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# Status of the Major Oyster Diseases in Virginia

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# Marine Resource Advisory

No. 33

VIRGINIA SEA GRANT MARINE ADVISORY SERVICES AT VIMS/WILLIAM & MARY

July 1987

## STATUS OF MAJOR OYSTER DISEASES IN VIRGINIA

### SUMMARY:

Virginia oysters are still reacting to the severe drought of 1986. Based upon June samples, both major oyster diseases, MSX and Dermo (Perkinsus), contributed to recent oyster mortality in the lower Rappahannock River and in Pocomoke Sound.

### STATUS OF PERKINSUS MARINUS (DERMO):

Dermo - Perkinsus marinus. This parasite also caused significant oyster mortality during 1986 as a result of the increased salinity and the prolonged warm weather during fall. In normal years, this parasite is present at low levels in early summer and then gradually increases in abundance and causes localized mortality during late summer and fall. Dermo may go through two or three infection/mortality cycles depending upon the duration of warm weather in the fall. During winter the parasite abundance is usually greatly reduced; however, it is not eliminated from an area by low salinity as readily as is MSX.

During June of 1987, Dermo was unusually abundant in the lower Rappahannock River, in certain areas in Pocomoke Sound, and at Thomas Rock in the lower portion of the James River seed area. High levels of infection in June indicate that Dermo was not eliminated by most oysters during winter and spring of 1987. This is a very abnormal situation and reasons for it are not clear. The early presence of heavy and moderate infections indicates that mortality has already occurred. Such unprecedented levels of the disease so early in the summer suggest that in some areas during 1987

## STATUS OF MAJOR OYSTER DISEASES IN VIRGINIA

all oysters may become infected and the disease may go through two or three more infection/mortality cycles than normal. Resulting oyster mortality may be high. Oystermen should check their grounds periodically through the summer for signs of mortality.

Private planters are advised not to transplant seed from below Wreck Shoal in the James River until laboratory tests indicate that these oysters are no longer infected. The high prevalence of Dermo in these oysters will result in high mortality the first summer after transplanting.

### STATUS OF HAPLOSPORIDIUM NELSONI (MSX):

MSX - Haplosporidium nelsoni. The greatest abundance of this parasite ever recorded in the Bay is the result of record high salinities in Chesapeake Bay during 1986. In areas such as the lower Rappahannock River, where salinity usually ranges from 10 to 15 ppt, MSX does not usually cause significant mortality because the parasite is not abundant in such low salinity areas. In addition, during years of high Bay-wide river discharge when salinity drops below 10 ppt, MSX infections acquired during late summer will be eliminated in the spring by the low salinity.

Unfortunately, because of the unusually high salinity during 1986, there was a much greater than normal number of late-summer MSX infections and no reduction of salinity below 10 ppt which would have eliminated the infections. When the water temperature warmed in the late spring of 1987, these over-wintering infections rapidly developed and caused mortality during June in the Rappahannock River, in some portions of Pocomoke sound, and probably other areas as well.

Salinity in the James River seed area was low enough to eliminate MSX during spring, 1987 and no infections were found at Wreck Shoal or at Thomas Rock in June.


It is too early to estimate the impact of new 1987 MSX infections on the oyster industry. New spring infections are usually not apparent until late July and don't typically cause mortality until August and September.

1987 OYSTER DISEASE STATUS REPORT

Location	Month	MSX ( <i>Haplosporidium nelsoni</i> )			Dermo ( <i>Perkinsus marinus</i> )		
		Sample Size	Prevalence of MSX H-M-L	% MSX	Sample Size	Prevalence of Dermo H-M-L	% Dermo
James River							
Thomas Rock	June	25		0	25	4-1-13	72
Wreck Shoals	June	25		0	25		0
Rappahannock River							
Whitehouse Creek, Corrotoman	June	25	3-4-9	64	25	2-4-17	92
Whitehouse Creek, Corrotoman	June	25	1-0-8	36	No Determination		
Towles Point	June	25	3-3-9	60	24	4-4-14	92
Towles Point Spat	June	11	2-0-2	36	11	0-0-2	18
Pocomoke Sound							
Site #1	June	23	5-2-12	83	25	1-3-7	44
Site #2	June	25	0-0-3	12	25	0-1-1	8
Yeocomico Creek							
Site #1	June	25		0	25	0-1-21	88
Site #2	June	25		0	25	0-1-8	36
Site #3	June	25		0	25	2-0-12	56
Coan River							
Site #1	May	25	0-0-1	4	25	0-1-8	36
Site #2	May	25		0	25	0-1-11	48
Lower Machodoc Creek							
Site #1	June	25		0	25	1-0-4	20
Site #1	April	50	9-5-15	58	No Determination		
Hungars Creek (Eastern Shore)							
Site #1	June	25	7-2-7	64	25	3-3-9	60

Information in this Marine Resource Advisory was developed by Dr. Gene Burreson from the ongoing VIMS Oyster Monitoring Program. Cooperation from members of the Virginia oyster industry is gratefully acknowledged.

Further advisories will be issued to the oyster industry as more information becomes available. For additional information contact Sea Grant Marine Advisory Services, Virginia Institute of Marine Science, Gloucester Point, Virginia 23062.

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C. M. Plummer . . . . . Editor	
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