

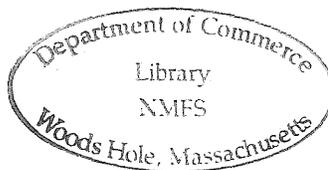
LABORATORY REFERENCE DOCUMENT NO. 80-16

DATA REPORT: YELLOWTAIL FLOUNDER OF THE CAPE COD AREA  
AND NORTHERN GULF OF MAINE.

BY

M. M. McBride and M. P. Sissenwine

<input checked="" type="checkbox"/>	Approved for Distribution
<input type="checkbox"/>	Distribution to F/NWC; F/SWC; F/SEC; F/NWR1, & F/NEC (Technical Writer; Editor)
Signature	
Date	15 May 1980



National Marine Fisheries Service  
Northeast Fisheries Center  
Woods Hole Laboratory  
Woods Hole, Massachusetts 02543

## Introduction

This document presents a time series of yellowtail flounder commercial catch statistics and Northeast Fisheries Center (NEFC) bottom trawl survey data to the year 1979 for Cape Cod and Northern Gulf of Maine areas. Recent information on the yellowtail flounder fishery on Georges Bank, Southern New England, and Middle Atlantic grounds is reviewed in McBride et al. 1980. Geographic representation of the yellowtail fishing grounds discussed in these documents is shown in Figure 1.

Data from the Cape Cod area has been considered in previous assessment documents as well as discussion relevant to management of yellowtail flounder west of 69°N by the New England Regional Fishery Management Council (NERFMC). The NEFC has not provided the NERFMC with data describing the fishery of the Northern Gulf of Maine prior to this document.

## Fishery Statistics

Available catch and effort statistics for Cape Cod and the Gulf of Maine are given in Tables 1 and 2. Landings for Cape Cod have been increasing since the mid-1970's and in 1979 (4,200 MT) reached the highest level ever observed for that area, showing an 8% increase over the 1978 (3,900 MT) value. The 1963 catch value of 3,600 MT is the only other year that approaches recent levels. Catches have generally been less than 2,000 MT.

The 1979 catch per unit of fishing effort (CPUE) value for Cape Cod (1.8) is down 10% from the 1978 (2.0) value and falls below the overall mean CPUE value (2.1) for this area. This implies that to a large extent,

increased catch of yellowtail on Cape Cod in 1979 is directly related to increased effort.

Comparing recent CPUE with earlier periods is difficult as fishing regulations, which have changed the fishing priorities, may influence the values. However, the difference between 1978 and 1979 is likely to reflect a real change as regulations were similar in both years.

Landings in the Northern Gulf of Maine have also increased significantly during the 1970's to a level comparable to the Cape Cod fishery. The 1978 catch value (3,876 MT) is the largest observed in the time series. Landings are largely concentrated in statistical area 513. The 1979 catch (2,761 MT) reflects a 29% decrease from 1978. CPUE data for the Northern Gulf of Maine is not available.

#### NEFC Survey Results

Offshore autumn bottom trawl survey data for both Cape Cod and the Northern Gulf of Maine is presented in Tables 3 and 4. The levels of survey catch on Cape Cod have been very low and data for the Northern Gulf of Maine is too sketchy to interpret.

Inshore summer bottom trawl survey data for both areas are given in Tables 5 and 6. The inshore series is essentially limited to the summer of 1977-1979 cruises; it affords little indication of trends in the population.

#### Summary

Commercial catch data indicate that 1978 and 1979 estimates of landings on Cape Cod are the largest ever observed. However, the 1979 CPUE value decreased 10% from 1978, thus indicating that increased landings are largely

due to increased effort. Northern Gulf of Maine catch data indicates increased landings throughout the 1970's that bring it up to a level comparable to the Cape Cod yellowtail fishery.

Offshore bottom trawl survey data is too sketchy for reliable interpretation and the brief time series of inshore survey data makes it difficult to connect the values to any other observed trends in the yellowtail fishery.

Literature Cited

McBride, M.M., M.P. Sissenwine, B.E. Brown, and L.M. Kerr. Yellowtail flounder

(Limanda ferruginea): Status of the Stocks, March 1980. NEFC Lab.

Ref. No. 80-20.

Table 1. Yellowtail flounder catch statistics for Cape Cod Ground (catch in MT x 10<sup>-3</sup>).

Year	Food landings	Discard	Industrial	Foreign	Total	Days fished in 1000's	Catch per day in MT
1935	0.4	0.1					
1936	0.4	0.1					
1937	0.5	0.2					
1938	0.5	0.2					
1939	0.6	0.2					
1940	0.9	0.3					
1941	1.3	0.4					
1942	1.5	0.5					
1943	1.3	0.4			1.7	0.53	3.2
1944	1.5	0.5			2.0	1.01	2.0
1945	1.2	0.4			1.6	0.61	2.6
1946	1.2	0.4			1.6	0.62	2.6
1947	1.1	0.3			1.4	0.75	1.9
1948	0.7	0.2			0.9	0.47	1.9
1949	1.2	0.4			1.6	0.68	2.4
1950	1.3	0.4			1.7	0.95	1.8
1951	0.8	0.2			1.0	0.79	1.3
1952	0.8	0.2			1.0	0.76	1.3
1953	0.8	0.2			1.0	0.78	1.3
1954	1.1	0.3			1.4	0.89	1.6
1955	1.3	0.4			1.7	1.00	1.7
1956	1.4	0.4			1.8	1.34	1.3
1957	2.4	0.7			3.1	1.44	2.2
1958	1.6	0.5			2.1	0.92	2.3
1959	1.5	0.5			2.0	0.76	2.6
1960	1.5	0.5			2.0	1.12	1.8
1961	1.8	0.6			2.4	0.91	2.6
1962	1.9	0.6			2.5	1.01	2.5
1963	3.6	1.0			4.6	1.00	4.6
1964	1.8	0.6			2.4	0.71	3.4
1965	1.5	0.5			2.0	0.70	2.8
1966	1.8	0.3			2.1	1.37	1.6
1967	1.5	0.8			2.3	1.69	1.4
1968	1.6	0.6			2.2	0.99	2.3
1969	1.3	0.3			1.6	0.68	2.5
1970	1.2	0.4			1.6	0.53	3.0
1971	1.7	0.7			2.3	0.79	2.9
1972	1.4	0.3			1.6	0.67	2.4
1973	1.7	0.1			1.7	0.89	1.9
1974	2.1	0.2			2.3	1.21	1.9
1975	2.0	0			2.0	1.25	1.6
1976	3.6	0.1			3.7	2.31	1.6
1977	3.5	0			3.5	2.42	1.4
1978*	3.9	0			3.9	1.98	2.0
1979*	4.2	0.4			4.6	2.4	1.8

\*Preliminary and assuming 10.7% discard.

Table 2. Yellowtail flounder catch statistics for the Northern Gulf of Maine in 100's of kilograms by area and total metric tons.

Year	STATISTICAL AREAS				MT's
	511	512	513	515	
1964	4.1		39.9	15.9	59.9
1965	2.7		72.1	3.6	78.5
1966	14.1	18.6	226.3	5.9	259.0
1967	18.1		476.7	3.2	498.1
1968	7.3		101.2	18.1	126.6
1969	5.0		733.9	14.1	753.0
1970		2.3	1108.1	141.5	1251.9
1971	6.8	1.8	548.4	1.4	557.0
1972	4.5	2.7	1530.0	25.4	1562.7
1973			613.7	11.8	625.5
1974		58.1	978.4	3.2	1039.7
1975	6.4	1.4	1891.5	40.8	1940.1
1976	0.5	10.0	2556.0	10.9	2577.4
1977		7.7	2507.0	6.4	2521.1
1978	0.9	109.8	3711.3	53.5	3875.6
1979	13.2	18.6	2660.3	68.5	2760.6

Table 3. Yellowtail flounder bottom trawl survey results for the Cape Cod area.

Year	$\bar{wt}$	$\bar{no}$	$\bar{Age}$ 1's	$\bar{len}$	$\bar{wt}/\text{fish kg}$
1963	3.54	9.07	2.81	31.6	.39
1964	1.18	3.67	2.14	29.0	.32
1965	1.23	4.50	2.58	28.2	.27
1966	.80	4.02	2.04	21.1	.20
1967	.27	.74	0.17	32.0	.36
1968	.29	.88	0.46	32.2	.33
1969	.85	2.37	1.17	30.0	.36
1970	.31	1.16	0.61	26.1	.27
1971	.35	1.49	0.87	26.2	.23
1972	2.75	10.24	6.37	28.9	.27
1973	.58	1.60	0.45	31.5	.36
1974	.12	.22	-	40.6	.55
1975	.39	.93	0.38	32.6	.42
1976	1.21	4.81	2.21	27.9	.25
1977	4.66	12.93	3.98	31.5	.36
1978	1.37	4.51	1.83	30.9	.30
1979	1.01	3.87	2.20	28.0	.26

See Figure 2. Area includes strata 24, 25, and 26.

Table 4. Yellowtail flounder bottom trawl survey results for the Northern Gulf of Maine.

Year	$\bar{wt}$	$\bar{no}$	$\bar{len}$	$\bar{wt}/\text{fish kg}$
1963	.31	1.61	25.8	.19
1964	-	-	-	-
1965	-	-	-	-
1966	-	-	-	-
1967	-	-	-	-
1968	-	-	-	-
1969	-	-	-	-
1970	-	-	-	-
1971	-	.03	33.0	-
1972	.01	.08	26.3	.13
1973	-	-	-	-
1974	-	-	-	-
1975	-	-	-	-
1976	-	-	-	-
1977	.28	.60	36.9	.47
1978	.06	.25	26.0	.24
1979	.06	.05	44.1	1.20

See Figure 2. Area includes strata 27, 37, 38, 39, and 40.

Table 5. Yellowtail flounder summer inshore bottom trawl survey results for Cape Cod.

	Year	$\bar{wt}$	$\bar{No}$
Summer	1977	1.43	4.58
	1978	2.37	23.4
	1979	2.85	19.13

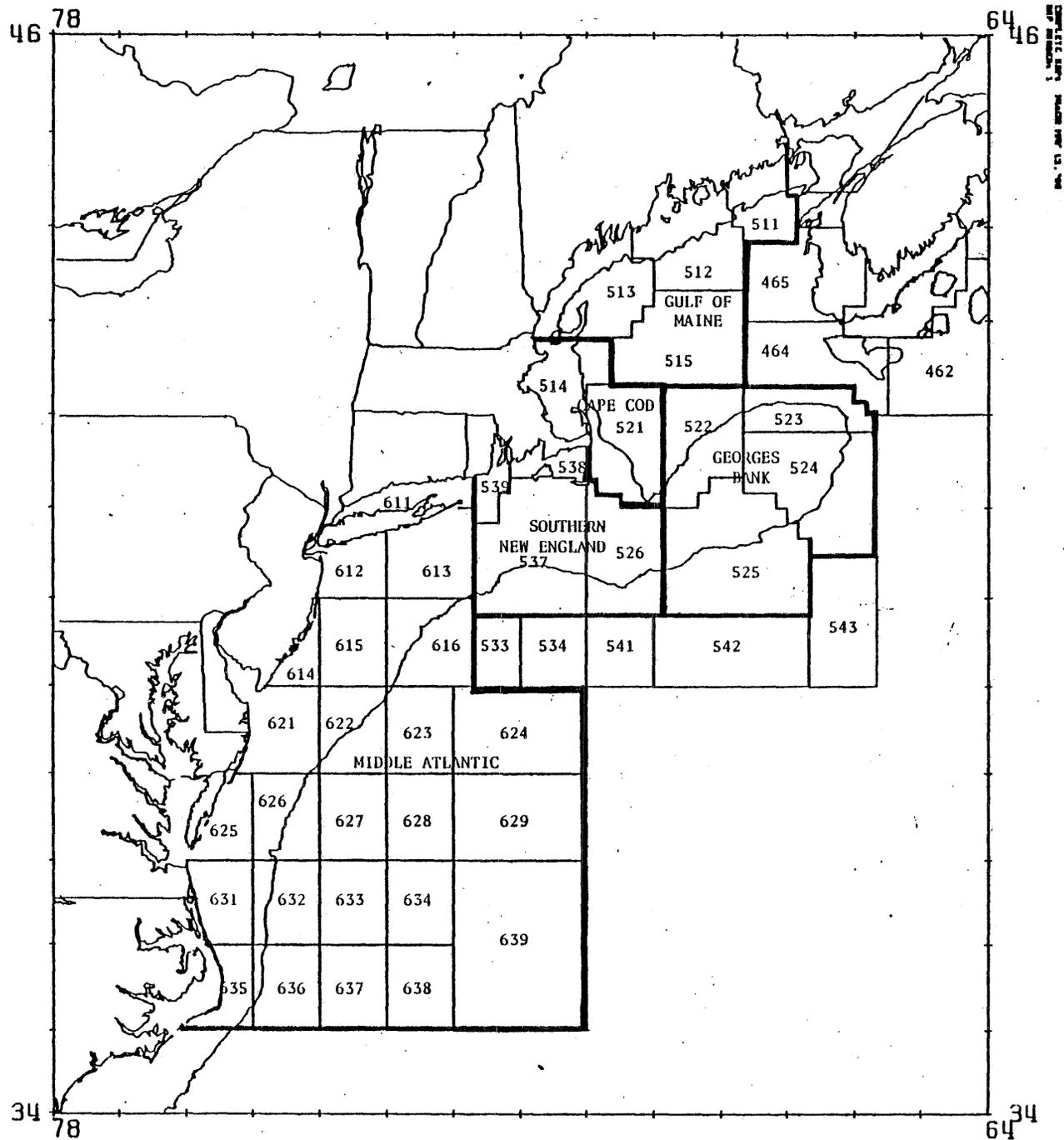
See Figure 3. Area includes strata 55 through 61.

Table 6. Yellowtail flounder summer inshore bottom trawl survey results for the Northern Gulf of Maine.

	Year	$\bar{wt}$ (kg)	$\bar{No}$	wt/fish
Summer	1977	.45	1.79	.25
	1978	2.88	8.72	.33
	1979	2.24	4.89	.46

See Figure 4. Area includes strata 62 through 90.

Figure 1. Statistical Areas



U.S. GEOLOGICAL SURVEY  
 WATER RESOURCES DIVISION  
 WASHINGTON, D.C. 20549

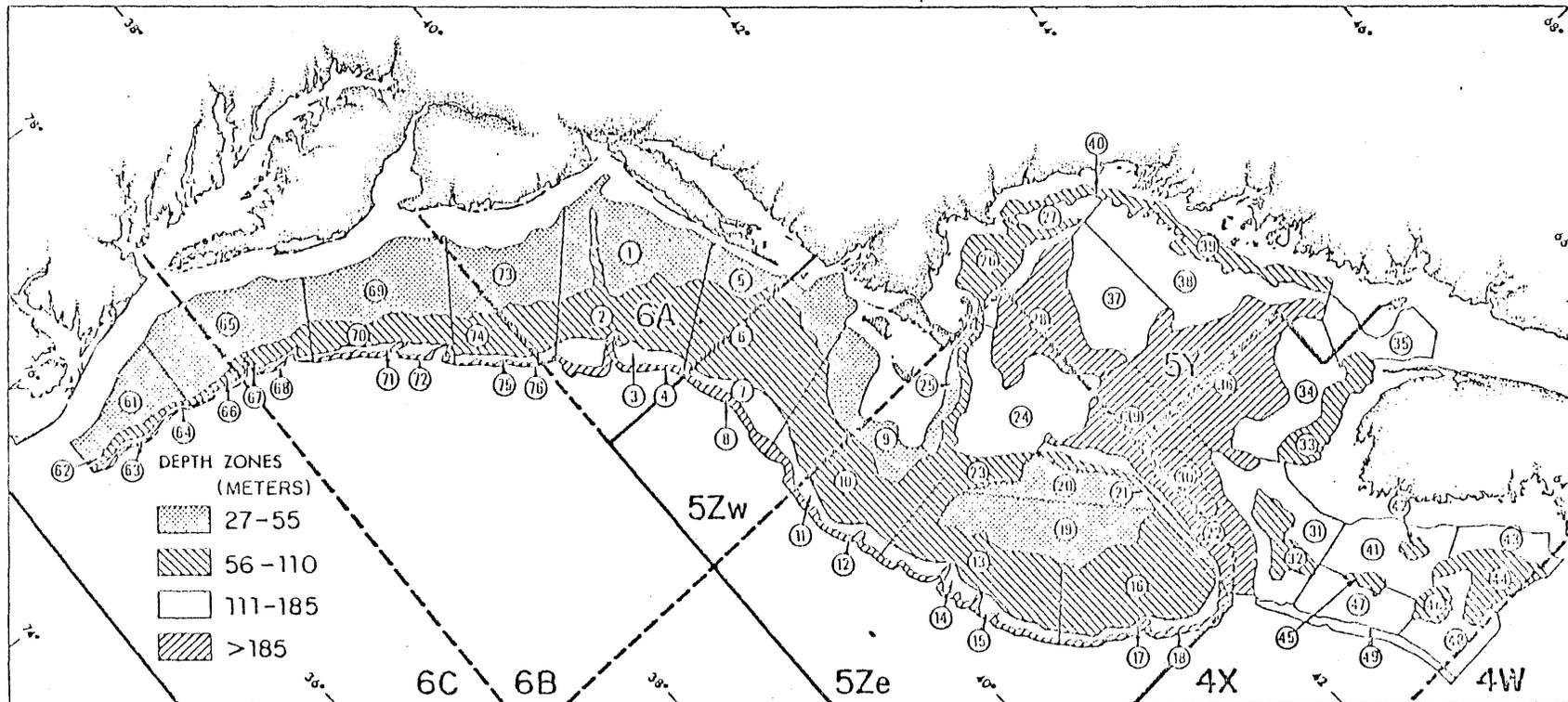
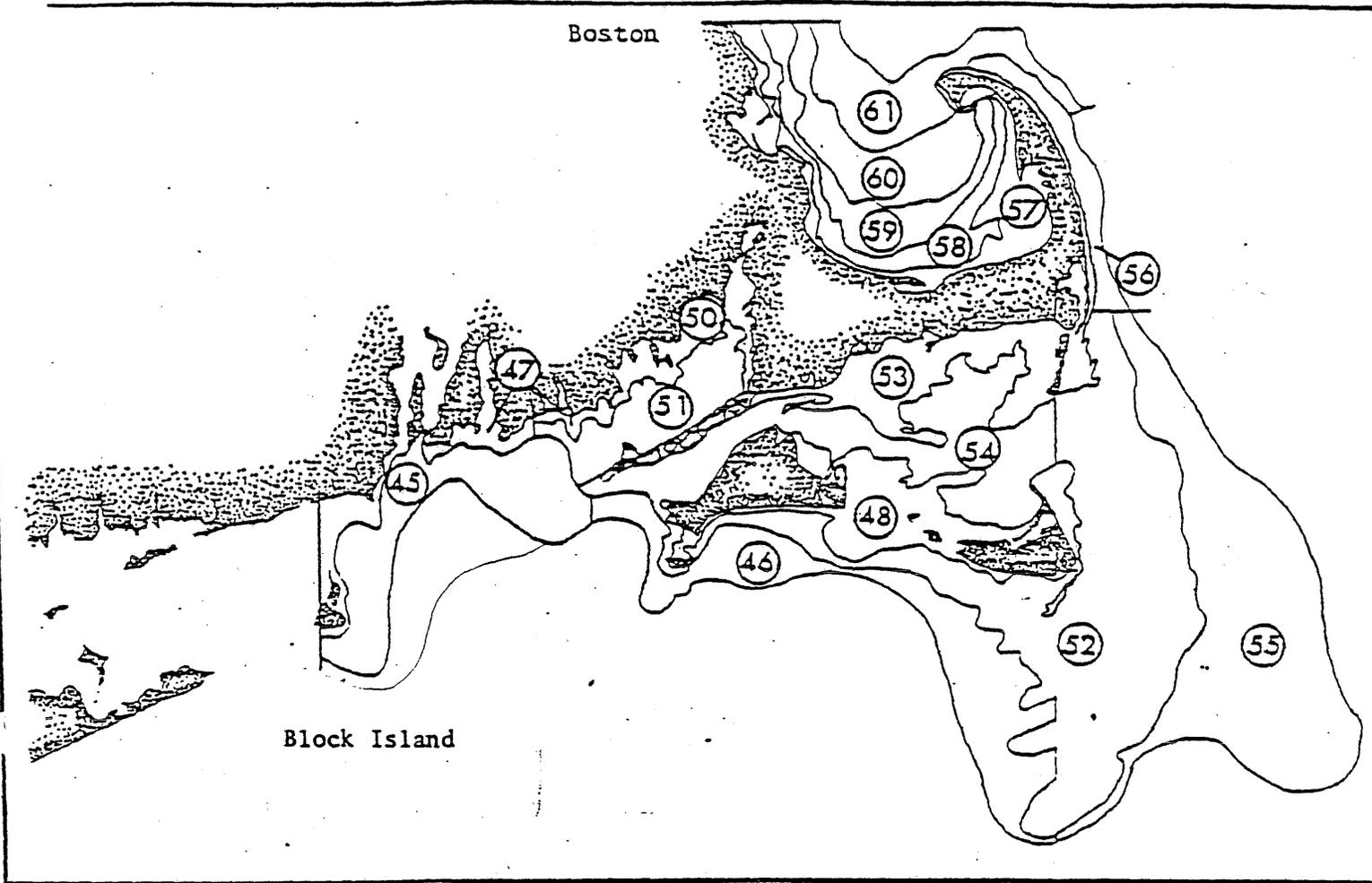


Figure 2. NEFC offshore survey strata.

COASTAL STRATA

Figure 3.

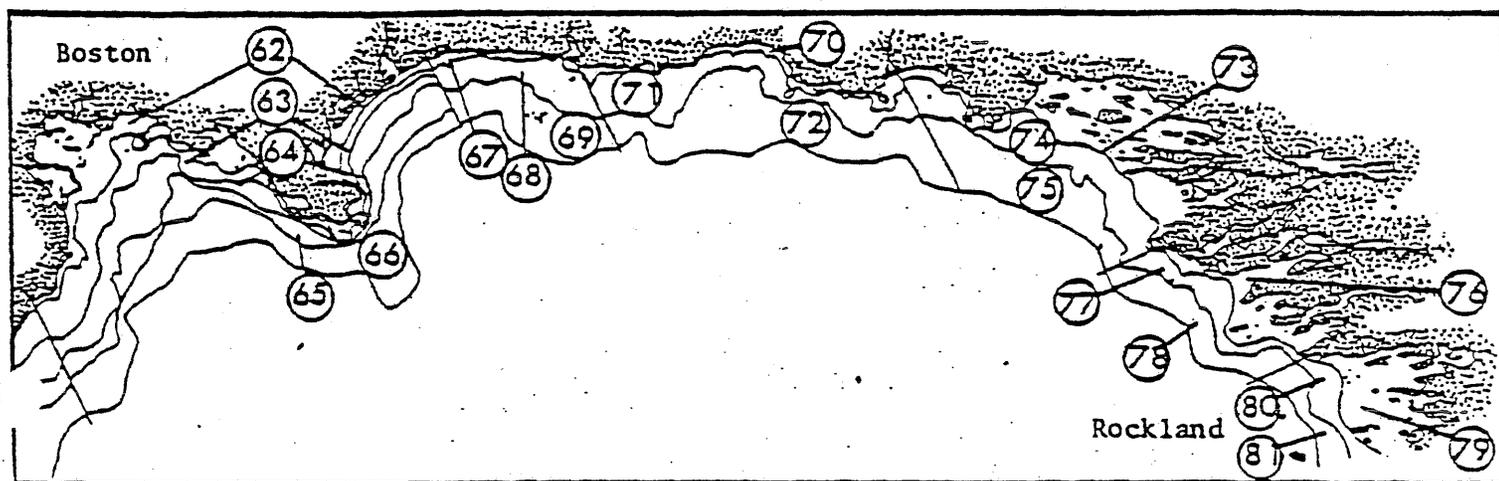
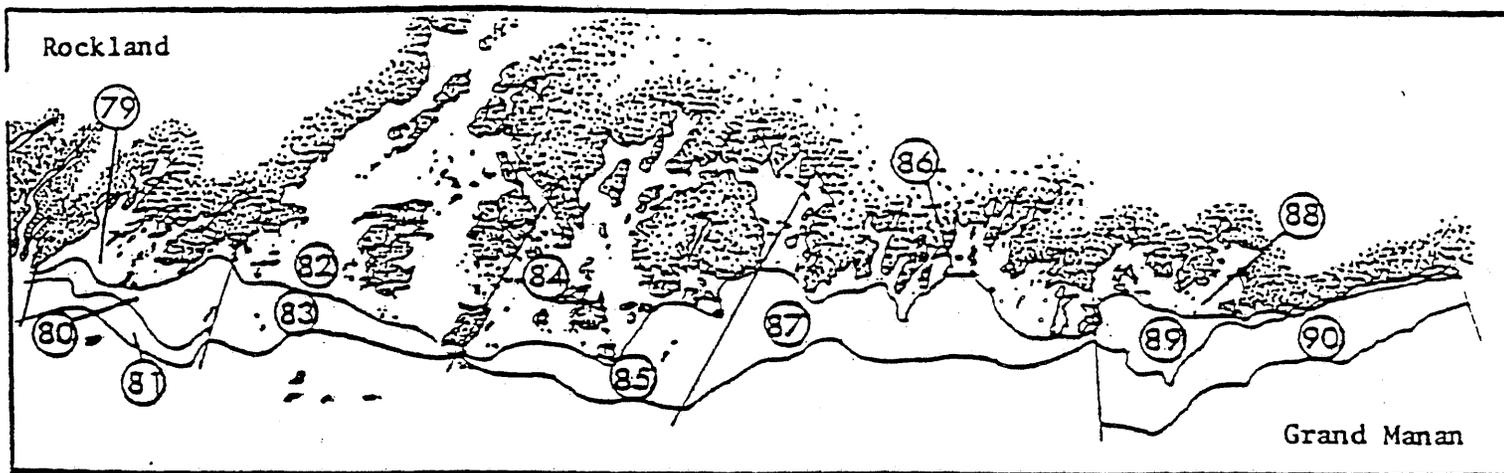
BLOCK ISLAND TO BOSTON



Strata No.	Square Miles	Depth (fms)	Strata No.	Square Miles	Depth (fms)
45	170	10-15	54	277	5-10*
46	273	10-15	55	495	10-15*
47	45	0-10	56	57	5-15*
48	113	0-5	57	34	0-5
50	15	0-5	58	88	5-10
51	117	5-10*	59	93	10-15
52	521	5-10*	60	126	15-23
53	142	0-5	61	133	23-30

\* Intermixed depths

Figure 4.



Strata No.	Square Miles	Depth (fms)	Strata No.	Square Miles	Depth (fms)	Strata No.	Square Miles	Depth (fms)
62	62	0-5	72	129	15-30*	82	209	0-10*
63	78	5-10	73	31	0-5*	83	80	10-30
64	90	10-15	74	68	5-15	84	137	0-10*
65	75	15-23	75	76	15-30	85	106	10-30*
66	151	23-30	76	20	0-10*	86	60	0-10*
67	5	0-5	77	34	10-30*	87	153	10-30*
68	40	5-15*	78	44	10-30*	88	34	0-10*
69	57	15-30*	79	34	0-10	89	59	10-30*
70	10	0-5 *	80	58	10-30*	90	125	30-60*
71	72	5-15*	81	38	10-30*			

\*Intermixed depths