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## **Rationale for Size and Catch Limits on Red Drum (*Sciaenops ocellatus*) and Black Drum (*Pogonias cromis*) in Virginia Waters**

Herbert M. Austin  
*Virginia Institute of Marine Science*

Mark E. Chittenden  
*Virginia Institute of Marine Science*

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RATIONALE FOR SIZE AND CATCH LIMITS ON RED DRUM (Sciaenops ocellatus) and  
BLACK DRUM (Pogonias cromis) IN VIRGINIA WATERS

BY

HERBERT M. AUSTIN

MARK E. CHITTENDEN

DEPARTMENT OF FISHERIES SCIENCE  
VIRGINIA INSTITUTE OF MARINE SCIENCE  
GLOUCESTER POINT, VIRGINIA 23062

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The Virginia Capes/Delaware Bay in recent years has been the northern limit of fisheries for both the red (Sciaenops ocellatus) and black drum (Pogonias cromis). Stock identities along the coast have never been resolved, but very large individuals seem to predominate in our waters.

The population center for the East Coast is found in the Carolinas. Juveniles of both species have been collected sporadically in the Chesapeake Bay and along the sea-side of the Eastern Shore. There is a periodic appearance of small red drum (puppy drum) in the Chesapeake Bay. Generally following a good spawn, as there was in the fall of 1981, yearling red drum (4-5") are taken in our juvenile survey the next summer as was the case during 1982. This is followed by a puppy drum fishery the next year or two. Such was the case during the summer of 1983.

The biology of both species is very poorly known other than in general terms. Female red drum seem to reach sexual maturity when they are from two to four years of age and 20-24" (500-700mm); however, there is disagreement about size at maturity and how to age these fish. Black drum seem roughly similar to red drum, although we do not have any data. Nor do we have data as to the size range of either species taken in the commercial or recreational fisheries.

A minimum size limit of 20" to protect the pre-spawners would reduce or eliminate the popular but sporadic puppy drum recreational fishery. It also may not be necessary to protect the stocks at current levels of fishing effort whatever they are. However, in principle, the optimum size to harvest many species is about the size when they mature. That protects against recruitment overfishing<sup>1</sup>, and enhances recreational quality by protecting against growth overfishing<sup>2</sup>. The consequence of a size limit then is more and larger fish because the total mortality is reduced until maturity.

From a biological point of view there are no data to support a contention that a minimum size limit is currently needed or not needed in Virginian waters to protect the stocks. North Carolina protects juvenile puppy drum to about 18 months of age with a 14" size limit (because Texas has one), and trophy fish with a two fish limit for 32" adults. Little yield modeling exists to support these regulations because, in part, model parameters are unknown. There are no regulations/legislation protecting black drum in North Carolina.

"Trophy" or "citation" sized adults of both species over 32", and the occasional puppy drum, support a major recreational fishery in Virginia. The commercial value, in price per pound, of large drum does not compare with the significant expenditure of recreational dollars. As such, a socio-economic bag limit of one or two large red drum (32") per day, and one or two large black drum ( ?") should enhance the recreational fishery, but at the probable expense of the commercial fisherman. An important point in fisheries management, though, is that it is best to use foresight and

simplest to put proper regulations in place before fisheries develop. Once a fishery has become established, it is nearly impossible to implement restrictive regulations. In most instances it is too late; there probably is still time to do so for Virginia's red and black drum fisheries.

Alternative considerations are 1) to make one or both species into restricted recreational fisheries, as Texas has done for red drum and spotted trout (it makes no difference of course to the stock who harvests it), or 2) to establish a "no-kill-release-only" fishery: A "no-kill" fishery would approach a virgin fishery and create an experience similar to fishing in newly-opened Canadian lakes, something like this has not yet been tried in marine waters. Citations could be awarded on the basis of releases, as would tournaments. Some shark tournaments now, for example, award only points for the single biggest fish. Smaller fish, if landed, can cost the contestant points.

<sup>1</sup> Recruitment overfishing is when so many adults are harvested that insufficient young are produced.

<sup>2</sup> Growth overfishing is when fish are captured when too young or too small a size so a cohort does not have time to develop its maximum biomass.