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A Survey of Oyster Resources at Glebe Point in the Great Wicomico River

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Virginia Department of Transportation

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by

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INTRODUCTION

This survey of oyster resources associated with leased oyster bottom in the Great Wicomico River in the vicinity of Glebe Point (State Rt. 200) was undertaken by the Virginia Institute of Marine Science (VIMS) at the request of the Virginia Department of Transportation (VDOT).

The study was designed specifically to assess the present and potential value of the two oyster leases adjacent to the bridge crossing the Great Wicomico River at Glebe Point. These tracts are identified by the Virginia Marine Resources Commission (VMRC) as File No. 15886, leased by E.E. Delano, Box 2, Wicomico Church, VA 22579 (formerly File No. 15032, K.H. Chase and L.M. Harding) located on the south shore (Fig. 1), and File No. 14325, leased by J.H. Steel, Box 1760, White Stone, VA 22578, on the north shore (Fig. 2). The portions of the leases surveyed are adjacent to the current bridge from approx. 100 ft up river extending downstream approx. 500 ft (shaded areas in Fig. 1 & 2). These areas were deemed likely to be impacted either directly or indirectly by the construction of a new bridge parallel to the existing bridge and/or the demolition of the existing bridge. There are no public Baylor Grounds in the vicinity.

METHODS

An initial site visit to assess the general area for survey planning was made in December 1989. The areas to be studied were surveyed and marked by VMRC engineers under direction from VIMS on 2 March 1990, and the oyster resources were surveyed by VIMS on 3 March 1990.

Each tract was divided into four areas of similar size and sampled by hand-tong. These sub-areas will be referred to as S1-4 (Steel lease) and D1-4 (Delano lease). Each hand-tong sample covered 6 ft^2 of bottom. Four samples were randomly taken in each sub-area S1-4, four in D1, and three in each of D2-4. Oysters were counted and classified by size as market ($\geq$ 3 in) or small ($<$ 3 in). It is possible that some oysters classified as small were actually spat; however, this had no effect on their estimated value because spat and small oysters are valued equally as seed oysters. Shell volume and the proportion of buried to exposed shell were estimated by visual inspection. The mean number of oysters per ft^2 was calculated separately for each lease and extrapolated to the shaded areas on Figs. 1 & 2. We assume a bushel count of 500 small or seed oysters per bushel (bu) for determining the resource value. The price/bu is based on the current price for seed oysters ($6.00/bu) because no market-sized oysters were found. Neither lease has been productive for at least the past four years (pers. comm. VMRC, Heathsville, VA). The value of oysters on each lease was determined as:

[(density of oysters) x (area) / (oysters/bu)] x (price/bu).

Bottom type was categorized for each sub-area. Three transects of the river were traversed recording the bottom contour to compare for possible post-construction changes.

RESULTS

The following discussion will be divided into three sections for clarity. We provide a general description of the Great Wicomico R. at Glebe

Point, then address each of the leased areas and the estimated value of their oyster resources.

General description

The Glebe Point area, north of the bridge, is rural-residential with a few scattered residences along the shore and a small marina at the northern end of the Steel lease. There is a public landing east of the bridge at Glebe Point and a small private boat ramp west of the bridge. The shoreline south of the bridge is undeveloped and forested.

Water salinity in the vicinity of the bridge ranges from 14.2-16.0 ppt (pers. comm. Dept. of Shellfish Sanitation, White Stone, VA). The bottom across transects of the river can be characterized as soft mud (Fig. 3). Nearshore, the bottom type ranges from soft mud to hard sand and sand covered by old shell plantings (Table 1 & 2).

Naturally occurring shellfish resources are sparse to nonexistent due to the lack of natural bottom suitable for settlement and growth. There is currently no limitation on the harvesting of shellfish from the area surveyed; however, according to the Shellfish Sanitation Department, a portion of the Steel lease abuts on an area which is seasonally closed to shellfish harvesting due to marina activities.

Delano lease - VMRC File No. 15886

The nearshore half of the lease within the area surveyed (Fig. 1) is extremely shallow ($\leq$ 2 ft) and consists of a thin layer of sand over mud. The bottom substrate is variable, consisting of mostly sand above the

bridge, and soft mud with patches of sand below the bridge. Table 1 characterizes the bottom substrate and lists the results of the hand-tong sampling by sub-area. The shaded area shown in Fig. 1 covers 2.55 acre and represents the area potentially affected by bridge construction. This area has not been planted with shell and has virtually no naturally occurring shell exposed, thus has no intrinsic value for oyster larvae settlement. Based on an estimated density of 0.102 oysters per ft^2, there are 11,393 small (seed) oysters within the 2.55 acre tract with a total value of $136.

Steel lease - VMRC File No. 14325

The shaded area in Fig. 2 encompasses approx. 3.67 acre of the Steel lease and is the area likely to be impacted by the proposed bridge construction. Approximately 30% of this area consisted of old shell plantings. This provided substrate for a relatively low density of small oysters which probably resulted from naturally occurring set. According to the VMRC office at Heathsville, this tract has not been harvested in at least four years. Thus, given the absence of market-sized oysters, it is probable that oysters from this tract are suitable only as seed and were valued as such. Table 2 characterizes the bottom substrate by sub-area and lists the results of the hand-tong sampling. Shell plant area was estimated at 1.15 acre, or 31.25% of the 3.67 acre tract, and contained an average density of 2.85 small oysters/ft^2. There were an estimated 131,089 small (seed) oysters in the 3.67 acre tract valued at $1,573.

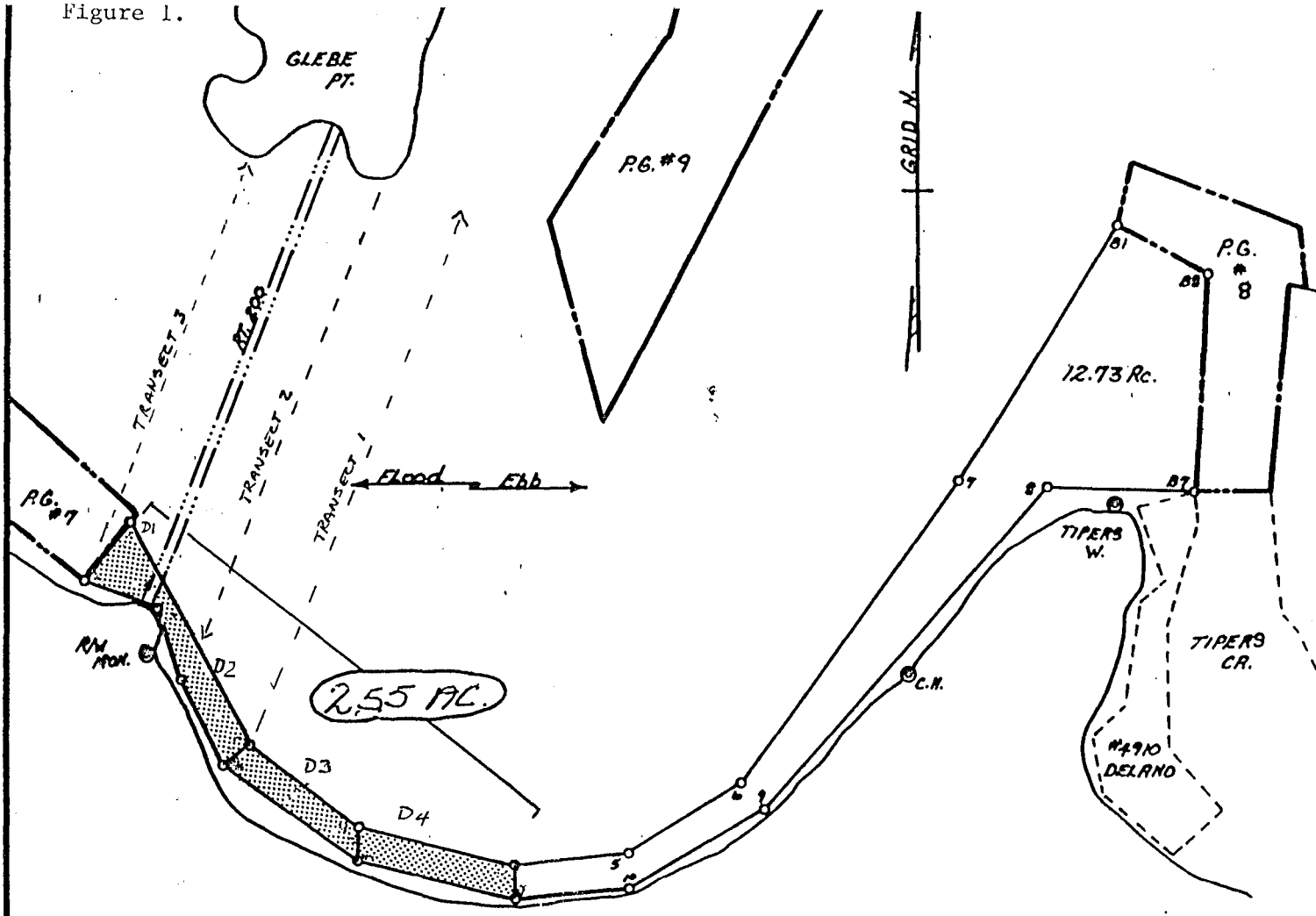
Table 1. Results of hand-tong survey of oysters on the Delano leased bottom in the Great Wicomico R., VMRC File No. 15886, in the proposed new bridge construction easement.

Station	Bottom type	Oysters	Remarks
D1.1	sand, shell	5	shell mostly buried
D1.2	sand	-	
D1.3	sand, shell	-	shell mostly buried
D1.4	sand, shell	3	
D2.1	thin sand over mud	-	
D2.2	"	-	
D2.3	"	-	
D3.1	hard sand	-	
D3.2	"	-	
D3.3	"	-	
D4.1	mud	-	5 buried shells
D4.2	hard sand	-	6 buried shells
D4.3	mud	-	1 shell

Table 2. Results of hand-tong survey of oysters on the Steel leased bottom in the Great Wicomico R., VMRC File. No. 14325, in the proposed new bridge construction easement.

Station	Bottom type	Oysters	Remarks
S1.1	mud, sand	2	most shell buried
S1.2	mud	-	5% shell exposed
S1.3	"	-	buried shell
S1.4	"	1	buried shell
S2.1	soft mud	-	
S2.2	" w/ thin sand	-	sm. amt. buried shell
S2.3	"	-	"
S2.4	sand	-	buried shell
S3.1	"	-	1 qt. shell
S3.2	"	-	1 pt. shell
S3.3	shell on hard sand	17	shell plant area
S3.4	"	18	"
S4.1	"	18	"
S4.2	"	16	"
S4.3	"	12	"
S4.4	sand, buried shell	-	

Figure 1.



NOTE : RESURVEY FILE # 15032, 6.13 Ac.
INCREASE BY CODE 28.1-101.3, + 6.60 Ac.
12.73 Ac.

SEE 7.50 Ac N.P., O.P.B. #2 pg. #391
1.50 Ac. N.P., O.P.B. #2 pg. #343
} RECORDED IN NORTHUMBERLAND COURT HSE.

E. E. DELAND
BOX 2
WICOMICO CHURCH
22579

12.73 Ac.

COMMONWEALTH OF VIRGINIA
GERALD W. SHOWALTER
No. 1245
LAND SURVEYOR

OYSTER PLANTING GROUN

OF
KATHERINE H. CHASE & LAWRENCE H. HARDING
IN
GREEN, WICOMICO RIVER 02-00-00

DISTRICT NO. 4 NORTHUMBERLAND COUNT

SCALE 1" = 5,000

MAY 10 19 81

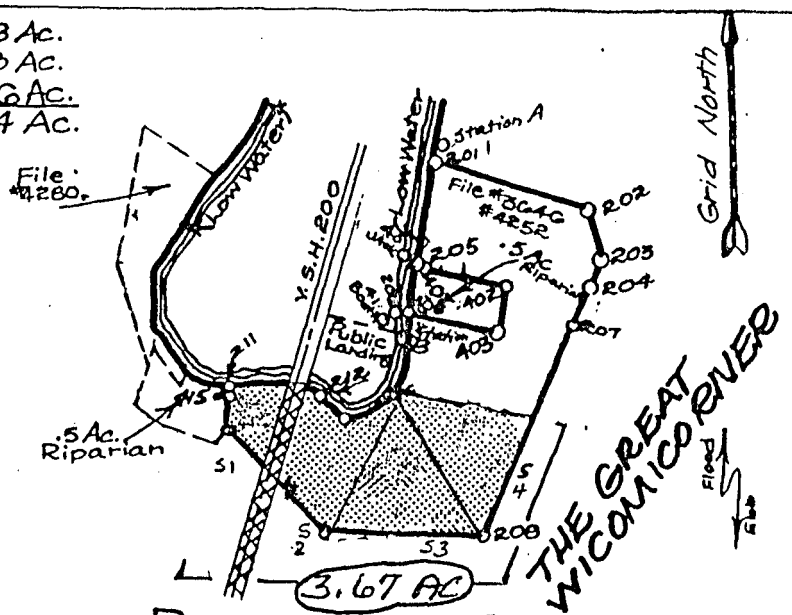
SMR recorded 7/18/85

Raymond M. Hale

Figure 2.

Area in old plats: files #3GAG, 4252 = 7.78 Ac.
Less A.J. Booth riparian .48 Ac.
Less A.J. Booth riparian .06 Ac.
New Area = 7.24 Ac.

Station Jack and Booth are 3/4 in. galvanized pipe. Stations A & B are just computed points.



Resurvey of
7.24 Acres

JUNE HAYNIE STEEL
BOX 1760
WHITE STONE VA
22578

o Indicates Stake

COMMONWEALTH OF VIRGINIA
WARREN R. KEYSER
Warren R. Keyser
CERTIFICATE No
01109
LAND SURVEYOR

OYSTER PLANTING GROUND

OF
~~EARL COCKRELL~~

IN
The Great Wicomico River

DISTRICT NO. 4 — Northumberland COUNTY

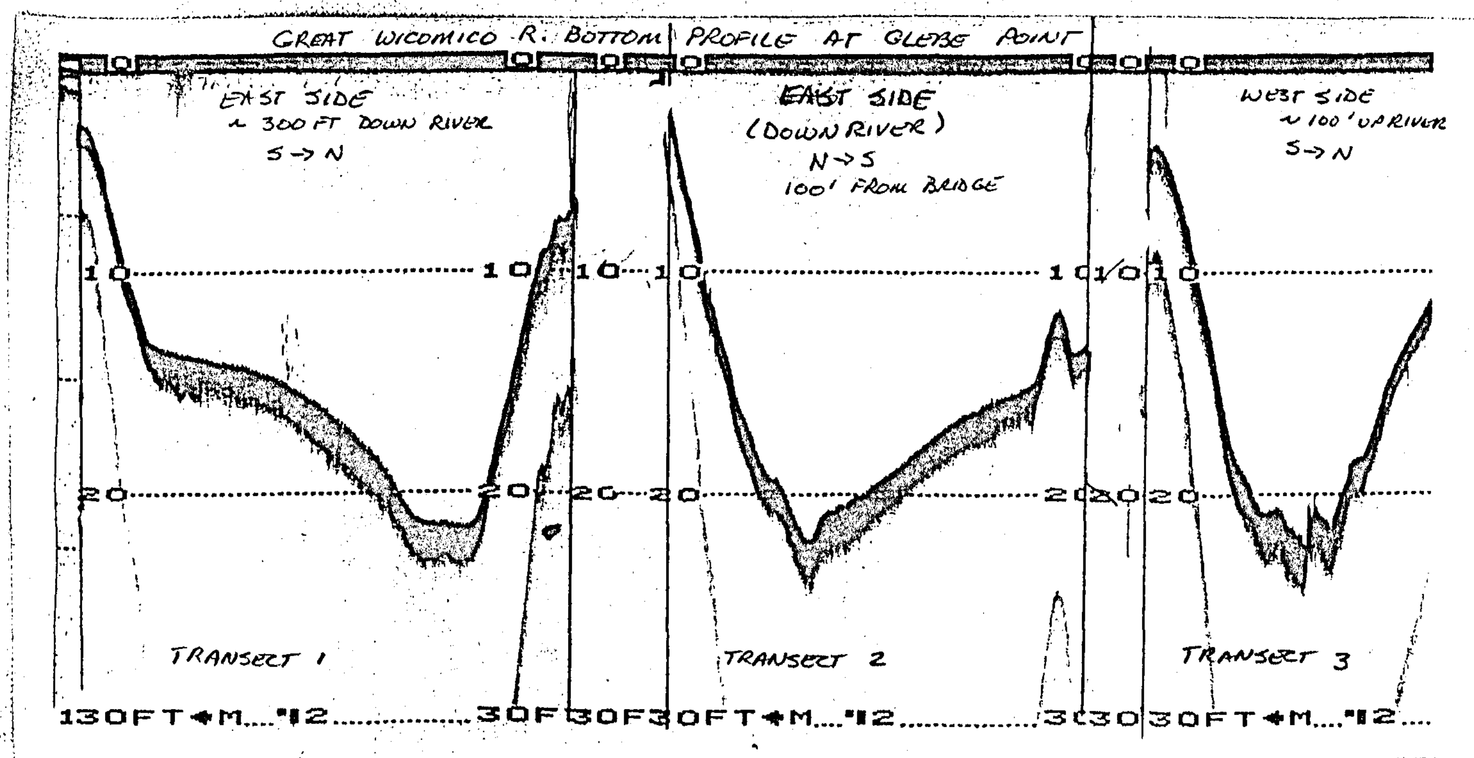
SCALE 1 / 5000 — June 11 1981

V.M.R.C. APPROVED/RECORDED — 9/16/81

Warren R. Keyser
CERTIFIED SURVEYOR

NF651-D-3 Sheet 1 of 2 FB 341, pg. 1

Figure 3.


GREAT WICOMICO R. BOTTOM PROFILE AT GLEBE POINT
EAST SIDE
~ 300 FT DOWN RIVER
S -> N
EAST SIDE
(DOWN RIVER)
N -> S
100' FROM BRIDGE
WEST SIDE
~ 100' UP RIVER
S -> N
10
20
TRANSECT 1
TRANSECT 2
TRANSECT 3
130FT
30FT