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Status of the Blue Crab Fishery in Chesapeake Bay*

A Report to the Virginia Advisory Legislative Council

The blue crab resource in the Chesapeake Bay area, like other marine fishery resources, is subject to rather wide fluctuations in abundance. These fluctuations, together with other factors such as the numbers of fishermen and units of gear, and the market situation, determine the size of the annual catch. When crabs are scarce, a popular remedy, not supported by scientific evidence, is to protect sponge crabs, in the belief that the hatching of additional millions of eggs will increase the supply.

Crab Research in Virginia

One objective of blue crab research at the Virginia Fisheries Laboratory has been to measure the actual changes in numbers of crabs in the Bay. The Laboratory now has a continuous 25-year series of estimates of the success of blue-crab fishing in Virginia, and these permit the following conclusions:

- (1) In a good season, crabbing may be more than 5 times as successful as in a poor season.
- (2) There has been no continuous downward trend in the success of crabbing in the past 25 years.
- (3) Although the abundance of crabs has been highly irregular in recent years, with very good and very poor years alternating, the average success of crabbing in the winter dredge fishery in the period 1950-55 was the best of any 5-year period on record, 1955-56 was the most successful of the past 25 seasons, and six of the past ten seasons have exceeded the 25-year average. Similarly, 15 years of records of the soft crab fishery at Tangier Island show that crabbing has been more successful in recent years. Six of the past eight years have exceeded the 15-year average.

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Fluctuations in the Catch

The total catch of blue crabs in Chesapeake Bay has fluctuated considerably since the mid-1920's (Figure 1). Virginia has taken an increasing proportion of the catch, but in recent years the advantage has been slight. Virginia's share of the catch has increased from 55 per cent in 1931-40, to 58 per cent in 1941-50, and 59 per cent in 1951-55. The abrupt decline of catches in the past five or six years was not unexpected, and should not be viewed with too much alarm. Its relatively short life and large fluctuations in spawning success make the blue crab a highly unstable resource.

Growth of the Crab Pot Fishery

The pot fishery for crabs is a relatively new one in Chesapeake Bay, having had its beginning in 1935. It has now grown to major importance, taking about 60 per cent by weight of all crabs landed in Virginia and about 45 per cent in Maryland (Figure 2). The fishery appears to have become stabilized in Virginia in the past ten years, with licenses issued to about 700 to 900 regular fishermen who have taken a rather constant proportion of the catch. In Maryland, however, the number of pot licenses issued has doubled since 1947, and the catch taken by pots has increased from 26 to 46 per cent of the total catch. Meanwhile the use of other gears, especially trotlines, has decreased. The limiting factor in the operation of pots is the bait supply, and it appears that in Virginia this has helped to stabilize the fishery. Removal of the limit on the number of pots that each license holder can fish has not increased substantially the numbers of pots in operation. Under the present level of fishing intensity in Virginia, limitation of the pot fishery is not recommended.

Conclusions and Recommendations

Under proper management a fishery resource can be exploited indefinitely because the removal of a portion of the resource increases the chances for survival and growth of the remainder. The female blue crab produces millions of eggs, only a very small fraction of which survive to maturity, and this tremendous reservoir of eggs provides the resilience that allows an intensive fishery to continue without harming the capacity of the resource to reproduce itself.

It is not intended to suggest that overfishing of the blue crab in Chesapeake Bay is impossible. But there is no evidence that the present rates of fishing are harming the resource, and protection of sponge crabs as a conservation measure has no particular merit. It is our opinion that under the present fishery it would be a needless interference with the blue crab industry to further restrict crabbing operations in any way. It is highly probable that additional restrictions would decrease rather than increase the catch.

Virginia Fisheries Laboratory, Gloucester Point, Virginia

14 August 1957

J. L. McHugh, Director