

## 2015 Maryland FMP Report (June 2016)

### Section 15. Red Drum (*Sciaenops ocellatus*)

A red drum benchmark stock assessment was conducted in 2015, and the population models for the northern and southern regions were deemed appropriate for management use by peer-review in early 2016. The Atlantic States Marine Fisheries Commission's (ASMFC) South Atlantic State/Federal Fisheries Management Board (Board) had some concerns with the stock assessment due to data limitations and life history characteristics of red drum. These concerns will be addressed by the Red Drum Technical Committee so the Board can determine if the stock assessment will be used to advise management of the species.

#### Fishery Management Plans (FMPs)

The Atlantic States Marine Fisheries Commission (ASMFC) adopted a Fishery Management Plan (FMP) in 1984 to protect the red drum spawning stock. The ASMFC adopted Amendment 1 (1991) to the FMP with the goal to attain optimum yield from the fishery over time. Amendment 2 was adopted in 2002 to require states to comply with recreational limits to meet the target fishing mortality. Addendum I (2013) identifies key habitats and habitats of concern for red drum. The coastal FMP management unit is currently defined as states from Florida to New Jersey.

The Chesapeake Bay Red Drum Fishery Management Plan (CBRD FMP) was adopted in 1993 to address overfishing and to follow the ASMFC guidelines. Management measures since 2000 have resulted in reduced fishing mortality. Stock assessment needs, habitat and water quality concerns were also addressed.

#### Stock Status

Status of the red drum stock is derived from the Atlantic coast stock assessment. In the 1980s and 1990s the coastal red drum stock was overfished and management measures were implemented to reduce fishing mortality (F) and rebuild the stock. Two management units were defined: the northern stock (NC to NJ) and the southern stock (FL to SC). The 2009 ASMFC stock assessment found that the stocks were relatively stable, as far as could be determined with data limitations, and that overfishing was likely not occurring.<sup>1</sup> The threshold and target are based on an escapement rate that provide a 30% and 40% static spawning potential ratio (sSPR), respectively. The sSPR is based on female biomass and egg production. An sSPR below 30% indicates that overfishing is occurring. The average sSPR has exceeded the overfishing threshold since 1994 with one exception in 2002 and the northern stock has been above the target since 1996.<sup>2</sup>

In preparation for the 2015 benchmark stock assessment, the Board approved the terms of reference and began coastwide data compilation in 2014. The benchmark

stock assessment was reviewed in 2015 by the Southeast Data, Assessment, and Review (SEDAR). This assessment used a new model to assess coastal red drum stocks. In order to improve upon the previous stock assessment's statistical-catch-at-age (SCA) model (2009) which was hampered by data limitations, the stock assessment subcommittee used the Stock Synthesis 3 model (SS3). At the time of the SEDAR review, the SS3 base run models for the northern and southern regions were still under construction. Therefore, the review focused on how to modify, stabilize, and improve the SS3 models for management use.<sup>3</sup> Following the SEDAR review the Stock Assessment Subcommittee implemented the suggestions of the SEDAR review panel and were successful in producing stable models, completing sensitivity analyses, and exploring retrospective patterns. These final models were seen by a subset of the SEDAR review panel early in 2016, and were deemed appropriate for management use.<sup>4</sup>

There is no formal red drum stock assessment for Chesapeake Bay. In most years, red drum are not frequent visitors to Maryland's portion of the Chesapeake Bay due to lower salinities. More red drum are reported from Virginia waters, where salinities are higher, than are reported in Maryland. Schools of red drum below the minimum and over the maximum size limit may be seen in years of low freshwater flow such as 2012, a year of unusually high catches.

#### Current Management Measures

Red drum are managed through size limits and creel limits in compliance with all current ASMFC FMP requirements. All harvests occur in state waters. Maryland allows recreational fishermen to take 1 fish per day between 18" and 27". Charter boat logs show that anglers in Maryland release most of the red drum they catch.<sup>2</sup> Commercial fishermen in Maryland are allowed 5 fish per day with a slot limit of 18"-25". As of January 1, 2015 Virginia allows a slot limit of 18"-26" and a possession limit of 3 fish per day for recreational fishermen and a slot limit of 18"-25" and a creel limit of 5 fish per day for commercial fishermen. The Potomac River Fisheries Commission (PRFC) has a slot limit of 18"-25" and a possession limit of 5 fish per day for recreational and commercial fishermen. There are no closed seasons for the recreational or commercial fisheries.

#### The Fisheries

The commercial harvest from the Chesapeake Bay has averaged 8,030 lbs. since 2000 (Figure 1). It makes up a rather small proportion (10-20%) of the total commercial catch from the Atlantic coast. The majority of the commercial catch from the Atlantic coast is from North Carolina. Three southern states have given red drum game fish status and prohibit commercial harvest (FL, GA, & SC). Coastal commercial landings have declined since the 1980s.<sup>2</sup>

Red drum are one of the most highly sought recreational species along the southern Atlantic coast. In Maryland's portion of the Chesapeake Bay, red drum are only seasonally available for a relatively short period in late summer to early fall. Consequently, the estimates for recreational total catch from Maryland are low. The total recreational estimates from Virginia can be much higher especially when the estimated number includes red drum that are caught and released because they are below the minimum size limit (Figure 2).

Figure 1. Commercial red drum landings reported to NMFS by Maryland and Virginia: 1982-2014.<sup>6</sup> Maryland's 2015 commercial red drum landings are preliminary<sup>7</sup> and Virginia's 2015 commercial red drum landings are not yet available.

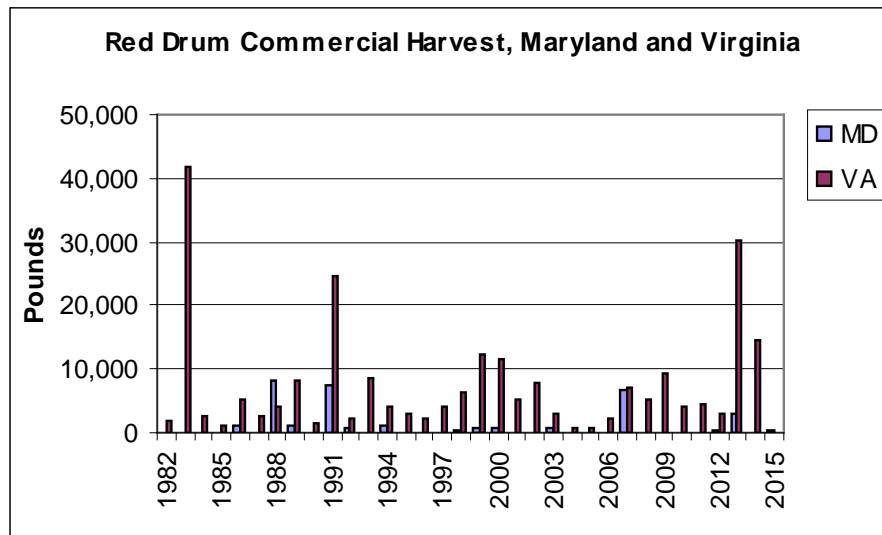
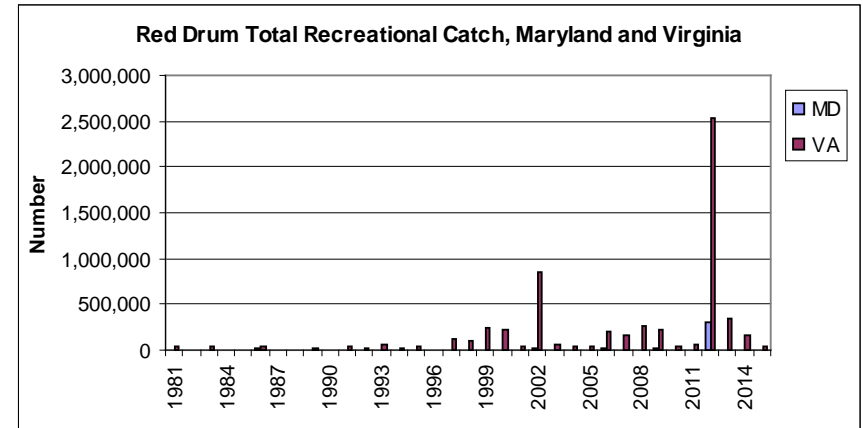


Figure 2. Total recreational red drum MRIP catch estimate for Maryland and Virginia, all modes combined, 1982-2015.<sup>8</sup> (Includes fish caught and released)



### Issues/Concerns

Red drum have been identified by ASMFC as a priority species in need of research. Coastal states are developing a cooperative plan to collect more age/length data to improve stock assessment modeling results particularly for the adult portion of the population. Maryland will continue to monitor commercial pound nets and fish houses and measure red drum when they are encountered.

The Maryland Sport Fisheries Advisory Commission asked the Maryland DNR in 2013 to consider allowing recreational fishermen to take one large red drum. Since red drum are managed by the ASMFC, allowing any harvest of fish over 27 inches would require an amendment to the FMP. Such an amendment is unlikely in the absence of supporting data and increased monitoring.

Submerged aquatic vegetation (SAV) beds are important red drum habitat. Efforts by EPA and state programs to achieve SAV restoration and water clarity goals will continue. In 2013, ASMFC approved Addendum I to Amendment 2 to the Red Drum Fishery Management Plan.<sup>5</sup> Addendum I revised the habitat section to include the most current science on red drum habitat requirements for spawning, egg and larvae, juvenile, subadult, and adult life history stages. Habitat identification and description, habitats of concern, and potential threats to recovery and sustainability were also defined.

## References:

- <sup>1</sup> SEDAR. 2009. SEDAR 18: Stock Assessment Report Atlantic Red Drum. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://sedarweb.org/sedar-18>
- <sup>2</sup> 2015 Review of the Atlantic States Marine Fisheries Commission Fishery Management Plan for Red Drum (*Sciaenops ocellatus*) 2014 Fishing Year. 22p.
- <sup>3</sup> SEDAR. 2015. SEDAR 44: Stock Assessment Report Atlantic Red Drum. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://sedarweb.org/sedar-44>
- <sup>4</sup> SEDAR. 2015. Addendum II to the SEDAR 44 Red Drum Stock Assessment Report. Southeast Data, Assessment, and Review. North Charleston, South Carolina.
- <sup>5</sup> Addendum I to Amendment 2 to the red drum fishery management plan: *Habitat Needs & Concerns*. Approved August, 2013. 24p
- <sup>6</sup> Personal communication from the National Marine Fisheries Service, Fisheries Statistics Division. June 25, 2015. <http://www.st.nmfs.noaa.gov/commercial-fisheries/index>
- <sup>7</sup> Lipkey, Genine K. 2015. Maryland Red Drum (*Sciaenops ocellatus*) Compliance Report to the Atlantic States Marine Fisheries Commission – 2014. Maryland Department of Natural Resources, Fisheries Service, June 2015. 6p.
- <sup>8</sup> Personal communication from the National Marine Fisheries Service, Fisheries Statistics Division. June 25, 2015. <http://www.st.nmfs.noaa.gov/st1/recreational/index.html>
- <sup>9</sup> Chesapeake Bay Program. Submerged Aquatic Vegetation (SAV) Outcome Justification. [http://www.chesapeakebay.net/publications/title/submerged\\_aquatic\\_vegetation\\_sav\\_outcome\\_justification](http://www.chesapeakebay.net/publications/title/submerged_aquatic_vegetation_sav_outcome_justification)
- <sup>10</sup> SAV in Chesapeake Bay and Coastal Bays. VIMS William & Mary Virginia Institute of Marine Sciences. [http://web.vims.edu/bio/sav/sav12/exec\\_summary.html](http://web.vims.edu/bio/sav/sav12/exec_summary.html)

<b>1993 Chesapeake Bay and Atlantic Coast Red Drum Management Plan Implementation Table</b> (updated 6/16)			
<b>Section</b>	<b>Action</b>	<b>Date</b>	<b>Comments</b>
1. Overfishing	1.1.1 Virginia will continue to enforce a 5 fish creel limit and an 18 inch minimum size limit with one fish over 27in in the recreational fishery.	1992 Modified in 2003       Modified in 2015 Continue	In compliance with coastal recommendations. VA has adopted a slot limit and now allows harvest of 18-26" red drum. A new possession limit of 3 fish has been adopted for both recreational and commercial harvest. The 2009 peer reviewed ASMFC stock assessment found the resource to be relatively stable with overfishing not occurring. Next coastal stock assessment is scheduled for 2015.  <b>Effective January 1, 2015, VA will allow recreational fishermen 3 fish per day between 18"-26" and commercial fishermen 5 fish per day between 18"-25".</b>
	1.1.2 Maryland and the PRFC will implement a 5 fish creel limit and an 18 in minimum size limit with one fish over 27in in the recreational fishery	1994 Modified in 2003 Continue	In compliance with coastal recommendations. MD has a recreational size limit for red drum of 18-27" and a commercial size limit of 18-25". The possession limit is 1 fish/day for the recreational fishery and 5 fish/day for the commercial fishery. PRFC has a size limit of 18-25" and a possession limit of 5 fish for both recreational and commercial harvest.
	1.2a Jurisdictions will investigate the potential for using bycatch reduction devices in nonselective fisheries	1992 Continue	The bycatch of immature red drum has not been a problem in Chesapeake Bay fisheries because small fish are infrequently encountered. Bycatch reduction devices that are currently in place should increase the escapement of juvenile red drum.
	1.2b Virginia and Maryland will work with the South Atlantic Fishery Management Council (SAFMC) and ASMFC to develop and require more efficient gear to reduce bycatch and/or discards.	1992 Continue	MD and VA appointed representatives to the ASMFC/SAFMC Red Drum Advisory Panel. MD and VA have representatives on the ASMFC technical committee. MD does not currently have a representative on the Red Drum Advisory Panel.

<b>1993 Chesapeake Bay and Atlantic Coast Red Drum Management Plan Implementation Table</b> (updated 6/16)			
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2. Stock Assessment and Research Needs	2.1 Jurisdictions will support fecundity research and tagging studies to determine movements of juvenile red drum and develop juvenile indices. Maryland and Virginia will continue the Baywide trawl survey of estuarine finfish species and crabs.	1993 Continue	The VA red drum tagging program is ongoing. The tagging program includes a fishery independent study and a volunteer recreational study. Tag recapture data indicates a southward, late fall migration of juvenile red drum out of the Bay and along the Virginia coast. Future tag returns should provide information about the movements of these fish upon reaching sexual maturity. The Chesapeake Bay Multispecies Monitoring and Assessment Program (ChesMMAAP) continues but the collection of red drum is not sufficient to guide any stock assessment. The Maryland Shoal Water (blue crab) Trawl Survey continues (data for fish and crabs). ASMFC has recommended that all states implement a tagging program for red drum. ASMFC has continued to facilitate standardized ageing protocols and consistency among laboratories.
	2.2 VMRC Stock Assessment Program will continue to collect biological data from commercial catches of red drum	1993 Ongoing	There is little fishery dependent information on larger, reproductive red drum and limited fishery-independent information (ASMFC). The large adults are primarily found offshore where fishing for red drum is prohibited.
	2.3a Jurisdictions will continue collecting commercial fisheries statistics.	Continue	Maryland's Chesapeake Bay red drum harvest remains insignificant, although the 2013 harvest was the largest since 2007. Virginia's commercial fishery reported 30,150 pounds of red drum harvested in 2013, the largest since 1983. <b>Preliminary commercial landings for 2015 are 298 lbs. (MD) <sup>7</sup></b>
	2.3b Virginia will implement a limited and/or delayed entry program and a mandatory reporting system for commercial licenses.	1993 Continue	Implemented in January 1993.

1993 Chesapeake Bay and Atlantic Coast Red Drum Management Plan Implementation Table (updated 6/16)			
Section	Action	Date	Comments
	2.3c Virginia and Maryland will continue to supplement the Marine Recreational Statistics Program	Continue	<p>In 2014, VA anglers received citations for 925 red drum over 46" in length that were caught and released which represented 18% of all tournament entries.</p> <p><b>MD anglers submitted 18 red drum in 2014 and 9 red drum in 2015 to the catch and release tournament award citation program. MD charter boat logs reported 16 red drum caught in 2015, 2 of which were harvested.</b></p> <p>The Marine Recreational Information Program (MRIP) has replaced MRFSS with refined estimates of recreational harvest and total catch. <b>Proportional standard errors (PSE) have dropped below 50 in the past four years for VA, indicating that recreational red drum harvest estimates were more precise in VA's waters, the same is not true for MD.</b></p>
	2.3d Maryland will continue a sampling program using pound nets and trawls.	Continue	<p>Maryland conducts fishery dependent sampling from pound nets in the Chesapeake Bay. Twenty-one red drum were sampled in 2008 (mean 361mm TL, range 237-541mm TL). None were collected in 2009 and 2010 and only two were collected and released in 2011.<sup>8</sup> In 2012, biologists sampled 458 red drum from pound nets; of this total, 455 were under the 18" minimum TL and 3 were over the 25" maximum TL size limit. <b>No red drum were encountered by this survey in 2015.</b></p>

1993 Chesapeake Bay and Atlantic Coast Red Drum Management Plan Implementation Table (updated 6/16)			
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3. Habitat Issues	3.1 Jurisdictions will continue to set specific objectives for water quality goals and review management programs established under the Chesapeake 2000 agreement	Continue	<p>New water quality and SAV goals were adopted by the Chesapeake Bay Program signatory states in 2014 as part of the new Chesapeake Watershed Agreement, for more information a summary of the agreement can be viewed at the following link <a href="http://www.chesapeakebay.net/documents/ChesapeakeBayWatershedAgreementFINAL.pdf">http://www.chesapeakebay.net/documents/ChesapeakeBayWatershedAgreementFINAL.pdf</a></p> <p>SAV beds are important red drum habitat. A 21% overall decrease in SAV acreage was calculated in 2012 from areas mapped in both 2011 and 2012. The largest SAV declines were noted for upper and middle Chesapeake Bay. Among Chesapeake Bay sites, only the Potomac River and middle James River locations showed any increases from 2011 to 2012. <b>In 2015, there were an estimated 91,621 acres of SAVs in the Chesapeake Bay. This estimate surpasses the 2017 restoration target, and puts progress ahead of schedule to meet the 185,000 acre SAV restoration goal. The next target is 130,000 acres by 2025.<sup>9</sup></b></p> <p>The Delmarva Peninsula Coastal Bays (Assawoman, Isle of Wight, Sinepuxent, Chicoteague and Southern VA Coastal Bays) declined 8% from 13,455 acres in 2011 to 12,326 acres in 2012<sup>10</sup>. The 2013 SAV estimate was 10,872 acres. Due to turbid conditions in 2014 not all regions could be mapped and only partial totals were reported.</p>

Acronyms:

ASMFC = Atlantic States Marine Fisheries Commission

Board = South Atlantic State/Federal Fisheries Management Board

CBRD FMP = Chesapeake Bay Red Drum Fisheries Management Plan

EPA = US Environmental Protection Agency

F = fishing mortality

FMP = Fishery Management Plan

SAV = Submerged Aquatic Vegetation

SAFMC = South Atlantic Fisheries Management Council

SCA = Statistical Catch at Age

SEDAR = Southeast Data Assessment and Review

MRFSS = Marine Recreational Fisheries Statistics Survey  
MRIP = Marine Recreational Information Program  
NMFS = National Marine Fisheries Service  
PFRC = Potomac River Fisheries Commission

SS3 = Stock Synthesis 3  
sSPR = static spawning potential ratio  
VIMS = Virginia Institute of Marine Science  
VMRC = Virginia Marine Resource Commission