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BULLETIN
of VIRGINIA INSTITUTE of MARINE SCIENCE

Vol. 3, No. 11

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WEEKLY OYSTER SPATFALL ON SHELLSTRINGS
IN VIRGINIA RIVERS
JUNE 1971

EXPLANATION OF SURVEYS

The Applied Biology Department in the VIMS Division of Applied Marine Science and Ocean Engineering conducts regular surveys of oyster "setting" in Virginia rivers. These surveys are made weekly from the end of May through early October each year. Starting at the mouth of each river and proceeding upstream to the limits of oyster setting, collecting areas are established on public and private beds. Spat counts are obtained from oyster shells strung on wire and suspended from stakes. The number of spat which set in one week on the smooth side of each shell on the string are tabulated.

USE OF INFORMATION

Using the numbers of spat counted on shells during each week of the spawning season, it is possible to estimate the potential of a particular area for receiving a "strike" or set of oysters as well as the weeks when the strike occurs. This information is useful because shells planted just before the period of maximum set have the best chance of getting a good strike.

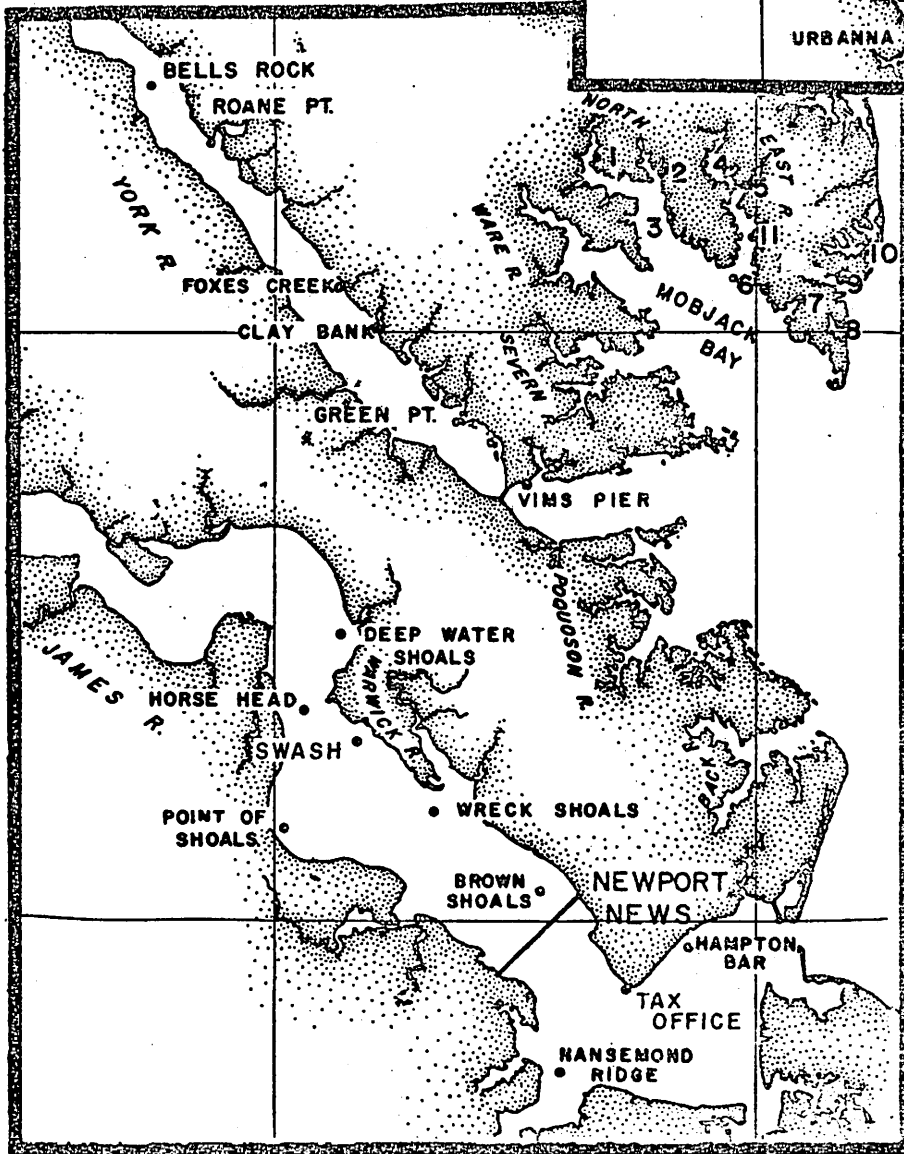
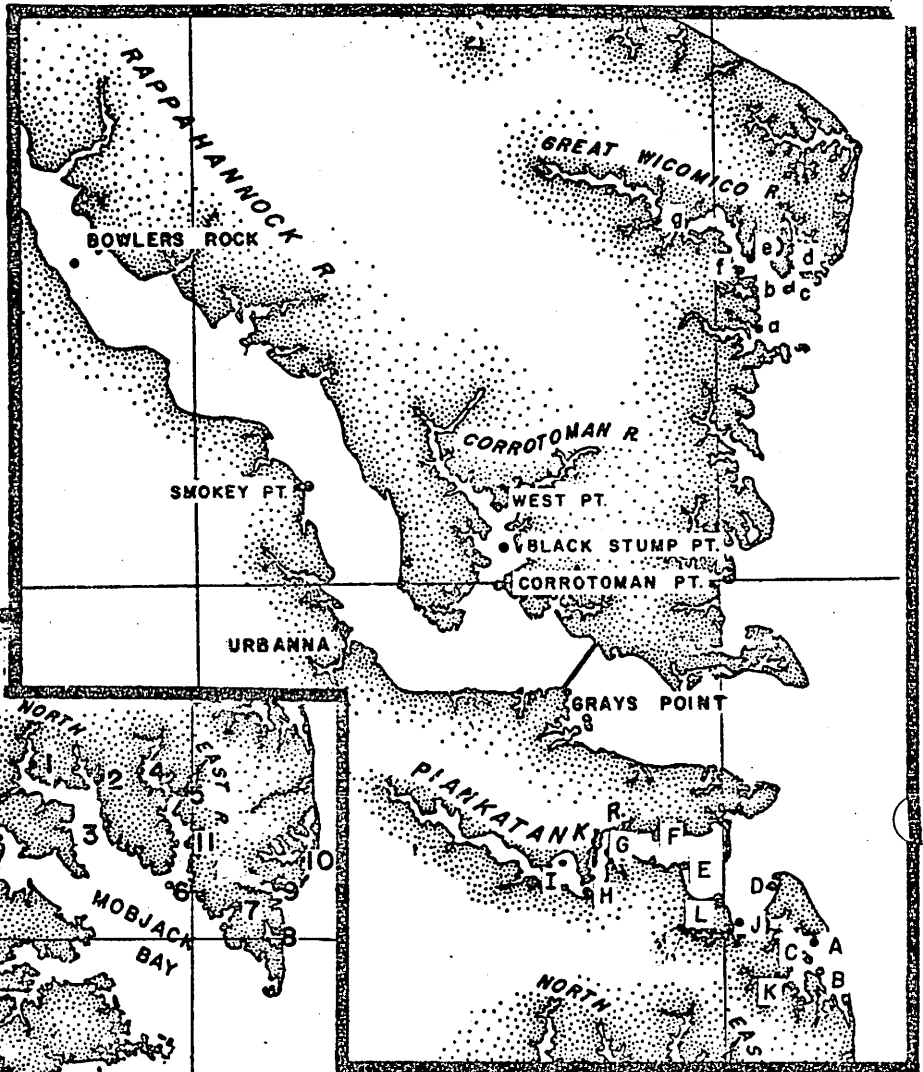
A good strike on shellstrings usually indicates that a strike has taken place on bottom shells. However, a good strike on shellstrings in some locations may not be accompanied by good spatfall on the rock. One reason for such a failure is that bottom shells can become so fouled by other marine life (much of which cannot even be detected with the naked eye) that no room is left for small spat to attach. Even with a reasonable spatfall, survival may be extremely low due to predators such as screwborers in the saltier waters which kill many small oysters soon after attachment.

The table on page 3 shows the average number of spat on a single oyster shell (smooth side only) at stations in various rivers in Virginia. To obtain approximate number of sets on both sides of oyster shells on shellstrings, total and spat per shell counts may be doubled. Figures are presented here for one side only because it is difficult to accurately count spat on the rough side of an oyster shell.

**STATIONS IN
 VIRGINIA RIVERS WHERE
 REGULAR SURVEYS OF
 OYSTER "SETTINGS" ARE
 CONDUCTED**

PIANKATANK RIVER AREA

- A Milford Haven
- B Lilly's Neck
- C Point Breeze
- D Three Branches
- E Iron Point
- F Island Bar
- G Ginney Point
- H Twiggs
- I Ferry Point
- J Hill Bay
- K Stutts Creek
- L Burton Point



MOBJACK BAY AREA

- North River
 - 1 Head
 - 2 Black Water Creek
 - 3 Cedar River
- East River
 - 4 Head
 - 5 Put-In-Creek
 - 6 Mouth
 - 11 Williams Wharf

NEW POINT COMFORT AREA

- 7 Pepper Creek
- 8 Dyer Creek
- 9 Horn Harbor
- 10 Winter Harbor

GREAT WICOMICO AREA

- a Off Mill Creek
- b Off Cranes Creek
- c Off Fleet Point
- d Off Cockrells Creek
- e SW Haynie Point
- f Off Shell Creek
- g Glebe Point

SPAT PER SHELL	0 TO 1 SPAT PER SHELL = POOR SET
	2 TO 10 SPAT PER SHELL = FAIR SET
	11 TO 100 SPAT PER SHELL = GOOD SET

June 14
 to
 June 21

JAMES RIVER

Brown Shoals	N.S.*
Wreck Shoals	0.2
Horse Head	0
Point of Shoals	0
Deepwater Shoals	0

June 15
 to
 June 22

YORK RIVER

VIMS Pier	0
Clay Bank	0
Foxes Creek	0

June 15
 to
 June 22

MOBJACK BAY AREA

North River	
1 Head	3.2
2 Black Water Creek	.3
3 Cedar River	.6
East River	
4 Head	2.8
5 Put-In-Creek	.5
6 Mouth	N.S.*
11 Williams Wharf	.4

June 9
 to
 June 16

NEW POINT CONFORT AREA

7 Pepper Creek	0
8 Dyer Creek	N.R.**
9 Horn Harbor	N.R.**
10 Winter Harbor	N.R.**

**Sample Not Recorded

*Not Sampled

SCIENTISTS STUDY METHODS OF INCREASING SOFT BLUE CRAB PRODUCTION

Scientists in VIMS' Department of Crustaceology are studying methods of increasing soft blue crab production in the Chesapeake Bay in a Sea Grant project announced by the U. S. Commerce Department's National Oceanic and Atmospheric Administration which administers the National Sea Grant Program.

Soft crabs for food and peeler crabs for fishing bait have high public demand, yet represent only a small fraction of total blue crab landings in Chesapeake Bay.

During the past 10 years, an average of 3.5 million pounds of soft and peeler crabs were produced annually with a value of \$1.2 million. These landings were less than 5 percent of the bay catch of crabs but brought in 20 percent of the dollars.

According to Paul A. Haefner, Jr., marine scientists in the Crustaceology Department, historical records reveal fluctuations in hard and soft production. The dollar value of hard crabs remains fairly constant while that of soft crabs varies according to the number of soft crabs produced. Although the total dollar value of the hard crab fishery is larger than that of the soft crabs, the latter is worth more per pound. Taking more soft and peeler crabs would leave fewer crabs to become mature hard crabs, but income from soft crabs would increase without markedly changing hard crab value, Haefner said.

Adequate supplies of peeler crabs are available for harvesting, but lack of guidelines for efficient construction and maintenance of holding facilities has kept production of soft crabs at low levels.

Haefner said the primary aim of this Sea Grant project is the development of plans for physical plants for shedding crabs in tanks with open-flow or re-circulated sea water. Guidelines for acceptable levels of water quality and for the condition and quantity of crabs that can be handled also will be established. Another aspect of the project is the study of mortality among crabs, aiming to explain the cause and ultimately, perhaps, to prevent this loss to the industry.

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Dr. William J. Hargis, Jr., VIMS Director; David Garten, Editor