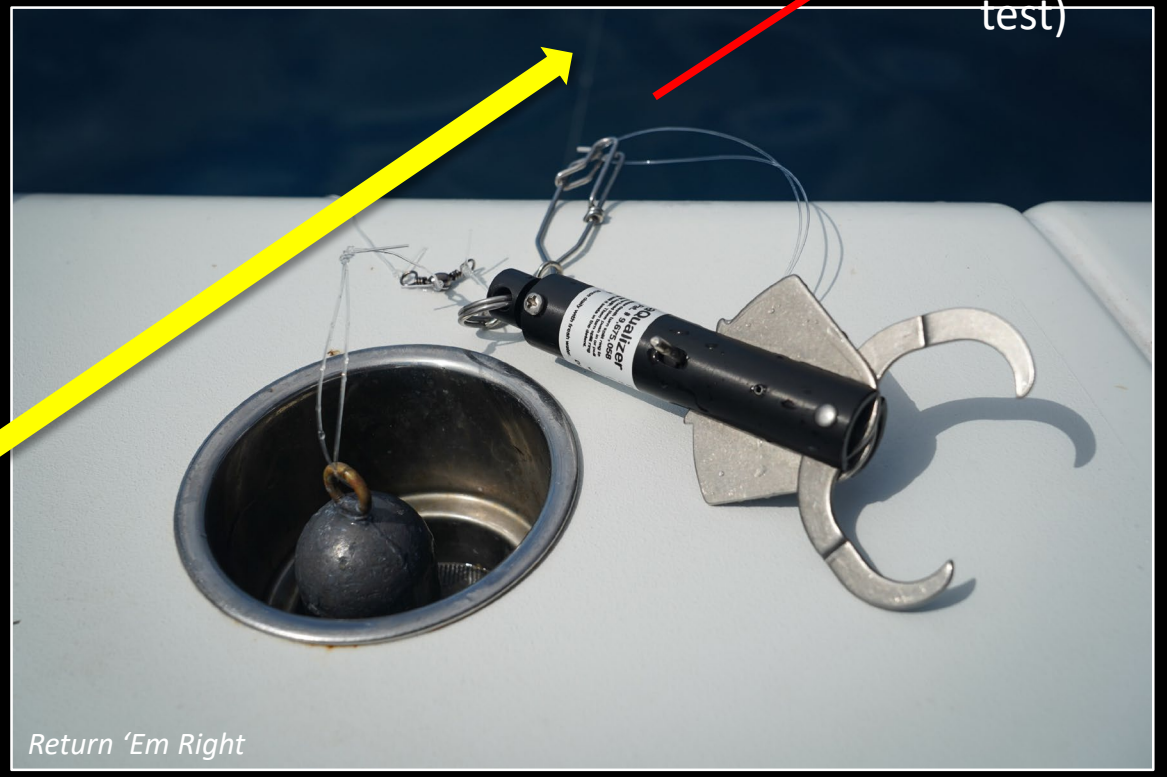
Data to collect: video footage and written information



GoFish Cam & SeaQualizer Setup

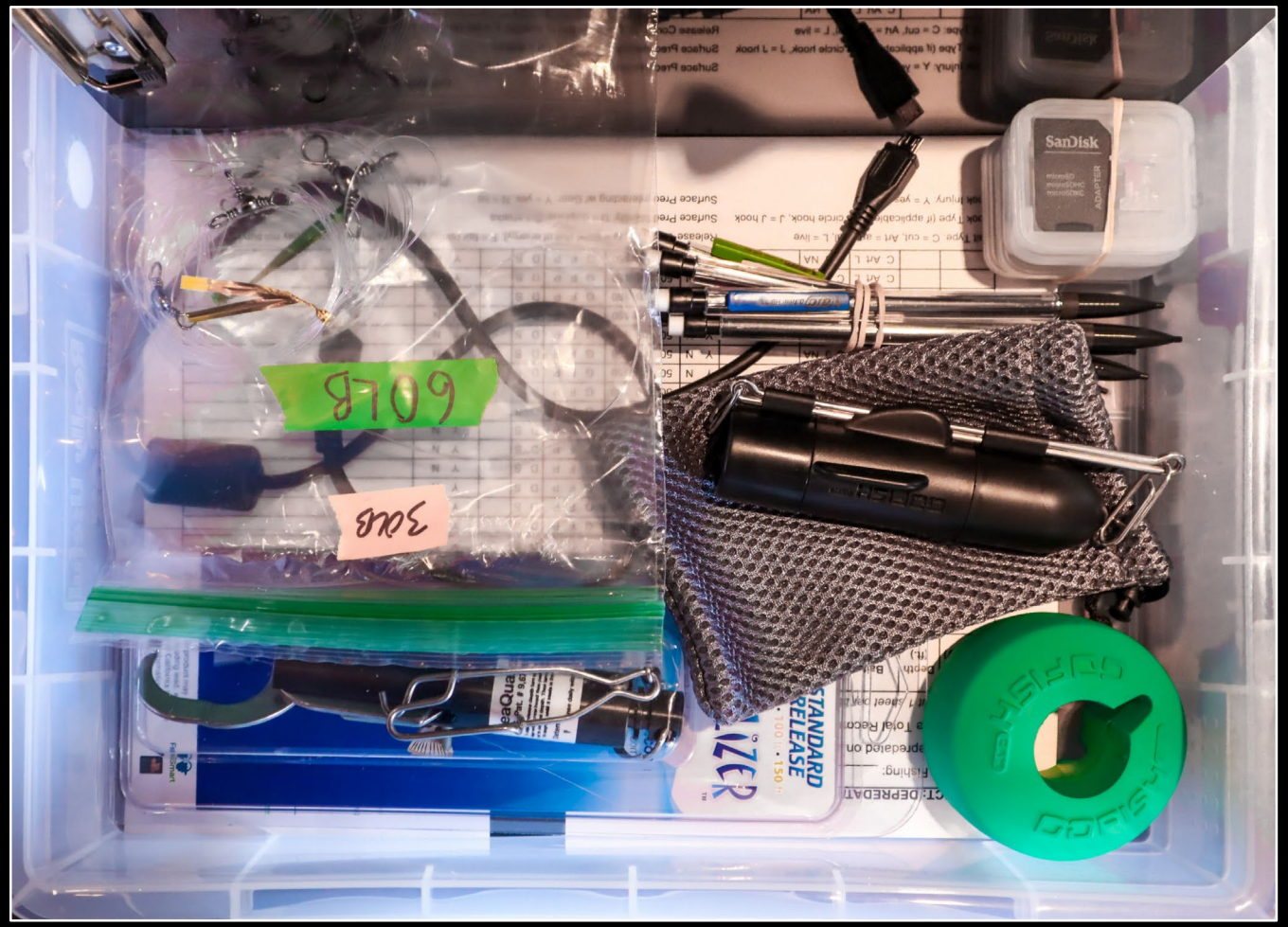
Mainline
(heavier test)

Rigging (lighter test)



Data Collection by Captains

- Focused on the charter-for-hire sector
- Recruited, trained, and incentivized 30 captains to collect data
- $100/trip, up to 20 trips



Pivot to Hybrid Approach

- Low participation (7 of 30 captains)
  - Incentives too low
  - Number of captains too high
  - Time/effort requirements too high
- Collected data ourselves, aboard fishing charters

Video Analysis

Captains and project team submitted video footage

Mississippi State University team analyzed videos

- Assigned water clarity and vision field scores
- Logged predator presence and identity from videos
- Determined fate of each descended fish

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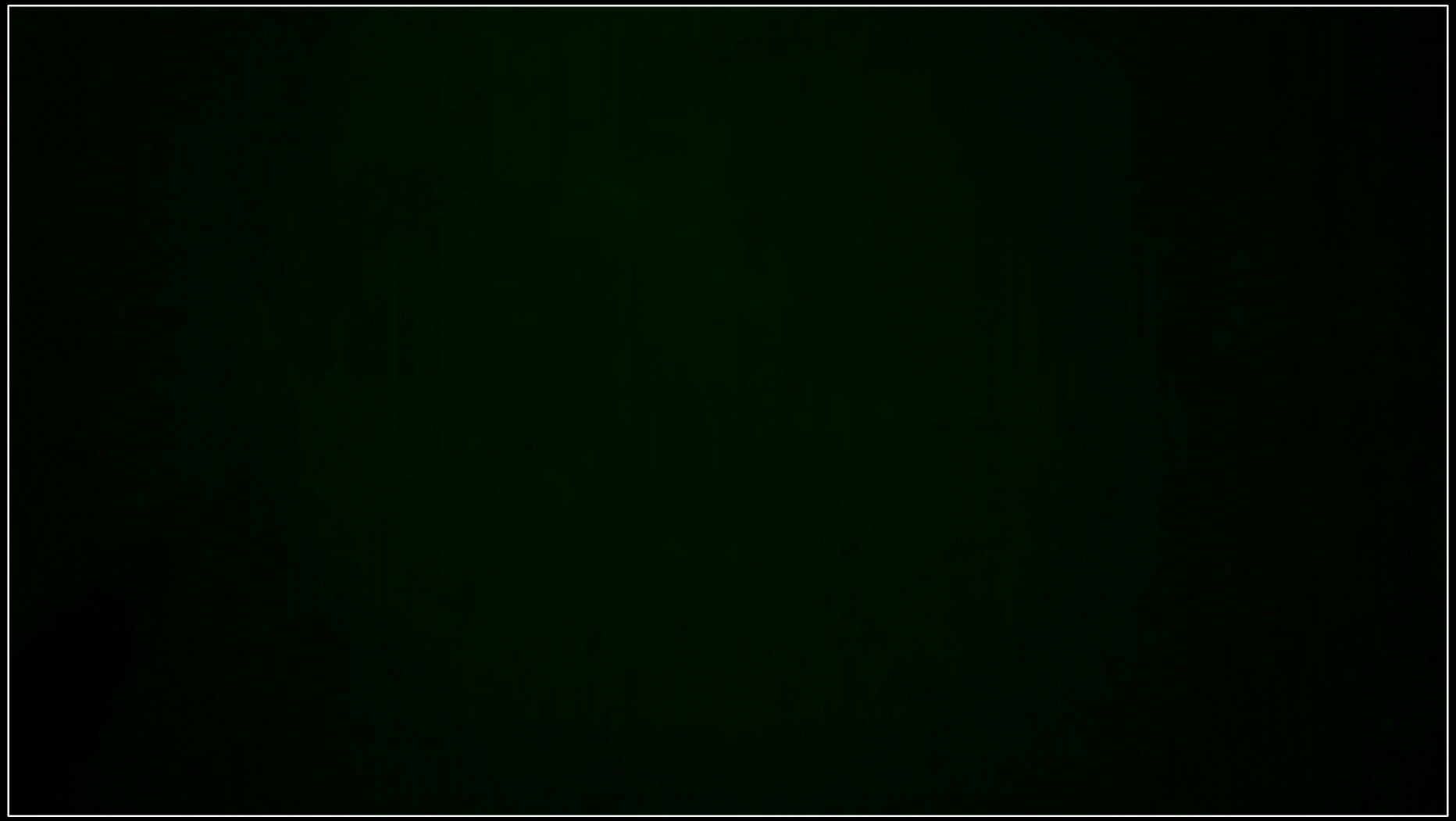
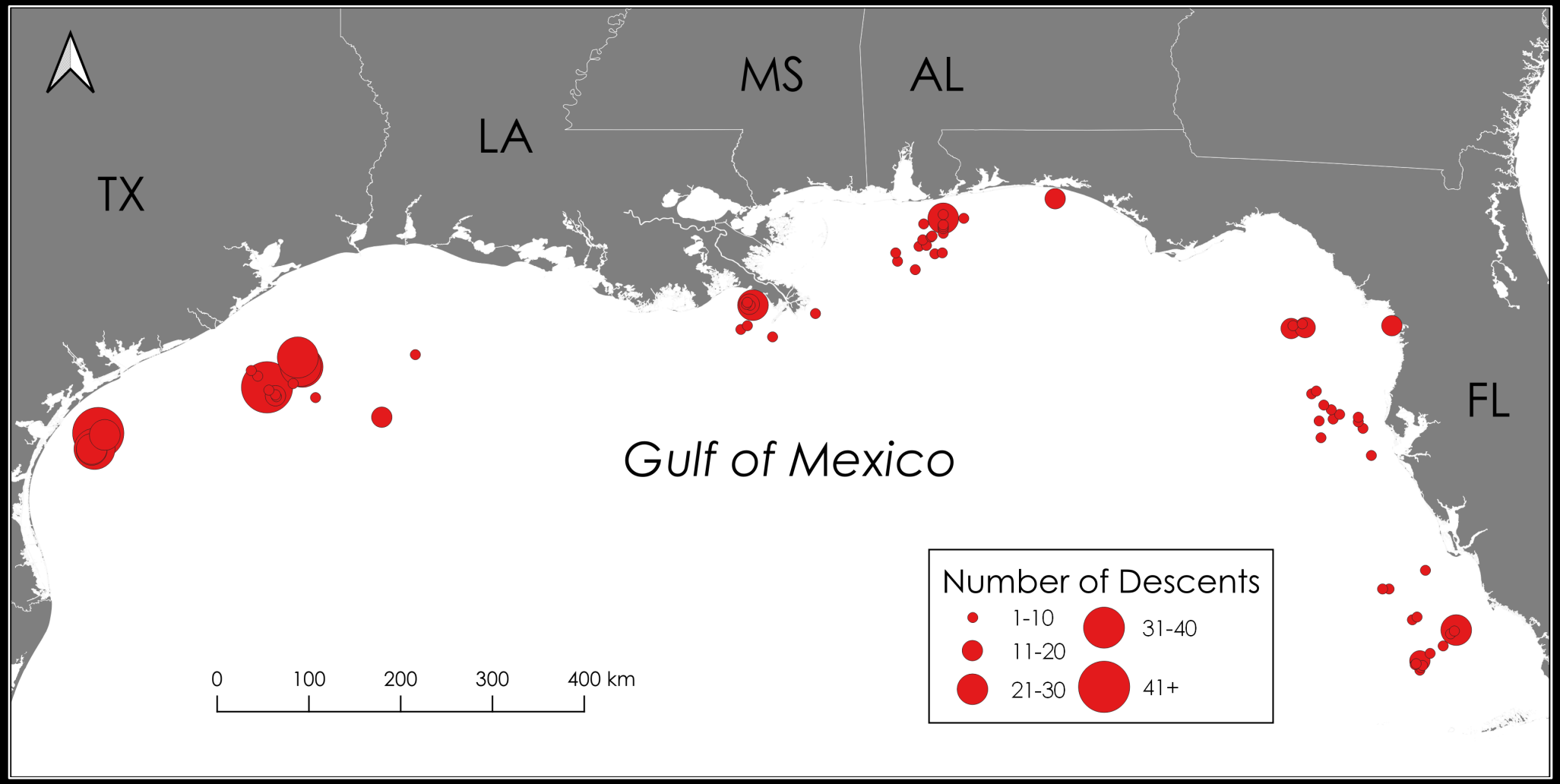
Omitted Descents

Omitted descents that lacked video footage or had poor scores



Data Summary

March 2022 – March 2024: n = 987 descents successfully recorded off TX, LA, AL, and FL



Descended Fishes

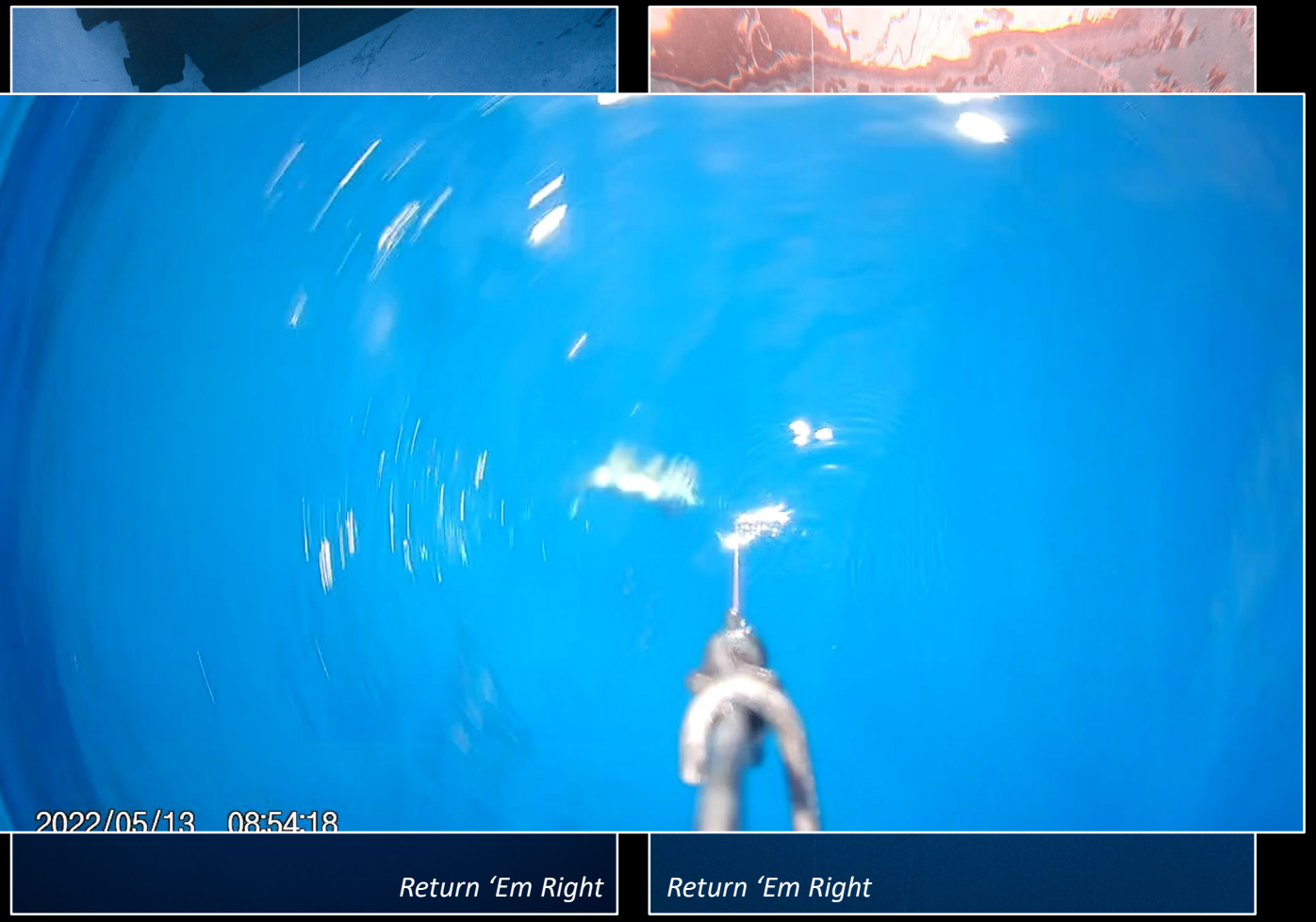
Half by captains, half by project team

20 species

Red Snapper: n = 684, 69%

Red Grouper: n = 197, 20%

Remainder: mostly reef fishes (snappers, groupers, jacks, triggerfish)



Descent Details

157 descents: at least one, and up to 10, fishes were depredated on ascent

114 descents: predators were present at the surface

- Sharks (n = 17)
- Dolphins (n = 97)

44 descents: predators were apparent in the video footage

- Sharks (n = 34)
- Dolphins (n = 7)
- Goliath Grouper (n = 3)

DEPREDATION ON DESCENT

Depredation of reef fishes returning to depth on descender devices is exceedingly rare.

3 depredation events offshore of LA

All sharks depredating Red Snapper

- Blacktip Shark (n = 2)
- Unidentified shark (n = 1)

No predators seen at surface

No depredation on ascent (n = 1) or 1 depredation on ascent (n = 2)

Depredation Event 1
06/15/2022

Conclusions

Depredation, though a significant problem for ascending fishes, is *essentially a nonissue for reef fishes on descender devices*

Gulf of Mexico anglers should *embrace the use of descender devices* as effective tools for mitigating barotrauma in the reef fish fishery

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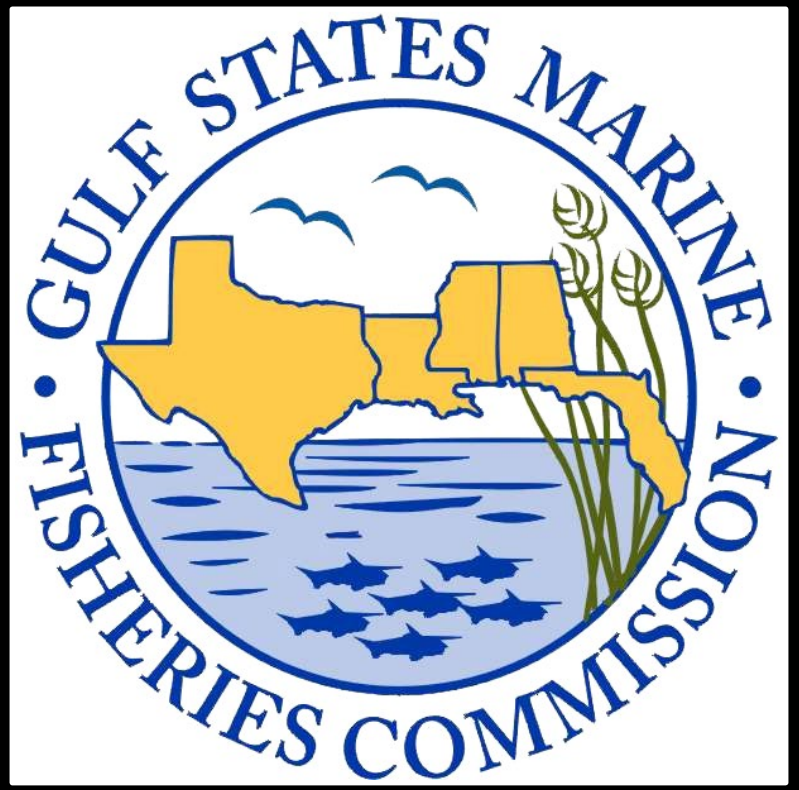
Interesting Observations

Next Steps

- Create a “whiteboard” results video
- Distribute the video broadly
  - Social media
  - Management agencies
  - Industry groups
  - NGOs
  - Recreational fishing groups
- Work with Return ‘Em Right!

Acknowledgments



Charter-for-Hire Captains:

Brad Gorst, Gulfstream Fishing Charters, FL

Brett Falterman, Fisheries Research Support, LA

Clarence Fleck, Capt. Marvel Charters, FL

Gary Bryant, Red Eye Charters, AL

John Greene, Intimidator Sportfishing, AL

Troy Frady, Distraction Charters, AL

Zachary Tapp, Niche Fishing Charters, FL

Questions?

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