



## Red Drum Stock Assessment

Review and Discussion

February 10, 2016

**Florida Fish and Wildlife Conservation Commission**

Division of Marine Fisheries Management

Version 1

This is a review and discussion of the 2015 Florida Fish and Wildlife Conservation Commission (FWC) stock assessment for red drum (*Sciaenops ocellatus*) conducted by the Fish and Wildlife Research Institute (FWRI).

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## Red Drum

- One of Florida's greatest management success stories
- Among Florida's most popular recreational fisheries
- Common in the Gulf of Mexico and along the Atlantic coast
- Targeted in shallow, nearshore waters



Red drum is one of Florida's greatest management success stories. By the 1980s, overfishing had led to Florida's red drum populations becoming severely depleted. However, strict regulations implemented under the Marine Fisheries Commission, followed by the FWC led to a substantial rebound of this species. At the time of the most recent stock assessment update (2011), red drum populations were meeting or exceeding FWC management goals throughout most of the state.

Red drum is one of Florida's most popular recreational fisheries and is targeted for both food and sport. Red drum inhabit nearshore and offshore waters throughout the Gulf of Mexico and along the Atlantic coast from Massachusetts to Key West. While adult red drum are typically found in offshore waters, those of legal harvestable size occur in estuaries. Therefore, anglers generally target red drum in shallow, nearshore waters.

## Current State Regulations

- Commercial harvest prohibited
- Slot size limit: 18 to 27 inches total length
- Regional bag limits
  - Southeast and Southwest: 1 per person per day
  - Northeast and Northwest: 2 per person per day
- Vessel limit: 8
- Off-the-water possession limit: 6 per person



*Harvest of red drum from federal waters is prohibited*

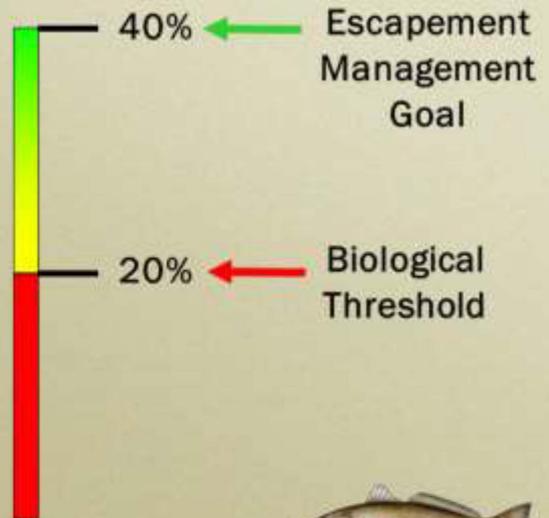
Commercial harvest and sale of native red drum has been prohibited in state waters since 1989.

FWC has divided the management of red drum into four management zones (as shown with the map on the slide). In all zones, there is a slot size limit of 18 to 27 inches total length. The bag limit in the Southeast and Southwest zones is one red drum per person per day while in the Northeast and Northwest zones the limit is two red drum per person per day. Statewide, there is a vessel limit of eight red drum. There is also an off-the-water possession limit of six red drum per person.

Harvest of red drum is prohibited from all federal waters of the Gulf of Mexico and Atlantic Ocean.

## 2015 Stock Assessment

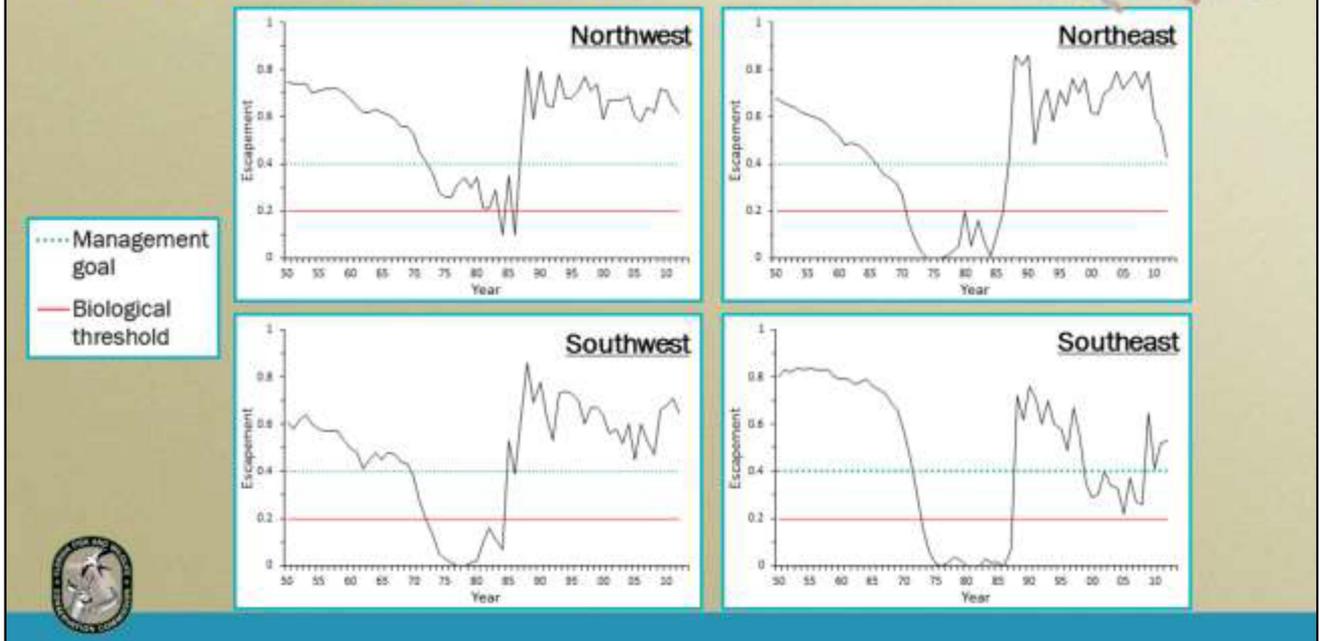
- Includes data through 2013
- Evaluates status of the stock relative to the current management goal: **40% escapement**
- Escapement: the percentage of fish surviving through age four compared to how many would have survived if there was no fishery



The 2015 stock assessment includes data through 2013 and evaluates the status of the red drum stock in each of the four management zones based on the Commission's current management goal for red drum of 40% escapement. The escapement rate is the percentage of fish surviving through age four compared to the number that would have survived if there was no fishery. Fish that reach this age are said to escape the fishery because they exceed the maximum harvestable size and are no longer subject to harvest. The Commission's management goal has been 40% escapement since 2007, when it was raised from 30% escapement.

The graphic on this slide shows how the management goal of 40% escapement compares to the biological threshold, which is estimated to occur at 20% escapement. The biological threshold indicates the population level at which the sustainability of the stock is expected to be threatened. While the population should be sustainable at any rate of escapement above 20%, the Commission has chosen to manage red drum for abundance due to its social and economic importance as one of the state's most popular sport fisheries.

## 2015 Assessment Results



These graphs show the escapement rates predicted by the stock assessment for each of the Commission's four management zones through 2013. The green dotted line at 0.4 represents the Commission's management goal of 40% escapement and the red solid line at 0.2 represents the biological threshold.

Before being managed aggressively in the mid-1980s, escapement rates were well below the then escapement goal of 30%. However, these rates increased rapidly in response to strict regulations placed on red drum in the mid- to late-1980s. Although escapement rate varies among management zones, it has been consistently exceeding the management goal in the Northwest, Northeast, and Southwest zones since the late 1980s. The Southeast management zone has been generally more variable than the other zones and did not consistently meet the Commission's management goal from 2000 to 2008. However, according to the 2015 assessment, the Southeast zone has also exceeded the management goal every year since 2008. Averaged over the last three years of the assessment, escapement rates were 66%, 68%, 58%, and 48% in the Northwest, Southwest, Northeast, and Southeast zones respectively.

## Summary: Assessment Results

- Florida's red drum stock is healthy
- Results indicate all management zones are:
  - Not overfished
  - Not experiencing overfishing
  - Exceeding the 40% escapement management goal
- Northeast: recent downward trend in escapement
- Southeast: generally lower escapement rates than other regions
  - Includes Indian River Lagoon



Based on the results of the 2015 Florida red drum stock assessment, Florida's red drum stock is healthy. Biomass estimates and fishing mortality estimates indicate that red drum are not overfished and overfishing is not occurring in any of the state's management zones. Additionally, all management zones are currently exceeding the Commission's management goal of 40% escapement.

While the results of the 2015 stock assessment are very positive, there are some indications that continued close monitoring of this fishery is appropriate. There was a marked decline in the escapement rate in the Northeast zone over the last three years of the assessment, with escapement in 2013 still exceeding, but approaching, the 40% management goal. Escapement in the Southeast zone continues to be variable, with some years estimated to barely exceed the management goal. The Southeast zone includes the Indian River Lagoon, an area that is rebounding from severe habitat degradation. The status of the lagoon, coupled with high fishing pressure, may have contributed to the lower escapement rates seen in that zone.

Overall, Florida's red drum populations are healthy and exceeding the Commission's already conservative management goal statewide. While the Northeast and Southeast zones are not experiencing levels of escapement as high as those seen on the west coast, the stock is not in any jeopardy of becoming overfished. With a healthy stock, the Commission continues to have the luxury of managing Florida's red drum populations for enhanced angler satisfaction, without having to worry about impacting sustainability.

## Stakeholder Feedback

- Stakeholders from various parts of the state have expressed concerns about red drum
  - Declining populations
  - Smaller fish
  - Shift in participation to inshore fisheries from offshore fisheries
  - Increased number of red drum tournaments



Because the Commission has historically expressed an interest in managing red drum for improved angler satisfaction, it is especially important to be mindful of stakeholder feedback on the status of this fishery.

Staff have recently heard concerns about the status of red drum from stakeholders in various locations around the state. Concerns include perceived declines in local populations, perceived declines in the average size of red drum and difficulty catching fish in the upper portion of the slot limit, concerns that there has been a shift to participation in inshore fisheries due to closures of offshore species, and concerns over an increase in fishing pressure associated with an increasing number of red drum tournaments in some areas of the state.

## Staff Recommendation

### Factors to Consider

- Assessment results indicate consideration of a 1-fish bag limit may be warranted in the NE zone
- More information about angler preferences is needed for the panhandle (NW zone)

Staff recommend gathering additional public input regarding stakeholder observations, concerns, and desires for this fishery



*If approved and directed, staff will gather additional feedback and return with a management recommendation in June*



Based on the results of the 2015 Florida red drum stock assessment, the Commission may want to consider lowering the bag limit in the Northeast management zone to 1 fish per person per day. Staff would also like to gather additional information about angler preferences for this fishery in the panhandle and the rest of the Northwest management zone.

Therefore, staff recommend gathering additional public input regarding stakeholder observations and concerns related to the red drum fishery, as well as how they would like to see this fishery managed before making any management recommendations.

Staff would also like to take this opportunity to try some new and potentially innovative ways to gather feedback from private anglers. In addition to on-line and directed surveys, staff would attend fishing club meetings and engage other groups of private anglers, particularly in the northern portions of the state. This would be done in conjunction with ongoing efforts to communicate with guide organizations and recreational fishing advocacy groups in order to get input from as broad of a cross-section of the recreational angling community as possible.

If approved and directed, staff will distribute the results of the assessment, gather additional public feedback from red drum anglers, and return to the Commission with a management recommendation in June.

The following slides are considered backup material and are not anticipated to be part of the actual presentation to the Commission



## Red Drum Biology

- Common in the Gulf of Mexico and along the Atlantic coast
- Can grow to 45 inches and 50+ pounds
- Eat crabs, shrimp, and fish
- Reach maturity at:
  - Males: 1-3 years
  - Females: 3-6 years
- Typically spawn near passes and in the late summer and fall
  - Spawn inshore in the Mosquito Lagoon and northern Indian River Lagoon



Red drum inhabit nearshore and offshore waters throughout the Gulf of Mexico and along the Atlantic coast from Massachusetts to Key West. Juvenile red drum inhabit rivers, bays, canals, tidal creeks, and passes in estuaries for up to four years, after which they move offshore or to open ocean waters as adults. Red drum in Florida can grow to 45 inches and over 50 pounds. The oldest recorded red drum in Florida was aged at 40 years. Common prey items for red drum are crab, shrimp, and fish.

Males mature at 1-3 years and females mature at 3-6 years. They spawn in late summer and fall, triggered by cooling water temperatures and decreasing daylight hours. Spawning season lasts from August to mid-November, peaking in September in the Gulf, and from July through December, peaking in September or October, on the Atlantic coast. Most red drum spawn near passes and inlets, but those that occur in the Everglades area may travel offshore, and those in Brevard County's Mosquito and northern Indian River lagoons spawn within the estuary.