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Oyster Shoal Survey, Fall 1984

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OYSTER SHOAL SURVEY

Fall 1984

James P. Whitcomb

The objective of the annual oyster shoal survey in the fall is to estimate the success of spatfall on the bottom cultch. Whenever it is possible, bottom samples are taken at the time shellstrings are removed from the river. These samples are taken adjacent to specific shellstring stations. This allows a comparison between set on shellstrings and on bottom cultch.

In river systems where no shellstrings are maintained, the bottom samples are usually taken near a former shellstring station location. Analysis of the samples includes enumeration of spat (set of current year), yearlings (one year old), small oysters (oysters less than three inches but older than one year), market oysters (oysters larger than three inches), and boxes (empty but intact valves indicating that an oyster has died). The substrate for each spat is documented and a subsample of one hundred or all the spat, whichever is the least, have their lengths recorded. The inherent value of the survey is that it gives us some information about the shoals in the several rivers simultaneously.

The value of a bushel of seed to the industry is correlated to the potential for converting it into one to two bushels of market oysters at harvest time. If the count per bushel of small oysters, approximately one to three inch oysters, equals the count of market oysters per bushel at

harvest time, approximately 220-300 oysters, the bushel of seed would be termed good, or a good investment. In addition, if the count of spat in the bushel of seed exceed the high count of small oysters, for example 300-400 spat in the fall, then there is an additional potential to convert the bushel of seed into more than one bushel of market oysters at harvest time.

With the exceptions of Wilson Creek and the Piankatank River, the set on shellstring stations in 1984 was the lowest set since 1979. More importantly, the high sets of the previous four years at the James River stations did not appear, and the setting level in the James River more closely resembled the 1976-79 period.

Usually total counts of oysters per bushel of seed in the James River exceeding 700 oysters per bushel have a "good count," or potential, of small oysters. The bushel counts for the James River samples taken in the fall demonstrate this statement (Table 1). None of the fall samples from the James River in 1984 contain the additional potential for production or harvest from the spat count. All of the spat counts per bushel of bottom cultch fall below a 200 count (Table 1).

The total set on shellstrings at the VIMS pier station was the lowest since 1976. The bottom samples collected in the fall of 1984 had no value as market or seed stock (Table 2). The sample sites are between four and five miles upriver of the single shellstring station.

In the Piankatank River, the set on upriver shellstrings was moderate to heavy while the set at Three Branches was fair. The sample of bottom cultch at Palace Bar corresponded closely with the shellstring data (327 per bushel). The composition and count of oysters at Palace Bar make these oysters a good investment as seed. The oysters at the remaining five stations would not be considered good seed oysters (Table 3).

No shellstring stations were monitored in the Rappahannock River and, therefore, we cannot examine correspondence between bottom set and shellstring set. The spat count in all the bottom samples was very low (Table 4). The percentage of shell in the Rappahannock River samples and the Corrotoman tributary averaged 48 percent and ranged 32 to 74 percent of the total volume. No samples were taken below the Norris bridge.

At all stations in the Great Wiconico River the set was the lowest in five years. At only one station, Shell Bar, and for a single week period, did the level of set exceed one spat per shell. Samples of bottom cultch from areas adjacent to the shellstring stations showed that recruitment of spat on the bottom was low in 1984 (Table 5). The composition of the bottom samples at Whaley E. and Fleet Point was satisfactory for a bushel of seed oysters, but the remaining bottom sample would not be termed "good seed."

Appendix

Locations of the stations in the various rivers in fall 1984 survey.

Table 1
 Counts (1) of Oysters and Boxes
 in Bottom Samples - 1984-85
 James River

Location	Date	Market	Small	Spat	Total Oysters	Boxes	Count per Bushel
Deepwater	10/31/84	2	219	100	321	91	642
Horsehead	10/31/84	4	317	189	510	40 ?	1020
Pt. O Shoal	10/31/84	3	515	13	531	30	1062
Mulberry Pt.	10/31/84	11	426	0	437	22	874
Wreck Shls	9/24 84	1	207	51	268	23	536
Wreck Shls	10/31/84	13	271	18	302	23	604
Wreck In	9/24/84	13	588	73	674	27	1348
Wreck In	10/31/84	16	728	96	306	40	612
White Shls	12/13/84	34	82	4	120	10	240
Gun Rk	12/13/84	25	127	33	185	14	370
Thomas Rk	12/13/84	28	217	6	251	1	502
Brown Shls	12/13/84	17	19	7	43	9	86
Naseway Shl	10/23/84	11	129	24	164	8	328
Ridge	10/23/84	31	105	14	150	18	300

(1) Volume of each sample is 1/2 Virginia bushel (25 quarts).

Table 2
 Counts of Oysters and Boxes
 in Bottom Samples - 1984-85
 York River

Location	Date	Market	Small	Spat	Total Oysters	Boxes	Count per Bushel
Bell Rk	12/11/84	8	88	0	96	2	192
Aberdeen	12/11/84	13	13	0	26	2	52
Pages Rk	12/11/84	3	4	0	7	5	14
Green Rk	12/11/84	4	1	0	5	2	10

Table 3
 Counts of Oysters and Boxes
 in Bottom Samples - 1984-85
 Piankatank River

Location	Date	Market	Small	Spat	Total Oysters	Boxes	Count per Bushel
Ginney Pt.	11/7/84	12	182	39	233	63	466
Island Bar	11/7/84	2	131	149	282	44	564
Palace Bar	11/7/84	4	302	327	633	44	1266
Cape Tune	11/7/84	1	74	294	369	33	738
Burton Pt.	11/7/84	8	76	33	117	42	234
Three Branches	11/7/84	13	167	46	226	24	452

Table 4
 Counts of Oysters and Boxes
 in Bottom Samples - 1984-85
 Rappahannock River

Location	Date	Market	Small	Spat	Total Oysters	Boxes	Count per Bushel
Bowlers Rk	11/14/84	16	22	0	38	6	76
Morattico	11/14/84	9	59	0	68	5	136
Smokey Pt.							
Inshore	12/4/84	17	11	0	28	2	56
Offshore	12/4/84	17	23	0	40	7	80
Hog House	11/26/84	20	7	0	27	7	54
Drumming	11/26/84	30	155	10	195	15	390
Parrots	11/26/84	35	54	2	91	4	182

Corrotoman Tributary

Location	Date	Market	Small	Spat	Total Oysters	Boxes	Count per Bushel
Corrotoman	11/26/84	14	66	18	98	12	196
Black Stump	11/26/84	1	106	16	123	33	246
Shelton Bar	11/26/84	0	9	1	10	134	20

Table 5
 Counts of Oysters and Boxes
 in Bottom Samples - 1984-85
 Great Wicomico River

Location	Date	Market	Small	Spat	Total Oysters	Boxes	Count per Bushel
Rogue Pt.	12/5/84	6	81	27	114	15	228
Haynie Pt.	12/5/84	20	89	15	124	24	248
Cranes Ck	12/5/84	10	118	14	142	27	284
Whaley E.	12/5/84	12	273	12	297	23	594
Fleet Pt.	12/5/84	16	272	11	299	13	598
Dameron	12/5/84	10	91	7	108	19	216









