

DATE	BOTTOM SALINITY	BOTTOM TEMP.	REEF	SAMPLE SIZE	NO. MARKET	NO SMALL	NO SPAT	NO OLD BOXES	NO NEW BOXES	PREDATORS	FOULING	METHOD	REMARKS
10.7.82	N140	18.1	HORSF HERD #1	1/2 bar	35	230	239	6	12	Turbellarian (2)	Barn. (L)	ledge	Z = 6.5 121 118 239 EBBING TIDE SS = 1 WNW 10KT 1430
ST			#2	1/2 bar	20	126	541	8	44	none	Barn. (L)		
			#3	1/2 bar	24	184	267	9	20	none	Barn. (M)		AN NO BRX / bar = 52
			#4	1/2 bar	25	176	338	12	21	Callinectes fundulus	Bot. (M)		#1 - 504 x 2 = 1008 #2 - 687 x 2 = 1374 #3 - 425 x 2 = 850 <hr/> 3332 X̄ = 1111
	12.64									Barnacles dominant			range = 424 #4 - 539 x 2 = 1078 <hr/> 4410 X̄ = 1103 range = 424

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10/17/87	11.38	18.3	pt of reef Point of # Phots	1/2 bar	24	152	384	6	8	mud crabs	Barn (L)	Odege	1250 flood low (late) WNN 10K Seas clear 7-8 ft depth
			#2		30	85	230	5	4	ditto	ditto		
			#3		15	96	350	4	11	ditto	ditto		
			#4		31	120	415	6	5	ditto	ditto		
													$\bar{x} = 910.67$ Range = 430
													No dominant fouling #1 1120/B0 #2 690/B4 #3 = 922/B0 #4 = 1132 $\bar{x} = 966$ Range = 442

SR

12.49



Whitcane, water, cart, sub

DATE	BOTTOM SALINITY	BOTTOM TEMP.	REEF	SAMPLE SIZE	NO. MARKET	NO. SMALL	NO. SPAT	NO. OLD BOXES	NO. NEW BOXES	PREDATORS	FOULING	METHOD	REMARKS
10.6.82	112.14	13.5°C	Thomas pt rock #1	1/2 bu	4	17	52	117	27	mud crabs	Cliona (4) barnacles (14)	dredge	dredge <del>lost</del> LOST 1 PM early ebb
			10/7/87 #2	1/2 bu	2	16	100	103	24	mud crabs	ditto		SW 10K sea gull 7 ft
			#3	1/2 bu	5	24	119	120	12	ditto	ditto		late flood on second day SW 10-15K on second day 10 ft on second day
													#1 - 73x2 = 146 #2 - 118x2 = 236
													#3 - 148x2 = 296
													678
													$\bar{x} = 226$ range = 150

JR

17.87

no dominant fouling org. 10/7  
 data accepted on chart ~~lost~~ because of  
 dredge lost after 1st tow.  
 schedule priorities



	DATE	BOTTOM SALINITY	BOTTOM TEMP.	REEF	SAMPLE SIZE	NO. MARKET	NO. SMALL	NO. SPAT	NO. OLD BOXES	NO. NEW BOXES	PREDATORS	FOULING	METHOD	REMARKS
JR	10-6-77	1121	18°C	Hansen's Ridge #1	1/2bu	6	9	76	46	7	numerous mud crabs	barnacles (L) Cliona Hydroids	drag	1030 late flood 8-9.5 ft.
				" #2	1/2bu	7	29	92	32	15	mud crabs	barnacles (L) Cliona Hydroids		SW 10 K res slight
				" #3	1/2bu	8	20	89	25	18	mud crabs	barnacles (L) Cliona Hydroids		
				" #4	1/2bu	4	25	131	11	22	mud crabs	Barnacles (L) Cliona Hydroids		#1 - 87 x 2 = 174 #2 - 128 x 2 = 256 #3 - 117 x 2 = 234 #4 - 160 x 2 = 320 <hr/> Σ 984
	19-2-77										occasional dead Microcerina			$\bar{x} = 246$ Range = 146
											Cliona dominant			

DATE	BOTTOM SALINITY	BOTTOM TEMP. °C	REEF	SAMPLE SIZE	NO. MARKET	NO. SMALL	NO. SPAT	NO. OLD BOXES	NO. NEW BOXES	PREDATORS	FOULING	METHOD	REMARKS
10/11/67	N/141	21.2° C	Aberdeen	1/2 bu	0	4	12	3	0	mid crabs numerous	Microcorna barnacles - <i>Crepidula</i> <i>Anomia</i> ( <i>0</i> ) <i>Molca</i> ( <i>0</i> )	dredge	lake @ 66 1070 4-5' depth
4K			#2	1/2 bu	2	0	11	2	1	mid crabs numerous <i>Crepidula</i>	<i>Anomia</i> numerous other fouling	dredge	Microcorna dominant NW 25K seas heavy
			#3	5 mi Haul									the same as haul #1 21.8° C surf.
										Microcorna was dominant, barnacles were light <i>Crepidula</i> , <i>Anomia</i> , <i>Molca</i> were occasional in the first haul. <i>Anomia</i> were numerous in the second haul.			

# 1 - 16 x 2 = 32  
# 2 - 13 x 2 = 26

$\bar{x} = 29$   
Range = 6

20.16

DATE	BOTTOM SALINITY	BOTTOM TEMP.	REEF	SAMPLE SIZE	NO. MARKET	NO. SMALL	NO. SPAT	NO. OLD BOXES	NO. NEW BOXES	PREDATORS	FOULING	METHOD	REMARKS
10/19/87 11:40 AM →	M III	16.4 C	Part 3 #1 BAR	1/2 Bu	1	4	0	40	0	Few <del>lots</del> mud crabs	Hydroids dominant lots of sulfur sponge <del>lots</del> Bryozoans Mod. Anemones Few leleod clams		Calm water Depth = 12 ft Late ship 10 45
MB			" #2	1/2 bu	2	4	2	36	0			ledge	loran out
			#3	1/2 bu	1	4	0	28	0				
										dominant fouling - Hydroids			#1 - 5 x 2 = 10 #2 - 8 x 2 = 16 #3 - 5 x 2 = 10 <hr/> $\bar{x} = 4 \times 2 = 8$ range = 3



	DATE	BOTTOM SALINITY	BOTTOM TEMP.	REEF	SAMPLE SIZE	NO. MARKET	NO. SMALL	NO. SPAT	NO. OLD BOXES	NO. NEW BOXES	PREDATORS	FOULING	METHOD	REMARKS
PK	10/2/87	M100	15.2	Palau Reef #1	1/2 BU	4	11	60	33	7	MUD CRABS numerous	BARNACLES (L) MANY POLYCHA HYDROIDS (M) ENCrustING BRYZ MICROCLONA (H)	Shovel	13 feet flood tide, early N 20K Seas moderate 11:20
				#2	1/2 bu	2	40	124	29	10	ditto	ditto		— 1 gopher
				#3	1/2 bu	0	94	153	13	7	ditto	ditto		
				#4	1/2 bu	1	63	67	46	11	ditto	ditto		
											Dominant fouling -	Microclona		

$75 \times 2 = 150$   
 $166 \times 2 = 332$   
 $247 \times 2 = 494$   
 $131 \times 2 = 262$   


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1238  
 $\bar{x} = 310$   
range = 344

27326.7  
41651.1

DATE	BOTTOM SALINITY	BOTTOM TEMP.	REEF	SAMPLE SIZE	NO. MARKET	NO SMALL	NO SPAT	NO OLD BOXES	NO NEW BOXES	PREDATORS	FOULING	METHOD	REMARKS
10/8/67	N-148	18.0	Burton Point #1	1/2 bu.	0	2	1	36	1	Urosalpinx freak mud crabs murex Callinectes	Microcanal (H) Hydrobia (H) Blood Clams	Dredge	13:15 Ebb-Tide Depth 9.7
PK			#2	1/2 bu	0	0	3	77	7	Urosalpinx mud crabs	Microcanal (H) Hydrobia (H) Crepidula Molgula (L)		Seal mark WNV 15-15K
			#3	1/2 bu	0	2	176	54	23	Urosalpinx mud crabs	Microcanal (H) Hydrobia (H) Molgula (L)		First two hauls on top of rock, hauls #3 and #4 near inside level.
			#4	1/2 bu	0	2	123	23	24	mud crabs	Microcanal (H) Hydrobia (H) Molgula (L)		#1 - 3x2 = 6 #2 - 3x2 = 6 #3 - 178x2 = 356
			Haul #3, #4 was closest to in shore boundary than haul #1, #2										368 x̄ = 123 Range = 350 #4 - 125x2 = 250 368 41618 x̄ = 154 Range = 350
19.37										Dominant Fouling - Hydrobia here.			



DATE	BOTTOM SALINITY	BOTTOM TEMP.	REEF	SAMPLE SIZE	NO. MARKET	NO. SMALL	NO. SPAT	NO. OLD BOXES	NO. NEW BOXES	PREDATORS	FOULING	METHOD	REMARKS
10/2/87	N143	20.3°	Morathoa #1	1/2 bu	57	33	15	20	8	Mud crab very few	Smallish muscle (w) magnolia (w)	Dredge	27440.4 } listed 41779.0 } reading
			#2	1/2 bu	28	23	5	11	8	ditto	ditto		1230 Ebb tide South 10-15 K see mod. horan coral did not seem to be current
			#3	1/2 bu	33	36	4	21	7	ditto	ditto		27446.8 } actual reading 41819.8 } or sample site
			#4		42	19	5	19	2	ditto	ditto		depth 14-15' av no. crebbars (40)
													105 x 2 = 210 58            112 73            146 64            128 ----- 596 ÷ 4 = x̄ = 149 have 98 check horan reading

Rapp

14.77

no important fouling org.



27398.3  
41725.8

DATE	BOTTOM SALINITY	BOTTOM TEMP.	REEF	SAMPLE SIZE	NO. MARKET	NO. SMALL	NO. SPAT	NO. OLD BOXES	NO. NEW BOXES	PREDATORS	FOULING	METHOD	REMARKS
10/5/87	N145	19.20C	Hog House #1	1/2 bu	6	8	5	36	1	mud crabs	Mussels (M) barn. (L) Anadara	dredge	1120 15' depth late flood calm slack before ebb 1 gopher
Rapp			#2	1/2 bu	3	6	5	37	0	mud crabs	Mussels (M) barn (L) Anadara		
			#3	1/2 bu	3	4	6	51	3	mud crabs	mussels (M) barn (L) Mya Anadara		
18.79										no dominant fouling mussels are washed each hour entered in previous as C7			#1 19x2 = 38 #2 14x2 = 28 #3 13x2 = 26 <hr/> 3592 x = 31 range = 12

27378.9  
41738.0

DATE	BOTTOM SALINITY	BOTTOM TEMP.	REEF	SAMPLE SIZE	NO. MARKET	NO. SMALL	NO. SPAT	NO. OLD BOXES	NO. NEW BOXES	PREDATORS	FOULING	METHOD
10/5/87	N146	19.3°C	Drum- mussel gdr #1	1/2 bu	0	6	58	26	2	Mud crabs	Mussels (L) Barn. (L) Hydroids (L) Byogran (M)	dredge
Rapp			#2	1/2 bu	0	4	73	35	0	2 larval penae mud crabs	Mussels (L) Molgula (H) Barn (L) Anadara Microciona	

REMARKS

27377.8  
41738.1

100 PM  
early ebbs  
12 Jt.  
calm

moved mistral;  
use these  
coordinates  
in 1988.

$$\begin{aligned} \#164 \times 2 &= 128 \\ \#277 \times 2 &= 154 \\ \hline &282 \end{aligned}$$

$$\begin{aligned} \bar{x} &= 136 \\ \text{Range} &= 16 \end{aligned}$$

Corrected Loran  
readings

Data accepted on  
basis of  
two (2)  
10 Sm (H)  
x 2  
20 Sm total

18.33

DATE	BOTTOM SALINITY	BOTTOM TEMP.	REEF	SAMPLE SIZE	NO. MARKET	NO. SMALL	NO. SPAT	NO. OLD BOXES	NO. NEW BOXES	PREDATORS	FOULING	METHOD	REMARKS
10.9.89	N 11.5a	16.2	PARROT ROCK #1	1/2 bu	0	12	58	23	15	BLUE CRAB (2)	LOT MOLLUSCA MUSSELS (L) BARNACLES (L)	(H) <del>Red</del>	SEAS 1/2' NE 10 Z = 8.5' AIR TEMP 15°C FLOOD TIDE; Late Flood 1200
Rapp			#2	1/2 bu	3	6	47	32	15	MUD CRABS numerous			
			#3	1/2 bu	1	5	48	33	14	ditto			

Dominant Fouling - Mollusca

#1 140  
#2 112  
#3 108  

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360  
120 = 4  
Range 32

DATE	BOTTOM SALINITY	BOTTOM TEMP.	REEF	SAMPLE SIZE	NO. MARKET	NO. SMALL	NO. SPAT	NO. OLD BOXES	NO. NEW BOXES	PREDATORS	FOULING	METHOD	REMARKS
10.9.82	N.149	16.0	BROAD CREEK #1	1/2 BU	2	10	180	48	10	LOTS OF PANCYCLIPES STYLOCORNUS	LT. BARNACLES LT. MUSSELS BRACHIODONTES few Nalgula	(L)	FLOOD 120 LITERS OF FLOOD SLACK AFTER FLOOD 1000
Rap			#2	1/2 BU	0	15	201	47	9	ditto	ditto		
			#3	1/2 BU	0	4	201	61	1	ditto	ditto		
19.16													No dominant haulings

NE 10

AIR TEMP = 15°C

Z = 14'  
SLIGHT CHOP

REMARKS

#1 384  
#2 432  
#3 410  $\mu = 409$   
RANGE = 48

27386.2  
41763.0

	DATE	BOTTOM SALINITY	BOTTOM TEMP.	REEF	SAMPLE SIZE	NO. MARKET	NO. SMALL	NO. SPAT	NO. OLD BOXES	NO. NEW BOXES	PREDATORS	FOULING	METHOD	REMARKS
Coco toman  Rapp	10/6/87	1147	19.50	Middle Qdr. #1	1/2 bu	1	23	46	43	1	mud crab	Molpula (H)	drags	1:45 PM. early ebb 11' depth
				#2	1/2 bu	0	67	52	30	2	mud crab	Molpula (M) Bark, (L)		calm
				#3	1/2 bu	1	38	59	48	1	ditto	ditto		
				#4	1/2 bu	0	34	43	41	3	ditto	Microcerans Molpula (L) Bark (L)		#1 - 70 x 2 = 140 #2 - 119 x 2 = 238 #3 - 98 x 2 = 196 #4 - 77 x 2 = 154
	17.62										Dominant fouling - Molpula			<u>728</u> $\bar{x} = 182$ range = 98

DATE	BOTTOM SALINITY	BOTTOM TEMP.	REEF	SAMPLE SIZE	NO. MARKET	NO. SMALL	NO. SPAT	NO. OLD BOXES	NO. NEW BOXES	PREDATORS	FOULING	METHOD	REMARKS
10/14/89	19.04	15.50	#1 Hammer Pt	1/2 bu	0	147	287	65	16	Mandrabes	Barnacles (L) Mussels (L) Growth (M) Hydras (L)	Crab	1-PM flood tide WN 15-25K Sea light depth 15'
SW			#2	1/2 bu	1	127	222	81	37	di. Ho	di. Ho		
	19.3		#3	1/2 bu	0	132	243	65	18	di. Ho	di. Ho		
											Dominant fouling - Greenaria		
											$434 \times 2 = 868$ $350 \times 2 = 700$ $375 \times 2 = 750$ $\bar{x} = 713$		
											$3 \overline{) 2318} \underline{21} 173.$		
											$\text{Range} = 168 \quad \frac{21}{218}$		

	DATE	BOTTOM SALINITY	BOTTOM TEMP.	REEF	SAMPLE SIZE	NO. MARKET	NO. SMALL	NO. SPAT	NO. OLD BOXES	NO. NEW BOXES	PREDATORS	FOULING	METHOD	REMARKS
SW	10/11/87	M103	15.00	Whaleys #1	1/2 bu	1	137	186	61	23	mud crabs	Mussels, few barn. (L)	drag	11 20 - depth 8-9, reach before flood N 1.5-20 K
	19.3			#2	1/2 bu	3	145	147	65	10	ditto	mussels, few barn. (L)		see med.
				#3	1/2 bu	3	139	172	58	17	ditto	ditto		
											No <i>Squilla</i> <i>scyllaria</i> <i>argemona</i>			

$324 \times 2 = 648$   
 $295 \times 2 = 590$   
 $314 \times 2 = 628$   


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1866  
 $\bar{x} = 622$   
range = 58

DATE	BOTTOM SALINITY	BOTTOM TEMP.	REEF	SAMPLE SIZE	NO. MARKET	NO SMALL	NO. SPAT	NO OLD BOXES	NO. NEW BOXES	PREDATORS	FOULING	METHOD	REMARKS
10/14/87	M102	14°C	Fleet Point #1	1/2 bu	0	61	1031	81	30	few nudibranchs turbellarian	light mat of Bryozoa, Hydrinths, mussels bryozoa	O/R use	945 late ebb W 15-20 Seas mud 10-11'
SW	19.2		#2	1/2 bu	0	53	905	24	38	mud crabs	di Ho		1 gaper
			#3	1/2 bu	0	46	931	55	21	di Ho	di Ho		
										No dominant Roulston organism			

$1092 \times 2 = 2184$   
 $958 \times 2 = 1916$   
 $1977 \times 2 = 3954$   
 $\bar{x} = \frac{2184 + 1916 + 3954}{3} = 2018$   
 Range = 268

37° 56.18  
 75° 42.13  
 37-56-46.8  
 75-42-07.8

DATE	BOTTOM SALINITY	BOTTOM TEMP.	REEF	SAMPLE SIZE	NO. MARKET	NO. SMALL	NO. SPAT	NO. OLD BOXES	NO. NEW BOXES	PREDATORS	FOULING	METHOD
10/15/87	M 106	13.8°C	P.6. #9 #1	1/2bu	8	6	30	19	5	mur d crabs few	Molopla (L) Eremone (L) Barnacle (L) Hydrozoa (L) Mussel	Checker
Pacombate	20.3		#2	1/2bu	8	14	25	26	2	mur d crabs turbellaria	Preyogram (L) Sabellidae	
			#3	1/2bu	2	14	19	20	7	mur d crabs		
no dominant fouling organism												

REMARKS  
 2-PM  
 Flood, early  
 5 ft. 1 gopher  
 calm  
 The lantern is not working

#1 44 x 2 = 88  
 #2 47 x 2 = 94  
 #3 35 x 2 = 70  
 x̄ = 84  
 range = 24



DATE	BOTTOM SALINITY	BOTTOM TEMP.	REEF	SAMPLE SIZE	NO. MARKET	NO. SMALL	NO. SPAT	NO. OLD BOXES	NO. NEW BOXES	PREDATORS	FOULING	METHOD	REMARKS
10.16.88	M107	14.8 C	MARSHALL ROCK	1/2 BU	0	5	0	16	0	VIROALPAX MUD CRABS PYRAMIDOSPONGES NASSARIIDS	HYDROIDS SABELLIDAE CREPIDULA BARNACLES MOLGULA ANOMIA CLIONA	DREDGE	Z=12' TIME=1010 CALM ETBS CLEAR WEATHER
ditto	ditto	ditto	ditto	ditto	0	2	0	18	0	ditto	ditto		ditto taken over charter
ditto	ditto	ditto	ditto	ditto	0	1	0	7	0	ditto	"	"	ditto
	20.0												Meremaria
													dominant hydroids 1- 5 2- 2 3- 1 <hr/> 8 $\bar{x} = 3$ range = 4

DATE	BOTTOM SALINITY	BOTTOM TEMP.	REEF	SAMPLE SIZE	NO. MARKET	NO. SMALL	NO. SPAT	NO. OLD BOXES	NO. NEW BOXES	PREDATORS	FOULING	METHOD	REMARKS
10/16/87	M108	15.5°C	Bad #1	1/2	0	0	0	1	0	MUD CRABS UROSAHPYX	CREPIDULA HYDROBIES FEW MORGULA CLIONA ANOMIA SABELLIDAE ANADARA	dede	COMPLETE MORT
	20.5		#7	1/2	0	0	0	1	0				t = 11:00 Calm sea + wind Ebb (M10) T = 15.5 depth 15' Larvae out of order

dominant hydroids



DATE	BOTTOM SALINITY	BOTTOM TEMP.	REEF	SAMPLE SIZE	NO. MARKET	NO. SMALL	NO. SPAT	NO. OLD BOXES	NO. NEW BOXES	PREDATORS	FOULING	METHOD	REMARKS
10/16/67	M 110	15.8°C	Robin Hood #1	1/2	0	0	1	8	0	mud crabs	Molgula Hydraria Anomia Cliona	cores	51ack before flood t=1230 T=15.8
	20.6		#2	1/2	2	0	3	10	0		"		depth 18'  Loran over of order
			#3	1/2	1	0	0	4	0		Bryozoans (encrusting) Anadara		2L sent Mar + Seas column
										dominant - hydroids			# 1 - 1 2 - 5 3 - 1 <hr/> 7 $\bar{x} = 2$ range = 4



Table 1. Summary, Fall 1987 Oyster Bar Survey<sup>1</sup>

BAR	OYSTERS			BU. COUNT	MEAN COUNT	GAPER	BOXES			FOULING	BOTTOM		TIME	TIDE	MEAN DEPTH	LORAN COORD.	OBSERVATIONS, SAMPLE PREC, ETC.
	MKT.	SM.	SPAT				REC.	OLD	PRED.		°C	‰					
<u>James River</u>																	
Horsehead	70	460	478	1008		None	24	12	Turbellarian	Barnacles; light to moderate.	18.1	12.6	1430	Early Ebb	6.5'	27346.0	Seas light.
	40	252	1082	1374		None	88	16	None							41333.2	Wind WNW 10K.
	48	368	534	950		None	40	18	None								
	50	352	676	1078	1103	None	42	24	None								
Pt. of Shls.	48	304	768	1120		None	16	12	Mud Crabs	Barnacles; light.	18.3	12.5	1250	Late Flood	7.5'	27344.0	Seas light.
	60	170	460	690		None	8	10	Mud Crabs							41310.6	Wind WNW 10K.
	30	192	700	922		None	22	8	Mud Crabs								
	62	240	830	1132	966	None	10	12	Mud Crabs								
Wreck Shl.	20	58	182	260		None	42	116	Mud Crabs	Barnacles; light.	18.5	16.8	1100	Max. Flood	9.5'	27326.0	Seas calm.
	16	38	240	294		None	42	66	Mud Crabs							41301.8	
	16	58	308	382	312	None	54	76	Mud Crabs	Cliona; light.							
Thomas Rock	8	34	104	146		None	54	234	Mud Crabs	Barnacles; light.	18.5	17.9	1300	Early Ebb	7.0'	27302.7	Seas calm.
	4	32	200	236		None	48	206	Mud Crabs	Cliona; light.						41288.4	
	10	48	238	296	226	None	24	240	Mud Crabs								
Ridge	12	18	144	174		None	14	92	Mud Crabs	Cliona; mod.	18.0	19.3	1030	Late Flood	8.8'	27280.6	Seas light.
	14	58	184	256		None	30	64	Mud Crabs	Barnacles; light.						41218/8	Wind SW 10K.
	16	40	178	234		None	36	50	Mud Crabs	Hydroides.							
	8	50	262	320	246	None	44	22	Mud Crabs								
<u>York River</u>																	
Aberdeen Rk.	0	8	24	32		None	0	6	Mud Crabs	Microciona; heavy.	21.2	20.2	1020	Late Ebb	4.5'	27368.3	Seas rough.
	4	0	22	26	29	None	2	4	Eupleura	Barnacles; light.						41501.2	Wind NW 25K.
										Crepidula,							Microciona dominant.
										Anomia and Molgula.							

1. Volume of each sample is 1 Virginia bushel (50 quarts).

BAR	OYSTERS			BU. COUNT	MEAN COUNT	GAPER	BOXES			FOULING	BOTTOM		TIME	TIDE	MEAN DEPTH	LORAN COORD.	OBSERVATIONS, SAMPLE PREC., ETC.
	MKT.	SM.	SPAT				REC.	OLD	PRED.		°C	‰					
<u>Mobjack Bay</u>																	
Pultz Bar	2	8	0	10		None	0	80	Mud Crabs	Hydroids, Cliona	16.4	22.4	1045	Late Ebb	12'	27310.6	Seas calm.
	4	8	4	16		None	0	72	Mud Crabs	Anomia,						41534.6	Hydroids dominant.
	2	8	0	10		None	0	56	Mud Crabs	Crepidula; mod. Blood clams.							
<u>Piankatank River</u>																	
Ginney Pt.	4	34	36	74		2	20	78	Mud Crabs	Molgula; heavy.	16.2	18.9	1300	Mid Flood	8.5'	27347.4	Seas light.
	2	76	52	130		None	12	102	Mud Crabs	Mussels; mod.						41659.7	Wind N 20K.
	10	98	68	176		None	36	98	Mud Crabs	Barnacles,							Molgula dominant.
	6	124	104	234	154	1	30	114	Mud Crabs	Hydroids; light.							
<u>Palace Bar</u>																	
	8	22	120	150		None	14	66	Mud Crabs	Microciona,	15.2	19.2	1120	Early Flood	13'	27338.1	Seas moderate.
	4	80	248	332		1	20	58	Mud Crabs	Molgula;						41658.3	Wind N 20K.
	0	188	306	494		None	14	26	Mud Crabs	heavy. Hydroides,							Microciona dominant.
<u>Burton Pt.</u>																	
	2	126	134	262	310	None	22	92	Mud Crabs	Bryozoans; mod.							
	0	4	2	6		None	2	72	Urosalpinx	Hydroides,	18.0	19.3	1315	Ebb	9.7'	27326.0	Seas moderate.
	0	0	6	6		None	4	144	Mud Crabs	Microciona; heavy.						41652.9	Wind NW10-15K.
	0	4	352	356		None	46	108	Callinectes,	Molgula; light.							Hydroides dominant.
	0	4	246	250	155	None	48	46	Juvenile	Crepidula.							
<u>Rappa River</u>																	
Bowler's Rk.	64	14	64	142		None	0	0	Mud Crabs	Molgula;	19.8	13.2	1030	Ebb	7.5'	27472.4	Seas light.
	48	8	20	76		None	0	14	Turbellarians	heavy.						41847.3	Wind S 10K.
	48	22	20	90	103	None	2	4		Barnacles, Mussels; mod.							Molgula dominant.

BAR	OYSTERS			BU. COUNT	MEAN COUNT	GAPER	BOXES			FOULING	BOTTOM		TIME	TIDE	MEAN DEPTH	LORAN COORD.	OBSERVATIONS, SAMPLE PREC., ETC.
	MKT.	SM.	SPAT				REC.	OLD	PRED.		°C	‰					
Morattico	114	66	30	210		None	16	40	Mud Crabs	Barnacles, Mussels, Molgula; light.	20.3	14.7	1230	Ebb	14.5'	27446.8 41819.8	Seas moderate. Wind S 10-15K.
	56	46	10	112		None	16	22	Mud Crabs								
	66	72	8	146		None	14	42	Mud Crabs								
Smokey Pt.	84	38	10	132	150	None	4	38	Mud Crabs	Molgula, Mussels;  light to mod. Barnacles; light. Anemones, Anadera.	18.0	16.1	1015	Late flood	13'	27417.8 41779.0	Seas calm. 1/3 of shell was black.
	22	10	12	44		None	4	66	Mud Crabs								
	26	22	10	58		None	14	66	Mud Crabs								
	24	16	14	54	52	1	6	82	Mud Crabs								
Hog House	12	16	10	38		1	2	72	Mud Crabs	Mussels; mod. Banacles; light. Anadera, Mya.	19.2	18.3	1120	High slack	15'	27398.3 41725.8	Seas calm.
	6	12	10	28		None	0	74	Mud Crabs								
	6	8	12	26	31	None	6	102	Mud Crabs								
Drumming Ground	0	12	116	128		None	4	52	Mud Crabs	Bryozoan, Molgula; med. Mussels, Barnacles, Hydroides, light.	19.3	18.3	1300	Early Ebb	12'	27377.8 41738.1	Seas calm.
	0	8	146	154	141	None	0	70	Urosalpiux								
Parrot Rk.	0	24	116	140		None	30	46	Mud Crabs	Molgula; heavy. Mussels, Barnacles; light.	16.2	18.4	1200	Late Flood	8.5'	27361.9 41710.4	Seas light. Wind NE 10K.
	6	12	94	112		None	30	64	Mud Crabs								
	2	10	96	108	120	None	28	66	Callinectes								
Broad Ck.	4	20	360	384		None	20	96	Mud Crabs	Barnacles, Mussels, Molgula; light.	16.0	19.2	1000	High slack	14'	27329.5 41696.3	Seas light. Wind N 10K.
	0	30	402	432		None	18	94	Turbel- larians								
	0	8	402	410	409	None	8	122									

BAR	OYSTERS			BU. COUNT	MEAN COUNT	GAPER	BOXES			FOULING	BOTTOM		TIME	TIDE	MEAN DEPTH	LORAN COORD.	OBSERVATIONS, SAMPLE PREC., ETC.
	MKT.	SM.	SPAT				REC.	OLD	PRED.		°C	‰					
<u>Corrotoman R.</u>																	
Middle	2	46	92	140		None	2	86	Mud Crabs	Molgula;	19.5	17.6	1345	Early Ebb	11'	27386.2	Seas calm.
Ground	0	134	104	238		None	4	60	Mud Crabs	light to heavy.						41763.0	
	2	76	118	196		None	2	96	Mud Crabs	Barnacles;							
	0	68	86	154	182	None	6	82	Mud Crabs	light; Microciona.							
<u>G.R. WICOMICO</u>																	
Haynie Pt.	0	294	574	868		None	32	130	Mud Crabs	Gracilaria;	15.5	19.3	1300	Flood	15'	27366.9	Seas light.
	2	254	444	698		None	74	162	Mud Crabs	mod. Barnacles.						41881.6	Wind N15-25K.
	0	264	486	750	772	None	36	130	Mud Crabs	Mussels, Hydroides;							Gracilaria dominant.
Whaley's E.	2	274	372	648		None	46	122	Mud Crabs	Barnacles,	15.0	19.3	1120	Low slack	8.5'	27361.6	Seas moderate.
	6	290	294	590		None	20	130	Mud Crabs	Mussels;						41867.3	Wind N15-20K.
	6	278	344	628	622	None	34	116	Mud Crabs	light.							
Fleet Pt.	0	122	2062	2184		None	60	162	Mud Crabs	Barnacles,	14.0	19.2	0945	Late Ebb	10.5'	27358.3	Seas moderate.
	0	106	1810	1916		1	76	48	Turbellarians	Mussels,						41868.9	Wind N 15-20K.
	0	92	1862	1954	2018	None	42	110		Bryozoans; light.							
<u>Pocomoke Snd.</u>																	
P. G. #9	16	12	60	88		1	10	38	Mud Crabs	Molgula,	13.8	20.3	1400	Early Flood	5'	Loran out	Seas calm.
	16	28	50	94		None	4	52	Turbellarians	Hydroides, Bryozoans,							
	4	28	38	70	84	None	14	40		Anemones, light. Mussels, Sabellidae.							
P. G. #10	2	18	34	54		None	4	72	Mud Crabs	Molgula,	14.0	20.3	1545	Flood	8'	Loran out	Seas light.
	2	20	40	62		None	2	74	Mud Crabs	Hydroides Barnacles; light.							Wind NW 5-10K.
	6	22	38	66	61	None	8	100	Mud Crabs	Mussels, Sabellaria.							

BAR	OYSTERS			BU. COUNT	MEAN COUNT	GAPER	REC.	BOXES		FOULING	BOTTOM		TIME	TIDE	MEAN DEPTH	LORAN COORD.	OBSERVATIONS, SAMPLE PREC., ETC.
	MKT.	SM.	SPAT					OLD	PRED.		°C	‰					
Marshall Rk.	0	10	0	10		None	0	32	Mud Crabs	Hydroides; mod. Barnacles,  Molgula, Crepidula, Cliona, Sabellidae, Anomia.	14.0	20.0	1010	Max. Ebb	12'	Loran out	Seas calm. Hydroides dominant.
	0	4	0	4		None	0	36	Urosalpinx								
	0	2	0	2	5	None	0	14	Mud crabs								
Bird Rk.	0	0	0	0		None	0	2	Mud Crabs	Hydroides, Molgula Cliona,	15.5	20.5	1100	Max. Ebb	15'	Loran out	Seas calm.  Hydroides dominant.
	0	0	0	0	0	None	0	2	Urosalpinx								
Island Rk.	0	0	0	0		None	0	20	Mud Crabs	Hydroides, Molgula, Sabellidae, Crepidula, Cliona	15.0	20.3	1130	Late Ebb	13.5'	Loran out	Seas calm. Hydroides dominant.
	0	0	0	0	0	None	0	10	Mud Crabs								
Robin Hood	0	0	2	2		None	0	16	Mud Crabs	Hydroides, Molgula, Anomia, Cliona, Bryozoans, Anadera.	15.8	20.6	1230	Low slack	18'	Loran out	Seas calm.  Hydroides dominant.
	4	0	6	10		None	0	20	Mud Crabs								
	2	0	0	2	5	None	0	8	Mud Crabs								





SUMMARY, FALL 1987 OYSTER BAR SURVEY

BAR	OYSTERS Bu. $\bar{x}$				GAPER	BOXES		FOULING	BOTTOM °C	‰	TIME	TIDE	DEPTH	LORAN COORD.	OBSERVATIONS, SAMPLE PREG., ETC.
	MKT	SM	SPAT COUNT	COUNT		REG.	OLD								
PANK. (CONT.)															
BURTON PT.	0	4	2	6	NONE	2	72	Urosalpinx	18.0	19.32	1315	Ebb	9.7'	27326.0	Seas mod
	0	0	6	6	NONE	4	144	Mud crabs						41652.9	Wind NN 10-15K
	0	4	352	356	NONE	46	108	Callinectes, juvenata							Hydroids dominant
	0	4	246	250	155	NONE	48	46							
PAPPA RIVER															
BOWLERS RK.	64	14	64	142	NONE	0	0	Mud crabs	19.8	13.2	1030	Ebb	7.5'	27472.4	Seas light
	48	8	20	76	NONE	0	14	Turbellarians						41847.3	Wind S 10K
	48	22	20	96	103	NONE	2	4							Molgula dominant
MORATTICO	114	66	30	210	NONE	16	40	Mud crabs	20.3	14.7	1230	Ebb	14.5'	27446.8	Seas moderate
	56	46	10	112	NONE	16	22	Mud crabs						41819.8	Wind S 10-15K
	66	72	8	146	NONE	14	42	Mud crabs							
	84	38	10	132	150	NONE	4	38	Mud crabs						
SMOKEY PT.	22	10	12	44	NONE	4	66	Mud crabs	18.0	16.1	1015	Late Flood	13'	27419.8	Seas calm
	26	22	10	58	NONE	14	66	Mud crabs						41779.0	1/3 of shells black
	24	16	14	54	52	1	6	82							
HOG HOUSE	12	16	10	38	1	2	72	Mud crabs	19.2	18.3	1120	High slack	15'	27398.3	Seas calm
	6	12	10	28	NONE	0	74	Mud crabs						41725.8	
	6	8	12	26	31	NONE	6	102							
RUMMING GROUND	0	12	116	128	NONE	4	52	Mud crabs	19.3	18.3	1300	Early Ebb	12'	27377.8	Seas calm
	0	8	146	154	141	NONE	0	70	Urosalpinx					41738.1	
PARROT RK.	0	24	116	140	NONE	30	46	Mud crabs	16.2	18.4	1200	Late Flood	8.5'	27361.9	Seas light
	6	12	94	112	NONE	30	64	Mud crabs						41710.4	Wind NE 10K
	2	10	96	108	120	NONE	28	66	Callinectes						Molgula dominant
BROAD CK.	4	20	368	384	NONE	20	96	Mud crabs	16.0	19.2	1000	High slack	14'	27329.5	Seas light
	0	30	402	432	NONE	18	94	Turbellarians						41696.3	Wind NE 10K
	0	8	402	410	409	NONE	2	122							
PORROTOMAN R.															
MIDDLE GROUND	2	46	92	140	NONE	2	86	Mud crabs	19.5	17.6	1345	Early Ebb	11'	27386.2	Seas calm
	0	134	104	238	6	NONE	4	60	Mud crabs					41763.0	
	2	76	118	194	NONE	2	96	Mud crabs							
	0	68	86	154	182	NONE	6	82	Mud crabs						

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LAB INFORMATION :

Technician name ----- JMV  
 Time ----- 12:31:28  
 Date ----- 11/6/1987  
 Cal H2o Type ----- Sub-Standard  
 Std H2o Cond Ratio --- 1.13510  
 Cal Temp ----- 20.2  
 Temp Com Dial ----- 838  
 STD Ratio Dial ----- 859  
 Repulls to ----- Whitcomb  
 Note -----

FIELD INFORMATION -

Technician name --- Whitcomb  
 Sample Date/Time --- 11/6/87  
 Project ID ----- 111305  
 River name ----- Bay Survey  
 Station name -----

Ratio	Temperature	Salinity	Bottle Number
0.58050	20.20	19.15	m100
0.57290	20.20	18.87	m101
0.58100	20.20	19.16	m102
0.58600	20.20	19.34	m103
0.58440	20.20	19.29	m104
0.61330	20.20	20.34	m105
0.61140	20.20	20.27	m106
0.60520	20.20	20.04	m107
0.61720	20.20	20.46	m108
0.61200	20.20	20.28	m109
0.62610	20.20	20.61	m110
0.66590	20.20	22.42	m111 Aults Bar

*additional results from Bay Survey attached to 9/30/87  
 James River field sheet and included with 1987 James R.  
 Temp & salinities.*