William & Mary
CHARTERED 1693

W&M ScholarWorks

Reports

6-16-1984

An Investigation of Oysters in the James River, Virginia with Emphasis on the Deep Water Shoal Area and Cruiser Shoals Rock

Dexter S. Haven
Virginia Institute of Marine Science

Follow this and additional works at: https://scholarworks.wm.edu/reports

 Part of the Aquaculture and Fisheries Commons

Recommended Citation

Haven, D. S. (1984) An Investigation of Oysters in the James River, Virginia with Emphasis on the Deep Water Shoal Area and Cruiser Shoals Rock. Marine Resource Report No. 84-6. Virginia Institute of Marine Science, College of William and Mary. http://dx.doi.org/doi:10.21220/m2-kjqn-9841

This Report is brought to you for free and open access by W&M ScholarWorks. It has been accepted for inclusion in Reports by an authorized administrator of W&M ScholarWorks. For more information, please contact scholarworks@wm.edu.

FILE COPY

An Investigation of Oysters in the James River, Virginia with Emphasis on the Deep Water Shoal Area and Cruiser Shoals Rock

by

Dexter S. Haven

Virginia Institute of Marine Science
and The College of William and Mary

Gloucester Point, VA 23062

June 16, 1984

Marine Resources Report Series (84-6)

INTRODUCTION

On June 7, 1984, at the request of Mr. Ben Daniel (VMRC) we accompanied him and Mr. Herbert Saddler on an inspection of the oyster beds in the James River. The survey was made using the Commission vessel. The author (Dexter Haven) assisted the survey.

Oyster rocks from Deep Water Shoals to the Nansemond Ridge area was sampled. Approximately 20-25 dredge hauls were made, and their contents inspected.

One of the objectives of this trip was to evaluate mortalities associated with fresh water conditions in the upper seed area. A second was to determine if oysters on Cruiser Shoals Rock were sufficiently abundant to serve as a source of seed to be planted elsewhere.

Oyster Mortality in the Upper Seed Area

Since late winter, salinities have been very low in the upper seed area and in the mid James as far down as Wreck Shoals. They were especially low in the upper river section in the vicinity of Deep Water Shoals, Horsehead, Point of Shoals and Mulberry Point (Table 1).

Surveys of this area by VIMS during October and November 1983 indicated a good set in 1983 and few dead oysters. However, in late winter, oysters began dying from the impact of fresh water. By 7 June 1984 we obtained the following mortalities, based on percentages of live and dead (boxes) oysters dredged on that date. Numbers of spat were not used in these calculations.

Deep Water Shoals	= 62%
Point of Shoals (inshore)	= 24%
Horsehead (upriver)	= 20%
Mulberry Point	= 28%

About 50-80% of the 1983 year class of spat had died at the above four locations since November.

Oysters growing downriver from the above locations showed a normal mortality (5-10%) for the various locations and for the season.

Cruiser Shoals and Nansemond Area

Several dredge hauls were made on the extensive Cruiser Shoals area. Oysters had started to grow and mortalities were normal for the area (5-10%). Most of the oysters were less than about 2 1/2 inches

long and some 1983 set was seen. A count made on a sample of dredged oysters showed about 325 oysters/bu.

The long oyster rock, inshore of Nansemond Ridge, showed a similar population as Cruiser Shoals.

Conclusions

1. Oyster from Deep Water Shoals are still dying but the peak period of mortality appears to be over. However, count of seed oysters are now low (395 bu). It would appear uneconomical to utilize oysters from this location as seed to be planted elsewhere.

2. The mortality of oysters at Horsehead, Point of Shoals and Mulberry Point appears to be over.

3. Oysters are surviving well at Cruiser Shoals, but counts (325 bu) are not high enough to move them economically. However, count is sufficient to provide a good harvest at some later date.

Table 2

Selected salinities in °/oo at certain locations in the James River[1]

Station	Date - and Tide Stage 4/11 Ebb	4/26 Ebb	5/7 Flood	5/14 Flood	6/21 Ebb	6/1 Flood
Deep Water Shoals						
S			0.0	0.0	0.2	1.0
B			0.0	0.0	-	1.2
Horsehead						
S	0.2	1.0	0.1		1.6	2.8
B	0.2	1.0	0.1		1.7	3.8
Point of Shoals						
S			0.0	1.2	2.0	3.5
B			0.2	1.2	2.1	3.8
Wreck Shoals offshore						
S	2.5	2.0	5.0	5.0	-	9.5[2]
B	4.5	6.8	-	9.5	4.5	13.5

[1]Additional data available in files.

[2]Wreck Shoals (inshore).