FISHERMEN'S CLAM REPORT
Surfclam - Ocean Quahog Survey
Delmarva Peninsula - Georges Bank
June 3 - July 12, 2002
FRV DELAWARE II

Submitted to: NOAA, NEFSC

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Date: 2002

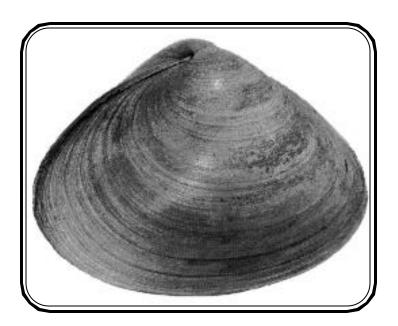
Fishermen's Report Surfclam/Ocean Quahog



Delmarva Peninsula - Georges Bank June 3 - July 12, 2002

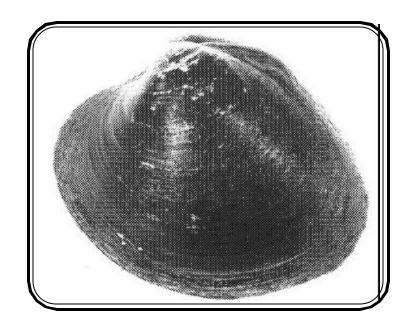
FRV DELAWARE II

National Marine Fisheries Service Northeast Fisheries Science Center Woods Hole, MA 02543



Surfclam (Spisula solidissima)

Ocean Quahog (Arctica islandica)



CLAM FISHERMEN'S REPORT

Preliminary Catch Summary

National Marine Fisheries Service Northeast Fisheries Science Center

Surfclam - Ocean Quahog Survey
FRV DELAWARE II
Delmarva Peninsula - Georges Bank
June 03 - July 12, 2002

The 2002 region-wide survey for Atlantic surfclam, *Spisula solidissima*; and Ocean Quahog, *Arctica islandica*, was conducted in continental shelf waters, from Delmarva Peninsula to Georges Bank aboard the *FRV DELAWARE II*. The survey, conducted by the NMFS, Northeast Fisheries Science Center, provides indices of abundance and recruitment for both species. In addition, tows were made at 25 non-random sites during the survey to support ongoing scientific studies.

The following charts and station data describe the distribution of surfclams and ocean quahogs during the survey. Five-minute tows were made at the speed of 1.5 knots with a hydraulic jet dredge equipped with a 5-foot wide blade and submersible pump positioned on the dredge. Survey stations were randomly selected to provide unbiased abundance measurements. Therefore, these stations were not always on or near known locations of clam concentrations.

In this report, catch quantity is recorded in numbers of clams, and depth in fathoms. Percent estimates of surfclams are also given by four categories of shell height: between 0 to 4.75", 4.76 to 5.00", 5.01 to 5.50", and greater than 5.50". Distribution plots indicate relative numbers of surfclams and ocean quahogs caught on each tow.

In an effort to make this report timely, the data are summarized from unaudited catch files. Therefore, all information in this report is considered provisional and subject to change.

For further information contact Russell Brown (508-495-2380) or Linda Despres (508-495-2346), National Marine Fisheries Service, Northeast Fisheries Science Center, 166 Water Street, Woods Hole, MA 02543. To view this report on the Ecosystems Surveys Branch website, go to: http://www.nefsc.nmfs.gov/esb/fishermens%20reports.htm.

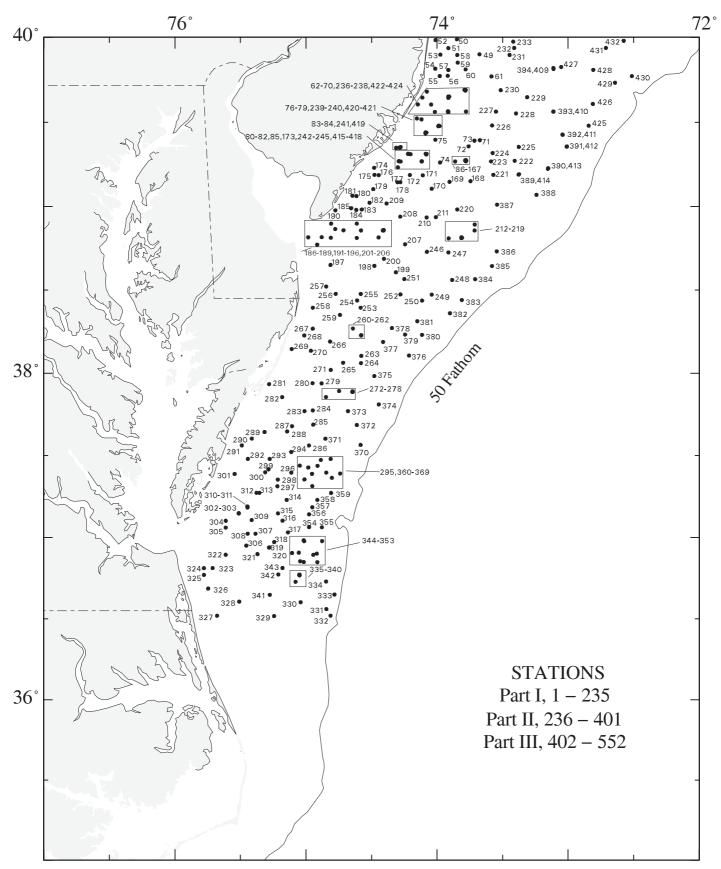


Figure 1. Dredge hauls made from R/V DELAWARE II, during National Marine Fisheries Service, Northeast Fisheries Science Center Surfclam/Ocean Quahog Survey (02 – 05), June 03 – July 12, 2002.

Map 1 of 3

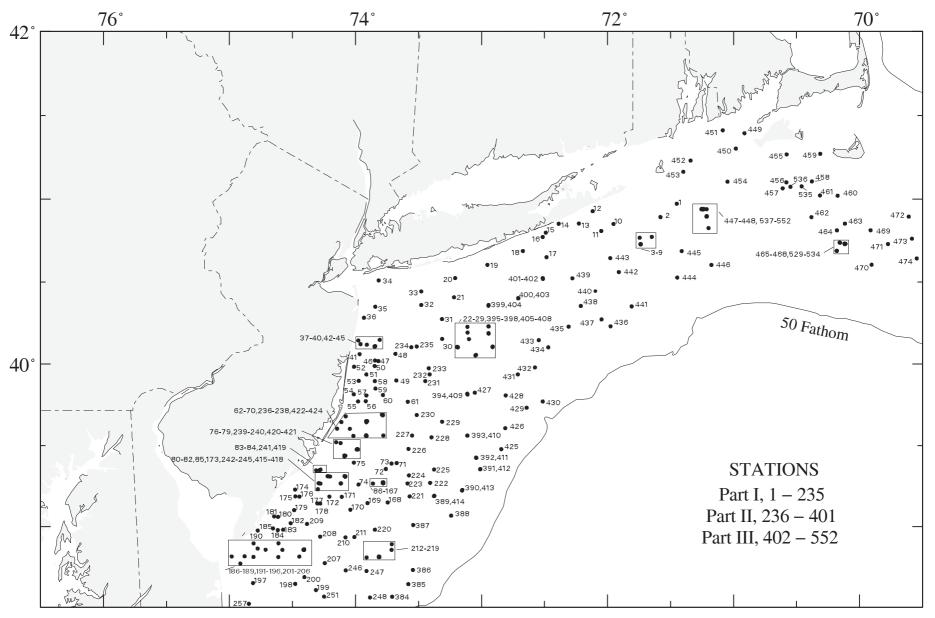


Figure 2. Dredge hauls made from R/V DELAWARE II, during National Marine Fisheries Service, Northeast Fisheries Science Center Surfclam/ Ocean Quahog Survey (02 – 05), June 03 – July 12, 2002.

Map 2 of 3

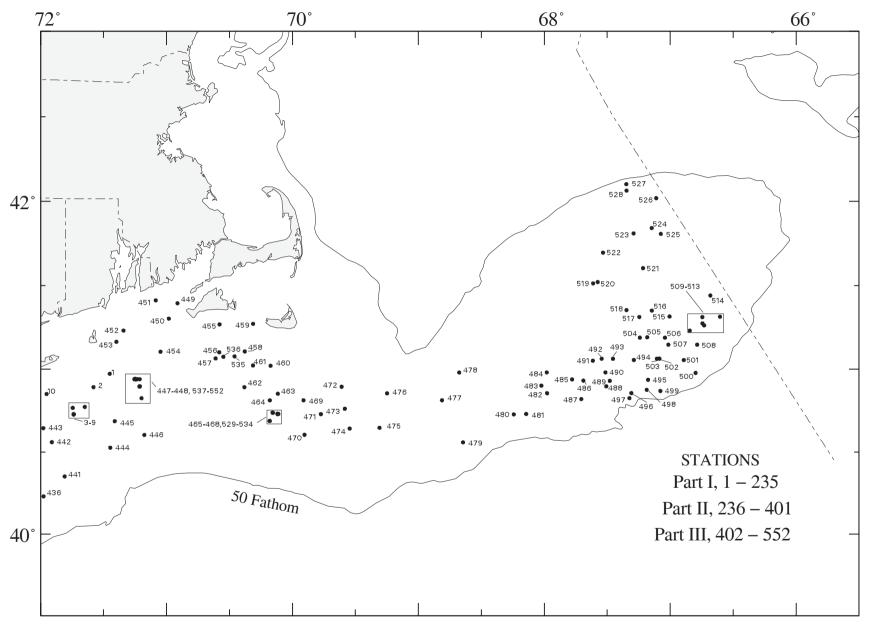


Figure 3. Dredge hauls made from R/V DELAWARE II, during National Marine Fisheries Service, Northeast Fisheries Science Center Surfclam/Ocean Quahog Survey (02 – 05), June 03 – July 12, 2002.

Map 3 of 3

			Station 1	Data						Surf Clams	7		Ocean Quahogs
										Percent of	Survey Catch		
Survey	Station	Position		Loran			Depth	Catch					Catch Number
Stratum	Number	Latitude L	ongitude	Time De	elays 1	Ieading	(FM)	Number	0-4.74"	4.76-5.00"	5.01-5.50"	>5.50"	
01	0277		7444.8	X26937.2			17.5	68	22.1	2.9	11.8	63.2	0
01	0375	3758.9	7428.7	X26863.9	Y42127.	48	27.3	0	0.0	0.0	0.0	0.0	168
01	0376	3806.3	7412.8	X26791.0	Y42224.	3 3 2 3	30.1	3	100.0	0.0	0.0	0.0	25
01	0377	3811.2	7424.7	X26861.2	Y42264.	2 66	19.7	158	79.7	8.2	3.2	8.9	11
01	0378	3816.3	7420.6	X26846.9	Y42323.	2 48	23.5	127	90.6	2.4	5.5	1.6	77
01	0380	3813.8	7406.8	X26768.5	Y42310.	3 338	35.5	0	0.0	0.0	0.0	0.0	31
02	0386	3843.9	7332.6	X26608.4	Y42647.	5 59	36.1	0	0.0	0.0	0.0	0.0	66
02	0387	3900.6	7332.5	X26626.1	Y42816.	9 65	26.8	0	0.0	0.0	0.0	0.0	116
02	0399	4021.5	7256.6	X26478.7			21.9	0	0.0	0.0	0.0	0.0	93
02	0453		7123.9	X25760.6			18.6	0	0.0	0.0	0.0	0.0	5
03	0004		7144.6	X25912.5			31.2	0	0.0	0.0	0.0	0.0	30
03	0395		7302.9	X26500.1			24.6	0	0.0	0.0	0.0	0.0	156
03	0396		7254.7	X26442.1			26.2	0	0.0	0.0	0.0	0.0	123
03	0390		7256.6	X26463.3			25.7	0	0.0	0.0	0.0	0.0	174
03	0397		7256.6	X26466.9			24.6	0	0.0	0.0	0.0	0.0	142
03	0400		7242.5	X26369.5			24.6	0	0.0	0.0	0.0	0.0	66
03								0	0.0	0.0	0.0		0
	0454		7102.8	X25566.4			18.0					0.0	-
05	0322		7536.7	X27077.3			12.0	0	0.0	0.0	0.0	0.0	0
0.5	0328		7530.5	X27025.2			10.4	5	100.0	0.0	0.0	0.0	0
05	0329		7514.6	X26953.1			15.9	51	78.4	0.0	15.7	5.9	0
05	0330		7502.4	X26909.2			13.7	1	0.0	0.0	0.0	100.0	0
05	0331		7450.6	X26857.0			24.6	8	100.0	0.0	0.0	0.0	0
05	0340		7504.7	X26928.4			14.8	107	72.9	2.8	19.6	4.7	0
05	0341	3638.9	7516.5	X26971.4	Y41177.	93	17.5	0	0.0	0.0	0.0	0.0	0
05	0342	3646.3	7512.6	X26965.2	Y41266.	96	16.4	14	0.0	14.3	42.9	42.9	0
06	0332	3631.2	7448.7	X26846.4	Y41163.	9 192	29.5	0	0.0	0.0	0.0	0.0	0
06	0333	3639.0	7446.9	X26847.4	Y41248.	351	32.8	0	0.0	0.0	0.0	0.0	2
06	0502	4103.7	6705.1	W13174.4	Y43564.	2 294	36.1	0	0.0	0.0	0.0	0.0	298
09	0014	4051.0	7223.2	X26249.9	Y43806.	259	7.7	25	32.0	0.0	0.0	68.0	1
09	0283	3746.2	7500.6	X27003.1	Y41945.	7 133	15.3	37	5.4	0.0	27.0	67.6	0
09	0284		7456.8	X26985.0			15.9	11	0.0	0.0	36.4	63.6	0
09	0285		7456.6	X26975.4			18.6	36	36.1	36.1	27.8	0.0	0
09	0286		7458.6	X26972.7			15.9	50	4.0	4.0	44.0	48.0	0
09	0287		7506.4	X27021.4			15.9	0	0.0	0.0	0.0	0.0	0
09	0288		7508.6	X27021.4 X27028.4			14.8	1	100.0	0.0	0.0	0.0	0
09	0289		7518.9	X27026.4			9.8	2	100.0	0.0	0.0	0.0	0
09	0289		7516.6	X27070.3			14.2	0	0.0	0.0	0.0	0.0	0
09	0294		7506.7	X27046.2			17.0	1	100.0	0.0	0.0	0.0	0
09	0294		7500.7	X26980.8			17.5	17	29.4	29.4	23.5	17.6	0
09								5	80.0	0.0	20.0	0.0	0
	0296		7506.7	X26994.6			17.5						-
* 09	0297		7513.0	X27015.4			14.8	0	0.0	0.0	0.0	0.0	0
09	0300		7518.6	X27049.1			15.3	0	0.0	0.0	0.0	0.0	0
09	0303		7530.7	X27077.0			9.8	1	100.0	0.0	0.0	0.0	0
09	0307		7523.1	X27032.1			15.3	0	0.0	0.0	0.0	0.0	0
09	0308		7526.6	X27047.2			12.0	0	0.0	0.0	0.0	0.0	0
09	0309		7524.8	X27047.4			14.8	0	0.0	0.0	0.0	0.0	0
09	0310		7526.8	X27064.4	Y41514.		13.1	0	0.0	0.0	0.0	0.0	0
09	0312	3716.4	7522.6	X27054.3	Y41577.	3 29	12.6	0	0.0	0.0	0.0	0.0	0
09	0314	3713.7	7508.8	X26988.5	Y41572.	7 313	16.4	4	25.0	25.0	25.0	25.0	0
* Sim	nifies a r	on-random s	station										

		Sta	tion D	Data						Surf Clams	Survey Catch		Ocean Quahogs
										Percent or a	Survey Catch		
Survey Stratum	Station Number	Position Latitude Long	gitude	Loran Time De	lays	Heading	Depth (FM)	Catch Number	0-4.74"	4.76-5.00"	5.01-5.50"	>5.50"	Catch Number
09	0315	3708.8 751	2.8	X26998.8	Y41511.	3 9	17.0	0	0.0	0.0	0.0	0.0	0
09	0315						17.0	1	0.0	100.0	0.0	0.0	0
				X26985.4			14.2	3	0.0			66.7	0
09	0319			X26996.5				2		0.0	33.3		0
09	0320				Y41365.		13.7		0.0	50.0	50.0	0.0	
09	0321				Y41328.		15.3	4	100.0	0.0	0.0	0.0	0
09	0335				Y41284.		16.4	320	50.0	11.9	31.2	6.9	0
09	0343				Y41296.		13.1	7	71.4	0.0	0.0	28.6	0
09	0344			X26949.3			20.8	2	0.0	0.0	50.0	50.0	0
09	0346			X26929.2			17.0	31	0.0	3.2	67.7	29.0	0
09	0348			X26894.8			19.1	59	37.3	30.5	30.5	1.7	0
09	0349			X26906.4			19.7	26	26.9	46.2	26.9	0.0	0
09	0352		0.8	X26931.3			22.4	37	54.1	40.5	5.4	0.0	0
09	0354			X26928.3	Y41484.	7 67	23.0	126	54.0	28.6	15.1	2.4	0
09	0358	3713.7 745	54.7	X26924.9	Y41598.	7 40	23.5	5	80.0	20.0	0.0	0.0	0
09	0360	3721.8 744	18.1	X26905.9	Y41698.	1 35	26.8	35	94.3	2.9	2.9	0.0	2
09	0364	3721.3 750	0.7	X26963.4	Y41670.	6 66	19.7	9	22.2	22.2	33.3	22.2	0
09	0367	3726.2 745	4.7	X26943.0	Y41734.	5 89	21.3	0	0.0	0.0	0.0	0.0	5
09	0369	3728.7 744	18.7	X26918.5	Y41771.	7 67	25.7	0	0.0	0.0	0.0	0.0	134
09	0371	3736.1 745	51.0	X26940.4	Y41848.	6 263	19.1	352	51.4	16.5	21.9	10.2	0
10	0334			X26869.0			25.2	12	91.7	8.3	0.0	0.0	0
10	0351			X26895.5			26.8	5	100.0	0.0	0.0	0.0	0
10	0355				Y41495.		27.3	0	0.0	0.0	0.0	0.0	1
11	0370			X26860.2			33.4	0	0.0	0.0	0.0	0.0	71
11	0372			X26878.5	Y41924.		29.5	0	0.0	0.0	0.0	0.0	74
13	0197			X27042.5			10.9	96	2.1	1.0	4.2	92.7	0
13	0253			X26936.6			15.3	59	15.3	1.7	1.7	81.4	0
13	0253				Y42416.		16.4	38	18.4	2.6	7.9	71.1	0
13	0254			X26945.4			16.4	29	24.1	3.4	6.9	65.5	0
13	0255						14.2	9	24.1	11.1	11.1	55.6	0
				X27008.5				9 76					
13	0259			X26983.1			14.2		7.9	1.3	6.6	84.2	0
13	0260			X26942.7			17.5	79	3.8	2.5	6.3	87.3	0
13	0261			X26918.3			22.4	3	33.3	0.0	0.0	66.7	28
13	0262		34.7	X26918.4			22.4	14	7.1	0.0	7.1	85.7	51
1.3	0263			X26905.6			19.1	7	57.1	0.0	0.0	42.9	1
13	0264			X26902.5			19.1	29	65.5	10.3	10.3	13.8	1
13	0265		12.9	X26944.5			13.7	6	33.3	16.7	0.0	50.0	0
13	0266		18.9	X26989.1			9.3	41	26.8	7.3	9.8	56.1	0
13	0271			X26969.2			16.4	16	25.0	0.0	12.5	62.5	0
13	0272	3753.4 743	38.6	X26906.1	Y42055.	0 207	23.5	0	0.0	0.0	0.0	0.0	285
13	0278	3751.2 745	8.03	X26963.5	Y42014.	6 316	18.6	60	10.0	11.7	18.3	60.0	0
13	0279	3756.2 745	52.8	X26981.9	Y42067.	2 280	12.6	49	2.0	2.0	16.3	79.6	0
13	0280	3756.3 745	7.0	X27003.1	Y42063.	0 298	13.7	64	0.0	1.6	23.4	75.0	0
14	0373	3746.1 744	10.7	X26905.5			26.8	0	0.0	0.0	0.0	0.0	278
14	0379			X26811.0			23.5	144	92.4	2.8	4.9	0.0	21
15	0374			X26838.7			32.3	0	0.0	0.0	0.0	0.0	60
15	0381			X26787.1			31.7	0	0.0	0.0	0.0	0.0	11
17	0187		34.8		Y42693.		14.2	3	0.0	0.0	0.0	100.0	0
17	0188		36.7	X26994.9	Y42663.		8.2	6	50.0	0.0	33.3	16.7	0
17	0198		28.7	X26929.5			18.6	0	0.0	0.0	0.0	0.0	1
		on-random stat		120222.3	174333.	0 00	10.0	U	0.0	0.0	0.0	0.0	Τ.

		S	Station I	Data						Surf Clams	Survey Catch		Ocean Quahogs
										reicent of .	ourvey caccii		
Survey Stratum	Station Number	Position Latitude Lo	ongitude	Loran Time De	lays	Heading	Depth (FM)	Catch Number	0-4.74"	4.76-5.00"	5.01-5.50"	>5.50"	Catch Number
17	0199	3836.3	7418.8	X26868.8	Y42539.	9 57	22.4	4	50.0	0.0	25.0	25.0	23
17	0200		7424.3	X26908.9	Y42589.		17.5	18	44.4	5.6	0.0	50.0	1
17	0201	3848.8	7426.7	X26937.0	Y42670.	4 44	10.9	15	20.0	13.3	13.3	53.3	0
17	0202		7424.4	X26928.6	Y42699.	9 64	16.4	96	3.1	0.0	3.1	93.8	0
17	0207	3846.4	7414.6	X26861.7			20.8	16	56.2	0.0	0.0	43.8	16
17	0246	3843.7	7404.6	X26798.4	Y42628.	1 181	25.2	2	50.0	0.0	0.0	50.0	66
17	0247		7354.7	X26739.6			22.4	13	92.3	7.7	0.0	0.0	33
17	0251		7414.9	X26842.6			25.2	0	0.0	0.0	0.0	0.0	103
17	0252		7416.7	X26844.1			22.4	19	89.5	0.0	5.3	5.3	21
18	0248		7353.1	X26717.2			30.1	1	100.0	0.0	0.0	0.0	93
18	0249		7402.4	X26763.4			28.4	0	0.0	0.0	0.0	0.0	60
18	0250		7406.8	X26785.3			30.1	0	0.0	0.0	0.0	0.0	1
19	0382		7354.0	X26707.6			36.1	0	0.0	0.0	0.0	0.0	28
19	0383		7348.6	X26682.8			34.4	0	0.0	0.0	0.0	0.0	237
19	0384		7342.5	X26656.1			33.9	0	0.0	0.0	0.0	0.0	21
21	0061		7335.0	X26709.3			19.1	38	36.8	5.3	7.9	50.0	69
21	0062		7346.9	X26784.5			10.4	232	5.6	2.2	4.3	87.9	1
21	0070		7346.7	X26768.6			13.7	24	37.5	12.5	4.2	45.8	0
21	0071		7340.4	X26708.7			19.1	69	23.2	7.2	17.4	52.2	0
21	0072		7345.5	X26739.2			19.7	62	8.1	1.6	12.9	77.4	5
* 21	0073		7342.8	X26724.5			18.6	147	10.2	4.8	15.6	69.4	0
21	0074		7358.6	X26814.7			15.3	47	8.5	2.1	4.3	85.1	0
* 21	0086		7350.0	X26770.8			19.7	107	11.2	2.8	15.0	71.0	8
21	0087		7346.7	X26738.6	Y42974.		20.2	242	6.2	5.0	21.1	67.8	29
* 21	0092		7346.8	X26739.4			19.7	148	6.8	0.7	34.5	58.1	5
21	0168		7344.6	X26714.0			18.6	35	62.9	5.7	8.6	22.9	12
21	0169		7354.3	X26775.3			25.2	23	95.7	0.0	0.0	4.3	484
21	0170		7402.4	X26822.3			19.1	29	34.5	3.4	13.8	48.3	19
21	0171		7406.5	X26856.7			12.0	8	25.0	12.5	0.0	62.5	0
21	0208		7416.8	X26892.6			18.6	0	0.0	0.0	0.0	0.0	84
* 21	0209		7423.1	X26939.8			13.1	56	10.7	1.8	1.8	85.7	0
21	0209		7423.1	X26818.8			18.0	12	83.3	0.0	16.7	0.0	3
21	0210		7404.7	X26793.4			19.7	28	32.1	7.1	3.6	57.1	52
21	0211		7354.7	X26746.7			23.5	1	100.0	0.0	0.0	0.0	114
21	0212		7348.8	X26746.7 X26711.7			24.6	5	60.0	0.0	20.0	20.0	275
21	0213		7340.0	X26680.6			21.9	10	60.0	20.0	0.0	20.0	12
21	0219		7350.7				20.8	9	33.3	0.0	11.1	55.6	70
21	0220		7334.2	X26737.3 X26650.1			20.8	0	0.0	0.0	0.0	0.0	13
									91.7				
21 21	0222 0223		7324.4	X26592.4			24.1	24	0.0	4.2	0.0	4.2	44 7
			7335.2	X26663.2			27.3						
21	0224		7334.5	X26662.8			24.1	9	55.6	0.0	22.2	22.2	3
21	0225		7322.6	X26586.4			25.7	17	88.2	11.8	0.0	0.0	46
21	0226		7334.7	X26678.6			17.5	88	8.0	1.1	9.1	81.8	1
21	0227		7333.0	X26674.5			19.7	21	9.5	4.8	4.8	81.0	1
21	0228		7323.8	X26610.1			18.0	98	24.5	4.1	11.2	60.2	1
21	0230		7330.8	X26671.4			23.0	9	66.7	11.1	22.2	0.0	0
22	0218		7342.8	X26678.5			24.6	2	100.0	0.0	0.0	0.0	39
22	0389		7322.4	X26573.8	Y42927.		26.8	0	0.0	0.0	0.0	0.0	59
23	0385	3838.6	7334.8	X26616.0	Y42592.	6 65	32.8	0	0.0	0.0	0.0	0.0	22

			Station 1	Data						Surf Clams Percent of	Survey Catch		Ocean Quahogs
Survey Stratum	Station Number	Position Latitude 1		Loran Time De	lays	Heading	Depth (FM)	Catch Number	0-4.74"	4.76-5.00"	5.01-5.50"	>5.50"	Catch Number
23	0388	3904.1	7314.4	X26515.1	Y42856.	1 83	36.1	0	0.0	0.0	0.0	0.0	616
23	0390	3913.6	7309.1	X26489.2	Y42950.	0 240	34.4	0	0.0	0.0	0.0	0.0	190
23	0391	3921.3	7300.6	X26439.1	Y43024.	5 50	36.6	0	0.0	0.0	0.0	0.0	371
25	0038	4008.8	7348.4	X26854.4	Y43512.	3 47	17.0	14	7.1	21.4	7.1	64.3	10
25	0047	4001.1	7349.1	X26841.7	Y43435.	0 14	13.7	48	12.5	2.1	8.3	77.1	0
25	0048	4003.7	7341.0	X26787.7	Y43456.	0 346	17.5	295	13.2	8.8	31.5	46.4	7
25	0049	3954.0	7340.5	X26763.8	Y43358.	4 16	16.4	70	10.0	0.0	10.0	80.0	3
25	0229	3938.8	7318.7	X26582.3	Y43198.	2 265	20.8	120	51.7	5.8	14.2	28.3	8
25	0231	3953.7	7326.7	X26662.7	Y43348.	2 268	23.0	87	100.0	0.0	0.0	0.0	44
25	0232	3956.2	7324.6	X26651.6	Y43371.	6 258	24.6	9	88.9	11.1	0.0	0.0	5
25	0235	4006.4	7330.8	X26716.9	Y43475.	6 354	23.5	0	0.0	0.0	0.0	0.0	186
25	0393	3933.7	7306.7	X26492.1	Y43145.	1 50	23.5	37	89.2	0.0	8.1	2.7	67
26	0233	3958.4	7325.1	X26659.2	Y43393.	4 230	28.4	0	0.0	0.0	0.0	0.0	143
26	0234	4006.1	7333.4	X26735.9	Y43474.	5 288	37.2	0	0.0	0.0	0.0	0.0	2
26	0394	3948.8	7306.6	X26508.7	Y43290.	3 49	29.0	0	0.0	0.0	0.0	0.0	16
27	0392	3925.5	7302.5	X26455.4	Y43065.	1 67	36.1	0	0.0	0.0	0.0	0.0	336
27	0425	3928.7	7250.5	X26375.9	Y43093.	6 112	32.8	0	0.0	0.0	0.0	0.0	33
27	0426	3936.4	7248.6	X26367.9	Y43165.	6 23	35.0	0	0.0	0.0	0.0	0.0	77
27	0427	3949.5	7303.1	X26484.1	Y43295.	3 134	38.3	0	0.0	0.0	0.0	0.0	232
29	0017	4038.9	7229.0	X26279.7	Y43712.	1 319	20.8	3	100.0	0.0	0.0	0.0	175
29	0018	4041.2	7240.3	X26378.2	Y43745.	7 336	17.5	0	0.0	0.0	0.0	0.0	125
29	0021	4024.4	7313.0	X26614.7	Y43632.	3 37	17.0	0	0.0	0.0	0.0	0.0	23
29	0022	4013.6	7306.7	X26545.4	Y43525.	4 183	23.0	0	0.0	0.0	0.0	0.0	107
29	0023	4011.5	7306.6	X26541.2	Y43505.	6 187	22.4	0	0.0	0.0	0.0	0.0	136
* 29	0024	4009.1	7305.9	X26532.0	Y43482.	5 193	24.6	0	0.0	0.0	0.0	0.0	140
29	0030	4009.2	7318.7	X26630.4	Y43493.	6 6	21.9	0	0.0	0.0	0.0	0.0	34
29	0031	4016.4	7318.8	X26644.7	Y43562.	5 353	19.1	1	100.0	0.0	0.0	0.0	51
29	0032	4021.6	7328.7	X26733.0	Y43621.	5 21	15.9	0	0.0	0.0	0.0	0.0	11
29	0401	4031.3	7230.8	X26284.1	Y43649.	1 22	23.5	0	0.0	0.0	0.0	0.0	403
30	0428	3948.5	7248.4	X26375.9	Y43278.	6 143	33.4	0	0.0	0.0	0.0	0.0	191
31	0429	3943.9	7238.5	X26301.1	Y43231.	5 25	39.9	0	0.0	0.0	0.0	0.0	0
31	0430	3946.2	7230.8	X26246.9			36.1	0	0.0	0.0	0.0	0.0	20
31	0431	3956.2	7242.7	X26340.5	Y43346.	6 343	30.6	0	0.0	0.0	0.0	0.0	92
31	0432	3958.7	7234.5	X26281.1	Y43364.	2 95	33.9	0	0.0	0.0	0.0	0.0	522
31	0433	4008.7	7232.7	X26275.1			31.7	0	0.0	0.0	0.0	0.0	563
31	0434	4006.1	7228.2	X26238.5			32.3	0	0.0	0.0	0.0	0.0	433
31	0435	4013.6	7218.5	X26168.4			32.3	0	0.0	0.0	0.0	0.0	434
31	0438	4021.2	7212.7	X26127.3	Y43544.	1 343	33.4	0	0.0	0.0	0.0	0.0	370
33	0010	4051.0	7157.1	X26025.0			20.8	0	0.0	0.0	0.0	0.0	66
33	0011	4048.4	7202.9	X26071.5			21.3	0	0.0	0.0	0.0	0.0	47
33	0013	4051.1	7213.6	X26167.5			16.4	0	0.0	0.0	0.0	0.0	95
33	0016	4046.2	7230.8	X26306.6			15.3	1	100.0	0.0	0.0	0.0	4
34	0439	4031.3	7216.7	X26168.1			29.0	0	0.0	0.0	0.0	0.0	737
34	0443	4038.6	7158.7	X26025.5			27.3	0	0.0	0.0	0.0	0.0	167
35	0436	4013.8	7158.5	X26012.8			35.0	0	0.0	0.0	0.0	0.0	178
35	0437	4016.3	7202.8	X26046.8			34.4	0	0.0	0.0	0.0	0.0	396
35	0440	4028.7	7204.6	X26066.9			31.7	0	0.0	0.0	0.0	0.0	1418
35	0441	4021.0	7148.5	X25935.2			40.5	0	0.0	0.0	0.0	0.0	0
35	0442	4033.5	7154.6	X25987.9	Y43627.	9 8	32.3	0	0.0	0.0	0.0	0.0	189
* Sign	nifies a r	non-random :	station										

	Station Data								Surf Clams Percent of Survey Catch				Ocean Quahogs
Survey Stratum	Station Number	Position Latitude Lo	ongitude	Loran Time De	elays	Heading	Depth (FM)	Catch Number	0-4.74"	4.76-5.00"	5.01-5.50"	>5.50"	Catch Number
37	0450	4118.1 7	7058.9	X25552.8	Y43891.	2 357	18.0	0	0.0	0.0	0.0	0.0	334
37	0452	4113.8 7	7120.4	X25737.0	Y43892.	0 60	18.6	0	0.0	0.0	0.0	0.0	152
38	0001	4058.3 7	7127.0	X25771.6	Y43787.	9 211	27.3	0	0.0	0.0	0.0	0.0	336
38	0447	4053.7 7	7112.7	X25643.9	Y43735.	7 20	28.4	0	0.0	0.0	0.0	0.0	552
38	0448	4056.3 7	7112.8	X25646.0	Y43755.	0 2	27.9	0	0.0	0.0	0.0	0.0	400
* 38	0543	4056.3 7	7114.6	X25661.6	Y43757.	2 187	28.4	0	0.0	0.0	0.0	0.0	838
* 38	0544	4056.4 7	7114.7	X25662.5	Y43758.	1 188	29.0	0	0.0	0.0	0.0	0.0	473
* 38	0545	4056.4 7	7114.9	X25664.3	Y43758.	3 23	28.4	0	0.0	0.0	0.0	0.0	520
* 38	0546	4056.3 7	7115.0	X25665.1	Y43757.	7 190	29.0	0	0.0	0.0	0.0	0.0	685
* 38	0547	4056.3 7	7115.2	X25666.8	Y43758.	0 13	29.0	0	0.0	0.0	0.0	0.0	79
* 38	0548	4056.4 7	7115.1	X25666.0	Y43758.	6 196	28.4	0	0.0	0.0	0.0	0.0	316
* 38	0549	4056.2 7	7114.6	X25661.5	Y43756.	5 6	27.9	0	0.0	0.0	0.0	0.0	153
* 38	0550	4056.3 7	7114.5	X25660.7	Y43757.	1 187	28.4	0	0.0	0.0	0.0	0.0	603
* 38	0551	4056.3 7	7114.2	X25658.1	Y43756.	7 10	28.4	0	0.0	0.0	0.0	0.0	275
* 38	0552	4056.3 7	7114.1	X25657.3	Y43756.	6 184	29.0	0	0.0	0.0	0.0	0.0	249
39	0002	4053.5 7	7134.7	X25833.9	Y43761.	7 192	29.5	0	0.0	0.0	0.0	0.0	765
39	0003	4046.3 7	7138.9	X25864.2	Y43711.	6 257	36.1	0	0.0	0.0	0.0	0.0	9
39	0444	4031.5 7	7126.8	X25761.5	Y43583.	1 20	37.2	0	0.0	0.0	0.0	0.0	1
39	0445	4041.1 7	7124.6	X25742.1	Y43655.	0 137	32.3	0	0.0	0.0	0.0	0.0	236
39	0446	4036.1 7	7110.5	X25629.1	Y43601.	9 123	36.1	0	0.0	0.0	0.0	0.0	9
* 39	0542	4049.5 7	7111.9	X25636.1	Y43703.	8 205	33.4	0	0.0	0.0	0.0	0.0	0
41	0456	4106.0 7	7034.8	X25317.9	Y43776.	4 211	21.9	0	0.0	0.0	0.0	0.0	211
41	0457	4103.8 7	7036.6	X25333.4	Y43763.	5 71	23.0	0	0.0	0.0	0.0	0.0	264
41	0458	4106.3 7	7022.7	X25212.6	Y43763.	7 27	20.2	0	0.0	0.0	0.0	0.0	301
* 41	0461	4101.3 7	7018.8	X25187.0	Y43725.	5 277	20.8	0	0.0	0.0	0.0	0.0	139
41	0462	4053.4 7	7022.9	X25235.0	Y43676.	3 208	24.6	0	0.0	0.0	0.0	0.0	2
41	0464	4048.7 7	7010.7	X25168.1	Y43631.	4 247	20.2	0	0.0	0.0	0.0	0.0	183
* 41	0465		7009.2	X25175.2	Y43599.		21.9	0	0.0	0.0	0.0	0.0	227
* 41	0466	4041.2 7	7010.8	X25194.3	Y43580.	1 182	23.5	0	0.0	0.0	0.0	0.0	69
* 41	0467	4041.2 7	7010.8	X25194.3	Y43580.	1 209	24.1	0	0.0	0.0	0.0	0.0	122
41	0468		7006.6	X25162.8	Y43594.	0 49	21.9	0	0.0	0.0	0.0	0.0	272
* 41	0534		7009.4	X25176.3			22.4	0	0.0	0.0	0.0	0.0	234
* 41	0535	4104.5 7	7027.5	X25254.7	Y43757.	3 343	22.4	0	0.0	0.0	0.0	0.0	212
* 41	0536		7032.9	X25301.2			22.4	0	0.0	0.0	0.0	0.0	148
45	0469		5954.7	W14039.8			15.3	11	0.0	0.0	0.0	100.0	2
45	0471		5946.4	W14013.8			24.6	25	16.0	4.0	24.0	56.0	52
45	0472		5936.5	W13924.4			20.8	0	0.0	0.0	0.0	0.0	0
* 45	0473		5935.0	W13946.8			25.2	1	100.0	0.0	0.0	0.0	6
46	0474		5932.7	W13961.1			27.3	34	61.8	17.6	17.6	2.9	54
46	0475		5918.5	W13887.8			28.4	0	0.0	0.0	0.0	0.0	5
47	0470		5954.2	W14081.8			31.7	0	0.0	0.0	0.0	0.0	115
47	0476		5914.9	W13821.7			29.0	0	0.0	0.0	0.0	0.0	0
55	0477		5848.7	W13700.9			37.7	0	0.0	0.0	0.0	0.0	302
55	0478		5840.5	W13620.0			34.4	0	0.0	0.0	0.0	0.0	0
55	0479		5838.7	W13712.8			37.2	0	0.0	0.0	0.0	0.0	340
57	0480		5814.5	W13559.6			36.1	0	0.0	0.0	0.0	0.0	796
57	0481		5808.6	W13532.3			38.8	0	0.0	0.0	0.0	0.0	1019
59	0482		5758.6	W13455.8			33.4	1	0.0	0.0	0.0	100.0	1628
59	0485		5746.7	W13382.2	Y43553.	0 90	30.6	0	0.0	0.0	0.0	0.0	713
* Sig	nifies a r	non-random st	tation										

	Station Data								Surf Clams Percent of Survey Catch				
Survey Stratum	Station Number	Position Latitude Lon	ngitude	Loran Time De	elays	Heading	Depth (FM)	Catch Number	0-4.74"	4.76-5.00"	5.01-5.50"	>5.50"	Catch Number
59	0488	4053.7 67	730.4	W13322.7	Y43527.	5 106	41.0	0	0.0	0.0	0.0	0.0	177
59	0490			W13302.3	Y43555.	9 326	36.6	27	88.9	3.7	7.4	0.0	455
59	0492	4103.7 67	32.6	W13288.5			33.4	48	18.8	4.2	35.4	41.7	1010
60	0495		10.5	W13229.7			44.3	0	0.0	0.0	0.0	0.0	415
60	0496		18.5	W13283.2			47.6	0	0.0	0.0	0.0	0.0	416
60	0497	4049.4 67	19.4	W13295.0	Y43496.	6 106	49.2	0	0.0	0.0	0.0	0.0	171
60	0498	4052.5 67	11.1	W13247.7	Y43508.	2 128	47.0	0	0.0	0.0	0.0	0.0	107
60	0499		04.7		Y43502.		48.1	0	0.0	0.0	0.0	0.0	230
61	0504			W13178.5			31.2	0	0.0	0.0	0.0	0.0	668
61	0506		02.5	W13129.8			36.1	0	0.0	0.0	0.0	0.0	1045
61	0509	4113.8 66	50.7	W13071.8	Y43606.	9 39	38.3	0	0.0	0.0	0.0	0.0	17
61	0511		544.6	W13036.3			41.0	0	0.0	0.0	0.0	0.0	219
61	0515		700.3	W13086.2			35.0	0	0.0	0.0	0.0	0.0	979
62	0500		47.9	W13129.0			40.5	0	0.0	0.0	0.0	0.0	76
62	0512	4118.7 66	44.7	W13026.0	Y43627.	6 162	39.9	0	0.0	0.0	0.0	0.0	16
62	0513	4118.8 66	36.2	W12993.2			46.5	0	0.0	0.0	0.0	0.0	77
62	0514	4126.4 66	40.8	W12975.2	Y43663.	6 353	44.3	0	0.0	0.0	0.0	0.0	958
65	0527	4206.1 67	720.9	W12936.4	Y43897.	5 76	36.1	25	100.0	0.0	0.0	0.0	0
70	0483	4054.0 68	301.3	W13456.5	Y43551.	3 117	25.7	5	100.0	0.0	0.0	0.0	2
70	0484	4058.8 67	758.8	W13424.7	Y43576.	8 2	29.5	0	0.0	0.0	0.0	0.0	0
71	0526	4201.1 67	706.6	W12904.1			27.9	0	0.0	0.0	0.0	0.0	0
71	0528	4203.8 67	720.8	W12948.1	Y43886.	1 48	26.8	4	75.0	25.0	0.0	0.0	0
73	0518	4121.2 67	720.8	W13159.1	Y43668.	8 322	24.6	191	4.2	1.6	8.9	85.3	0
73	0519	4130.8 67	736.7	W13181.4	Y43733.	4 260	19.1	11	90.9	0.0	9.1	0.0	0
73	0520	4131.2 67	734.5	W13170.0	Y43733.	5 78	17.5	25	28.0	4.0	12.0	56.0	0
73	0521	4136.2 67	712.9	W13054.9	Y43739.	9 345	24.1	0	0.0	0.0	0.0	0.0	0
73	0522	4141.7 67	732.0	W13108.2	Y43786.	0 36	24.1	5	0.0	0.0	40.0	60.0	0
73	0523	4148.6 67	717.4	W13012.1	Y43807.	1 81	26.8	228	18.9	14.9	33.3	32.9	0
74	0516	4121.0 67	708.7	W13110.2	Y43657.	9 249	30.6	0	0.0	0.0	0.0	0.0	175
74	0517	4118.7 67	14.7	W13145.4			25.7	0	0.0	0.0	0.0	0.0	5
74	0524	4150.5 67	708.8	W12967.3	Y43808.	3 117	30.6	0	0.0	0.0	0.0	0.0	0
74	0525	4148.4 67	704.4	W12960.1	Y43793.	7 120	32.3	0	0.0	0.0	0.0	0.0	0
81	0323	3648.7 75	42.7	X27094.1	Y41227.	9 254	8.7	0	0.0	0.0	0.0	0.0	0
81	0324	3648.7 75	46.7	X27110.4	Y41219.	6 127	9.8	0	0.0	0.0	0.0	0.0	0
81	0325	3646.2 75	46.7	X27106.3	Y41191.	4 148	8.7	0	0.0	0.0	0.0	0.0	0
81	0326	3641.2 75	344.7	X27090.1	Y41139.	5 166	6.6	5	100.0	0.0	0.0	0.0	0
81	0327	3631.1 75	40.7	X27058.5	Y41036.	3 151	12.6	0	0.0	0.0	0.0	0.0	0
82	0304	3706.1 75	36.7	X27098.1	Y41436.	1 214	9.8	0	0.0	0.0	0.0	0.0	0
82	0305	3703.6 75	36.7	X27093.8	Y41407.	8 199	10.4	0	0.0	0.0	0.0	0.0	0
83	0292	3728.7 75	26.6	X27093.7	Y41709.	7 87	8.7	1	100.0	0.0	0.0	0.0	0
83	0301	3723.3 75	32.6	X27110.7	Y41638.	5 174	7.7	3	100.0	0.0	0.0	0.0	0
84	0281	3755.9 75	16.8	X27099.6	Y42032.	9 263	5.5	0	0.0	0.0	0.0	0.0	2
84	0282	3751.2 75	10.8	X27061.5	Y41987.	6 243	7.1	33	100.0	0.0	0.0	0.0	0
84	0290	3736.2 75	24.7	X27098.9	Y41797.	8 268	8.7	7	85.7	0.0	14.3	0.0	0
84	0291	3733.7 75	29.3	X27115.3	Y41762.	3 213	7.1	6	100.0	0.0	0.0	0.0	0
85	0258	3823.6 74	156.8	X27054.2	Y42368.	6 260	10.4	0	0.0	0.0	0.0	0.0	0
85	0267	3816.0 74	156.8	X27038.9	Y42283.	3 250	7.7	7	100.0	0.0	0.0	0.0	0
85	0268		00.7	X27054.3			9.3	39	100.0	0.0	0.0	0.0	0
85	0269	3808.7 75	06.5	X27074.1	Y42190.	6 130	8.2	1	100.0	0.0	0.0	0.0	0
* Sig	nifies a r	on-random sta	ation										

	Station Data								Surf Clams Percent of Survey Catch				
Survey Stratum	Station Number	Position Latitude Long	jitude	Loran Time De	lays	Heading	Depth (FM)	Catch Number	0-4.74"	4.76-5.00"	5.01-5.50"	>5.50"	Catch Number
85	0270	3808.0 745	7.7	X27028.1	Y42192.	7 158	12.0	9	100.0	0.0	0.0	0.0	0
86	0195	3848.9 745		X27121.7			6.0	0	0.0	0.0	0.0	0.0	0
86	0196			X27092.6			7.7	0	0.0	0.0	0.0	0.0	0
86	0257	3831.2 745		X27037.1			10.9	4	25.0	25.0	50.0	0.0	0
87	0177	3908.6 741		X26924.6	Y42888.		12.0	8	12.5	0.0	0.0	87.5	0
87	0178			X26915.9	Y42889.		11.5	75	4.0	10.7	13.3	72.0	0
87	0179		9.2	X26987.6			10.4	42	14.3	0.0	2.4	83.3	0
87	0180	3903.6 743			Y42828.		9.8	194	1.0	7.7	60.8	30.4	0
87	0181	3903.8 743		X27027.3			7.1	2	50.0	0.0	0.0	50.4	0
87	0182	3901.3 743			Y42805.		9.3	23	47.8	13.0	13.0	26.1	0
87	0183	3858.8 743		X27002.9			7.7	20	45.0	20.0	25.0	10.0	0
87								20	40.0		30.0		0
	0184			X27017.5			5.5			20.0		10.0	
87	0185	3859.3 743		X27033.1			6.6	2	100.0	0.0	0.0	0.0	0
87	0186	3853.8 743		X27005.7			8.7		55.6	0.0	22.2	22.2	-
87	0189		2.8	X27035.9			8.7	0	0.0	0.0	0.0	0.0	0
87	0190		6.5	X27073.5			7.1	0	0.0	0.0	0.0	0.0	0
87	0191	3853.8 744		X27074.2			4.9	4	25.0	0.0	25.0	50.0	0
87	0192		6.6	X27058.7			7.7	28	3.6	0.0	0.0	96.4	0
87	0193	3848.7 744		X27063.1			8.7	6	100.0	0.0	0.0	0.0	0
87	0194	3848.9 745		X27087.4			7.1	25	100.0	0.0	0.0	0.0	0
88	0066		18.7	X26923.1			8.2	2	0.0	0.0	0.0	100.0	0
88	0067	3936.2 740		X26882.6			10.9	71	18.3	1.4	14.1	66.2	0
88	0068		1.0	X26865.6			12.6	18	16.7	22.2	16.7	44.4	0
88	0069	3933.6 735	55.0	X26825.0	Y43154.	7 240	13.7	96	10.4	0.0	5.2	84.4	0
88	0075	3923.7 740	0.7	X26843.6	Y43051.	7 254	12.0	18	0.0	16.7	27.8	55.6	0
88	0076	3928.5 735	9.4	X26844.4	Y43102.	0 251	12.0	133	4.5	3.0	5.3	87.2	0
88	0077	3930.9 740	7.1	X26900.7	Y43128.	0 242	9.3	21	33.3	4.8	4.8	57.1	0
88	0078	3931.3 740	19.2	X26915.6	Y43132.	4 258	8.2	25	12.0	12.0	12.0	64.0	0
88	0079	3926.2 740	14.8	X26875.6	Y43078.	1 153	10.9	46	8.7	0.0	2.2	89.1	0
88	0800	3918.5 740	14.9	X26860.8			13.7	48	10.4	4.2	6.2	79.2	0
88	0081	3916.0 740	7.0	X26869.5	Y42970.	0 247	14.8	153	5.2	3.9	4.6	86.3	0
88	0082	3918.7 741	3.0	X26913.3	Y42998.	1 249	11.5	24	0.0	4.2	16.7	79.2	0
88	0083		7.0	X26943.7			8.2	192	3.1	1.6	16.7	78.6	0
88	0084		8.7	X26954.6			8.2	6	0.0	0.0	16.7	83.3	0
88	0085		7.3	X26935.3			9.8	72	4.2	6.9	4.2	84.7	0
88	0172		2.4	X26894.1			11.5	29	27.6	0.0	34.5	37.9	0
88	0173		7.9	X26934.4			8.7	14	42.9	14.3	21.4	21.4	0
88	0174		28.7	X27001.5			8.2	50	2.0	2.0	12.0	84.0	0
88	0175		28.6	X26995.2			8.7	13	7.7	7.7	0.0	84.6	0
88	0176		26.6	X26982.6			9.3	31	12.9	6.5	9.7	71.0	0
89	0170		8.6	X26929.8			9.3	43	18.6	4.7	9.3	67.4	0
													0
89	0039		7.6	X26919.1			11.5	0	0.0	0.0	0.0	0.0	0
89	0040		4.6	X26896.1			11.5	105	42.9	1.9	1.9	53.3	
89	0041		8.0	X26912.8			11.5	72	20.8	0.0	1.4	77.8	0
89	0046	4001.3 735		X26853.9			12.6	32	9.4	0.0	12.5	78.1	0
89	0050		0.9	X26850.7			14.2	70	20.0	0.0	2.9	77.1	0
89	0051		4.8	X26871.9			12.6	47	38.3	2.1	6.4	53.2	0
89	0052		0.7	X26921.0			10.9	93	48.4	5.4	4.3	41.9	0
89	0053		8.4	X26892.1	Y43365.	2 52	10.4	43	14.0	9.3	4.7	72.1	0
* Sig	nifies a r	non-random stat	ion										

			Station :	Data						Survey Catch	Ocean Quahogs		
Survey Stratum	Station Number	Positio Latitude	n Longitude	Loran Time De	lays He	ading	Depth (FM)	Catch Number	0-4.74"	4.76-5.00"	5.01-5.50"	>5.50"	Catch Number
89	0054	3948.9	7400.8	X26897.7	Y43315.4	352	9.8	24	12.5	8.3	12.5	66.7	0
89	0055	3946.3	7358.7	X26877.1	Y43287.6	105	10.4	81	8.6	6.2	9.9	75.3	0
89	0056	3946.4	7355.1	X26852.1	Y43287.4	24	12.6	11	54.5	0.0	9.1	36.4	0
89	0057	3948.4	7354.8	X26854.4	Y43307.9	18	11.5	98	30.6	9.2	17.3	42.9	0
89	0058	3953.7	7350.7	X26836.8	Y43360.5	49	13.1	28	53.6	3.6	7.1	35.7	0
89	0059	3951.0	7350.5	X26829.5	Y43332.8	133	14.2	91	25.3	1.1	3.3	70.3	0
89	0060	3948.6	7346.9	X26798.8	Y43306.7	147	15.3	62	16.1	0.0	3.2	80.6	0
89	0063	3939.0	7354.4	X26831.7	Y43210.6	355	14.2	87	12.6	1.1	8.0	78.2	0
89	0064	3940.8	7404.6	X26905.7	Y43231.9	215	7.7	53	5.7	0.0	1.9	92.5	0
89	0065	3938.7	7406.7	X26915.2	Y43210.3	211	8.2	32	9.4	0.0	15.6	75.0	0
90	0035	4020.9	7350.5	X26900.5	Y43635.4	20	13.1	0	0.0	0.0	0.0	0.0	5
90	0036	4016.9	7355.9	X26931.1	Y43600.0	39	9.3	20	10.0	10.0	20.0	60.0	0
91	0020	4031.3	7312.5	X26624.8	Y43695.9	234	12.0	8	50.0	0.0	25.0	25.0	1
91	0033	4026.5	7328.7	X26744.1	Y43668.5	36	12.6	0	0.0	0.0	0.0	0.0	0
91	0034	4030.5	7348.9	X26913.7	Y43728.9	9	8.7	0	0.0	0.0	0.0	0.0	1
92	0015	4047.8	7229.4	X26297.5	Y43787.7	240	13.1	2	0.0	50.0	0.0	50.0	4
92	0019	4036.2	7257.1	X26508.8	Y43722.5	288	13.1	53	18.9	3.8	15.1	62.3	1
93	0012	4055.6	7207.0	X26117.6	Y43821.0	247	11.5	9	44.4	0.0	0.0	55.6	159
94	0449	4123.6	7054.8	X25531.2	Y43922.8	238	12.6	0	0.0	0.0	0.0	0.0	54
94	0451	4124.7	7105.1	X25627.1	Y43945.5	350	10.9	0	0.0	0.0	0.0	0.0	404
95	0455	4116.0	7034.7	X25328.9	Y43843.8	181	13.1	14	14.3	0.0	0.0	85.7	60
95	0459	4116.2	7018.7	X25184.3	Y43824.4	33	7.1	33	0.0	0.0	3.0	97.0	0
95	0460	4101.2	7010.4	X25125.1	Y43715.3	87	13.1	19	0.0	0.0	0.0	100.0	22
95	0463	4051.1	7006.9	X25138.1	Y43643.8	193	14.2	19	0.0	0.0	0.0	100.0	63

