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Virginia Fisheries Laboratory

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VIMS ARCHIVES

Preliminary Report on Crab Investigations

in Va. Waters Conducted by the Va. Fisheries Laboratory

submitted to

Mr. John C. Pearson of the Fish and

Wildlife Service, in charge of

Cooperative Crab Studies in Chesapeake Bay

Sept 1944

Crab studies conducted by the Va. Fisheries Laboratory during 1943 and 1944 have included several lines of investigation that are reported here.

One problem has been to determine the abundance and composition of the commercial crab population of the York and James Rivers as compared with the lower Bay waters on the western shore (Mobjack Bay to Lynnhaven).

Pot crabbers in the area of the mouth of the York and Poquoson flats averaged about 5 barrals per day throughout the season. There was a decline in quality of crabs and in price during late July as a result of an increase in the

number of buckram crabs. Many Seaford crabbers moved to the James River and operated pots from Warwick River to Jamestown Island with good success. Good catches of exceptionally large jimmies (composing over 90% of the catch) were made from the Warwick River to the mouth of the Chickahominy up until late August when buckram crabs showed up in appreciable numbers. These were mostly 1943 stock and were probably of the same year class as these composing the relatively large soft crab fishery of the Tangier region during the summer.

On Hampton Bar, most of the crabs caught after the Middle of May were egg-bearing crabs. They became very scarce early in August and most trotliners went up neighboring creeks and up the James River to catch male crabs and clean females. Later on an increase in the percentage of buckrams lowered the quality of the catch.

Sampling in the upper York River indicated a population of fairly large jimmy crabs comparable to that in the crabbing areas of the upper James.

It seems clear that the use made of the male crab population in the upper James and York rivers during 1944 proved to be of considerable economic importance to the industry. These crabs have been very lightly fished in the past but developments during the 1944 season indicate that many more of them will be caught in the future. This seems to be a good trend from the standpoint of conservation since it means the utilization of many old crabs that would die of old age before another season. Furthermore, ^{there is a possibility that this practice} it will ~~possibly~~ take some of the fishing pressure off of the "sponge" crabs in the Bay.

To determine the extent of the Bay waters most favorable for the hatching of the crab eggs, controlled experiments were carried out in waters of different salt content. It was found that the optimum range was that which ^{occurs} obtains in the region of the Sanctuary. A comparison of the color of the eggs (indicating stages in development) of crabs collected at the mouth of the Rappahannock River south to the Sanctuary indicated a progressively larger proportion of dark sponges, more advanced in development, with approach to the mouth of the Bay where dark sponges predominate.

Studies ^{as to} on where the fungus parasite of the crab eggs occurs in the Bay, on the percentage of crabs infected, and ~~on~~ how the parasite grows, reproduces and spreads have been continued.

Throughout the period April 24-Sept. 15, samples of very small crabs were taken in the York, James and Mobjack areas. Considerable numbers of crabs ranging from one third of an inch to three inches in width, i.e. 1943 stock, were taken during late spring and early summer. No crab less than two-fifths of an inch in width was caught after June 20 until Aug. 15 when 16% of a catch of 185 crabs ^{were} ~~was~~ less than two-fifths of an inch in width, the smallest being one-fifth of an inch. Over 50% were between two-fifths and four-fifths of an inch in width. This evidently represented a new crop of small crabs which had hatched this summer in the lower Bay. From this time on, very small crabs continued to be

caught at this place ^{were} some as small as one seventh of an inch in width, which is the size of the second crab instar.

Small crabs hatched in 1944 were also collected at Va. Beach (Aug. 25), Back Creek near Seaford (Aug. 26) near the head of North River and Gwynn's Island (Aug. 27), Back River near Messick (Aug. 28), Chickahominy River at Shipyard (Aug. 30), Carmine's Island (Sept. 1), Allmonds Wharf, York River (Aug. 19 and Sept. 8) and Mattaponi River at West Point (Sept. 7).

As expected, the crabs caught furthest from their point of origin in the lower Bay were not quite as small as those caught near the mouths of rivers.

The results of quantitative sampling together with random observations and reports of watermen indicate that there was a sizeable population of small crabs of 1943 and 1944 stocks in the Bay during the summer of 1944. ^{Looking comparable} ~~sampling records for past years a definite comparison with the small crab populations of previous years is not possible.~~ However, it would appear that the quantity of crabs in the Bay now may be considerably above average.

The conditions that existed in the lower Bay during the summers of 1943 and 1944 seem to have yielded a net result favorable for an increase in the number of crabs in the winter dredge fishery of 1944-45 and possibly in the soft and hard crab fisheries of the following summer, assuming normal weather conditions prevail.

A definite comparison with the small crab populations of previous years is not possible due to the lack of sampling records.