



Hogfish

Proposed Adoption of Federal Standards

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Florida Fish and Wildlife Conservation Commission

Division of Marine Fisheries Management

Version 3

This is a summary of proposed rules to adopt federal standards for hogfish. These proposed rules are consistent with pending federal rules in Atlantic and Gulf federal waters.

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Photo courtesy of Michael Sipos

Hogfish Biology

- Juvenile hogfish inhabit nearshore estuaries and shallow reef habitats, and move to offshore, hard-bottom reef habitats as adults
- Form spawning harems composed of a single male and 5 to 15 females
 - Spawning can occur daily from November through April
- All hogfish are born female and transition to male
 - Most females mature when over 7.5 inches in length
 - 50% of females have transitioned to male by 16 inches
 - Hogfish in the Keys and southeast Florida are transitioning at a smaller size than hogfish in the Gulf



Hogfish can be found in tropical, subtropical, and warm temperate waters of the Atlantic and throughout the Gulf of Mexico and Caribbean Sea. As juveniles, they inhabit nearshore estuaries, seagrass beds, or shallow reef habitats and gradually move offshore as they grow. Adult hogfish can be found over hard-bottom reef habitats.

Hogfish have a unique spawning behavior. A single male will form a harem of five to 15 females. The male can spawn daily with members of its harem from November through April.

All hogfish are born female and transition to male. As females, hogfish can reach sexual maturity as small as 7.5 inches in length. Later on, females transition to males when triggered by the absence of a male or as a factor of size and age. If a male is removed from a harem and there is not another male nearby to take his place, a female will transition sexes and take over the harem. Sexual transition can take several months. Fifty percent of females transition to males by the time they reach 16 inches in length. The oldest hogfish aged was 23 years old.

Researchers have found that hogfish in the Keys and southeast Florida are transitioning from female to male at a smaller size than hogfish in the Gulf. This is likely due to harvesters removing the larger males. Fish transitioning at smaller sizes destabilizes fish stocks and is an indicator of overfishing.

Florida Hogfish Harvest

- Primary target for many spearfishers
- Highly-desired food fish
- Most southeastern U.S. hogfish harvest is harvested in Florida

Statewide landings

- 89% recreational
 - 60% from state waters
 - 40% from federal waters
- 11% commercial
 - 19% from state waters
 - 81% from federal waters



Photo courtesy of Bill D'Antonio



Hogfish are a primary target for many recreational and commercial spearfishers because they are easy to spear and are a highly-desired food fish. Because they are easy targets, many new spearfishers learn the sport by targeting hogfish. Although hogfish are mainly harvested by spearfishing, some anglers harvest them by hook and line.

Hogfish occur throughout the southeastern U.S., but most hogfish harvest is harvested in Florida. Recreational harvest dominates the hogfish fishery. Between 2011 and 2015, the recreational fishery harvested 89% of the hogfish landed in Florida. Most recreational harvest occurs in state waters.

Commercial harvest is a smaller, but important component of the hogfish fishery. Most commercial harvest of hogfish comes from federal waters.

Florida Hogfish Stocks Status

2004 stock assessment: Failed peer review and not approved for use in management

- Assessed hogfish in the southeastern U.S. as a single stock
- Suggested that hogfish might be overfished in the Keys

2014 genetic analysis: Identified 2 distinct hogfish stocks off Florida

2014 stock assessment: Completed by FWC

- Keys/East Florida stock: overfished and undergoing overfishing
 - Likely overfished since the 1980s
 - Breeding stock less than 1/3 of minimum sustainable level
- Gulf stock: not overfished and not undergoing overfishing



Photo courtesy of Bill D'Antonio



Hogfish in the southeastern U.S. were first assessed as a single stock in 2004, but that stock assessment failed peer review and was not approved for use in management. The peer reviewers did note, however, that the data suggested hogfish might be overfished in the Keys.

In 2014, researchers completed a genetic analysis of hogfish in the southeastern U.S. and identified three distinct stocks, two of which occupy waters off Florida. The third is in waters off Georgia – North Carolina. For the purpose of this presentation, we will refer to the Florida stocks as the Keys/East Florida stock and the Gulf stock. The biological boundary between these stocks occurs off Naples. Prior to this analysis, hogfish were assumed to comprise a single stock in the southeastern U.S. and were managed as such.

FWC's Fish and Wildlife Research Institute (FWRI) completed an assessment of each stock in 2014. The assessment found that the Keys/East Florida stock is overfished and is undergoing overfishing. Assessment results showed that this has likely been occurring since the 1980s, as indicated in the 2004 stock assessment. Assessing hogfish as a single stock in 2004 masked the poor status of hogfish in the Keys and East Florida. The estimated size of the breeding stock of Keys/East Florida hogfish for 2017 is less than one third of the minimum sustainable level and only 20% of the ideal breeding stock size.

FWRI's assessment showed the Gulf stock is neither overfished nor undergoing overfishing.

Hogfish Management Boundary



- Managed by councils in federal waters and FWC in state waters
 - South Atlantic Council managing Keys/East Florida stock
 - Gulf Council managing Gulf stock
- Because biological boundary occurs in the Gulf, a new management boundary is needed
 - Management boundary set at a line that extends due west of Cape Sable
- Management boundary recommended by FWC staff
 - Same boundary line used in pompano rules
 - Few people fish in or traverse this area



Hogfish are managed by the federal fishery management councils in federal waters and by FWC in state waters. The councils have agreed that the South Atlantic Council will manage the Keys/East Florida stock and the Gulf Council will manage the Gulf stock.

Traditionally, the management boundary for hogfish was the boundary line between the Gulf and South Atlantic council jurisdictions (marked by the thick black line on the map). Because the biological boundary between the two stocks occurs off Naples, the councils had to set a new management boundary to streamline management. The councils agreed to establish a management boundary for hogfish at a line that extends due west of Cape Sable (25° 09' North Latitude) in the Gulf.

The management boundary line was recommended by FWC staff from the divisions of Law Enforcement and Marine Fisheries Management for several reasons. First, this is an existing boundary in FWC rules that is used pompano management. Second, it should allow for ease of enforcement because few people fish in this area, and few people traverse this area when fishing.

South Atlantic Council Action – Keys/East Florida Stock



Rebuilding Plan

- Federal law requires Council to end overfishing immediately and rebuild hogfish within 10 years
 - Requires drastic reduction in harvest
 - Spawning biomass must be increased by 500%
- Quota set to reduce harvest
 - New recreational quota 84% less than recent harvest levels
 - New commercial quota 72% less than recent harvest levels
- Increased minimum size limit from 12 to 16 inches for all harvesters
- Set commercial trip limit at 25 pounds
- Reduced recreational bag limit from 5 to 1 fish
- Set recreational season of May 1 – Oct. 31



Pending approval by U.S. Secretary of Commerce



Federal law requires the South Atlantic Council to end overfishing immediately and implement a 10-year rebuilding plan for the Keys/East Florida stock of hogfish. The 10-year rebuilding timeline is standard for federal fisheries management. To be successful, the current hogfish Keys/East Florida spawning biomass must be increased by 500% in 10 years.

To meet these federal requirements, drastic reductions in harvest are necessary. Thus, the South Atlantic Council set new quotas to reduce harvest. The 2017 quotas are 84% less than recent recreational harvest levels and 72% less than recent commercial harvest levels. The quotas approved by the South Atlantic Council will gradually increase each year during the rebuilding plan.

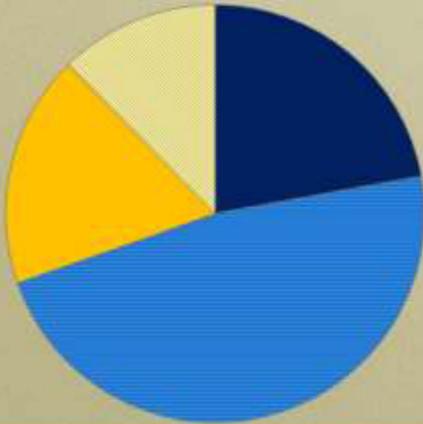
The South Atlantic Council also approved regulations to promote rebuilding of the Keys/East Florida hogfish stock while allowing recreational and commercial harvest to continue. These regulations include a size limit increase from 12 to 16 inches for recreational and commercial harvest, establishment of a 25-pound commercial trip limit, a recreational bag limit reduction from five to one fish per person, and creation of a recreational season set from May 1 through Oct. 31.

Although there has been public support for an increased minimum size limit and a decreased recreational bag limit for the past few years, many recreational and commercial harvesters have expressed concern that the federal regulation changes are excessive.

The Keys/East Florida rebuilding plan and new regulations are pending approval by the U.S. Secretary of Commerce and are expected to go into effect in early 2017.

Florida Recreational Hogfish Harvest by Area, 2011-2015

- Consistent rules between state and federal waters will play an important role in rebuilding the Keys/East Florida stock



- Keys/East Florida Stock - Federal Waters
- Keys/East Florida Stock - State Waters
- Gulf Stock - Federal Waters
- Gulf Stock - State Waters



Federal consistency is important to the rebuilding of the Keys/East Florida stock because nearly 50% of all Florida recreational harvest occurs in state waters of the Keys and Atlantic. On average, from 2011-2015, over 68% of landings from the Keys/East Florida stock came from state waters.

In the Gulf, excluding the Keys, recreational harvesters take more hogfish from federal waters than state waters. Eighteen percent of statewide recreational harvest occurs in Gulf federal waters, compared to 12% in Gulf state waters.

Gulf Council Action – Gulf Stock



- Reminder: not overfished and not undergoing overfishing
- Increased minimum size limit from 12 to 14 inches for all harvesters
 - Requested by fishermen
 - Intended to allow hogfish additional spawning opportunities

Pending approval by U.S. Secretary of Commerce



Unlike the Keys/East Florida stock, the Gulf stock of hogfish is neither overfished nor undergoing overfishing. However, based upon stakeholder requests, the Gulf Council decided to modify their hogfish regulations to increase the minimum size limit from 12 to 14 inches for all harvesters. Fishermen requested this change because they believe a 12-inch minimum size limit is too small. The 14-inch minimum size limit will allow hogfish additional spawning opportunities prior to harvest and address stakeholder concerns.

This rule change is also pending approval by the U.S. Secretary of Commerce and is expected to go into effect in early 2017.

Summary of Current and Pending Regulations

	Current state and federal rules	Pending and current federal rules – Keys/E. FL	Pending and current federal rules - Gulf
Recreational and commercial minimum size limit	12 inches	<u>16 inches</u>	<u>14 inches</u>
Commercial trip limit	Unlimited	<u>25 pounds per trip</u>	Unlimited
Recreational bag limit	5 fish/person	<u>1 fish/person</u>	5 fish/person
Recreational fishing season	Open year-round	<u>May 1 – Oct. 31</u>	Open year-round



This table provides a summary of current and pending hogfish regulations for state and federal waters. Pending regulations are indicated in red, bold, underlined text.

At present, state and federal hogfish regulations are consistent in the Gulf and the Atlantic. The recreational and commercial minimum size limit is 12 inches fork length (FL). There are no commercial trip limits. Recreational harvesters are limited to 5 fish per person and may fish year-round.

Pending federal rules for the Keys/East Florida stock would increase the minimum size limit to 16 inches FL, create a 25-pound commercial trip limit, reduce the recreational bag limit to one fish per person, and establish a recreational season from May 1 to Oct. 31.

Pending federal rules for the Gulf stock would increase the minimum size limit to 14 inches FL for all harvesters.

Again, the pending rule changes, including the new management boundary, are under review by the U.S. Secretary of Commerce. If approved, they will likely become effective in early 2017. Today, the Commission will consider state regulations that are consistent with the pending federal rules. The following slides outline several points to consider as the Commission decides whether to manage hogfish in state waters consistent with federal regulations.

Considerations for Federal Consistency

Keys/East Florida:

- Rebuilding not likely to be accomplished without state consistency
- Big changes needed to meet 10-year rebuilding timeline
 - Many recreational harvesters agree changes are needed; however, they are concerned that the proposed federal changes are too restrictive
- Benefits of May 1 – Oct. 31 Atlantic recreational season timing
 - Creates a predictable season that also overlaps with popular dive season
 - Harvest closed during spawning months
- A lower recreational bag limit allows for a longer season

Keys/East Florida and Gulf:

- Increase in minimum size limits intended to promote spawning
 - Half of females have transitioned to males at 16 inches



The Keys/East Florida stock will likely not be rebuilt without state consistency because most hogfish harvested from that stock are taken in state waters. To meet the 10-year rebuilding timeline and keep harvest within the new quotas, big changes in federal and state regulations are needed. Many recreational harvesters have advocated for changes to hogfish regulations; however, there is concern from recreational and commercial fishermen that the proposed federal regulations are too strict. The South Atlantic Council considered the public's concerns when they approved regulations for the Keys/East Florida stock.

The South Atlantic Council chose a May 1 to Oct. 31 recreational season to optimize the timing of harvest opportunities while promoting stock rebuilding. First, setting a predictable season allows divers to plan their hogfish spearfishing trips without having to worry about the fishery closing early in federal waters due to a quota closure. These months were chosen because they overlap with a popular diving season, when the water is warm and divers target multiple species. Second, recreational harvest would be prohibited during the months when hogfish are spawning. This reduces the likelihood of males (the largest members of each harem) being removed and spawning being disrupted.

The South Atlantic Council selected the 1-fish recreational bag limit because it allows for a longer recreational season. If a higher bag limit was chosen, the recreational season would have to be shortened to prevent the likelihood of the recreational fishery from exceeding its quota. There is a direct tradeoff between the recreational bag limit and season length.

Both the Gulf and South Atlantic councils approved increases to their hogfish minimum size limits to promote spawning. The Gulf Council chose a 14-inch minimum size limit to allow individual hogfish to spawn more times before harvest. The South Atlantic Council chose a 16-inch minimum size limit because, in a healthy stock, half of all females have transitioned to male by the time they reach 16 inches in length.

For the Keys/East Florida stock, the combination of a May – October season, a one-fish bag limit, and 16-inch minimum size limit is expected to prevent an early quota closure.

Considerations for Commercial Harvest



- Commercial harvesters are required to follow federal rules in state waters
- Atlantic commercial trip limit expected to allow for a 196-day season
 - Fishing year begins Jan. 1
- Proposed hogfish management boundary does not affect federal permit requirements
 - Gulf federal permit still required in all Gulf waters
 - Atlantic federal permit still required in all Atlantic waters



Under FWC rules and the conditions of the federal Gulf and Atlantic commercial permits, commercial hogfish harvesters must follow federal rules in state waters, unless state rules are more restrictive.

The federal commercial quota for the Keys/East Florida stock of hogfish will be 3,510 pounds in 2017. Without a commercial trip limit, this quota could be caught in less than four months. By establishing a 25-pound commercial trip limit, along with a 16-inch minimum size limit, the commercial harvest season is to last at least 6.5 months (196 days) in 2017. As the quota increases in future years of the rebuilding plan, the season could stay open longer. (Note: the commercial fishing year begins Jan. 1.)

Also, the councils' proposed management boundary for hogfish does not affect federal permit requirements. Commercial harvesters will still be required to possess a Gulf Reef Fish commercial permit when fishing in Gulf waters and a South Atlantic Snapper-Grouper commercial permit when fishing in Atlantic waters. The boundary for permits is the Gulf/Atlantic boundary marked by the thick black line on the map.

Proposed Rules – Federal Consistency

68B-14.0035 Size Limits: Amberjacks, Black Sea Bass, Gray Triggerfish, Grouper, Hogfish, Red Porgy, Snapper

- Increase the Atlantic* minimum size limit to 16 inches fork length (FL) and the Gulf minimum size limit to 14 inches FL

68B-14.00355 Size Limits for Importation and Sale

- Set minimum size limit for statewide importation and sale at 14 inches FL

68B-14-0036 Recreational Bag Limits: Snapper, Grouper, Hogfish, Black Sea Bass, Red Porgy, Amberjacks, Tilefish, Exception, Wholesale/Retail Purchase Exemption

- Set recreational bag limit of 1 fish in the Atlantic*

68B-14.0042 Recreational Hogfish Season

- Set May 1 – Oct. 31 recreational harvest season in the Atlantic*

*Management boundary for Gulf and Atlantic hogfish regulations would be 25°09' North Latitude in Gulf state waters

These changes are consistent with pending federal rules



The proposed changes to state rules would be consistent with pending changes to federal hogfish rules.

68B-14.0035 Florida Administrative Code (FAC), would be modified to increase the hogfish minimum size limit to 16 inches FL in state waters of the Atlantic and state waters south of 25°09' North Latitude in the Gulf, and increase the hogfish minimum size limit to 14 inches FL in state waters of the Gulf north of 25°09' North Latitude.

68B-14.00355, FAC, would be modified to increase the minimum size limit for statewide importation and sale of hogfish to 14 inches FL.

68B-14.0036, FAC, would be modified to decrease the recreational bag limit to 1 fish per person in state waters of the Atlantic and state waters south of 25°09' North Latitude in the Gulf.

68B-14.0042, FAC, would be modified to set the recreational hogfish season from May 1 through Oct. 31 in state waters of the Atlantic and state waters south of 25°09' North Latitude in the Gulf.

These changes are consistent with Gulf and Atlantic federal rules recently approved by the Gulf and South Atlantic councils and pending approval by the U.S. Secretary of Commerce. If approved by the Commission, these changes would be made through a federal consistency action.

Staff Recommendation



Approve the proposed rules to implement federal consistency

- Set the state management boundary for Gulf and Atlantic hogfish regulations at 25° 09' North Latitude in the Gulf of Mexico
- Increase Gulf minimum size limit to 14 inches FL and Atlantic minimum size limit to 16 inches FL
- Set minimum size limit for importation and sale at 14 inches FL
- Set recreational bag limit of 1 fish in the Atlantic
- Set May 1 - Oct. 31 recreational harvest season in the Atlantic

If approved by the Commission, the rule will be noticed and filed without further hearing as allowed under the adopting federal standards provision of section 120.54(6) Florida Statutes



Staff recommends approving the proposed rules to implement federal consistency for hogfish regulations between state and adjacent federal waters. This includes:

- Setting a management boundary for Gulf and Atlantic hogfish regulations at 25° 09' North Latitude in the Gulf of Mexico;
- Increasing the Gulf hogfish minimum size limit to 14 inches FL and the Atlantic minimum size limit to 16 inches FL;
- Increasing the statewide minimum size limit for hogfish import and sale to 14 inches FL;
- Decreasing the Atlantic recreational hogfish bag limit to one fish per person; and
- Setting the Atlantic recreational hogfish season to be May 1 - Oct. 31.

Staff recommends approving these rules to end overfishing and promote rebuilding of the Keys/East Florida hogfish stock, and to address stakeholder requests in the Gulf.

The proposed rules for hogfish would only be filed for state waters if the federal rule changes are approved by the U.S. Secretary of Commerce and implemented by NOAA Fisheries.

If the Commission approves the proposed rule change, the decision would be final and the rules will be filed without further hearing as allowed under the adopting of federal standards provision of section 120.54(6), Florida Statutes.

Staff have evaluated the rules under the standards of 68-1.004, FAC, and found them to be in compliance.