Regulatory Amendment 29 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region



Photo: Brendan Runde, Department of Applied Ecology, NCSU

(Gear Requirement Modifications)

Options Paper with guidance from the October 2018 Snapper Grouper Committee Meeting

Background

Commercial and recreational fishermen have expressed concern about regulations that result in released fish that do not survive. This has been particularly true for red snapper since 2010. Observations from recent fishery-independent studies show the population of red snapper has increased (SEDAR 41 2017). As a result, fishermen are reporting an increase in the number of released red snapper. A portion of released fish will die due to foul hooking (hooking the fish in the stomach or throat), injuries caused by barotrauma (injury due to expansion of gas when reeled up from depth), and predation. To reduce the number of released fish and improve the survivorship of released fish, the Council may consider best fishing practices as either mandatory or voluntary options.

Best fishing practices aim to reduce bycatch and discard mortality by avoiding non-target species or sizes through fishing techniques and/or gear that minimizes the impact of capture. Common examples of best fishing practices include recompressing fish, reducing the number of

1

hooks fished, using hooks that reduce or minimize gut hooking or foul-hooking, using knotless landing nets, etc.

Additionally, fishermen have expressed concern regarding inequitable access for the dive component of the snapper grouper fishery. Powerheads, also known as bang sticks (spears with a charge that is fired when in contact with target), may not be used to harvest snapper-grouper in federal waters off South Carolina but allowed in federal waters off North Carolina, Georgia, and Florida. To allow for more consistent regulations for the dive component of the snapper grouper fishery, the Council may consider removing the powerhead prohibition in federal waters off South Carolina.

2016-2020 Vision Blueprint for the Snapper Grouper Fishery: Strategies and Objectives

The 2016-2020 Vision Blueprint for the Snapper Grouper Fishery (Vision Blueprint) was approved in December 2015 and is intended to inform management of the snapper grouper fishery through 2020. The Vision Blueprint serves as a "living document" to help guide future management, build on stakeholder input, and illustrate actions that could be developed through the amendment process to address the goals identified during the visioning process. Specifically, the Vision Blueprint is organized into four goal areas: (1) Science, (2) Management, (3) Communication, and (4) Governance. Each goal area has a set of objectives and a set of strategies aimed at meeting each objective. The actions in Regulatory Amendment 29 correspond to different objectives and strategies in the Vision Blueprint. The full Vision Blueprint for the Snapper Grouper Fishery in the South Atlantic can be found here: https://safmc.net/useful-info/council-visioning-project/

Actions 1 and 2 address best fishing practices intended to reduce the number of released fish and improve the survivorship of released fish for snapper grouper species. Some of the alternatives the Council many consider were suggested during Visioning Meetings, including the use of single hook rigs when targeting deep-water species and requiring descending devices. The circle hook alternatives were developed based on management in other areas and include an option to remove the circle hook requirement.

Action 3 includes alternatives that would provide consistent regulations for the dive component of the snapper grouper fishery. Currently, South Carolina is the only state where powerheads are prohibited. The alternatives include options to remove the powerhead restriction off South Carolina or prohibit powerheads when fishing in the South Atlantic exclusive economic zone (EEZ).

Snapper Grouper Species and Best Fishing Practices

Standard practice to improve survivorship of released fish is to reduce handling and the amount of time a fish is out of the water. However, fish experiencing barotrauma (floaters) may not survive without some assistance. There are two types of tools that can be used to treat barotrauma: venting devices (**Figure 2**) and descending devices (**Figure 3**). Note: not all fish will require venting or descending, it is important to look for the signs of barotrauma.

<u>Venting devices</u> are sharp, hollow tools that can be used to release gases that have over expanded in a fish's swim bladder due to rapid ascent in the water column. Once the gases have been released, internal organs can return to their original positions and the fish should be able to swim down. Fishermen should hold the fish on its side and insert the venting tool at a 45-degree



angle approximately one to two inches behind the base of the pectoral fin. The venting tool should be inserted just deep enough to release the gases. Instruments that are not hollow, such as fishing hooks or knives are <u>not</u> appropriate for venting fish and will cause more harm.

Figure 2. Venting a fish with barotrauma. Photo: Florida Fish and Wildlife Commission



Figure 3. Descending device. Photo: Florida Sea Grant

<u>Barotrauma Explained</u>

Most marine fishes have a gas-filled organ known as a swim bladder. This organ allows the fish to control its buoyancy and location within the water column. Barotrauma, a condition often experienced by bottomdwelling snapper grouper species, occurs when a fish is rapidly reeled up from depth. The change in pressure causes the fish's swim bladder to expand, and in some cases burst, causing air to fill the body cavity. Along with internal damage, this expansion can prevent the fish from swimming back down to the capture depth, decreasing its chances of survival and making it more vulnerable to predators.

Fish experiencing barotrauma, sometimes called floaters, exhibit some identifiable signs, including bulging eyes, swollen abdomen, and stomach or intestines protruding from the mouth (**Figure 1**). Not all fish species react the same way to barotrauma, but if a fish is experiencing any of these symptoms it will likely need some help descending.



Figure 1. Red snapper experiencing barotrauma. Photo: Brendan Runde, Department of Applied Ecology, NCSU

<u>Descending devices</u> are tools that quickly send a fish back to the depth where it was caught. Rapidly returning the fish to depth causes gases in the swim bladder to recompress, allowing the fish to swim away. Descending devices can be purchased or made by hand but are generally some kind of weighted device that is attached to fishing line or rope with a clamp or hook to attach to the mouth of the fish (**Table 1**). Through the NOAA Fisheries National Saltwater Recreational Fisheries Policy implementation plan, thousands of descending devices have been distributed to fishermen through state agencies and other partners (NOAA Fisheries 2017). Additionally, many state agencies have outreach programs aimed at educating fishermen on the proper use of both descending devices and venting tools.

Brand	Price
<u>SeaQualizer</u>	\$59.99
Shelton Fish Descender	\$5.99
RokLees Fish Descender	\$34.99
Blacktip Catch and Release Tool	\$54.99
<u>FishSaver</u>	\$24.95
Safe Release Weight	\$19.95

Table 1. Descending device options

Circle hooks are a type of fishing hook designed so that the point turns back towards the shank creating a circle or oval shape (Figure 4). Typically used with natural baits, circle hooks are more likely to hook a fish in the mouth because the circular shape allows the hook to move toward the jaw without catching on the fish's gut or throat. Furthermore, non-offset, or inline circle hooks (where the point is perpendicular to the shank), are less likely to injure a fish. On the other hand, offset circle hooks are more likely to result in the hook catching before the fish's jaw, lodging in the gills or gut.

In addition to avoiding internal damage, fish hooked in the mouth are easier to dehook, decreasing the amount of time the fish is being handled. The use of non-stainless-steel circle hooks is currently required to fish for snapper grouper species with natural baits north of 28 degrees North latitude (approximately 20-miles south of Cape Canaveral, Florida).

Discard Mortality and Best Fishing Practices

Estimates of discard mortality are important components of stock assessments (Table 2) and for subsequent management actions aimed at improving survivorship of discarded snapper grouper species. Circumstances often vary, and the use of best fishing practices as described above may or may not be necessary or reduce discard mortality in every situation. For example, fish harvested in shallow water may not experience barotrauma and would not need treatment from a venting device or descending device. Ultimately, discard mortality is influenced by an array of factors including: temperature, capture depth, handling time, and hooking injuries.

Best Fishing Practices Website and Pamphlet Links:

- Catch & Release Fishing 0
- FishSmart
- o Ethical Angling: A Guide to **Responsible Fishing**
- o Catch & Release: Ways You Can Help Saltwater Fish Survive
- Seven Tips for Successful Catch and Release
- Venting: A Guide to Releasing Reef Fish with Ruptured Swimbladders
- How to Treat Barotrauma (Video) 0
- Circle Hooks



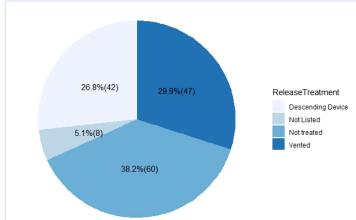
Figure 4. J-hook vs. circle hook. Photo: Florida Sea Grant/UF IFAS

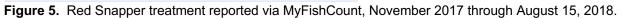
Species	Source	Commercial Discard Mortality	Recreational Discard Mortality
Black Sea Bass	SEDAR 56	19%	13.7%
Vermilion Snapper	SEDAR 55	41%	38%
Red Grouper	SEDAR 53	20%	20%
Red Snapper	SEDAR 41	38%	28.5%
Gray Triggerfish	SEDAR 41	12.5%	12.5%
Greater Amberjack	SEDAR 15	20%	20%
Gag Grouper	SEDAR 10	40%	25%

Table 2. Commercial and recreational hook and line discard mortality rates for commonly targeted snapper grouper species.

When used properly, venting devices and descending devices can be successful at reducing discard mortality (Curtis et al., 2015; Drumhiller et al., 2014; Eberts and Somers, 2017). Runde and Buckel (2018) conducted a study on the effect of descending device utilization on deepwater grouper species (scamp, snowy grouper, and speckled hind). Fish were caught (60-120 m), tagged, and then descended back to depths of 150-200 m. Survival after two weeks of observation was estimated to be around 50%, substantially higher than survival without recompression. Another tagging study, conducted by Curtis et al. (2015), found that red snapper treated for barotrauma using a descending device were 3 times more likely to survive than untreated fish. Collins et al. (1999) found that venting significantly improved survival of released black sea bass and, to a lesser extent, vermilion snapper.

Recent studies have recommended the use of descending devices over venting devices for treating fish experiencing symptoms of barotrauma. Though faster to use, venting devices have the potential to damage vital organs and cause additional stress if not used correctly (Harrison, 2015; Pulver, 2017; Wilde, 2009). However, recent surveys of fishermen in the Gulf of Mexico and Florida have shown that recreational fishermen are more comfortable using venting devices and perceive descending devices to be time consuming and expensive (Crandall et al., 2018; Scyphers et al., 2013). Though a small sample, reports submitted to the electronic reporting app for recreational anglers in the South Atlantic, MyFishCount, indicate that approximately 47% of red snapper caught were treated for barotrauma. Of the fish treated, 52.8% were vented and 47.2% were descended (**Figures 5** and **6**).





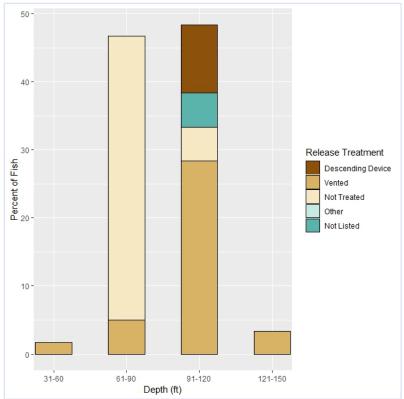


Figure 6. Red Snapper treatment reported via MyFishCount by depth caught, November 2017 through August 15, 2018.

Accounting for regulations pertaining to venting devices and/or descending devices in estimates of discard mortality rates utilized in stock assessments is challenging, especially without a way to quantify their use in the fishery. However, such revised estimates of discard mortality rate for Gulf of Mexico red snapper that were vented were included in SEDAR 31 (2013). Additionally, on the U.S. Pacific coast, where the Pacific Fishery Management Council (PFMC), requires use of descending devices for their groundfish fishery, estimates of discard mortality rates have diminished (PFMC 2013).

Like barotrauma mitigation tools, the effect of circle hooks on discard mortality tends to vary. For some species, studies have shown that circle hooks significantly reduce discard mortality when compared to J-hooks, with hooking location and the amount of bleeding being key factors (Cooke and Suski, 2004). Additionally, Bacheler and Buckel (2004) showed that hook type has a negligible effect on catch rate for large grouper species (catch rates did vary for other species). Alternatively, other studies have shown that discard mortality rates are not improved using circle hooks. While hooking injury has been shown to be a leading cause of mortality for red snapper, circle hooks do not appear to be more effective than J-hooks at improving survival of released fish (Burns, 2004, 2009; Burns and Froeschke, 2012). In general, studies on the effects of circle hooks on discard mortality rates of snapper grouper species remain sparse. Variations in fish physiology and fishery characteristics are likely to influence the effect of circle hooks.

Actions in this amendment

- Action 1. Specify requirements for the use of venting devices and/or descending devices when possessing species in the snapper grouper fishery management unit.
- Action 2. Modify the requirement for the use of non-stainless-steel circle hooks when fishing for and/or possessing snapper grouper species with hook-and-line gear.
- Action 3. Specify the allowable rigs when fishing for and/or possessing species in the snapper grouper fishery management unit with hook-and-line gear in the recreational sector.
- Action 3. Adjust powerhead prohibitions in the South Atlantic Region.

Expected amendment timing

	Process Steps	Dates
\checkmark	Review draft options paper	March 2018
\checkmark	Approve for scoping	June 2018
\checkmark	Scoping hearings	August 2018
~	Review scoping comments, approve actions/alternatives to be analyzed.	September 2018
	Review draft amendment, modify as necessary, select preferred alternatives, and approve for public hearings.	March 2019
	Public hearings	April 2019
	Review public hearing comments, approve all actions and alternatives.	June 2019
	Final action to approve for Secretarial review	September 2019

Purpose and Need Statement

Purpose for Actions

The *purpose* is to modify gear requirements for the snapper grouper fishery to promote best fishing practices and to ensure consistent regulations for the dive component of the snapper grouper fishery.

Need for Actions

The *need* is to reduce discards and discard mortality of snapper grouper species and to decrease the burden of compliance with differing regulations for the dive component of the snapper grouper fishery while minimizing, to the extent practicable, adverse social and economic effects.

Committee Action

MOTION: APPROVE THE SUGGESTED PURPOSE AND NEED STATEMENT. APPROVED BY COUNCIL

Proposed Actions and Alternatives

Action 1. Specify requirements for the use of descending devices* and/or venting devices** when possessing species in the snapper grouper fishery management unit.

Alternative 1 (No Action). Descending devices and/or venting devices are not required to be onboard a vessel possessing species in the snapper grouper fishery management unit.

Alternative 2. Require a *descending device** be onboard a vessel possessing species in the snapper grouper fishery management unit.

Sub-alternative 2a. private recreational and for hire vessels.
Sub-alternative 2b. for-hire vessels
Sub-alternative 2c. commercially permitted South Atlantic snapper grouper vessels

Alternative 3. Require a *venting device*^{**} be onboard a vessel possessing species in the snapper grouper fishery management unit.

Sub-alternative 3a. private recreational and for-hire vessels.
Sub-alternative 3b. for-hire vessels
Sub-alternative 3c. commercially permitted South Atlantic snapper grouper vessels.

Alternative 4. Require a venting device* *or* a descending device** be onboard a vessel possessing species in the snapper grouper fishery management unit.

Sub-alternative 3a. private recreational and for-hire vessels. Sub-alternative 3b. commercially permitted South Atlantic snapper grouper vessels.

* For the purpose of this requirement, "descending device" means an instrument that will must release fish at a depth sufficient for the fish to be able to recover from the effects of barotrauma, generally 33 feet (twice the atmospheric pressure at the surface 1 atmosphere of pressure) or greater. The device can be a weighted hook, lip clamp, or box that will hold the fish while it is lowered to depth. The device should be capable of releasing the fish automatically, releasing the fish by actions of the operator of the device, or by allowing the fish to escape on its own. Since minimizing surface time is critical to increasing survival, descending devices should be rigged and ready for use while fishing is occurring.

** For the purpose of this requirement, "venting device" means a device capable of penetrating the abdomen of a fish in order to release excess gases accumulated in body cavity when a fish is deflate the expanded air due to a ruptured swim bladder from the body cavity of a fish retrieved from depth. A venting device must be a sharpened, hollow instrument, such as a hypodermic syringe with the plunger removed, or a 16–gauge needle fixed to a handle. A larger gauge needle is preferred in order to allow more air to escape rapidly. A device that is not hollow, such as a knife or ice pick, is not a venting device and will cause additional damage.

Items to Consider:

Definitions for Venting Devices and Descending Devices

- Venting devices are currently defined in the Code of Federal Regulations (CFR) as "a device intended to deflate the abdominal cavity of a fish to release the fish with minimum damage" (50 CFR § 622.2). Descending devices are not currently defined in the CFR for the fisheries of the South Atlantic (50 CFR part 622).
- The Gulf of Mexico Fishery Management Council (Gulf Council) recently approved their "Policy on the Use of Venting Tools and Descending Devices." This policy strongly encourages the use of venting tools and descending devices in the reef fish fishery with the goal of increasing survivorship and improving stock productivity and sustainability. In addition to the policy, the Gulf Council is working on an outreach plan for dissemination of information as well as monitoring to ensure the policy is measurable and successful. The definition of venting device and descending device in **Action 1** match those found in the Gulf Council's policy. The full policy can be found here: http://gulfcouncil.org/wp-content/uploads/Gulf-Council-Policy-on-the-Use-of-Venting-Tools-and-Descending-Devices.pdf

Previous Snapper Grouper Amendment Addressing Venting Devices

• Amendment 16 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region included an action requiring the use of venting and dehooking tools for a person onboard a vessel to fish for snapper grouper species in the South Atlantic EEZ. The venting tool requirement was **not** approved by the National Marine Fisheries Service (NMFS) based on information obtained during public comment on the amendment that indicated the benefits of venting remained unclear and, in some cases, might increase mortality of some species, depending on capture depth. NMFS did note that if new research indicated snapper grouper species would benefit from a venting (or other barotrauma mitigation methods) requirement, they would consider such options in a future amendment.

Protected Resources

• In June 2016, NMFS completed a Biological Opinion (BiOp) on the snapper grouper fishery of the South Atlantic region and concluded that the fishery's continued authorization would not jeopardize the continued existence of Endangered Species Act-listed species. However, listed in the terms and conditions of the BiOp was a measure to assess the effectiveness of fishing practices that reduce fishing mortality, including dehooking and treatment of barotrauma. This action could address impacts to incidentally-caught Nassau grouper.

Committee Action:

MOTION: APPROVE THE INCLUSION OF ACTION 1/ALTERNATIVES 1 THOUGH 3 IN SNAPPER GROUPER REGULATORY AMENDMENT 29 AS MODIFIED. APPROVED BY COUNCIL

Action 2. Modify the requirement for the use of non-stainless-steel circle hooks when fishing for and/or possessing snapper grouper species with hook-and-line gear.

Alternative 1 (No Action). Use of non-stainless-steel circle hooks is required when fishing for and/or possessing species in the snapper grouper fishery management unit with hook-and-line gear and natural baits north of 28 degrees north latitude.

Alternative 2. Require the use of non-stainless-steel circle hooks when fishing for and/or possessing species in the snapper grouper fishery management unit with hook-and-line gear and natural baits in the exclusive economic zone:

Sub-alternative 2a. north of 25° 09' north latitude on the east coast of Monroe County (approximately Key Largo, Florida).

Sub-alternative 2b. throughout the extent of the South Atlantic Council's jurisdiction (North Carolina/Virginia border through Key West, Florida).

Alternative 3. Require the use of *non-offset*, non-stainless-steel circle hooks when fishing for and/or possessing species in the snapper grouper fishery management unit with hook-and-line gear and natural baits in the exclusive economic zone:

Sub-alternative 3a. north of 28 degrees north latitude (approximately 25 miles south of Cape Canaveral, Florida).

Sub-alternative 3b. north of 25° 09' north latitude on the east coast of Monroe County (approximately Key Largo, Florida).

Sub-alternative 3c. throughout the extent of the South Atlantic Council's jurisdiction (North Carolina/Virginia border through Key West, Florida).

Alternative 4. Require *non-offset*, non-stainless-steel circle hooks be *onboard* a vessel possessing species in the snapper grouper fishery management unit when fishing in the exclusive economic zone:

Sub-alternative 4a. north of 28 degrees north latitude (approximately 25 miles south of Cape Canaveral, Florida).

Sub-alternative 4b. north of 25° 09' north latitude on the east coast of Monroe County (approximately Key Largo, Florida).

Sub-alternative 4c. throughout the extent of the South Atlantic Council's jurisdiction (North Carolina/Virginia border through Key West, Florida).

Alternative 5. Remove the requirement for use of non-stainless-steel circle hooks when fishing for and/or possessing species in the snapper grouper fishery management unit with hook-and-line gear and natural baits north of 28 degrees north latitude:

Sub-alternative 5a. private recreational and for-hire vessels.

Sub-alternative 5b. commercially permitted South Atlantic snapper grouper vessels.

Alternative 6. Require the use of non-stainless-steel hooks when fishing for and/or possessing species in the snapper grouper fishery management unit in the exclusive economic zone.

Items to Consider:

Circle Hook Definitions

- A circle hook, as defined in 50 CFR § 622.2, is "a fishing hook designed and manufactured so that the point is turned perpendicularly back to the shank to form a generally circular, or oval, shape."
- Non-offset circle hooks, though not defined in the CFR or required by current regulations, are circle hooks where the point of the hook lines up with the shank.

Previous Snapper Grouper and Reef Fish Amendments Addressing Circle Hooks

- Amendment 17A to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region <u>required</u> the use of non-stainless-steel circle hooks when fishing for and/or possessing snapper grouper species with hook-and-line gear and natural baits north of 28 degrees north latitude.
 - Reasoning: Studies on the effects of circle hooks and J-hooks on retention and survival have been limited to a handful of snapper grouper species. Many studies indicate circle hooks can reduce discard and bycatch mortality for some snapper grouper species, particularly red snapper, while studies for other species are inconclusive. Not all snapper grouper species have the same mouth morphology and it is possible that circle hooks could negatively impact survival.
 - Additionally, analysis for Amendment 17A showed that requiring the use of circle hooks could substantially reduce harvest of some species south of 28 degrees north latitude resulting in social and economic impacts on fishermen dependent upon the species being targeted.
- Framework Amendment to the Fishery Management Plan for the Reef Fish Fishery of the Gulf of Mexico (2016) <u>removed</u> the requirement to use circle hooks when commercial fishing with natural bait for yellowtail snapper south of 25° 09' north latitude on the west coast of Monroe County, Florida (Cape Sable) south to the Gulf Council jurisdictional boundary.
 - Reasoning: the yellowtail snapper fishery in southern Florida is prosecuted in such a way that results in small circle hooks being swallowed by fish or snagged in the fish's gut, increasing mortality.
 - Gear exemption was adopted over the smallest effective area possible to reduce the likelihood of increasing discard mortality in other parts of the Gulf of Mexico.

Protected Resources

• The terms and conditions in the 2016 Biological Opinion on the snapper grouper fishery of the South Atlantic includes a measure to assess the effectiveness of non-stainless-steel circle hooks on reducing injury and mortality to Nassau grouper and, if effective, consider revisions of regulations to expand the use of circle hooks south of 28 degrees north latitude.

Committee Action:

MOTION: APPROVE THE INCLUSION OF ACTION 2/ALTERNATIVES 1 THROUGH 6 IN SNAPPER GROUPER REGULATORY AMENDMENT 29 AS MODIFIED. APPROVED BY COUNCIL

Action 3. Specify the allowable rigs when fishing for and/or possessing species in the snapper grouper fishery management unit with hook-and-line gear in the recreational sector.

Alternative 1 (No Action). There are no requirements specifying allowable rigs when fishing for species in the snapper grouper fishery management unit with hook-and-line gear in the recreational sector.

Alternative 2. Require the use of *single hook rigs* (one hook per rod and reel) when fishing for and/or possessing: species in the snapper grouper fishery management unit with hook-and-line gear in the recreational sector.

Sub-alternative 2a. species in the snapper grouper deepwater species aggregate

Alternative 3. Require the use of a *single leader* when fishing for and/or possessing: species in the snapper grouper fishery management unit with hook-and-line gear in the recreational sector. Sub-alternative 3a. species in the snapper grouper deepwater species aggregate

Items to Consider:

- Requiring the use of single hook rigs and/or the use of a single leader could result in fewer regulatory discards and subsequent mortality for snapper grouper species, resulting in long-term benefits to the fishery.
- In previous public comment, for-hire fishermen indicated that this requirement would negatively affect their business, particularly in areas where vessels have to travel long distances to reach productive fishing grounds.
- Information on the prevalence of multi-hook vs. single-hook rigs is not readily available, but if multi-hook rigs are widely used throughout the recreational sector, private and for-hire fishermen may need to adjust their fishing behavior.
- This action was previously included in drafts of Snapper Grouper Amendment 43 (Red Snapper) and Snapper Grouper Regulatory Amendment 26 (Recreational Visioning). Should this action apply to all snapper grouper species? species in the deep-water aggregate? red snapper only?

Committee Action:

MOTION: REMOVE ACTION 3/ALTERNATIVES 1 THOUGH 3 FROM SNAPPER GROUPER REGULATORY AMENDMENT 29. APPROVED BY COUNCIL

Action 3. Adjust powerhead prohibitions in the South Atlantic Region.

Alternative 1 (No Action). A powerhead may not be used in the exclusive economic zone off South Carolina to harvest South Atlantic snapper grouper. The possession of a mutilated South Atlantic snapper grouper species in or from the exclusive economic zone off South Carolina, and a powerhead is prima facie evidence that such fish was harvested by a powerhead.

Alternative 2. Allow the use of a powerhead for recreational and commercial harvest of species in the South Atlantic snapper grouper complex species in the exclusive economic zone off South Carolina.

Sub-alternative 2a. private recreational and for-hire vessels. Sub-alternative 2b. commercially permitted South Atlantic snapper grouper vessels.

Alternative 3. Prohibit the use of a powerhead for recreational and commercial harvest of species in the South Atlantic snapper grouper complex species in the exclusive economic zone of the South Atlantic Region.

Sub-alternative 3a. private recreational and for-hire vessels. Sub-alternative 3b. commercially permitted South Atlantic snapper grouper vessels.

Items to Consider:

Current Snapper Grouper Regulations on Powerhead Use

- Fishermen can use powerheads to harvest snapper grouper species in the South Atlantic exclusive economic zone in all waters except off South Carolina (Figure 6).
- The CFR defines a powerhead as "any device with an explosive charge, usually attached to a spear gun, spear, pole, or stick, that fires a projectile upon contact." (50 CFR § 622.2).
- Allowing the use of powerheads off South Carolina would not remove the prohibition on powerhead use in special management zones found at 50 CFR §622.182(a)(2).

Previous Snapper Grouper Amendments Addressing Powerheads

• Snapper Grouper Amendment 7 prohibited the use of explosive charges, including powerheads, to harvest snapper grouper species in the EEZ off South Carolina. Rationale at the time included:

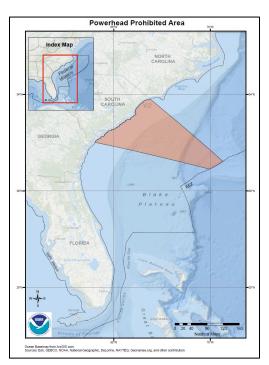


Figure 6. Map of the powerhead prohibited area. Source: SERO GIS website.

• Representatives from the State of South Carolina expressed concern about their inability to enforce their ban on powerheads in state waters and in federal special management zones (SMZs) so long as the practice was legal in federal waters.

- Fishermen expressed concerns about localized depletion of snapper grouper species resulting from the illegal use of powerheads in SMZs off South Carolina.
- A rise in the use of powerheads in the recreational sector was resulting in user conflict between recreational and commercial fishermen, as well as within the recreational sector.

Committee Action:

MOTION: APPROVE THE INCLUSION OF ACTION 4/ALTERNATIVES 1 THOUGH 3 IN SNAPPER GROUPER REGULATORY AMENDMENT 29 AS MODIFIED. APPROVED BY COUNCIL

References

Bacheler, N.M. and J.A. Buckel. 2004. Does hook type influence catch rate, size, and injury of grouper in a North Carolina commercial fishery? Fisheries Research 69:303-311.

Burns, K.M. 2009. Evaluation of the efficacy of the minimum size rule in the red grouper and red snapper fisheries with respect to J and circle hook mortality and barotrauma and the consequences for survival and movement. Ph.D. Dissertation. College of Marine Science, University of South Florida. 183 pp.

Burns, K.M., N.F. Parnell, and R.R. Wilson. 2004. Partitioning release mortality in the undersized red snapper bycatch: comparison of depth versus hooking effects. Mote Marine Laboratory Technical Report No. 932.

Burns, K.M., and J.T. Froeschke. 2012. Survival of red grouper (*Epinephalus morio*) and red snapper (*Lutjanus campechanus*) caught on J-hooks and circle hooks in the Florida recreational and recreational-for-hire fisheries. Bulletin of Marine Science. 88(3):633-646.

Campbell, M.D., W.B. Driggers, B. Sauls, and J.F. Walter. 2014. Release mortality in the red snapper fishery: a meta-analysis of three decades of research. Fishery Bulletin. 112:283-296.

Collins, M.R., J.C. McGovern, G.R. Sedberry, H.S. Meister, and R. Pardieck. 1999. Swim bladder deflation in black sea bass and vermilion snapper: potential for increasing postrelease survival. North American Journal of Fisheries Management. 19:828-832.

Cooke, S. J. and C. D. Suski. 2004. Are circle hooks an effective tool for conserving marine and freshwater recreational catch-and-release fisheries? Aquatic Conservation: Marine and Freshwater Ecosystems 14: 299-326.

Crandall, C.A., T.M. Garlock, and K. Lorenzen. 2018. Understanding resource-conserving behavior among fishers: barotrauma mitigation and the power of subjective norms in Florida's reef fisheries. North American Journal of Fisheries Management. 38:271-280.

Curtis, J.M., M.W. Johnson, S.L. Diamond, and G.W. Stunz. 2015. Quantifying delayed mortality from barotrauma impairment in discarded red snapper using acoustic telemetry. Marine and Coastal Fisheries. 7:434-449.

Drumhiller, K.L, M. W. Johnson, S L. Diamond, M. M. Reese Robillard, and G. W. Stunz. 2014 Venting or rapid recompression increase survival and improve recovery of red snapper with barotrauma. Marine and Coastal Fisheries. 6(1):190-199.

Eberts, R.L. and C.M. Somers. 2017. Venting and descending provide equivocal benefits for catch-and-release survival: study design influences effectiveness more than barotrauma relief method. North American Journal of Fisheries Management, 37:(3) 612-623.

S. Harrison. 2015. Increasing Survival Rates of Discarded Red Snapper: Best Release Strategies, Fisheries, 40(1):3-4.

NOAA Fisheries. 2017. Progress update: national saltwater recreational fisheries implementation plan. NOAA Fisheries, Office of Sustainable Fisheries, Silver Spring, Maryland. 7 p. <u>https://www.fisheries.noaa.gov/webdam/download/63756855</u>

PFMC. 2013. Groundfish management team report on proposed discard mortality for cowcod, canary rockfish, and yelloweye rockfish released using descending devices in the recreational fishery. Pacific Fishery Management Council, Portland, Oregon. 28 p. http://www.pcouncil.org/wp-content/uploads/D5b_GMT_APR2013BB.pdf

Pulver, J. R. 2017. Sink or swim? Factors affecting immediate discard mortality for the Gulf of Mexico commercial reef fish fishery. Fisheries Research, 188:166-172.

Runde, B.J. and J.A. Buckel. 2018. Descender devices are promising tools for increasing survival in deepwater groupers. Marine and Coastal Fisheries: Dynamics, Management, and Ecosystem Science 10:100–117.

SEDAR 41. 2017. Stock assessment of red snapper off the Southeastern United States. Southeast Data, Assessment and Review. North Charleston, South Carolina. <u>http://www.sefsc.noaa.gov/sedar/</u>.

SEDAR 31. 2013. Stock assessment report Gulf of Mexico red snapper. Southeast Data, Assessment, and Review. North Charleston, South Carolina. 1103 pp. <u>http://sedarweb.org/docs/sar/SEDAR%2031%20SAR-</u> <u>%20Gulf%20Red%20Snapper_sizereduced.pdf</u>

Scyphers, S.B., F.J. Fodrie, F.J. Hernandez Jr., S.P. Powers, and R.L. Shipp. 2013. Venting and reef fish survival: perceptions and participation rates among recreational anglers in the Northern Gulf of Mexico. North American Journal of Fisheries Management. 33:1071-1078.

Wilde, G.R. 2009. Does venting promote survival of released fish? American Fisheries Society, Fisheries 34(1):20-28.