

Public Oyster Shoal Survey

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Twice a year the Virginia Institute of Marine Science conducts a survey of selected public oyster bars (shoals) in Virginia waters for the purpose of assessing the status of the fishery. The spring survey provides information as to over-winter mortality, relative fishing pressure from the current harvesting season, and the potential for a particular shoal as a source of seed and/or market oysters the following fall. The fall survey provides information as to summer (disease) mortality, spatfall or recruitment, and the current status of each shoal as a source of seed and/or market oysters. Shoals are selected for sampling based on their historical significance, their current importance to the fishery, and/or their location within a subestuary.

The 1988 Fall Oyster Bar Survey was conducted between 26 September and 11 October 1988 at the locations indicated in Figure 1. Each shoal was sampled using a dredge with a twenty-four inch mouth. Three dredge hauls were made at each shoal, with one-half bushel of each catch saved as a representative sample. Table 1 presents a summary of the data obtained. It includes the number of oysters by class (market, small or spat), a bushel count, and an evaluation of recent mortality.

Only Horsehead and Point of Shoals in the James River had over 50 market sized oysters per bushel. Other stations in the James River ranged from 1 (Ridge) to 35 (Long Rock) market oysters per bushel. Aberdeen Rock in the York River had one market oyster per bushel. Pultz Bar in Mobjack Bay had 8 market oysters per bushel. In the Piankatank River, market oysters were almost absent at the sites surveyed. Stations in the Rappahannock River had from 0 (Broad Creek and Hog House) to 33 (Morattico Bar) market oysters per bushel. No market oysters were found on Middle Ground Bar in the Corrotoman River. In the Great Wicomico, market counts were below 2 oysters per bushel. Market counts were 1 or less at P.G. #9 and P.G. #10 in Pocomoke Sound.

The greatest number of small oysters were also found in the James River, particularly Point of Shoals (420 per bushel) and Horsehead (231 per bushel). Numbers decreased downriver from Point of Shoals, from 189 per bushel at Long Rock to 33 per bushel at Ridge. The York River (Aberdeen) station had 19 small oysters per bushel and the Mobjack Bay (Pultz Bar) station had 2 small oysters per bushel. In the Piankatank River, counts of small oysters per bushel ranged from 2 at Burton Point to 80 at Palace Bar. In the Rappahannock River, Bowler's Rock and Broad Creek had 96 and 83 small oysters

per bushel, respectively. The counts at other stations on the Rappahannock ranged from 3 to 36 small oysters per bushel. The Middle Ground station in the Corrotoman River had 21 small oysters per bushel. In the Great Wicomico River, counts of small oysters per bushel were 3 at Whaley's East, 145 at Fleet Point, and 228 at Haynie Point. In Pocomoke Sound, there were 4 small oysters per bushel at P.G. #9 and 25 and P.G. #10.

The number of spat per bushel ranged from 12 to 100 at the seven stations sampled on the James River. Aberdeen (York River) and Pultz Bar (Mobjack Bay) had 8 and 1 spat per bushel, respectively. In the Piankatank River, the number of spat per bushel ranged from 119 at Burton Point to 307 at Palace Bar. The number of spat per bushel ranged from a low of 1 at Morattico Bar to a high of 111 at Broad Creek in the Rappahannock River. There were 54 spat per bushel at the Middle Ground station in the Corrotoman River. The Great Wicomico stations had 467 spat per bushel at Haynie Point, 179 at Whaley's East, and 134 at Fleet Point. In Pocomoke Sound, there were 9 and 38 spat per bushel at P.G. #9 and P.G. #10, respectively.

It would be difficult to summarize the current status of the public Virginia oyster fishery as anything but dismal. Virtually all areas with the exception of the upper James River (Burwell Bay) and the upper Rappahannock River have been depleted, due primarily to the diseases *Haplosporidium nelsoni* (MSX) and *Perkinsus marinus* (dermo). Recent mortality was lower in all locations in 1988 than in past years. This may indicate that in endemic areas, disease has killed all the susceptible oysters, and that in the upper James River (Point of Shoals and Horsehead), disease has not yet become a factor.

Traditionally, James River oysters, because of their slow growth rate and poor quality have been harvested only as a source of seed (to be planted in other areas for growout). However, to supplement the supply of market oysters lost to disease in other areas, the James River became the focus of intensive harvesting in the 1986-87 season. As a result, this area, which had averaged a 10% contribution of market oysters to the fishery in the ten previous years, produced 70% of the market oysters in 1986-87, over 90% in 1987-88, and most likely will contribute an even higher proportion in the current season. In conjunction with this increased market oyster harvest, there was a 35% decrease in seed oyster harvest between 1986-87 and 1987-88, a 70% decrease from the previous ten

(continued on pages 8, 9, 10)

FIGURE 1
OYSTER BAR SURVEY STATIONS

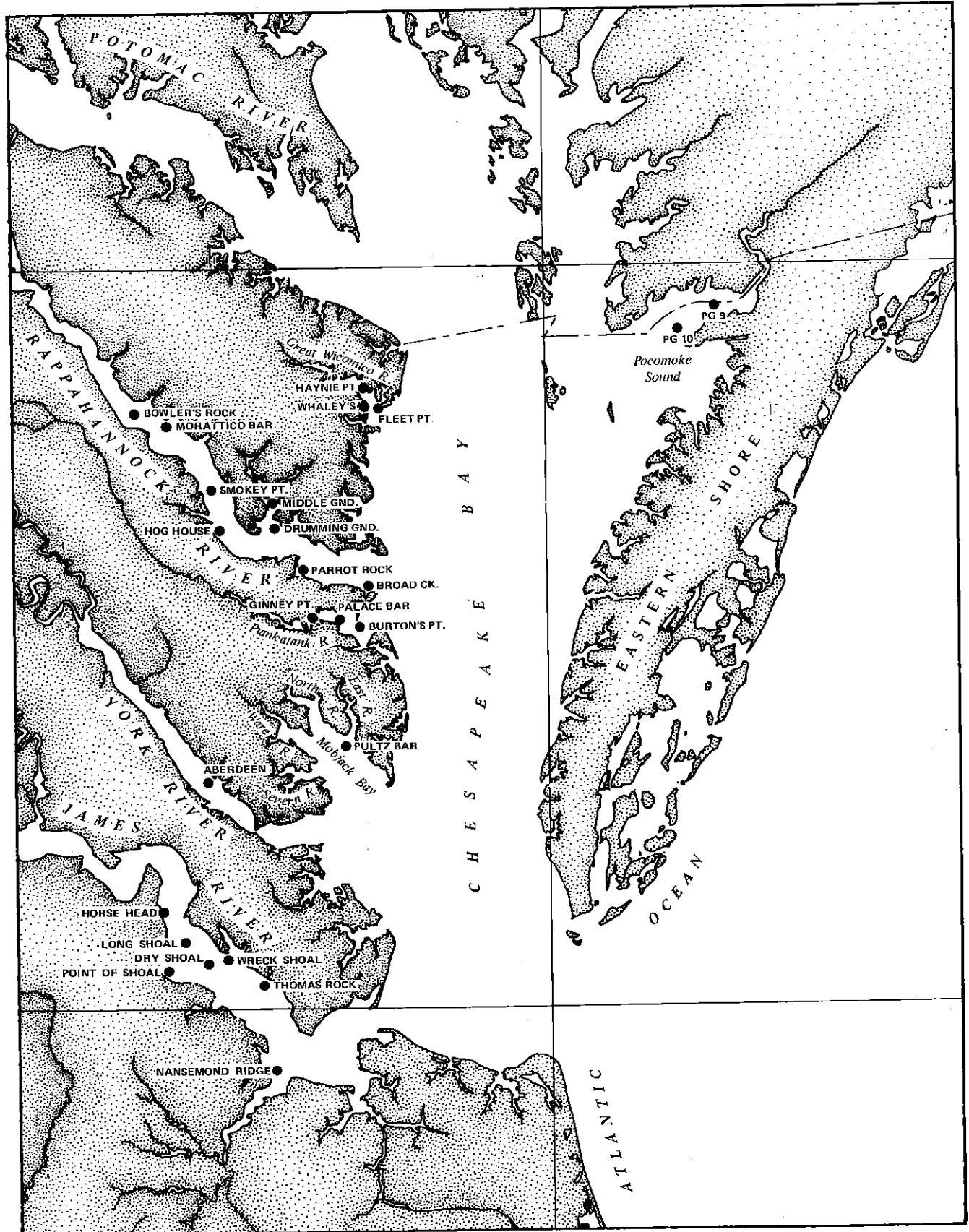
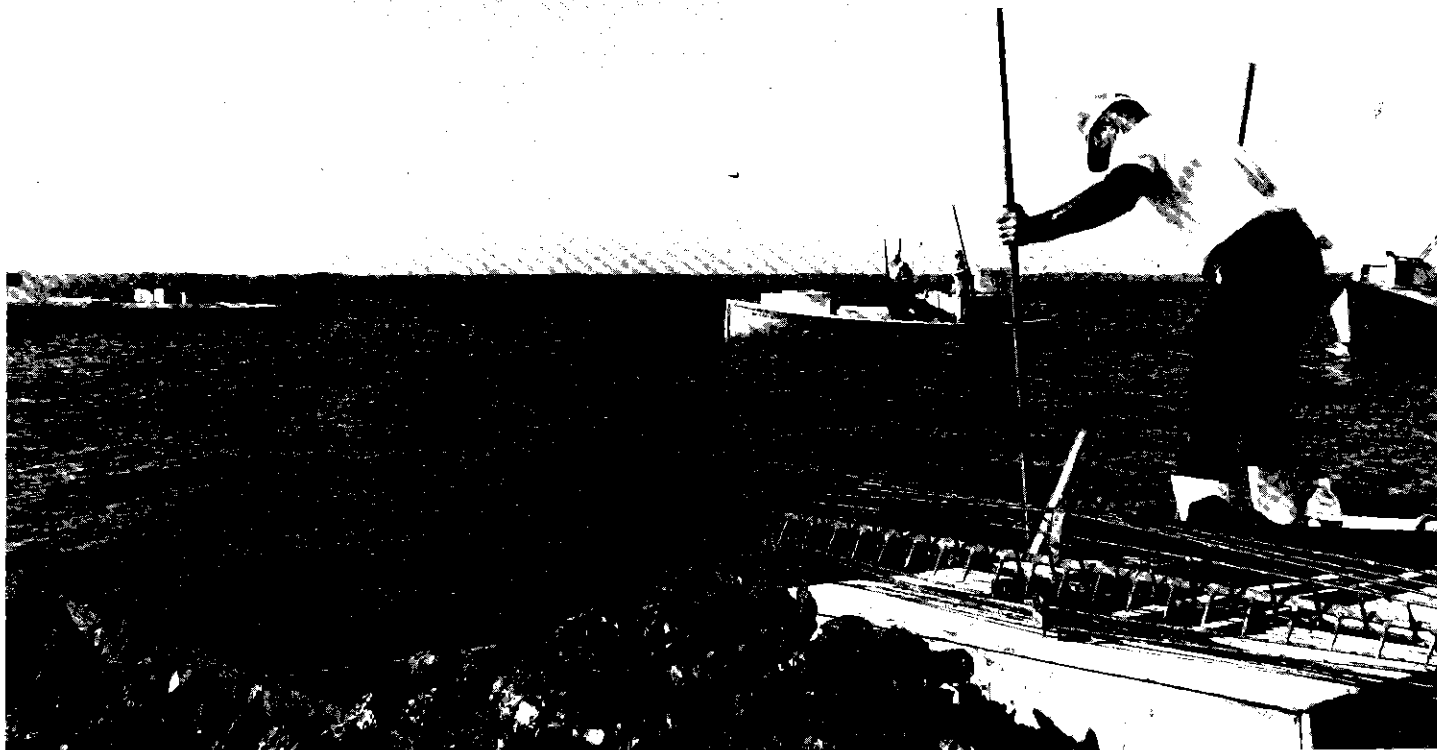


TABLE 1

Average Number of Oysters per Bushel
and Percent Recent Mortality

Station	Market	Small	Spat	Total	% Recent Mortality
James River					
Horsehead	62	231	100	393	3
Point of Shoals	54	420	66	540	1
Long Rock	35	189	49	273	6
Dry Shoal	11	83	33	127	15
Wreck Shoal	6	86	48	140	15
Thomas Rock	1	72	23	96	25
Ridge	1	33	12	46	18
York River					
Aberdeen	1	19	8	28	20
Mobjack Bay					
Pultz Bar	8	2	1	11	31
Piankatank River					
Ginney Point	0	43	281	324	5
Palace Bar	1	80	307	388	2
Burton Point	0	2	119	121	1
Rappahannock River					
Bowler's Rock	26	96	6	128	<1
Morattico Bar	33	33	1	67	0
Smokey Point	9	21	28	58	1
Hog House	0	3	13	16	0
Drumming Ground	1	14	34	49	8
Parrot Rock	1	36	71	108	4
Broad Creek	0	83	111	194	10
Corrotoman River					
Middle Ground	0	21	54	75	0
Great Wicomico River					
Haynie Point	1	228	467	696	1
Whaley's East	0	3	179	182	1
Fleet Point	0	145	134	279	4
Pocomoke Sound					
P.G. #9	1	4	9	13	7
P.G. #10	0	25	38	63	6



Hand tonging for oysters in Virginia waters.

year average. Thus the harvest emphasis in the James River has recently shifted from seed oyster production to market oyster production.

Unfortunately, this strategy is proving to be short-lived. Considering the slow growth rate of oysters in the upper James River, the market portion of the stock is subject to over-fishing. In fact, there is concern among the watermen that the current (1988-89) season will be abbreviated due to a shortage of market oysters. The total bushel count of oysters (all sizes) decreased from 1103 in 1987 to 393 in 1988 on Horsehead and from 966 in 1987 to 540 in 1988 at Point of Shoals. Removal of a large proportion of the older oysters in this area might also be having an effect on recruitment. Spat counts per bushel decreased from 695 in 1987 to 100 in 1988 at Horsehead and from 690 in 1987 to 66 in 1988 at Point of Shoals. Thus both segments of the fishery, now concentrated in a very small segment of the James River, are in trouble.

Considering that the upper James River remains relatively disease-free and predator-free suggests it still might be developed and utilized as a seed producing area. Shell planting and bottom cultivation in this area might enhance natural setting. Areas of the James River above Burwell Bay should be investigated for seed production potential. This entire region might also be utilized as a nursery area for hatchery-produced or other disease-free spat. There are no obvious short-term solutions to the problems faced by the public oyster fishery in Virginia. Long-term solutions will require the cooperation of industry, as well as regulatory and scientific personnel.

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