February 4, 1992

Attached is a summary of the 1991 seedbed sampling data with similar data for 1990 and 1989. All data were collected between October 14 and 18, 1991 using a boat and captain (Larry Hickman) 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. Beds are arrayed from the farthest up bay beds to those down bay. For each bed the percentage of oysters for each sample is presented ranked from highest to lowest. Percentage of oyster is based on volume of oyster in the sample divided by the total volume of the cultch, oyster and debris in the sample. Those samples that have over 40% oyster are underlined. The test area sample is depicted with an *. Oysters per bushel and spat per bushel are based on actual counts adjusted to 37 quarts. Percent yearling was computed by dividing the number of yearlings in 37 quarts by the sum of the numbers of yearlings plus oysters.

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

The size distribution of oysters on beds that were heavily harvested this past year (Shell Rock and Cohansey) are given in the attached figures. A more detailed breakdown (every 5 mm) of the oyster size distribution on the four most heavily harvested beds (Shellrock - 58,000 bu., Cohansey - 65,000 bu., Ship John - 42,000 bu., and New Beds - 34,000 bu.) is also appended.

The parameters of interest this year are:

o   Numbers of oysters per bushel remain low on all beds below Bennies. Bennies, Bennies Sand and Ship John are intermediate in numbers per bushel.

o   Spat set was much better this year than in the previous two. New Beds, Vexton and beds from Bennies Sand to Upper Arnolds all received good set.

o   Data on percentage mortalities indicate a shift from up bay in 1989 (probably due to the high freshwater flow that year) to down bay in this past year (undoubtedly reflecting Dermo caused deaths).

o   The heavy harvesting on Shellrock and Cohansey appears to have reduced the stock of larger oysters only a modest amount.

o   The data reported in the Dermo report of December 19, 1991 was taken in conjunction with the seed bed sampling and should be carefully considered in any decision to move oysters. The report is appended.

The proportional distribution data have been used to estimate the numbers of oysters in each size group for a 37 quart bushel dredge sample for the four most heavily fished beds (Shell Rock, Cohansey, New Beds and Ship John.

If you wanted to find out how many oysters per bushel were 3 inches or larger from Shell Rock. 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 30 oysters larger than 3 inches in an average sample from Shell Rock.

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.

These data are available because of the generous support of Bivalve Packing and the dedication of many individuals at the Haskin Shellfish Research Laboratory. I can only urge you to read the last paragraph of Dr. Ford's letter of December 19.

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) the percentage of the oysters that were yearlings are presented behind the percent oyster data. The comparable 1989 and 1990 random sample data are listed for comparison. All data were collected between October 14 to October 18, 1991. Samples were collected with the use of a boat from Bivalve Packing Co.

Bed		Pct. Oyster			Oyster/Bu.			Spat/Bu.			Pct. Yearling			Pct. Mort.		
		1991	1990	1989	1991	1990	1989	1991	1990	1989	1991	1990	1989	1991	1990	1989
Round Is.		82.1	63.9	62.1												
Round Is.		63.4	56.2	62.0												
Round Is.	*	53.9	55.4	59.5	379	385	437	199	178	55	12	18	12	6	15	43
Round Is.		46.9	49.0	56.8												
Round Is.		19.8	43.8	28.0												
Round Is.		6.9	30.5	0.0												
Up. Arnolds		64.4	--	60.0												
Up. Arnolds	*	42.3	--	39.5	420	--	401	353	--	84	10	--	17	3	--	52
Arnolds	*	74.7	63.8	65.0												
Arnolds		63.9	52.0	57.1												
Arnolds		33.3	49.8	52.6	274	333	356	203	198	69	13	18	15	10	9	40
Arnolds		31.4	44.6	33.8												
Arnolds		11.1	28.6	33.3												
Arnolds		3.6	20.0	13.9												
Up. Middle		--	4.8	--												
Up. Middle		--	0.7	--		22			10			0			21	
Middle	*	68.0	54.3	46.7												
Middle		58.8	47.5	44.4												
Middle		56.1	40.7	38.7												
Middle		51.5	30.4	36.4												
Middle		50.0	23.4	27.8	258	115	157	227	77	71	14	20	15	19	8	16
Middle		50.0	11.1	27.6												
Middle		42.4	7.8	17.1												
Middle		30.6	0.0	0.0												
Middle		26.3	0.0	0.0												
Cohansey		62.5	57.9	55.2												
Cohansey		62.1	47.4	54.3												
Cohansey		57.1	44.2	30.8	246	226	162	240	109	23	11	21	15	19	9	22
Cohansey	*	56.1	36.5	12.1												
Cohansey		37.5	31.3	0.0												
Ship John	*	53.3	64.2	62.5												
Ship John		51.9	53.9	52.6												
Ship John		45.1	39.8	48.6	157	248	285	237	139	120	13	29	26	24	8	27
Ship John		25.4	36.6	41.7												
Ship John		12.6	23.4	30.0												
Shellrock	*	73.5	73.0	71.1												
Shellrock		70.1	68.6	67.5												
Shellrock		57.1	63.9	64.2												
Shellrock		51.3	63.9	53.1	226	354	252	474	162	67	13	15	21	26	1	30
Shellrock		40.0	63.1	35.9												
Shellrock		32.9	52.1	15.7												
Shellrock		9.1	16.2	5.9												
BenSand		85.7	36.6	46.9												
BenSand	*	64.7	35.9	43.7	167	122	156	335	108	78	18	33	24	43	16	63
BenSand		40.6	34.8	40.5												
BenSand		6.2	21.1	8.3												

Bed	Pct. Oyster			Oyster/Bu.			Spat/Bu.			Pct. Yearling			Pct. Mort.		
	1991	1990	1989	1991	1990	1989	1991	1990	1989	1991	1990	1989	1991	1990	1989
Bennies	52.4	54.7	43.6												
Bennies *	48.5	38.3	40.5												
Bennies	38.9	32.3	20.5												
Bennies	23.4	22.5	16.2												
Bennies	22.8	17.7	14.3												
Bennies	18.9	14.3	5.7	108	76	54	147	180	60	15	31	25	33	13	78
Bennies	16.0	11.4	5.7												
Bennies	8.6	8.3	2.9												
Bennies	5.3	7.6	2.8												
Bennies	3.8	2.9	1.5												
Bennies	2.4	2.8	0.0												
Bennies	0.8	0.7	0.0												
Nantxt Pt	31.6	-	30.8												
Nantxt Pt	25.9	-	20.6												
Nantxt Pt	15.6	-	0.0												
Nantxt Pt *	0.7	-	0.0	44	--	100	151	--	27	17	--	11	58	--	41
Nantxt Pt	0.7	-	0.0												
Nantxt Pt	0.0	-	0.0												
Hog Shl	32.4	-	41.2												
Hog Shl *	30.0	-	38.9												
Hog Shl	27.9	-	38.9	80	--	156	181	--	38	21	--	26	61	--	35
Hog Shl	27.1	-	37.5												
Hog Shl	21.7	-	8.3												
Hog Shl	0.0	-	0.0												
New	54.3	45.6	34.4												
New *	46.2	35.1	15.6												
New	40.0	21.5	6.5												
New	37.2	13.9	5.9												
New	34.5	5.3	4.5	85	62	34	538	88	163	22	31	22	46	28	41
New	8.0	4.3	3.1												
New	1.8	2.6	3.1												
New	0.9	0.0	2.9												
New	0.8	0.0	0.0												
Strawbrry	--	30.5	--												
Strawbrry	--	6.8	--												
Strawbrry	--	6.3	--												
Strawbrry	--	5.3	--		52			83			26			15	
Strawbrry	--	4.7	--												
Strawbrry	--	1.4	--												
Hawksnest	--	57.6	--												
Hawksnest	--	38.6	--												
Hawksnest	--	37.3	--												
Hawksnest	--	35.8	--		215			147			17			14	
Hawksnest	--	32.5	--												
Hawksnest	--	2.7	--												
Beadons	34.3	18.4	22.9												
Beadons	33.3	13.7	15.8												
Beadons	23.7	8.8	9.1												
Beadons	10.5	6.1	4.5												
Beadons	8.1	4.9	4.1	47	40	60	93	38	31	24	27	19	42	15	71
Beadons *	4.6	4.1	2.8												
Beadons	2.7	2.9	0.0												
Beadons	1.1	0.0	0.0												
Beadons	0.3	0.0	0.0												
Beadons	0.3	0.0	0.0												
Vexton	29.0	--	47.1												
Vexton *	20.5	--	45.3												
Vexton	19.4	--	43.8												
Vexton	18.7	--	35.3	55	--	175	464	--	94	27	--	34	65	--	35
Vexton	16.7	--	23.5												
Vexton	6.8	--	10.5												
Vexton	0.0	--	3.6												

Bed	Pct. Oyster			Oyster/Bu.			Spat/Bu.			Pct. Yearling			Pct.Mort.		
	1991	1990	1989	1991	1990	1989	1991	1990	1989	1991	1990	1989	1991	1990	1989
Egg I	20.8	38.4	48.6												
Egg I	18.5	33.3	24.6												
Egg I	17.6	28.2	17.8												
Egg I	13.6	21.6	16.7												
Egg I	12.1	5.7	2.9	26	68	56	133	133	55	37	22	31	66	21	58
Egg I	5.0	5.3	1.8												
Egg I	3.3	4.8	0.0												
Egg I	2.5	2.8	0.0												
Egg I *	0.0	2.6	0.0												
Egg I	0.0	1.4	0.0												
Ledge	--	2.8	--												
Ledge	--	2.5	--												
Ledge	--	1.3	--												
Ledge	--	0.0	--												
Ledge	--	0.0	--		6			8			10			6	
Ledge	--	0.0	--												
Ledge	--	0.0	--												
Ledge	--	0.0	--												

New Beds 1991

Size mm	Freq.	Proport.	Oyst./bu.
0	0	0.00000	0
5	0	0.00000	0
10	0	0.00000	0
15	1	0.00198	0
20	14	0.02778	2
25	16	0.03175	3
30	33	0.06548	6
35	57	0.11310	10
40	93	0.18452	16
45	86	0.17063	15
50	76	0.15079	13
55	49	0.09722	8
60	27	0.05357	5
65	20	0.03968	3
70	17	0.03373	3
75	2	0.00397	0
80	7	0.01389	1
85	4	0.00794	1
90	2	0.00397	0
95	0	0.00000	0
100	0	0.00000	0
105	0	0.00000	0
110	0	0.00000	0
115	0	0.00000	0
120	0	0.00000	0
125	0	0.00000	0
130	0	0.00000	0
135	0	0.00000	0
140	0	0.00000	0

Ship John 1991

Size mm	Freq.	Proport.	Oyst./bu
0	0	0.00000	0
5	0	0.00000	0
10	0	0.00000	0
15	0	0.00000	0
20	2	0.00532	1
25	10	0.02660	4
30	13	0.03457	5
35	27	0.07181	11
40	47	0.12500	20
45	54	0.14362	23
50	52	0.13830	22
55	56	0.14894	23
60	41	0.10904	17
65	34	0.09043	14
70	16	0.04255	7
75	13	0.03457	5
80	7	0.01862	3
85	2	0.00532	1
90	2	0.00532	1
95	0	0.00000	0
100	0	0.00000	0
105	0	0.00000	0
110	0	0.00000	0
115	0	0.00000	0
120	0	0.00000	0
125	0	0.00000	0
130	0	0.00000	0
135	0	0.00000	0
140	0	0.00000	0

COHANSEY 1991
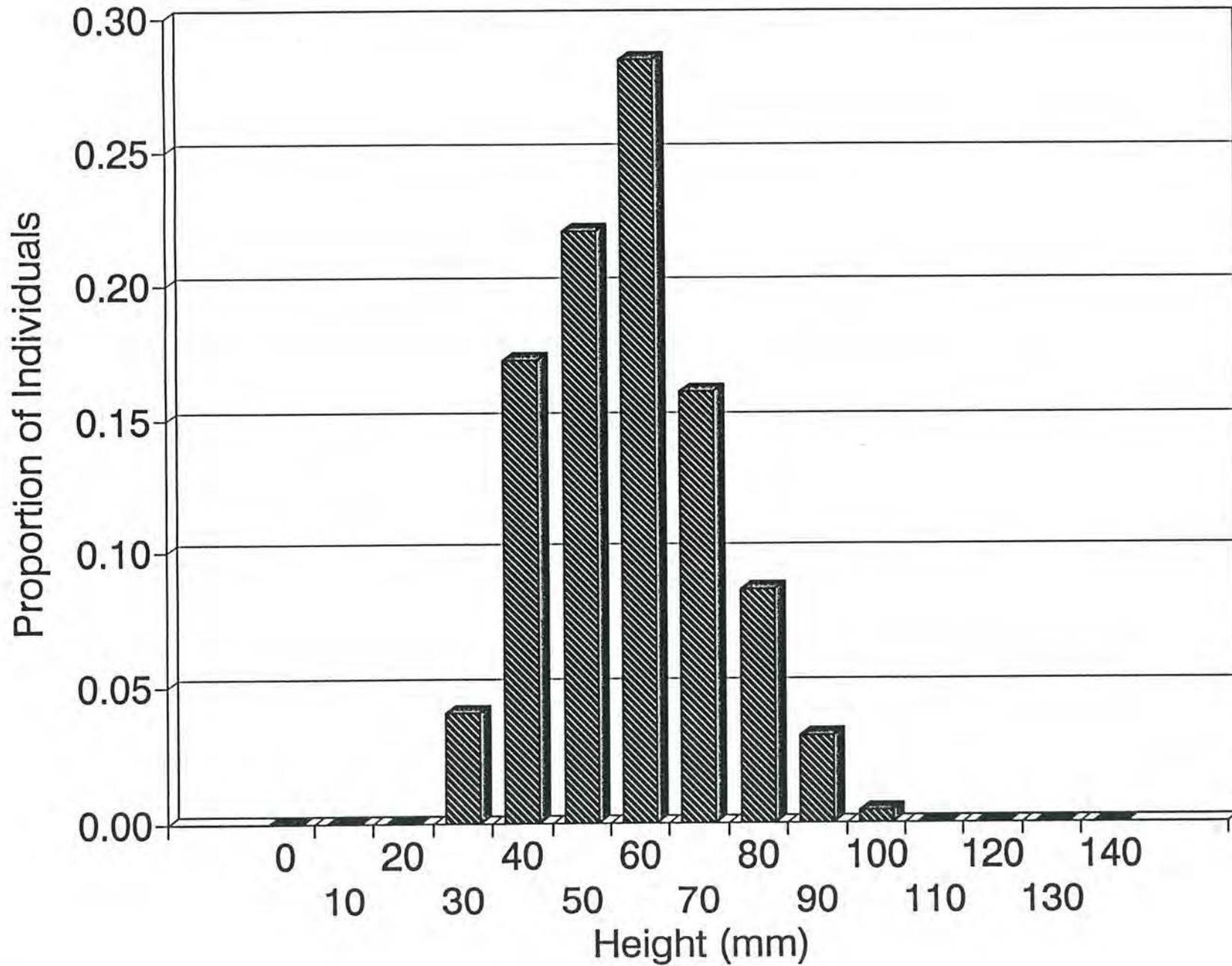
\	Shell Rock 1991				Cohansey 1991		
Size mm	Freq.	Proport.	Oyst./bu.	Size mm	Freq.	Proport.	Oyst./bu.
0	0	0.00000	0	0	0	0.00000	0
5	0	0.00000	0	5	0	0.00000	0
10	0	0.00000	0	10	0	0.00000	0
15	0	0.00000	0	15	0	0.00000	0
20	0	0.00000	0	20	0	0.00000	0
25	4	0.00642	1	25	1	0.00200	2
30	16	0.02568	6	30	19	0.03808	6
35	44	0.07063	16	35	34	0.06814	17
40	54	0.08668	20	40	52	0.10421	21
45	51	0.08186	19	45	55	0.11022	20
50	74	0.11878	27	50	55	0.11022	29
55	79	0.12681	29	55	68	0.13627	31
60	80	0.12841	29	60	74	0.14830	32
65	63	0.10112	23	65	45	0.09018	25
70	59	0.09470	21	70	35	0.07014	23
75	39	0.06260	14	75	24	0.04810	15
80	22	0.03531	8	80	19	0.03808	9
85	11	0.01766	4	85	12	0.02405	4
90	9	0.01445	3	90	4	0.00802	4
95	3	0.00482	1	95	1	0.00200	1
100	0	0.00000	0	100	1	0.00200	0
105	0	0.00000	0	105	0	0.00000	0
110	1	0.00161	0	110	0	0.00000	0
115	0	0.00000	0	115	0	0.00000	0
120	0	0.00000	0	120	0	0.00000	0
125	0	0.00000	0	125	0	0.00000	0
130	0	0.00000	0	130	0	0.00000	0
135	0	0.00000	0	135	0	0.00000	0
140	0	0.00000	0	140	0	0.00000	0