

**OYSTER SETTING  
NEW HAVEN HARBOR  
1981 SEASON**

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Long Island Oyster Farms**

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## INTRODUCTION

A survey was undertaken from June 8 to October 8, 1981, to monitor the oyster spawn and set occurring in the New Haven Harbor, New Haven, Connecticut.

Plankton samples and spat collectors at specific sites were used to measure the time and intensity of the oyster spawn and set respectively.

Results of the survey show a comparatively abundant occurrence of natural oyster set during the 1981 spawning season.

## MATERIALS AND METHODS

Sample station selection was based on sites used in previous state and federal studies. This is due to the sites proximity to historically productive oyster beds and areas planted with cultch, in hopes of attaining an abundant set of oysters.

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Sample station description and location (Fig. 1) are as follows:

Sample Station 6 A: Center of Lot 151 (Morris Greek entrance)

6: Center of Lot 152

5: S. E. corner of Lot 1-C

4: N.W. corner of Lot 13

Q1: N.W. corner of Lot 5, Quinnipiac River.

Plankton samples and spat collectors from each sample station were examined generally every 2 to 3 days, from June 8 to October 8, 1981.

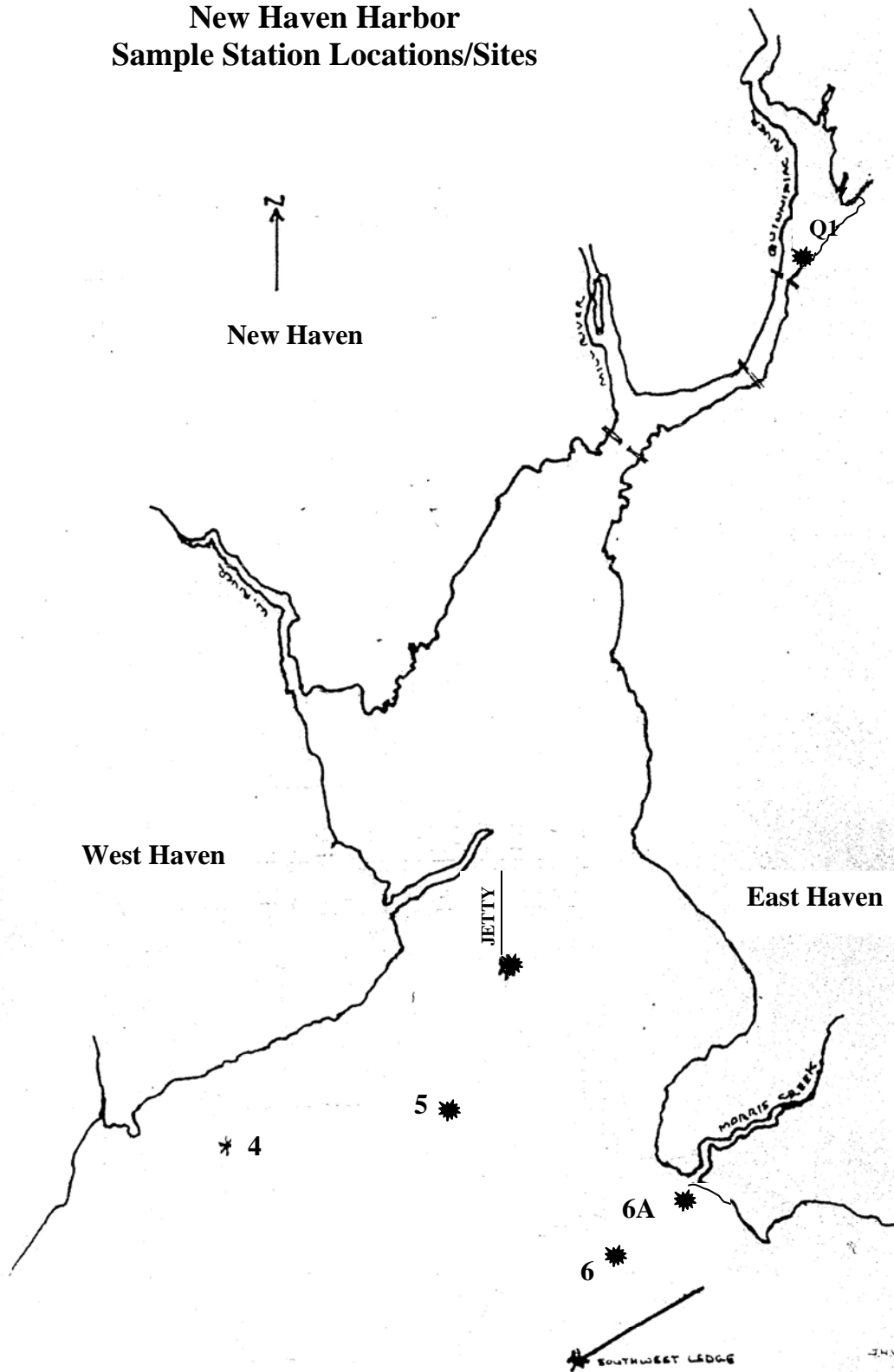
Plankton samples were obtained from a mild-water depth, by pumping 500 gallons of water through a #20 plankton net. The collected plankton concentrate was resuspended to a 200 ml volume and examined microscopically for oyster larvae. Results were recorded as the number and development stage of oyster larvae, in a 1 ml/200 ml sample portion.

Spat collectors placed at each station consisted of a plastic mesh bag, weighted to the bottom and marked by a buoy, and line. Each mesh bag contained 20 clean oyster shells, that were examined microscopically after 2 to 3 days bottom setting time. Results were recorded as the number of development stage of oyster larvae, in a 1 ml /200 ml sample portion.

Spat collectors placed at each station consisted of a plastic mesh bag, weighted to the bottom and marked by a buoy, and line. Each mesh bag contained 20 clean oyster shells, that were examined microscopically after 2 to 3 days bottom setting time. Results were recorded as the number of spat per 20 shell for each station.

Water temperature, weather, tide, and sea conditions were recorded for each station during the time of sampling.

Figure 1  
New Haven Harbor  
Sample Station Locations/Sites





**SPAT Collector Data 1981**  
**Oyster SPAT per 20 Shell Sites - Table 2**

Sample Station	6A	6	5	4	Q1	Daily Totals
Date						
26-29 June	0	0	0	0	0	0
June 29-1 July	0	0	0	0	0	0
1-3 July	0	0	0	0	0	0
3-6 July	0	0	0	0	0	0
6-8 July	0	0	0	0	0	0
8-10 July	0	0	0	0	0	0
10-13 July	0	0	0	0	0	0
13-18 July	0	0	0	0	0	0
15-17 July	0	0	0	0	0	0
17-20 July	0	0	0	0	0	0
20-22 July	0	0	0	0	0	0
22-24 July	1	1	0	0	0	2
24-27 July	129	103	61	92	18	403
27-30 July	478	228	220	94	94	1192
July 30-1 Aug.	281	400	533	28	28	1426
1-4 Aug	425	654	223	8	8	1400
4-7 Aug	261	302	178	2	2	1025
7-10 Aug	123	139	55	4	4	379
10-13 Aug	353	432	229	2	2	1087
13-15 Aug	1023	1407	306	1	1	2820
18-17 Aug	1478	1561	339	17	17	3467
17-19 Aug	2390	4748	1860	320	320	13,281
19-21 Aug	1090	1070	865	81	81	3659
21-24 Aug	278	416	410	41	41	1327
24-26 Aug	95	153	75	3	3	359
26-28 Aug	89	147	149	2	2	526
28-31 Aug	181	1102	490	59	59	1908
Aug. 31-2 Sep	109	179	177	19	19	541
2-5 Sep	112	108	98	1	1	367
5-8 Sep	18	29	7	1	1	55
8-11 Sep	2	1	0	0	0	3
11-17 Sep	0	*	2	1	1	5
17- 23 Sep	2	4	*	0	0	6
Sep 23-8 Oct.	0	0	0	0	0	1
Cumulative Totals	8918	13,184	6277	702	702	35,239

Water Temperature of ( \_\_\_\_ )

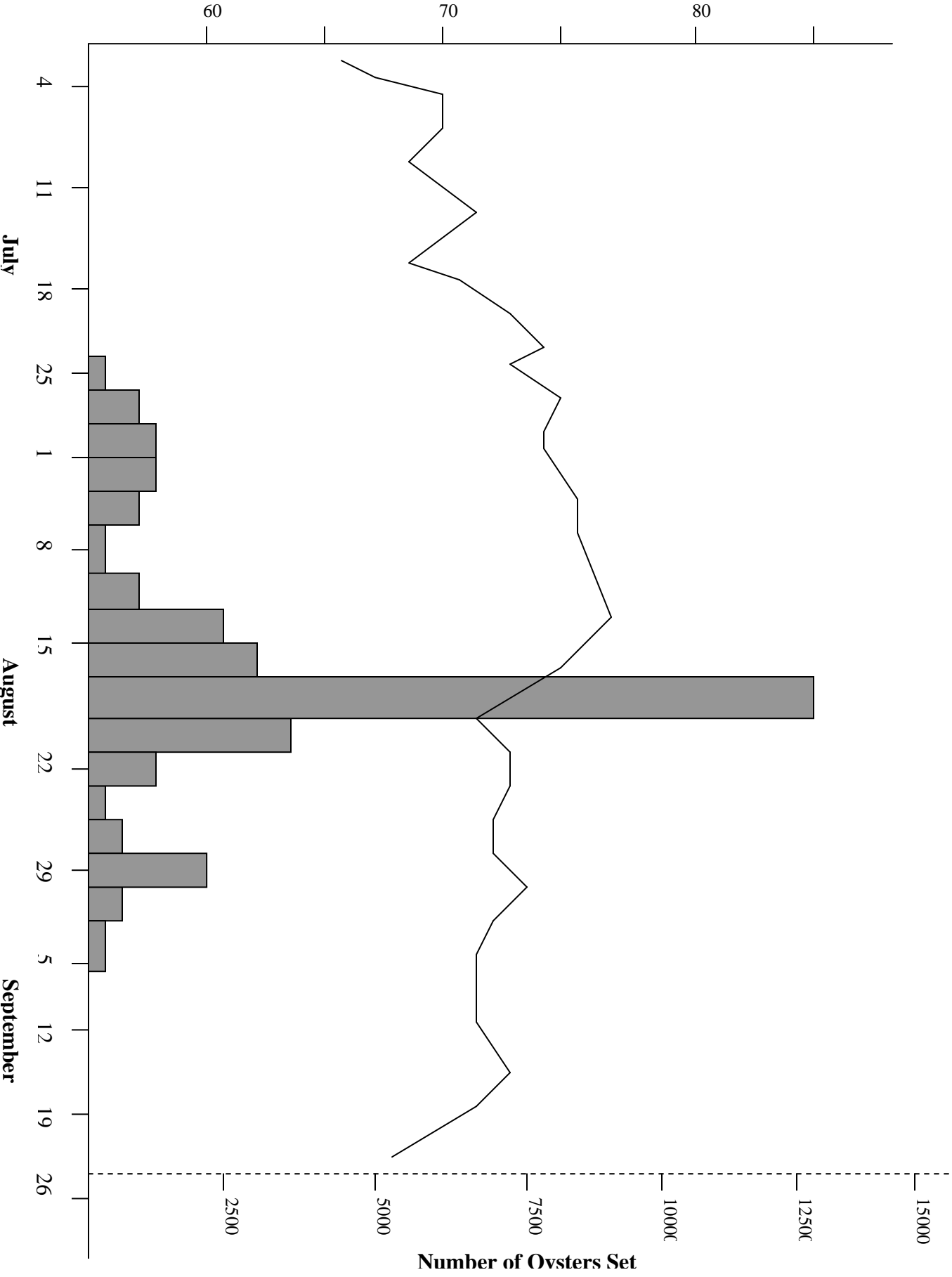
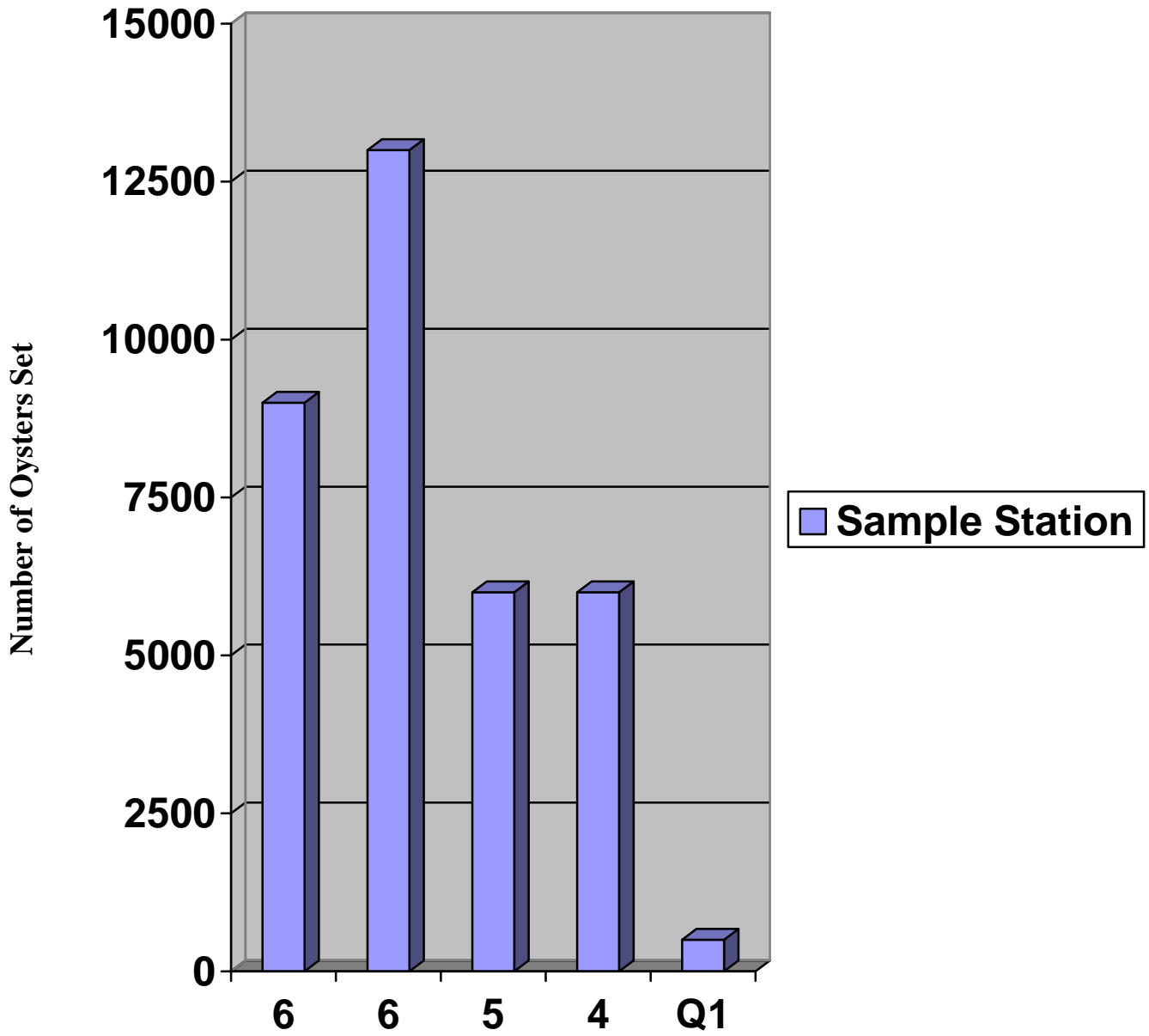


FIGURE 2



1981 Oyster Set per Individual Stations  
Figure 3

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## RESULTS

Resulting plankton sample data (Table 1.) indicated frequent variability in the density and diversity of the free-swimming oyster larvae. Especially noticed was a general lack of abundant early larval stages, preceding the appearance of numerous well developed larvae. The observation of well developed umbo and eyed oyster larvae, coincided with the first appearance of set on the spat collectors on July 24. Subsequently; eyed oyster larvae could be found for the remainder of July through August and into the first part of September.

The largest incidence of oyster larvae at any single sample station was 32 larvae (per 1 ml/200 ml sample portion), occurring on August 17 at station 5. Station totals for that day reached 60 larvae; the largest for any one day of plankton sampling.

Spat collector data (Table 2) showed the first occurrence of oyster setting on July 22-24, at two sample stations. Oyster spat was found on the test shell from all stations during July 24-26. The greatest intensity of setting for any sample cycle took place on August 17-19, for a combined station total of 13.281 spat/100 shell. The largest single station total was 4.748 spat /20 shell at station 6, also for August 17-19.

During this 1981 season, three distinct “waves” of oyster setting were recorded. The peaks of these waves occurred on July 30- August 1, August 17-19, and August 28-31. The incidence and intensity of oyster setting for all stations combined, are shown graphically in Figure 2. The total oyster set for individual stations is depicted in Figure 3.

Water temperature peaked on August 11 for a combined station average of 75 F. A temperature profile is shown in Figure 2.

The weather pattern throughout the oyster setting season could best be described as “stable”; with no severe rain storms or unfavorable winds. Perhaps these factors helped to make the 1981 oyster set in the New Haven Harbor successful.



**A History Oyster Setting in Connecticut**

**Compiled by Timothy C. Visel**

**EPA/HRI Meeting November 14, 2007**

**October 15, 1982**

Mr. Timothy C. Visel  
Cape Cod Extension Service  
Office of Deeds and Probate  
Railroad Avenue  
Barnstable, Massachusetts 02630

Dear Tim:

I've enclosed some data on oyster setting in Connecticut for the years 1882 through 1961. This information is taken from the Annual Shellfish Commissioners' Report.

Since 1961, the Reports of the Shellfish Commission and that of the subsequent Division have been included in the Annual Connecticut Administrative Reports to the Governor.

Using information from the Administrative Reports and my personal knowledge of oyster sets in recent years, I have compiled the statistics for 1962 to the present as listed below.

Please let me know if we can be of further assistance.

Best regards,

John H. Volk  
Division Chief

Year	Set-Description	Number of Natural Bed Boats
1882	Ok-Probably	-
1883	Ok-Probably	-
1884	Ok-Probably	300
1885	Ok-Probably	-
1886	Ok-Probably	-
1887	Abundant	-
1888	Light	-
1889	Light	-
1890	Great Set	-
1891	Fine	-
1892	Fine	-
1893	Fair	-
1894	Fine	256
1895	Fine	247
1898	Good	302
1897	Uneven	196
1898	Failure	122
1899	Fine	276
1900	Only Fair	324
1901	Light	217
1902	Poor	81
1903	Very Poor	24
1904	Splendid	258
1905	Scattering	267
1906	Very Poor	193
1907	Very Poor	157
1908	Scattering	177
1909	Poor	131
1910	Poor	138
1911	New Haven Only	154
1912	No Set	136
1913	Failure	98
1914	Light	117
1915	No Set	68
1916	No Set	43
1917	No Set	28
1918	No Set	21
1919	Bridgeport Bed Only	161
1920	No Set	126
1921	No Set	73
1922	Set from Spawning Beds	41
1923	A Little	57
1924	No Set	31
1925	Fairly Good Set	40
1926	Fairly Local Sets	40

1927	No Set	21
1928	Good Inshore Set	9
1929	Scattering	20
1930	Fine	34
1931	No Set	32
1932	No Set	9
1933	No Set	17
1934	Good	11
1935	Very Light	14
1936	No Set	34
1937	Light Set	47
1938	Very Poor	28
1939	Fair Set (Mostly destroyed by pests)	12
1940	Fair Set	37
1941	Very Light Set	24
1942	Very Poor Set	29
1943	Light Set	22
1944	Fair to Good	11
1945	Fair	20
1946	Fair – Spotty	31
1947	Very Light	27
1948	Very Poor	27
1949	Poor	20
1950	Poor	29
1951	Very Poor	10
1952	Very Poor	9
1953	Very Poor	3
1954	No Set	4
1955	Very Poor	3
1956	Poor	7
1957	Fair	4
1958	Very Light	0
1959	Poor	1
1960	Poor	12
1961	Poor	5
1962	Poor	-
1963	Poor	-
1965	Poor	-
1966	Fair to Good	-
1967	Light	-
1968	Good	“S” License Holders # Issued)
1969	Fair to Good	?
1970	Fair to Good	?
1971	Fair to Good	?
1972	Fair to Good	?
1973	Fair to Good	?
1974	Fair to Good	?
1975	Fair to Good	?
1976	Fair to Good	?
1977	Fair to Good	?

1978	Very Abundant	?
1979	Good	?
1980	Good	?
1981	Abundant	?
1982	Very Light	?
1983	?	?
1984	?	?
1985	?	?
1986	?	?
1987	?	?
1988	?	?
1989	?	?
1990	?	?
1991	?	?
1992	?	?
1993	?	?
1994	?	?
1995	?	?
1996	?	?
1997	?	?
1998	?	?
1999	?	?
2000	?	?
2001	?	?
2002	?	?
2003	?	?
2004	?	?
2005	?	?
2006	?	?