8-27-1971

Marine Resource Information Bulletin Vol. 3, No. 15

Virginia Sea Grant

Virginia Institute of Marine Science

MARINE RESOURCE INFORMATION

VIRGINIA INSTITUTE of MARINE SCIENCE BULLETIN

Vol. 3, No. 15 August 27, 1971

SCIENTISTS SURVEY POTOMAC OYSTER BARS

Personnel from the Virginia Institute of Marine Science and the Chesapeake Biological Laboratory of the University of Maryland surveyed representative oyster bars in the Potomac River on August 4 and 5 and report that the supply of oysters is gradually diminishing after the peak harvests of the mid-1960's. These harvests resulted from an unusual river-wide natural set in 1963 but there has been no repetition of that exceptional spatfall.

The Virginia and Maryland laboratories surveyed representative oyster beds at the request of the Potomac River Fisheries Commission to assess the status of oyster populations after the 1970-71 harvesting season. The scientists report that the general outlook on natural reproduction throughout the river remains poor. It is too early to give up hope for a 1971 set of oysters but the study team found that the 1970 year-class was scarce. However, in places where imported seed oysters were planted in the spring of 1971, the 1970 year-class could be clearly observed.

Seed planting by the Potomac River Fisheries Commission is an important part of the effort to provide adequate stocks of oysters in the river since low levels of reproduction are characteristic of this prime growing area. Most seed oysters have been purchased from Virginia, particularly from the Piankatank and Great Wicomico rivers. Seed is usually moved in late winter or early spring (April) in time to gain full advantage of warming waters and spring growth. A significant portion of total production in the river is attributed to seed plantings which, because of high survival rates and good growth, are yielding excellent returns.

In general, oyster survival has been excellent except for some freshwater kill upriver and light disease mortality near the mouth of the river. Growth, however, has been below normal in most of the river this year.

The salinity in the Potomac River and its tributaries has been exceptionally low during the spring and summer of 1971 -- a condition which inhibits feeding, growth and spawning. Some mortality of oysters has occurred on upstream bars near Potomac River Bridge that is attributable to reduced salinity, but the normal late summer and fall salinity increase will probably prevent excessive deaths, the scientists report.

Because very low levels of dissolved oxygen have been observed in some tributaries, oxygen concentrations were checked. Low levels were found only in deeper waters from Blakiston Island to Posey's Bluff.

OYSTER MEATS QUALITY INDEX

Oysters in the James River during August remained at the same level as they were in July, and values for all stations were average with the exception of Point of Shoals where they were above average. Indices for August 1971 were slightly below those for the same period in 1970.

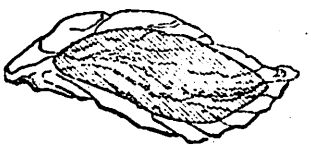
Indices for oysters in the York River showed that meat quality was still average for all stations, but that values had decreased at all stations from the previous month. This decrease was expected and was due to spawning. August 1971 indices were below those for the same month in 1970.

In the Rappahannock River meat quality was still above average at all stations. There was a sizable decrease in quality over that recorded for the previous month but this was associated with spawning. Indices for August 1971 were about the same as they were for August 1970.

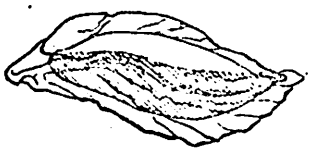
KEY TO INDEX NUMBERS
4.0 to 5.9 -- Below average
6.0 to 7.5 -- Average
7.6 and up -- Above average

	July		Aug.	
	1970	1971	1970	1971
JAMES RIVER				
Brown Shoals	7.8	---	6.7	6.4
White Shoals	8.4	5.8	6.8	6.1
Wreck Shoals				
shallow	6.6	6.2	6.5	6.1
deep	7.6	5.1	6.2	5.7
Point of Shoals	9.6	8.2	9.7	8.3
Horse Head	6.8	6.9	6.6	6.8
Deepwater Shoals	7.2	7.0	9.0	7.1
YORK RIVER				
Green Rock	9.0	8.3	8.3	7.4
Pages Rock	8.9	8.2	7.9	7.1
Aberdeen Rock	9.1	8.1	8.3	7.4
Bells Rock				
deep	8.2	6.8	7.2	6.5
RAPPAHANNOCK RIVER				
Drumming Ground	---	7.3	---	---
Urbanna	10.1	10.2	9.1	9.3
Smokey Point				
shallow	10.0	10.8	8.0	8.9
deep	---	10.2	8.9	8.3
Morattico Bar				
deep	9.7	10.9	8.4	8.3
Bowlers Rock				
shallow	10.1	11.6	9.6	8.5
deep	---	11.1	9.5	9.2
Ross Rock	---	---	---	---

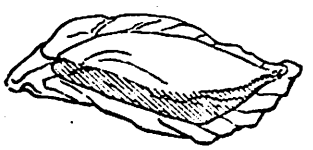
Three oysters of same size illustrate grades of meats in VIMS' index. Shaded area represents meat.



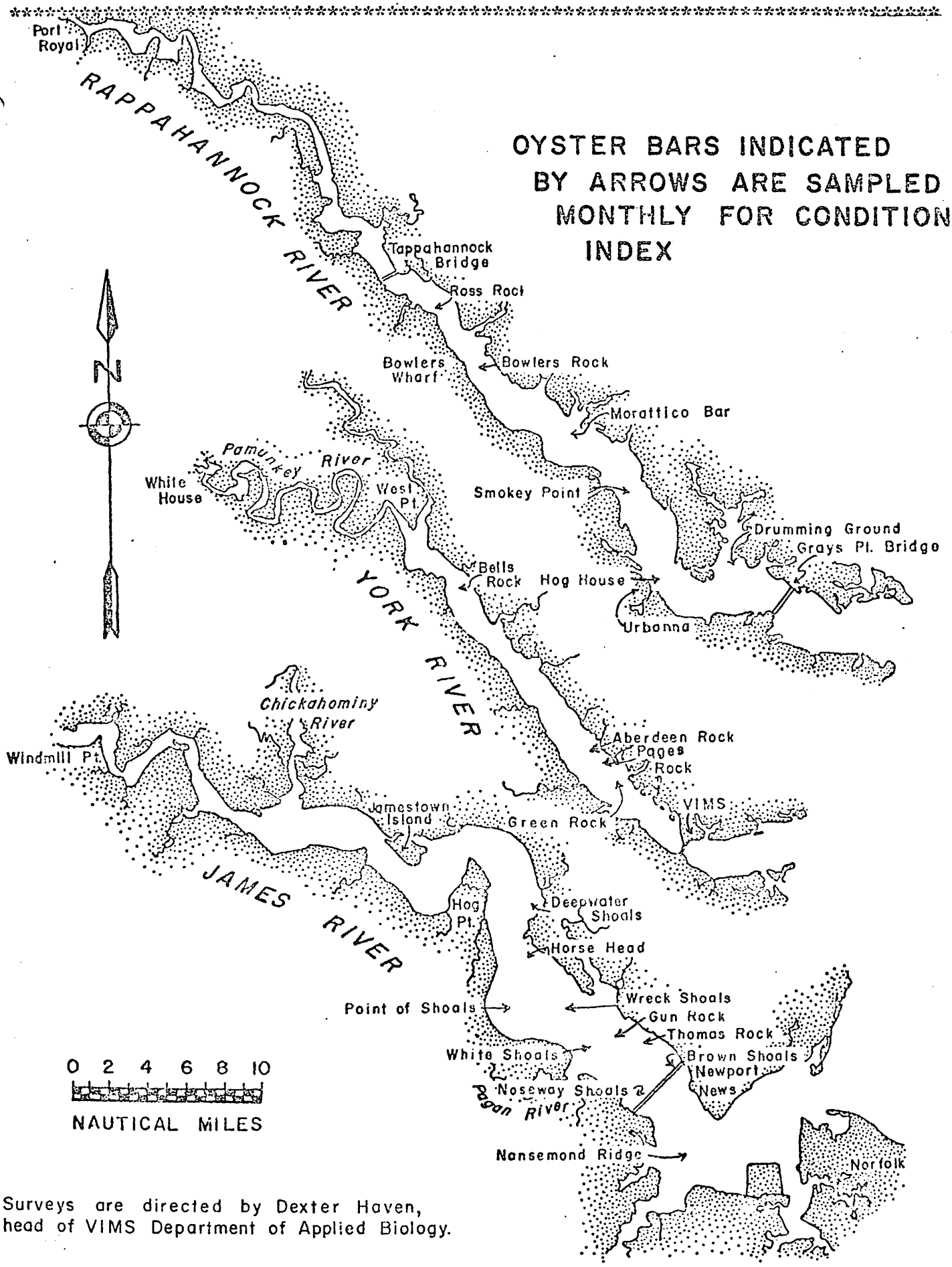
High index number (7.6 and up) for good quality oyster. Meat fills shell.



Medium index number (6.0 to 7.5) for fair quality oyster. Meat does not fill shell.



Low index number (4.0 to 5.9) for poor quality oyster. Much unfilled space in shell and the meats are watery.



Surveys are directed by Dexter Haven, head of VIMS Department of Applied Biology.

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WEEKLY OYSTER SPATFALL ON SHELLSTRINGS
JULY-AUGUST 1971

The Applied Biology Department, Division of Applied Marine Science and Ocean Engineering, conducts regular surveys of oyster bars to determine the potential areas for receiving a "strike." 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.

To obtain approximate number of sets on both sides of oyster shells on shellstrings, total and spat per shell counts should 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.

The following table presents the current weekly spatfall on shellstrings. Please refer to chart on page 6 for locations of stations where regular surveys are conducted. No spatfall was observed in the Potomac during the period from August 2 to August 19.

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

JAMES RIVER	July 19 to July 26	July 26 to Aug. 2	Aug. 2 to Aug. 9	Aug. 9 to Aug. 16
Brown Shoals	0	.2	0.7	2.0
Wreck Shoals	0	.1	3.4	2.6
Horse Head	0	0	7.7	2.5
Point of Shoals	0	0	4.4	1.0
Deepwater Shoals	0	0	3.2	2.6
Hampton Flats	0	0	1.2	10.9

YORK RIVER	July 20 to July 27	July 27 to Aug. 3	Aug. 3 to Aug. 10	Aug. 10 to Aug. 17
VIMS Pier	.1	.2	1.9	.6
Clay Bank	0	0	.3	.6
Foxes Creek	0	0	0	.1

NANSEMOND RIVER	July 23 to July 30	July 30 to Aug. 6	Aug. 6 to Aug. 16
Nansemond Ridge	0	.6	11.2
Larken's Rock	0	9.2	7.5
Half Pone	0	6.2	22.7

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SPAT PER SHELL COUNTS - Continued

MOBJACK BAY AREA	July 20 to July 27	July 27 to Aug. 3	Aug. 3 to Aug. 10	Aug. 10 to Aug. 17
North River				
1 Head	.1	.1	1.0	.1
2 Black Water Creek	0	0	.9	Lost
3 Cedar River	0	0	.2	.1
East River				
4 Head	.1	0	.2	.1
5 Put-In-Creek	0	.4	.6	0
6 Mouth	0	0	.1	.1
11 Williams Wharf	0	.2	.2	0

NEW POINT COMFORT	July 20 to July 27	July 27 to Aug. 3	Aug. 3 to Aug. 10	Aug. 10 to Aug. 17
7 Pepper Creek	.2	0	.6	.1
8 Dyer Creek	.1	.6	1.3	.2
9 Horn Harbor	0	0	1.3	0
10 Winter Harbor	.1	0	1.0	.4

PIANKATANK RIVER	July 19 to July 26	July 26 to Aug. 2	Aug. 2 to Aug. 9	Aug. 9 to Aug. 16
A Milford Haven	0	0	0	0
B Lillys Neck	0	0	0	0
C Point Breeze	0	.1	0	.3
D Three Branches	0	.5	0	.1
E Iron Point	.6	4.5	0	0
F Island Bar	.7	2.2	.1	5.8
G Ginney Point	1.8	3.4	.1	13.5
H Twiggs	.7	.7	.1	19.6
I Ferry Point	.8	0	0	8.9
J Hill Bay	0	.1	0	0
K Stutts Creek	0	0	0	0
L Burton Point	0	.9	.1	.3

GREAT WICOMICO	July 20 to July 27	July 22 to Aug. 2	Aug. 2 to Aug. 9	Aug. 9 to Aug. 16
a Off Mill Creek	0	0	0	.2
b Off Cranes Creek	0	0	0	.9
c Off Fleet Point	0	0	Lost	.1
d Off Cockrells Creek	0	0	0	0
e SW Haynie Point	0	.2	0	2.3
f Off Shell Creek	0	0	.1	.8
g Glebe Point	0	0	Lost	.4

RAPPAHANNOCK RIVER	July 21 to July 27	July 28 to Aug. 4	Aug. 4 to Aug. 11	Aug. 11 to Aug. 18
Grays Point	0	4.6	1.7	.9

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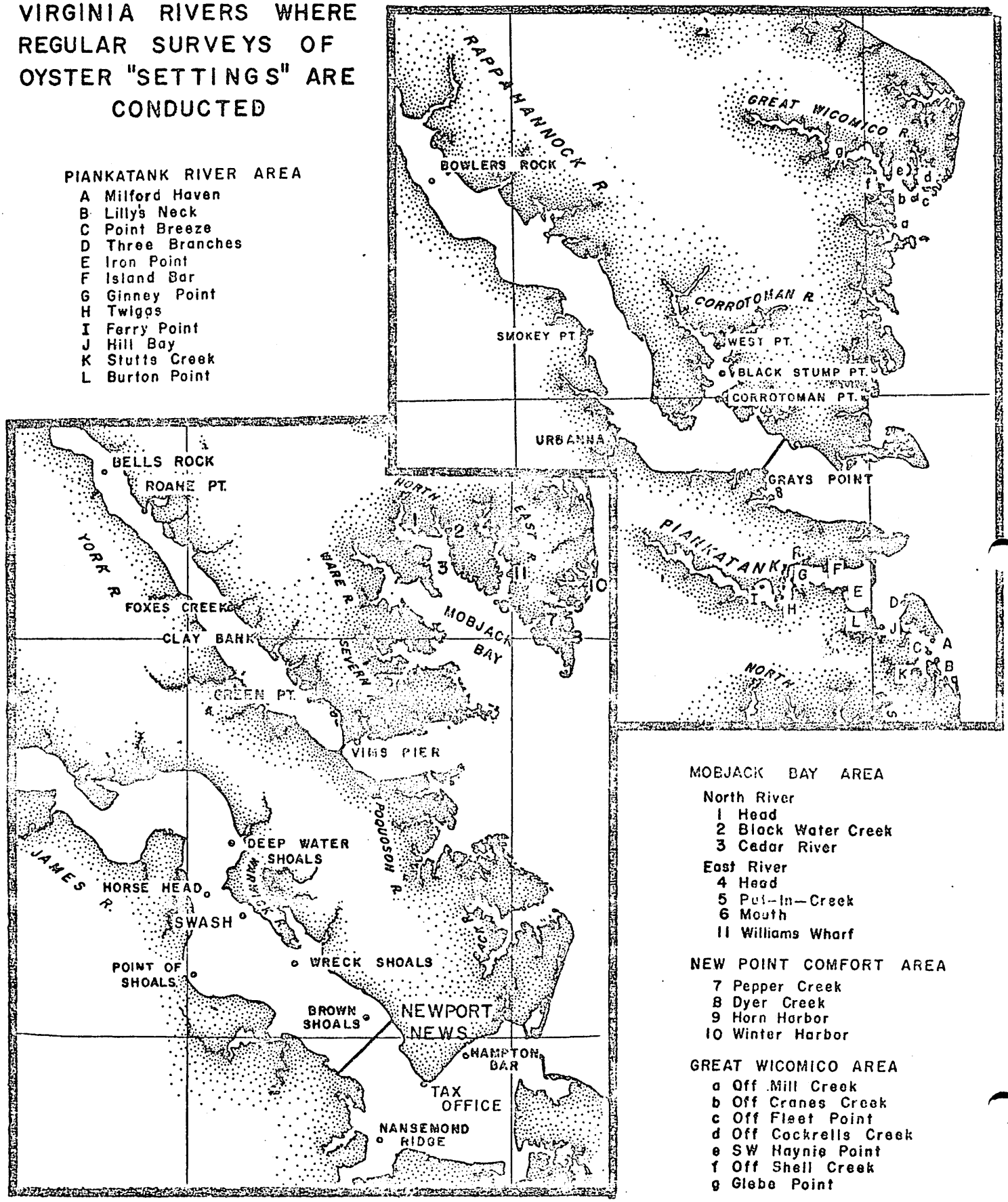
STATIONS IN VIRGINIA RIVERS WHERE REGULAR SURVEYS OF OYSTER "SETTINGS" ARE CONDUCTED



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

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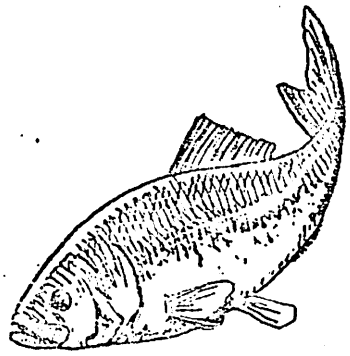
BAY FOUNDATION ENCOURAGES STUDENT MEMBERS

With the beginning of another scholastic year at hand, the Chesapeake Bay Foundation (CBF) reminds Maryland and Virginia high school and college students that now is the time to plan for the formation of local school chapters.

The Foundation is an educational and scientific organization dedicated to preserving the ecological integrity of the Chesapeake Bay. Through positive conservation projects, the CBF observes problems regarding the Bay, informs the public and then acts to correct existing or potentially dangerous situations threatening the water and its wildlife. Any faculty member or student interested in forming a school or college chapter is asked to contact CBF at 17 State Circle, Annapolis, Md. 21401.

The governors of both Bay states recently declared August as Save the Bay month. In conjunction with this event, the Foundation instituted a new membership rate for students.

More than 1,200 persons are members of the Foundation and currently, there are local chapters in many of the areas surrounding the Chesapeake Bay tidewater region.



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