

TCC GENERAL SESSION
GULF STATES MARINE
FISHERIES COMMISSION
2024 RETURN 'EM RIGHT OVERVIEW



GSMFC 75TH ANNUAL MEETING

October 16, 2024
The Lodge at Gulf State Park
Gulf Shores, AL

Agenda

1. 8:30 Welcome – *Dave Donaldson/Charlie Robertson*
2. 8:40 Determination of Predation Mortality, Barotrauma Survival, and Emigration Patterns for Catch-and-released Red Snapper – *Dr. Stephen Szedlmayer (Auburn University)*
3. 9:10 Do Descender Devices Increase Opportunities for Depredation? A Gulf-wide Examination of Descender Device Depredation Rates and Depredating Species – *Amanda Jargowsky (Mississippi State University)*
4. 9:40 Depredation Rates and Release Mortality of Red Snapper, Gray Triggerfish, and Greater Amberjack Released Using Fish Descending Devices – *Erik Lang (Louisiana Department of Wildlife and Fisheries)*

10:15-10:30 Break

5. 10:30 Mitigation of Gag Release Mortality in the Eastern Gulf of Mexico – *Dr. Will Patterson (University of Florida)*
6. 11:00 Alabama At-sea Observer Data Collection Methods, Results and Analysis – *Marie Head (Alabama Department of Conservation and Natural Resources)*
7. 11:30 Return 'Em Right Outreach and Education – *Nick Haddad (Florida Sea Grant)*

Adjourn

INTRODUCTION

The Return 'Em Right program, funded by the Damage Assessment, Remediation, and Restoration Program (DARRP), addresses a critical challenge facing recreational reef fisheries in the Southeast United States—discard mortality due to barotrauma.

Barotrauma occurs when fish experience rapid pressure changes as they are brought to the surface, causing gases to expand within their bodies, often leading to injury or death. Each year, millions of reef fish are released after being caught, but many do not survive.

Return 'Em Right is a collaborative effort between the Gulf States Marine Fisheries Commission, Florida Sea Grant, and the NOAA Restoration Center. It aims to enhance the sustainability of the Gulf of Mexico's reef fisheries through targeted education, outreach, and the promotion of barotrauma mitigation techniques. Central to the program is the distribution of free fish descending gear paired with an interactive online learning platform that educates anglers on best practices for releasing reef fish. This platform incorporates illustrated demonstrations, videos, and expert guidance from charter captains to promote sustainable angling practices.

As part of its restoration mission, Return 'Em Right also funds studies to evaluate the effectiveness of release methods and collaborates with state and federal partners to expand data collection. Monitoring progress this way and through angler engagement, the program has successfully reached over 32,000 participants, building awareness of best handling practices and improved release techniques to support reef fishery conservation.

ABSTRACTS

Determination of Predation Mortality, Barotrauma Survival, and Emigration Patterns for Catch-and-released Red Snapper

Dr. Stephen Szedlmayer

Auburn University

This study investigated the survival and predation risks of Red Snapper (*Lutjanus campechanus*) released using three methods: cage release, drop-weight release with a descender device, and surface release. Throughout the project, hundreds of Red Snapper were tagged and released at multiple reef sites in the northern Gulf of Mexico, with recapture efforts conducted to monitor survival. While the conventional tagging study showed no significant difference in recapture rates across the methods, telemetry tracking indicated varying levels of survival among the different release techniques. Predation was observed in some cases, particularly with the use of descender devices, while surface-released fish experienced challenges associated with barotrauma. The study highlights the importance of proper handling and release techniques to improve survival rates and reduce predation risks. These findings offer valuable insights for developing effective catch-and-release practices to support the long-term sustainability of Red Snapper fisheries.

The results suggest that thoughtful release methods and handling practices could contribute to improving post-release outcomes for Red Snapper in recreational fisheries.

Do Descender Devices Increase Opportunities for Depredation? A Gulf-wide Examination of Descender Device Depredation Rates and Depredating Species

Ms. Amanda Jargowsky

Mississippi State University

Increasing post-release survival of discarded fishes is crucial for effective fisheries management, particularly among reef fishes affected by barotrauma. In the U.S. Gulf of Mexico (GoM), the DESCEND Act mandates the use of venting tools or descender devices for reef fishes, but concerns about depredation—non-target species removing captured fish—hinder adoption. This study assessed depredation rates on fishes released using descender devices across the GoM. Partnering with seven charter-for-hire captains, we recorded over 1,000 descents using GoFish Cams from March 2022 to March 2024, with the majority involving Red Snapper (*Lutjanus campechanus*) and Red Grouper (*Epinephelus morio*). The footage revealed that depredation during descents was extremely rare, with only two instances involving Blacktip Sharks (*Carcharhinus limbatus*). These findings suggest that, while depredation is a concern for ascending fishes, it is not a significant issue for those released with descender devices. As such, GoM anglers are encouraged to adopt these tools to mitigate barotrauma and improve post-release survival in the reef fish fishery.

Depredation Rates and Release Mortality of Red Snapper, Gray Triggerfish, and Greater Amberjack Released Using Fish Descending Devices

Mr. Erik Lang and Mr. Zachary Zuckerman
Louisiana Department of Wildlife and Fisheries

According to the DESCEND Act of 2020, it is now mandatory for reef fishermen to have a venting tool or descender device “rigged and ready” to use when fishing in Gulf of Mexico federal waters. As part of a gulf-wide effort to determine the benefits and shortfalls of descending devices, Louisiana Department of Wildlife and Fisheries (LDWF) tested and compared the lip grip, inverted hook, and fish elevator style descender devices for overall effectiveness. Red Snapper (*Lutjanus campechanus*), Greater Amberjack (*Seriola dumerili*), and Gray Triggerfish (*Balistes capriscus*) were released after hook and line capture using the three descender device types within various depth strata (as equally distributed as possible). Each release was videoed with an upward and downward facing camera and was characterized by a predation/depredation, predator interaction, or by assigning a release code. The lip grip and fish elevator had the largest percentage of negative outcomes across species (either a predator interaction or fish that lost equilibrium upon release from the descender device). The inverted hook releases were more favorable, but could not be used on Gray Triggerfish due to its small operculum. There are pros and cons with each descending device and further investigation will be needed in order to compare outcomes to a vented surface release.

Mitigation of Gag Release Mortality in the Eastern Gulf of Mexico

Dr. Will Patterson
University of Florida

This project aims to evaluate the effectiveness of descender devices in mitigating release mortality among reef fish species, specifically targeting gag grouper (*Mycteroperca microlepis*) in the eastern Gulf of Mexico. Reef fishes are highly susceptible to barotrauma when caught at depth and rapidly brought to the surface, often resulting in significant mortality upon release. The study uses a large-scale, high-resolution 3D acoustic telemetry array to track the fate of recreationally caught gag grouper released with and without the use of descender devices or release cages. By comparing survival, depredation, and movement data, the study seeks to improve estimates of release mortality and provide critical insights into the effectiveness of these devices in reducing post-release fish deaths.

This research builds on previous studies of red snapper and gray triggerfish, where descender devices significantly reduced mortality. The results will directly inform management strategies aimed at enhancing reef fish conservation, improving stock assessments, and refining the use of catch-and-release methods in the Gulf of Mexico. In addition, the project will engage local fishing communities, providing outreach and education on the use of descender devices to promote sustainable fishing practices.

Alabama At-sea Observer Data Collection Methods, Results and Analysis

Ms. Marie Head

Alabama Department of Conservation and Natural Resources, Marine Resources Division

This presentation provides an overview of Alabama's At-Sea Observer Program, focusing on the evolution of data collection methods and key findings from 2022 to 2024. It highlights the program's transition from paper-based methods to the use of a BigFin scientific tablet and e-board combination, which has streamlined data collection and post-processing. The discussion will detail the benefits of this technological shift in improving efficiency, accuracy, and consistency across other regions of the Gulf.

The presentation will also summarize data collected over the past two years, offering insights into Alabama's recreational for-hire fishery. Specific topics will include the most commonly caught reef fish species, tagging and release methods used, and the incidence of barotrauma in fish caught at depth. Additionally, the analysis will cover catch rates and size composition of observed reef fish, providing a comprehensive picture of the fishery's dynamics during this period.

Return 'Em Right Outreach and Education

Mr. Nick Haddad

Florida Sea Grant

In the Southeast United States, discard mortality from barotrauma has been a continuing challenge to the sustainability of popular recreational reef fish fisheries. Barotrauma occurs when fish experience changes in barometric pressure as they are brought to the surface from depth, causing gasses in the body to expand, often resulting in injury or death. To address this issue, Florida Sea Grant is collaborating with the Gulf States Marine Fisheries Commission and the NOAA Restoration Center on a program to enhance reef fishery resources in the Gulf of Mexico through education and promotion of sustainable angling and barotrauma mitigation among recreational anglers. The program, branded Return 'Em Right, has been developed using an interactive online learning platform coupled with the distribution of free fish descending gear, as a central element, to motivate sustainable angling knowledge and best practices among recreational reef fish anglers. The educational platform leads participants through a series of interactive learning modules that combine short, illustrated demonstrations and complementary videos showing the use of sustainable angling gear and fish descending devices. The Return 'Em Right team developed the educational material through the participation of angling community influencers with input from charter captains. This presentation describes the development process and distribution of the learning platform, as well as the marketing and communications strategies employed to encourage angler

engagement. Progress is monitored through an informational dashboard that reflects input from over 32,000 recreational anglers who have participated and received free fish descending gear during the past two years.



Gulf States Marine Fisheries Commission

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