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On 19 December 1979, at the request of the VMRC we examined oysters on Drumming Ground and Flag Pond. These areas are on the north side of the Lower Rappahannock River just below the entrance of the Corrotoman River. The survey was made from a VMRC vessel captained by Stanley James and Mate Otis George. VIMS personnel on board were Dexter Haven and Kenneth Walker.

Drumming Ground

The first area we examined was Drumming Ground. Here the patent tong line runs from Towles Point to Orchard Point.

When we examined the area two patent tong boats were working on a recent shell planting in the patent tong area; two hand tong boats were working just inshore of the "patent tong line" on the same shell planting.

We took a dredged sample (1/2 bushel) in the vicinity of the patent tong boats and a similar sample near the hand tong boats. We also examined the catch of a patent tong and a hand tong boat. The catch of the boats was similar to the sampled obtained by our dredge.

According to Captain James the area being worked by the patent tong boats and the hand tongers was a fairly recent VMRC shell planting. This observation was substantiated by an examination of the dredged material and the material tonged by the watermen. That is, clean "blank" shells made up from 36 to 40% of the catch (Table 1).

We made the following observations for the Drumming Ground area after examining the catch of the patent tong boat, the hand tong boat and the dredged material.

1. Market oysters were fairly abundant in the dredged material (27-28% of the live oysters), (Table 2). Often the market oysters were attached to shell or to small oysters. The average size of market oysters ranged from 3.3 to 3.5 inches.
2. Small oysters were more abundant than market oysters (53-72% of all oysters), (Table 2).
3. The small oysters were sometimes difficult to "cull" from the market oysters. Often

they occurred in clusters of 3-4. They averaged 2.4 inches in length with many approaching 3 inches.

4. Most of the spat (from 66 to 94%) occurred on shell material. From 4 to 21% occurred on small oysters. From 2 to 14% occurred on market oysters (Table 3).
5. Mortalities were normal (11%) and most of the boxes were old. No tong damage was noted. No gapers were observed (Table 1).
6. Spatfall during 1979 was low and ranged from 58 to 100 per bushel (Table 1).

Flag Pond

This area was too deep (20 feet) to be easily worked with hand tongs. Two dredged samples were obtained here. Each showed the same size distribution of oysters as obtained on Drumming Ground. Shell were about as abundant on Drumming Ground, but it did not look like a recently shelled bottom. The oysters were even more clustered here and the small oysters averaged 2.6 inches in length; many were almost 3 inches in length. Culling here might present some problems to watermen.

The data relating to Flag Pond area are shown in Tables 1, 2 and 3. They are not reviewed in detail since they essentially show the same size distribution, type of growth, etc., as those growing on Drumming Ground.

Conclusion for Drumming Ground and Flag Pond

Many oysters classed as "markets" (because they were over 3 inches long) were often just over 3 inches. Moreover, they were sometimes clustered. Occasionally they were attached to "small" oysters. Clustering would, of course, make shucking difficult. Also, culling would be a problem.

Small oysters were abundant and were also clustered.

There was no evidence, however, that harvest efforts by patent tongs or hand tongs was causing a measurable mortality of the small oysters and spat being culled overboard. That is, we observed no gapers in the catch which would indicate recent damage by harvesting gear such as patent tongs. Moreover, the boxes which were collected were mostly "old" and showed no evidence of tonging injury (chipped or broken shells).

Possibly harvest efforts (as they are now being carried out) have a beneficial effect by breaking up clumps of small oysters.

We conclude that at the present time there is no biological reason to restrict harvest by any gear in this area.

Table 1

Numbers of Oysters and Quarts of Shell Per Bushel in the Rappahannock River Below the Corrotoman River.

	Water Depth (ft)	Number of Oysters				% Mortality	Percent of bushel cultch on blank shell without attached spat or oysters
		Market	Small	Yearling	1979 Spat		
Drumming Ground							
Patent tong	18	36	70	26	100	11	40
Hand tong	16	62	160	0	58	11	36
Flag Pond							
Offshore	20	72	102	0	38	19	44
Inshore	20	70	190	5	10	16	40

Table 2

Percentage of Various Sized Oysters (Exclusive of Spat) in a Bushel in the Rappahannock River Below the Corrotoman River. These data are based on numbers shown in Table 1.

	Percent of Total Oysters		
	Market	Small	Yearling
Drumming Ground			
Patent tongs	27.3	53.0	19.7
Hand tongs	27.9	72.1	0
Flag Pond			
Offshore	41.4	58.6	0
Inshore	26.4	71.7	1.9

Table 3

The Percentage of the 1979 Spat (Shown in Table 1) Occurring on Shell and on the Various Sized Oysters.

	% Market	% Small	% Yearling	% Shell Material
Drumming Ground				
Patent tong	2	4	0	94
Hand tong	13.7	20.7	0	65.5
Flag Pond				
Offshore	5.2	10.5	0	84.2
Inshore		(Only 4 spat seen)		