Seedbed 1992 Sampling

February 2, 1993

Attached is a summary of the 1992 seedbed sampling data with similar data for 1991 and 1990. All data were collected between October 19-23, 1992 using a boat and captain donated by Bivalve Packing. This information is provided based on a stratified random sampling of grids from the seed beds. The strata (groups) from which the samples were selected are: Test area, general bed, marginal areas. One sample was taken from one of the 4 test area grids, no more than two samples were taken from the marginal areas of the beds. The remainder of the samples were from the general bed. All data were adjusted to a 37 quart bushel.

The data format is the same as in the past years. Data are displayed from the farthest up bay beds to those down bay. For each bed the percentage of oysters for each sample is presented, with rankings from highest to lowest. Percentage of oyster is based on volume of oyster in the sample divided by the total volume of the shell, oyster and debris in the sample. Those samples that have over 40% oyster are underlined. The test area sample is indicated by an *. Oysters per bushel and spat per bushel are based on actual counts adjusted to 37 quarts. The number of yearlings in 37 quarts has been included for 1992 and 1991 (1990 data are in % yearlings).

Due to the influence of Dermo on the industry we have continued the new set of columns for percentage mortality. This figure is based on the number of boxes that were counted in the samples.

The size distributions of oysters on two of the more heavily used beds (Shell Rock and Cohansey for 1991 and 1992) are given in the attached figures. A more detailed breakdown (every 5 mm) of the oyster size distribution on Arnolds, Cohansey, Ship John, Shell Rock, Bennies, New Beds and Hawks Nest are also appended.

The parameters of interest this year are:

- There was no seed bed harvest in 1992. This means that all changes in the numbers of oysters are due to additions from the past two years of sets and mortality.
- Number of oysters per bushel remain low on all beds below Bennies.
- Number of oysters per bushel has steadily increased over the past 4 years on both New Beds and Bennies.
- Ship John, Arnolds and Round Island all had large increases in the numbers of oysters per bushel.
- Spat setting was very low (less than 50/Bu.) this year on all beds.
- Mortalities were generally higher in inshore and down bay(undoubtedly reflecting Dermo caused deaths).
- The mortalities on Shell Rock and Cohansey appear to have reduced the stock of larger oysters.
- The data reported in the Dermo report of February 2, 1993 was taken in conjunction with the seed bed sampling and should be carefully considered in any decision to move oysters.

The size distribution data have been used to estimate the numbers of oysters in each size group for a 37 quart bushel dredge sample for the beds most likely to be fished. These data can provide an estimate of the numbers of oysters in each size class. If you wanted to find out how many 3 inch or larger oysters per bushel could be obtained from Shell Rock (1992) you would simply sum the numbers of oysters in the Oyst./bu. column from Shell Rock beginning at the bottom (140 mm) to the approximately 3 inch size (75 mm). There are 6 oysters larger than 3 inches in an average bushel of dredged material from Shell Rock. Similar data for 1991 and 1992 for selected beds are provided in Table 1 below.

There are 25.4 mm per inch. Two inch oysters are 50.8 mm (so everything in the 50 mm and larger categories would be larger than 2 inches). Three inch oysters are 25.4 x 3 = 76.2 mm.

Please remember that these data do not provide an estimate of the numbers of oysters on the seed beds, but provide a relative assessment of what could be expected from a dredge haul on the bed. I urge you to read this information in conjuction with Dr. Ford's analysis of disease on the seed beds.

These data are available because of the generous support of Bivalve Packing and the dedication of many individuals at the Haskin Shellfish Research Laboratory.

Table 1. Average number of oysters per bushel based on samples from selected seed beds in 1991 and 1992. The values indicate the numbers of oysters greater than 2.5 and 3 inches in length that could be expected in a bushel of oyster and shell was sorted directly from the dredge (no pre-sorting).

	1991			1992		
Bed	greater than 2.5 inches	greater than 3 inchs	Number/Bu.	greater than 2.5 inches	greater than 3 inches	Number/Bu.
Arnolds	41	6	274	42	9	536
Cohansey	81	33	246	40	16	190
Ship John	31	10	157	41	10	452
Shell Rock	74	30	226	17	6	218
Bennies	21	9	108	23	10	120
New Beds	8	2	85	14	4	178
Hawks Nest				10	7	127

SUMMARY OF THE 1992 RANDOM SAMPLING OF THE SEED BEDS

The beds are listed from upbay to downbay. The percentage of oysters is presented (ranked from highest to lowest value) for each grid sampled. The star (*) indicates that the percent oyster values was from a "test area." The **averages for the whole seed bed** of: 1) numbers of oysters per 37 qt bushel, 2) numbers of spat per 37 qt bushel, and 3) yearlings (1991, 1992 data) per 37 qt. bushel (1990 is in % yearlings) are presented following the percent oyster data. The comparable 1990 and 1991 random sample data are listed for comparison. All data were collected October 19 - 23, 1992. Samples were collected with the use of a boat from Bivalve Packing Co.

Bed		Pct. Oyster			Oyster/Bu.			Spat/Bu.			Yearling/Bu.			Pct.Mort.		
		1992	1991	1990	1992	1991	1990	1992	1991	1990	1992	1991	1990	1992	1991	1990
Round Is.		74.4	82.1	63.9												
Round Is.		66.5	63.4	56.2												
Round Is.	*	66.0	53.9	55.4	546	379	385	21	199	178	64	12	18	11	6	15
Round Is.		59.7	46.9	49.0												
Round Is.		51.3	19.8	43.8												
Round Is.		0.9	6.9	30.5												
Up. Arnolds		--	64.4	--												
Up. Arnolds	*	--	42.3	--	--	420	--	--	353	--	--	10	--	--	3	--
Arnolds		70.1	74.7	63.8												
Arnolds		60.2	63.9	52.0												
Arnolds	*	49.5	33.3	49.8	536	274	333	46	203	198	81	13	18	12	10	9
Arnolds		42.5	33.3	44.6												
Arnolds		33.3	11.1	28.6												
Arnolds		21.6	3.6	20.0												
Up. Middle		0	--	4.8												
Up. Middle		0	--	0.7	0	--	22	14	--	10	0	--	0	0	--	21
Middle	*	53.9	68.0	54.3												
Middle		42.8	58.8	47.5												
Middle		42.2	56.1	40.7												
Middle		39.7	51.5	30.4												
Middle		21.5	50.0	23.4	114	258	115	13	227	77	19	14	20	26	19	8
Middle		18.5	50.0	11.1												
Middle		0.3	42.4	7.8												
Middle		0.0	30.6	0.0												
Middle		0.0	26.3	0.0												
Cohansey	*	53.4	62.5	57.9												
Cohansey		48.4	62.1	47.4												
Cohansey		37.9	57.1	44.4	190	246	226	30	240	109	54	11	21	34	19	9
Cohansey		27.8	56.1	36.5												
Cohansey		15.2	37.5	31.3												
Ship John		68.9	53.3	64.2												
Ship John		63.9	51.9	53.9												
Ship John	*	57.7	45.1	39.8	452	157	248	35	139	120	47	23	29	18	24	8
Ship John		54.0	25.4	36.6												
Ship John		33.3	12.6	23.4												
Shell Rock		63.4	73.5	73.0												
Shell Rock		51.3	70.1	68.6												
Shell Rock	*	51.2	57.1	63.9												
Shell Rock		40.9	51.3	63.9	218	226	354	47	474	162	60	33	15	36	26	1
Shell Rock		24.2	40.0	63.1												
Shell Rock		4.7	32.9	52.1												
Shell Rock		0.5	9.1	16.2												
Ben Sand	*	21.1	85.7	36.6												
Ben Sand		16.6	64.7	35.9	47	167	122	9	335	108	3	18	33	55	43	16
Ben Sand		6.5	40.6	34.8												
Ben Sand		0.4	6.2	21.1												

Bed		Pct. Oyster			Oyster/Bu.			Spat/Bu.			Yearling/Bu.			Pct.Mort.		
		1992	1991	1990	1992	1991	1990	1992	1991	1990	1992	1991	1990	1992	1991	1990
Bennies		53.1	52.4	54.7												
Bennies		47.0	48.5	38.3												
Bennies		45.5	38.9	32.3												
Bennies	*	44.6	23.4	22.5												
Bennies		34.5	22.8	17.7												
Bennies		6.6	18.9	14.3	120	108	76	35	147	180	5	15	31	35	33	13
Bennies		2.3	16.0	11.4												
Bennies		1.7	8.6	8.3												
Bennies		1.6	5.3	7.6												
Bennies		0.9	3.8	2.9												
Bennies		0.0	2.4	2.8												
Bennies		0.0	0.8	0.7												
Nantxt Pt		--	31.6	--												
Nantxt Pt		--	25.9	--												
Nantxt Pt		--	15.6	--												
Nantxt Pt		--	0.7	--	--	44	--	--	151	--	--	17	--	--	58	--
Nantxt Pt		--	0.7	--												
Nantxt Pt		--	0.0	--												
Hog Shl		--	32.4	--												
Hog Shl		--	30.0	--												
Hog Shl		--	27.9	--	--	80	--	--	181	--	--	21	--	--	61	--
Hog Shl		--	27.1	--												
Hog Shl		--	21.7	--												
Hog Shl		--	0.0	--												
New Beds		59.3	54.3	45.6												
New Beds		47.8	46.2	35.1												
New Beds		43.9	40.0	21.5												
New Beds		33.2	37.2	13.9												
New Beds	*	27.7	34.5	5.3	178	85	62	26	538	88	25	22	31	28	46	28
New Beds		0.8	8.0	4.3												
New Beds		0.3	1.8	2.6												
New Beds		0.3	0.9	0.0												
New Beds		0.0	0.8	0.0												
Strawbrry		44.2	--	30.5												
Strawbrry	*	11.8	--	6.8												
Strawbrry		5.0	--	6.3												
Strawbrry		2.7	--	5.3	30	--	52	13	--	83	29	--	26	64	--	15
Strawbrry		2.0	--	4.7												
Strawbrry		0.3	--	1.4												
Hawks Nest		42.8	--	57.6												
Hawks Nest		37.0	--	38.6												
Hawsk Nest		25.6	--	37.3												
Hawks Nest	*	16.1	--	35.8	127	--	215	36	--	147	14	--	17	41	--	14
Hawks Nest		2.7	--	32.5												
Hawks Nest		0.3	--	2.7												
Beadons		31.0	34.3	18.4												
Beadons		21.6	33.3	13.7												
Beadons		8.6	23.7	8.8												
Beadons		8.4	10.5	6.1												
Beadons		5.4	8.1	4.9	41	47	40	9	93	38	4	24	27	57	42	15
Beadons		2.9	4.6	4.1												
Beadons	*	2.8	2.7	2.9												
Beadons		0.8	1.1	0.0												
Beadons		0.3	0.3	0.0												
Beadons		0.0	0.0													
Vexton		--	29.0	--												
Vexton		--	20.5	--												
Vexton		--	19.4	--												
Vexton		--	18.7	--	--	55	--	--	464	--	--	27	--	--	65	--
Vexton		--	16.7	--												
Vexton		--	6.8	--												
Vexton		--	0.0	--												

Bed		Pct. Oyster			Oyster/Bu.			Spat/Bu.			Yearling/Bu.			Pct.Mort.		
		1992	1991	1990	1992	1991	1990	1992	1991	1990	1992	1991	1990	1992	1991	1990
---		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Egg I	*	**36.1**	20.8	38.4												
Egg I		**35.9**	18.5	33.3												
Egg I		**16.2**	17.6	28.2												
Egg I		**15.3**	13.6	21.6												
Egg I		**0.4**	12.1	5.7	**60**	26	68	**10**	133	133	**1**	37	22	**45**	66	21
Egg I		**0.4**	5.0	5.3												
Egg I		**0.3**	3.3	4.8												
Egg I		**0.0**	2.5	2.8												
Egg I		**0.0**	0.0	2.6												
Egg I		**0.0**	0.0	1.4												
Ledge		**35.6**	--	2.8												
Ledge		**0.5**	--	2.5												
Ledge	*	**0.4**	--	1.3												
Ledge		**0.4**	--	0.0												
Ledge		**0.0**	--	0.0	**18**	--	6	**25**	--	8	**3**	--	10	**28**	--	6
Ledge		**0.0**	--	0.0												
Ledge		**0.0**	--	0.0												
Ledge		**0.0**	--	0.0												