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Historical Data Assessment: Finfishes of the

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Jeffries, Hale, & Keller (URI)

Narragansett Bay Estuary Program

Current Report

The Narragansett Bay Project

HISTORICAL DATA ASSESSMENT FINFISHES OF THE NARRAGANSETT BAY AREA: AUGUST 1988

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the U.S. Environmental Protection Agency and
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Final Report

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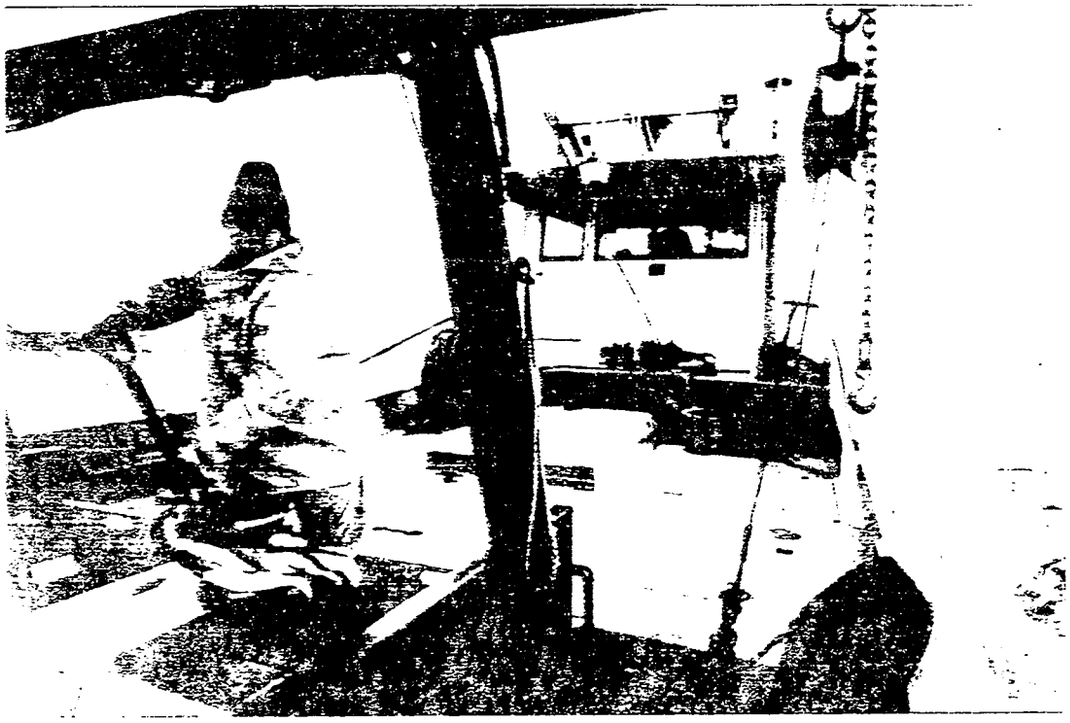
REPORT 1988

Perry Jeffries, Stephen Hale and Aimee Keller



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NOTICE

This report is released for management purposes. Persons wishing to use figures, tabulations or other results should contact the Principal Investigator. Although much of the raw data is in the public domain, the processed results presented here are considered proprietary until published by the authors in the formal literature.

Perry Jonnes
August 31, 1988

COVER

Mary Michelman "conducting" the Graduate School of Oceanography trawl survey program; from the Providence Journal series on Narragansett Bay, February 28, 1988.

FOREWORD

The United States Congress created the National Estuary Program in 1984, citing its concern for the "health and ecological integrity" of the nation's estuaries and estuarine resources. Narragansett Bay was selected for inclusion in the National Estuary Program in 1984 and designated an "estuary of national significance" in 1988. The Narragansett Bay Project (NBP) was established in 1985. Under the joint sponsorship of the U.S. Environmental Protection Agency and the Rhode Island Department of Environmental Management, the NBP's mandate is to direct a five-year program of research and planning focussed on managing Narragansett Bay and its resources for future generations. The NBP will develop a comprehensive management plan by December, 1990, which will recommend actions to improve and protect the Bay and its natural resources.

The NBP has established the following seven priority issues for Narragansett Bay:

* management of fisheries
* nutrients and potential for eutrophication
* impacts of toxic contaminants
* health and abundance of living resources
* health risk to consumers of contaminated seafood
* land-based impacts on water quality
* recreational uses

The NBP is taking an ecosystem approach to address these problems and has funded research that will help to improve our understanding of various aspects of these priority problems. The Project is also working to expand and coordinate existing programs among state agencies, governmental institutions, and academic researchers in order to apply research findings to the practical needs of managing the Bay and improving the environmental quality of its watershed.

This report represents the technical results of an investigation performed for the Narragansett Bay Project. The information in this document has been funded wholly or in part by the United States Environmental Protection Agency under assistance agreement #CX812768 to the Rhode Island Department of Environmental Management. It has been subject to the Agency's and the Narragansett Bay Project's peer and administrative review and has been accepted for publication by the Management Committee of the Narragansett Bay Project. The results and conclusions contained herein are those of the author(s), and do not necessarily represent the views or recommendations of the NBP. Final recommendations for management actions will be based upon the results of this and other investigations.

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ACKNOWLEDGEMENT

Dr. Charles J. Fish, founder of the Narragansett Marine Laboratory, began in 1959 what is now known as the Graduate School of Oceanography trawl survey, and in 1966, shortly before retiring, he turned the study over to Dr. Perry Jeffries, who has supervised this unique weekly program ever since. Several captains and many graduate students have participated. Two recent graduate students, Margarida Castro and Mary Michelman, collected, entered, and processed data for use in this report. In June 1987, Sheldon Pratt discovered Dr. Fish's original compilations for 1959 to 1965 in an attic of the old North Laboratory.

Michael Scherer and Richard Toner of Marine Research, Inc., Tony Black and Milton Anderson of New England Power Company, and Donald Moore of Narragansett Electric Company provided catch records for Mt. Hope Bay and Providence River programs and made suggestions on interpretation. Donald Robadue, Brooks Martin and Anant Bharadwaj of the Coastal Resources Center, University of Rhode Island provided keypunched records for early years of the Manchester Street power station.

Stephen Clark, Linda Despres-Patanjo, and Loretta O'Brien of the Northeast Fisheries Center, National Marine Fisheries Service (NMFS), Woods Hole extracted data from the NMFS trawl survey, gave us a tape, and offered advice on use. Mike Fogarty and Don Flescher answered questions on proper interpretation.

Joan Palmer and Lorraine Belfiore of the Northeast Fisheries Center, NMFS made us a tape containing catch records of commercial fishing vessels operating since 1964 in Narragansett Bay and its offings. Ron Schultz of NMFS provided helpful information on this record and its interpretation.

Dick Sisson, Tim Lynch, and Mark Gibson of the Rhode Island Division of Fish and Wildlife kindly provided raw data from the 1969-1977 trawl survey, annual summary reports from the 1979-1987 trawl survey, and reports on scup and winter flounder biology.

Carole Corcoran typed the final report and helped with data entry.

This historical account was supported by the Narragansett Bay Project. Funding for the Graduate School of Oceanography trawl survey is a long-term commitment of the State of Rhode Island and the University of Rhode Island.

I. INTRODUCTION

Several long-term fishery investigations have been conducted in the Narragansett Bay-Rhode Island Sound (NB-RIS) area, but their results are so scattered that access is impractical, if not fast-becoming impossible. Our chief intent was to: (1) obtain and collate original data sets; (2) make decisions regarding accuracy, reliability and comparability of the various sampling programs; and (3) publish summaries in sufficient detail for statistical analysis of long-term trends. Additional goals were: (1) a time-series analysis of winter flounder in Narragansett Bay; and (2) suggestions for a long-term monitoring program.

Original data for this report came from six investigations: (1) the Graduate School of Oceanography (GSO) weekly fish trawl program in the West Passage and Rhode Island Sound; (2) the New England Power Company's trawling program in Mt. Hope Bay and records of fish retained on the intake screens of pumps supplying cooling water to Brayton Point power generators (sampling program run by Marine Research Inc.); (3) the Narragansett Electric Company's record for intake screens at their Providence River facility (sampling program run by Marine Research Inc.); (4) the National Marine Fisheries Service (NMFS) fall surveys immediately offshore from Narragansett Bay; (5) the NMFS commercial catch record for the NB-RIS area; and (6) the Rhode Island Department of Environmental Management (DEM), Division of Fish and Wildlife (RIFW) trawl surveys at four fixed stations in the middle and lower Bay and, later, at random stations in two strata in the Bay (Table 1; Figs. 1 and 2). These data sets were chosen because, with certain exceptions, they were quantitative, long-term, and used consistent methods throughout--necessary criteria for time series analysis. We did not include such studies as that of Oviatt and Nixon (1973), which is useful for characterizing the fishes of the Bay but does not have a long enough record for examination of long-term trends. A historical summary of Bay fisheries has been given by Robadue and Lee (1980).

Over a million data entries are represented in this report. Computerized searches of regional data bases had to be made for the offshore areas. We are indebted to NMFS, Woods Hole for preparing tapes of raw data. Marine Research Inc. (MRI) answered many questions about their sampling programs in Mt. Hope Bay and the Providence River, as did the sponsoring utility companies; primary data for both areas was obtained from quarterly and annual reports on file in the Pell Marine Science Library and from raw data sheets obtained from Marine Research.

Table 1. Description of long-term data sets from Narragansett Bay and offshore which were included in the report.

Area Station/ Stratum	Location	Sampling Frequency	Period	Method	Sponsor
West Passage					
Fox Island	41° 34' 00" N 71° 24' 30" W	weekly	1959-1987	otter trawl	Grad. Sch. Ocean.
Dutch Is.	41° 30' 30" N 71° 24' 30" W	monthly	1969-1977	otter trawl	RI Fish & Wildlife
Jamest. Hole	41° 33' 00" N 71° 24' 30" W	monthly	1969-1977	otter trawl	RI Fish & Wildlife
Davisville	41° 36' 00" N 71° 23' 00" W	monthly	1969-1977	otter trawl	RI Fish & Wildlife
Middle Bay					
Popasq. Pt.	41° 39' 00" N 71° 19' 00" W	monthly	1969-1977	otter trawl	RI Fish & Wildlife
Mt. Hope Bay					
Cole	41° 43' 00" N 71° 13' 30" W	biweekly monthly	1971-1981 1982-1985	otter trawl	New Eng. Power Co. (Marine Res., Inc.)
Lee	41° 43' 00" N 71° 12' 00" W	biweekly monthly	1972-1981 1982-1985	otter trawl	New Eng. Power Co. (Marine Res., Inc.)
Taunton	41° 43' 00" N 71° 10' 00" W	biweekly monthly	1971-1981 1982-1985	otter trawl	New Eng. Power Co. (Marine Res., Inc.)
Intake	41° 42' 30" N 71° 11' 00" W	biweekly monthly	1971-1981 1982-1985	otter trawl	New Eng. Power Co. (Marine Res., Inc.)
Discharge	41° 42' 00" N 71° 12' 00" W	biweekly monthly	1972-1981 1982-1985	otter trawl	New Eng. Power Co. (Marine Res., Inc.)
Crossleg	41° 42' 00" N 71° 12' 00" W	biweekly monthly	1972-1981 1982-1985	otter trawl	New Eng. Power Co. (Marine Res., Inc.)
Mid-Bay	41° 42' 00" N 71° 13' 00" W	biweekly monthly	1971-1981 1982-1985	otter trawl	New Eng. Power Co. (Marine Res., Inc.)

Table 1 cont'd. Description of long-term data sets from Narragansett Bay and offshore which were included in the report.

Area Station/ Stratum	Location	Sampling Frequency	Period	Method	Sponsor
Spar	41° 41' 00" N 71° 13' 30" W	biweekly monthly	1972-1981 1982-1985	otter trawl	New Eng. Power Co. (Marine Res., Inc.)
Brayton Pt.	41° 42' 42" N 71° 11' 26" W	weekly	1973-1985	intake screens	New Eng. Power Co. (Marine Res., Inc.)
Providence River					
Manchester Street	41° 49' 04" N 71° 24' 17" W	weekly	1975-1985	intake screens	Narr. Electric Co. (Marine Res., Inc.)
Narragansett Bay					
Strata 1 & 2	random	spring autumn	1979-1987	otter trawl	RI Fish & Wildlife
Rhode Island Sound and offshore					
Whale Rock,	41° 26' 00" N 71° 25' 30" W	weekly	1959-1987	otter trawl	Grad. Sch. Ocean.
NMFS survey Stratum 5 Stratum 45	random	spring, autumn	 1963-1985 1972-1985	otter trawl	Ntl. Mar. Fish. Serv.
NMFS comm. Area 539 (incl. Narr. Bay)	distributed	daily	1964-1986	otter trawl	Ntl. Mar. Fish. Serv.

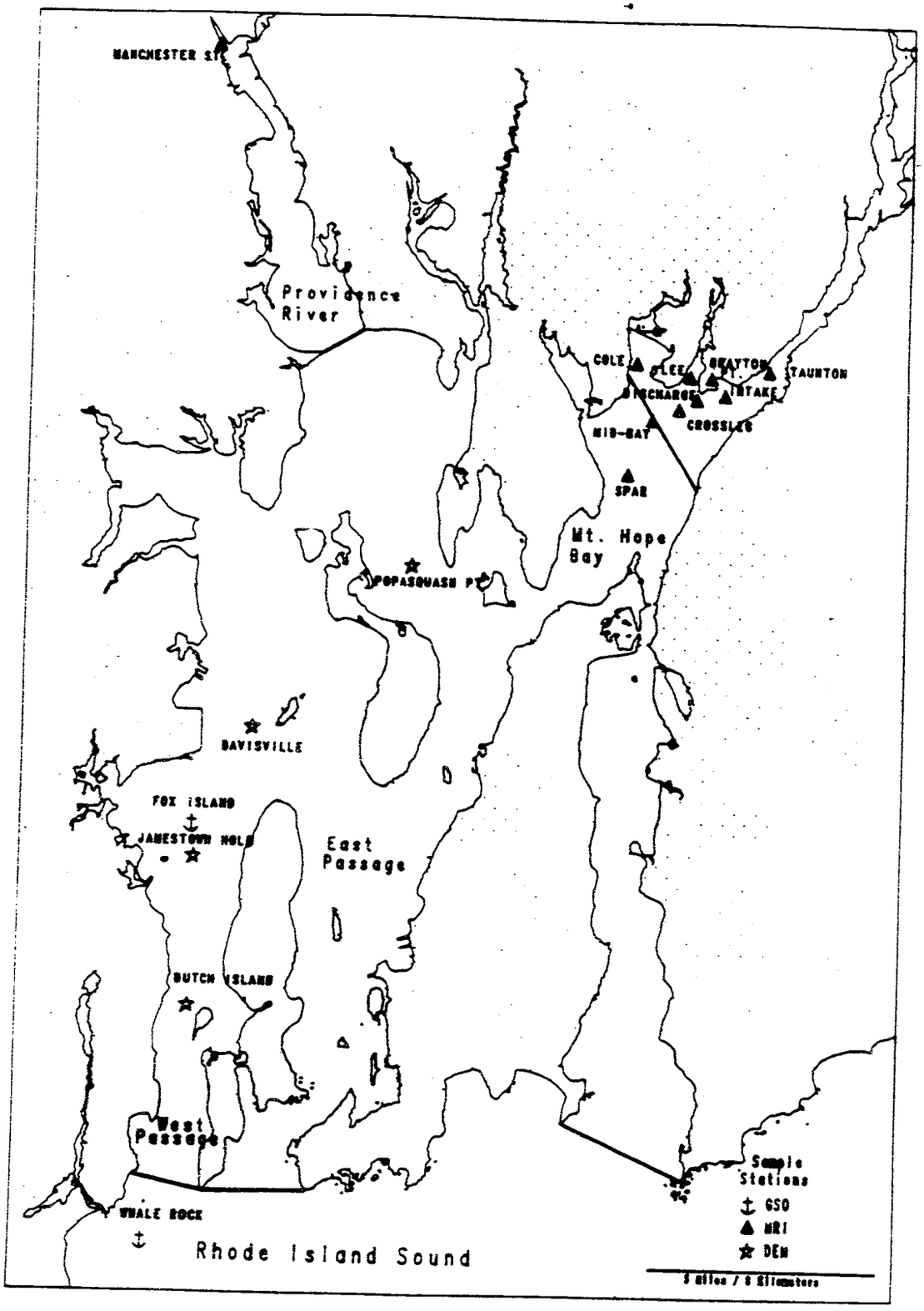

Fig. 1. Narragansett Bay. Location of sampling stations. R. I. Division of Fish and Wildlife Narragansett Bay strata are south of thick lines in the Providence River and Mt. Hope Bay and north of thick lines at the mouth of the Bay.

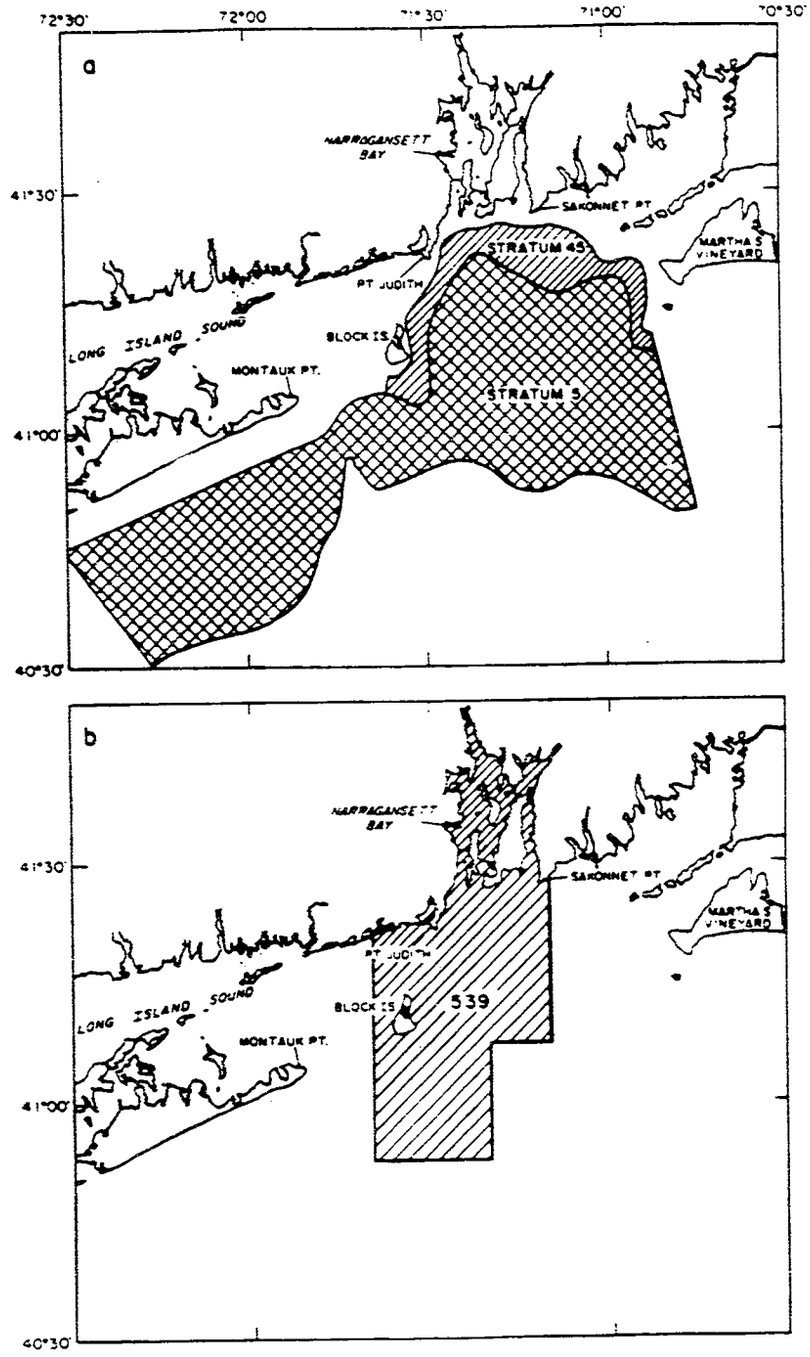

Fig. 2. Narragansett Bay and offshore waters, showing the location of National Marine Fisheries Service, Northeast Fisheries Center a) (offshore) Survey Stratum 5 and (inshore) Survey Stratum 45 and b) Statistical Reporting Area 539.

A. Organization and Interpretation:

This report is organized into six data sections corresponding to the above listed investigations. The species selected comprise 95-100% of total fin fishes occurring in Narragansett Bay otter trawl samples. The GSO program also includes macro-invertebrate distributions and surface and bottom temperatures.

The basic unit of relative abundance for trawl samples is the monthly mean of weekly species catch; annual indices of abundance for each species are the sums of the corresponding monthly means; temperatures are also reported as monthly means. This process filters uncontrolled sampling error, while information on seasonality is preserved.

Four preliminary progress reports of these data were submitted (Jeffries et al. 1986a, 1986b, 1987a, 1987b). They have been corrected and updated in this final report, along with a seven-year addition to the GSO survey that extends coverage back to 1959. Portions of an extensive GSO data base on size-frequency distribution in winter flounder are presented in graphical form for the first time.

Two interpretive sections are included--a manuscript on time-series analysis of winter flounder, in which recovery of the population is predicted, and a comment on designing a low-cost, synoptic monitoring program for fishes in the NB-RIS area.

Readers are encouraged to examine first the extensive and consistently obtained GSO trawl data. Although limited to the West Passage and a nearby station in Rhode Island Sound, the main patterns of species relative abundance are clearly expressed. Tables that summarize annual abundances of the numerically top ranked species are followed by monthly means at each station. Reference can then be made to power plant data and the offshore records of fishes common to Narragansett Bay. Finally, coherence of long-term change throughout the entire inshore-offshore coverage can be gleaned from a comparison of graphical distributions presented in each section. We are preparing a statistical analysis of long-term trends in this correspondence, along with a discussion of year-round residents interacting with seasonal migrants.

B. Status of the data

All tabular material is stored as SAS data sets. These are kept on IBM mainframe nine-track tape and on IBM microcomputer diskettes.

Interested parties can make copies on request. Listings of the SAS PROC CONTENTS, which describe the variables in each data set, are also available. Inquiries may be directed to: Dr. H. P. Jeffries, Graduate School of Oceanography, University of Rhode Island, Narragansett, RI 02882. Tel. (401) 792-6617.

The original data that we obtained from outside sources are in the public domain; however, our abstracting and syntheses are extensive, subject to revision, and they are, therefore, considered proprietary. Permission to use in research applications the data presented here, should be obtained from the principal investigator.

C. Graduate School of Oceanography Trawl Survey

Marine pollution emanates from estuaries, and thus we find that biological disturbances are common within these embayments. An initial task for management is the measurement of changing abundances among resident and migratory populations. These populations are commercially valuable, of course; additionally they serve as monitors on our efforts to improve environmental quality. Major effects are revealed in the long-term, for which we have little useful information due to the commitment that is required.

For 29 years, weekly trawls have been taken by Graduate School of Oceanography investigators at two stations in the Narragansett Bay area (Fig. 1) with the express purpose of monitoring long term trends in relative abundance of demersal fish populations. Indices of relative abundance, not population size, are estimated. Comparability is ensured, since we have used the same gear and methods throughout the entire 29-year period, maintaining strict quality control over sampling and data logging.

Trends of the more abundant species have been reported in the scientific literature (Jeffries and Johnson 1974, Jeffries and Terceiro 1985). The chief pattern results from biological processes interacting with small-scale climatic cycles. Changes among species of secondary commercial importance are being described and will be reported.

D. Marine Research Inc. Trawl Survey and Power Plant Data

Extensive data on fin fishes in the Narragansett Bay area have been collected by Marine Research Inc. Operating under contracts from the New England Power Company at Brayton Point, MA and from the Narragansett Electric Company in Providence, Marine Research has compiled a lengthy time series designed to meet federal regulations. We

attempted to abstract and recalculate portions of the data base for purposes of semi-quantitative comparison with the Narragansett Bay Trawl Series (Jeffries et al. 1986a).

Brayton Point is located on the northern shore of Mt. Hope Bay, a major subdivision of Narragansett Bay lying to the east of the Bay proper. The Providence River power stations at Manchester St. and South St. are located just north of the Fox Point Hurricane Barrier (Fig. 1).

Quarterly data reports for Mt. Hope Bay beginning in 1971 (Marine Research Inc. 1972-1986) were on file at the Pell Marine Science Library, University of Rhode Island, Bay Campus. Weekly data sheets for the Providence River power stations were kept by Marine Research Inc.; a description of the operation and a summary for 1975-79 were given by the Narragansett Electric Company (1979). Information on the catch reported for power plant intake screens was presented in two reports on survival (Marine Research Inc. 1980b, 1982).

E. National Marine Fisheries Service Trawl Survey

The National Marine Fisheries Service (NMFS) has conducted standardized otter trawl surveys in New England waters since 1963 (Azarovitz 1981; National Marine Fisheries Service 1988). The objectives are to determine factors that control ground fish distribution and abundance and to assess production potential (Grosslein 1969). We summarized the catch data from Rhode Island Sound and surrounding areas (NMFS strata 5 and 45, Fig. 2) for the purpose of making comparisons with long-term abundance of major species also inhabiting Narragansett Bay.

F. Commercial Fisheries Catch Data

The National Marine Fisheries Service (NMFS) maintains information on the catch records of fishing vessels going back to the 1930's (Burns et al. 1983). Recording became continuous in the New England area in 1942 (National Marine Fisheries Service 1984). Fishing grounds are divided into a grid of statistical areas. Whenever a boat docks, NMFS agents determine the species caught, amount, and the statistical area in which the boat operated. Data from 1964 to the present have been stored in computer format by the Northeast Fisheries Center of NMFS in Woods Hole.

Commercial catch per unit effort--as an indicator of population trends--is at best a rough estimate, being subject to problems not present in trawl surveys. Vessel type, the gear used and trawling time vary considerably. Records are inconsistent on species of no commercial value

that are discarded at sea. Catch grouped into the "industrial fish" category is often not identified to species and the species that comprise this category have changed over the years. In other cases, species were identified only to genus. However, commercial catch is useful because the record is much longer than any scientific trawl survey in this area and, whereas surveying in the offshore area was limited to seasonal sampling (Jeffries et al. 1987a), the commercial record integrates weekly--perhaps daily--abundances throughout the entire year. The major marketable species, e.g. winter flounder, cod, butterfish, scup, and summer flounder, have been recorded with consistent reliability.

Olsen and Stevenson (1975) summarized commercial fisheries records from colonial times, for some species, through 1973. Their sources included the landings in Rhode Island ports and the commercial catch from the International Commission for Northwest Atlantic Fisheries (ICNAF) area 5Z, an area extending from Rhode Island east to Georges Bank. We restricted our study to data from statistical area 539, a NMFS zone encompassing Narragansett Bay, Rhode Island Sound, Block Island Sound and part of the adjacent continental shelf (Fig. 2). We did not use data on total landings in Rhode Island ports because fish from other statistical areas have been landed in Rhode Island ports, and conversely, Rhode Island fish have been occasionally landed out of state. We compiled data from 1964 to 1986 for comparison with the long-term fish surveys in Narragansett Bay and the adjacent offshore area (Jeffries et al., 1986a).

G. Rhode Island Division of Fish and Wildlife Trawl Surveys

From 1969 to 1977, the Rhode Island Division of Fish and Wildlife conducted a trawl survey, sampling three stations in the West Passage (Dutch Island, Jamestown Hole, and Davisville) and one station off Popasquash Point east of Prudence Island (Fig. 1) once a month (Sisson unpubl. reports). In 1979, they began a new spring/fall trawl survey program in Narragansett Bay, Rhode Island Sound, and Block Island Sound that continues today. Random stations are located in each of 11 strata. The strata are defined by depth. Two strata are located in Narragansett Bay--one less than 6.1 m and the other greater than 6.1 m (Lynch 1986). This design is patterned after the National Marine Fisheries Service trawl survey, and it includes an area inside the 3-mile limit not covered by NMFS. Winter flounder results from these two surveys were analyzed by Gibson (1987).

II. METHODS

Data storage, manipulation, and analysis was done with SAS software on the University of Rhode Island IBM mainframe and an IBM microcomputer. All data entry (except for the National Marine Fisheries Service data, which came on magnetic tapes and the 1975-1983 Manchester St. power plant intake catch, which we obtained from the Coastal Resources Center in the Lotus 1-2-3 IBM diskette format) was done with Macintosh Excel.

A. Graduate School of Oceanography Trawl Survey

This investigation started in January 1959 and it has run continuously ever since. Log sheets and compilations for 1959 to 1965 were maintained by Charles J. Fish. They were considered lost until uncovered during renovation of the old North Laboratory. Perry Jeffries has maintained the program since January 1966 .

From the program's inception until present, two stations have been sampled weekly, weather permitting, by otter trawl (Fig. 1). The first is located in Narragansett Bay, 13.3 km from the mouth of the West Passage (41° 34' N, 71° 24.5' W), and the other is in Rhode Island Sound near the mouth of West Passage (41° 26' N, 71° 25.5' W). The Narragansett Bay station (near Fox Island) is representative of fish populations in the Bay. Due to bottom configuration in this area, populations migrating in and out of the Bay are funneled past the observation point. Consequently, the long-term catch record provides a sensitive index of relative abundances within the Bay. The Sound location (near Whale Rock) is as far seaward as can be managed on a continuing basis.

A small otter trawl is towed for 30 min at each station. Due to weather and other contingencies, sampling frequency usually has ranged from three to five cruises per month. The trawl is 14 m long, tapering from 10 m across at the mouth to 1 m at the throat. Stretched mesh size is 7.6 cm in the forward half and 5.1 cm behind the throat. Engine speed is set in relation to currents and wind so that speed over the bottom is about 2.5 knots. The catch is identified and counted. Data are reported as monthly means of weekly catch. Periodically, total length is measured for winter flounder and gonads are examined for ripeness and sex determination.

Surface water temperature was originally measured by bucket thermometer. Since September 1977, surface and bottom temperatures have been taken with a 2 L Nisken sampler.

Many observations during 1959-1965 were listed on the raw data sheets as the catch volume of a species, rather than the number. We have estimated numbers from these volumes by counting the number of a given species in a known volume during the past year. Calibration factors were calculated seasonally to allow for size differences at different times of year. For example, the number/volume ratio for silver hake in October 1987 was used to calibrate all 1959-1965 October volumetric estimates of silver hake.

B. Marine Research Inc. Trawl Survey and Power Plant Data

1. Mt. Hope Bay

Brayton Point (41° 42' 42" N, 71° 11' 26" W) lies between the mouths of the Taunton and Lee rivers in the northeastern corner of Mt. Hope Bay (Fig. 1). Water for power units 1-3 was taken into the plant on the east side of the Point (Taunton River) and discharged to the southwest (Lee River). Unit 4 used cooling water from the same channel as units 1-3 until July 1984 when a separate intake for Unit 4 was constructed in the Lee River.

Sampling methods included 15-min otter trawls, beach seines and washings from revolving screens placed in the plant's intake canal. Plankton tows were taken for estimates of fish eggs and larvae. Only the otter trawls and screen washings from power units 1-3 were considered here.

a. Mt. Hope Bay trawl survey. The otter trawl measured 11.4 m in length, with a 7.6-m head rope and a 11.1-m foot rope; mesh sizes (stretched) were 11.3 cm in the wings and 3.8 cm in the cod end. The net was towed at 2.0-2.5 knots for 15 min at 3-8 stations clustered around the power plant and in the central and south central parts of Mt. Hope Bay. Sampling frequency was usually biweekly from May 1971 to November 1981, after which the observations became monthly.

Data reports issued by Marine Research Inc. showed total catch at all 5 stations from January 1971 to January 1979, when 3 new stations were added. Total catch at all 8 stations was then reported, along with the previous 5-station total, some with replicates yielding still another total. For simplicity and reference to specific locale, data were summarized here for single transects across the mouth of the Taunton River, adjacent to Brayton Point (Intake station: 41° 42.5' N, 71° 11' W), and in the south-central bay (Spar station: 41° 41' N, 71° 13.5' W). The Intake station had

high catches of winter flounder and the Spar station appeared to be a good location for representing the general area of Mt. Hope Bay.

b. Brayton Point intake screens. Each of the plant's 3 units had 2 circulating pumps, and each pump was protected from fish and floating debris by a revolving screen (0.95 cm mesh). The pumps were rated as follows: units 1 and 2 each had 2 pumps producing 90,000 gal/min (341 m^3/min), Unit 3 had 2- 140,000 gal/min (530 m^3/min) pumps. The majority of fish caught on the revolving screens in front of each pump was at Unit 3, probably because velocity in the intake channel was high here. Canals leading to the revolving pumps were protected by fixed screens, usually positioned in summer to remove horseshoe crabs; mesh sizes were 2.5 cm in the Unit 3 canal and 3.8 cm in the canals to units 1 and 2.

The 6 revolving screens were washed periodically and the "impinged" fish dislodged were returned in a common sluiceway to the Bay. Unit 3 revolving screens were washed 3-times daily, units 1 and 2 screens once daily.

Sampling frequencies were once weekly at units 1 and 2, representing 24 hr of flow, and 3-times weekly at Unit 3, each collection being made at one of the 8-hr wash cycles, for a total flow duration of 24 hr. The fish caught on the screens following the previous washing were trapped in a wire-mesh box located in a common sluiceway.

Marine Research Inc. reported catch as the weekly and quarterly sums of each species from all 3 units. Their quarterly scale began in December and ran through November, so annual totals of the four quarters did not bear exact correspondence with the yearly totals (January-December) of monthly mean abundances that we reported for trawl stations in the West Passage of Narragansett Bay and Rhode Island Sound (Jeffries et al. 1986a).

The purpose of the Marine Research Inc. monitoring program was a continuous estimate of mortality attributable to power generation. For our purposes of assessment of relative abundance over time, uncontrolled variabilities were numerous and serious. Since fixed screens were employed to remove large organisms before they entered the intake canal, catch on the revolving screens was limited to small forms. Further, these fixed screens differed in mesh size between power units; they were not always in place and occasionally had gaps at the sides or bottom large enough to let through varying numbers and sizes of fish that ended up as recorded catch on the revolving screens.

A second problem we encountered in developing revolving screen catch as an index of relative abundance was the reporting of total catch for all of the six screens. If one of the power units was not operating (as frequently happened), the volume of water passing through the screens decreased and weekly catch was underestimated. This introduced a serious error for temporal comparison. Ideally, one should know for each sampling period how many hours each of the six pumps were operating. Then the catch for that sampling period could be related to unit flow. The required information was not recorded, so we standardized the reported catch to unit volume of water filtered in the following manner.

Marine Research Inc. gave us the mean daily flow in 10^3 gals/min for all three power units combined for each month during the 1973-81 period. This information was not recorded after 1981; so we obtained from New England Power Co. the number of hours each unit operated monthly for 1982-1986. Using the number of hours per month and the rated capacity of the two pumps at each unit, we calculated the mean flow in 10^3 gals/min for each unit on a monthly basis and summed the flows from the three units to obtain a unit of measurement comparable to the 1973-81 flow rates. This is essentially the pump capacity in 10^3 gals/min, multiplied by the proportion of time the pumps were operated that month. Then, monthly flows for all years (1973-1985) were converted to mean quarterly flows and the units changed to 10^3 m^3/min. Finally, estimated quarterly catches of each species caught on the revolving screens were divided by the estimated mean flow (in 10^3m^3/min) for that quarter. This gave catch standardized for flow rate; the units are number of fish per 10^3m^3/min.

A third problem involved the sampling method itself, which was made inefficient by the time-period of washing and observation. Since the intake was located at the head of a channel-like embayment that also served as a wharf for coal freighters, turbulence during docking dislodged bottom dwellers and wafted them onto the intake screens.

Due to these major uncontrolled errors, long-term relative abundance could be inferred only grossly. An accurate estimate can not be determined due to the method and design of sampling. Nevertheless, we believe that temporal variations in catch are so pronounced that a potentially useful signal emerges. Little other information is available for Mt. Hope Bay, the record is long, and small species are reported which are missed in the accompanying otter trawls.

2. Providence River intake screens

The Narragansett Electric Company operates two generating stations (Manchester Street, South Street) situated on the west bank of the Providence River (41° 49' 4" N, 71° 24' 17" W) , immediately north of the Fox Point Hurricane Barrier. Cooling water supplying both plants is provided by a canal. Water enters the canal through two ports in the hurricane barrier, each approximately 30.1 m^2 (total area 60.2 m^2), protected by trash racks. Partial listings of finfishes washed from screens located at the intake of each power unit were reported by Marine Research Inc. (1979, 1980a) and by the Narragansett Electric Co. (1979). The two stations had a 233 MW total capacity and were operated only during peak demand periods. South St. station has operated irregularly over the years because of long maintenance periods. Because Manchester St. station has been more consistent, we restrict this summary to it.

The Manchester St. station had 3 power units capable of producing 132 MW. There were 5 circulating water pumps, 2 of which were rated at 33,000 gal/min (125 m^3/min), while the other 3 were rated at 60,000 gal/min (227 m^3/min), for a total capacity of 246,000 gal/min (931 m^3/min). Under normal operating conditions, only three pumps were used, for a capacity of 153,000 gal/min (579 m^3/min). Each pump took its water from a screened well; the total intake area for all 5 pumps was 23.4 m^2, the 3 major pumps 14.3 m^2. The screened wells had racks for trash removal (5.1 cm^2 mesh) extending from above high tide to almost low tide. Revolving screens (1.3 cm^2 mesh) in front of each pump were in recent years usually washed twice daily, and fish were returned to the River through a sluiceway emptying east of the intake canal.

Sampling began in January 1975 and continued weekly to present (except during 1980 when a study on survival of the catch was made). Fishes washed from an unspecified number of screens were caught in the return sluiceway on 1.3 cm^2 wire mesh screens. More recently, fish were counted on the screens during prescribed, weekly counting periods. However, during the course of observation, times between washings varied greatly, from 168 hr (=1 week) to less than 12 hr. The usual period, now standardized, was about 11 hr.

Catch was reported as the number of fish retained on all five revolving screens during the period following the previous washing. Unfortunately, the total volume of water circulated through the revolving screens during the sampling period was unknown. The volume could be estimated from the pump capacities if it were known which pumps operated during each sampling period. However, conversations with New

England Power Co. personnel, Narragansett Electric Co. engineers and Marine Research Inc. biologists indicated that this information, even if recorded, would be difficult to recover. We were not able to use periods of power generation as an estimator of flow because the circulating pumps were often operating even when the generators were shut down. However, we believe that the number of pumps working at the Providence River stations was a less serious problem for our purposes than at Brayton Point, where the shutdown of Unit 3 caused sharp reduction in number of fishes caught and had to be allowed for in the calculations.

Weekly catch data and hours following the last washing had been compiled from raw Marine Research Inc. data by the Coastal Resources Center of the University of Rhode Island for the years 1975-1979 and 1981-1983. We obtained from Marine Research Inc. the raw data sheets for 1984-1986. We then calculated for each species the catch per hour, and extrapolated to a 24-hr day. The mean of these 2-5 daily totals for each month was calculated. Monthly means were summed for an index of annual abundance.

Despite procedural problems, we believe that useful trends can be extracted. Further, the data provide a long-time series in a polluted area where there is no information of comparable coverage.

C. National Marine Fisheries Service Trawl Survey

Fifty-eight strata have been designated in the 27-365 m depth range from Cape Hatteras to western Nova Scotia (National Marine Fisheries Service 1988). Strata were selected based on geographical features and depth zones. The number of stations sampled in each stratum ranged from 2 to 10. Surveys were conducted in the autumn since 1963 and in the spring since 1968 according to a stratified random sample sampling design (Grosslein 1969). An inshore survey (9-27 m) was begun in 1972 (Azarovitz 1981).

A #36 Yankee trawl was used, having 12.7 cm mesh in the wings and 11.4 cm mesh in the cod end; the top belly and the entire cod end were lined with a 1.3 cm mesh liner. The net was approximately 30 m long with an 18.3 m headrope and an 24.4 m footrope. The trawl doors were 2.6 m^2. This net was towed at 3.5 knots for 30 min between the time the desired scope was reached and the start of haul-back. The same trawl was used in the spring surveys except from 1973-1981 when a #41 Yankee trawl was used because of low catches. Fogarty et al. (1986) used intervention analysis to model the effect of this gear change on catch. A 3/4 Yankee trawl was used during several inshore cruises between 1972 and 1975

(NMFS 1988). Total number, total weight, and length frequency of each finfish species were recorded; data was also kept on several invertebrate species. Bathythermograph casts were made at each station.

NMFS, Woods Hole, kindly gave us a tape of raw data from the trawls in strata 5 (offshore) and 45 (inshore) , the survey areas closest to Narragansett Bay (Fig. 2). The average number of stations sampled per survey cruise was five in Stratum 5 and two in Stratum 45. Only those species which were both abundant and common to the Narragansett Bay-Rhode Island Sound region were selected for this report. For each stratum and cruise, we calculated the mean bottom temperature and the mean catch/30 min tow of each species. We did not use data from the summer survey begun in 1977 because the record is too short for our purposes.

D. Commercial Fisheries Catch Data

We obtained from NMFS a computer tape of catch records for all species caught by all boats that fished in Statistical Area 539 from 1964 to 1986 (about 432,000 records). Included were records from Statistical Area 529, the designation of this area from 1964 to 1967.

Nine fin-fish species, lobster, and longfin squid, all of which were important in the Narragansett Bay-Rhode Island Sound trawl surveys (Jeffries et al. 1986a), were selected for analysis. Several species common in the trawl surveys (e.g., sea robin, dogfish, sculpins) were not included here because occasionally they had been discarded from the commercial vessel without being recorded or grouped into the inconsistent "industrial fish" category. We summed by month the pounds of each species caught by otter trawl and the days fished; converted pounds to metric tons, then divided the total monthly catch by the total monthly days fished to obtain a catch per unit effort (CPUE) in metric tons per day fished. Our index of annual relative abundance for each species is the sum of monthly CPUE.

E. Rhode Island Division of Fish and Wildlife Trawl Surveys

1. Trawl survey, fixed stations, 1969-1977

This survey was conducted once a month at four stations: Dutch Island, Jamestown Hole, Davisville, and Popasquash Point (Fig. 1). The net was a 3/4 Yankee otter trawl with a 14.6 m ground rope and an average opening of 2.4 m to the headrope (Sisson unpubl.). The wings were 7.6 cm stretched mesh, the top and bottom belly 5.1 cm, and the cod end 3.8 cm.

The net was towed at each station for 30 min at an average speed of 2.5 knots. Numbers of all species were recorded; temperatures were recorded intermittently.

Actual sampling was less frequent than monthly and was irregular throughout the year; almost half of the months were not represented. Therefore, mean catch per tow and an unbiased estimate of annual abundance for seasonally migrating populations can not be calculated. To standardize data comparable to the other surveys in this report, we used only June-August observations and dropped 1976-77 entirely, thereby reducing the missing data frequency to 21% of the total. From this tailored data set we calculated relative abundance as the mean catch/30 min tow for all four stations during June, July, and August.

2. Trawl survey, random stations in 11 strata, 1979-present

Since 1979 spring and fall surveys have been conducted in Narragansett Bay, Rhode Island Sound, and Block Island Sound (Lynch 1983, 1984, 1985, 1986). Stations are randomly selected in each of 11 strata. The sampling intensity has been about 1.3 stations per square nautical mile. There are 42 potential stations in the two Narragansett Bay strata. Stratum 1 includes all of the Bay less than 6.1 m deep; stratum 2 covers the rest of the Bay.

The trawl is a 3/4 scale, University of Rhode Island 340 High Rise with a 11.9 m headrope and a 16.5 m footrope. The mesh size is 10.2 cm in the wings, 6.4 cm on top of the belly, 5.1 cm in the bottom of the belly, and 2.5 cm in the cod end, with a 0.6 cm cod end liner. The net is towed for 20 min at an average speed of 2.5 knots.

Numbers, weights, and lengths were recorded for all species. Several environmental variables were also measured. Data are stored in SAS on the IBM mainframe at the University of Rhode Island Academic Computer Center.

The Division of Fish and Wildlife is currently organizing and validating the results; original data are not available for distribution outside the Division. However, some of the data have been summarized in reports. Lynch (1986 and pers. comm.) gave the stratified mean catch in Narragansett Bay (both strata, both seasons) during 1979-1987 for four species (winter flounder, scup, butterfish, and longfin squid). We used these numbers without further processing.

III. RESULTS

Table 2 is a master list of species codes, common names, and scientific names (American Fisheries Society, 1980). The GSO code is used throughout this report. The NMFS code is used by the Northeast Fisheries Center of the National Marine Fisheries Service and by the Rhode Island Division of Fish and Wildlife. Table 2 was extracted from a SAS data set we created which includes the National Oceanographic Data Center (NODC) species codes.

A. Graduate School of Oceanography Trawl Survey

Summary statistics, based on yearly totals of mean monthly catch, are given in Tables 3 and 4 for Fox Island and Whale Rock, respectively. Mean monthly temperatures are given in Tables 5-8. Tables 9 and 10 summarize annual totals of mean monthly catch; mean monthly catch is given in Tables 11 and 12 for all species and in Tables 13-20 for selected species. For Tables 9-20 the annual sum of mean monthly catch is shown as a missing value when data are missing for any month throughout the year (with three exceptions). The exceptions are Fox Island in Feb 1979 and Whale Rock in Feb 1981 and Jan 1982 when no data were collected. The total recorded in the tables for these years thus represents the sum of 11 months rather than 12. Total catch of all species listed in Tables 3 and 4 is shown in Tables 21 and 22. Plots of annual totals of mean monthly catch for the major species are presented in Figures 3-9.

B. Marine Research Inc. Trawl Survey and Power Plant Data

1. Trawl Survey. Summary statistics of mean monthly catch, summed annually, are given in Tables 23 and 24. Monthly water temperature data are given in Tables 25-28. Tables 29-30 show annual sum of mean monthly catch; monthly catch is given in Tables 31-32. Average monthly winter flounder catch (number/15 min tow) at all 8 stations is given in Tables 33-40; data for other major species at the Intake and Spar stations are shown in Tables 41-46. The annual sum of mean monthly catch recorded in Tables 29-46 represents the sum of non-missing data. Tables 47-48 give the total catch of all species listed in Tables 23 and 24. Plots of annual sums of mean monthly catch for the major species are presented in Figs. 10-15.

2. Brayton Point Intake Screens. Descriptive statistics for numbers of fish caught per quarter on the intake screens of power units 1-3 at Brayton Point, divided by the mean quarterly flow rate in $10^3 m^3$/min are given in Table 49. Estimated mean quarterly flow rate is given in Table 49A. Annual sums of the quarterly values are shown in Table 50 with

quarterly catch listed in Table 51. Tables 52-57 summarize these data for the major species. Plots for the major species are shown in Figs. 16-19.

3. Providence River Intake Screens. Summary statistics for the annual sum of monthly mean catch of fish on the Manchester St. power station intake screens are given in Table 58. Table 59 shows the annual sum of the mean daily catch on intake screens. Table 60 gives the mean daily catch by month as well as the mean number of hours since the previous screen washing. Tables 61-65 summarize these data for the major species; total fish catch (species listed in Table 58) is shown in Table 66. Annual sums of mean monthly catch for major species are plotted in Figs. 20-23.

C. National Marine Fisheries Service Trawl Survey

Summary statistics for the autumn survey are shown in Tables 67 and 68. Statistics for the spring survey were not considered because of a gear change during the series. Stratum 45 was surveyed only in 1972, 1975, and 1977-1985. Lobsters in 1963 and longfin squid in 1963-1966 were not consistently recorded, so those years are not included. Mean bottom water temperatures are given in Tables 69 and 70. Annual totals of all selected species are given in Tables 71 and 72 with the spring and fall values given in Tables 73 and 74. Catch for the most abundant species are summarized in Tables 75-94 and plotted (autumn survey data only) in Figs 24-27.

D. Commercial Fisheries Catch Data

Summary statistics for nine fish species and two invertebrates are shown in Table 95. Yearly CPUE in metric tons per day fished is given by species in Table 96 and monthly CPUE in Tables 97-107; annual totals are plotted in Figs. 28-33. Total catch for all selected species is given in Table 108. Note that no catch was reported (not recorded) for sand flounder, 1964-1974, and for longfin squid, 1964-1977.

E. Rhode Island Division of Fish and Wildlife Trawl Surveys

Because the 1969-1977 survey had missing observations and the 1979-present SAS data sets are not yet available for release outside the Division of Fish and Wildlife, no tabular data are given. Relative abundances of winter flounder, scup, and butterfish are shown separately for each survey in Figs. 34-36. The two surveys are not comparable because sampling design, sampling frequency, and mesh sizes differed.

IV. DESIGN OF A MONITORING PROGRAM

There is good reason for continuous monitoring of the fin fishes and macroinvertebrates in the Narragansett Bay region. Long-term sampling has yielded significant practical and scientific benefits. Any loss of continuity is unthinkable. For expanded coverage, the factors requiring evaluation are: (1) sampling strategy; (2) station locations within Narragansett Bay; (3) method and frequency of observation; and (4) variables recorded. These will be considered separately below.

A. Strategy and rationale

The worth of any long-term program derives from its consistency. This is especially true in the estuarine environment, where the controlling variables develop gradients related to the embayment's topography, fresh water inputs and tidal forcing. These gradients change seasonally and in relation to climatic change and society's efforts to manage the environment. The integral of all this is eventually expressed through the biota as the embayment's character.

The long-term component exerts profound, yet poorly understood, implications for the entire Narragansett Bay system. By monitoring, we manage to keep abreast of the more important changes as they are happening, and we thereby put ourselves in position to design studies that answer questions identified in the more general survey. This is more than collecting and counting: when done properly, monitoring reveals the fundamental pattern of nature. And it is a starting point for management as well as a base for scientific research.

Two sampling strategies are currently being used in Narragansett Bay: stratified random and fixed point. The former is used in areas where depth is more of a determining factor in distribution and abundance than are physical-chemical variations. Consequently, the NMFS spring and fall surveys are stratified random within strata delineated by depth. With depth held constant, the scattering of stations yields information for estimates of crops and yields. Sampling is intense over widely separated and brief periods. Distribution within the area is not the goal, nor is detailed information produced on seasonal occurrence.

Estuarine monitoring is usually designed with a different focus. Depth is a lesser factor than offshore because the physical-chemical determinants patterning biotic distributions are expressed as axial gradients extending from the headlands to headwaters and varying quantitatively in slope and shape. By measuring abundances frequently at a fixed point, we learn the timing and rates of migratory

behavior. Absolute stock size is not calculated because it is varying rapidly due to migration. The important factor is population behavior at any given time relative to its past, and for this task consistently obtained measures of relative abundance and size-frequency usually suffice. A random scheme, as opposed to fixed point, would produce so much noise in this situation that the signal becomes lost.

To summarize: stratified random is appropriate for offshore stock assessment, but within Narragansett Bay, fixed-point sampling should be the basis of a long-term, high frequency, monitoring program. The two strategies are compatible when kept separate according to application. Ideally, however, the addition of offshore, fixed-point sampling--at monthly intervals, with stations selected relative to the logistics of day-long cruises--should be considered in any future plan of committed monitoring.

B. Coverage within Narragansett Bay

The GSO long-term series has one station in the Bay, at Fox Island, and a second only 15 km away in nearby Rhode Island Sound. The simplicity of this plan results from logistical constraint, and it has been a key factor in the program's survival.

Narragansett Bay has 7-10 topographic regions that are generally recognized as the minimum units for a synopsis of general behavior. They are: Lower West Passage (Fox Island), Upper West Passage, Upper Bay, Providence River, Upper East Passage, Mt. Hope Bay; Lower East Passage. Trawling in Mt. Hope Bay might be coordinated with Marine Research's program for the New England Power Company.

C. Method and frequency of observation

A single trawl described by Jeffries and Johnson (1974) has been used throughout the GSO program. Improved designs are available, and a change should be considered. However, one would have to make extensive comparisons in order to preserve long-term integrity.

Trawling at the two current GSO stations (Upper West Passage, Rhode Island Sound) should be at weekly intervals, which experience has shown can be managed year-round. Because any one haul is subject to considerable error, we have adopted the monthly mean of weekly abundance as the primary unit. Addition of another station sampled weekly in the Upper Bay is feasible. Stations located throughout the topographic grid described above should be visited monthly at the minimum, but for this to be worth the effort, long-term commitment would have to be ensured. Otherwise, spring and fall

monitoring are the best minimum plan. The months that are selected for sampling are critical because of seasonal changes in relative abundance resulting from migration. Even so, the benefit produced would be exponential at this stage in our knowledge of distributions within Narragansett Bay.

D. Variables recorded

The challenge here is the design of a plan that balances breadth against the vagaries of funding. Since the latter can be limiting, care must be exercised so as not to start with a "shopping list" that fails simply because it is too much to stand the test of time.

Commitment to a cost-effective scheme would include the following estimates and measurements: fin fish and macroinvertebrate relative abundances; surface, mid-depth and bottom temperature and salinity; transparency; chlorophyll a; phytoplankton particle-size distribution; zooplankton image analysis. The fish program could be logistically coordinated with concurrent observation of nutrients and metals.

E. Summary

Monitoring need not be expensive, nor is it second-class science. Although scientific respectability has been slow to come, management has long understood the need, starting with coliform counts, dissolved oxygen, and BOD, and developing a base--admittedly incomplete, but a base nevertheless--on which policy could be built.

The compelling argument is not regulation and terse fact; rather we must accept our responsibilities and obligations, as users and temporary proprietors of the coastal commons, to keep track of what is happening there, to measure changes as they occur both naturally and in response to our presence, and to act responsibly--all this because we, too, are part of nature. It follows, then, that planning, restoration and overall responsibility can and should become part of our existence. How well we are progressing is the job of monitoring.

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Table 2a. Master list of species code names, common names, and scientific names; sorted by common name.

NMFS CODE	GSO CODE	COMMON NAME	SCIENTIFIC NAME
033	ALW	ALEWIFE	Alosa pseudoharengus
384	AEL	AMERICAN EEL	Anguilla rostrata
043	ANC	ANCHOVY (BAY)	Anchoa mitchilli
032	SHR	ATLANTIC HERRING	Clupea harengus harengus
034	BHR	BLUEBACK HERRING	Alosa aestivalis
135	BFS	BLUEFISH	Pomatomus saltatrix
131	BUT	BUTTERFISH	Peprilus triacanthus
073	COD	COD (ATLANTIC)	Gadus morhua
176	CUN	CUNNER	Tautogolabrus adspersus
104	FSP	FOURSPOT FLOUNDER	Paralichthys oblongus
197	GOO	GOOSEFISH	Lophius americanus
166	GSC	GRUBBY	Myoxocephalus aenaeus
118	HOG	HOGCHOKER	Trinectes maculatus
146	KFS	KINGFISH (NORTHERN)	Menticirrhus saxatilis
026	SKA	LITTLE SKATE	Raja erinacea
163	LSC	LONGHORN SCULPIN	Myoxocephalus octodecemspinosus
036	MEN	MENHADEN (ATLANTIC)	Brevoortia tyrannus
473	MUM	MUMMICHOG	Fundulus heteroclitus
116	PIP	NORTHERN PIPEFISH	Syngnathus fuscus
171	NSR	NORTHERN SEAROBIN	Prionotus carolinus
193	OPT	OCEAN POUT	Macrozoarces americanus
196	PUF	PUFFER (NORTHERN)	Sphoeroides maculatus
108	WND	SAND FL.[WINDOWPANE]	Scophthalmus aquosus
143	SCP	SCUP	Stenotomus chrysops
164	SRV	SEA RAVEN	Hemitripterus americanus
072	SHK	SILVER HAKE	Merluccius bilinearis
113	SLV	SILVERSIDE (ATLANTIC)	Menidia menidia
045	SMT	SMELT (RAINBOW)	Osmerus mordax
013	SMD	SMOOTH DOGFISH	Mustelus canis
015	SPD	SPINY DOGFISH	Squalus acanthias
078	SPH	SPOTTED HAKE	Urophycis regia
077	RHK	SQUIRREL (RED) HAKE	Urophycis chuss
044	SAN	STRIPED ANCHOVY	Anchoa hepsetus
474	STM	STRIPED KILLIFISH	Fundulus majalis
172	SSR	STRIPED SEAROBIN	Prionotus evolans
103	FLK	SUMMER FLOUNDER	Paralichthys dentatus
177	TAU	TAUTOG	Tautoga onitis
115	TSS	THREESPINE STICKLEBACK	Gasterosteus aculeatus
185	TDF	TOADFISH (OYSTER)	Opsanus tau
453	TOM	TOMCOD (ATLANTIC)	Microgadus tomcod
145	WFS	WEAKFISH	Cynoscion regalis
076	WHK	WHITE HAKE	Urophycis tenuis
140	WPR	WHITE PERCH	Morone americana
106	WFL	WINTER FLOUNDER	Pseudopleuronectes americanus

Table 2a cont'd

NMFS CODE	GSO CODE	COMMON NAME	SCIENTIFIC NAME
314	BCR	BLUE CRAB	Callinectes sapidus
311	CAN	CANCER CRABS	Cancer irroratus & borealis
336/7	CON	CONCHS	Busycon canaliculatum & carica
318	HSC	HORSESHOE CRAB	Limulus polyphemus
301	LOB	LOBSTER (AMERICAN)	Homarus americanus
323	MSR	MANTIS SHRIMP	Squilla empusa
402	SCL	SCALLOP (BAY)	Aequipecten irradians
317	SPC	SPIDER CRAB	Libinia emarginata
503	SQD	SQUID (LONGFIN)	Loligo pealei
332	STR	STARFISH	Asterias spp.

Table 2b. Master list of species code names, common names and scientific names; sorted by National Marine Fisheries Service code.

NMFS CODE	GSO CODE	COMMON NAME	SCIENTIFIC NAME
013	SMD	SMOOTH DOGFISH	Mustelus canis
015	SPD	SPINY DOGFISH	Squalus acanthias
026	SKA	LITTLE SKATE	Raja erinacea
032	SHR	ATLANTIC HERRING	Clupea harengus harengus
033	ALW	ALEWIFE	Alosa pseudoharengus
034	BHR	BLUEBACK HERRING	Alosa aestivalis
036	MEN	MENHADEN (ATLANTIC)	Brevoortia tyrannus
043	ANC	ANCHOVY (BAY)	Anchoa mitchilli
044	SAN	STRIPED ANCHOVY	Anchoa hepsetus
045	SMT	SMELT (RAINBOW)	Osmerus mordax
072	SHK	SILVER HAKE	Merluccius bilinearis
073	COD	COD (ATLANTIC)	Gadus morhua
076	WHK	WHITE HAKE	Urophycis tenuis
077	RHK	SQUIRREL (RED) HAKE	Urophycis chuss
078	SPH	SPOTTED HAKE	Urophycis regia
103	FLK	SUMMER FLOUNDER	Paralichthys dentatus
104	FSP	FOURSPOT FLOUNDER	Paralichthys oblongus
106	WFL	WINTER FLOUNDER	Pseudopleuronectes americanus
108	WND	SAND FL.[WINDOWPANE]	Scophthalmus aquosus
113	SLV	SILVERSIDE (ATLANTIC)	Menidia menidia
115	TSS	THREESPINE STICKLEBACK	Gasterosteus aculeatus
116	PIP	NORTHERN PIPEFISH	Syngnathus fuscus
118	HOG	HOGCHOKER	Trinectes maculatus
131	BUT	BUTTERFISH	Peprilus triacanthus
135	BFS	BLUEFISH	Pomatomus saltatrix
140	WPR	WHITE PERCH	Morone americana
143	SCP	SCUP	Stenotomus chrysops
145	WFS	WEAKFISH	Cynoscion regalis
146	KFS	KINGFISH (NORTHERN)	Menticirrhus saxatilis
163	LSC	LONGHORN SCULPIN	Myoxocephalus octodecemspinosus
164	SRV	SEA RAVEN	Hemitripterus americanus
166	GSC	GRUBBY	Myoxocephalus aenaeus
171	NSR	NORTHERN SEAROBIN	Prionotus carolinus
172	SSR	STRIPED SEAROBIN	Prionotus evolans
176	CUN	CUNNER	Tautogolabrus adspersus
177	TAU	TAUTOG	Tautoga onitis
185	TDF	TOADFISH (OYSTER)	Opsanus tau
193	OPT	OCEAN POUT	Macrozoarces americanus
196	PUF	PUFFER (NORTHERN)	Sphoeroides maculatus
197	GOO	GOOSEFISH	Lophius americanus
384	AEL	AMERICAN EEL	Anguilla rostrata
453	TOM	TOMCOD (ATLANTIC)	Microgadus tomcod
473	MUM	MUMMICHOG	Fundulus heteroclitus
474	STM	STRIPED KILLIFISH	Fundulus majalis

Table 2b cont'd

NMFS CODE	GSO CODE	COMMON NAME	SCIENTIFIC NAME
301	LOB	LOBSTER (AMERICAN)	Homarus americanus
311	CAN	CANCER CRABS	Cancer irroratus & borealis
314	BCR	BLUE CRAB	Callinectes sapidus
317	SPC	SPIDER CRAB	Libinia emarginata
318	HSC	HORSESHOE CRAB	Limulus polyphemus
323	MSR	MANTIS SHRIMP	Squilla empusa
332	STR	STARFISH	Asterias spp.
336/7	CON	CONCHS	Busycon canaliculatum & carica
402	SCL	SCALLOP (BAY)	Aequipecten irradians
503	SQD	SQUID (LONGFIN)	Loligo pealei

Table 3. Fox Island, Narragansett Bay. Summary statistics for finfishes and invertebrates based on yearly totals of mean monthly catches, number per 30 min. tow (n=29), 1959-1987.

COMMON NAME	MEAN	SD	MIN	MAX
ALEWIFE	1	3	0	17
ATLANTIC HERRING	22	17	0	59
BLUEBACK HERRING	3	2	0	10
BLUEFISH	5	10	0	49
BUTTERFISH	98	139	1	508
COD (ATLANTIC)	<0.5	<0.5	0	1
CUNNER	36	36	0	116
FOURSPOT FLOUNDER	5	11	0	45
GOOSEFISH	1	1	0	5
GRUBBY	11	8	2	31
KINGFISH (NORTHERN)	1	3	0	10
LITTLE SKATE	23	16	3	71
LONGHORN SCULPIN	33	40	0	166
MENHADEN (ATLANTIC)	1	5	0	27
NORTHERN SEAROBIN	158	158	2	649
OCEAN POUT	1	2	0	9
PUFFER (NORTHERN)	2	4	0	16
SAND FL.[WINDOWPANE]	167	115	6	359
SCUP	1197	1110	60	4896
SEA RAVEN	2	5	0	22
SILVER HAKE	31	21	2	73
SILVERSIDE (ATLANTIC)	1	2	0	11
SMOOTH DOGFISH	6	6	0	25
SPINY DOGFISH	<0.5	<0.5	0	1
SPOTTED HAKE	1	1	0	5
SQUIRREL (RED) HAKE	9	10	0	44
STRIPED ANCHOVY	1	3	0	13
STRIPED SEAROBIN	11	16	0	59
SUMMER FLOUNDER	22	21	3	106
TAUTOG	29	19	2	72
TOADFISH (OYSTER)	6	3	1	13
WEAKFISH	8	17	0	95
WHITE HAKE	<0.5	1	0	5
WINTER FLOUNDER	1738	1147	494	4351
BLUE CRAB	1	1	0	5
CANCER CRABS	308	512	2	2426
CONCH	61	50	0	202
HORSESHOE CRAB	48	43	4	164
LOBSTER (AMERICAN)	28	36	0	145
MANTIS SHRIMP	10	17	0	64
SCALLOP (BAY)	17	69	0	362
SPIDER CRAB	105	64	8	244
SQUID (LONGFIN)	86	116	5	565
STARFISH	121	134	0	431

Table 4. Whale Rock, Rhode Island Sound. Summary statistics for finfishes and invertebrates based on yearly totals of mean monthly catches, number per 30 min. tow (n=29), 1959-1987.

COMMON NAME	MEAN	SD	MIN	MAX
ALEWIFE	6	14	0	70
ATLANTIC HERRING	34	59	0	269
BLUEBACK HERRING	11	15	0	70
BLUEFISH	10	26	0	137
BUTTERFISH	288	393	5	1445
COD (ATLANTIC)	5	7	0	25
CUNNER	26	33	0	122
FOURSPOT FLOUNDER	51	47	3	197
GOOSEFISH	11	10	0	40
GRUBBY	3	16	0	87
KINGFISH (NORTHERN)	9	35	0	186
LITTLE SKATE	111	100	9	383
LONGHORN SCULPIN	121	183	7	950
MENHADEN (ATLANTIC)	1	2	0	7
NORTHERN SEAROBIN	43	44	9	205
OCEAN POUT	280	498	5	2107
PUFFER (NORTHERN)	4	6	0	24
SAND FL.[WINDOWPANE]	152	116	33	489
SCUP	234	210	19	697
SEA RAVEN	2	3	0	8
SILVER HAKE	563	528	0	2025
SILVERSIDE (ATLANTIC)	<0.5	1	0	3
SMOOTH DOGFISH	4	3	0	15
SPINY DOGFISH	4	4	0	19
SPOTTED HAKE	3	5	0	21
SQUIRREL (RED) HAKE	350	494	19	1737
STRIPED ANCHOVY	1	5	0	25
STRIPED SEAROBIN	4	4	0	16
SUMMER FLOUNDER	10	10	0	41
TAUTOG	1	2	0	8
TOADFISH (OYSTER)	<0.5	1	0	3
WEAKFISH	3	4	0	17
WHITE HAKE	5	13	0	58
WINTER FLOUNDER	519	259	130	1033
BLUE CRAB	1	2	0	5
CANCER CRABS	869	712	20	2370
CONCH	1	1	0	5
HORSESHOE CRAB	7	25	0	133
LOBSTER (AMERICAN)	150	180	7	714
MANTIS SHRIMP	<0.5	<0.5	0	2
SCALLOP (BAY)	<0.5	<0.5	0	1
SPIDER CRAB	15	10	3	34
SQUID (LONGFIN)	177	248	1	907
STARFISH	50	55	0	169

Table 5. Fox Island, Narragansett Bay. Mean monthly surface temperature (degrees Celsius), 1967-1987.

YEAR	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1966	.	.	.	.	.	.	.	.	.	.	.	.
1967	2.3	1.1	1.2	5.5	8.8	16.6	20.3	20.1	17.4	15.4	8.3	4.7
1968	0.6	0.1	2.0	6.5	11.9	16.9	20.7	21.0	18.7	15.6	7.4	4.0
1969	0.4	1.1	1.7	8.6	12.8	19.1	20.1	22.9	19.8	15.9	9.8	4.9
1970	-0.2	0.9	2.6	7.1	13.0	17.1	21.3	22.3	19.0	15.9	10.2	3.9
1971	-0.1	0.3	2.5	6.0	10.3	17.4	21.4	22.1	20.6	16.5	10.8	4.9
1972	2.9	1.2	2.9	5.2	10.9	17.3	21.3	21.4	19.2	14.4	8.8	5.3
1973	2.0	1.9	4.4	7.7	12.8	18.3	21.4	21.5	18.9	15.2	8.8	6.5
1974	2.4	1.8	4.1	7.0	12.2	17.5	20.8	22.6	20.8	14.2	9.4	5.2
1975	3.2	2.4	3.1	5.6	12.0	17.4	21.7	21.8	18.5	15.0	11.9	5.4
1976	0.3	2.1	4.6	9.3	13.8	18.5	22.3	21.1	19.3	13.4	6.7	2.0
1977	-0.5	0.3	3.5	7.1	14.3	18.7	22.3	22.2	19.7	14.5	9.4	4.3
1978	1.0	0.6	2.4	6.7	12.0	17.7	20.6	22.1	18.8	14.2	10.0	7.0
1979	2.7	.	3.1	6.7	14.3	18.0	21.5	21.0	20.0	14.8	10.5	6.2
1980	3.0	0.4	3.1	8.6	12.5	17.5	21.8	22.7	20.7	14.6	8.1	4.7
1981	-0.9	2.1	3.4	9.6	13.2	19.0	22.9	22.2	19.6	15.2	11.5	4.7
1982	2.1	2.1	3.2	7.1	14.0	17.1	21.6	21.9	18.8	14.8	11.5	6.5
1983	4.0	2.5	4.9	8.3	13.3	18.9	23.3	22.8	20.4	15.4	10.5	6.0
1984	1.9	2.3	3.2	7.4	13.1	18.9	21.8	21.3	19.1	14.7	10.2	5.9
1985	1.4	1.0	3.6	8.6	15.1	17.1	21.5	22.8	19.7	16.1	11.0	5.0
1986	2.1	1.9	4.1	8.6	14.2	17.6	20.1	21.6	18.3	13.8	9.9	5.4
1987	2.6	1.5	3.3	8.1	12.6	18.9	20.8	21.5	18.6	13.9	8.3	5.2

Table 6. Fox Island, Narragansett Bay. Mean monthly bottom temperature (degrees Celsius), 1977-1987.

YEAR	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1966	.	.	.	.	.	.	.	.	.	.	.	.
1967	.	.	.	.	.	.	.	.	.	.	.	.
1968	.	.	.	.	.	.	.	.	.	.	.	.
1969	.	.	.	.	.	.	.	.	.	.	.	.
1970	.	.	.	.	.	.	.	.	.	.	.	.
1971	.	.	.	.	.	.	.	.	.	.	.	.
1972	.	.	.	.	.	.	.	.	.	.	.	.
1973	.	.	.	.	.	.	.	.	.	.	.	.
1974	.	.	.	.	.	.	.	.	.	.	.	.
1975	.	.	.	.	.	.	.	.	.	.	.	.
1976	.	.	.	.	.	.	.	.	.	.	.	.
1977	.	.	.	.	.	.	.	.	17.3	14.9	11.0	4.7
1978	1.3	0.9	2.4	6.1	11.4	16.8	19.5	21.7	18.9	14.0	10.0	5.3
1979	3.0	.	3.0	6.2	12.6	16.7	20.7	21.0	19.7	14.7	11.2	6.3
1980	3.3	0.8	3.0	7.8	12.3	17.4	20.6	26.0	20.2	14.6	8.3	4.9
1981	-1.1	2.6	3.3	8.6	12.2	17.6	21.7	21.8	23.8	15.0	11.5	5.0
1982	2.5	2.3	3.3	6.6	11.6	15.3	20.6	21.2	18.8	15.0	11.5	7.1
1983	4.3	2.3	4.9	7.4	11.4	17.0	21.6	21.8	20.1	12.3	10.7	5.7
1984	2.9	2.7	3.0	6.8	12.2	15.1	21.4	21.9	18.6	14.8	10.7	6.2
1985	1.3	1.2	3.6	8.1	14.4	17.1	20.8	22.7	19.8	16.3	11.1	5.2
1986	2.1	1.7	3.8	8.4	13.0	17.5	19.7	21.6	18.3	13.8	10.0	5.6
1987	2.6	1.6	3.3	7.7	11.8	18.3	20.5	21.4	18.6	13.9	.	5.2

Table 7. Whale Rock, Rhode Island Sound. Mean monthly surface temperature (degree Celsius), 1967-1987.

YEAR	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1966	.	.	.	.	.	.	.	.	.	.	.	.
1967	4.3	2.6	1.9	4.7	8.2	13.9	17.6	19.1	16.5	15.0	9.9	5.8
1968	2.3	1.2	1.9	4.2	11.1	15.3	18.5	19.1	18.4	15.5	9.2	6.4
1969	2.3	1.6	2.0	6.8	10.7	17.2	19.0	20.8	19.1	16.1	10.9	6.9
1970	1.9	2.0	2.4	7.5	11.0	15.8	19.4	20.6	18.0	16.1	11.4	6.7
1971	2.7	0.9	2.2	5.1	8.8	15.5	19.4	20.3	19.7	16.8	12.6	7.6
1972	5.1	3.1	3.0	5.2	9.9	15.5	19.4	20.1	18.4	15.2	11.2	7.5
1973	3.3	2.8	4.3	7.0	11.7	16.1	20.0	21.0	18.1	16.7	11.0	8.1
1974	4.7	4.0	4.6	7.0	10.3	16.3	19.4	21.1	19.5	15.1	10.8	6.9
1975	4.8	3.4	4.0	5.3	10.7	16.2	20.0	20.8	18.4	16.0	13.0	7.8
1976	2.9	2.4	4.9	7.5	11.4	16.7	20.3	20.7	18.6	15.2	9.5	6.0
1977	2.6	0.8	4.1	7.4	12.3	16.6	20.1	20.1	21.3	14.5	10.8	6.3
1978	3.5	1.1	2.5	6.5	11.0	15.8	19.0	21.4	17.5	14.7	11.2	.
1979	4.2	1.8	3.3	5.6	12.2	18.9	18.5	20.3	19.2	15.0	11.4	7.6
1980	4.9	2.6	2.2	6.4	11.6	16.0	19.6	21.8	19.9	16.4	10.2	7.5
1981	1.3	.	2.5	7.5	12.3	16.8	20.4	19.8	18.6	15.2	.	6.1
1982	.	2.8	2.5	6.9	11.7	15.8	20.4	19.8	18.1	14.9	12.4	8.0
1983	5.2	3.2	6.9	7.2	11.4	16.1	19.7	20.8	19.3	15.7	11.6	7.1
1984	3.9	2.7	3.3	6.1	11.1	15.7	19.1	20.7	18.1	15.1	11.5	8.4
1985	3.9	2.0	3.3	7.2	11.7	15.5	18.2	21.1	18.8	16.6	11.8	7.4
1986	4.2	2.5	3.2	6.7	12.5	15.7	18.0	19.9	17.6	14.3	11.5	6.8
1987	3.9	3.1	3.1	7.1	11.1	16.1	18.7	19.5	18.1	14.1	10.0	6.2

Table 8. Whale Rock, Rhode Island Sound. Mean monthly bottom temperature (degrees Celsius), 1977-1987.

YEAR	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1966	.	.	.	.	.	.	.	.	.	.	.	.
1967	.	.	.	.	.	.	.	.	.	.	.	.
1968	.	.	.	.	.	.	.	.	.	.	.	.
1969	.	.	.	.	.	.	.	.	.	.	.	.
1970	.	.	.	.	.	.	.	.	.	.	.	.
1971	.	.	.	.	.	.	.	.	.	.	.	.
1972	.	.	.	.	.	.	.	.	.	.	.	.
1973	.	.	.	.	.	.	.	.	.	.	.	.
1974	.	.	.	.	.	.	.	.	.	.	.	.
1975	.	.	.	.	.	.	.	.	.	.	.	.
1976	.	.	.	.	.	.	.	.	.	.	.	.
1977	.	.	.	.	.	.	.	.	.	14.9	12.1	7.7
1978	5.0	2.0	1.9	3.9	8.7	12.9	16.0	17.1	17.3	14.9	12.0	6.8
1979	5.4	1.3	2.5	4.6	9.7	16.0	15.8	18.2	18.2	14.4	9.6	9.1
1980	5.8	4.4	2.3	5.1	8.6	.	16.2	17.3	19.3	16.3	10.5	8.3
1981	.	.	2.5	4.9	10.0	14.6	19.1	17.6	17.2	15.0	.	7.2
1982	.	3.5	2.8	4.5	9.2	14.0	17.2	17.3	18.0	15.4	12.5	9.5
1983	6.2	4.0	4.3	6.3	9.3	13.8	15.7	18.0	18.5	14.1	11.9	8.4
1984	6.0	3.5	3.5	4.7	9.4	12.7	17.3	20.6	17.5	15.2	12.0	8.8
1985	3.8	2.6	3.5	5.9	10.9	14.3	17.9	19.8	17.7	16.7	12.8	8.4
1986	5.0	3.4	3.2	6.3	10.6	15.1	16.9	19.6	17.4	14.2	11.8	7.4
1987	4.4	2.7	3.0	6.4	10.3	14.3	18.4	18.8	18.2	14.1	.	6.3

Table 9a. Fox Island, Narragansett Bay. Annual sum of mean monthly catch, number per 30 min. tow - finfishes.

YEAR	SPECIES:	ALW	SHR	BHR	BFS	BUT	COD	CUN	FSP	GOO	GSC	KFS	SKA
1959		0	20	1	1	53	0	71	4	1	3	10	16
1960		1	16	1	0	8	0	116	0	2	22	1	12
1961		0	6	1	0	31	0	102	0	1	28	10	23
1962		1	19	3	0	10	0	67	1	0	26	2	10
1963		0	11	3	0	10	0	57	0	3	22	0	21
1964		0	17	3	1	35	0	51	1	0	14	3	13
1965		0	4	0	2	27	0	38	0	0	10	2	8
1966		2	58	5	0	1	0	56	0	0	14	0	3
1967		1	52	3	0	79	0	88	0	0	31	0	5
1968		1	26	1	1	19	0	98	0	0	16	3	5
1969		0	45	2	1	7	1	79	0	0	13	6	11
1970		0	34	1	5	3	0	47	0	1	8	2	10
1971		4	13	3	2	81	0	33	0	0	8	0	15
1972		0	35	2	0	63	0	23	0	0	6	1	26
1973		0	11	7	0	16	0	40	2	0	8	0	39
1974		0	13	2	5	12	0	16	2	5	5	1	41
1975		6	13	3	6	145	0	27	0	0	2	0	27
1976		0	22	3	0	71	0	22	0	0	4	0	27
1977		0	15	3	12	19	0	4	3	0	7	0	12
1978		0	0	7	1	21	0	1	45	0	10	0	11
1979		0	0	1	2	150	0	0	36	0	8	0	17
1980		0	0	0	1	7	0	1	12	0	14	0	35
1981		0	15	2	3	24	0	4	18	0	7	0	27
1982		1	24	3	7	132	0	3	5	0	9	1	41
1983		0	40	9	1	508	0	3	5	0	5	0	61
1984		2	59	1	2	258	0	1	3	2	7	0	35
1985		3	4	1	25	276	0	0	2	0	2	0	20
1986		3	22	2	20	274	0	0	3	0	3	0	17
1987		17	34	10	49	498	0	1	4	1	3	0	71

Table 9a cont'd. Fox Island, Narragansett Bay. Annual sum of mean monthly catch, number per 30 min. tow - finfishes.

YEAR	SPECIES:	LSC	MEN	NSR	OPT	PUF	WND	SCP	SRV	SHK	SLV	SMD
1959		64	0	165	1	7	8	829	0	.	1	21
1960		44	0	132	0	4	6	260	0	.	4	6
1961		101	1	230	0	4	25	255	0	252	3	6
1962		95	0	150	0	16	43	93	0	331	2	8
1963		92	0	267	0	8	50	.	0	71	0	7
1964		166	0	.	0	5	75	.	0	29	0	4
1965		88	0	649	1	4	102	499	0	55	0	3
1966		50	0	219	1	1	265	197	0	28	0	1
1967		45	0	173	0	0	307	1280	0	9	0	10
1968		81	0	379	0	2	315	363	0	35	0	11
1969		29	0	142	1	0	359	229	0	2	0	13
1970		43	0	156	6	1	316	208	0	22	0	11
1971		11	0	167	4	6	283	914	0	2	0	25
1972		12	0	130	2	0	244	452	0	16	0	8
1973		25	0	217	4	1	249	1313	0	72	0	12
1974		8	0	188	7	0	206	666	1	33	0	9
1975		0	0	51	9	0	126	1997	0	18	0	5
1976		3	0	59	2	0	99	4896	0	47	0	4
1977		2	0	176	1	1	171	3449	0	34	0	5
1978		5	0	72	0	0	337	1963	0	21	0	1
1979		1	0	50	0	0	301	1717	0	21	0	0
1980		6	0	24	1	0	238	967	1	4	0	0
1981		6	0	51	0	0	164	1436	14	3	0	1
1982		7	2	76	2	0	88	700	22	73	0	4
1983		3	0	27	0	0	128	2271	3	60	0	1
1984		3	0	7	1	0	50	2050	7	37	0	9
1985		8	27	21	0	0	31	2251	0	13	1	0
1986		0	4	2	0	0	38	1903	0	36	1	0
1987		10	1	4	0	0	213	1280	0	29	11	1

Table 9a cont'd. Fox Island, Narragansett Bay. Annual sum of mean monthly catch, number per 30 min. tow - finfishes.

YEAR	SPECIES:	SPD	SPH	RHK	SAN	SSR	FLK	TAU	TDF	WFS	WHK	WFL
1959		0	5	0	.	0	34	72	12	6	0	917
1960		0	2	12	.	0	19	32	3	1	0	846
1961		0	1	7	.	0	42	42	6	2	0	1136
1962		0	2	7	.	0	24	36	6	1	0	1109
1963		0	0	12	.	12	12	66	9	1	0	1065
1964		0	1	2	.	27	14	35	9	0	0	1017
1965		0	0	0	.	32	15	41	5	1	0	1200
1966		0	0	3	0	5	21	20	6	3	0	1739
1967		0	0	10	0	0	9	13	8	0	0	3779
1968		0	2	0	0	0	4	25	13	1	0	4351
1969		0	0	0	0	59	5	35	7	8	0	3312
1970		0	0	0	0	28	3	60	7	1	0	2139
1971		0	0	0	0	45	6	37	6	3	0	1495
1972		0	0	6	0	10	3	29	3	3	0	1269
1973		0	0	2	0	41	13	45	6	95	0	1247
1974		0	0	1	0	0	42	31	2	8	0	1132
1975		0	0	4	0	0	30	44	6	13	0	757
1976		0	0	5	0	0	106	52	12	17	0	613
1977		0	0	30	0	10	30	22	1	0	0	774
1978		0	0	20	0	13	19	14	5	11	0	2092
1979		0	0	11	0	9	15	9	4	1	5	4038
1980		0	1	12	0	2	12	4	6	10	0	3169
1981		0	2	4	0	5	62	9	8	3	0	2271
1982		0	0	11	0	8	30	13	1	10	2	1707
1983		0	3	10	0	11	30	14	7	10	0	3807
1984		1	0	8	0	3	10	31	4	0	0	1320
1985		0	3	24	3	2	6	5	2	4	0	513
1986		0	1	6	13	5	16	4	1	1	2	494
1987		0	4	44	4	1	18	2	4	8	2	1102

Table 9b. Fox Island, Narragansett Bay. Annual sum of mean monthly catch, number per 30 min. tow - invertebrates.

YEAR	SPECIES:	BCR	CAN	CON	HSC	LOB	MSR	SCL	SPC	SQD	STR
1959		1	67	28	69	0	1	0	96	.	33
1960		0	9	11	79	0	3	0	.	.	171
1961		2	28	29	89	0	4	2	.	50	431
1962		1	21	16	39	1	9	0	33	65	308
1963		1	36	33	8	1	6	0	84	71	198
1964		0	12	7	28	1	4	0	61	23	70
1965		0	2	3	4	2	1	0	8	5	0
1966		0	.	7	32	8	5	0	.	25	.
1967		0	.	0	.	9	0	0	.	17	.
1968		0	.	0	.	17	0	0	.	29	.
1969		0	.	49	.	17	0	0	.	23	.
1970		0	105	39	17	13	0	30	141	34	147
1971		0	54	67	18	10	0	362	140	48	179
1972		0	107	91	20	7	0	107	158	16	207
1973		0	157	76	53	17	0	2	190	32	213
1974		0	136	51	81	16	0	0	125	29	228
1975		0	122	87	164	29	0	0	113	65	344
1976		0	92	66	85	19	0	0	160	54	364
1977		0	62	80	148	34	34	0	147	36	151
1978		0	848	58	79	64	53	0	74	34	0
1979		0	1027	62	77	42	26	0	80	61	3
1980		0	346	70	43	21	10	0	91	30	5
1981		0	544	93	68	50	27	0	64	81	5
1982		1	689	85	55	83	1	0	244	221	9
1983		5	479	183	7	19	0	0	74	270	0
1984		2	134	202	11	22	6	0	37	565	0
1985		4	143	118	11	43	26	0	222	230	0
1986		1	333	39	7	125	17	0	172	138	0
1987		0	2426	115	7	145	64	1	147	188	0

Table 10a. Whale Rock, Rhode Island Sound. Annual sum of mean monthly catch, number per 30 min. tow - finfishes.

YEAR	SPECIES:	ALW	SHR	BHR	BFS	BUT	COD	CUN	FSP	GOO	GSC	KFS	SKA
1959		6	38	5	1	26	1	122	31	22	0	6	120
1960		5	10	6	0	19	3	.	21	32	0	3	89
1961		1	10	7	0	18	6	.	14	40	0	3	89
1962		0	6	6	0	5	4	121	23	26	0	2	58
1963		1	11	4	0	7	4	68	25	23	0	0	38
1964		0	4	2	0	24	0	41	14	17	0	0	29
1965		1	6	0	1	58	1	25	47	13	0	0	37
1966		2	18	4	0	14	3	63	20	6	4	0	20
1967		1	13	11	0	15	12	48	20	10	87	0	9
1968		8	40	10	0	14	25	31	12	11	0	0	16
1969		4	16	21	0	60	24	28	21	12	5	186	15
1970		4	19	15	2	112	22	14	22	9	0	9	37
1971		6	38	41	1	99	14	9	30	20	0	2	41
1972		0	19	19	0	72	7	4	3	14	0	0	37
1973		2	13	70	0	29	8	8	35	16	0	1	78
1974		0	12	16	137	443	6	1	40	19	0	28	98
1975		0	1	30	5	328	0	1	23	13	0	0	200
1976		0	2	3	3	966	0	1	46	4	0	0	69
1977		0	15	2	3	78	3	0	99	3	0	0	57
1978		2	0	2	1	197	1	5	197	2	0	2	155
1979		0	0	1	0	106	1	0	113	1	0	0	239
1980		0	2	3	0	33	0	3	59	3	0	1	120
1981		4	2	5	27	270	0	12	122	0	1	3	237
1982		1	10	8	15	863	0	8	90	0	0	0	338
1983		2	38	4	9	1445	0	6	140	3	0	1	383
1984		12	149	10	20	956	0	18	42	1	0	2	220
1985		70	123	1	10	600	1	24	46	0	3	0	87
1986		11	110	2	29	981	0	2	8	0	0	0	66
1987		39	269	4	23	504	0	3	102	5	0	0	251

Table 10a cont'd. Whale Rock, Rhode Island Sound. Annual sum of mean monthly catch, number per 30 min. tow - finfishes.

YEAR	SPECIES:	LSC	MEN	NSR	OPT	PUF	WND	SCP	SRV	SHK	SLV	SMD
1959		92	0	205	48	24	102	627	0	.	0	4
1960		111	0	128	25	2	149	73	1	.	1	3
1961		237	1	94	22	12	370	67	2	.	3	3
1962		129	0	95	60	5	141	19	0	1731	0	3
1963		109	3	108	49	7	47	22	0	461	0	3
1964		98	0	45	30	2	114	64	0	323	0	4
1965		63	0	53	79	4	147	65	0	509	0	3
1966		99	0	41	38	5	207	52	1	312	0	4
1967		164	0	20	52	0	185	92	1	449	0	6
1968		950	0	18	66	5	179	71	2	424	0	2
1969		322	0	37	173	5	90	56	6	107	0	4
1970		254	0	21	531	4	106	83	2	426	0	3
1971		334	0	20	629	0	81	134	4	387	0	5
1972		35	0	18	617	0	72	238	4	477	0	6
1973		92	0	30	1066	0	57	64	0	933	0	4
1974		31	0	28	2107	0	58	424	0	2025	0	3
1975		9	0	12	1511	0	75	490	0	1637	0	4
1976		29	0	16	453	0	70	321	0	1763	0	3
1977		25	0	18	199	3	210	162	0	1243	0	3
1978		30	0	15	54	1	440	262	1	478	0	0
1979		39	0	27	44	3	489	218	0	253	0	1
1980		35	0	10	40	5	246	55	6	169	0	0
1981		148	0	61	40	17	330	325	8	308	0	4
1982		203	0	25	61	3	171	257	5	630	0	3
1983		65	0	45	43	8	193	684	8	903	0	15
1984		43	3	14	34	0	83	697	2	1074	0	9
1985		7	7	15	20	1	70	580	0	271	3	0
1986		15	3	9	5	0	69	232	0	484	0	1
1987		28	3	19	33	0	307	338	3	312	0	1

Table 10a cont'd. Whale Rock, Rhode Island Sound. Annual sum of mean monthly catch, number per 30 min. tow - finfishes.

YEAR	SPECIES:	SPD	SPH	RHK	SAN	SSR	FLK	TAU	TDF	WFS	WHK	WFL
1959		7	5	82	.	0	41	1	0	8	0	621
1960		3	2	157	.	0	19	2	0	0	0	495
1961		3	1	687	.	0	18	8	0	1	0	490
1962		5	3	106	.	0	12	1	0	0	0	661
1963		3	0	130	.	1	1	3	0	1	0	589
1964		4	1	167	.	5	4	0	0	0	0	421
1965		9	1	133	.	6	9	0	0	0	29	993
1966		19	1	54	0	12	8	1	0	0	15	1033
1967		6	0	155	0	0	1	0	0	0	0	693
1968		11	2	227	0	0	0	0	0	0	0	531
1969		6	9	834	0	0	0	0	0	1	0	621
1970		7	2	141	0	3	0	0	0	0	0	528
1971		5	0	446	0	16	1	0	0	17	0	235
1972		10	0	1452	0	0	0	0	0	4	0	205
1973		1	0	1737	0	7	6	0	0	2	0	246
1974		0	0	1557	0	0	5	0	0	0	0	182
1975		1	0	1181	0	0	15	0	0	0	0	154
1976		1	0	421	0	0	31	0	0	4	0	143
1977		2	18	216	0	7	6	1	0	0	0	257
1978		0	1	154	0	6	9	0	0	5	0	633
1979		1	0	130	0	6	13	0	0	0	58	854
1980		0	0	67	0	2	3	0	0	12	6	920
1981		0	4	19	0	9	19	2	2	5	0	787
1982		0	0	118	0	6	12	0	0	2	27	686
1983		0	4	137	0	1	8	0	0	1	1	668
1984		5	0	147	0	8	6	3	3	0	1	571
1985		0	3	42	0	1	6	2	2	13	0	338
1986		0	1	30	25	5	10	2	0	1	5	130
1987		1	21	64	0	2	22	1	0	1	5	491

Table 10b. Whale Rock, Rhode Island Sound. Annual sum of mean monthly catch, number per 30 min. tow - invertebrates.

YEAR	SPECIES:	BCR	CAN	CON	HSC	LOB	MSR	SCL	SPC	SQD	STR
1959		1	442	3	23	7	0	0	9	26	1
1960		5	351	3	8	14	0	0	6	13	15
1961		1	264	1	4	12	0	0	5	34	55
1962		2	206	0	3	20	1	0	8	23	169
1963		4	115	0	1	21	0	0	25	75	87
1964		0	88	1	1	31	0	0	10	11	9
1965		0	20	0	0	41	0	0	3	1	0
1966		0	.	0	0	266	0	0	.	24	.
1967		0	.	0	.	177	0	0	.	11	.
1968		0	.	0	.	398	0	0	.	60	.
1969		0	.	0	0	258	0	1	.	23	.
1970		0	504	0	1	161	0	0	25	158	115
1971		0	1031	0	0	194	0	0	12	52	114
1972		0	1549	0	0	246	0	1	3	185	109
1973		0	1800	0	1	714	0	0	28	36	112
1974		0	2014	0	133	606	0	0	3	76	97
1975		0	1931	0	0	384	0	0	3	158	113
1976		0	1100	0	0	179	0	0	33	108	108
1977		0	478	0	1	55	0	0	24	42	39
1978		0	582	1	1	51	0	0	15	67	0
1979		0	811	0	2	30	0	0	9	54	2
1980		0	966	1	2	24	0	0	11	9	1
1981		0	2370	0	5	108	0	0	14	175	9
1982		3	1118	4	5	60	0	0	17	371	19
1983		5	1378	5	3	33	0	0	34	502	3
1984		1	448	3	2	65	0	0	17	907	0
1985		0	295	0	1	86	0	0	7	627	0
1986		3	243	0	3	41	0	0	29	717	0
1987		3	2120	0	1	54	2	0	23	593	0

Table 11. Fox Island, Narragansett Bay. Mean monthly catch in number per 30 min. tow, 1959.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Atlantic Herring	0	1	0	7	10	0	0	0	0	0	1	1	20
Blueback Herring	0	0	0	1	0	0	0	0	0	0	0	0	1
Butterfish	0	0	0	0	0	0	2	3	33	14	1	0	53
Cod (Atlantic)	0	0	0	0	0	0	0	0	0	0	0	0	0
Cunner	0	0	0	0	13	37	11	6	1	3	0	0	71
Fourspot Flounder	0	0	0	0	4	0	0	0	0	0	0	0	4
Goosefish	0	0	0	0	0	0	0	0	0	0	0	1	1
Grubby Sculpin	0	0	0	0	0	0	0	0	0	0	0	3	3
Little Skate	0	0	0	1	4	1	3	0	0	1	1	5	16
Longhorn Sculpin	1	0	2	1	1	0	0	0	0	0	18	41	64
Northern Searobin	0	0	0	0	33	24	57	43	6	2	0	0	165
Ocean Pout	0	0	0	0	1	0	0	0	0	0	0	0	1
Sand Fl. (Windowpane)	0	0	0	1	3	0	1	1	0	0	1	1	8
Scup	0	0	0	0	66	156	211	92	148	156	0	0	829
Silver Hake	0	0	0	0	3	7	1	0	0	22	224	.	.
Smooth Dogfish	0	0	0	0	0	1	4	7	8	1	0	0	21
Spiny Dogfish	0	0	0	0	0	0	0	0	0	0	0	0	0
Squirrel Hake	0	0	0	0	0	0	0	0	0	0	0	0	0
Striped Searobin	0	0	0	0	0	0	0	0	0	0	0	0	0
Summer Flounder	0	0	0	0	1	7	13	6	5	2	0	0	34
Tautog	0	0	0	1	10	17	19	5	6	13	1	0	72
Toadfish (Oyster)	0	0	0	0	0	1	5	1	3	2	0	0	12
Winter Flounder	3	8	34	127	128	26	202	102	58	102	64	63	917
Cancer Crabs	2	1	1	2	55	0	0	0	1	0	1	4	67
Conchs	0	0	1	5	1	0	17	2	0	2	0	0	28
Horseshoe Crab	0	0	1	2	3	2	20	8	7	17	8	1	69
Lobster (American)	0	0	0	0	0	0	0	0	0	0	0	0	0
Spider Crab	0	0	1	23	57	1	5	4	1	1	1	2	96
Squid (Longfin)	0	0	0	0	9	.	10	8	23	2	0	0	.
Starfish	1	2	5	1	0	0	0	0	7	5	5	7	33
Additional Organisms	.	.	.	.	.	.	.	.	.	.	.	.	.

Table 11 cont'd. Fox Island, Narragansett Bay. Mean monthly catch in number per 30 min. tow, 1960.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Atlantic Herring	3	6	1	3	1	0	0	0	0	0	0	2	16
Blueback Herring	0	0	0	0	0	0	0	0	0	0	1	0	1
Butterfish	0	0	0	0	0	2	1	2	2	1	0	0	8
Cod (Atlantic)	0	0	0	0	0	0	0	0	0	0	0	0	0
Cunner	0	0	0	0	12	66	14	2	0	20	2	0	116
Fourspot Flounder	0	0	0	0	0	0	0	0	0	0	0	0	0
Goosefish	0	0	0	0	0	0	1	0	0	0	1	0	2
Grubby Sculpin	8	5	4	0	0	0	0	0	0	0	0	5	22
Little Skate	1	1	0	2	4	1	0	0	0	1	1	1	12
Longhorn Sculpin	10	0	0	1	1	0	0	0	0	0	19	13	44
Northern Searobin	0	0	0	0	6	45	61	18	1	1	0	0	132
Ocean Pout	0	0	0	0	0	0	0	0	0	0	0	0	0
Sand Fl. (Windowpane)	1	0	0	1	1	1	0	0	0	0	2	0	6
Scup	0	0	0	0	0	118	50	19	3	70	0	0	260
Silver Hake	2	2	0	0	13	.	7	0	1	29	.	.	.
Smooth Dogfish	0	0	0	0	0	1	2	3	0	0	0	0	6
Spiny Dogfish	0	0	0	0	0	0	0	0	0	0	0	0	0
Squirrel Hake	1	0	0	1	2	4	1	0	0	1	2	0	12
Striped Searobin	0	0	0	0	0	0	0	0	0	0	0	0	0
Summer Flounder	0	0	0	0	0	4	6	5	2	2	0	0	19
Tautog	0	0	0	0	5	11	6	1	4	5	0	0	32
Toadfish (Oyster)	0	0	0	0	0	0	1	1	1	0	0	0	3
Winter Flounder	40	40	64	98	133	80	63	39	62	85	98	44	846
Cancer Crabs	1	0	2	1	1	0	0	0	0	0	2	2	9
Conchs	0	0	0	0	5	2	2	1	0	0	1	0	11
Horseshoe Crab	0	0	1	8	1	6	20	30	6	3	4	0	79
Lobster (American)	0	0	0	0	0	0	0	0	0	0	0	0	0
Spider Crab	0	0	0	.	.	1	5	4	0	1	2	1	.
Squid (Longfin)	0	0	0	0	.	.	8	5	2	1	0	0	.
Starfish	7	3	9	15	17	11	20	15	9	20	24	21	171
Additional Organisms	.	.	.	.	.	.	.	.	.	.	.	.	.

Table 11 cont'd. Fox Island, Narragansett Bay. Mean monthly catch in number per 30 min. tow, 1961.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Atlantic Herring	3	0	0	1	0	0	2	0	0	0	0	0	6
Blueback Herring	0	0	0	0	1	0	0	0	0	0	0	0	1
Butterfish	0	0	0	0	0	3	15	1	6	6	0	0	31
Cod (Atlantic)	0	0	0	0	0	0	0	0	0	0	0	0	0
Cunner	0	0	0	0	16	71	13	2	0	0	0	0	102
Fourspot Flounder	0	0	0	0	0	0	0	0	0	0	0	0	0
Goosefish	0	0	0	0	0	0	0	0	0	0	1	0	1
Grubby Sculpin	9	11	5	1	0	0	0	0	0	0	0	2	28
Little Skate	0	0	2	4	7	10	0	0	0	0	0	0	23
Longhorn Sculpin	0	0	0	0	0	0	0	0	0	2	47	52	101
Northern Searobin	0	0	0	0	17	50	70	76	15	2	0	0	230
Ocean Pout	0	0	0	0	0	0	0	0	0	0	0	0	0
Sand Fl. (Windowpane)	0	0	1	4	3	8	4	0	0	1	3	1	25
Scup	0	0	0	0	0	101	46	5	17	86	0	0	255
Silver Hake	1	1	0	0	31	122	5	0	0	16	68	8	252
Smooth Dogfish	0	0	0	0	0	0	2	2	1	1	0	0	6
Spiny Dogfish	0	0	0	0	0	0	0	0	0	0	0	0	0
Squirrel Hake	0	0	0	1	1	3	1	0	0	0	1	0	7
Striped Searobin	0	0	0	0	0	0	0	0	0	0	0	0	0
Summer Flounder	0	0	0	0	2	6	15	9	7	3	0	0	42
Tautog	0	0	0	1	4	19	8	5	2	3	0	0	42
Toadfish (Oyster)	0	0	0	0	0	1	2	1	1	1	0	0	6
Winter Flounder	18	11	77	113	206	259	43	38	43	172	108	48	1136
Cancer Crabs	0	0	3	12	9	1	0	0	0	0	2	1	28
Conchs	0	0	0	1	3	5	8	3	0	1	8	0	29
Horseshoe Crab	0	0	1	12	6	1	13	44	7	4	1	0	89
Lobster (American)	0	0	0	0	0	0	0	0	0	0	0	0	0
Spider Crab	0	0	0	3	.	2	2	2	0	1	1	1	.
Squid (Longfin)	0	0	0	0	5	11	6	6	21	1	0	0	50
Starfish	27	41	49	73	46	46	25	31	7	23	27	36	431
Additional Organisms	.	.	.	.	.	.	.	.	.	.	.	.	.

Table 11 cont'd. Fox Island, Narragansett Bay. Mean monthly catch in number per 30 min. tow, 1962.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Atlantic Herring	9	1	1	1	1	0	0	0	0	0	1	5	19
Blueback Herring	0	0	0	0	0	0	0	0	0	0	0	3	3
Butterfish	0	0	0	0	0	1	4	2	0	3	0	0	10
Cod (Atlantic)	0	0	0	0	0	0	0	0	0	0	0	0	0
Cunner	0	0	0	2	29	16	2	1	0	14	3	0	67
Fourspot Flounder	0	0	0	0	0	0	0	0	0	0	1	0	1
Goosefish	0	0	0	0	0	0	0	0	0	0	0	0	0
Grubby Sculpin	13	6	6	0	0	0	0	0	0	0	0	1	26
Little Skate	0	0	0	3	2	0	0	0	1	1	2	1	10
Longhorn Sculpin	6	0	0	0	0	0	0	0	8	0	19	62	95
Northern Searobin	0	0	0	0	19	82	34	12	2	1	0	0	150
Ocean Pout	0	0	0	0	0	0	0	0	0	0	0	0	0
Sand Fl. (Windowpane)	1	0	2	3	3	5	3	1	3	9	7	6	43
Scup	0	0	0	0	1	20	8	11	21	32	0	0	93
Silver Hake	2	1	0	0	31	2	0	0	56	54	106	79	331
Smooth Dogfish	0	0	0	0	0	0	3	0	2	3	0	0	8
Spiny Dogfish	0	0	0	0	0	0	0	0	0	0	0	0	0
Squirrel Hake	0	0	0	2	1	1	0	0	0	1	1	1	7
Striped Searobin	0	0	0	0	0	0	0	0	0	0	0	0	0
Summer Flounder	0	0	0	0	2	8	5	4	5	0	0	0	24
Tautog	0	0	0	0	9	15	3	2	2	5	0	0	36
Toadfish (Oyster)	0	0	0	0	1	1	0	1	2	1	0	0	6
Winter Flounder	22	25	64	130	224	62	11	52	92	176	135	116	1109
Cancer Crabs	0	0	1	14	2	0	0	0	0	0	2	2	21
Conchs	0	0	0	0	4	4	3	1	1	2	1	0	16
Horseshoe Crab	0	0	0	3	1	5	8	6	9	7	0	0	39
Lobster (American)	0	0	0	0	0	0	1	0	0	0	0	0	1
Spider Crab	1	1	0	.	.	0	5	2	1	1	11	11	.
Squid (Longfin)	0	0	0	0	27	7	2	12	14	3	0	0	65
Starfish	36	31	35	36	29	30	16	20	19	22	19	15	308
Additional Organisms	.	.	.	.	.	.	.	.	.	.	.	.	.

Table 11 cont'd. Fox Island, Narragansett Bay. Mean monthly catch in number per 30 min. tow, 1963.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Atlantic Herring	9	0	0	2	0	0	0	0	0	0	0	0	11
Blueback Herring	0	0	0	1	1	0	0	0	0	0	1	0	3
Butterfish	0	0	0	0	1	3	4	0	1	1	0	0	10
Cod (Atlantic)	0	0	0	0	0	0	0	0	0	0	0	0	0
Cunner	0	0	0	0	19	8	1	0	1	19	8	1	57
Fourspot Flounder	0	0	0	0	0	0	0	0	0	0	0	0	0
Goosefish	0	0	0	0	0	0	0	1	0	0	2	0	3
Grubby Sculpin	12	4	3	0	0	0	0	0	0	0	0	3	22
Little Skate	0	0	0	9	8	0	0	0	1	1	1	1	21
Longhorn Sculpin	1	0	1	12	1	0	0	0	9	0	26	42	92
Northern Searobin	0	0	0	0	20	206	15	21	3	2	0	0	267
Ocean Pout	0	0	0	0	0	0	0	0	0	0	0	0	0
Sand Fl. (Windowpane)	1	2	3	6	2	15	9	0	1	4	4	3	50
Scup	0	0	0	0	2	.	.	11	30	17	0	0	.
Silver Hake	0	0	0	0	15	0	0	0	7	5	23	21	71
Smooth Dogfish	0	0	0	0	0	1	1	4	0	1	0	0	7
Spiny Dogfish	0	0	0	0	0	0	0	0	0	0	0	0	0
Squirrel Hake	0	0	0	0	1	0	0	0	1	2	4	4	12
Striped Searobin	0	0	0	0	0	2	4	4	2	0	0	0	12
Summer Flounder	0	0	0	0	1	4	4	3	0	0	0	0	12
Tautog	0	0	0	1	28	23	11	0	1	2	0	0	66
Toadfish (Oyster)	0	0	0	0	1	2	1	1	3	1	0	0	9
Winter Flounder	39	21	68	212	196	97	2	18	55	149	148	60	1065
Cancer Crabs	2	1	3	15	4	2	0	3	2	0	1	3	36
Conchs	0	0	1	0	3	3	21	4	1	0	0	0	33
Horseshoe Crab	0	0	1	1	0	0	1	1	3	1	0	0	8
Lobster (American)	0	0	0	0	0	1	0	0	0	0	0	0	1
Spider Crab	0	0	2	23	29	4	8	1	2	0	5	10	84
Squid (Longfin)	0	0	0	0	42	5	9	11	4	0	0	0	71
Starfish	13	20	29	16	22	7	7	14	18	5	23	24	198
Additional Organisms	.	.	.	.	.	.	.	.	.	.	.	.	.

Table 11 cont'd. Fox Island, Narragansett Bay. Mean monthly catch in number per 30 min. tow, 1964.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Atlantic Herring	5	2	1	2	2	0	0	0	0	0	1	4	17
Blueback Herring	0	0	0	1	2	0	0	0	0	0	0	0	3
Butterfish	0	0	0	0	0	13	4	1	12	5	0	0	35
Cod (Atlantic)	0	0	0	0	0	0	0	0	0	0	0	0	0
Cunner	0	0	0	0	4	14	8	0	0	13	12	0	51
Fourspot Flounder	0	0	0	0	0	1	0	0	0	0	0	0	1
Goosefish	0	0	0	0	0	0	0	0	0	0	0	0	0
Grubby Sculpin	5	6	1	0	0	0	0	0	0	0	0	2	14
Little Skate	0	0	2	5	4	1	0	0	0	0	1	0	13
Longhorn Sculpin	0	0	1	1	1	0	0	0	0	0	35	128	166
Northern Searobin	0	0	0	1	482	.	103	15	2	1	0	0	.
Ocean Pout	0	0	0	0	0	0	0	0	0	0	0	0	0
Sand Fl. (Windowpane)	1	5	7	7	5	8	8	4	5	7	12	6	75
Scup	0	0	0	0	32	.	79	26	69	8	0	0	.
Silver Hake	0	0	0	0	1	0	0	0	0	6	22	0	29
Smooth Dogfish	0	0	0	0	0	0	2	1	1	0	0	0	4
Spiny Dogfish	0	0	0	0	0	0	0	0	0	0	0	0	0
Squirrel Hake	0	0	0	0	0	0	0	0	0	0	2	0	2
Striped Searobin	0	0	0	0	0	18	2	5	2	0	0	0	27
Summer Flounder	0	0	0	0	0	4	5	3	2	0	0	0	14
Tautog	0	0	0	3	14	9	5	1	1	1	1	0	35
Toadfish (Oyster)	0	0	0	0	0	0	1	1	3	4	0	0	9
Winter Flounder	38	42	119	121	149	46	22	22	58	129	154	117	1017
Cancer Crabs	0	2	2	5	3	0	0	0	0	0	0	0	12
Conchs	0	0	0	0	1	4	2	0	0	0	0	0	7
Horseshoe Crab	0	0	0	0	0	1	7	10	6	3	1	0	28
Lobster (American)	0	0	0	0	0	0	0	0	0	1	0	0	1
Spider Crab	0	0	1	16	33	2	6	2	0	1	0	0	61
Squid (Longfin)	0	0	0	0	1	13	1	6	2	0	0	0	23
Starfish	17	12	17	11	7	3	3	0	0	0	0	0	70
Additional Organisms	.	.	.	.	.	.	.	.	.	.	.	.	.

Table 11 cont'd. Fox Island, Narragansett Bay. Mean monthly catch in number per 30 min. tow, 1965.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Atlantic Herring	0	0	0	0	0	0	0	0	0	0	0	4	4
Blueback Herring	0	0	0	0	0	0	0	0	0	0	0	0	0
Butterfish	0	0	0	0	0	0	1	17	5	4	0	0	27
Cod (Atlantic)	0	0	0	0	0	0	0	0	0	0	0	0	0
Cunner	0	0	0	0	1	10	3	1	1	19	2	1	38
Fourspot Flounder	0	0	0	0	0	0	0	0	0	0	0	0	0
Goosefish	0	0	0	0	0	0	0	0	0	0	0	0	0
Grubby Sculpin	2	5	2	0	0	0	0	0	0	0	0	1	10
Little Skate	0	0	0	2	4	2	0	0	0	0	0	0	8
Longhorn Sculpin	4	0	1	2	3	0	0	0	0	0	20	58	88
Northern Searobin	0	0	0	0	0	431	185	31	2	0	0	0	649
Ocean Pout	0	0	0	1	0	0	0	0	0	0	0	0	1
Sand Fl. (Windowpane)	3	1	9	6	5	7	7	9	4	15	10	26	102
Scup	0	0	0	0	1	374	15	13	64	32	0	0	499
Silver Hake	0	0	0	0	1	4	0	0	0	14	30	6	55
Smooth Dogfish	0	0	0	0	0	1	0	0	1	1	0	0	3
Spiny Dogfish	0	0	0	0	0	0	0	0	0	0	0	0	0
Squirrel Hake	0	0	0	0	0	0	0	0	0	0	0	0	0
Striped Searobin	0	0	0	0	2	24	1	2	2	1	0	0	32
Summer Flounder	0	0	0	0	0	3	7	0	3	2	0	0	15
Tautog	0	0	0	1	4	23	7	0	1	5	0	0	41
Toadfish (Oyster)	0	0	0	0	1	0	1	2	1	0	0	0	5
Winter Flounder	40	25	68	154	230	107	63	39	52	147	179	96	1200
Cancer Crabs	0	0	0	0	0	0	2	0	0	0	0	0	2
Conchs	0	0	0	0	0	0	3	0	0	0	0	0	3
Horseshoe Crab	0	0	0	0	0	0	3	1	0	0	0	0	4
Lobster (American)	0	0	0	0	1	0	1	0	0	0	0	0	2
Spider Crab	0	0	0	0	8	0	0	0	0	0	0	0	8
Squid (Longfin)	0	0	0	0	1	3	1	0	0	0	0	0	5
Starfish	0	0	0	0	0	0	0	0	0	0	0	0	0
Additional Organisms	.	.	.	.	.	.	.	.	.	.	.	.	.

Table 11 cont'd. Fox Island, Narragansett Bay. Mean monthly catch in number per 30 min. tow, 1966.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Atlantic Herring	26	0	16	5	0	0	0	0	0	0	1	10	58
Blueback Herring	0	0	1	1	2	0	0	0	0	0	1	0	5
Butterfish	0	0	0	0	0	0	0	0	1	0	0	0	1
Cod (Atlantic)	0	0	0	0	0	0	0	0	0	0	0	0	0
Cunner	0	0	0	0	6	13	11	3	2	19	2	0	56
Fourspot Flounder	0	0	0	0	0	0	0	0	0	0	0	0	0
Goosefish	0	0	0	0	0	0	0	0	0	0	0	0	0
Grubby Sculpin	6	6	1	0	0	0	0	0	0	0	0	1	14
Little Skate	0	0	1	1	1	0	0	0	0	0	0	0	3
Longhorn Sculpin	5	0	0	2	0	0	0	0	0	0	20	23	50
Northern Searobin	0	0	0	0	1	62	103	41	9	3	0	0	219
Ocean Pout	0	0	0	1	0	0	0	0	0	0	0	0	1
Sand Fl. (Windowpane)	18	27	42	31	10	2	25	3	4	22	31	50	265
Scup	0	0	0	0	11	90	7	32	46	11	0	0	197
Silver Hake	0	0	0	0	0	1	0	0	0	6	19	2	28
Smooth Dogfish	0	0	0	0	0	0	0	0	1	0	0	0	1
Spiny Dogfish	0	0	0	0	0	0	0	0	0	0	0	0	0
Squirrel Hake	0	0	0	0	0	0	0	0	0	3	0	0	3
Striped Searobin	0	0	0	0	0	4	0	0	1	0	0	0	5
Summer Flounder	0	0	0	0	0	3	6	6	6	0	0	0	21
Tautog	0	0	0	1	5	7	1	2	2	2	0	0	20
Toadfish (Oyster)	0	0	0	0	0	0	1	1	3	1	0	0	6
Winter Flounder	41	37	115	217	98	119	258	117	132	203	235	167	1739
Cancer Crabs	.	.	.	.	.	.	.	.	.	.	.	.	.
Conchs	0	0	0	0	0	0	0	7	0	0	0	0	7
Horseshoe Crab	0	0	1	2	0	0	0	13	15	1	0	0	32
Lobster (American)	0	0	0	1	0	4	1	1	0	1	0	0	8
Spider Crab	.	.	.	.	.	.	.	.	.	.	.	.	.
Squid (Longfin)	0	0	0	0	0	4	3	7	10	1	0	0	25
Starfish	.	.	.	.	.	.	.	.	.	.	.	.	.
Additional Organisms	0	0	2	0	0	0	1	1	5	2	0	0	11

Table 11 cont'd. Fox Island, Narragansett Bay. Mean monthly catch in number per 30 min. tow, 1967.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Atlantic Herring	31	2	7	4	2	1	0	0	0	0	1	4	52
Blueback Herring	0	0	0	1	0	1	0	0	0	0	1	0	3
Butterfish	0	0	0	0	0	12	5	34	24	3	1	0	79
Cod (Atlantic)	0	0	0	0	0	0	0	0	0	0	0	0	0
Cunner	0	0	0	0	8	14	6	1[illegible]	17	25	7	0	88
Fourspot Flounder	0	0	0	0	0	0	0	0	0	0	0	0	0
Goosefish	0	0	0	0	0	0	0	0	0	0	0	0	0
Grubby Sculpin	5	4	5	0	0	0	0	0	0	0	16	1	31
Little Skate	0	0	0	3	1	1	0	0	0	0	0	0	5
Longhorn Sculpin	5	0	0	1	1	0	0	0	0	0	9	29	45
Northern Searobin	0	0	0	0	0	58	74	24	15	2	0	0	173
Ocean Pout	0	0	0	0	0	0	0	0	0	0	0	0	0
Sand Fl. (Windowpane)	51	41	31	36	29	14	11	11	24	11	16	32	307
Scup	0	0	0	0	1	164	675	292	128	20	0	0	1280
Silver Hake	0	0	0	0	0	6	1	0	1	0	1	0	9
Smooth Dogfish	0	0	0	0	0	0	3	2	4	1	0	0	10
Spiny Dogfish	0	0	0	0	0	0	0	0	0	0	0	0	0
Squirrel Hake	0	0	0	0	1	1	1	3	1	3	0	0	10
Striped Searobin	0	0	0	0	0	0	0	0	0	0	0	0	0
Summer Flounder	0	0	0	0	0	2	3	2	2	0	0	0	9
Tautog	0	0	0	0	1	4	1	1	2	3	1	0	13
Toadfish (Oyster)	0	0	0	0	0	1	1	1	3	2	0	0	8
Winter Flounder	104	73	193	421	405	283	48	201	443	600	525	483	3779
Cancer Crabs	.	.	.	.	.	.	.	.	.	.	.	.	.
Conchs	0	0	0	0	0	0	0	0	0	0	0	0	0
Horseshoe Crab	.	.	.	.	.	.	.	.	.	.	.	.	.
Lobster (American)	0	0	0	0	1	2	4	0	0	2	0	0	9
Spider Crab	.	.	.	.	.	.	.	.	.	.	.	.	.
Squid (Longfin)	0	0	0	0	1	4	2	6	2	2	0	0	17
Starfish	.	.	.	.	.	.	.	.	.	.	.	.	.
Additional Organisms	0	0	0	1	0	0	0	0	0	0	0	0	1

Table 11 cont'd. Fox Island, Narragansett Bay. Mean monthly catch in number per 30 min. tow, 1968.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Atlantic Herring	7	2	3	2	0	0	0	0	0	0	2	10	26
Blueback Herring	0	0	0	1	0	0	0	0	0	0	0	0	1
Butterfish	0	0	0	0	1	1	2	12	2	1	0	0	19
Cod (Atlantic)	0	0	0	0	0	0	0	0	0	0	0	0	0
Cunner	0	0	0	0	24	29	9	10	6	20	0	0	98
Fourspot Flounder	0	0	0	0	0	0	0	0	0	0	0	0	0
Goosefish	0	0	0	0	0	0	0	0	0	0	0	0	0
Grubby Sculpin	7	4	3	0	0	0	0	0	0	0	0	2	16
Little Skate	0	0	0	1	4	0	0	0	0	0	0	0	5
Longhorn Sculpin	7	0	0	2	0	0	0	0	0	0	40	32	81
Northern Searobin	0	0	0	0	26	148	140	51	12	2	0	0	379
Ocean Pout	0	0	0	0	0	0	0	0	0	0	0	0	0
Sand Fl. (Windowpane)	20	27	29	42	36	36	19	10	20	25	25	26	315
Scup	0	0	0	0	110	125	27	36	35	30	0	0	363
Silver Hake	0	0	0	0	1	0	0	0	0	0	25	9	35
Smooth Dogfish	0	0	0	0	0	0	1	2	1	7	0	0	11
Spiny Dogfish	0	0	0	0	0	0	0	0	0	0	0	0	0
Squirrel Hake	0	0	0	0	0	0	0	0	0	0	0	0	0
Striped Searobin	0	0	0	0	0	0	0	0	0	0	0	0	0
Summer Flounder	0	0	0	0	0	1	2	1	0	0	0	0	4
Tautog	0	0	0	0	10	9	1	1	3	1	0	0	25
Toadfish (Oyster)	0	0	0	0	0	1	2	2	3	5	0	0	13
Winter Flounder	112	75	190	275	900	319	80	200	288	400	1000	512	4351
Cancer Crabs	.	.	.	.	.	.	.	.	.	.	.	.	.
Conchs	0	0	0	0	0	0	0	0	0	0	0	0	0
Horseshoe Crab	.	.	.	.	.	.	.	.	.	.	.	.	.
Lobster (American)	0	0	0	0	2	8	2	1	2	0	0	2	17
Spider Crab	.	.	.	.	.	.	.	.	.	.	.	.	.
Squid (Longfin)	0	0	0	0	12	6	1	2	3	5	0	0	29
Starfish	.	.	.	.	.	.	.	.	.	.	.	.	.
Additional Organisms	0	0	0	0	1	1	0	3	5	0	0	0	10

Table 11 cont'd. Fox Island, Narragansett Bay. Mean monthly catch in number per 30 min. tow, 1969.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Atlantic Herring	31	5	9	0	0	0	0	0	0	0	0	0	45
Blueback Herring	0	0	0	0	0	0	0	0	0	1	0	1	2
Butterfish	0	0	0	0	1	3	1	2	0	0	0	0	7
Cod (Atlantic)	0	0	0	1	0	0	0	0	0	0	0	0	1
Cunner	0	0	0	3	26	21	7	2	1	12	7	0	79
Fourspot Flounder	0	0	0	0	0	0	0	0	0	0	0	0	0
Goosefish	0	0	0	0	0	0	0	0	0	0	0	0	0
Grubby Sculpin	6	4	2	0	0	0	0	0	0	0	0	1	13
Little Skate	0	0	0	2	5	1	0	0	0	1	2	0	11
Longhorn Sculpin	0	0	1	2	0	0	0	0	0	0	12	14	29
Northern Searobin	0	0	0	0	20	70	30	11	7	4	0	0	142
Ocean Pout	0	0	0	1	0	0	0	0	0	0	0	0	1
Sand Fl. (Windowpane)	38	71	62	36	21	16	6	24	19	21	17	28	359
Scup	0	0	0	0	1	31	21	9	92	75	0	0	229
Silver Hake	0	0	0	0	0	0	0	0	0	0	1	1	2
Smooth Dogfish	0	0	0	0	0	1	3	2	6	1	0	0	13
Spiny Dogfish	0	0	0	0	0	0	0	0	0	0	0	0	0
Squirrel Hake	0	0	0	0	0	0	0	0	0	0	0	0	0
Striped Searobin	0	0	0	0	0	0	0	41	16	2	0	0	59
Summer Flounder	0	0	0	0	0	1	2	1	1	0	0	0	5
Tautog	0	0	0	1	10	6	7	5	1	4	1	0	35
Toadfish (Oyster)	0	0	0	0	1	2	2	1	1	0	0	0	7
Winter Flounder	144	138	231	325	625	219	117	144	170	362	467	370	3312
Cancer Crabs	.	.	.	.	.	0	0	1	1	5	1	28	.
Conchs	0	0	0	0	0	4	9	19	7	6	4	0	49
Horseshoe Crab	.	.	.	.	.	1	1	2	3	2	0	0	.
Lobster (American)	0	0	0	1	4	6	0	1	1	2	1	1	17
Spider Crab	.	.	.	.	.	15	18	4	4	1	7	2	.
Squid (Longfin)	0	0	0	0	10	1	4	1	4	3	0	0	23
Starfish	.	.	.	.	.	.	18	12	14	16	8	6	.
Additional Organisms	0	0	0	0	3	2	0	2	3	5	0	0	15

Table 11 cont'd. Fox Island, Narragansett Bay. Mean monthly catch in number per 30 min. tow, 1970.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Atlantic Herring	28	3	2	0	0	0	0	0	0	0	0	1	34
Blueback Herring	0	0	0	0	1	0	0	0	0	0	0	0	1
Butterfish	0	0	0	0	0	0	0	2	1	0	0	0	3
Cod (Atlantic)	0	0	0	0	0	0	0	0	0	0	0	0	0
Cunner	0	0	0	1	26	8	2	1	0	4	5	0	47
Fourspot Flounder	0	0	0	0	0	0	0	0	0	0	0	0	0
Goosefish	0	0	0	0	0	0	0	0	0	0	1	0	1
Grubby Sculpin	4	4	0	0	0	0	0	0	0	0	0	0	8
Little Skate	0	0	0	2	4	1	0	0	0	1	2	0	10
Longhorn Sculpin	2	0	0	3	1	0	0	0	0	0	9	28	43
Northern Searobin	0	0	0	0	6	77	57	9	7	0	0	0	156
Ocean Pout	0	0	1	4	1	0	0	0	0	0	0	0	6
Sand Fl. (Windowpane)	25	70	38	38	39	20	12	2	4	10	28	30	316
Scup	0	0	0	0	5	12	110	13	18	50	0	0	208
Silver Hake	0	0	0	0	0	0	0	0	0	0	21	1	22
Smooth Dogfish	0	0	0	0	0	2	3	5	1	0	0	0	11
Spiny Dogfish	0	0	0	0	0	0	0	0	0	0	0	0	0
Squirrel Hake	0	0	0	0	0	0	0	0	0	0	0	0	0
Striped Searobin	0	0	0	0	0	2	3	3	10	10	0	0	28
Summer Flounder	0	0	0	0	0	0	1	2	0	0	0	0	3
Tautog	0	0	0	1	14	15	11	3	6	7	3	0	60
Toadfish (Oyster)	0	0	0	0	1	1	1	1	2	1	0	0	7
Winter Flounder	158	88	121	300	575	188	50	12	20	95	338	194	2139
Cancer Crabs	18	20	29	24	4	0	0	0	0	0	2	8	105
Conchs	0	0	0	2	7	6	5	11	4	3	1	0	39
Horseshoe Crab	0	0	0	1	1	1	2	4	6	1	1	0	17
Lobster (American)	0	0	1	1	2	1	1	0	1	2	3	1	13
Spider Crab	0	1	1	10	90	3	14	6	2	2	10	2	141
Squid (Longfin)	0	0	0	0	6	3	3	4	11	7	0	0	34
Starfish	8	11	11	16	18	13	10	11	11	10	14	14	147
Additional Organisms	0	0	0	0	0	2	0	0	4	7	18	8	39

Table 11 cont'd. Fox Island, Narragansett Bay. Mean monthly catch in number per 30 min. tow, 1971.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Atlantic Herring	4	1	1	4	0	0	0	0	0	0	1	2	13
Blueback Herring	0	0	0	0	1	0	0	0	0	0	0	2	3
Butterfish	0	0	0	0	2	42	31	1	3	0	2	0	81
Cod (Atlantic)	0	0	0	0	0	0	0	0	0	0	0	0	0
Cunner	0	0	0	0	12	14	2	1	1	0	2	1	33
Fourspot Flounder	0	0	0	0	0	0	0	0	0	0	0	0	0
Goosefish	0	0	0	0	0	0	0	0	0	0	0	0	0
Grubby Sculpin	2	4	1	0	0	0	0	0	0	0	0	1	8
Little Skate	0	0	1	2	8	4	0	0	0	0	0	0	15
Longhorn Sculpin	1	0	0	3	2	0	0	0	0	0	1	4	11
Northern Searobin	0	0	0	0	6	70	79	10	0	2	0	0	167
Ocean Pout	0	0	1	2	1	0	0	0	0	0	0	0	4
Sand Fl. (Windowpane)	28	34	45	48	46	22	18	6	8	2	12	14	283
Scup	0	0	0	0	7	466	325	10	46	45	15	0	914
Silver Hake	0	0	0	0	1	0	0	0	0	0	0	1	2
Smooth Dogfish	0	0	0	0	0	4	10	3	8	0	0	0	25
Spiny Dogfish	0	0	0	0	0	0	0	0	0	0	0	0	0
Squirrel Hake	0	0	0	0	0	0	0	0	0	0	0	0	0
Striped Searobin	0	0	0	0	0	2	0	11	19	12	1	0	45
Summer Flounder	0	0	0	0	0	1	1	2	1	1	0	0	6
Tautog	0	0	0	0	13	11	6	1	3	1	2	0	37
Toadfish (Oyster)	0	0	0	0	0	2	1	1	2	0	0	0	6
Winter Flounder	56	29	92	256	500	178	34	66	29	18	136	101	1495
Cancer Crabs	4	10	18	14	3	2	0	0	0	1	0	2	54
Conchs	0	1	1	3	2	7	10	21	11	7	4	0	67
Horseshoe Crab	0	0	0	1	1	1	2	3	5	3	2	0	18
Lobster (American)	0	0	1	0	1	2	1	1	0	1	2	1	10
Spider Crab	1	2	2	26	68	6	14	6	2	1	6	6	140
Squid (Longfin)	0	0	0	0	15	15	4	4	7	1	2	0	48
Starfish	16	19	12	19	14	17	19	10	10	10	17	16	179
Additional Organisms	10	16	19	21	23	45	46	49	45	32	41	30	377

Table 11 cont'd. Fox Island, Narragansett Bay. Mean monthly catch in number per 30 min. tow, 1972.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Atlantic Herring	13	2	9	1	0	0	0	0	0	0	4	6	35
Blueback Herring	0	0	0	1	0	0	0	0	0	1	0	0	2
Butterfish	0	0	0	0	2	58	3	0	0	0	0	0	63
Cod (Atlantic)	0	0	0	0	0	0	0	0	0	0	0	0	0
Cunner	0	0	0	1	7	6	5	0	0	0	4	0	23
Fourspot Flounder	0	0	0	0	0	0	0	0	0	0	0	0	0
Goosefish	0	0	0	0	0	0	0	0	0	0	0	0	0
Grubby Sculpin	2	2	1	0	0	0	0	0	0	0	0	1	6
Little Skate	0	0	0	7	8	1	0	0	0	4	5	1	26
Longhorn Sculpin	2	0	0	1	0	0	0	0	0	0	2	7	12
Northern Searobin	0	0	0	0	9	60	42	18	0	1	0	0	130
Ocean Pout	0	0	1	0	1	0	0	0	0	0	0	0	2
Sand Fl. (Windowpane)	15	34	33	38	36	12	14	8	2	8	26	18	244
Scup	0	0	0	0	4	333	42	6	25	42	0	0	452
Silver Hake	0	0	0	0	1	0	0	0	0	0	3	12	16
Smooth Dogfish	0	0	0	0	0	2	6	0	0	0	0	0	8
Spiny Dogfish	0	0	0	0	0	0	0	0	0	0	0	0	0
Squirrel Hake	0	0	0	0	1	0	0	1	1	1	1	1	6
Striped Searobin	0	0	0	0	0	0	3	5	2	0	0	0	10
Summer Flounder	0	0	0	0	0	1	0	2	0	0	0	0	3
Tautog	0	0	0	0	6	11	6	4	0	1	1	0	29
Toadfish (Oyster)	0	0	0	0	0	1	2	0	0	0	0	0	3
Winter Flounder	33	36	92	162	181	53	42	63	38	108	269	192	1269
Cancer Crabs	26	15	6	7	2	0	0	0	0	3	1	47	107
Conchs	0	0	0	1	6	5	12	40	16	6	5	0	91
Horseshoe Crab	0	0	0	3	1	0	1	2	6	5	2	0	20
Lobster (American)	0	0	0	0	0	1	2	1	0	1	2	0	7
Spider Crab	1	0	0	9	105	1	4	2	2	10	19	5	158
Squid (Longfin)	0	0	0	0	4	6	1	2	1	2	0	0	16
Starfish	19	14	18	21	21	18	20	15	10	18	18	15	207
Additional Organisms	31	24	17	15	12	7	2	1	1	1	0	0	111

Table 11 cont'd. Fox Island, Narragansett Bay. Mean monthly catch in number per 30 min. tow, 1973.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Atlantic Herring	3	1	4	2	0	0	0	0	0	0	0	1	11
Blueback Herring	0	0	1	2	2	1	0	0	0	0	1	0	7
Butterfish	0	0	0	0	0	9	1	2	2	2	0	0	16
Cod (Atlantic)	0	0	0	0	0	0	0	0	0	0	0	0	0
Cunner	0	0	0	0	12	10	3	8	1	4	2	0	40
Fourspot Flounder	0	0	0	0	1	0	0	0	0	1	0	0	2
Goosefish	0	0	0	0	0	0	0	0	0	0	0	0	0
Grubby Sculpin	4	2	2	0	0	0	0	0	0	0	0	0	8
Little Skate	0	0	4	10	18	2	0	0	0	1	1	3	39
Longhorn Sculpin	0	0	0	0	0	0	0	0	0	0	2	23	25
Northern Searobin	0	0	0	1	14	141	59	2	0	0	0	0	217
Ocean Pout	0	0	2	2	0	0	0	0	0	0	0	0	4
Sand Fl. (Windowpane)	30	21	26	39	39	12	12	8	4	11	19	28	249
Scup	0	0	0	0	32	550	173	100	158	300	0	0	1313
Silver Hake	0	0	2	1	4	1	0	0	0	1	11	52	72
Smooth Dogfish	0	0	0	0	1	1	3	4	3	0	0	0	12
Spiny Dogfish	0	0	0	0	0	0	0	0	0	0	0	0	0
Squirrel Hake	0	0	0	0	0	0	0	1	0	0	1	0	2
Striped Searobin	0	0	0	0	1	4	6	0	22	8	0	0	41
Summer Flounder	0	0	0	0	1	2	3	1	2	4	0	0	13
Tautog	0	0	0	3	14	19	3	2	1	2	1	0	45
Toadfish (Oyster)	0	0	0	0	0	1	1	1	2	1	0	0	6
Winter Flounder	55	36	150	290	212	66	60	45	58	72	138	65	1247
Cancer Crabs	10	28	78	18	5	1	0	0	0	0	2	15	157
Conchs	0	0	0	1	8	18	12	18	7	11	1	0	76
Horseshoe Crab	0	0	1	2	1	1	1	11	25	8	2	1	53
Lobster (American)	1	0	0	1	6	4	2	0	0	1	2	0	17
Spider Crab	0	0	5	99	65	0	8	5	1	5	2	0	190
Squid (Longfin)	0	0	0	0	19	2	5	0	5	1	0	0	32
Starfish	18	16	19	19	16	16	19	20	18	18	19	15	213
Additional Organisms	1	0	0	0	0	0	0	39	56	2	0	0	98

Table 11 cont'd. Fox Island, Narragansett Bay. Mean monthly catch in number per 30 min. tow, 1974.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Atlantic Herring	2	2	0	1	0	0	0	0	0	0	0	8	13
Blueback Herring	0	0	0	1	0	1	0	0	0	0	0	0	2
Butterfish	0	0	0	0	0	4	0	0	0	8	0	0	12
Cod (Atlantic)	0	0	0	0	0	0	0	0	0	0	0	0	0
Cunner	0	0	0	0	4	9	0	0	1	2	0	0	16
Fourspot Flounder	0	0	0	0	2	0	0	0	0	0	0	0	2
Goosefish	0	0	0	0	0	0	0	5	0	0	0	0	5
Grubby Sculpin	1	3	1	0	0	0	0	0	0	0	0	0	5
Little Skate	1	0	5	8	20	3	0	0	0	1	3	0	41
Longhorn Sculpin	5	0	0	1	0	0	0	0	0	0	0	2	8
Northern Searobin	0	0	0	0	55	63	27	18	8	17	0	0	188
Ocean Pout	0	2	2	2	1	0	0	0	0	0	0	0	7
Sand Fl. (Windowpane)	23	25	23	22	37	16	6	2	4	9	17	22	206
Scup	0	0	0	0	303	194	47	3	48	71	0	0	666
Silver Hake	2	0	0	9	17	1	0	0	0	1	2	1	33
Smooth Dogfish	0	0	0	0	0	2	1	6	0	0	0	0	9
Spiny Dogfish	0	0	0	0	0	0	0	0	0	0	0	0	0
Squirrel Hake	0	0	0	0	0	0	0	0	0	1	0	0	1
Striped Searobin	0	0	0	0	0	0	0	0	0	0	0	0	0
Summer Flounder	0	0	0	0	3	4	6	12	16	1	0	0	42
Tautog	0	0	0	3	10	10	2	1	2	3	0	0	31
Toadfish (Oyster)	0	0	0	0	1	1	0	0	0	0	0	0	2
Winter Flounder	46	45	73	125	300	124	36	15	25	62	183	98	1132
Cancer Crabs	38	18	34	16	7	1	0	0	0	0	3	19	136
Conchs	0	0	0	0	5	9	12	10	10	4	1	0	51
Horseshoe Crab	0	0	1	2	1	0	13	18	25	18	3	0	81
Lobster (American)	0	1	0	0	2	2	2	1	3	3	1	1	16
Spider Crab	0	0	1	49	23	2	28	9	2	3	4	4	125
Squid (Longfin)	0	0	0	0	13	8	3	3	2	0	0	0	29
Starfish	13	10	13	11	12	19	18	15	28	31	28	30	228
Additional Organisms	1	0	0	0	0	0	0	1	2	11	0	0	15

Table 11 cont'd. Fox Island, Narragansett Bay. Mean monthly catch in number per 30 min. tow, 1975.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Atlantic Herring	1	0	7	1	0	0	0	0	0	0	1	3	13
Blueback Herring	0	0	0	1	1	0	0	0	0	0	0	1	3
Butterfish	0	0	0	1	0	3	2	14	38	80	7	0	145
Cod (Atlantic)	0	0	0	0	0	0	0	0	0	0	0	0	0
Cunner	0	0	0	0	7	10	4	5	0	0	1	0	27
Fourspot Flounder	0	0	0	0	0	0	0	0	0	0	0	0	0
Goosefish	0	0	0	0	0	0	0	0	0	0	0	0	0
Grubby Sculpin	0	1	1	0	0	0	0	0	0	0	0	0	2
Little Skate	1	3	3	3	4	3	0	0	0	2	6	2	27
Longhorn Sculpin	0	0	0	0	0	0	0	0	0	0	0	0	0
Northern Searobin	0	0	0	0	7	23	5	5	6	5	0	0	51
Ocean Pout	1	1	2	3	2	0	0	0	0	0	0	0	9
Sand Fl. (Windowpane)	12	9	18	24	25	8	4	2	3	6	6	9	126
Scup	0	0	0	0	1003	350	350	117	95	82	0	0	1997
Silver Hake	0	0	0	1	13	0	0	0	0	0	2	2	18
Smooth Dogfish	0	0	0	0	0	1	3	1	0	0	0	0	5
Spiny Dogfish	0	0	0	0	0	0	0	0	0	0	0	0	0
Squirrel Hake	0	0	0	0	1	0	0	0	0	0	2	1	4
Striped Searobin	0	0	0	0	0	0	0	0	0	0	0	0	0
Summer Flounder	0	0	0	0	1	6	6	6	9	2	0	0	30
Tautog	0	0	0	1	11	18	8	2	0	3	1	0	44
Toadfish (Oyster)	0	0	0	0	0	0	2	1	2	1	0	0	6
Winter Flounder	28	27	81	142	142	37	14	12	36	83	85	70	757
Cancer Crabs	30	20	34	23	4	1	0	1	0	0	1	8	122
Conchs	0	0	0	0	5	8	8	33	27	2	4	0	87
Horseshoe Crab	0	1	4	2	9	1	56	43	30	9	9	0	164
Lobster (American)	1	0	1	1	4	9	4	1	1	3	3	1	29
Spider Crab	1	1	2	25	35	2	19	5	2	1	7	13	113
Squid (Longfin)	0	0	0	0	12	35	6	4	3	5	0	0	65
Starfish	28	26	30	27	28	32	29	30	26	25	33	30	344
Additional Organisms	0	0	5	1	0	1	0	11	6	1	0	0	25

Table 11 cont'd. Fox Island, Narragansett Bay. Mean monthly catch in number per 30 min. tow, 1976.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Atlantic Herring	3	16	3	0	0	0	0	0	0	0	0	0	22
Blueback Herring	0	0	0	1	0	0	0	0	0	0	1	1	3
Butterfish	0	0	0	0	4	7	2	18	19	21	0	0	71
Cod (Atlantic)	0	0	0	0	0	0	0	0	0	0	0	0	0
Cunner	0	0	0	1	9	4	5	2	0	1	0	0	22
Fourspot Flounder	0	0	0	0	0	0	0	0	0	0	0	0	0
Goosefish	0	0	0	0	0	0	0	0	0	0	0	0	0
Grubby Sculpin	1	1	1	0	0	0	0	0	0	0	0	1	4
Little Skate	1	1	7	6	9	1	0	0	0	1	1	0	27
Longhorn Sculpin	1	0	0	0	0	0	0	0	0	0	1	1	3
Northern Searobin	0	0	0	3	8	7	9	19	11	2	0	0	59
Ocean Pout	1	0	1	0	0	0	0	0	0	0	0	0	2
Sand Fl. (Windowpane)	5	8	14	16	18	9	3	5	5	4	6	6	99
Scup	0	0	0	4	1550	1150	425	1283	375	109	0	0	4896
Silver Hake	0	0	1	2	10	0	0	0	0	7	25	2	47
Smooth Dogfish	0	0	0	0	0	2	0	1	1	0	0	0	4
Spiny Dogfish	0	0	0	0	0	0	0	0	0	0	0	0	0
Squirrel Hake	0	0	0	1	1	0	0	0	0	2	1	0	5
Striped Searobin	0	0	0	0	0	0	0	0	0	0	0	0	0
Summer Flounder	0	0	0	0	1	22	36	27	17	3	0	0	106
Tautog	0	0	0	4	13	13	7	5	5	4	1	0	52
Toadfish (Oyster)	0	0	0	0	2	1	1	3	4	1	0	0	12
Winter Flounder	21	29	57	95	138	29	25	17	19	65	86	32	613
Cancer Crabs	9	21	54	7	0	0	0	0	0	0	1	0	92
Conchs	0	0	0	2	3	11	21	12	9	7	1	0	66
Horseshoe Crab	0	1	3	5	0	5	19	22	20	10	0	0	85
Lobster (American)	0	1	1	2	1	4	2	1	2	2	2	1	19
Spider Crab	1	3	11	63	17	34	11	2	3	7	7	1	160
Squid (Longfin)	0	0	0	3	22	17	4	2	3	3	0	0	54
Starfish	21	35	34	31	17	34	36	37	37	23	34	25	364
Additional Organisms	0	0	0	0	0	0	0	0	10	7	0	0	17

Table 11 cont'd. Fox Island, Narragansett Bay. Mean monthly catch in number per 30 min, tow, 1977.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Atlantic Herring	2	1	10	2	0	0	0	0	0	0	0	0	15
Blueback Herring	0	0	0	0	0	0	0	0	0	0	3	0	3
Butterfish	0	0	0	0	2	2	1	2	2	6	4	0	19
Cod (Atlantic)	0	0	0	0	0	0	0	0	0	0	0	0	0
Cunner	0	0	0	0	3	0	1	0	0	0	0	0	4
Fourspot Flounder	0	0	0	0	1	0	1	0	0	0	1	0	3
Goosefish	0	0	0	0	0	0	0	0	0	0	0	0	0
Grubby Sculpin	2	1	1	0	0	0	0	0	0	0	0	3	7
Little Skate	0	0	3	4	4	1	0	0	0	0	0	0	12
Longhorn Sculpin	0	0	0	0	0	0	0	0	0	0	2	0	2
Northern Searobin	0	0	0	0	96	60	3	10	7	0	0	0	176
Ocean Pout	0	0	1	0	0	0	0	0	0	0	0	0	1
Sand Fl. (Windowpane)	1	2	10	11	29	15	4	14	8	19	33	25	171
Scup	0	0	0	0	863	2100	67	83	163	173	0	0	3449
Silver Hake	0	0	0	0	2	0	0	0	0	0	9	23	34
Smooth Dogfish	0	0	0	0	0	1	4	0	0	0	0	0	5
Spiny Dogfish	0	0	0	0	0	0	0	0	0	0	0	0	0
Squirrel Hake	0	0	0	0	1	0	3	1	1	4	19	1	30
Striped Searobin	0	0	0	0	0	0	4	3	1	2	0	0	10
Summer Flounder	0	0	0	0	5	6	8	6	4	1	0	0	30
Tautog	0	0	0	0	10	6	2	2	0	1	1	0	22
Toadfish (Oyster)	0	0	0	0	0	0	0	0	1	0	0	0	1
Winter Flounder	1	14	72	95	94	18	41	50	45	90	178	76	774
Cancer Crabs	2	0	7	5	0	0	0	3	4	2	2	37	62
Conchs	0	1	3	5	6	14	18	22	6	4	1	0	80
Horseshoe Crab	0	0	1	5	3	3	13	56	36	28	3	0	148
Lobster (American)	0	0	1	1	2	6	4	3	1	4	10	2	34
Spider Crab	0	4	2	8	59	0	45	5	10	7	5	2	147
Squid (Longfin)	0	0	0	0	14	1	5	13	1	2	0	0	36
Starfish	30	28	26	23	22	20	2	0	0	0	0	0	151
Additional Organisms	0	0	0	0	0	0	4	17	12	13	1	0	47

Table 11 cont'd. Fox Island, Narragansett Bay. Mean monthly catch in number per 30 min. tow, 1978.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Atlantic Herring	0	0	0	0	0	0	0	0	0	0	0	0	0
Blueback Herring	7	0	0	0	0	0	0	0	0	0	0	0	7
Butterfish	0	0	0	0	0	3	7	2	4	5	0	0	21
Cod (Atlantic)	0	0	0	0	0	0	0	0	0	0	0	0	0
Cunner	0	0	0	0	0	0	1	0	0	0	0	0	1
Fourspot Flounder	0	0	0	0	1	1	0	0	0	20	23	0	45
Goosefish	0	0	0	0	0	0	0	0	0	0	0	0	0
Grubby Sculpin	4	1	1	2	0	0	0	0	0	0	0	2	10
Little Skate	0	0	0	0	2	2	0	0	0	2	3	2	11
Longhorn Sculpin	0	0	0	0	0	0	0	0	0	0	1	4	5
Northern Searobin	0	0	0	0	7	17	20	13	14	1	0	0	72
Ocean Pout	0	0	0	0	0	0	0	0	0	0	0	0	0
Sand Fl. (Windowpane)	25	15	17	30	56	38	30	13	12	45	29	27	337
Scup	0	0	0	0	2	1139	608	70	49	95	0	0	1963
Silver Hake	9	0	0	0	0	0	0	0	0	0	8	4	21
Smooth Dogfish	0	0	0	0	0	1	0	0	0	0	0	0	1
Spiny Dogfish	0	0	0	0	0	0	0	0	0	0	0	0	0
Squirrel Hake	0	0	0	0	1	3	2	0	0	5	9	0	20
Striped Searobin	0	0	0	0	1	3	0	1	2	5	1	0	13
Summer Flounder	0	0	0	0	0	3	7	4	4	1	0	0	19
Tautog	0	0	0	0	1	2	2	0	5	2	2	0	14
Toadfish (Oyster)	0	0	0	0	1	0	1	1	2	0	0	0	5
Winter Flounder	57	23	74	186	220	194	98	93	178	247	406	316	2092
Cancer Crabs	13	44	381	353	4	1	1	11	0	1	11	28	848
Conchs	0	0	0	0	4	15	15	11	8	4	1	0	58
Horseshoe Crab	0	0	3	9	3	1	2	19	32	10	0	0	79
Lobster (American)	0	0	1	2	2	10	12	6	8	12	11	0	64
Spider Crab	1	1	0	1	24	0	27	9	0	3	8	0	74
Squid (Longfin)	0	0	0	0	7	8	7	7	2	3	0	0	34
Starfish	0	0	0	0	0	0	0	0	0	0	0	0	0
Additional Organisms	0	0	0	0	7	13	2	12	7	17	7	0	65

Table 11 cont'd. Fox Island, Narragansett Bay. Mean monthly catch in number per 30 min. tow, 1979.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Atlantic Herring	0	.	0	0	0	0	0	0	0	0	0	0	0
Blueback Herring	1	.	0	0	0	0	0	0	0	0	0	0	1
Butterfish	0	.	0	0	0	10	0	24	111	4	1	0	150
Cod (Atlantic)	0	.	0	0	0	0	0	0	0	0	0	0	0
Cunner	0	.	0	0	0	0	0	0	0	0	0	0	0
Fourspot Flounder	0	.	0	0	1	1	1	0	4	17	12	0	36
Goosefish	0	.	0	0	0	0	0	0	0	0	0	0	0
Grubby Sculpin	2	.	3	1	0	0	0	0	0	0	0	2	8
Little Skate	0	.	0	4	6	0	0	0	0	2	2	3	17
Longhorn Sculpin	0	.	0	0	0	0	0	0	0	0	0	1	1
Northern Searobin	0	.	0	0	13	14	10	7	5	1	0	0	50
Ocean Pout	0	.	0	0	0	0	0	0	0	0	0	0	0
Sand Fl. (Windowpane)	17	.	20	31	40	44	27	23	21	34	13	31	301
Scup	0	.	0	0	47	725	566	212	113	54	0	0	1717
Silver Hake	1	.	0	0	1	1	2	0	3	0	11	2	21
Smooth Dogfish	0	.	0	0	0	0	0	0	0	0	0	0	0
Spiny Dogfish	0	.	0	0	0	0	0	0	0	0	0	0	0
Squirrel Hake	1	.	0	0	5	4	0	0	0	0	0	1	11
Striped Searobin	0	.	0	0	4	1	1	1	2	0	0	0	9
Summer Flounder	0	.	0	0	0	7	4	2	2	0	0	0	15
Tautog	0	.	0	0	2	1	1	3	1	0	1	0	9
Toadfish (Oyster)	0	.	0	0	0	0	1	1	2	0	0	0	4
Winter Flounder	93	.	192	305	311	592	591	285	205	546	680	238	4038
Cancer Crabs	8	.	747	236	11	1	0	0	3	5	6	10	1027
Conchs	0	.	0	0	5	9	17	17	11	3	0	0	62
Horseshoe Crab	0	.	1	8	2	2	9	29	18	6	2	0	77
Lobster (American)	1	.	0	2	1	7	6	5	6	9	3	2	42
Spider Crab	0	.	0	2	15	0	2	42	2	4	10	3	80
Squid (Longfin)	0	.	0	0	23	10	9	5	11	3	0	0	61
Starfish	0	.	0	0	0	1	0	0	1	0	1	0	3
Additional Organisms	0	.	0	0	3	2	3	7	2	11	6	0	34

Table 11 cont'd. Fox Island, Narragansett Bay. Mean monthly catch in number per 30 min. tow, 1980.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Atlantic Herring	0	0	0	0	0	0	0	0	0	0	0	0	0
Blueback Herring	0	0	0	0	0	0	0	0	0	0	0	0	0
Butterfish	0	0	0	0	0	3	1	1	1	1	0	0	7
Cod (Atlantic)	0	0	0	0	0	0	0	0	0	0	0	0	0
Cunner	0	0	0	0	1	0	0	0	0	0	0	0	1
Fourspot Flounder	0	0	0	0	2	2	0	0	4	4	0	0	12
Goosefish	0	0	0	0	0	0	0	0	0	0	0	0	0
Grubby Sculpin	3	4	5	1	0	0	0	0	0	0	0	1	14
Little Skate	1	0	0	5	10	5	4	0	0	4	5	1	35
Longhorn Sculpin	0	0	0	0	0	0	0	0	0	0	2	4	6
Northern Searobin	0	0	0	0	3	7	5	6	2	1	0	0	24
Ocean Pout	0	0	0	0	0	0	0	0	0	0	0	1	1
Sand Fl. (Windowpane)	36	20	18	32	26	21	22	8	8	14	15	18	238
Scup	0	0	0	0	23	312	445	64	53	70	0	0	967
Silver Hake	1	0	0	0	0	0	0	0	0	0	3	0	4
Smooth Dogfish	0	0	0	0	0	0	0	0	0	0	0	0	0
Spiny Dogfish	0	0	0	0	0	0	0	0	0	0	0	0	0
Squirrel Hake	0	0	0	1	3	4	2	0	1	1	0	0	12
Striped Searobin	0	0	0	0	0	0	1	0	0	1	0	0	2
Summer Flounder	0	0	0	0	0	1	3	3	3	2	0	0	12
Tautog	0	0	0	0	2	1	1	0	0	0	0	0	4
Toadfish (Oyster)	0	0	0	0	0	1	2	2	1	0	0	0	6
Winter Flounder	106	24	195	914	621	256	196	141	193	296	156	71	3169
Cancer Crabs	19	9	61	218	3	4	1	0	1	2	20	8	346
Conchs	0	0	1	0	5	9	15	27	11	2	0	0	70
Horseshoe Crab	0	0	1	4	2	3	9	13	7	4	0	0	43
Lobster (American)	0	0	0	1	1	4	4	3	5	1	1	1	21
Spider Crab	1	0	0	12	39	1	7	2	3	8	18	0	91
Squid (Longfin)	0	0	0	0	6	3	7	3	2	9	0	0	30
Starfish	0	0	0	0	0	1	0	0	1	0	2	1	5
Additional Organisms	0	0	1	1	0	2	2	6	7	4	0	0	23

Table 11 cont'd. Fox Island, Narragansett Bay. Mean monthly catch in number per 30 min. tow, 1981.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Atlantic Herring	0	0	0	0	0	0	0	0	0	0	12	3	15
Blueback Herring	0	0	1	0	0	0	0	0	0	0	1	0	2
Butterfish	0	0	0	0	0	6	4	8	6	0	0	0	24
Cod (Atlantic)	0	0	0	0	0	0	0	0	0	0	0	0	0
Cunner	0	0	0	2	1	1	0	0	0	0	0	0	4
Fourspot Flounder	0	0	0	0	2	1	0	0	4	10	1	0	18
Goosefish	0	0	0	0	0	0	0	0	0	0	0	0	0
Grubby Sculpin	2	2	1	0	0	0	0	0	0	0	0	2	7
Little Skate	1	1	1	4	11	4	0	0	1	2	1	1	27
Longhorn Sculpin	0	0	0	0	0	0	0	0	1	0	2	3	6
Northern Searobin	0	0	0	1	9	14	10	12	5	0	0	0	51
Ocean Pout	0	0	0	0	0	0	0	0	0	0	0	0	0
Sand Fl. (Windowpane)	1	2	9	24	24	10	24	21	29	3	6	11	164
Scup	0	0	0	0	317	531	413	36	96	43	0	0	1436
Silver Hake	0	0	0	0	0	0	0	0	0	0	2	1	3
Smooth Dogfish	0	0	0	0	0	0	1	0	0	0	0	0	1
Spiny Dogfish	0	0	0	0	0	0	0	0	0	0	0	0	0
Squirrel Hake	1	0	0	0	1	0	0	0	2	0	0	0	4
Striped Searobin	0	0	0	0	1	0	0	0	4	0	0	0	5
Summer Flounder	0	0	0	0	1	11	20	18	8	4	0	0	62
Tautog	0	0	0	1	5	2	0	0	0	1	0	0	9
Toadfish (Oyster)	0	0	0	0	0	0	1	1	2	0	4	0	8
Winter Flounder	10	42	125	407	296	198	252	187	219	422	68	45	2271
Cancer Crabs	1	33	323	125	2	1	1	0	6	0	27	25	544
Conchs	0	1	3	4	2	7	28	30	9	9	0	0	93
Horseshoe Crab	0	0	1	1	1	6	16	32	9	2	0	0	68
Lobster (American)	0	1	1	13	2	5	8	3	5	8	3	1	50
Spider Crab	1	0	2	10	11	8	24	3	1	2	1	1	64
Squid (Longfin)	0	0	0	0	16	37	10	7	8	3	0	0	81
Starfish	1	0	3	1	0	0	0	0	0	0	0	0	5
Additional Organisms	0	1	1	8	3	2	9	7	3	12	0	3	49

Table 11 cont'd. Fox Island, Narragansett Bay. Mean monthly catch in number per 30 min. tow, 1982.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Atlantic Herring	16	0	0	5	0	0	0	0	0	1	1	1	24
Blueback Herring	0	0	0	0	0	0	0	0	0	0	0	3	3
Butterfish	0	0	0	0	7	18	0	13	59	34	1	0	132
Cod (Atlantic)	0	0	0	0	0	0	0	0	0	0	0	0	0
Cunner	0	0	0	0	1	0	0	1	0	1	0	0	3
Fourspot Flounder	0	0	0	0	1	1	0	0	1	1	1	0	5
Goosefish	0	0	0	0	0	0	0	0	0	0	0	0	0
Grubby Sculpin	2	5	1	1	0	0	0	0	0	0	0	0	9
Little Skate	1	0	3	2	13	4	0	0	2	7	7	2	41
Longhorn Sculpin	0	0	0	1	0	0	0	0	0	0	3	3	7
Northern Searobin	0	0	0	1	40	5	4	25	1	0	0	0	76
Ocean Pout	0	0	0	1	1	0	0	0	0	0	0	0	2
Sand Fl. (Windowpane)	5	3	7	7	13	7	5	6	6	6	7	16	88
Scup	0	0	0	1	74	181	199	150	79	16	0	0	700
Silver Hake	0	0	0	0	0	0	0	0	4	15	39	15	73
Smooth Dogfish	0	0	0	0	1	0	0	1	1	1	0	0	4
Spiny Dogfish	0	0	0	0	0	0	0	0	0	0	0	0	0
Squirrel Hake	0	0	0	1	0	2	0	1	3	3	0	1	11
Striped Searobin	0	0	0	0	3	0	1	3	0	1	0	0	8
Summer Flounder	0	0	0	0	9	3	9	2	4	1	0	2	30
Tautog	0	0	0	1	2	3	0	6	1	0	0	0	13
Toadfish (Oyster)	0	0	0	0	0	0	1	0	0	0	0	0	1
Winter Flounder	22	36	106	269	289	174	54	162	177	189	74	155	1707
Cancer Crabs	70	88	376	73	23	4	0	1	3	6	16	29	689
Conchs	0	0	0	1	3	11	11	28	23	8	0	0	85
Horseshoe Crab	1	0	0	0	5	3	2	15	18	8	3	0	55
Lobster (American)	1	0	2	14	5	12	12	4	14	12	5	2	83
Spider Crab	0	0	1	51	90	3	19	11	11	16	9	33	244
Squid (Longfin)	0	0	0	0	145	37	4	4	5	26	0	0	221
Starfish	1	2	1	3	1	1	0	0	0	0	0	0	9
Additional Organisms	2	1	2	10	6	2	0	1	9	6	6	2	47

Table 11 cont'd. Fox Island, Narragansett Bay. Mean monthly catch in number per 30 min. tow, 1983.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Atlantic Herring	12	1	0	11	1	0	0	0	0	0	0	15	40
Blueback Herring	0	0	0	4	1	1	0	0	0	0	0	3	9
Butterfish	0	0	0	0	5	422	11	2	3	62	1	2	508
Cod (Atlantic)	0	0	0	0	0	0	0	0	0	0	0	0	0
Cunner	0	0	0	0	1	1	0	0	1	0	0	0	3
Fourspot Flounder	0	0	0	0	2	2	0	0	0	1	0	0	5
Goosefish	0	0	0	0	0	0	0	0	0	0	0	0	0
Grubby Sculpin	1	2	1	0	0	0	0	0	0	0	0	1	5
Little Skate	1	1	1	13	28	3	1	0	1	2	6	4	61
Longhorn Sculpin	1	0	0	0	0	0	0	2	0	0	0	0	3
Northern Searobin	0	0	0	0	17	5	3	0	1	1	0	0	27
Ocean Pout	0	0	0	0	0	0	0	0	0	0	0	0	0
Sand Fl. (Windowpane)	11	8	5	15	31	12	7	5	4	6	12	12	128
Scup	0	0	0	0	3	320	521	785	442	200	0	0	2271
Silver Hake	3	0	0	2	38	12	0	1	0	0	1	3	60
Smooth Dogfish	0	0	0	0	0	0	0	1	0	0	0	0	1
Spiny Dogfish	0	0	0	0	0	0	0	0	0	0	0	0	0
Squirrel Hake	0	0	0	0	1	9	0	0	0	0	0	0	10
Striped Searobin	0	0	0	0	2	2	3	2	1	1	0	0	11
Summer Flounder	0	0	0	2	0	6	11	5	5	1	0	0	30
Tautog	0	0	0	0	4	3	1	0	3	2	1	0	14
Toadfish (Oyster)	0	0	0	0	0	0	3	3	1	0	0	0	7
Winter Flounder	40	18	68	358	675	469	712	363	266	441	214	183	3807
Cancer Crabs	36	147	167	81	23	5	8	0	2	0	3	7	479
Conchs	0	0	0	0	9	36	45	48	26	13	4	2	183
Horseshoe Crab	0	0	1	2	0	1	0	0	1	1	1	0	7
Lobster (American)	0	0	0	1	2	4	2	1	2	2	4	1	19
Spider Crab	1	0	2	16	20	0	5	10	11	2	6	1	74
Squid (Longfin)	0	0	0	0	27	115	53	5	33	33	4	0	270
Starfish	0	0	0	0	0	0	0	0	0	0	0	0	0
Additional Organisms	1	0	0	1	0	1	0	1	5	10	1	2	22

Table 11 cont'd. Fox Island, Narragansett Bay. Mean monthly catch in number per 30 min. tow, 1984.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Atlantic Herring	2	0	1	54	0	0	0	0	0	0	0	2	59
Blueback Herring	0	0	0	1	0	0	0	0	0	0	0	0	1
Butterfish	0	0	0	0	58	1	51	34	80	30	4	0	258
Cod (Atlantic)	0	0	0	0	0	0	0	0	0	0	0	0	0
Cunner	0	0	0	0	0	0	0	1	0	0	0	0	1
Fourspot Flounder	0	0	0	0	1	0	0	0	0	2	0	0	3
Goosefish	0	0	0	0	0	0	1	0	0	0	0	1	2
Grubby Sculpin	2	0	1	1	0	0	0	1	0	0	0	2	7
Little Skate	1	2	4	4	9	3	0	1	1	2	4	4	35
Longhorn Sculpin	0	0	0	0	0	2	0	0	0	0	0	1	3
Northern Searobin	0	0	0	0	5	2	0	0	0	0	0	0	7
Ocean Pout	0	0	1	0	0	0	0	0	0	0	0	0	1
Sand Fl. (Windowpane)	2	3	9	8	9	3	0	0	3	6	4	3	50
Scup	0	0	0	0	12	785	700	150	387	16	0	0	2050
Silver Hake	0	0	0	1	4	1	0	0	1	9	16	5	37
Smooth Dogfish	0	0	0	0	0	0	6	0	0	3	0	0	9
Spiny Dogfish	0	0	0	0	0	1	0	0	0	0	0	0	1
Squirrel Hake	0	0	0	0	0	0	0	0	0	3	4	1	8
Striped Searobin	0	0	0	0	1	2	0	0	0	0	0	0	3
Summer Flounder	0	0	0	0	0	4	2	3	1	0	0	0	10
Tautog	0	0	0	0	5	1	1	0	18	5	1	0	31
Toadfish (Oyster)	0	0	0	0	1	1	0	1	1	0	0	0	4
Winter Flounder	23	18	89	174	195	105	131	110	213	162	73	27	1320
Cancer Crabs	9	4	39	35	6	3	2	2	13	6	2	13	134
Conchs	0	0	0	2	5	50	66	51	9	17	2	0	202
Horseshoe Crab	0	0	0	2	1	0	0	4	3	1	0	0	11
Lobster (American)	0	0	0	3	3	3	1	0	0	2	5	5	22
Spider Crab	0	0	0	4	14	0	9	4	0	1	3	2	37
Squid (Longfin)	0	0	0	0	282	96	86	63	23	12	3	0	565
Starfish	0	0	0	0	0	0	0	0	0	0	0	0	0
Additional Organisms	2	1	2	3	0	1	1	3	2	4	0	0	19

Table 11 cont'd. Fox Island, Narragansett Bay. Mean monthly catch in number per 30 min. tow, 1985.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Atlantic Herring	1	0	0	1	0	0	0	0	0	0	0	2	4
Blueback Herring	1	0	0	0	0	0	0	0	0	0	0	0	1
Butterfish	0	0	0	0	31	32	35	173	2	0	3	0	276
Cod (Atlantic)	0	0	0	0	0	0	0	0	0	0	0	0	0
Cunner	0	0	0	0	0	0	0	0	0	0	0	0	0
Fourspot Flounder	0	0	0	0	1	0	1	0	0	0	0	0	2
Goosefish	0	0	0	0	0	0	0	0	0	0	0	0	0
Grubby Sculpin	1	0	0	0	0	0	0	0	0	0	0	1	2
Little Skate	4	1	3	2	3	1	2	0	0	1	1	2	20
Longhorn Sculpin	3	3	1	0	0	0	0	0	0	0	0	1	8
Northern Searobin	0	0	0	0	5	8	7	1	0	0	0	0	21
Ocean Pout	0	0	0	0	0	0	0	0	0	0	0	0	0
Sand Fl. (Windowpane)	2	3	2	1	4	2	10	3	1	1	1	1	31
Scup	0	0	0	0	967	1031	79	56	27	91	0	0	2251
Silver Hake	1	0	0	0	1	0	0	0	0	1	9	1	13
Smooth Dogfish	0	0	0	0	0	0	0	0	0	0	0	0	0
Spiny Dogfish	0	0	0	0	0	0	0	0	0	0	0	0	0
Squirrel Hake	0	1	0	0	0	1	5	2	5	3	4	2	24
Striped Searobin	0	0	0	0	1	1	0	0	0	0	0	0	2
Summer Flounder	0	0	0	0	0	1	2	2	1	0	0	0	6
Tautog	0	0	0	1	1	1	2	0	0	0	0	0	5
Toadfish (Oyster)	0	0	0	0	0	0	1	1	0	0	0	0	2
Winter Flounder	17	12	30	42	123	68	74	39	25	27	42	14	513
Cancer Crabs	6	11	57	38	1	3	1	3	2	3	2	16	143
Conchs	0	0	0	0	8	25	36	35	11	3	0	0	118
Horseshoe Crab	0	0	0	0	0	1	1	5	1	2	1	0	11
Lobster (American)	0	0	1	4	2	1	20	1	1	6	5	2	43
Spider Crab	1	0	0	28	9	11	33	14	6	52	65	3	222
Squid (Longfin)	0	0	0	0	123	27	10	6	42	21	1	0	230
Starfish	0	0	0	0	0	0	0	0	0	0	0	0	0
Additional Organisms	0	0	0	0	2	4	39	41	2	2	3	3	96

Table 11 cont'd. Fox Island, Narragansett Bay. Mean monthly catch in number per 30 min. tow, 1986.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Atlantic Herring	2	0	0	9	0	0	0	0	0	0	1	10	22
Blueback Herring	0	0	0	0	0	0	0	0	0	1	1	0	2
Butterfish	0	0	0	0	1	19	16	104	72	26	36	0	274
Cod (Atlantic)	0	0	0	0	0	0	0	0	0	0	0	0	0
Cunner	0	0	0	0	0	0	0	0	0	0	0	0	0
Fourspot Flounder	0	0	0	0	0	0	0	0	0	2	1	0	3
Goosefish	0	0	0	0	0	0	0	0	0	0	0	0	0
Grubby Sculpin	1	1	0	0	0	0	0	0	0	0	0	1	3
Little Skate	1	0	0	1	0	1	0	0	0	0	6	8	17
Longhorn Sculpin	0	0	0	0	0	0	0	0	0	0	0	0	0
Northern Searobin	0	0	0	0	0	2	0	0	0	0	0	0	2
Ocean Pout	0	0	0	0	0	0	0	0	0	0	0	0	0
Sand Fl. (Windowpane)	3	2	1	3	3	1	2	1	3	12	4	3	38
Scup	0	0	0	0	7	1001	623	98	145	29	0	0	1903
Silver Hake	0	0	0	0	0	0	0	1	1	16	6	12	36
Smooth Dogfish	0	0	0	0	0	0	0	0	0	0	0	0	0
Spiny Dogfish	0	0	0	0	0	0	0	0	0	0	0	0	0
Squirrel Hake	0	0	0	0	1	0	0	0	1	0	1	3	6
Striped Searobin	0	0	0	0	0	1	0	1	1	2	0	0	5
Summer Flounder	0	0	0	0	1	1	6	4	2	2	0	0	16
Tautog	0	0	0	0	1	2	0	1	0	0	0	0	4
Toadfish (Oyster)	0	0	0	0	0	0	1	0	0	0	0	0	1
Winter Flounder	8	15	14	33	20	101	82	37	40	77	22	45	494
Cancer Crabs	22	7	58	64	5	1	2	5	4	10	46	109	333
Conchs	0	0	0	1	3	5	7	16	5	2	0	0	39
Horseshoe Crab	0	0	0	1	0	1	0	0	3	2	0	0	7
Lobster (American)	1	1	0	2	4	11	25	21	17	25	12	6	125
Spider Crab	0	0	0	28	9	5	23	9	5	60	28	5	172
Squid (Longfin)	0	0	0	0	14	34	20	44	17	8	1	0	138
Starfish	0	0	0	0	0	0	0	0	0	0	0	0	0
Additional Organisms	0	1	0	3	3	6	6	20	8	12	1	3	63

Table 11 cont'd. Fox Island, Narragansett Bay. Mean monthly catch in number per 30 min. tow, 1987.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Atlantic Herring	8	1	4	5	1	0	0	0	0	0	12	3	34
Blueback Herring	0	0	0	1	1	1	1	2	1	2	1	0	10
Butterfish	0	0	0	0	1	23	243	164	63	3	1	0	498
Cod (Atlantic)	0	0	0	0	0	0	0	0	0	0	0	0	0
Cunner	0	0	0	0	0	0	0	0	1	0	0	0	1
Fourspot Flounder	0	0	0	0	2	2	0	0	0	0	0	0	4
Goosefish	0	0	0	0	0	1	0	0	0	0	0	0	1
Grubby Sculpin	1	1	1	0	0	0	0	0	0	0	0	0	3
Little Skate	4	1	5	6	12	6	1	0	2	2	14	18	71
Longhorn Sculpin	0	0	0	0	0	0	0	0	0	0	0	10	10
Northern Searobin	0	0	0	0	4	0	0	0	0	0	0	0	4
Ocean Pout	0	0	0	0	0	0	0	0	0	0	0	0	0
Sand Fl. (Windowpane)	5	3	4	6	9	9	6	7	66	39	37	22	213
Scup	0	0	0	0	2	384	231	267	337	59	0	0	1280
Silver Hake	1	0	0	1	18	8	1	0	0	0	0	0	29
Smooth Dogfish	0	0	0	0	0	0	1	0	0	0	0	0	1
Spiny Dogfish	0	0	0	0	0	0	0	0	0	0	0	0	0
Squirrel Hake	5	0	0	4	5	2	1	2	7	7	5	6	44
Striped Searobin	0	0	0	0	0	0	0	1	0	0	0	0	1
Summer Flounder	0	0	0	0	0	1	2	7	4	4	0	0	18
Tautog	0	0	0	0	1	0	0	0	0	1	0	0	2
Toadfish (Oyster)	0	0	0	0	0	0	1	1	2	0	0	0	4
Winter Flounder	29	14	24	143	218	197	60	72	137	91	76	41	1102
Cancer Crabs	432	29	179	102	76	250	245	83	183	220	243	384	2426
Conchs	0	0	0	0	4	18	14	52	15	9	3	0	115
Horseshoe Crab	0	0	1	1	1	0	0	1	2	1	0	0	7
Lobster (American)	2	0	0	7	15	29	24	20	23	13	8	4	145
Spider Crab	1	0	0	21	48	7	15	10	6	9	28	2	147
Squid (Longfin)	0	0	0	0	30	33	32	43	33	16	1	0	188
Starfish	0	0	0	0	0	0	0	0	0	0	0	0	0
Additional Organisms	7	1	1	13	1	9	19	29	53	20	6	2	161

Table 12. Whale Rock, Rhode Island Sound. Mean monthly catch in number per 30 min. tow, 1959.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Atlantic Herring	8	10	0	20	0	0	0	0	0	0	0	0	38
Blueback Herring	1	0	0	2	0	0	0	0	0	0	1	1	5
Butterfish	0	0	0	0	0	1	1	3	2	18	1	0	26
Cod (Atlantic)	0	0	0	0	0	0	0	0	0	0	1	0	1
Cunner	0	0	0	2	39	34	25	2	2	0	6	12	122
Fourspot Flounder	0	0	0	0	1	15	13	0	0	1	1	0	31
Goosefish	2	0	0	0	2	4	2	2	1	5	2	2	22
Grubby Sculpin	0	0	0	0	0	0	0	0	0	0	0	0	0
Little Skate	6	9	12	6	12	18	31	8	2	5	5	6	120
Longhorn Sculpin	4	2	2	2	0	0	0	0	0	1	51	32	92
Northern Searobin	0	0	0	3	26	22	62	77	14	1	0	0	205
Ocean Pout	7	13	12	10	4	0	0	0	0	0	0	2	48
Sand Fl. (Windowpane)	0	2	2	4	6	35	80	78	28	2	1	0	238
Scup	0	0	0	0	3	80	0	1	23	520	0	0	627
Silver Hake	7	0	0	10	294	.	98	.	.	.	1185	.	.
Smooth Dogfish	0	0	0	0	0	1	2	0	1	0	0	0	4
Spiny Dogfish	0	0	0	0	0	0	0	1	0	3	2	1	7
Squirrel Hake	2	0	2	5	26	16	3	0	0	8	1	19	82
Striped Searobin	0	0	0	0	0	0	0	0	0	0	0	0	0
Summer Flounder	0	0	0	0	1	4	3	10	19	4	0	0	41
Tautog	0	0	0	0	0	0	0	0	0	0	1	0	1
Toadfish (Oyster)	0	0	0	0	0	0	0	0	0	0	0	0	0
Winter Flounder	12	6	14	42	47	94	128	199	20	25	26	8	621
Cancer Crabs	28	5	2	4	35	79	39	30	38	90	56	36	442
Conchs	0	0	0	0	0	0	1	2	0	0	0	0	3
Horseshoe Crab	0	0	0	3	1	0	2	6	2	4	4	1	23
Lobster (American)	1	0	0	0	0	4	1	0	0	0	1	0	7
Spider Crab	0	0	1	1	5	0	1	0	0	0	0	1	9
Squid (Longfin)	0	0	0	0	0	2	0	5	14	4	1	0	26
Starfish	0	0	0	0	0	0	0	0	0	0	0	1	1
Additional Organisms	.	.	.	.	.	.	.	.	.	.	.	.	.

Table 12 cont'd. Whale Rock, Rhode Island Sound. Mean monthly catch in number per 30 min. tow, 1960.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Atlantic Herring	0	4	5	1	0	0	0	0	0	0	0	0	10
Blueback Herring	0	0	2	1	0	0	0	0	1	0	1	1	6
Butterfish	0	0	0	0	0	6	0	2	1	5	5	0	19
Cod (Atlantic)	1	1	0	0	0	0	0	0	0	0	1	0	3
Cunner	1	0	0	0	.	.	45	1	0	5	.	1	.
Fourspot Flounder	0	0	0	0	3	12	6	0	0	0	0	0	21
Goosefish	3	1	0	1	2	2	1	3	5	4	4	6	32
Grubby Sculpin	0	0	0	0	0	0	0	0	0	0	0	0	0
Little Skate	8	9	2	7	13	10	21	5	0	6	4	4	89
Longhorn Sculpin	16	3	1	1	0	0	0	0	0	2	46	42	111
Northern Searobin	0	0	0	0	16	8	45	57	1	1	0	0	128
Ocean Pout	8	5	3	6	1	1	0	0	0	0	0	1	25
Sand Fl. (Windowpane)	0	2	2	7	5	10	81	35	1	2	2	2	149
Scup	0	0	0	0	2	44	1	3	5	18	0	0	73
Silver Hake	280	.	4	6	.	.	82	175	100	290	458	275	.
Smooth Dogfish	0	0	0	0	0	0	0	1	0	1	1	0	3
Spiny Dogfish	0	0	0	0	0	0	0	0	0	2	1	0	3
Squirrel Hake	5	4	7	18	24	11	2	1	4	15	23	43	157
Striped Searobin	0	0	0	0	0	0	0	0	0	0	0	0	0
Summer Flounder	0	0	0	0	1	4	5	4	4	1	0	0	19
Tautog	0	0	0	0	1	0	0	0	0	1	0	0	2
Toadfish (Oyster)	0	0	0	0	0	0	0	0	0	0	0	0	0
Winter Flounder	16	15	21	27	46	56	176	81	10	25	14	8	495
Cancer Crabs	29	7	7	19	38	92	4	80	58	6	3	8	351
Conchs	0	0	0	0	0	0	1	2	0	0	0	0	3
Horseshoe Crab	1	0	0	0	0	0	1	3	2	0	1	0	8
Lobster (American)	1	0	0	0	1	5	2	1	2	1	1	0	14
Spider Crab	0	0	0	0	0	0	0	0	0	1	2	3	6
Squid (Longfin)	0	0	0	0	0	0	4	9	0	0	0	0	13
Starfish	1	1	2	3	1	1	0	0	0	0	2	4	15
Additional Organisms	.	.	.	.	.	.	.	.	.	.	.	.	.

Table 12 cont'd. Whale Rock, Rhode Island Sound. Mean monthly catch in number per 30 min. tow, 1961.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Atlantic Herring	3	2	1	4	0	0	0	0	0	0	0	0	10
Blueback Herring	1	0	0	3	0	0	0	0	0	1	1	1	7
Butterfish	0	0	0	0	0	1	2	1	3	9	1	1	18
Cod (Atlantic)	0	2	0	1	0	0	0	0	0	0	1	2	6
Cunner	1	0	0	0	22	.	22	2	0	0	0	0	.
Fourspot Flounder	0	0	0	0	2	8	3	1	0	0	0	0	14
Goosefish	1	0	0	0	1	3	3	4	6	8	7	7	40
Grubby Sculpin	0	0	0	0	0	0	0	0	0	0	0	0	0
Little Skate	5	2	1	24	11	6	12	9	3	4	8	4	89
Longhorn Sculpin	8	2	1	1	0	0	0	0	0	6	105	114	237
Northern Searobin	0	0	0	2	21	23	3	20	21	2	2	0	94
Ocean Pout	1	3	4	4	6	1	0	0	0	0	0	3	22
Sand Fl. (Windowpane)	2	5	9	5	6	10	105	144	76	5	2	1	370
Scup	0	0	0	0	1	17	4	1	0	43	1	0	67
Silver Hake	.	0	0	0	63	132	100	102	122	378	207	310	.
Smooth Dogfish	0	0	0	0	0	0	2	0	0	1	0	0	3
Spiny Dogfish	1	0	0	0	0	0	0	0	0	0	2	0	3
Squirrel Hake	17	0	2	5	19	147	6	6	92	179	174	40	687
Striped Searobin	0	0	0	0	0	0	0	0	0	0	0	0	0
Summer Flounder	0	0	0	0	1	5	5	4	2	1	0	0	18
Tautog	0	0	0	0	5	0	1	1	0	1	0	0	8
Toadfish (Oyster)	0	0	0	0	0	0	0	0	0	0	0	0	0
Winter Flounder	10	8	30	12	42	54	73	112	53	47	35	14	490
Cancer Crabs	7	4	2	10	41	42	17	17	18	39	28	39	264
Conchs	0	0	0	0	0	0	0	1	0	0	0	0	1
Horseshoe Crab	0	0	0	1	0	0	0	1	1	1	0	0	4
Lobster (American)	0	0	0	0	1	3	4	0	1	2	0	1	12
Spider Crab	0	0	0	1	4	0	0	0	0	0	0	0	5
Squid (Longfin)	0	0	0	0	0	4	2	5	18	5	0	0	34
Starfish	5	2	5	6	5	1	2	3	1	9	7	9	55
Additional Organisms	.	.	.	.	.	.	.	.	.	.	.	.	.

Table 12 cont'd. Whale Rock, Rhode Island Sound. Mean monthly catch in number per 30 min. tow, 1962.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Atlantic Herring	1	1	3	0	0	0	0	0	0	0	0	1	6
Blueback Herring	1	0	0	1	0	0	0	0	1	0	2	1	6
Butterfish	0	0	0	0	0	0	0	0	1	2	2	0	5
Cod (Atlantic)	1	1	1	0	0	0	0	0	0	0	1	0	4
Cunner	0	0	0	1	49	37	2	4	7	2	17	2	121
Fourspot Flounder	1	0	0	0	8	5	4	1	2	1	0	1	23
Goosefish	1	1	0	0	1	2	4	3	4	5	3	2	26
Grubby Sculpin	0	0	0	0	0	0	0	0	0	0	0	0	0
Little Skate	4	4	2	9	6	11	3	4	3	6	3	3	58
Longhorn Sculpin	19	3	2	1	1	0	0	0	14	0	54	35	110
Northern Searobin	0	0	0	1	19	9	14	43	6	2	1	0	95
Ocean Pout	8	11	16	17	6	0	0	0	0	0	0	2	60
Sand Fl. (Windowpane)	1	2	3	4	6	26	29	35	28	3	3	1	141
Scup	0	0	0	0	2	1	1	1	3	11	0	0	19
Silver Hake	155	3	0	2	172	55	104	148	201	303	344	244	1731
Smooth Dogfish	0	0	0	0	0	0	1	0	1	1	0	0	3
Spiny Dogfish	0	0	0	0	0	1	0	0	0	0	4	0	5
Squirrel Hake	8	3	5	12	15	3	4	6	9	15	21	5	106
Striped Searobin	0	0	0	0	0	0	0	0	0	0	0	0	0
Summer Flounder	0	0	0	0	1	6	1	1	2	1	0	0	12
Tautog	0	0	0	0	0	0	0	0	0	0	1	0	1
Toadfish (Oyster)	0	0	0	0	0	0	0	0	0	0	0	0	0
Winter Flounder	10	13	33	58	157	78	108	66	49	43	32	14	661
Cancer Crabs	25	1	0	5	57	32	2	16	39	20	2	7	206
Conchs	0	0	0	0	0	0	0	0	0	0	0	0	0
Horseshoe Crab	0	0	0	0	0	0	0	1	1	1	0	0	3
Lobster (American)	0	0	0	0	1	3	6	3	2	1	3	1	20
Spider Crab	1	0	0	0	2	0	0	1	0	0	0	4	8
Squid (Longfin)	0	0	0	0	0	0	5	4	6	7	1	0	23
Starfish	9	16	23	9	26	15	17	13	9	9	10	13	169
Additional Organisms	.	.	.	.	.	.	.	.	.	.	.	.	.

Table 12 cont'd. Whale Rock, Rhode Island Sound. Mean monthly catch in number per 30 min. tow, 1963.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Atlantic Herring	3	3	4	1	0	0	0	0	0	0	0	0	11
Blueback Herring	1	0	1	1	0	0	0	0	0	0	1	0	4
Butterfish	0	0	0	0	0	4	1	0	0	1	1	0	7
Cod (Atlantic)	2	1	0	0	0	0	0	0	0	0	1	0	4
Cunner	0	0	0	1	16	22	7	0	0	1	20	1	68
Fourspot Flounder	0	0	0	0	7	13	3	0	1	1	0	0	25
Goosefish	1	0	0	1	1	3	2	3	2	5	3	2	23
Grubby Sculpin	0	0	0	0	0	0	0	0	0	0	0	0	0
Little Skate	7	3	4	3	3	2	5	3	1	2	2	3	38
Longhorn Sculpin	10	11	10	3	0	0	0	0	0	0	57	18	109
Northern Searobin	0	0	0	0	12	6	47	39	4	0	0	0	108
Ocean Pout	3	13	19	12	1	0	0	0	0	0	0	1	49
Sand Fl. (Windowpane)	1	4	3	5	7	6	10	8	0	1	1	1	47
Scup	0	0	0	0	5	6	2	0	0	9	0	0	22
Silver Hake	35	1	0	3	68	172	95	8	12	15	45	7	461
Smooth Dogfish	0	0	0	0	0	0	1	0	1	1	0	0	3
Spiny Dogfish	0	0	0	0	0	0	0	0	0	1	1	1	3
Squirrel Hake	3	1	2	2	56	16	12	2	6	5	22	3	130
Striped Searobin	0	0	0	0	0	1	0	0	0	0	0	0	1
Summer Flounder	0	0	0	0	0	0	0	0	1	0	0	0	1
Tautog	0	0	0	0	0	0	0	0	0	1	2	0	3
Toadfish (Oyster)	0	0	0	0	0	0	0	0	0	0	0	0	0
Winter Flounder	9	16	18	51	29	116	101	138	30	33	15	33	589
Cancer Crabs	1	0	4	3	12	19	5	15	26	12	8	10	115
Conchs	0	0	0	0	0	0	0	0	0	0	0	0	0
Horseshoe Crab	0	0	0	0	0	0	0	0	0	0	1	0	1
Lobster (American)	0	0	0	0	1	8	3	2	1	3	2	1	21
Spider Crab	0	0	0	0	0	2	0	0	0	0	10	13	25
Squid (Longfin)	0	0	0	0	0	12	9	18	32	4	0	0	75
Starfish	6	8	7	11	12	11	3	5	6	3	9	6	87
Additional Organisms	.	.	.	.	.	.	.	.	.	.	.	.	.

Table 12 cont'd. Whale Rock, Rhode Island Sound. Mean monthly catch in number per 30 min. tow, 1964.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Atlantic Herring	2	1	0	0	1	0	0	0	0	0	0	0	4
Blueback Herring	0	0	0	1	1	0	0	0	0	0	0	0	2
Butterfish	0	0	0	0	0	0	3	7	10	3	0	1	24
Cod (Atlantic)	0	0	0	0	0	0	0	0	0	0	0	0	0
Cunner	0	0	0	0	5	10	0	0	0	4	9	13	41
Fourspot Flounder	0	0	0	0	1	5	3	4	0	1	0	0	14
Goosefish	1	0	0	0	1	2	1	1	2	3	4	2	17
Grubby Sculpin	0	0	0	0	0	0	0	0	0	0	0	0	0
Little Skate	2	2	2	0	2	4	6	0	2	4	4	1	29
Longhorn Sculpin	6	3	2	1	1	0	0	0	0	1	48	36	98
Northern Searobin	0	0	0	4	14	3	9	12	3	0	0	0	45
Ocean Pout	0	7	9	10	2	1	0	0	0	0	0	1	30
Sand Fl. (Windowpane)	1	1	4	3	1	7	53	15	11	11	6	1	114
Scup	0	0	0	0	8	10	1	8	34	3	0	0	64
Silver Hake	3	0	0	1	10	23	14	34	69	55	67	47	323
Smooth Dogfish	0	0	0	0	0	1	1	0	1	1	0	0	4
Spiny Dogfish	0	0	0	0	0	1	0	0	1	2	0	0	4
Squirrel Hake	1	0	0	2	8	9	1	9	59	25	34	19	167
Striped Searobin	0	0	0	0	0	1	0	2	1	1	0	0	5
Summer Flounder	0	0	0	0	0	1	2	1	0	0	0	0	4
Tautog	0	0	0	0	0	0	0	0	0	0	0	0	0
Toadfish (Oyster)	0	0	0	0	0	0	0	0	0	0	0	0	0
Winter Flounder	11	9	10	38	37	38	74	32	29	57	63	23	421
Cancer Crabs	0	1	1	3	8	17	15	15	12	12	4	0	88
Conchs	0	0	0	0	0	0	1	0	0	0	0	0	1
Horseshoe Crab	0	0	0	0	0	0	0	0	0	1	0	0	1
Lobster (American)	0	0	0	0	2	7	10	3	4	4	1	0	31
Spider Crab	0	0	0	0	4	0	2	3	0	1	0	0	10
Squid (Longfin)	0	0	0	0	0	1	2	3	3	2	0	0	11
Starfish	1	2	1	0	4	0	1	0	0	0	0	0	9
Additional Organisms	.	.	.	.	.	.	.	.	.	.	.	.	.

Table 12 cont'd. Whale Rock, Rhode Island Sound. Mean monthly catch in number per 30 min. tow, 1965.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Atlantic Herring	2	0	1	2	0	1	0	0	0	0	0	0	6
Blueback Herring	0	0	0	0	0	0	0	0	0	0	0	0	0
Butterfish	0	0	0	0	0	6	2	9	31	8	2	0	58
Cod (Atlantic)	1	0	0	0	0	0	0	0	0	0	0	0	1
Cunner	0	0	0	0	2	15	1	0	0	0	5	2	25
Fourspot Flounder	0	0	0	0	0	16	13	10	4	2	2	0	47
Goosefish	1	0	0	0	0	3	2	1	1	1	2	2	13
Grubby Sculpin	0	0	0	0	0	0	0	0	0	0	0	0	0
Little Skate	4	4	2	2	3	4	2	4	2	4	3	3	37
Longhorn Sculpin	5	10	10	3	1	0	0	0	0	0	19	15	63
Northern Searobin	0	0	0	0	7	18	13	9	5	1	0	0	53
Ocean Pout	8	16	24	21	6	2	0	0	0	0	1	1	79
Sand Fl. (Windowpane)	2	8	7	7	7	15	12	25	31	16	9	8	147
Scup	0	0	0	0	0	4	11	2	14	34	0	0	65
Silver Hake	5	0	0	1	15	62	59	23	50	88	138	68	509
Smooth Dogfish	0	0	0	0	0	0	1	0	0	2	0	0	3
Spiny Dogfish	0	0	0	0	0	0	1	2	1	2	1	2	9
Squirrel Hake	0	0	1	1	4	13	18	4	15	35	34	8	133
Striped Searobin	0	0	0	0	0	0	2	1	2	1	0	0	6
Summer Flounder	0	0	0	0	1	1	2	1	3	1	0	0	9
Tautog	0	0	0	0	0	0	0	0	0	0	0	0	0
Toadfish (Oyster)	0	0	0	0	0	0	0	0	0	0	0	0	0
Winter Flounder	7	9	34	87	140	272	93	133	72	69	58	19	993
Cancer Crabs	0	0	0	0	3	10	7	0	0	0	0	0	20
Conchs	0	0	0	0	0	0	0	0	0	0	0	0	0
Horseshoe Crab	0	0	0	0	0	0	0	0	0	0	0	0	0
Lobster (American)	0	0	0	0	1	7	11	4	5	8	3	2	41
Spider Crab	0	0	0	0	3	0	0	0	0	0	0	0	3
Squid (Longfin)	0	0	0	0	0	0	1	0	0	0	0	0	1
Starfish	0	0	0	0	0	0	0	0	0	0	0	0	0
Additional Organisms	.	.	.	.	.	.	.	.	.	.	.	.	.

Table 12 cont'd. Whale Rock, Rhode Island Sound. Mean monthly catch in number per 30 min. tow, 1966.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Atlantic Herring	2	2	8	4	0	0	0	0	0	1	0	1	18
Blueback Herring	1	0	0	1	0	0	0	0	0	1	0	1	4
Butterfish	0	0	0	0	0	6	0	2	2	2	1	1	14
Cod (Atlantic)	0	0	0	0	0	0	0	0	0	0	0	3	3
Cunner	0	0	0	1	22	15	1	0	0	8	4	12	63
Fourspot Flounder	0	0	0	0	0	6	6	4	2	2	0	0	20
Goosefish	0	0	0	0	1	1	0	0	1	2	1	0	6
Grubby Sculpin	3	0	1	0	0	0	0	0	0	0	0	0	4
Little Skate	2	2	0	1	0	2	5	1	1	3	1	2	20
Longhorn Sculpin	0	1	0	1	0	0	0	0	0	0	62	35	99
Northern Searobin	0	0	0	0	4	3	8	6	12	7	1	0	41
Ocean Pout	8	6	12	7	3	0	0	0	0	0	0	2	38
Sand Fl. (Windowpane)	15	13	14	23	10	9	32	35	22	22	6	6	207
Scup	0	0	0	0	0	5	0	1	6	40	0	0	52
Silver Hake	53	0	0	0	2	11	35	33	32	75	28	43	312
Smooth Dogfish	0	0	0	0	0	0	0	0	0	4	0	0	4
Spiny Dogfish	0	0	0	0	0	1	0	0	6	6	2	4	19
Squirrel Hake	1	0	0	0	1	0	2	8	10	20	7	5	54
Striped Searobin	0	0	0	0	0	0	0	12	0	0	0	0	12
Summer Flounder	0	0	0	0	0	2	4	1	1	0	0	0	8
Tautog	0	0	0	0	0	0	0	0	0	1	0	0	1
Toadfish (Oyster)	0	0	0	0	0	0	0	0	0	0	0	0	0
Winter Flounder	12	24	44	96	70	139	157	174	129	96	48	44	1033
Cancer Crabs	.	.	.	.	.	.	.	.	.	.	.	.	.
Conchs	0	0	0	0	0	0	0	0	0	0	0	0	0
Horseshoe Crab	0	0	0	0	0	0	0	0	0	0	0	0	0
Lobster (American)	1	2	1	1	8	48	20	16	70	59	30	10	266
Spider Crab	.	.	.	.	.	.	.	.	.	.	.	.	.
Squid (Longfin)	0	0	0	0	0	2	0	10	10	2	0	0	24
Starfish	.	.	.	.	.	.	.	.	.	.	.	.	.
Additional Organisms	0	0	1	1	0	0	0	0	6	0	13	3	24

Table 12 cont'd. Whale Rock, Rhode Island Sound. Mean monthly catch in number per 30 min. tow, 1967.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Atlantic Herring	3	2	7	0	0	0	0	0	0	0	1	0	13
Blueback Herring	1	2	2	0	0	2	0	1	0	2	1	0	11
Butterfish	0	0	0	0	0	2	3	2	5	3	0	0	15
Cod (Atlantic)	1	4	3	0	0	0	0	0	0	0	1	3	12
Cunner	0	0	0	0	1	29	3	2	2	4	6	1	48
Fourspot Flounder	0	0	0	0	1	5	4	1	1	2	6	0	20
Goosefish	0	1	0	1	2	1	1	0	1	1	1	1	10
Grubby Sculpin	0	0	0	0	0	0	0	0	0	1	86	0	87
Little Skate	1	0	0	0	4	2	1	0	0	0	0	1	9
Longhorn Sculpin	4	1	2	4	1	0	0	0	0	0	19	133	164
Northern Searobin	0	0	0	0	2	3	4	6	3	2	0	0	20
Ocean Pout	5	13	9	12	5	3	0	0	0	0	1	4	52
Sand Fl. (Windowpane)	5	8	10	14	4	14	7	61	35	15	9	3	185
Scup	0	0	0	0	1	40	13	20	9	9	0	0	92
Silver Hake	23	1	0	0	1	30	31	125	59	36	65	78	449
Smooth Dogfish	0	0	0	0	0	1	1	0	1	2	1	0	6
Spiny Dogfish	0	0	0	0	0	2	1	0	0	0	2	1	6
Squirrel Hake	2	1	0	1	2	4	6	38	31	26	26	18	155
Striped Searobin	0	0	0	0	0	0	0	0	0	0	0	0	0
Summer Flounder	0	0	0	0	0	1	0	0	0	0	0	0	1
Tautog	0	0	0	0	0	0	0	0	0	0	0	0	0
Toadfish (Oyster)	0	0	0	0	0	0	0	0	0	0	0	0	0
Winter Flounder	18	10	38	58	56	103	62	108	136	42	34	28	693
Cancer Crabs	.	.	.	.	.	.	.	.	.	.	.	.	.
Conchs	0	0	0	0	0	0	0	0	0	0	0	0	0
Horseshoe Crab	.	.	.	.	.	.	.	.	.	.	.	.	.
Lobster (American)	1	0	0	0	9	20	52	22	26	28	17	2	177
Spider Crab	.	.	.	.	.	.	.	.	.	.	.	.	.
Squid (Longfin)	0	0	0	0	1	2	0	2	4	2	0	0	11
Starfish	.	.	.	.	.	.	.	.	.	.	.	.	.
Additional Organisms	0	1	0	0	0	0	1	0	0	0	0	0	2

Table 12 cont'd. Whale Rock, Rhode Island Sound. Mean monthly catch in number per 30 min. tow, 1968.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Atlantic Herring	2	7	21	6	0	0	0	0	0	0	2	2	40
Blueback Herring	1	0	3	2	0	0	0	0	1	0	2	1	10
Butterfish	0	0	0	0	0	1	0	0	8	5	0	0	14
Cod (Atlantic)	5	6	4	0	0	0	0	0	0	0	7	3	25
Cunner	0	0	0	0	1	15	5	2	2	5	0	1	31
Fourspot Flounder	0	0	0	0	0	3	3	4	0	2	0	0	12
Goosefish	1	0	0	0	1	2	1	1	1	1	1	2	11
Grubby Sculpin	0	0	0	0	0	0	0	0	0	0	0	0	0
Little Skate	1	1	1	3	2	2	2	0	1	1	0	2	16
Longhorn Sculpin	10	9	5	10	0	0	0	0	0	0	800	116	950
Northern Searobin	0	0	0	0	4	5	3	4	2	0	0	0	18
Ocean Pout	10	13	11	14	5	1	0	0	0	0	5	7	66
Sand Fl. (Windowpane)	11	22	28	18	4	12	34	16	8	15	0	11	179
Scup	0	0	0	0	1	21	21	4	4	20	0	0	71
Silver Hake	3	0	0	0	36	33	60	16	61	100	75	40	424
Smooth Dogfish	0	0	0	0	0	0	1	0	0	1	0	0	2
Spiny Dogfish	0	0	0	0	2	0	0	1	0	5	2	1	11
Squirrel Hake	0	0	0	0	5	4	7	6	16	25	150	14	227
Striped Searobin	0	0	0	0	0	0	0	0	0	0	0	0	0
Summer Flounder	0	0	0	0	0	0	0	0	0	0	0	0	0
Tautog	0	0	0	0	0	0	0	0	0	0	0	0	0
Toadfish (Oyster)	0	0	0	0	0	0	0	0	0	0	0	0	0
Winter Flounder	8	12	21	38	39	158	113	68	22	35	5	12	531
Cancer Crabs	.	.	.	.	.	.	.	.	.	.	.	.	.
Conchs	0	0	0	0	0	0	0	0	0	0	0	0	0
Horseshoe Crab	.	.	.	.	.	.	.	.	.	.	.	.	.
Lobster (American)	1	0	0	2	14	35	41	34	52	200	11	8	398
Spider Crab	.	.	.	.	.	.	.	.	.	.	.	.	.
Squid (Longfin)	0	0	0	0	0	2	1	5	42	10	0	0	60
Starfish	.	.	.	.	.	.	.	.	.	.	.	.	.
Additional Organisms	1	0	2	3	0	3	1	0	5	2	0	0	17

Table 12 cont'd. Whale Rock, Rhode Island Sound. Mean monthly catch in number per 30 min. tow, 1969.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Atlantic Herring	1	3	9	1	0	0	0	0	0	0	2	0	16
Blueback Herring	1	0	0	1	0	6	1	0	1	1	2	8	21
Butterfish	0	0	0	0	2	1	0	22	31	3	1	0	60
Cod (Atlantic)	7	7	4	2	0	0	0	0	0	0	1	3	24
Cunner	0	0	0	5	10	2	3	0	1	2	5	0	28
Fourspot Flounder	0	0	0	0	1	14	6	0	0	0	0	0	21
Goosefish	1	0	0	0	2	1	1	1	1	2	1	2	12
Grubby Sculpin	5	0	0	0	0	0	0	0	0	0	0	0	5
Little Skate	1	0	1	1	2	1	3	2	0	0	2	2	15
Longhorn Sculpin	59	18	14	3	1	0	0	0	0	0	58	169	322
Northern Searobin	0	0	0	2	3	4	13	5	8	2	0	0	37
Ocean Pout	30	69	35	21	5	2	0	0	0	0	0	11	173
Sand Fl. (Windowpane)	6	10	5	4	6	10	10	9	15	4	2	9	90
Scup	0	0	0	0	3	14	3	0	19	17	0	0	56
Silver Hake	0	0	0	0	0	0	3	10	12	15	43	24	107
Smooth Dogfish	0	0	0	0	0	0	1	1	1	1	0	0	4
Spiny Dogfish	0	0	0	0	1	1	0	1	0	1	1	1	6
Squirrel Hake	0	0	0	6	9	6	8	3	6	502	265	29	834
Striped Searobin	0	0	0	0	0	0	0	0	0	0	0	0	0
Summer Flounder	0	0	0	0	0	0	0	0	0	0	0	0	0
Tautog	0	0	0	0	0	0	0	0	0	0	0	0	0
Toadfish (Oyster)	0	0	0	0	0	0	0	0	0	0	0	0	0
Winter Flounder	14	12	18	66	106	61	92	41	150	23	18	20	621
Cancer Crabs	.	.	.	.	.	19	78	61	52	43	105	75	.
Conchs	0	0	0	0	0	0	0	0	0	0	0	0	0
Horseshoe Crab	0	0	0	0	0	0	0	0	0	0	0	0	0
Lobster (American)	6	0	1	2	13	65	23	17	36	53	28	14	258
Spider Crab	.	.	.	.	.	0	0	0	0	0	5	5	.
Squid (Longfin)	0	0	0	0	1	0	0	7	13	1	1	0	23
Starfish	.	.	.	.	.	.	42	20	20	13	8	8	.
Additional Organisms	25	1	1	19	55	72	18	1	17	1	2	0	212

Table 12 cont'd. Whale Rock, Rhode Island Sound. Mean monthly catch in number per 30 min. tow, 1970.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Atlantic Herring	3	2	10	1	0	2	0	0	0	0	0	1	19
Blueback Herring	0	0	1	1	1	5	0	2	1	1	1	2	15
Butterfish	0	0	0	0	5	12	0	7	80	5	2	1	112
Cod (Atlantic)	6	8	3	1	0	0	0	0	0	0	1	3	22
Cunner	0	0	0	0	2	4	1	0	1	1	3	2	14
Fourspot Flounder	0	0	0	0	1	7	3	0	1	3	5	2	22
Goosefish	1	0	0	0	1	2	0	1	1	1	1	1	9
Grubby Sculpin	0	0	0	0	0	0	0	0	0	0	0	0	0
Little Skate	1	2	1	1	1	1	2	1	2	9	12	4	37
Longhorn Sculpin	12	7	14	9	3	0	0	0	0	0	33	176	254
Northern Searobin	0	0	0	0	2	7	7	2	3	0	0	0	21
Ocean Pout	106	112	212	66	16	0	0	0	0	0	1	18	531
Sand Fl. (Windowpane)	6	4	4	4	9	12	31	4	4	4	12	12	106
Scup	0	0	0	0	6	50	4	2	10	10	1	0	83
Silver Hake	6	0	0	1	12	13	18	20	24	82	112	138	426
Smooth Dogfish	0	0	0	0	0	0	1	0	0	2	0	0	3
Spiny Dogfish	0	0	0	0	0	1	0	0	0	0	6	0	7
Squirrel Hake	1	0	0	2	10	5	5	3	6	15	58	36	141
Striped Searobin	0	0	0	0	0	0	2	0	0	1	0	0	3
Summer Flounder	0	0	0	0	0	0	0	0	0	0	0	0	0
Tautog	0	0	0	0	0	0	0	0	0	0	0	0	0
Toadfish (Oyster)	0	0	0	0	0	0	0	0	0	0	0	0	0
Winter Flounder	10	5	10	21	45	151	172	19	24	20	31	20	528
Cancer Crabs	30	8	4	8	38	47	67	75	66	52	58	51	504
Conchs	0	0	0	0	0	0	0	0	0	0	0	0	0
Horseshoe Crab	0	0	0	0	0	0	0	0	0	1	0	0	1
Lobster (American)	2	3	2	1	16	21	15	9	34	28	26	4	161
Spider Crab	1	1	0	2	6	1	0	0	0	0	0	14	25
Squid (Longfin)	0	0	0	0	0	1	6	28	40	82	1	0	158
Starfish	6	12	9	10	10	11	10	9	10	10	10	8	115
Additional Organisms	0	0	0	1	4	2	0	0	8	8	0	0	23

Table 12 cont'd. Whale Rock, Rhode Island Sound. Mean monthly catch in number per 30 min. tow, 1971.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Atlantic Herring	3	17	7	5	0	1	3	1	0	0	0	1	38
Blueback Herring	0	0	1	1	1	0	1	32	1	2	0	2	41
Butterfish	0	0	0	0	1	3	9	16	55	3	10	2	99
Cod (Atlantic)	6	3	3	1	0	0	0	0	0	0	1	0	14
Cunner	0	0	0	1	2	3	0	0	1	0	0	2	9
Fourspot Flounder	0	0	0	0	3	10	15	1	0	1	0	0	30
Goosefish	1	0	0	0	2	3	1	2	1	4	4	2	20
Grubby Sculpin	0	0	0	0	0	0	0	0	0	0	0	0	0
Little Skate	2	5	3	2	4	3	2	1	2	4	10	3	41
Longhorn Sculpin	24	12	9	4	2	0	0	0	0	0	2	281	334
Northern Searobin	0	0	0	1	3	9	2	2	0	3	0	0	20
Ocean Pout	134	100	183	88	108	3	0	0	0	1	0	12	629
Sand Fl. (Windowpane)	8	9	7	4	8	6	15	4	9	2	6	3	81
Scup	0	0	0	0	2	32	6	50	16	18	10	0	134
Silver Hake	41	0	1	1	28	114	44	40	18	15	16	69	387
Smooth Dogfish	0	0	0	0	0	2	1	0	0	2	0	0	5
Spiny Dogfish	0	0	0	0	0	1	2	0	1	0	1	0	5
Squirrel Hake	1	0	0	3	12	22	17	20	52	100	125	94	446
Striped Searobin	0	0	0	0	0	0	0	2	6	6	2	0	16
Summer Flounder	0	0	0	0	0	1	0	0	0	0	0	0	1
Tautog	0	0	0	0	0	0	0	0	0	0	0	0	0
Toadfish (Oyster)	0	0	0	0	0	0	0	0	0	0	0	0	0
Winter Flounder	9	5	9	20	22	22	69	11	19	9	29	11	235
Cancer Crabs	12	8	0	4	62	87	119	131	59	112	212	225	1031
Conchs	0	0	0	0	0	0	0	0	0	0	0	0	0
Horseshoe Crab	0	0	0	0	0	0	0	0	0	0	0	0	0
Lobster (American)	2	3	4	3	16	18	39	12	30	25	35	7	194
Spider Crab	1	1	1	2	2	3	2	0	0	0	0	0	12
Squid (Longfin)	0	0	0	0	1	1	1	1	13	5	30	0	52
Starfish	6	10	10	10	10	10	10	10	10	10	10	8	114
Additional Organisms	1	0	0	2	1	3	1	2	4	8	7	1	30

Table 12 cont'd. Whale Rock, Rhode Island Sound. Mean monthly catch in number per 30 min. tow, 1972.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Atlantic Herring	0	10	4	4	0	1	0	0	0	0	0	0	19
Blueback Herring	9	2	1	1	2	0	1	1	0	0	0	2	19
Butterfish	0	0	0	0	0	4	26	13	20	6	2	1	72
Cod (Atlantic)	2	2	0	0	0	0	0	0	0	0	1	2	7
Cunner	0	0	0	0	4	0	0	0	0	0	0	0	4
Fourspot Flounder	0	0	0	0	2	0	0	0	1	0	0	0	3
Goosefish	2	1	0	1	2	2	0	0	1	1	2	2	14
Grubby Sculpin	0	0	0	0	0	0	0	0	0	0	0	0	0
Little Skate	2	3	1	1	3	3	4	4	1	2	6	7	37
Longhorn Sculpin	12	1	3	4	0	0	0	0	0	0	3	12	35
Northern Searobin	0	0	0	0	6	5	3	4	0	0	0	0	18
Ocean Pout	133	95	125	160	84	2	0	0	0	0	0	18	617
Sand Fl. (Windowpane)	3	8	13	9	5	4	4	8	7	3	4	4	72
Scup	0	0	0	0	1	142	48	8	18	6	15	0	238
Silver Hake	63	10	0	2	50	58	40	42	88	17	32	75	477
Smooth Dogfish	0	0	0	0	0	1	3	0	1	1	0	0	6
Spiny Dogfish	0	0	0	0	1	0	0	1	0	0	8	0	10
Squirrel Hake	27	2	1	4	58	11	43	2	38	6	110	1150	1452
Striped Searobin	0	0	0	0	0	0	0	0	0	0	0	0	0
Summer Flounder	0	0	0	0	0	0	0	0	0	0	0	0	0
Tautog	0	0	0	0	0	0	0	0	0	0	0	0	0
Toadfish (Oyster)	0	0	0	0	0	0	0	0	0	0	0	0	0
Winter Flounder	3	9	18	24	32	16	17	15	25	13	18	15	205
Cancer Crabs	155	19	3	8	53	175	215	18	267	123	225	288	1549
Conchs	0	0	0	0	0	0	0	0	0	0	0	0	0
Horseshoe Crab	0	0	0	0	0	0	0	0	0	0	0	0	0
Lobster (American)	3	1	0	1	7	22	104	3	30	23	32	20	246
Spider Crab	0	0	0	1	1	0	0	0	0	0	0	1	3
Squid (Longfin)	0	0	0	0	0	2	5	65	42	63	8	0	185
Starfish	10	9	10	10	10	10	10	5	7	10	8	10	109
Additional Organisms	0	1	0	1	1	0	0	0	0	4	1	1	9

Table 12 cont'd. Whale Rock, Rhode Island Sound. Mean monthly catch in number per 30 min. tow, 1973.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Atlantic Herring	1	0	4	3	0	0	1	0	0	3	1	0	13
Blueback Herring	2	0	0	0	0	1	1	65	0	0	0	1	70
Butterfish	0	0	0	0	0	1	6	1	6	12	2	1	29
Cod (Atlantic)	2	3	1	1	0	0	0	0	0	0	0	1	8
Cunner	0	0	0	0	2	4	0	1	0	0	1	0	8
Fourspot Flounder	0	0	0	0	10	5	5	0	1	8	5	1	35
Goosefish	2	0	1	1	2	0	0	1	1	2	4	2	16
Grubby Sculpin	0	0	0	0	0	0	0	0	0	0	0	0	0
Little Skate	6	3	8	11	4	2	2	3	2	6	24	7	78
Longhorn Sculpin	25	6	7	1	1	0	0	0	0	0	2	50	92
Northern Searobin	0	0	0	1	5	10	14	0	0	0	0	0	30
Ocean Pout	188	288	244	260	51	0	0	0	0	0	0	35	1066
Sand Fl. (Windowpane)	5	3	2	13	8	4	4	4	2	8	3	1	57
Scup	0	0	0	0	13	12	6	5	3	25	0	0	64
Silver Hake	50	5	1	7	75	150	83	38	22	112	140	250	933
Smooth Dogfish	0	0	0	0	0	0	1	1	0	1	1	0	4
Spiny Dogfish	0	0	0	0	0	0	0	0	0	1	0	0	1
Squirrel Hake	68	2	2	14	56	66	23	15	50	10	681	750	1737
Striped Searobin	0	0	0	0	0	0	0	0	0	6	1	0	7
Summer Flounder	0	0	0	0	1	1	0	1	2	1	0	0	6
Tautog	0	0	0	0	0	0	0	0	0	0	0	0	0
Toadfish (Oyster)	0	0	0	0	0	0	0	0	0	0	0	0	0
Winter Flounder	10	8	7	56	31	39	18	13	18	23	18	5	246
Cancer Crabs	70	13	8	46	50	41	175	275	275	400	172	275	1800
Conchs	0	0	0	0	0	0	0	0	0	0	0	0	0
Horseshoe Crab	0	0	0	0	0	0	0	0	0	0	0	1	1
Lobster (American)	4	2	0	2	39	59	77	115	175	175	64	2	714
Spider Crab	10	2	2	3	4	5	1	0	0	0	1	0	28
Squid (Longfin)	0	0	0	0	0	0	2	3	18	8	4	1	36
Starfish	10	10	9	10	9	9	9	10	10	10	6	10	112
Additional Organisms	0	0	1	0	0	0	0	0	0	2	2	0	5

Table 12 cont'd. Whale Rock, Rhode Island Sound. Mean monthly catch in number per 30 min. tow, 1974.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Atlantic Herring	0	0	1	0	0	0	0	4	5	1	1	0	12
Blueback Herring	0	0	0	0	0	1	3	6	6	0	0	0	16
Butterfish	0	0	0	0	1	1	45	167	93	127	9	0	443
Cod (Atlantic)	2	1	0	0	0	0	0	0	0	0	3	0	6
Cunner	0	0	0	0	1	0	0	0	0	0	0	0	1
Fourspot Flounder	0	0	0	10	12	4	9	0	0	3	2	0	40
Goosefish	2	2	2	3	3	3	1	2	0	1	0	0	19
Grubby Sculpin	0	0	0	0	0	0	0	0	0	0	0	0	0
Little Skate	6	20	16	12	7	6	3	10	3	5	6	4	98
Longhorn Sculpin	13	6	0	1	1	0	0	0	0	0	1	9	31
Northern Searobin	0	0	0	3	3	5	3	4	2	8	0	0	28
Ocean Pout	350	850	500	250	142	2	0	1	0	0	0	12	2107
Sand Fl. (Windowpane)	3	8	3	3	6	5	7	3	6	6	5	3	58
Scup	0	0	0	1	118	29	10	201	30	34	1	0	424
Silver Hake	150	93	190	300	200	363	155	50	28	28	233	235	2025
Smooth Dogfish	0	0	0	0	1	1	0	1	0	0	0	0	3
Spiny Dogfish	0	0	0	0	0	0	0	0	0	0	0	0	0
Squirrel Hake	110	4	4	81	200	180	35	83	70	29	705	56	1557
Striped Searobin	0	0	0	0	0	0	0	0	0	0	0	0	0
Summer Flounder	0	0	0	0	0	2	1	0	0	2	0	0	5
Tautog	0	0	0	0	0	0	0	0	0	0	0	0	0
Toadfish (Oyster)	0	0	0	0	0	0	0	0	0	0	0	0	0
Winter Flounder	8	15	14	16	25	21	18	11	13	25	14	2	182
Cancer Crabs	20	10	45	89	183	275	316	283	450	154	158	31	2014
Conchs	0	0	0	0	0	0	0	0	0	0	0	0	0
Horseshoe Crab	0	0	0	0	0	0	0	133	0	0	0	0	133
Lobster (American)	3	1	2	3	27	96	48	62	100	231	22	11	606
Spider Crab	0	0	0	0	0	3	0	0	0	0	0	0	3
Squid (Longfin)	0	0	0	0	0	1	4	11	19	28	13	0	76
Starfish	7	8	8	6	7	8	10	5	10	10	10	8	97
Additional Organisms	0	0	0	0	0	0	0	5	101	59	0	0	165

Table 12 cont'd. Whale Rock, Rhode Island Sound. Mean monthly catch in number per 30 min. tow, 1975.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Atlantic Herring	0	0	0	1	0	0	0	0	0	0	0	0	1
Blueback Herring	1	3	2	2	0	1	11	5	3	0	2	0	30
Butterfish	0	0	0	0	2	4	141	58	62	45	15	1	328
Cod (Atlantic)	0	0	0	0	0	0	0	0	0	0	0	0	0
Cunner	0	0	0	0	1	0	0	0	0	0	0	0	1
Fourspot Flounder	0	0	0	0	2	12	3	0	0	1	5	0	23
Goosefish	1	0	1	1	2	3	1	1	0	1	1	1	13
Grubby Sculpin	0	0	0	0	0	0	0	0	0	0	0	0	0
Little Skate	30	26	18	2	3	4	1	2	6	37	54	17	200
Longhorn Sculpin	3	1	1	0	0	0	0	0	0	0	0	4	9
Northern Searobin	0	0	0	1	2	1	2	0	1	4	1	0	12
Ocean Pout	345	217	575	230	125	5	0	0	0	0	0	14	1511
Sand Fl. (Windowpane)	4	6	5	13	5	15	4	5	3	6	7	2	75
Scup	0	0	0	0	33	55	5	36	80	280	1	0	490
Silver Hake	431	147	100	88	143	150	135	45	14	11	48	325	1637
Smooth Dogfish	0	0	0	0	0	2	1	1	0	0	0	0	4
Spiny Dogfish	0	0	0	0	0	0	0	0	0	0	1	0	1
Squirrel Hake	63	2	2	9	23	10	18	33	25	25	141	830	1181
Striped Searobin	0	0	0	0	0	0	0	0	0	0	0	0	0
Summer Flounder	0	0	0	0	2	1	2	1	7	2	0	0	15
Tautog	0	0	0	0	0	0	0	0	0	0	0	0	0
Toadfish (Oyster)	0	0	0	0	0	0	0	0	0	0	0	0	0
Winter Flounder	4	7	11	27	23	22	6	9	14	15	11	5	154
Cancer Crabs	30	8	10	32	213	250	285	283	260	231	269	60	1931
Conchs	0	0	0	0	0	0	0	0	0	0	0	0	0
Horseshoe Crab	0	0	0	0	0	0	0	0	0	0	0	0	0
Lobster (American)	4	0	1	1	14	43	44	32	87	95	54	9	384
Spider Crab	0	0	0	0	0	0	0	0	0	0	1	2	3
Squid (Longfin)	0	0	0	0	1	3	5	53	48	30	16	2	158
Starfish	10	8	9	10	10	8	11	10	9	8	10	10	113
Additional Organisms	0	0	0	0	0	0	0	1	4	0	0	0	5

Table 12 cont'd. Whale Rock, Rhode Island Sound. Mean monthly catch in number per 30 min. tow, 1976.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Atlantic Herring	1	0	1	0	0	0	0	0	0	0	0	0	2
Blueback Herring	2	0	0	0	0	0	0	0	0	0	0	1	3
Butterfish	0	0	0	0	0	2	1	30	34	891	8	0	966
Cod (Atlantic)	0	0	0	0	0	0	0	0	0	0	0	0	0
Cunner	0	0	0	0	1	0	0	0	0	0	0	0	1
Fourspot Flounder	0	0	0	2	8	16	14	0	0	2	4	0	46
Goosefish	0	0	0	1	0	1	1	0	0	0	1	0	4
Grubby Sculpin	0	0	0	0	0	0	0	0	0	0	0	0	0
Little Skate	10	6	6	7	2	3	12	1	0	5	15	2	69
Longhorn Sculpin	4	1	4	0	0	0	0	0	0	0	5	15	29
Northern Searobin	0	0	0	2	0	3	5	1	1	4	0	0	16
Ocean Pout	17	145	217	36	28	0	0	0	0	0	0	10	453
Sand Fl. (Windowpane)	1	2	6	5	4	16	24	1	3	4	3	1	70
Scup	0	0	0	0	0	92	43	92	55	39	0	0	321
Silver Hake	53	75	50	50	70	663	100	120	115	17	200	250	1763
Smooth Dogfish	0	0	0	0	0	1	0	0	0	2	0	0	3
Spiny Dogfish	0	0	0	0	0	0	0	1	0	0	0	0	1
Squirrel Hake	13	4	6	10	125	23	6	25	18	6	175	10	421
Striped Searobin	0	0	0	0	0	0	0	0	0	0	0	0	0
Summer Flounder	0	0	0	0	1	2	1	1	14	12	0	0	31
Tautog	0	0	0	0	0	0	0	0	0	0	0	0	0
Toadfish (Oyster)	0	0	0	0	0	0	0	0	0	0	0	0	0
Winter Flounder	6	5	26	18	5	14	33	9	5	5	13	4	143
Cancer Crabs	34	43	37	141	375	212	133	9	33	17	56	10	1100
Conchs	0	0	0	0	0	0	0	0	0	0	0	0	0
Horseshoe Crab	0	0	0	0	0	0	0	0	0	0	0	0	0
Lobster (American)	1	4	0	7	10	15	19	14	20	70	19	0	179
Spider Crab	0	0	0	0	1	3	0	0	0	0	28	1	33
Squid (Longfin)	0	0	0	0	1	3	15	28	31	28	2	0	108
Starfish	6	10	26	10	6	11	10	5	10	3	8	3	108
Additional Organisms	0	0	0	0	0	0	0	0	3	4	0	0	7

Table 12 cont'd. Whale Rock, Rhode Island Sound. Mean monthly catch in number per 30 min. tow, 1977.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Atlantic Herring	1	4	5	5	0	0	0	0	0	0	0	0	15
Blueback Herring	0	0	1	0	0	0	0	0	0	0	1	0	2
Butterfish	0	0	0	0	0	0	1	1	30	36	10	0	78
Cod (Atlantic)	1	1	1	0	0	0	0	0	0	0	0	0	3
Cunner	0	0	0	0	0	0	0	0	0	0	0	0	0
Fourspot Flounder	0	0	0	0	12	47	10	20	3	4	3	0	99
Goosefish	2	0	0	0	0	0	0	0	0	1	0	0	3
Grubby Sculpin	0	0	0	0	0	0	0	0	0	0	0	0	0
Little Skate	0	1	0	5	0	1	1	18	2	10	7	12	57
Longhorn Sculpin	5	2	0	0	0	0	0	0	0	0	13	5	25
Northern Searobin	0	0	0	0	3	2	1	2	3	7	0	0	18
Ocean Pout	30	28	51	70	18	0	0	0	0	0	0	2	199
Sand Fl. (Windowpane)	0	15	22	4	4	27	19	49	45	12	3	10	210
Scup	0	0	0	0	10	16	4	1	100	31	0	0	162
Silver Hake	75	0	0	0	538	200	25	119	50	58	63	115	1243
Smooth Dogfish	0	0	0	0	0	2	0	0	0	1	0	0	3
Spiny Dogfish	0	0	0	0	0	0	0	0	0	1	0	1	2
Squirrel Hake	4	1	3	2	6	1	10	5	0	24	75	85	216
Striped Searobin	0	0	0	0	0	0	3	2	0	1	1	0	7
Summer Flounder	0	0	0	0	2	1	0	3	0	0	0	0	6
Tautog	0	0	0	0	0	0	1	0	0	0	0	0	1
Toadfish (Oyster)	0	0	0	0	0	0	0	0	0	0	0	0	0
Winter Flounder	1	8	10	13	4	38	43	40	23	25	29	23	257
Cancer Crabs	40	11	8	6	0	0	14	23	60	97	142	77	478
Conchs	0	0	0	0	0	0	0	0	0	0	0	0	0
Horseshoe Crab	0	0	0	1	0	0	0	0	0	0	0	0	1
Lobster (American)	1	1	0	1	8	16	5	5	3	4	8	3	55
Spider Crab	1	0	0	0	0	4	10	2	1	2	1	3	24
Squid (Longfin)	0	0	0	0	0	1	1	3	25	11	1	0	42
Starfish	10	5	6	4	5	8	0	0	1	0	0	0	39
Additional Organisms	0	0	0	0	0	0	0	17	2	5	0	0	24

Table 12 cont'd. Whale Rock, Rhode Island Sound. Mean monthly catch in number per 30 min. tow, 1978.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Atlantic Herring	0	0	0	0	0	0	0	0	0	0	0	0	0
Blueback Herring	0	0	2	0	0	0	0	0	0	0	0	0	2
Butterfish	0	0	0	0	10	8	2	6	39	96	36	0	197
Cod (Atlantic)	0	1	0	0	0	0	0	0	0	0	0	0	1
Cunner	0	0	0	0	4	1	0	0	0	0	0	0	5
Fourspot Flounder	0	0	0	0	75	59	22	6	2	16	17	0	197
Goosefish	0	0	0	0	1	0	0	0	0	0	1	0	2
Grubby Sculpin	0	0	0	0	0	0	0	0	0	0	0	0	0
Little Skate	12	0	1	2	2	3	8	20	17	16	32	42	155
Longhorn Sculpin	1	2	4	1	2	0	0	0	0	0	3	17	30
Northern Searobin	0	0	0	0	8	2	2	1	1	1	0	0	15
Ocean Pout	4	5	17	10	12	0	0	0	0	0	0	6	54
Sand Fl. (Windowpane)	47	21	13	44	31	54	75	27	42	56	27	3	440
Scup	0	0	0	0	5	79	33	3	77	62	3	0	262
Silver Hake	44	1	0	1	22	58	27	5	1	7	12	300	478
Smooth Dogfish	0	0	0	0	0	0	0	0	0	0	0	0	0
Spiny Dogfish	0	0	0	0	0	0	0	0	0	0	0	0	0
Squirrel Hake	4	1	1	2	2	2	1	2	0	8	7	124	154
Striped Searobin	0	0	0	0	0	0	0	0	1	2	3	0	6
Summer Flounder	0	0	0	0	2	1	1	0	2	3	0	0	9
Tautog	0	0	0	0	0	0	0	0	0	0	0	0	0
Toadfish (Oyster)	0	0	0	0	0	0	0	0	0	0	0	0	0
Winter Flounder	22	24	13	42	53	105	194	45	33	32	40	30	633
Cancer Crabs	29	6	26	20	71	114	33	7	32	144	59	41	582
Conchs	0	0	0	0	0	0	0	0	1	0	0	0	1
Horseshoe Crab	0	0	0	0	1	0	0	0	0	0	0	0	1
Lobster (American)	1	0	0	1	5	9	8	3	5	9	2	8	51
Spider Crab	0	0	0	0	10	2	1	0	0	1	1	0	15
Squid (Longfin)	0	0	0	0	0	2	6	11	18	29	1	0	67
Starfish	0	0	0	0	0	0	0	0	0	0	0	0	0
Additional Organisms	1	0	0	2	0	0	0	0	3	6	1	0	13

Table 12 cont'd. Whale Rock, Rhode Island Sound. Mean monthly catch in number per 30 min. tow, 1979.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Atlantic Herring	0	0	0	0	0	0	0	0	0	0	0	0	0
Blueback Herring	0	0	1	0	0	0	0	0	0	0	0	0	1
Butterfish	0	0	0	0	2	1	0	46	38	5	6	8	106
Cod (Atlantic)	0	1	0	0	0	0	0	0	0	0	0	0	1
Cunner	0	0	0	0	0	0	0	0	0	0	0	0	0
Fourspot Flounder	0	0	0	0	31	44	13	2	1	10	8	4	113
Goosefish	0	0	0	0	1	0	0	0	0	0	0	0	1
Grubby Sculpin	0	0	0	0	0	0	0	0	0	0	0	0	0
Little Skate	17	9	5	3	5	20	36	24	13	30	15	62	239
Longhorn Sculpin	2	0	0	1	0	0	0	0	0	0	14	22	39
Northern Searobin	0	0	0	1	16	5	1	0	0	3	1	0	27
Ocean Pout	6	16	10	6	3	0	0	0	0	0	0	3	44
Sand Fl. (Windowpane)	3	11	16	40	35	91	188	26	17	36	15	11	489
Scup	0	0	0	0	33	12	29	3	20	118	3	0	218
Silver Hake	83	0	0	2	30	21	16	1	0	22	39	39	253
Smooth Dogfish	0	0	0	0	0	0	0	0	0	1	0	0	1
Spiny Dogfish	0	0	0	0	1	0	0	0	0	0	0	0	1
Squirrel Hake	23	9	14	5	9	9	6	0	0	3	19	33	130
Striped Searobin	0	0	0	0	0	0	1	0	0	1	1	3	6
Summer Flounder	0	0	0	0	0	0	12	0	1	0	0	0	13
Tautog	0	0	0	0	0	0	0	0	0	0	0	0	0
Toadfish (Oyster)	0	0	0	0	0	0	0	0	0	0	0	0	0
Winter Flounder	23	17	44	59	49	157	222	63	39	42	86	53	854
Cancer Crabs	27	0	120	96	134	91	51	17	17	166	71	21	811
Conchs	0	0	0	0	0	0	0	0	0	0	0	0	0
Horseshoe Crab	0	0	0	0	0	1	0	0	0	0	1	0	2
Lobster (American)	1	0	0	1	3	9	3	4	2	5	0	2	30
Spider Crab	0	0	0	0	2	0	3	0	0	1	0	3	9
Squid (Longfin)	0	0	0	0	2	7	1	2	10	30	2	0	54
Starfish	0	0	0	0	2	0	0	0	0	0	0	0	2
Additional Organisms	30	2	0	5	9	0	0	0	1	2	6	6	61

Table 12 cont'd. Whale Rock, Rhode Island Sound. Mean monthly catch in number per 30 min. tow, 1980.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Atlantic Herring	0	0	1	0	0	0	0	0	1	0	0	0	2
Blueback Herring	2	1	0	0	0	0	0	0	0	0	0	0	3
Butterfish	0	0	0	0	2	0	1	0	15	11	4	0	33
Cod (Atlantic)	0	0	0	0	0	0	0	0	0	0	0	0	0
Cunner	1	0	0	0	2	0	0	0	0	0	0	0	3
Fourspot Flounder	0	0	0	0	18	28	9	3	0	0	1	0	59
Goosefish	0	0	0	0	0	0	0	0	0	1	1	1	3
Grubby Sculpin	0	0	0	0	0	0	0	0	0	0	0	0	0
Little Skate	11	5	3	3	13	6	15	5	14	18	7	20	120
Longhorn Sculpin	3	0	0	0	0	0	0	0	0	0	8	24	35
Northern Searobin	0	0	0	0	4	2	1	0	2	1	0	0	10
Ocean Pout	7	12	12	7	2	0	0	0	0	0	0	0	40
Sand Fl. (Windowpane)	9	15	19	21	46	11	79	21	9	3	10	3	246
Scup	0	0	0	0	9	18	8	0	18	1	1	0	55
Silver Hake	38	5	0	1	35	19	40	2	1	6	12	10	169
Smooth Dogfish	0	0	0	0	0	0	0	0	0	0	0	0	0
Spiny Dogfish	0	0	0	0	0	0	0	0	0	0	0	0	0
Squirrel Hake	6	3	1	3	2	4	9	0	0	0	20	19	67
Striped Searobin	0	0	0	0	0	0	1	0	0	1	0	0	2
Summer Flounder	0	0	0	0	0	0	0	0	1	2	0	0	3
Tautog	0	0	0	0	0	0	0	0	0	0	0	0	0
Toadfish (Oyster)	0	0	0	0	0	0	0	0	0	0	0	0	0
Winter Flounder	46	53	36	111	128	94	244	62	55	29	38	24	920
Cancer Crabs	26	91	38	73	206	117	91	60	89	159	5	11	966
Conchs	0	0	0	0	0	0	0	0	0	0	1	0	1
Horseshoe Crab	0	0	0	0	0	0	0	0	1	1	0	0	2
Lobster (American)	1	0	1	0	2	7	6	1	0	4	1	1	24
Spider Crab	1	1	0	4	1	0	1	0	1	1	1	0	11
Squid (Longfin)	0	0	0	0	0	0	0	0	2	6	1	0	9
Starfish	0	0	0	1	0	0	0	0	0	0	0	0	1
Additional Organisms	1	1	1	1	0	0	1	0	6	11	3	5	30

Table 12 cont'd. Whale Rock, Rhode Island Sound. Mean monthly catch in number per 30 min. tow, 1981.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Atlantic Herring	0	.	1	1	0	0	0	0	0	0	0	0	2
Blueback Herring	0	.	0	2	0	0	3	0	0	0	0	0	5
Butterfish	0	.	0	0	3	9	77	14	124	39	3	1	270
Cod (Atlantic)	0	.	0	0	0	0	0	0	0	0	0	0	0
Cunner	0	.	0	2	9	1	0	0	0	0	0	0	12
Fourspot Flounder	0	.	0	1	21	71	11	4	1	10	2	1	122
Goosefish	0	.	0	0	0	0	0	0	0	0	0	0	0
Grubby Sculpin	0	.	1	0	0	0	0	0	0	0	0	0	1
Little Skate	6	.	6	6	36	16	32	37	33	50	0	15	237
Longhorn Sculpin	0	.	0	0	0	0	0	0	1	0	101	46	148
Northern Searobin	0	.	0	1	26	21	2	2	7	2	0	0	61
Ocean Pout	3	.	22	9	2	0	0	0	0	0	0	4	40
Sand Fl. (Windowpane)	6	.	22	22	45	44	85	52	21	25	4	4	330
Scup	0	.	0	0	148	31	74	4	7	61	0	0	325
Silver Hake	0	.	0	0	14	51	20	1	1	106	38	77	308
Smooth Dogfish	0	.	0	0	0	1	0	0	1	2	0	0	4
Spiny Dogfish	0	.	0	0	0	0	0	0	0	0	0	0	0
Squirrel Hake	0	.	0	1	4	3	2	0	2	4	1	2	19
Striped Searobin	0	.	0	0	0	1	1	4	1	2	0	0	9
Summer Flounder	0	.	0	1	3	3	1	4	6	1	0	0	19
Tautog	0	.	0	0	0	0	0	0	1	1	0	0	2
Toadfish (Oyster)	2	.	0	0	0	0	0	0	0	0	0	0	2
Winter Flounder	14	.	31	146	82	148	95	30	49	95	46	51	787
Cancer Crabs	5	.	5	517	260	252	117	124	317	562	145	66	2370
Conchs	0	.	0	0	0	0	0	0	0	0	0	0	0
Horseshoe Crab	0	.	0	0	0	0	0	3	1	1	0	0	5
Lobster (American)	0	.	0	2	32	35	14	2	7	14	0	2	108
Spider Crab	0	.	0	2	5	2	3	0	0	1	0	1	14
Squid (Longfin)	0	.	0	1	1	9	54	51	54	5	0	0	175
Starfish	1	.	0	0	1	0	0	0	0	0	7	0	9
Additional Organisms	0	.	1	3	1	0	2	6	31	18	4	2	68

Table 12 cont'd. Whale Rock, Rhode Island Sound. Mean monthly catch in number per 30 min. tow, 1982.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Atlantic Herring	.	2	6	0	0	0	1	1	0	0	0	0	10
Blueback Herring	.	0	0	0	0	0	1	6	1	0	0	0	8
Butterfish	.	0	0	0	2	35	38	150	135	347	147	9	863
Cod (Atlantic)	.	0	0	0	0	0	0	0	0	0	0	0	0
Cunner	.	0	0	2	5	1	0	0	0	0	0	0	8
Fourspot Flounder	.	0	0	0	22	32	18	9	0	2	3	4	90
Goosefish	.	0	0	0	0	0	0	0	0	0	0	0	0
Grubby Sculpin	.	0	0	0	0	0	0	0	0	0	0	0	0
Little Skate	.	11	15	4	29	19	38	20	38	49	56	59	338
Longhorn Sculpin	.	1	1	7	1	0	0	0	0	0	68	125	203
Northern Searobin	.	0	0	3	10	9	1	0	1	1	0	0	25
Ocean Pout	.	23	16	15	1	0	0	0	0	0	1	5	61
Sand Fl. (Windowpane)	.	30	22	17	16	18	33	12	10	9	2	2	171
Scup	.	0	0	0	59	63	25	23	20	67	0	0	257
Silver Hake	.	0	1	0	65	67	150	29	29	50	55	184	630
Smooth Dogfish	.	0	0	0	0	0	0	0	1	0	2	0	3
Spiny Dogfish	.	0	0	0	0	0	0	0	0	0	0	0	0
Squirrel Hake	.	0	0	2	7	2	4	2	1	26	33	41	118
Striped Searobin	.	0	0	0	0	1	1	0	0	2	1	1	6
Summer Flounder	.	0	0	1	5	1	1	0	3	1	0	0	12
Tautog	.	0	0	0	0	0	0	0	0	0	0	0	0
Toadfish (Oyster)	.	0	0	0	0	0	0	0	0	0	0	0	0
Winter Flounder	.	20	40	192	105	49	75	33	47	43	48	34	686
Cancer Crabs	.	20	4	213	253	174	86	80	111	89	43	45	1118
Conchs	.	0	0	0	0	0	0	4	0	0	0	0	4
Horseshoe Crab	.	0	1	0	0	0	0	0	3	1	0	0	5
Lobster (American)	.	0	1	5	22	10	2	5	4	5	5	1	60
Spider Crab	.	0	0	0	2	1	0	0	1	1	5	7	17
Squid (Longfin)	.	0	0	0	3	22	45	26	37	198	37	3	371
Starfish	.	3	0	0	0	0	16	0	0	0	0	0	19
Additional Organisms	.	0	3	0	2	1	0	0	11	12	18	9	56

Table 12 cont'd. Whale Rock, Rhode Island Sound. Mean monthly catch in number per 30 min. tow, 1983.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Atlantic Herring	0	4	8	25	0	0	0	0	0	1	0	0	38
Blueback Herring	0	1	0	1	0	0	1	0	0	1	0	0	4
Butterfish	1	0	0	0	30	207	132	22	108	915	5	25	1445
Cod (Atlantic)	0	0	0	0	0	0	0	0	0	0	0	0	0
Cunner	0	0	0	0	3	1	0	0	0	0	0	2	6
Fourspot Flounder	1	0	0	1	33	61	18	19	3	4	0	0	140
Goosefish	0	0	0	0	1	0	1	0	0	0	0	1	3
Grubby Sculpin	0	0	0	0	0	0	0	0	0	0	0	0	0
Little Skate	51	18	7	25	39	28	27	47	9	19	43	70	383
Longhorn Sculpin	14	1	1	1	0	0	0	0	0	0	2	46	65
Northern Searobin	0	0	0	3	29	10	0	1	0	2	0	0	45
Ocean Pout	9	9	7	8	7	0	0	0	0	0	0	3	43
Sand Fl. (Windowpane)	7	9	11	12	20	13	38	42	16	15	8	2	193
Scup	0	0	0	0	440	159	0	7	57	20	1	0	684
Silver Hake	116	12	2	21	219	152	135	36	1	6	16	187	903
Smooth Dogfish	0	0	0	0	0	0	1	1	1	11	1	0	15
Spiny Dogfish	0	0	0	0	0	0	0	0	0	0	0	0	0
Squirrel Hake	23	9	4	6	33	3	5	0	0	0	14	40	137
Striped Searobin	0	0	0	0	0	1	0	0	0	0	0	0	1
Summer Flounder	0	0	0	0	1	1	0	0	5	1	0	0	8
Tautog	0	0	0	0	0	0	0	0	0	0	0	0	0
Toadfish (Oyster)	0	0	0	0	0	0	0	0	0	0	0	0	0
Winter Flounder	32	36	72	60	78	52	94	73	31	69	48	23	668
Cancer Crabs	28	45	136	133	235	163	147	176	85	163	44	23	1378
Conchs	0	0	0	0	5	0	0	0	0	0	0	0	5
Horseshoe Crab	0	0	0	0	0	0	0	1	1	1	0	0	3
Lobster (American)	2	1	0	1	3	8	6	0	0	1	8	3	33
Spider Crab	10	1	0	8	12	0	0	0	0	0	1	2	34
Squid (Longfin)	0	0	0	0	14	25	25	45	222	91	76	4	502
Starfish	0	0	0	0	0	0	3	0	0	0	0	0	3
Additional Organisms	1	1	3	3	1	1	2	3	11	7	4	2	39

Table 12 cont'd. Whale Rock, Rhode Island Sound. Mean monthly catch in number per 30 min. tow, 1984.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Atlantic Herring	0	63	49	37	0	0	0	0	0	0	0	0	149
Blueback Herring	1	0	1	0	0	0	5	3	0	0	0	0	10
Butterfish	0	0	0	0	17	26	20	148	555	130	42	18	956
Cod (Atlantic)	0	0	0	0	0	0	0	0	0	0	0	0	0
Cunner	11	0	0	4	2	0	0	0	0	0	0	1	18
Fourspot Flounder	0	0	0	0	17	13	6	4	0	0	1	1	42
Goosefish	0	0	0	0	1	0	0	0	0	0	0	0	1
Grubby Sculpin	0	0	0	0	0	0	0	0	0	0	0	0	0
Little Skate	48	23	13	6	9	13	31	27	13	7	19	11	220
Longhorn Sculpin	7	0	4	2	0	0	0	0	0	0	0	30	43
Northern Searobin	0	0	0	0	11	2	0	0	1	0	0	0	14
Ocean Pout	5	8	14	5	2	0	0	0	0	0	0	0	34
Sand Fl. (Windowpane)	15	14	11	4	6	1	6	9	6	7	3	1	83
Scup	0	0	0	0	43	551	4	10	41	48	0	0	697
Silver Hake	34	0	0	8	391	122	258	24	5	12	17	203	1074
Smooth Dogfish	0	0	0	0	0	0	6	0	0	3	0	0	9
Spiny Dogfish	0	0	0	0	0	0	0	0	0	1	2	2	5
Squirrel Hake	0	0	6	5	13	0	13	1	2	11	42	54	147
Striped Searobin	0	0	0	0	5	0	0	0	1	1	1	0	8
Summer Flounder	0	0	0	0	1	1	0	0	3	1	0	0	6
Tautog	0	0	0	0	1	1	0	0	0	1	0	0	3
Toadfish (Oyster)	0	1	0	0	0	0	0	0	0	0	0	2	3
Winter Flounder	50	57	50	49	82	56	115	25	38	27	12	10	571
Cancer Crabs	17	2	66	10	28	40	72	23	111	51	19	9	448
Conchs	0	0	0	0	0	0	0	2	0	0	0	1	3
Horseshoe Crab	0	0	0	0	0	0	0	0	1	1	0	0	2
Lobster (American)	1	0	0	1	3	13	14	3	2	13	7	8	65
Spider Crab	0	0	0	1	4	1	2	1	0	1	2	5	17
Squid (Longfin)	0	0	0	0	3	213	84	178	206	98	111	14	907
Starfish	0	0	0	0	0	0	0	0	0	0	0	0	0
Additional Organisms	0	1	1	5	0	1	1	0	11	11	8	2	41

Table 12 cont'd. Whale Rock, Rhode Island Sound. Mean monthly catch in number per 30 min. tow, 1985.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Atlantic Herring	11	60	32	17	0	2	0	0	0	0	0	1	123
Blueback Herring	0	0	0	0	0	1	0	0	0	0	0	0	1
Butterfish	0	0	0	0	51	44	133	93	229	18	30	2	600
Cod (Atlantic)	0	1	0	0	0	0	0	0	0	0	0	0	1
Cunner	0	0	0	0	23	0	0	0	0	0	0	1	24
Fourspot Flounder	0	0	0	0	19	20	7	0	0	0	0	0	46
Goosefish	0	0	0	0	0	0	0	0	0	0	0	0	0
Grubby Sculpin	0	2	1	0	0	0	0	0	0	0	0	0	3
Little Skate	14	6	1	12	6	17	19	1	2	2	2	5	87
Longhorn Sculpin	1	0	0	0	0	0	0	0	0	0	0	6	7
Northern Searobin	0	0	0	0	6	8	1	0	0	0	0	0	15
Ocean Pout	0	10	6	2	2	0	0	0	0	0	0	0	20
Sand Fl. (Windowpane)	6	11	1	4	9	14	14	2	1	3	0	5	70
Scup	0	0	0	0	250	108	183	5	30	4	0	0	580
Silver Hake	34	1	0	6	107	42	38	0	0	1	14	28	271
Smooth Dogfish	0	0	0	0	0	0	0	0	0	0	0	0	0
Spiny Dogfish	0	0	0	0	0	0	0	0	0	0	0	0	0
Squirrel Hake	1	0	0	1	4	2	3	0	0	1	18	12	42
Striped Searobin	0	0	0	0	0	1	0	0	0	0	0	0	1
Summer Flounder	0	0	0	0	2	2	0	0	1	1	0	0	6
Tautog	0	0	0	0	2	0	0	0	0	0	0	0	2
Toadfish (Oyster)	0	0	0	0	1	0	0	0	1	0	0	0	2
Winter Flounder	21	35	19	28	103	68	36	2	5	5	5	11	338
Cancer Crabs	7	15	21	16	34	46	13	96	25	3	1	18	295
Conchs	0	0	0	0	0	0	0	0	0	0	0	0	0
Horseshoe Crab	0	0	0	0	0	0	0	0	1	0	0	0	1
Lobster (American)	0	0	1	3	43	12	11	1	4	7	2	2	86
Spider Crab	0	0	0	5	1	1	0	0	0	0	0	0	7
Squid (Longfin)	0	0	0	0	16	48	108	82	292	68	11	2	627
Starfish	0	0	0	0	0	0	0	0	0	0	0	0	0
Additional Organisms	14	5	0	1	0	14	32	11	17	9	3	1	107

Table 12 cont'd. Whale Rock, Rhode Island Sound. Mean monthly catch in number per 30 min. tow, 1986.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Atlantic Herring	13	49	2	44	0	0	0	0	0	0	2	0	110
Blueback Herring	1	0	0	0	0	0	0	0	0	0	1	0	2
Butterfish	0	0	0	0	1	24	28	103	129	77	616	3	981
Cod (Atlantic)	0	0	0	0	0	0	0	0	0	0	0	0	0
Cunner	0	0	0	1	1	0	0	0	0	0	0	0	2
Fourspot Flounder	0	0	0	0	1	2	1	0	1	1	2	0	8
Goosefish	0	0	0	0	0	0	0	0	0	0	0	0	0
Grubby Sculpin	0	0	0	0	0	0	0	0	0	0	0	0	0
Little Skate	12	1	1	2	2	5	6	1	4	11	11	10	66
Longhorn Sculpin	1	0	0	0	0	0	0	0	0	0	0	14	15
Northern Searobin	0	0	0	0	1	6	1	0	0	1	0	0	9
Ocean Pout	0	4	0	1	0	0	0	0	0	0	0	0	5
Sand Fl. (Windowpane)	21	6	4	5	4	5	1	1	1	8	7	6	69
Scup	0	0	0	1	50	108	10	7	19	35	2	0	232
Silver Hake	49	0	0	1	7	42	19	9	28	67	105	157	484
Smooth Dogfish	0	0	0	0	0	0	0	0	0	1	0	0	1
Spiny Dogfish	0	0	0	0	0	0	0	0	0	0	0	0	0
Squirrel Hake	10	0	0	3	2	4	0	0	0	0	2	9	30
Striped Searobin	0	0	0	0	0	1	0	0	0	2	1	1	5
Summer Flounder	0	0	0	0	0	2	0	0	2	5	1	0	10
Tautog	0	0	0	1	0	1	0	0	0	0	0	0	2
Toadfish (Oyster)	0	0	0	0	0	0	0	0	0	0	0	0	0
Winter Flounder	13	5	10	16	8	17	16	8	7	4	6	20	130
Cancer Crabs	49	5	7	8	11	19	3	7	27	28	45	34	243
Conchs	0	0	0	0	0	0	0	0	0	0	0	0	0
Horseshoe Crab	0	0	0	1	0	0	0	0	1	1	0	0	3
Lobster (American)	3	0	0	1	11	11	2	3	2	2	2	4	41
Spider Crab	1	0	0	2	5	0	0	0	0	1	2	18	29
Squid (Longfin)	0	0	0	0	6	25	153	104	165	166	85	13	717
Starfish	0	0	0	0	0	0	0	0	0	0	0	0	0
Additional Organisms	0	0	1	2	42	3	3	3	3	11	6	4	78

Table 12 cont'd. Whale Rock, Rhode Island Sound. Mean monthly catch in number per 30 min. tow, 1987.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Atlantic Herring	22	109	103	25	1	1	0	1	0	0	3	4	269
Blueback Herring	0	0	0	0	0	0	0	1	1	0	2	0	4
Butterfish	0	0	0	0	12	27	133	112	90	119	8	3	504
Cod (Atlantic)	0	0	0	0	0	0	0	0	0	0	0	0	0
Cunner	0	0	0	1	2	0	0	0	0	0	0	0	3
Fourspot Flounder	0	0	1	1	29	31	28	7	1	2	2	0	102
Goosefish	1	0	0	0	0	1	1	1	0	0	1	0	5
Grubby Sculpin	0	0	0	0	0	0	0	0	0	0	0	0	0
Little Skate	39	30	20	32	7	6	21	11	9	26	35	15	251
Longhorn Sculpin	4	0	0	0	0	0	0	0	0	0	13	11	28
Northern Searobin	0	0	0	1	13	4	0	0	0	1	0	0	19
Ocean Pout	9	9	7	5	1	0	0	0	0	0	0	2	33
Sand Fl. (Windowpane)	22	18	19	33	24	13	10	8	16	51	41	52	307
Scup	0	0	0	0	26	80	1	2	91	131	7	0	338
Silver Hake	41	10	3	73	43	49	37	2	1	0	12	41	312
Smooth Dogfish	0	0	0	0	0	0	1	0	0	0	0	0	1
Spiny Dogfish	0	0	0	0	0	0	0	0	0	0	1	0	1
Squirrel Hake	15	5	3	16	3	1	1	3	1	1	9	6	64
Striped Searobin	0	0	0	0	0	0	0	0	0	1	1	0	2
Summer Flounder	0	0	0	1	7	5	1	1	4	3	0	0	22
Tautog	0	0	0	0	0	0	0	0	0	1	0	0	1
Toadfish (Oyster)	0	0	0	0	0	0	0	0	0	0	0	0	0
Winter Flounder	24	51	49	44	58	30	55	28	14	22	31	85	491
Cancer Crabs	89	34	31	46	133	145	90	112	191	465	351	433	2120
Conchs	0	0	0	0	0	0	0	0	0	0	0	0	0
Horseshoe Crab	0	0	0	0	0	0	0	0	1	0	0	0	1
Lobster (American)	0	0	0	1	4	19	10	5	4	6	4	1	54
Spider Crab	1	0	0	5	4	0	0	1	1	0	5	6	23
Squid (Longfin)	0	0	0	0	34	51	169	73	154	105	7	0	593
Starfish	0	0	0	0	0	0	0	0	0	0	0	0	0
Additional Organisms	1	6	2	7	6	2	10	16	14	14	9	13	100

Table 13. Sand Flounder. Fox Island, Narragansett Bay. Mean monthly catch in number per 30 min. tow, 1959-1987.

YEAR	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1959	0	0	0	1	3	0	1	1	0	0	1	1	8
1960	1	0	0	1	1	1	0	0	0	0	2	0	6
1961	0	0	1	4	3	8	4	0	0	1	3	1	25
1962	1	0	2	3	3	5	3	1	3	9	7	6	43
1963	1	2	3	6	2	15	9	0	1	4	4	3	50
1964	1	5	7	7	5	8	8	4	5	7	12	6	75
1965	3	1	9	6	5	7	7	9	4	15	10	26	102
1966	18	27	42	31	10	2	25	3	4	22	31	50	265
1967	51	41	31	36	29	14	11	11	24	11	16	32	307
1968	20	27	29	42	36	36	19	10	20	25	25	26	315
1969	38	71	62	36	21	16	6	24	19	21	17	28	359
1970	25	70	38	38	39	20	12	2	4	10	28	30	316
1971	28	34	45	48	46	22	18	6	8	2	12	14	283
1972	15	34	33	38	36	12	14	8	2	8	26	18	244
1973	30	21	26	39	39	12	12	8	4	11	19	28	249
1974	23	25	23	22	37	16	6	2	4	9	17	22	206
1975	12	9	18	24	25	8	4	2	3	6	6	9	126
1976	5	8	14	16	18	9	3	5	5	4	6	6	99
1977	1	2	10	11	29	15	4	14	8	19	33	25	171
1978	25	15	17	30	56	38	30	13	12	45	29	27	337
1979	17	.	20	31	40	44	27	23	21	34	13	31	301
1980	36	20	18	32	26	21	22	8	8	14	15	18	238
1981	1	2	9	24	24	10	24	21	29	3	6	11	164
1982	5	3	7	7	13	7	5	6	6	6	7	16	88
1983	11	8	5	15	31	12	7	5	4	6	12	12	128
1984	2	3	9	8	9	3	0	0	3	6	4	3	50
1985	2	3	2	1	4	2	10	3	1	1	1	1	31
1986	3	2	1	3	3	1	2	1	3	12	4	3	38
1987	5	3	4	6	9	9	6	7	66	39	37	22	213

Table 14. Sand Flounder. Whale Rock, Rhode Island Sound. Mean monthly catch in number per 30 min. tow, 1959-1987.

YEAR	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1959	0	2	2	4	6	35	80	78	28	2	1	0	238
1960	0	2	2	7	5	10	81	35	1	2	2	2	149
1961	2	5	9	5	6	10	105	144	76	5	2	1	370
1962	1	2	3	4	6	26	29	35	28	3	3	1	141
1963	1	4	3	5	7	6	10	8	0	1	1	1	47
1964	1	1	4	3	1	7	53	15	11	11	6	1	114
1965	2	8	7	7	7	15	12	25	31	16	9	8	147
1966	15	13	14	23	10	9	32	35	22	22	6	6	207
1967	5	8	10	14	4	14	7	61	35	15	9	3	185
1968	11	22	28	18	4	12	34	16	8	15	0	11	179
1969	6	10	5	4	6	10	10	9	15	4	2	9	90
1970	6	4	4	4	9	12	31	4	4	4	12	12	106
1971	8	9	7	4	8	6	15	4	9	2	6	3	81
1972	3	8	13	9	5	4	4	8	7	3	4	4	72
1973	5	3	2	13	8	4	4	4	2	8	3	1	57
1974	3	8	3	3	6	5	7	3	6	6	5	3	58
1975	4	6	5	13	5	15	4	5	3	6	7	2	75
1976	1	2	6	5	4	16	24	1	3	4	3	1	70
1977	0	15	22	4	4	27	19	49	45	12	3	10	210
1978	47	21	13	44	31	54	75	27	42	56	27	3	440
1979	3	11	16	40	35	91	188	26	17	36	15	11	489
1980	9	15	19	21	46	11	79	21	9	3	10	3	246
1981	6	.	22	22	45	44	85	52	21	25	4	4	330
1982	.	30	22	17	16	18	33	12	10	9	2	2	171
1983	7	9	11	12	20	13	38	42	16	15	8	2	193
1984	15	14	11	4	6	1	6	9	6	7	3	1	83
1985	6	11	1	4	9	14	14	2	1	3	0	5	70
1986	21	6	4	5	4	5	1	1	1	8	7	6	69
1987	22	18	19	33	24	13	10	8	16	51	41	52	307

Table 15. Scup. Fox Island, Narragansett Bay. Mean monthly catch in number per 30 min. tow, 1959-1987.

YEAR	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1959	0	0	0	0	66	156	211	92	148	156	0	0	829
1960	0	0	0	0	0	118	50	19	3	70	0	0	260
1961	0	0	0	0	0	101	46	5	17	86	0	0	255
1962	0	0	0	0	1	20	8	11	21	32	0	0	93
1963	0	0	0	0	2	.	.	11	30	17	0	0	.
1964	0	0	0	0	32	.	79	26	69	8	0	0	.
1965	0	0	0	0	1	374	15	13	64	32	0	0	499
1966	0	0	0	0	11	90	7	32	46	11	0	0	197
1967	0	0	0	0	1	164	675	292	128	20	0	0	1280
1968	0	0	0	0	110	125	27	36	35	30	0	0	363
1969	0	0	0	0	1	31	21	9	92	75	0	0	229
1970	0	0	0	0	5	12	110	13	18	50	0	0	208
1971	0	0	0	0	7	466	325	10	46	45	15	0	914
1972	0	0	0	0	4	333	42	6	25	42	0	0	452
1973	0	0	0	0	32	550	173	100	158	300	0	0	1313
1974	0	0	0	0	303	194	47	3	48	71	0	0	666
1975	0	0	0	0	1003	350	350	117	95	82	0	0	1997
1976	0	0	0	4	1550	1150	425	1283	375	109	0	0	4896
1977	0	0	0	0	863	2100	67	83	163	173	0	0	3449
1978	0	0	0	0	2	1139	608	70	49	95	0	0	1963
1979	0	.	0	0	47	725	566	212	113	54	0	0	1717
1980	0	0	0	0	23	312	445	64	53	70	0	0	967
1981	0	0	0	0	317	531	413	36	96	43	0	0	1436
1982	0	0	0	1	74	181	199	150	79	16	0	0	700
1983	0	0	0	0	3	320	521	785	442	200	0	0	2271
1984	0	0	0	0	12	785	700	150	387	16	0	0	2050
1985	0	0	0	0	967	1031	79	56	27	91	0	0	2251
1986	0	0	0	0	7	1001	623	98	145	29	0	0	1903
1987	0	0	0	0	2	384	231	267	337	59	0	0	1280

Table 16. Scup. Whale Rock, Rhode Island Sound. Mean monthly catch in number per 30 min. tow, 1959-1987.

YEAR	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1959	0	0	0	0	3	80	0	1	23	520	0	0	627
1960	0	0	0	0	2	44	1	3	5	18	0	0	73
1961	0	0	0	0	1	17	4	1	0	43	1	0	67
1962	0	0	0	0	2	1	1	1	3	11	0	0	19
1963	0	0	0	0	5	6	2	0	0	9	0	0	22
1964	0	0	0	0	8	10	1	8	34	3	0	0	64
1965	0	0	0	0	0	4	11	2	14	34	0	0	65
1966	0	0	0	0	0	5	0	1	6	40	0	0	52
1967	0	0	0	0	1	40	13	20	9	9	0	0	92
1968	0	0	0	0	1	21	21	4	4	20	0	0	71
1969	0	0	0	0	3	14	3	0	19	17	0	0	56
1970	0	0	0	0	6	50	4	2	10	10	1	0	83
1971	0	0	0	0	2	32	6	50	16	18	10	0	134
1972	0	0	0	0	1	142	48	8	18	6	15	0	238
1973	0	0	0	0	13	12	6	5	3	25	0	0	64
1974	0	0	0	1	118	29	10	201	30	34	1	0	424
1975	0	0	0	0	33	55	5	36	80	280	1	0	490
1976	0	0	0	0	0	92	43	92	55	39	0	0	321
1977	0	0	0	0	10	16	4	1	100	31	0	0	162
1978	0	0	0	0	5	79	33	3	77	62	3	0	262
1979	0	0	0	0	33	12	29	3	20	118	3	0	218
1980	0	0	0	0	9	18	8	0	18	1	1	0	55
1981	0	.	0	0	148	31	74	4	7	61	0	0	325
1982	.	0	0	0	59	63	25	23	20	67	0	0	257
1983	0	0	0	0	440	159	0	7	57	20	1	0	684
1984	0	0	0	0	43	551	4	10	41	48	0	0	697
1985	0	0	0	0	250	108	183	5	30	4	0	0	580
1986	0	0	0	1	50	108	10	7	19	35	2	0	232
1987	0	0	0	0	26	80	1	2	91	131	7	0	338

Table 17. Winter Flounder. Fox Island, Narragansett Bay. Mean monthly catch in number per 30 min tow, 1959-1987.

YEAR	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1959	3	8	34	127	128	26	202	102	58	102	64	63	917
1960	40	40	64	98	133	80	63	39	62	85	98	44	846
1961	18	11	77	113	206	259	43	38	43	172	108	48	1136
1962	22	25	64	130	224	62	11	52	92	176	135	116	1109
1963	39	21	68	212	196	97	2	18	55	149	148	60	1065
1964	38	42	119	121	149	46	22	22	58	129	154	117	1017
1965	40	25	68	154	230	107	63	39	52	147	179	96	1200
1966	41	37	115	217	98	119	258	117	132	203	235	167	1739
1967	104	73	193	421	405	283	48	201	443	600	525	483	3779
1968	112	75	190	275	900	319	80	200	288	400	1000	512	4351
1969	144	138	231	325	625	219	117	144	170	362	467	370	3312
1970	158	88	121	300	575	188	50	12	20	95	338	194	2139
1971	56	29	92	256	500	178	34	66	29	18	136	101	1495
1972	33	36	92	162	181	53	42	63	38	108	269	192	1269
1973	55	36	150	290	212	66	60	45	58	72	138	65	1247
1974	46	45	73	125	300	124	36	15	25	62	183	98	1132
1975	28	27	81	142	142	37	14	12	36	83	85	70	757
1976	21	29	57	95	138	29	25	17	19	65	86	32	613
1977	1	14	72	95	94	18	41	50	45	90	178	76	774
1978	57	23	74	186	220	194	98	93	178	247	406	316	2092
1979	93	.	192	305	311	592	591	285	205	546	680	238	4038
1980	106	24	195	914	621	256	196	141	193	296	156	71	3169
1981	10	42	125	407	296	198	252	187	219	422	68	45	2271
1982	22	36	106	269	289	174	54	162	177	189	74	155	1707
1983	40	18	68	358	675	469	712	363	266	441	214	183	3807
1984	23	18	89	174	195	105	131	110	213	162	73	27	1320
1985	17	12	30	42	123	68	74	39	25	27	42	14	513
1986	8	15	14	33	20	101	82	37	40	77	22	45	494
1987	29	14	24	143	218	197	60	72	137	91	76	41	1102

Table 18. Winter Flounder. Whale Rock, Rhode Island Sound. Mean monthly catch in number per 30 min tow, 1959-1987.

YEAR	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1959	12	6	14	42	47	94	128	199	20	25	26	8	621
1960	16	15	21	27	46	56	176	81	10	25	14	8	495
1961	10	8	30	12	42	54	73	112	53	47	35	14	490
1962	10	13	33	58	157	78	108	66	49	43	32	14	661
1963	9	16	18	51	29	116	101	.	30	33	15	33	451
1964	11	9	10	38	37	38	74	32	29	57	63	23	421
1965	7	9	34	87	140	272	93	133	72	69	58	19	993
1966	12	24	44	96	70	139	157	174	129	96	48	44	1033
1967	18	10	38	58	56	103	62	108	136	42	34	28	693
1968	8	12	21	38	39	158	113	68	22	35	5	12	531
1969	14	12	18	66	106	61	92	41	150	23	18	20	621
1970	10	5	10	21	45	151	172	19	24	20	31	20	528
1971	9	5	9	20	22	22	69	11	19	9	29	11	235
1972	3	9	18	24	32	16	17	15	25	13	18	15	205
1973	10	8	7	56	31	39	18	13	18	23	18	5	246
1974	8	15	14	16	25	21	18	11	13	25	14	2	182
1975	4	7	11	27	23	22	6	9	14	15	11	5	154
1976	6	5	26	18	5	14	33	9	5	5	13	4	143
1977	1	8	10	13	4	38	43	40	23	25	29	23	257
1978	22	24	13	42	53	105	194	45	33	32	40	30	633
1979	23	17	44	59	49	157	222	63	39	42	86	53	854
1980	46	53	36	111	128	94	244	62	55	29	38	24	920
1981	14	.	31	146	82	148	95	30	49	95	46	51	787
1982	.	20	40	192	105	49	75	33	47	43	48	34	686
1983	32	36	72	60	78	52	94	73	31	69	48	23	668
1984	50	57	50	49	82	56	115	25	38	27	12	10	571
1985	21	35	19	28	103	68	36	2	5	5	5	11	338
1986	13	5	10	16	8	17	16	8	7	4	6	20	130
1987	24	51	49	44	58	30	55	28	14	22	31	85	491

Table 19. Lobster. Fox Island, Narragansett Bay. Mean monthly catch in number per 30 min. tow, 1959-1987.

YEAR	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1959	0	0	0	0	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	1	0	0	0	0	0	1
1963	0	0	0	0	0	1	0	0	0	0	0	0	1
1964	0	0	0	0	0	0	0	0	0	1	0	0	1
1965	0	0	0	0	1	0	1	0	0	0	0	0	2
1966	0	0	0	1	0	4	1	1	0	1	0	0	8
1967	0	0	0	0	1	2	4	0	0	2	0	0	9
1968	0	0	0	0	2	8	2	1	2	0	0	2	17
1969	0	0	0	1	4	6	0	1	1	2	1	1	17
1970	0	0	1	1	2	1	1	0	1	2	3	1	13
1971	0	0	1	0	1	2	1	1	0	1	2	1	10
1972	0	0	0	0	0	1	2	1	0	1	2	0	7
1973	1	0	0	1	6	4	2	0	0	1	2	0	17
1974	0	1	0	0	2	2	2	1	3	3	1	1	16
1975	1	0	1	1	4	9	4	1	1	3	3	1	29
1976	0	1	1	2	1	4	2	1	2	2	2	1	19
1977	0	0	1	1	2	6	4	3	1	4	10	2	34
1978	0	0	1	2	2	10	12	6	8	12	11	0	64
1979	1	.	0	2	1	7	6	5	6	9	3	2	42
1980	0	0	0	1	1	4	4	3	5	1	1	1	21
1981	0	1	1	13	2	5	8	3	5	8	3	1	50
1982	1	0	2	14	5	12	12	4	14	12	5	2	83
1983	0	0	0	1	2	4	2	1	2	2	4	1	19
1984	0	0	0	3	3	3	1	0	0	2	5	5	22
1985	0	0	1	4	2	1	20	1	1	6	5	2	43
1986	1	1	0	2	4	11	25	21	17	25	12	6	125
1987	2	0	0	7	15	29	24	20	23	13	8	4	145

Table 20. Lobster. Whale Rock, Rhode Island Sound. Mean monthly catch in number per 30 min. tow, 1959-1987.

YEAR	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1959	1	0	0	0	0	4	1	0	0	0	1	0	7
1960	1	0	0	0	1	5	2	1	2	1	1	0	14
1961	0	0	0	0	1	3	4	0	1	2	0	1	12
1962	0	0	0	0	1	3	6	3	2	1	3	1	20
1963	0	0	0	0	1	8	3	2	1	3	2	1	21
1964	0	0	0	0	2	7	10	3	4	4	1	0	31
1965	0	0	0	0	1	7	11	4	5	8	3	2	41
1966	1	2	1	1	8	48	20	16	70	59	30	10	266
1967	1	0	0	0	9	20	52	22	26	28	17	2	177
1968	1	0	0	2	14	35	41	34	52	200	11	8	398
1969	6	0	1	2	13	65	23	17	36	53	28	14	258
1970	2	3	2	1	16	21	15	9	34	28	26	4	161
1971	2	3	4	3	16	18	39	12	30	25	35	7	194
1972	3	1	0	1	7	22	104	3	30	23	32	20	246
1973	4	2	0	2	39	59	77	115	175	175	64	2	714
1974	3	1	2	3	27	96	48	62	100	231	22	11	606
1975	4	0	1	1	14	43	44	32	87	95	54	9	384
1976	1	4	0	7	10	15	19	14	20	70	19	0	179
1977	1	1	0	1	8	16	5	5	3	4	8	3	55
1978	1	0	0	1	5	9	8	3	5	9	2	8	51
1979	1	0	0	1	3	9	3	4	2	5	0	2	30
1980	1	0	1	0	2	7	6	1	0	4	1	1	24
1981	0	.	0	2	32	35	14	2	7	14	0	2	108
1982	.	0	1	5	22	10	2	5	4	5	5	1	60
1983	2	1	0	1	3	8	6	0	0	1	8	3	33
1984	1	0	0	1	3	13	14	3	2	13	7	8	65
1985	0	0	1	3	43	12	11	1	4	7	2	2	86
1986	3	0	0	1	11	11	2	3	2	2	2	4	41
1987	0	0	0	1	4	19	10	5	4	6	4	1	54

Table 21. Total Finfish Catch. Fox Island, Narragansett Bay. Mean monthly catch in number per 30 min tow, 1959-1987.

YEAR	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1959	7	12	45	172	399	285	583	292	314	356	328	130	2923
1960	74	57	82	130	203	354	269	149	94	243	159	93	1907
1961	59	65	139	227	357	721	283	228	132	332	267	152	2962
1962	91	66	109	194	388	265	111	133	247	339	308	304	2555
1963	77	48	113	298	398	385	99	100	148	213	246	172	2297
1964	66	69	151	175	741	138	259	99	167	183	241	257	2546
1965	49	31	80	166	262	990	302	118	138	242	241	192	2811
1966	96	70	179	262	134	309	417	234	237	275	309	253	2775
1967	196	120	236	467	451	568	835	588	666	674	578	549	5928
1968	153	108	225	323	1127	684	286	331	380	496	1092	593	5798
1969	219	218	305	372	727	400	246	284	351	523	528	452	4625
1970	243	197	204	403	801	355	285	89	108	210	456	287	3638
1971	122	116	194	399	726	911	603	206	200	137	246	181	4041
1972	142	127	177	267	407	576	207	170	104	212	362	305	3056
1973	122	104	294	490	471	861	371	267	365	453	204	203	4205
1974	132	106	153	250	816	473	201	119	176	246	245	185	3102
1975	103	89	188	256	1314	548	520	293	284	310	168	140	4213
1976	64	116	187	246	1823	1350	606	1456	540	279	167	70	6904
1977	38	51	137	159	1216	2253	230	290	302	356	272	169	5473
1978	116	84	477	583	343	1454	842	272	327	478	520	383	5879
1979	124	.	963	589	490	1432	1250	663	523	699	748	293	7774
1980	167	57	282	1189	747	640	727	279	303	424	222	106	5143
1981	18	83	471	601	705	844	821	365	418	521	128	96	5071
1982	121	135	499	442	732	471	321	434	421	358	172	264	4370
1983	107	177	245	506	890	1429	1386	1234	808	778	258	236	8054
1984	41	28	146	292	611	1064	1057	428	755	281	121	66	4890
1985	37	31	94	117	1282	1218	359	382	126	213	137	48	4044
1986	38	27	73	145	72	1192	813	362	324	286	166	205	3703
1987	495	50	219	310	449	980	897	761	935	496	435	492	6519

Table 22. Total Finfish Catch. Whale Rock, Rhode Island Sound. Mean monthly catch in number per 30 min. tow, 1959-1987.

YEAR	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1959	81	48	49	114	376	446	492	461	190	702	1351	127	4437
1960	374	53	58	98	155	262	417	464	194	393	571	398	3437
1961	62	33	56	80	251	458	366	435	428	745	682	548	4144
1962	246	60	88	120	529	284	305	352	353	438	504	336	3615
1963	82	61	73	98	231	422	306	241	129	100	202	101	2046
1964	28	26	29	63	110	141	199	149	242	193	240	144	1564
1965	35	47	79	125	193	449	251	228	241	287	290	132	2357
1966	98	50	81	136	121	250	270	303	310	351	204	172	2346
1967	64	44	71	90	90	264	190	388	313	175	276	273	2238
1968	54	70	96	96	114	297	293	161	225	427	1060	220	3113
1969	156	120	88	133	220	279	305	201	383	684	550	380	3499
1970	191	164	270	129	188	355	344	182	315	335	374	493	3340
1971	251	173	238	152	290	357	359	338	297	330	510	723	4018
1972	424	173	179	231	322	458	523	189	546	278	475	1608	5406
1973	453	345	297	429	361	409	428	551	585	813	1132	1393	7196
1974	674	1018	785	778	937	1006	668	1042	936	751	1183	371	10149
1975	926	425	735	417	604	589	675	575	623	791	637	1282	8279
1976	148	295	379	289	637	1080	417	337	342	1109	537	307	5877
1977	171	77	107	111	610	364	148	310	348	330	357	336	3269
1978	165	61	77	125	316	499	413	136	274	488	245	571	3370
1979	215	65	210	219	367	468	582	188	159	475	287	270	3505
1980	152	187	112	225	470	306	506	154	215	255	114	118	2814
1981	37	.	89	717	693	698	593	338	665	999	351	272	5452
1982	.	110	110	461	609	505	535	400	453	903	524	529	5139
1983	295	147	251	308	1203	885	635	473	550	1327	271	433	6778
1984	189	169	215	137	639	1054	637	458	996	424	286	372	5576
1985	109	146	82	95	679	450	598	293	608	122	86	94	3362
1986	173	70	25	89	152	275	243	246	389	421	896	293	3272
1987	268	272	238	291	407	465	568	384	593	948	542	672	5648

Table 23. Intake, Mt. Hope Bay. Summary statistics for finfishes based on yearly totals of mean monthly catch, number per 15 min. tow (n=15), 1971-1985.

COMMON NAME	MEAN	SD	MIN	MAX
ANCHOVY (BAY)	10	35	0	137
ATLANTIC HERRING	1	2	0	7
BLUEBACK HERRING	<0.5	1	0	2
BUTTERFISH	15	13	0	41
CUNNER	35	27	6	107
GRUBBY	2	3	0	9
HOGCHOKER	58	33	6	98
LITTLE SKATE	4	5	0	14
NORTHERN SEAROBIN	3	8	0	30
SAND FL.[WINDOWPANE]	212	125	67	474
SCUP	44	56	4	216
SILVER HAKE	10	12	0	42
SMELT (RAINBOW)	17	23	0	81
SQUIRREL (RED) HAKE	4	5	0	15
STRIPED SEAROBIN	2	2	0	7
SUMMER FLOUNDER	2	2	0	8
TAUTOG	20	14	4	61
TOADFISH (OYSTER)	10	6	0	19
TOMCOD (ATLANTIC)	6	9	0	31
WEAKFISH	199	248	0	858
WHITE HAKE	12	17	0	57
WHITE PERCH	3	5	0	17
WINTER FLOUNDER	1075	757	387	3210

Table 24. Spar, Mt. Hope Bay. Summary statistics for finfishes based on yearly totals of mean monthly catch, number per 15 min. tow (n=14), 1972-1985.

COMMON NAME	MEAN	SD	MIN	MAX
ANCHOVY (BAY)	1	2	0	7
ATLANTIC HERRING	1	1	0	5
BLUEBACK HERRING	<0.5	<0.5	0	1
BUTTERFISH	3	4	0	12
CUNNER	1	1	0	5
GRUBBY	<0.5	1	0	2
HOGCHOKER	4	5	0	17
LITTLE SKATE	1	1	0	3
NORTHERN SEAROBIN	<0.5	1	0	5
SAND FL.[WINDOWPANE]	42	30	14	106
SCUP	22	18	2	63
SILVER HAKE	<0.5	1	0	2
SMELT (RAINBOW)	<0.5	<0.5	0	1
SQUIRREL (RED) HAKE	<0.5	1	0	2
STRIPED SEAROBIN	2	3	0	12
SUMMER FLOUNDER	1	1	0	4
TAUTOG	6	5	2	17
TOADFISH (OYSTER)	<0.5	1	0	2
TOMCOD (ATLANTIC)	<0.5	<0.5	0	1
WEAKFISH	5	9	0	33
WHITE HAKE	<0.5	<0.5	0	1
WHITE PERCH	0	0	0	0
WINTER FLOUNDER	242	148	77	544

Table 25. Intake, Mt. Hope Bay. Mean monthly mid-depth temperature (degrees Celsius), 1971-1985.

YEAR	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1971	.	.	.	.	.	.	.	.	.	.	.	.
1972	.	.	.	.	.	.	.	.	.	.	.	.
1973	.	.	.	.	.	.	.	.	.	.	.	.
1974	.	.	.	.	.	.	.	.	.	.	.	.
1975	.	.	.	.	.	.	.	.	.	.	.	.
1976	.	.	.	.	.	.	.	.	.	.	.	.
1977	.	.	.	.	.	.	.	.	.	.	.	.
1978	.	.	.	.	.	.	.	.	.	.	.	.
1979	.	.	.	.	.	.	.	.	.	.	.	.
1980	.	.	.	.	.	.	.	.	.	.	.	.
1981	.	.	.	6.3	10.9	17.2	23.3	23.5	22.8	18.3	6.7	.
1982	.	1.9	2.6	10.3	13.6	25.7	.	26.7	19.9	13.0	9.6	4.4
1983	.	1.7	6.1	8.3	17.3	16.1	22.1	21.5	18.2	15.6	10.2	6.0
1984	1.7	1.6	3.5	4.5	14.3	16.1	22.6	23.0	21.2	12.4	8.0	4.0
1985	0.4	2.4	2.0	6.0	12.3	15.3	23.6	20.7	18.3	.	11.5	.
	1.1	2.1	4.9	9.5	13.7	18.1	21.7	25.4	18.7	13.4	10.3	.

Table 26. Intake, Mt. Hope Bay. Mean monthly bottom temperature (degrees Celsius), 1971-1985.

YEAR	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1971	.	.	.	.	.	.	.	.	.	.	.	.
1972	.	.	.	.	.	.	.	.	.	.	10.3	3.8
1973	.	2.5	4.9	8.1	11.3	17.3	20.1	21.4	19.4	15.2	9.0	9.0
1974	6.0	3.0	4.6	.	12.8	15.7	18.3	23.5	19.6	13.9	10.3	7.1
1975	4.9	6.0	5.6	5.7	12.4	15.4	23.2	22.9	19.9	16.9	13.0	9.8
1976	2.8	.	.	8.3	14.0	17.3	22.4	22.5	21.4	15.6	7.6	1.8
1977	.	.	3.2	5.6	12.5	17.4	22.7	22.9	20.4	16.3	13.1	6.4
1978	3.6	1.0	2.5	.	13.9	17.0	20.5	22.5	20.5	15.8	12.7	5.5
1979	3.3	2.0	4.8	7.9	12.3	17.0	22.4	21.5	21.4	16.0	12.0	7.3
1980	.	1.0	2.6	5.6	10.1	16.8	21.5	21.7	21.6	18.2	6.3	.
1981	.	.	2.3	8.3	10.5	25.2	.	22.2	20.4	12.9	9.7	4.3
1982	.	1.5	4.2	7.6	14.5	14.9	18.9	20.7	18.0	14.0	10.5	5.7
1983	2.2	1.8	3.3	4.1	10.7	15.2	21.3	21.0	20.2	12.9	9.2	4.0
1984	0.8	2.2	2.5	5.1	10.9	13.9	19.8	19.7	18.2	.	11.2	.
1985	1.6	1.9	3.8	8.3	12.9	17.1	21.7	22.1	18.0	13.2	10.5	.

Table 27. Spar, Mt. Hope Bay. Mean monthly mid-depth temperature (degrees Celsius), 1972-1985.

YEAR	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1972	.	.	.	.	.	.	.	.	.	.	.	.
1973	.	.	.	.	.	.	.	.	.	.	.	.
1974	.	.	.	.	.	.	.	.	.	.	.	.
1975	.	.	.	.	.	.	.	.	.	.	.	.
1976	.	.	.	.	.	.	.	.	.	.	.	.
1977	.	.	.	.	.	.	.	.	.	.	.	.
1978	.	.	.	.	.	.	.	.	.	.	.	.
1979	.	.	.	.	.	.	.	.	.	.	.	.
1980	.	.	.	.	.	.	.	.	.	.	.	.
1981	.	.	.	6.9	12.9	19.1	22.8	24.5	21.8	17.0	6.2	3.9
1982	.	.	2.8	8.5	14.1	19.9	24.7	25.0	18.8	12.1	9.4	4.0
1983	.	1.5	5.0	9.5	14.6	17.4	23.1	21.0	18.5	14.3	10.3	5.0
1984	2.6	2.4	5.0	4.8	11.2	17.9	25.9	22.0	21.2	12.8	9.3	6.1
1985	.	0.8	2.7	7.8	16.5	20.3	24.0	22.7	18.7	.	11.5	4.3
	0.0	3.2	5.1	9.7	15.7	20.3	23.0	24.3	18.2	12.7	9.6	1.9

Table 28. Spar, Mt. Hope Bay. Mean monthly bottom temperature (degrees Celsius), 1972-1985.

YEAR	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1972	.	.	.	.	.	.	.	.	.	.	10.3	3.9
1973	.	2.7	5.9	7.9	11.8	18.9	21.7	22.0	21.2	15.0	9.1	9.0
1974	6.0	2.5	4.4	.	13.2	17.4	19.6	23.0	19.5	13.7	9.7	6.7
1975	4.6	5.2	5.5	6.5	12.5	18.0	23.1	22.7	20.0	16.5	12.9	9.5
1976	2.8	.	.	8.1	12.8	18.6	21.9	23.1	20.6	15.1	7.1	1.4
1977	.	.	4.2	6.9	13.8	18.3	22.3	23.5	21.4	16.0	12.9	5.4
1978	2.5	1.0	2.0	.	13.5	18.9	11.5	24.3	19.0	15.3	12.4	5.1
1979	3.6	0.6	4.9	7.6	13.3	17.2	21.4	23.3	21.2	15.3	11.9	7.5
1980	3.0	1.5	2.0	5.7	10.9	18.1	21.2	23.6	21.7	17.0	6.5	4.0
1981	.	.	2.1	7.8	13.0	19.4	23.5	23.6	19.0	12.5	9.5	4.6
1982	.	1.6	4.3	8.9	13.8	15.4	19.5	21.0	17.9	13.8	10.4	5.3
1983	1.6	1.8	3.5	4.5	11.0	15.4	24.3	19.9	19.0	13.0	8.7	6.8
1984	.	1.3	2.3	5.5	13.1	15.5	22.0	20.0	18.3	.	11.3	4.6
1985	0.8	2.7	4.0	7.7	12.5	18.0	23.6	23.3	19.0	12.6	10.4	2.2

Table 29. Intake, Mt. Hope Bay. Annual sum of mean monthly catch, number per 15 min. tow - finfishes, 1971-1985.

YEAR	SPECIES:	ANC	SHR	BHR	BUT	CUN	GSC	HOG	SKA	NSR	WND	SCP	SHK
1971		0	1	2	41	11	0	9	0	30	205	26	3
1972		0	7	0	18	41	0	30	0	9	257	6	30
1973		2	0	0	5	75	0	18	4	6	214	5	8
1974		0	1	0	7	36	1	86	1	2	251	28	18
1975		6	0	0	32	37	0	82	4	1	173	22	5
1976		2	1	0	2	50	0	41	0	1	74	216	3
1977		0	1	0	24	6	0	6	0	0	105	4	5
1978		1	2	1	2	37	2	35	2	2	428	28	9
1979		3	0	0	24	107	9	98	4	0	474	87	4
1980		137	0	0	4	35	4	78	2	0	227	85	0
1981		0	0	0	18	24	0	96	1	0	140	59	1
1982		1	0	0	30	40	4	72	9	0	341	15	42
1983		0	0	0	17	13	4	92	13	0	145	65	10
1984		0	0	0	1	10	1	49	14	0	67	5	8
1985		0	2	1	0	6	0	74	5	1	74	6	1

Table 29 cont'd. Intake, Mt. Hope Bay. Annual sum of mean monthly catch number per 15 min. tow - finfishes, 1971-1985.

YEAR	SPECIES:	SMT	RHK	SSR	FLK	TAU	TDF	TOM	WFS	WHK	WPR	WFL
1971		0	0	0	0	4	7	0	858	1	4	480
1972		30	4	6	0	15	13	16	278	19	3	1436
1973		81	1	5	0	9	11	6	319	34	10	1336
1974		41	4	7	2	13	7	2	598	8	4	1579
1975		12	0	3	4	23	8	0	104	29	4	578
1976		6	4	1	8	14	8	0	29	18	17	387
1977		0	1	1	1	12	0	1	17	0	1	492
1978		2	8	2	0	33	12	16	262	57	2	1838
1979		27	3	1	0	24	1	31	34	2	1	3210
1980		13	15	0	1	15	5	2	284	4	0	820
1981		2	0	0	3	32	4	4	56	0	2	871
1982		1	2	2	0	61	15	1	4	0	1	886
1983		37	10	2	0	16	15	4	137	1	0	1336
1984		1	1	2	3	16	19	3	0	0	1	400
1985		0	11	0	4	19	18	1	3	0	0	478

Table 30. Spar, Mt. Hope Bay. Annual sum of mean monthly catch, number per 15 min. tow - finfishes, 1972-1985.

YEAR	SPECIES:	ANC	SHR	BHR	BUT	CUN	GSC	HOG	SKA	NSR	WND	SCP	SHK
1972		0	0	0	0	5	2	1	0	5	32	12	0
1973		1	0	1	8	2	0	3	0	0	65	2	2
1974		0	0	0	2	1	0	6	0	0	36	12	1
1975		7	0	0	6	0	0	1	1	0	35	35	1
1976		5	5	0	0	0	0	2	0	0	15	63	0
1977		0	1	0	12	0	0	1	0	0	18	2	0
1978		0	0	0	2	0	0	4	0	0	106	3	0
1979		2	1	0	6	0	2	10	1	0	106	29	0
1980		0	0	0	1	0	0	17	1	0	46	40	0
1981		0	0	0	0	0	0	2	1	0	43	6	0
1982		0	0	0	0	0	0	2	1	0	33	43	0
1983		0	0	0	0	0	0	7	3	0	31	16	1
1984		0	0	0	1	0	0	2	1	0	14	14	0
1985		0	0	0	1	0	0	0	1	0	14	25	0

Table 30 cont'd. Spar, Mt. Hope Bay. Annual sum of mean monthly catch, number per 15 min. tow - finfishes, 1972-1985.

YEAR	SPECIES:	SMT	RHK	SSR	FLK	TAU	TDF	TOM	WFS	WHK	WPR	WFL
1972		1	0	4	0	6	0	0	2	1	0	372
1973		0	0	12	1	7	2	0	33	1	0	544
1974		1	0	2	2	9	0	0	14	0	0	217
1975		0	0	3	1	3	0	0	14	1	0	191
1976		0	0	0	4	3	0	0	2	0	0	109
1977		0	0	0	0	10	0	0	1	0	0	135
1978		0	0	0	0	4	0	1	2	0	0	286
1979		0	0	0	0	4	0	0	2	0	0	520
1980		0	2	0	2	3	0	0	0	1	0	162
1981		0	0	0	0	5	1	0	0	0	0	212
1982		0	0	0	2	2	2	0	0	0	0	214
1983		0	0	0	0	2	0	0	0	0	0	278
1984		0	0	0	1	14	0	0	0	0	0	77
1985		0	0	0	0	17	0	0	0	0	0	77

Table 31. Intake, Mt. Hope Bay. Mean monthly catch in number per 15 min. tow, 1971.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Anchovy	.	.	.	.	0	0	0	0	0	0	0	0	0
Atlantic Herring	.	.	.	.	1	.	.	.	.	0	0	0	1
Blueback Herring	.	.	.	.	.	.	.	.	0	2	0	0	2
Butterfish	.	.	.	.	.	.	.	.	27	4	10	0	41
Cunner	.	.	.	.	3	3	0	0	1	1	3	0	11
Grubby Sculpin	.	.	.	.	.	.	.	.	0	0	0	0	0
Hogchoker	.	.	.	.	0	0	1	5	0	1	2	0	9
Little Skate	.	.	.	.	.	.	.	.	0	0	0	0	0
Northern Searobin	.	.	.	.	0	1	0	4	10	7	6	2	30
Sand Flounder	.	.	.	.	19	40	10	22	38	15	18	43	205
Scup	.	.	.	.	0	0	0	3	19	4	0	0	26
Silver Hake	.	.	.	.	.	.	.	.	0	0	0	3	3
Smelt	.	.	.	.	0	0	0	0	0	0	0	0	0
Squirrel Hake	.	.	.	.	.	.	.	.	0	0	0	0	0
Striped Searobin	.	.	.	.	.	.	.	.	0	0	0	0	0
Summer Flounder	.	.	.	.	.	.	.	.	0	0	0	0	0
Tautog	.	.	.	.	.	.	.	.	0	0	2	2	4
Toadfish	.	.	.	.	1	1	0	0	0	1	4	0	7
Tomcod	.	.	.	.	0	0	0	0	0	0	0	0	0
Weakfish	.	.	.	.	0	0	0	169	464	194	31	0	858
White Hake	.	.	.	.	0	0	0	0	0	0	1	0	1
White Perch	.	.	.	.	0	1	0	0	0	3	0	0	4
Winter Flounder	.	.	.	.	7	4	2	21	82	50	107	207	480
Total Fish	.	.	.	.	31	50	13	224	641	282	184	257	1682

Table 31 cont'd. Intake, Mt. Hope Bay. Mean monthly catch in number per 15 min. tow, 1972.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Anchovy	0	0	0	0	0	0	0	0	0	0	0	0	0
Atlantic Herring	0	2	1	0	1	0	0	0	0	0	0	3	7
Blueback Herring	0	0	0	0	0	0	0	0	0	0	0	0	0
Butterfish	0	0	0	0	0	0	0	1	1	16	0	0	18
Cunner	2	1	3	0	2	14	11	0	1	1	3	3	41
Grubby Sculpin	0	0	0	0	0	0	0	0	0	0	0	0	0
Hogchoker	0	2	2	0	3	2	3	9	4	1	3	1	30
Little Skate	0	0	0	0	0	0	0	0	0	0	0	0	0
Northern Searobin	0	0	0	0	2	1	1	1	0	2	2	0	9
Sand Flounder	35	33	21	4	20	28	47	22	17	19	3	8	257
Scup	0	0	0	0	0	0	1	0	1	4	0	0	6
Silver Hake	0	0	0	0	0	1	0	0	0	0	7	22	30
Smelt	14	4	9	0	0	0	0	0	0	0	0	3	30
Squirrel Hake	0	0	1	0	0	1	2	0	0	0	0	0	4
Striped Searobin	0	0	0	0	0	0	0	0	3	2	1	0	6
Summer Flounder	0	0	0	0	0	0	0	0	0	0	0	0	0
Tautog	5	0	1	1	2	2	1	0	1	1	1	0	15
Toadfish	0	1	2	3	2	0	0	1	2	2	0	0	13
Tomcod	3	0	2	0	0	0	0	0	0	0	0	11	16
Weakfish	0	0	0	0	0	0	0	46	163	69	0	0	278
White Hake	0	0	0	0	0	1	2	7	4	4	1	0	19
White Perch	2	0	0	0	0	0	0	0	0	0	0	1	3
Winter Flounder	432	168	105	120	45	45	61	57	55	80	58	210	1436
Total Fish	493	211	147	128	77	95	129	144	252	201	79	262	2218

Table 31 cont'd. Intake, Mt. Hope Bay. Mean monthly catch in number per 15 min. tow, 1973.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Anchovy	0	0	0	0	0	0	0	0	1	1	0	0	2
Atlantic Herring	0	0	0	0	0	0	0	0	0	0	0	0	0
Blueback Herring	0	0	0	0	0	0	0	0	0	0	0	0	0
Butterfish	0	0	0	0	0	0	0	0	2	3	0	0	5
Cunner	4	2	5	10	12	13	2	0	3	1	15	8	75
Grubby Sculpin	0	0	0	0	0	0	0	0	0	0	0	0	0
Hogchoker	0	3	4	1	1	0	0	1	3	4	1	0	18
Little Skate	1	0	0	1	1	1	0	0	0	0	0	0	4
Northern Searobin	0	0	0	0	3	0	0	1	0	1	1	0	6
Sand Flounder	23	26	11	13	22	10	23	6	9	12	32	27	214
Scup	0	0	0	0	0	1	0	1	2	1	0	0	5
Silver Hake	0	0	4	0	4	0	0	0	0	0	0	0	8
Smelt	34	40	4	0	0	0	0	0	0	0	3	0	81
Squirrel Hake	0	0	0	0	1	0	0	0	0	0	0	0	1
Striped Searobin	0	0	0	0	0	3	0	0	1	1	0	0	5
Summer Flounder	0	0	0	0	0	0	0	0	0	0	0	0	0
Tautog	3	2	2	0	1	1	0	0	0	0	0	0	9
Toadfish	0	0	1	0	4	1	1	1	0	1	2	0	11
Tomcod	0	0	0	0	2	1	2	0	0	0	0	1	6
Weakfish	0	0	0	0	0	0	1	35	214	69	0	0	319
White Hake	0	0	0	0	0	7	21	2	1	2	1	0	34
White Perch	4	2	0	0	0	0	0	0	0	0	4	0	10
Winter Flounder	396	143	65	32	36	29	69	29	39	48	205	245	1336
Total Fish	465	218	96	57	87	67	119	76	275	144	264	281	2149

Table 31 cont'd. Intake, Mt. Hope Bay. Mean monthly catch in number per 15 min. tow, 1974.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Anchovy	0	0	0	.	0	0	0	0	0	0	0	0	0
Atlantic Herring	0	0	1	.	0	0	0	0	0	0	0	0	1
Blueback Herring	0	0	0	.	0	0	0	0	0	0	0	0	0
Butterfish	0	0	0	.	0	0	0	0	0	7	0	0	7
Cunner	10	0	1	.	2	8	4	0	1	1	7	2	36
Grubby Sculpin	0	0	1	.	0	0	0	0	0	0	0	0	1
Hogchoker	1	1	1	.	0	0	9	17	33	21	3	0	86
Little Skate	0	0	0	.	1	0	0	0	0	0	0	0	1
Northern Searobin	0	0	0	.	1	0	0	0	1	0	0	0	2
Sand Flounder	36	14	22	.	50	8	22	13	27	14	17	28	251
Scup	0	0	0	.	0	0	2	18	6	2	0	0	28
Silver Hake	11	1	2	.	1	0	0	0	0	0	2	1	18
Smelt	1	32	6	.	0	0	0	1	0	0	0	1	41
Squirrel Hake	0	0	0	.	0	4	0	0	0	0	0	0	4
Striped Searobin	0	0	0	.	0	0	0	0	6	0	1	0	7
Summer Flounder	0	0	0	.	0	0	0	1	0	0	0	1	2
Tautog	0	0	0	.	0	8	1	0	2	0	1	1	13
Toadfish	0	0	0	.	1	1	0	1	2	0	2	0	7
Tomcod	2	0	0	.	0	0	0	0	0	0	0	0	2
Weakfish	0	0	0	.	0	0	1	413	164	19	1	0	598
White Hake	0	0	0	.	0	0	5	3	0	0	0	0	8
White Perch	0	1	0	.	0	.	0	0	0	0	3	0	4
Winter Flounder	630	106	213	.	22	11	26	33	11	88	145	294	1579
Total Fish	691	155	247	.	78	40	70	500	253	152	182	328	2696

Table 31 cont'd. Intake, Mt. Hope Bay. Mean monthly catch in number per 15 min. tow, 1975.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Anchovy	0	0	0	0	0	0	0	0	3	2	0	1	6
Atlantic Herring	0	0	0	0	0	0	0	0	0	0	0	0	0
Blueback Herring	0	0	0	0	0	0	0	0	0	0	0	0	0
Butterfish	0	0	0	0	0	0	0	0	1	25	6	0	32
Cunner	0	0	0	0	8	16	2	0	0	2	5	4	37
Grubby Sculpin	0	0	0	0	0	0	0	0	0	0	0	0	0
Hogchoker	0	1	1	1	1	23	23	12	13	2	3	2	82
Little Skate	1	0	0	1	1	1	0	0	0	0	0	0	4
Northern Searobin	0	0	0	0	0	0	0	0	0	1	0	0	1
Sand Flounder	32	30	12	12	17	36	12	3	3	6	8	2	173
Scup	0	0	0	0	0	2	0	0	1	19	0	0	22
Silver Hake	0	2	0	0	0	0	0	0	0	0	0	3	5
Smelt	1	3	1	6	0	0	1	0	0	0	0	0	12
Squirrel Hake	0	0	0	0	0	0	0	0	0	0	0	0	0
Striped Searobin	0	0	0	0	0	0	0	0	2	0	0	1	3
Summer Flounder	0	0	0	0	0	0	0	2	2	0	0	0	4
Tautog	0	1	0	0	1	3	1	1	1	2	5	8	23
Toadfish	0	0	0	0	1	1	1	0	2	1	1	1	8
Tomcod	0	0	0	0	0	0	0	0	0	0	0	0	0
Weakfish	0	0	0	0	0	1	2	57	43	1	0	0	104
White Hake	0	0	0	0	0	21	6	0	0	0	1	1	29
White Perch	0	0	1	0	0	0	0	0	0	0	1	2	4
Winter Flounder	153	131	88	30	33	31	12	18	7	12	28	35	578
Total Fish	187	168	103	50	62	135	60	93	78	73	58	60	1127

Table 31 cont'd. Intake, Mt. Hope Bay. Mean monthly catch in number per 15 min. tow, 1976.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Anchovy	0	0	0	0	0	0	0	0	0	2	0	0	2
Atlantic Herring	0	0	1	0	0	0	0	0	0	0	0	0	1
Blueback Herring	0	0	0	0	0	0	0	0	0	0	0	0	0
Butterfish	0	0	0	0	0	0	0	0	2	0	0	0	2
Cunner	1	0	1	8	29	5	2	0	1	3	0	0	50
Grubby Sculpin	0	0	0	0	0	0	0	0	0	0	0	0	0
Hogchoker	0	0	3	3	2	2	17	8	5	1	0	0	41
Little Skate	0	0	0	0	0	0	0	0	0	0	0	0	0
Northern Searobin	0	0	0	0	0	1	0	0	0	0	0	0	1
Sand Flounder	12	17	14	4	10	4	0	2	3	5	2	1	74
Scup	0	0	0	0	0	1	32	131	43	9	0	0	216
Silver Hake	2	0	0	0	0	0	0	0	0	0	1	0	3
Smelt	0	3	2	0	0	0	0	0	0	0	0	1	6
Squirrel Hake	0	1	0	0	0	0	0	1	1	1	0	0	4
Striped Searobin	0	0	0	0	0	0	1	0	0	0	0	0	1
Summer Flounder	0	0	0	0	0	0	2	4	1	1	0	0	8
Tautog	2	0	1	1	0	2	1	1	3	2	1	0	14
Toadfish	3	0	0	0	1	1	3	0	0	0	0	0	8
Tomcod	0	0	0	0	0	0	0	0	0	0	0	0	0
Weakfish	0	0	0	0	0	0	0	0	25	4	0	0	29
White Hake	15	0	0	0	0	1	2	0	0	0	0	0	18
White Perch	0	1	0	1	0	0	0	0	0	0	13	2	17
Winter Flounder	68	88	57	19	9	20	21	15	6	20	55	9	387
Total Fish	103	110	79	36	51	37	81	162	90	48	72	13	882

Table 31 cont'd. Intake, Mt. Hope Bay. Mean monthly catch in number per 15 min. tow, 1977.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Anchovy	.	.	0	0	0	0	0	0	0	0	0	0	0
Atlantic Herring	.	.	0	0	1	0	0	0	0	0	0	0	1
Blueback Herring	.	.	0	0	0	0	0	0	0	0	0	0	0
Butterfish	.	.	0	0	0	0	0	0	0	4	18	2	24
Cunner	.	.	0	0	2	0	0	0	0	1	3	0	6
Grubby Sculpin	.	.	0	0	0	0	0	0	0	0	0	0	0
Hogchoker	.	.	0	0	0	0	0	0	0	3	2	1	6
Little Skate	.	.	0	0	0	0	0	0	0	0	0	0	0
Northern Searobin	.	.	0	0	0	0	0	0	0	0	0	0	0
Sand Flounder	.	.	1	2	4	1	0	1	1	26	36	33	105
Scup	.	.	0	0	2	0	0	0	1	1	0	0	4
Silver Hake	.	.	0	0	0	0	0	0	0	0	2	3	5
Smelt	.	.	0	0	0	0	0	0	0	0	0	0	0
Squirrel Hake	.	.	0	0	0	0	0	0	0	0	1	0	1
Striped Searobin	.	.	0	0	0	0	0	0	0	1	0	0	1
Summer Flounder	.	.	0	0	0	0	1	0	0	0	0	0	1
Tautog	.	.	0	0	0	2	0	1	2	2	5	0	12
Toadfish	.	.	0	0	0	0	0	0	0	0	0	0	0
Tomcod	.	.	0	0	0	0	0	0	0	0	0	1	1
Weakfish	.	.	0	0	0	0	0	17	0	0	0	0	17
White Hake	.	.	0	0	0	0	0	0	0	0	0	0	0
White Perch	.	.	0	0	1	0	0	0	0	0	0	0	1
Winter Flounder	.	.	33	12	19	2	0	5	5	198	118	100	492
Total Fish	.	.	34	14	29	5	1	24	9	236	185	140	677

Table 31 cont'd. Intake, Mt. Hope Bay. Mean monthly catch in number per 15 min. tow, 1978.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Anchovy	0	0	0	.	0	0	1	0	0	0	0	0	1
Atlantic Herring	2	0	0	.	0	0	0	0	0	0	0	0	2
Blueback Herring	1	0	0	.	0	0	0	0	0	0	0	0	1
Butterfish	0	0	0	.	0	0	0	0	0	2	0	0	2
Cunner	0	0	0	.	8	16	5	0	1	3	4	0	37
Grubby Sculpin	0	0	0	.	1	0	0	0	0	0	0	1	2
Hogchoker	1	0	0	.	4	1	4	2	7	13	3	0	35
Little Skate	0	0	0	.	0	0	1	0	0	0	1	0	2
Northern Searobin	0	0	0	.	1	0	0	0	0	1	0	0	2
Sand Flounder	31	4	13	.	17	49	34	1	20	45	128	86	428
Scup	0	0	0	.	0	0	1	1	12	14	0	0	28
Silver Hake	1	0	1	.	0	0	0	0	0	0	3	4	9
Smelt	1	0	0	.	0	0	0	0	0	0	0	1	2
Squirrel Hake	0	0	0	.	1	1	2	0	0	4	0	0	8
Striped Searobin	0	0	0	.	0	0	0	0	0	1	1	0	2
Summer Flounder	0	0	0	.	0	0	0	0	0	0	0	0	0
Tautog	1	0	0	.	0	1	1	2	13	8	6	1	33
Toadfish	0	0	0	.	1	2	1	1	2	3	1	1	12
Tomcod	0	0	0	.	2	0	0	0	0	1	3	10	16
Weakfish	0	0	0	.	1	0	0	69	137	54	1	0	262
White Hake	0	0	0	.	0	0	1	1	0	54	1	0	57
White Perch	1	0	0	.	0	0	0	0	0	0	0	1	2
Winter Flounder	45	3	33	.	35	23	180	47	54	135	469	814	1838
Total Fish	84	7	47	.	71	93	231	124	246	338	621	919	2781

Table 31 cont'd. Intake, Mt. Hope Bay. Mean monthly catch in number per 15 min. tow, 1979.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Anchovy	0	0	0	0	0	0	0	0	0	2	0	1	3
Atlantic Herring	0	0	0	0	0	0	0	0	0	0	0	0	0
Blueback Herring	0	0	0	0	0	0	0	0	0	0	0	0	0
Butterfish	0	0	0	0	0	1	0	3	11	5	4	0	24
Cunner	0	1	0	0	36	33	19	0	0	2	14	2	107
Grubby Sculpin	0	5	1	0	2	0	0	0	0	0	0	1	9
Hogchoker	0	0	1	3	2	24	5	36	15	8	2	2	98
Little Skate	0	0	1	0	0	1	1	0	0	0	0	1	4
Northern Searobin	0	0	0	0	0	0	0	0	0	0	0	0	0
Sand Flounder	12	37	29	65	72	150	24	13	16	22	24	10	474
Scup	0	0	0	0	1	0	47	24	14	1	0	0	87
Silver Hake	0	0	0	0	1	0	0	0	0	0	1	2	4
Smelt	3	15	7	0	0	0	0	0	0	0	0	2	27
Squirrel Hake	0	1	0	0	0	1	0	0	0	0	0	1	3
Striped Searobin	0	0	0	0	0	0	0	0	0	0	1	0	1
Summer Flounder	0	0	0	0	0	0	0	0	0	0	0	0	0
Tautog	1	4	0	1	4	3	2	1	4	2	2	0	24
Toadfish	0	0	0	0	0	0	0	0	1	0	0	0	1
Tomcod	13	0	9	2	3	1	0	0	0	0	1	2	31
Weakfish	0	0	0	0	0	1	0	13	17	0	0	3	34
White Hake	0	0	1	0	1	0	0	0	0	0	0	0	2
White Perch	0	0	0	0	0	0	0	0	0	0	0	1	1
Winter Flounder	266	187	616	567	520	484	191	223	16	35	32	73	3210
Total Fish	295	250	665	638	642	699	289	313	94	77	81	101	4144

Table 31 cont'd. Intake, Mt. Hope Bay. Mean monthly catch in number per 15 min. tow, 1980.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Anchovy	0	0	0	0	0	0	1	0	13	123	0	0	137
Atlantic Herring	0	0	0	0	0	0	0	0	0	0	0	0	0
Blueback Herring	0	0	0	0	0	0	0	0	0	0	0	0	0
Butterfish	0	0	0	0	0	0	0	0	2	2	0	0	4
Cunner	0	0	0	1	14	18	1	0	1	0	0	0	35
Grubby Sculpin	0	4	0	0	0	0	0	0	0	0	0	0	4
Hogchoker	0	1	2	2	1	19	42	3	7	0	1	0	78
Little Skate	1	0	0	0	1	0	0	0	0	0	0	0	2
Northern Searobin	0	0	0	0	0	0	0	0	0	0	0	0	0
Sand Flounder	14	30	37	34	34	25	24	1	10	6	5	7	227
Scup	0	0	0	0	0	2	37	10	23	13	0	0	85
Silver Hake	0	0	0	0	0	0	0	0	0	0	0	0	0
Smelt	4	4	5	0	0	0	0	0	0	0	0	0	13
Squirrel Hake	1	1	0	0	0	8	1	3	1	0	0	0	15
Striped Searobin	0	0	0	0	0	0	0	0	0	0	0	0	0
Summer Flounder	0	0	0	0	0	0	0	0	0	1	0	0	1
Tautog	1	0	0	0	1	4	2	1	1	5	0	0	15
Toadfish	0	0	0	0	1	0	1	1	1	1	0	0	5
Tomcod	1	0	0	0	1	0	0	0	0	0	0	0	2
Weakfish	0	0	0	0	0	0	0	157	117	10	0	0	284
White Hake	0	0	0	0	0	0	3	0	1	0	0	0	4
White Perch	0	0	0	0	0	0	0	0	0	0	0	0	0
Winter Flounder	23	12	160	156	121	83	45	13	12	15	108	72	820
Total Fish	45	52	204	193	174	159	157	189	189	176	114	79	1731

Table 31 cont'd. Intake, Mt. Hope Bay. Mean monthly catch in number per 15 min. tow, 1981.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Anchovy	.	0	0	0	0	0	0	0	0	0	0	0	0
Atlantic Herring	.	0	0	0	0	0	0	0	0	0	0	0	0
Blueback Herring	.	0	0	0	0	0	0	0	0	0	0	0	0
Butterfish	.	0	0	0	0	0	12	2	0	4	0	0	18
Cunner	.	0	3	1	4	13	0	0	1	1	1	0	24
Grubby Sculpin	.	0	0	0	0	0	0	0	0	0	0	0	0
Hogchoker	.	5	0	1	0	34	35	17	4	0	0	0	96
Little Skate	.	0	0	0	1	0	0	0	0	0	0	0	1
Northern Searobin	.	0	0	0	0	0	0	0	0	0	0	0	0
Sand Flounder	.	3	0	16	23	59	9	2	7	4	5	12	140
Scup	.	0	0	0	0	0	0	0	56	3	0	0	59
Silver Hake	.	0	0	0	0	0	0	0	0	0	1	0	1
Smelt	.	1	0	0	0	0	0	0	0	0	0	1	2
Squirrel Hake	.	0	0	0	0	0	0	0	0	0	0	0	0
Striped Searobin	.	0	0	0	0	0	0	0	0	0	0	0	0
Summer Flounder	.	0	0	0	0	0	0	2	1	0	0	0	3
Tautog	.	1	0	0	0	9	0	0	15	5	1	1	32
Toadfish	.	0	0	0	0	0	0	2	1	0	0	1	4
Tomcod	.	1	0	0	0	1	2	0	0	0	0	0	4
Weakfish	.	0	0	0	0	0	0	32	24	0	0	0	56
White Hake	.	0	0	0	0	0	0	0	0	0	0	0	0
White Perch	.	1	1	0	0	0	0	0	0	0	0	0	2
Winter Flounder	.	38	60	21	241	102	53	26	7	40	96	187	871
Total Fish	.	50	64	39	269	218	111	83	116	57	104	202	1313

Table 31 cont'd. Intake, Mt. Hope Bay. Mean monthly catch in number per 15 min. tow, 1982.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Anchovy	0	0	0	0	0	0	0	0	0	0	0	1	1
Atlantic Herring	0	0	0	0	0	0	0	0	0	0	0	0	0
Blueback Herring	0	0	0	0	0	0	0	0	0	0	0	0	0
Butterfish	0	0	0	0	0	0	0	0	10	20	0	30
Cunner	0	0	2	13	15	1	2	0	5	0	2	40
Grubby Sculpin	0	0	0	0	0	0	0	0	0	0	4	4
Hogchoker	0	0	7	0	53	1	4	4	0	1	2	72
Little Skate	0	0	1	0	1	0	0	0	3	2	2	9
Northern Searobin	0	0	0	0	0	0	0	0	0	0	0	0
Sand Flounder	3	0	12	30	106	2	1	10	133	19	25	341
Scup	0	0	0	0	0	0	3	12	0	0	0	15
Silver Hake	0	0	0	0	0	0	0	0	0	35	7	42
Smelt	0	0	0	0	0	0	0	0	0	0	1	1
Squirrel Hake	0	0	0	0	1	0	1	0	0	0	0	2
Striped Searobin	0	0	0	0	0	0	0	0	0	2	0	2
Summer Flounder	0	0	0	0	0	0	0	0	0	0	0	0
Tautog	1	0	2	0	3	2	4	0	40	2	7	61
Toadfish	0	0	1	1	5	1	2	0	5	0	0	15
Tomcod	0	0	0	0	0	0	0	0	0	0	1	1
Weakfish	0	0	0	0	3	0	0	0	0	1	0	4
White Hake	0	0	0	0	0	0	0	0	0	0	0	0
White Perch	0	0	1	0	0	0	0	0	0	0	0	1
Winter Flounder	59	1	165	116	233	3	42	18	80	65	104	886
Total Fish	63	1	191	160	420	10	59	44	276	147	156	1527

Table 31 cont'd. Intake, Mt. Hope Bay. Mean monthly catch in number per 15 min. tow, 1983.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Anchovy	0	0	0	0	0	0	0	0	0	0	0	0	0
Atlantic Herring	0	0	0	0	0	0	0	0	0	0	0	0	0
Blueback Herring	0	0	0	0	0	0	0	0	0	0	0	0	0
Butterfish	0	0	0	0	0	4	10	1	1	0	1	0	17
Cunner	1	0	4	1	4	2	1	0	0	0	0	0	13
Grubby Sculpin	1	2	0	0	1	0	0	0	0	0	0	0	4
Hogchoker	1	1	0	0	1	1	2	19	42	21	3	1	92
Little Skate	1	1	2	1	5	0	0	1	0	0	1	1	13
Northern Searobin	0	0	0	0	0	0	0	0	0	0	0	0	0
Sand Flounder	10	8	11	6	24	2	2	7	11	51	10	3	145
Scup	0	0	0	0	0	0	27	24	14	0	0	0	65
Silver Hake	4	0	2	0	3	0	0	0	0	0	1	0	10
Smelt	0	37	0	0	0	0	0	0	0	0	0	0	37
Squirrel Hake	0	0	0	0	2	2	1	3	0	2	0	0	10
Striped Searobin	0	0	0	0	0	0	0	0	0	2	0	0	2
Summer Flounder	0	0	0	0	0	0	0	0	0	0	0	0	0
Tautog	0	1	2	0	4	2	0	1	2	4	0	0	16
Toadfish	1	0	1	0	1	0	3	3	2	4	0	0	15
Tomcod	1	0	0	0	0	0	1	0	0	0	0	2	4
Weakfish	0	0	0	0	0	0	0	8	129	0	0	0	137
White Hake	0	0	0	0	0	0	0	0	1	0	0	0	1
White Perch	0	0	0	0	0	0	0	0	0	0	0	0	0
Winter Flounder	670	34	115	38	89	5	19	72	40	142	54	58	1336
Total Fish	690	84	137	46	134	18	66	139	242	226	70	65	1917

Table 31 cont'd. Intake, Mt. Hope Bay. Mean monthly catch in number per 15 min. tow, 1984.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Anchovy	0	0	0	0	0	0	0	0	0	.	0	.	0
Atlantic Herring	0	0	0	0	0	0	0	0	0	.	0	.	0
Blueback Herring	0	0	0	0	0	0	0	0	0	.	0	.	0
Butterfish	0	0	0	0	0	0	0	1	0	.	0	.	1
Cunner	0	0	0	0	0	7	1	0	1	.	1	.	10
Grubby Sculpin	0	0	0	0	0	0	1	0	0	.	0	.	1
Hogchoker	0	1	0	0	0	21	13	9	3	.	2	.	49
Little Skate	0	0	1	1	3	4	3	1	0	.	1	.	14
Northern Searobin	0	0	0	0	0	0	0	0	0	.	0	.	0
Sand Flounder	1	3	0	0	5	23	6	12	13	.	4	.	67
Scup	0	0	0	0	0	0	0	1	4	.	0	.	5
Silver Hake	0	0	0	0	0	6	0	0	0	.	2	.	8
Smelt	0	0	1	0	0	0	0	0	0	.	0	.	1
Squirrel Hake	0	0	0	0	0	1	0	0	0	.	0	.	1
Striped Searobin	0	0	0	0	0	0	0	0	1	.	1	.	2
Summer Flounder	0	0	0	0	0	0	2	1	0	.	0	.	3
Tautog	0	1	0	0	1	5	4	1	4	.	0	.	16
Toadfish	0	0	0	0	0	2	3	12	2	.	0	.	19
Tomcod	0	0	0	0	0	0	2	1	0	.	0	.	3
Weakfish	0	0	0	0	0	0	0	0	0	.	0	.	0
White Hake	0	0	0	0	0	0	0	0	0	.	0	.	0
White Perch	0	0	0	0	0	1	0	0	0	.	0	.	1
Winter Flounder	6	18	7	13	24	63	59	70	123	.	17	.	400
Total Fish	7	23	9	14	33	133	94	109	151	.	28	.	601

Table 31 cont'd. Intake, Mt. Hope Bay. Mean monthly catch in number per 15 min. tow, 1985.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Anchovy	0	0	0	0	0	0	0	0	0	0	.	.	0
Atlantic Herring	0	0	0	0	0	0	2	0	0	0	.	.	2
Blueback Herring	1	0	0	0	0	0	0	0	0	0	.	.	1
Butterfish	0	0	0	0	0	0	0	0	0	0	.	.	0
Cunner	0	0	0	0	4	1	1	0	0	0	.	.	6
Grubby Sculpin	0	0	0	0	0	0	0	0	0	0	.	.	0
Hogchoker	1	0	0	0	1	53	3	0	1	15	.	.	74
Little Skate	0	0	0	0	0	4	1	0	0	0	.	.	5
Northern Searobin	0	0	0	0	0	1	0	0	0	0	.	.	1
Sand Flounder	3	0	0	1	21	8	5	4	0	32	.	.	74
Scup	0	0	0	0	1	1	0	1	3	0	.	.	6
Silver Hake	0	0	0	0	0	0	0	0	0	1	.	.	1
Smelt	0	0	0	0	0	0	0	0	0	0	.	.	0
Squirrel Hake	0	0	0	0	0	10	1	0	0	0	.	.	11
Striped Searobin	0	0	0	0	0	0	0	0	0	0	.	.	0
Summer Flounder	0	0	0	0	0	0	0	0	1	3	.	.	4
Tautog	1	0	0	0	1	2	0	2	8	5	.	.	19
Toadfish	0	0	0	0	7	4	0	0	3	4	.	.	18
Tomcod	0	0	0	0	0	0	1	0	0	0	.	.	1
Weakfish	0	0	0	0	0	0	1	1	0	1	.	.	3
White Hake	0	0	0	0	0	0	0	0	0	0	.	.	0
White Perch	0	0	0	0	0	0	0	0	0	0	.	.	0
Winter Flounder	17	5	0	1	85	122	56	68	31	93	.	.	478
Total Fish	23	5	0	2	120	206	71	76	47	154	.	.	704

Table 32. Spar, Mt. Hope Bay. Mean monthly catch in number per 15 min. tow, 1972.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Anchovy	.	.	.	.	0	0	0	0	0	0	0	0	0
Atlantic Herring	.	.	.	.	0	0	0	0	0	0	0	0	0
Blueback Herring	.	.	.	.	0	0	0	0	0	0	0	0	0
Butterfish	.	.	.	.	0	0	0	0	0	0	0	0	0
Cunner	.	.	.	.	2	2	0	0	0	0	0	1	5
Grubby Sculpin	.	.	.	.	0	0	0	0	0	0	1	1	2
Hogchoker	.	.	.	.	0	1	0	0	0	0	0	0	1
Little Skate	.	.	.	.	0	0	0	0	0	0	0	0	0
Northern Searobin	.	.	.	.	0	3	2	0	0	0	0	0	5
Sand Flounder	.	.	.	.	12	7	2	1	0	0	7	3	32
Scup	.	.	.	.	0	1	0	8	2	1	0	0	12
Silver Hake	.	.	.	.	0	0	0	0	0	0	0	0	0
Smelt	.	.	.	.	0	0	0	0	0	0	0	1	1
Squirrel Hake	.	.	.	.	0	0	0	0	0	0	0	0	0
Striped Searobin	.	.	.	.	0	2	0	2	0	0	0	0	4
Summer Flounder	.	.	.	.	0	0	0	0	0	0	0	0	0
Tautog	.	.	.	.	2	3	0	1	0	0	0	0	6
Toadfish	.	.	.	.	0	0	0	0	0	0	0	0	0
Tomcod	.	.	.	.	0	0	0	0	0	0	0	0	0
Weakfish	.	.	.	.	0	0	0	1	1	0	0	0	2
White Hake	.	.	.	.	0	1	0	0	0	0	0	0	1
White Perch	.	.	.	.	0	0	0	0	0	0	0	0	0
Winter Flounder	.	.	.	.	110	57	9	8	8	6	156	18	372
Total Fish	.	.	.	.	126	77	13	21	11	7	164	24	443

Table 32 cont'd. Spar, Mt. Hope Bay. Mean monthly catch in number per 15 min. tow, 1973.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Anchovy	0	0	0	0	0	0	0	0	1	0	0	0	1
Atlantic Herring	0	0	0	0	0	0	0	0	0	0	0	0	0
Blueback Herring	0	0	0	0	0	0	0	0	1	0	0	0	1
Butterfish	0	0	0	0	0	0	0	5	1	2	0	0	8
Cunner	1	0	0	0	1	0	0	0	0	0	0	0	2
Grubby Sculpin	0	0	0	0	0	0	0	0	0	0	0	0	0
Hogchoker	1	0	0	1	0	1	0	0	0	0	0	0	3
Little Skate	0	0	0	0	0	0	0	0	0	0	0	0	0
Northern Searobin	0	0	0	0	0	0	0	0	0	0	0	0	0
Sand Flounder	1	9	8	15	13	8	3	1	3	0	1	3	65
Scup	0	0	0	0	0	0	1	0	0	1	0	0	2
Silver Hake	0	0	1	1	0	0	0	0	0	0	0	0	2
Smelt	0	0	0	0	0	0	0	0	0	0	0	0	0
Squirrel Hake	0	0	0	0	0	0	0	0	0	0	0	0	0
Striped Searobin	0	0	0	0	0	9	1	0	1	1	0	0	12
Summer Flounder	0	0	0	0	0	0	0	0	1	0	0	0	1
Tautog	0	1	0	1	3	1	0	0	1	0	0	0	7
Toadfish	0	0	0	0	0	1	1	0	0	0	0	0	2
Tomcod	0	0	0	0	0	0	0	0	0	0	0	0	0
Weakfish	0	0	0	0	0	0	0	18	13	2	0	0	33
White Hake	0	0	0	0	0	0	1	0	0	0	0	0	1
White Perch	0	0	0	0	0	0	0	0	0	0	0	0	0
Winter Flounder	16	17	83	154	77	30	25	16	47	11	29	39	544
Total Fish	19	27	92	172	94	50	32	40	69	17	30	42	684

Table 32 cont'd. Spar, Mt. Hope Bay. Mean monthly catch in number per 15 min. tow, 1974.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Anchovy	0	0	0	.	0	0	0	0	0	0	0	0	0
Atlantic Herring	0	0	0	.	0	0	0	0	0	0	0	0	0
Blueback Herring	0	0	0	.	0	0	0	0	0	0	0	0	0
Butterfish	0	0	0	.	0	0	0	1	0	1	0	0	2
Cunner	0	0	1	.	0	0	0	0	0	0	0	0	1
Grubby Sculpin	0	0	0	.	0	0	0	0	0	0	0	0	0
Hogchoker	0	0	0	.	0	1	2	2	0	0	0	1	6
Little Skate	0	0	0	.	0	0	0	0	0	0	0	0	0
Northern Searobin	0	0	0	.	0	0	0	0	0	0	0	0	0
Sand Flounder	3	5	4	.	8	6	2	1	3	1	1	2	36
Scup	0	0	0	.	0	0	4	5	2	1	0	0	12
Silver Hake	0	1	0	.	0	0	0	0	0	0	0	0	1
Smelt	0	0	1	.	0	0	0	0	0	0	0	0	1
Squirrel Hake	0	0	0	.	0	0	0	0	0	0	0	0	0
Striped Searobin	0	0	0	.	0	0	0	0	2	0	0	0	2
Summer Flounder	0	0	0	.	1	0	0	0	1	0	0	0	2
Tautog	0	0	0	.	5	2	1	1	0	0	0	0	9
Toadfish	0	0	0	.	0	0	0	0	0	0	0	0	0
Tomcod	0	0	0	.	0	0	0	0	0	0	0	0	0
Weakfish	0	0	0	.	0	0	0	5	9	0	0	0	14
White Hake	0	0	0	.	0	0	0	0	0	0	0	0	0
White Perch	0	0	0	.	0	0	0	0	0	0	0	0	0
Winter Flounder	9	28	32	.	85	5	11	2	6	11	13	15	217
Total Fish	12	34	38	.	99	14	20	17	23	14	14	18	303

Table 32 cont'd. Spar, Mt. Hope Bay. Mean monthly catch in number per 15 min. tow, 1975.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Anchovy	0	0	0	0	0	0	0	1	1	1	4	0	7
Atlantic Herring	0	0	0	0	0	0	0	0	0	0	0	0	0
Blueback Herring	0	0	0	0	0	0	0	0	0	0	0	0	0
Butterfish	0	0	0	0	0	0	0	0	0	1	4	1	6
Cunner	0	0	0	0	0	0	0	0	0	0	0	0	0
Grubby Sculpin	0	0	0	0	0	0	0	0	0	0	0	0	0
Hogchoker	0	0	0	0	0	1	0	0	0	0	0	0	1
Little Skate	0	1	0	0	0	0	0	0	0	0	0	0	1
Northern Searobin	0	0	0	0	0	0	0	0	0	0	0	0	0
Sand Flounder	2	3	1	2	14	9	2	0	1	0	1	0	35
Scup	0	0	0	0	1	0	0	4	5	25	0	0	35
Silver Hake	0	0	0	0	0	0	0	0	0	0	0	1	1
Smelt	0	0	0	0	0	0	0	0	0	0	0	0	0
Squirrel Hake	0	0	0	0	0	0	0	0	0	0	0	0	0
Striped Searobin	0	0	0	0	0	1	1	0	0	1	0	0	3
Summer Flounder	0	0	0	0	0	0	0	1	0	0	0	0	1
Tautog	0	0	0	0	2	1	0	0	0	0	0	0	3
Toadfish	0	0	0	0	0	0	0	0	0	0	0	0	0
Tomcod	0	0	0	0	0	0	0	0	0	0	0	0	0
Weakfish	0	0	0	0	0	0	2	9	2	1	0	0	14
White Hake	0	0	0	0	0	1	0	0	0	0	0	0	1
White Perch	0	0	0	0	0	0	0	0	0	0	0	0	0
Winter Flounder	9	8	18	26	86	11	2	1	6	4	8	12	191
Total Fish	11	12	19	28	103	24	7	16	15	33	17	14	299

Table 32 cont'd. Spar, Mt. Hope Bay. Mean monthly catch in number per 15 min. tow, 1976.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Anchovy	0	0	0	0	0	0	0	0	1	4	0	0	5
Atlantic Herring	0	1	4	0	0	0	0	0	0	0	0	0	5
Blueback Herring	0	0	0	0	0	0	0	0	0	0	0	0	0
Butterfish	0	0	0	0	0	0	0	0	0	0	0	0	0
Cunner	0	0	0	0	0	0	0	0	0	0	0	0	0
Grubby Sculpin	0	0	0	0	0	0	0	0	0	0	0	0	0
Hogchoker	0	0	0	0	0	1	1	0	0	0	0	0	2
Little Skate	0	0	0	0	0	0	0	0	0	0	0	0	0
Northern Searobin	0	0	0	0	0	0	0	0	0	0	0	0	0
Sand Flounder	0	0	3	2	2	1	4	0	1	1	1	0	15
Scup	0	0	0	0	0	5	31	19	4	4	0	0	63
Silver Hake	0	0	0	0	0	0	0	0	0	0	0	0	0
Smelt	0	0	0	0	0	0	0	0	0	0	0	0	0
Squirrel Hake	0	0	0	0	0	0	0	0	0	0	0	0	0
Striped Searobin	0	0	0	0	0	0	0	0	0	0	0	0	0
Summer Flounder	0	0	0	0	1	0	1	1	1	0	0	0	4
Tautog	0	0	0	0	0	3	0	0	0	0	0	0	3
Toadfish	0	0	0	0	0	0	0	0	0	0	0	0	0
Tomcod	0	0	0	0	0	0	0	0	0	0	0	0	0
Weakfish	0	0	0	0	0	0	0	0	1	1	0	0	2
White Hake	0	0	0	0	0	0	0	0	0	0	0	0	0
White Perch	0	0	0	0	0	0	0	0	0	0	0	0	0
Winter Flounder	2	7	12	19	28	16	1	0	8	4	11	1	109
Total Fish	2	8	19	21	31	26	38	20	16	14	12	1	208

Table 32 cont'd. Spar, Mt. Hope Bay. Mean monthly catch in number per 15 min. tow, 1977.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Anchovy	.	.	0	0	0	0	0	0	0	0	0	0	0
Atlantic Herring	.	.	1	0	0	0	0	0	0	0	0	0	1
Blueback Herring	.	.	0	0	0	0	0	0	0	0	0	0	0
Butterfish	.	.	0	0	0	0	1	0	0	6	5	0	12
Cunner	.	.	0	0	0	0	0	0	0	0	0	0	0
Grubby Sculpin	.	.	0	0	0	0	0	0	0	0	0	0	0
Hogchoker	.	.	0	0	0	0	1	0	0	0	0	0	1
Little Skate	.	.	0	0	0	0	0	0	0	0	0	0	0
Northern Searobin	.	.	0	0	0	0	0	0	0	0	0	0	0
Sand Flounder	.	.	0	3	3	1	2	2	1	1	2	3	18
Scup	.	.	0	0	0	0	2	0	0	0	0	0	2
Silver Hake	.	.	0	0	0	0	0	0	0	0	0	0	0
Smelt	.	.	0	0	0	0	0	0	0	0	0	0	0
Squirrel Hake	.	.	0	0	0	0	0	0	0	0	0	0	0
Striped Searobin	.	.	0	0	0	0	0	0	0	0	0	0	0
Summer Flounder	.	.	0	0	0	0	0	0	0	0	0	0	0
Tautog	.	.	0	0	6	1	2	1	0	0	0	0	10
Toadfish	.	.	0	0	0	0	0	0	0	0	0	0	0
Tomcod	.	.	0	0	0	0	0	0	0	0	0	0	0
Weakfish	.	.	0	0	0	0	1	0	0	0	0	0	1
White Hake	.	.	0	0	0	0	0	0	0	0	0	0	0
White Perch	.	.	0	0	0	0	0	0	0	0	0	0	0
Winter Flounder	.	.	7	19	40	8	3	0	2	6	29	21	135
Total Fish	.	.	8	22	49	10	12	3	3	13	36	24	180

Table 32 cont'd. Spar, Mt. Hope Bay. Mean monthly catch in number per 15 min. tow, 1978.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Anchovy	0	0	0	.	0	0	0	0	0	0	0	0	0
Atlantic Herring	0	0	0	.	0	0	0	0	0	0	0	0	0
Blueback Herring	0	0	0	.	0	0	0	0	0	0	0	0	0
Butterfish	0	0	0	.	0	0	0	0	0	2	0	0	2
Cunner	0	0	0	.	0	0	0	0	0	0	0	0	0
Grubby Sculpin	0	0	0	.	0	0	0	0	0	0	0	0	0
Hogchoker	0	0	0	.	0	0	2	1	0	0	1	0	4
Little Skate	0	0	0	.	0	0	0	0	0	0	0	0	0
Northern Searobin	0	0	0	.	0	0	0	0	0	0	0	0	0
Sand Flounder	1	0	2	.	15	38	6	2	6	24	7	5	106
Scup	0	0	0	.	0	0	1	0	1	1	0	0	3
Silver Hake	0	0	0	.	0	0	0	0	0	0	0	0	0
Smelt	0	0	0	.	0	0	0	0	0	0	0	0	0
Squirrel Hake	0	0	0	.	0	0	0	0	0	0	0	0	0
Striped Searobin	0	0	0	.	0	0	0	0	0	0	0	0	0
Summer Flounder	0	0	0	.	0	0	0	0	0	0	0	0	0
Tautog	0	0	0	.	2	1	1	0	0	0	0	0	4
Toadfish	0	0	0	.	0	0	0	0	0	0	0	0	0
Tomcod	0	0	0	.	0	0	0	1	0	0	0	0	1
Weakfish	0	0	0	.	0	0	0	0	2	0	0	0	2
White Hake	0	0	0	.	0	0	0	0	0	0	0	0	0
White Perch	0	0	0	.	0	0	0	0	0	0	0	0	0
Winter Flounder	4	2	10	.	49	94	9	8	10	24	49	27	286
Total Fish	5	2	12	.	66	133	19	12	19	51	57	32	408

Table 32 cont'd. Spar, Mt. Hope Bay. Mean monthly catch in number per 15 min. tow, 1979.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Anchovy	0	0	0	0	0	0	0	0	0	2	0	0	2
Atlantic Herring	0	0	0	0	0	0	0	0	0	0	0	1	1
Blueback Herring	0	0	0	0	0	0	0	0	0	0	0	0	0
Butterfish	0	0	0	0	0	1	1	0	2	2	0	0	6
Cunner	0	0	0	0	0	0	0	0	0	0	0	0	0
Grubby Sculpin	1	0	0	0	0	0	0	0	0	0	0	1	2
Hogchoker	0	0	0	0	0	1	4	3	2	0	0	0	10
Little Skate	0	0	0	1	0	0	0	0	0	0	0	0	1
Northern Searobin	0	0	0	0	0	0	0	0	0	0	0	0	0
Sand Flounder	4	6	4	22	15	21	10	8	3	2	2	9	106
Scup	0	0	0	0	0	3	3	19	4	0	0	0	29
Silver Hake	0	0	0	0	0	0	0	0	0	0	0	0	0
Smelt	0	0	0	0	0	0	0	0	0	0	0	0	0
Squirrel Hake	0	0	0	0	0	0	0	0	0	0	0	0	0
Striped Searobin	0	0	0	0	0	0	0	0	0	0	0	0	0
Summer Flounder	0	0	0	0	0	0	0	0	0	0	0	0	0
Tautog	0	0	0	0	2	1	0	0	0	0	1	0	4
Toadfish	0	0	0	0	0	0	0	0	0	0	0	0	0
Tomcod	0	0	0	0	0	0	0	0	0	0	0	0	0
Weakfish	0	0	0	0	0	0	0	1	1	0	0	0	2
White Hake	0	0	0	0	0	0	0	0	0	0	0	0	0
White Perch	0	0	0	0	0	0	0	0	0	0	0	0	0
Winter Flounder	18	4	51	131	101	88	24	19	10	16	25	33	520
Total Fish	23	10	55	154	118	115	42	50	22	22	28	44	683

Table 32 cont'd. Spar, Mt. Hope Bay. Mean monthly catch in number per 15 min. tow, 1980.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Anchovy	0	0	0	0	0	0	0	0	0	0	0	0	0
Atlantic Herring	0	0	0	0	0	0	0	0	0	0	0	0	0
Blueback Herring	0	0	0	0	0	0	0	0	0	0	0	0	0
Butterfish	0	0	0	0	0	1	0	0	0	0	0	0	1
Cunner	0	0	0	0	0	0	0	0	0	0	0	0	0
Grubby Sculpin	0	0	0	0	0	0	0	0	0	0	0	0	0
Hogchoker	0	0	0	0	0	0	8	8	1	0	0	0	17
Little Skate	1	0	0	0	0	0	0	0	0	0	0	0	1
Northern Searobin	0	0	0	0	0	0	0	0	0	0	0	0	0
Sand Flounder	4	1	1	7	18	2	1	2	3	0	7	0	46
Scup	0	0	0	0	0	5	16	18	1	0	0	0	40
Silver Hake	0	0	0	0	0	0	0	0	0	0	0	0	0
Smelt	0	0	0	0	0	0	0	0	0	0	0	0	0
Squirrel Hake	0	0	0	0	1	0	1	0	0	0	0	0	2
Striped Searobin	0	0	0	0	0	0	0	0	0	0	0	0	0
Summer Flounder	0	0	0	0	0	0	1	1	0	0	0	0	2
Tautog	0	0	0	0	1	1	0	0	1	0	0	0	3
Toadfish	0	0	0	0	0	0	0	0	0	0	0	0	0
Tomcod	0	0	0	0	0	0	0	0	0	0	0	0	0
Weakfish	0	0	0	0	0	0	0	0	0	0	0	0	0
White Hake	0	0	0	1	0	0	0	0	0	0	0	0	1
White Perch	0	0	0	0	0	0	0	0	0	0	0	0	0
Winter Flounder	7	1	8	35	87	2	0	5	2	3	9	3	162
Total Fish	12	2	9	43	107	11	27	34	8	3	16	3	275

Table 32 cont'd. Spar, Mt. Hope Bay. Mean monthly catch in number per 15 min. tow, 1981.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Anchovy	0	0	0	0	0	0	0	0	0	0	0	0	0
Atlantic Herring	0	0	0	0	0	0	0	0	0	0	0	0	0
Blueback Herring	0	0	0	0	0	0	0	0	0	0	0	0	0
Butterfish	0	0	0	0	0	0	0	0	0	0	0	0	0
Cunner	0	0	0	0	0	0	0	0	0	0	0	0	0
Grubby Sculpin	0	0	0	0	0	0	0	0	0	0	0	0	0
Hogchoker	0	0	0	0	0	0	2	0	0	0	0	0	2
Little Skate	0	0	0	1	0	0	0	0	0	0	0	0	1
Northern Searobin	0	0	0	0	0	0	0	0	0	0	0	0	0
Sand Flounder	0	1	12	23	1	0	0	0	2	4	0	43	
Scup	0	0	0	0	5	0	1	0	0	0	0	6	
Silver Hake	0	0	0	0	0	0	0	0	0	0	0	0	
Smelt	0	0	0	0	0	0	0	0	0	0	0	0	
Squirrel Hake	0	0	0	0	0	0	0	0	0	0	0	0	
Striped Searobin	0	0	0	0	0	0	0	0	0	0	0	0	
Summer Flounder	0	0	0	0	0	0	0	0	0	0	0	0	
Tautog	0	0	0	1	3	0	0	1	0	0	0	5	
Toadfish	0	0	0	0	0	0	1	0	0	0	0	1	
Tomcod	0	0	0	0	0	0	0	0	0	0	0	0	
Weakfish	0	0	0	0	0	0	0	0	0	0	0	0	
White Hake	0	0	0	0	0	0	0	0	0	0	0	0	
White Perch	0	0	0	0	0	0	0	0	0	0	0	0	
Winter Flounder	4	6	71	92	13	0	0	3	9	8	6	212	
Total Fish	4	7	83	117	22	2	2	4	11	12	6	270	

Table 32 cont'd. Spar, Mt. Hope Bay. Mean monthly catch in number per 15 min. tow, 1982.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Anchovy	.	0	0	0	0	0	0	0	0	0	0	0	0
Atlantic Herring	.	0	0	0	0	0	0	0	0	0	0	0	0
Blueback Herring	.	0	0	0	0	0	0	0	0	0	0	0	0
Butterfish	.	0	0	0	0	0	0	0	0	0	0	0	0
Cunner	.	0	0	0	0	0	0	0	0	0	0	0	0
Grubby Sculpin	.	0	0	0	0	0	0	0	0	0	0	0	0
Hogchoker	.	0	0	0	1	0	0	1	0	0	0	0	2
Little Skate	.	0	0	0	0	0	0	0	1	0	0	0	1
Northern Searobin	.	0	0	0	0	0	0	0	0	0	0	0	0
Sand Flounder	.	0	1	1	13	5	0	1	1	0	7	4	33
Scup	.	0	0	0	1	12	0	3	27	0	0	0	43
Silver Hake	.	0	0	0	0	0	0	0	0	0	0	0	0
Smelt	.	0	0	0	0	0	0	0	0	0	0	0	0
Squirrel Hake	.	0	0	0	0	0	0	0	0	0	0	0	0
Striped Searobin	.	0	0	0	0	0	0	0	0	0	0	0	0
Summer Flounder	.	0	0	0	0	0	0	1	1	0	0	0	2
Tautog	.	0	0	0	2	0	0	0	0	0	0	0	2
Toadfish	.	0	0	0	0	0	0	2	0	0	0	0	2
Tomcod	.	0	0	0	0	0	0	0	0	0	0	0	0
Weakfish	.	0	0	0	0	0	0	0	0	0	0	0	0
White Hake	.	0	0	0	0	0	0	0	0	0	0	0	0
White Perch	.	0	0	0	0	0	0	0	0	0	0	0	0
Winter Flounder	.	4	5	16	70	20	1	4	5	0	59	30	214
Total Fish	.	4	6	17	87	37	1	12	35	0	66	34	299

Table 32 cont'd. Spar, Mt. Hope Bay. Mean monthly catch in number per 15 min. tow, 1983.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Anchovy	0	0	0	0	0	0	0	0	0	0	0	0	0
Atlantic Herring	0	0	0	0	0	0	0	0	0	0	0	0	0
Blueback Herring	0	0	0	0	0	0	0	0	0	0	0	0	0
Butterfish	0	0	0	0	0	0	0	0	0	0	0	0	0
Cunner	0	0	0	0	0	0	0	0	0	0	0	0	0
Grubby Sculpin	0	0	0	0	0	0	0	0	0	0	0	0	0
Hogchoker	0	0	0	0	0	0	1	6	0	0	0	0	7
Little Skate	0	0	0	0	1	0	0	0	0	0	2	0	3
Northern Searobin	0	0	0	0	0	0	0	0	0	0	0	0	0
Sand Flounder	0	0	2	1	4	4	1	6	2	3	6	2	31
Scup	0	0	0	0	0	11	0	3	2	0	0	0	16
Silver Hake	0	0	0	0	1	0	0	0	0	0	0	0	1
Smelt	0	0	0	0	0	0	0	0	0	0	0	0	0
Squirrel Hake	0	0	0	0	0	0	0	0	0	0	0	0	0
Striped Searobin	0	0	0	0	0	0	0	0	0	0	0	0	0
Summer Flounder	0	0	0	0	0	0	0	0	0	0	0	0	0
Tautog	0	0	0	0	1	0	0	1	0	0	0	0	2
Toadfish	0	0	0	0	0	0	0	0	0	0	0	0	0
Tomcod	0	0	0	0	0	0	0	0	0	0	0	0	0
Weakfish	0	0	0	0	0	0	0	0	0	0	0	0	0
White Hake	0	0	0	0	0	0	0	0	0	0	0	0	0
White Perch	0	0	0	0	0	0	0	0	0	0	0	0	0
Winter Flounder	6	11	8	31	43	51	19	57	20	13	11	8	278
Total Fish	6	11	10	32	50	66	21	73	24	16	19	10	338

Table 32 cont'd. Spar, Mt. Hope Bay. Mean monthly catch in number per 15 min. tow, 1984.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Anchovy	0	0	0	0	0	0	0	0	0	.	0	0	0
Atlantic Herring	0	0	0	0	0	0	0	0	0	.	0	0	0
Blueback Herring	0	0	0	0	0	0	0	0	0	.	0	0	0
Butterfish	0	0	0	0	0	0	0	0	0	.	1	0	1
Cunner	0	0	0	0	0	0	0	0	0	.	0	0	0
Grubby Sculpin	0	0	0	0	0	0	0	0	0	.	0	0	0
Hogchoker	0	0	0	0	0	1	1	0	0	.	0	0	2
Little Skate	0	0	0	0	0	0	0	0	0	.	1	0	1
Northern Searobin	0	0	0	0	0	0	0	0	0	.	0	0	0
Sand Flounder	0	2	4	5	0	0	0	0	2	.	1	0	14
Scup	0	0	0	0	0	1	0	2	11	.	0	0	14
Silver Hake	0	0	0	0	0	0	0	0	0	.	0	0	0
Smelt	0	0	0	0	0	0	0	0	0	.	0	0	0
Squirrel Hake	0	0	0	0	0	0	0	0	0	.	0	0	0
Striped Searobin	0	0	0	0	0	0	0	0	0	.	0	0	0
Summer Flounder	0	0	0	0	0	0	0	1	0	.	0	0	1
Tautog	0	0	0	0	7	1	0	2	4	.	0	0	14
Toadfish	0	0	0	0	0	0	0	0	0	.	0	0	0
Tomcod	0	0	0	0	0	0	0	0	0	.	0	0	0
Weakfish	0	0	0	0	0	0	0	0	0	.	0	0	0
White Hake	0	0	0	0	0	0	0	0	0	.	0	0	0
White Perch	0	0	0	0	0	0	0	0	0	.	0	0	0
Winter Flounder	2	2	5	12	16	7	0	3	21	.	8	1	77
Total Fish	2	4	9	17	23	10	1	8	38	.	11	1	124

Table 32 cont'd. Spar, Mt. Hope Bay. Mean monthly catch in number per 15 min. tow, 1985.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Anchovy	0	0	0	0	0	0	0	0	0	0	0	0	0
Atlantic Herring	0	0	0	0	0	0	0	0	0	0	0	0	0
Blueback Herring	0	0	0	0	0	0	0	0	0	0	0	0	0
Butterfish	0	0	0	0	0	1	0	0	0	0	0	0	1
Cunner	0	0	0	0	0	0	0	0	0	0	0	0	0
Grubby Sculpin	0	0	0	0	0	0	0	0	0	0	0	0	0
Hogchoker	0	0	0	0	0	0	0	0	0	0	0	0	0
Little Skate	0	0	1	0	0	0	0	0	0	0	0	0	1
Northern Searobin	0	0	0	0	0	0	0	0	0	0	0	0	0
Sand Flounder	0	0	1	4	1	4	0	3	0	0	1	0	14
Scup	0	0	0	0	0	16	8	1	0	0	0	0	25
Silver Hake	0	0	0	0	0	0	0	0	0	0	0	0	0
Smelt	0	0	0	0	0	0	0	0	0	0	0	0	0
Squirrel Hake	0	0	0	0	0	0	0	0	0	0	0	0	0
Striped Searobin	0	0	0	0	0	0	0	0	0	0	0	0	0
Summer Flounder	0	0	0	0	0	0	0	0	0	0	0	0	0
Tautog	0	0	0	0	15	1	1	0	0	0	0	0	17
Toadfish	0	0	0	0	0	0	0	0	0	0	0	0	0
Tomcod	0	0	0	0	0	0	0	0	0	0	0	0	0
Weakfish	0	0	0	0	0	0	0	0	0	0	0	0	0
White Hake	0	0	0	0	0	0	0	0	0	0	0	0	0
White Perch	0	0	0	0	0	0	0	0	0	0	0	0	0
Winter Flounder	2	5	9	16	20	7	2	4	2	2	3	5	77
Total Fish	2	5	11	20	36	29	11	8	2	2	4	5	135

Table 33. Winter Flounder. Intake, Mt. Hope Bay. Mean monthly catch in number per 15 min. tow, 1971-1985.

YEAR	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1971	.	.	.	.	7	4	2	21	82	50	107	207	480
1972	432	168	105	120	45	45	61	57	55	80	58	210	1436
1973	396	143	65	32	36	29	69	29	39	48	205	245	1336
1974	630	106	213	.	22	11	26	33	11	88	145	294	1579
1975	153	131	88	30	33	31	12	18	7	12	28	35	578
1976	68	88	57	19	9	20	21	15	6	20	55	9	387
1977	.	.	33	12	19	2	0	5	5	198	118	100	492
1978	45	3	33	.	35	23	180	47	54	135	469	814	1838
1979	266	187	616	567	520	484	191	223	16	35	32	73	3210
1980	23	12	160	156	121	83	45	13	12	15	108	72	820
1981	.	38	60	21	241	102	53	26	7	40	96	187	871
1982	.	59	1	165	116	233	3	42	18	80	65	104	886
1983	670	34	115	38	89	5	19	72	40	142	54	58	1336
1984	6	18	7	13	24	63	59	70	123	.	17	.	400
1985	17	5	0	1	85	122	56	68	31	93	.	.	478

Table 34. Winter Flounder. Spar, Mt. Hope Bay. Mean monthly catch in number per 15 min. tow, 1972-1985.

YEAR	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1972	.	.	.	.	110	57	9	8	8	6	156	18	372
1973	16	17	83	154	77	30	25	16	47	11	29	39	544
1974	9	28	32	.	85	5	11	2	6	11	13	15	217
1975	9	8	18	26	86	11	2	1	6	4	8	12	191
1976	2	7	12	19	28	16	1	0	8	4	11	1	109
1977	.	.	7	19	40	8	3	0	2	6	29	21	135
1978	4	2	10	.	49	94	9	8	10	24	49	27	286
1979	18	4	51	131	101	88	24	19	10	16	25	33	520
1980	7	1	8	35	87	2	0	5	2	3	9	3	162
1981	.	4	6	71	92	13	0	0	3	9	8	6	212
1982	.	4	5	16	70	20	1	4	5	0	59	30	214
1983	6	11	8	31	43	51	19	57	20	13	11	8	278
1984	2	2	5	12	16	7	0	3	21	.	8	1	77
1985	2	5	9	16	20	7	2	4	2	2	3	5	77

Table 35. Winter Flounder. Lee, Mt. Hope Bay. Mean monthly catch in number per 15 min. tow, 1971-1985.

YEAR	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1971	.	.	.	.	2	1	0	.	.	.	4	42	49
1972	13	2	11	12	26	6	.	1	9	10	78	88	256
1973	23	22	74	130	61	2	2	1	4	7	32	10	368
1974	13	20	34	27	8	12	11	4	1	14	5	11	160
1975	5	9	34	18	12	5	0	0	0	1	7	8	99
1976	2	6	5	4	7	6	1	0	1	1	1	0	34
1977	.	.	4	8	1	1	2	1	0	3	11	3	34
1978	2	4	7	7	14	1	26	29	13	20	28	32	183
1979	3	91	30	73	87	4	9	11	3	8	15	19	353
1980	6	10	33	38	18	5	11	3	3	0	9	9	145
1981	.	9	24	2	1	4	3	5	0	3	0	8	59
1982	.	10	25	4	2	.	0	18	16	15	148	184	422
1983	14	1	27	65	74	27	57	25	15	21	24	21	371
1984	3	8	31	17	18	3	2	1	10	.	46	6	145
1985	9	6	9	5	7	20	11	6	0	6	3	18	100

Table 36. Winter Flounder. Crossleg, Mt. Hope Bay. Mean monthly catch in number per 15 min. tow, 1971-1985.

YEAR	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1971	.	.	.	.	5	1	0	.	.	.	14	32	52
1972	8	1	7	34	49	10	.	1	8	15	138	59	330
1973	4	14	73	76	57	2	0	12	17	6	42	14	317
1974	17	23	32	36	24	0	0	0	1	8	21	16	178
1975	9	6	21	17	16	37	0	0	0	1	3	5	115
1976	4	11	12	9	20	4	1	1	1	3	9	1	76
1977	.	.	23	18	19	2	1	0	1	14	20	6	104
1978	1	2	12	47	81	13	13	12	9	31	31	15	267
1979	5	8	23	62	38	7	1	10	7	4	28	12	205
1980	1	4	13	44	40	8	2	0	0	2	6	2	122
1981	.	1	12	22	16	9	0	0	0	6	15	9	90
1982	.	1	1	18	18	7	0	2	0	27	91	219	384
1983	5	19	28	8	110	8	8	41	21	30	23	3	304
1984	5	5	3	12	19	5	1	0	6	.	18	2	76
1985	6	2	6	16	38	11	0	4	0	3	5	6	97

Table 37. Winter Flounder. Cole, Mt. Hope Bay. Mean monthly catch in number per 15 min. tow, 1971-1985.

YEAR	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1971	.	.	.	.	.	.	.	.	.	.	1	.	1
1972	3	1	10	18	49	0	.	1	4	6	54	18	164
1973	10	.	105	117	58	6	1	0	2	3	13	9	324
1974	20	36	51	27	20	0	5	0	3	5	25	13	205
1975	6	3	11	10	26	6	0	0	1	2	10	13	88
1976	2	10	10	7	15	.	0	0	0	1	9	3	57
1977	.	.	0	13	0	0	1	0	0	2	13	6	35
1978	3	0	6	10	33	34	40	1	0	74	81	167	449
1979	4	12	17	88	21	0	0	3	4	19	100	22	290
1980	4	3	9	27	27	22	1	1	2	2	3	2	103
1981	.	4	37	28	9	11	0	0	3	3	12	10	117
1982	.	57	19	32	124	15	0	14	5	72	207	198	743
1983	47	37	36	37	46	2	12	56	10	64	30	32	409
1984	7	14	21	16	51	2	0	3	1	.	21	11	147
1985	.	29	22	4	45	6	2	1	1	2	9	10	131

Table 38. Winter Flounder. Discharge, Mt. Hope Bay. Mean monthly catch in number per 15 min. tow, 1979-1985.

YEAR	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1979	.	.	.	.	.	.	.	.	.	3	12	3	18
1980	1	1	4	8	1	6	0	1	0	1	0	0	23
1981	.	0	2	1	4	2	1	0	1	2	5	5	23
1982	0	0	1	6	3	1	0	0	1	2	0	1	15
1983	1	0	2	3	3	0	0	1	0	0	0	8	18
1984	1	0	3	3	2	0	0	1	0	.	2	2	14
1985	0	2	2	1	2	4	0	0	0	0	0	0	11

Table 39. Winter Flounder. Mid-Bay, Mt. Hope Bay. Mean monthly catch in number per 15 min. tow, 1979-1985.

YEAR	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1979	.	.	.	.	.	.	.	.	.	4	5	9	18
1980	0	0	5	24	29	9	0	2	1	2	1	0	73
1981	.	1	10	27	11	30	0	0	3	9	12	8	111
1982	.	4	0	28	66	11	0	2	8	45	77	28	269
1983	7	4	38	34	95	29	8	55	29	28	14	15	356
1984	3	1	3	25	12	10	1	1	10	.	17	3	86
1985	5	1	10	20	14	5	6	2	0	2	2	1	68

Table 40. Winter Flounder. Taunton, Mt. Hope Bay. Mean monthly catch in number per 15 min. tow, 1979-1985.

YEAR	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1979	.	.	.	.	.	.	.	.	.	16	90	141	246
1980	124	8	13	27	23	9	11	6	11	5	17	5	256
1981	.	13	47	18	7	1	14	5	2	11	0	34	152
1982	.	12	0	31	31	97	0	30	.	15	74	151	441
1983	14	24	77	14	36	40	40	31	7	48	126	101	558
1984	2	4	26	3	28	90	37	53	29	.	8	18	298
1985	4	22	9	38	50	80	19	13	2	7	2	4	250

Table 41. Weakfish. Intake, Mt. Hope Bay. Mean monthly catch in number per 15 min. tow, 1971-1985.

YEAR	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1971	.	.	.	.	0	0	0	169	464	194	31	0	858
1972	0	0	0	0	0	0	0	46	163	69	0	0	278
1973	0	0	0	0	0	0	1	35	214	69	0	0	319
1974	0	0	0	.	0	0	1	413	164	19	1	0	598
1975	0	0	0	0	0	1	2	57	43	1	0	0	104
1976	0	0	0	0	0	0	0	0	25	4	0	0	29
1977	.	.	0	0	0	0	0	17	0	0	0	0	17
1978	0	0	0	.	1	0	0	69	137	54	1	0	262
1979	0	0	0	0	0	1	0	13	17	0	0	3	34
1980	0	0	0	0	0	0	0	157	117	10	0	0	284
1981	.	0	0	0	0	0	0	32	24	0	0	0	56
1982	.	0	0	0	0	3	0	0	0	0	1	0	4
1983	0	0	0	0	0	0	0	8	129	0	0	0	137
1984	0	0	0	0	0	0	0	0	0	.	0	.	0
1985	0	0	0	0	0	0	1	1	0	1	.	.	3

Table 42. Weakfish. Spar, Mt. Hope Bay. Mean monthly catch in number per 15 min. tow, 1972-1985.

YEAR	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1972	.	.	.	.	0	0	0	1	1	0	0	0	2
1973	0	0	0	0	0	0	0	18	13	2	0	0	33
1974	0	0	0	.	0	0	0	5	9	0	0	0	14
1975	0	0	0	0	0	0	2	9	2	1	0	0	14
1976	0	0	0	0	0	0	0	0	1	1	0	0	2
1977	.	.	0	0	0	0	1	0	0	0	0	0	1
1978	0	0	0	.	0	0	0	0	2	0	0	0	2
1979	0	0	0	0	0	0	0	1	1	0	0	0	2
1980	0	0	0	0	0	0	0	0	0	0	0	0	0
1981	.	0	0	0	0	0	0	0	0	0	0	0	0
1982	.	0	0	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	.	0	0	0
1985	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 43. Sand Flounder. Intake, Mt. Hope Bay. Mean monthly catch in number per 15 min. tow, 1971-1985.

YEAR	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1971	.	..	.	.	19	40	10	22	38	15	18	43	205
1972	35	33	21	4	20	28	47	22	17	19	3	8	257
1973	23	26	11	13	22	10	23	6	9	12	32	27	214
1974	36	14	22	.	50	8	22	13	27	14	17	28	251
1975	32	30	12	12	17	36	12	3	3	6	8	2	173
1976	12	17	14	4	10	4	0	2	3	5	2	1	74
1977	.	.	1	2	4	1	0	1	1	26	36	33	105
1978	31	4	13	.	17	49	34	1	20	45	128	86	428
1979	12	37	29	65	72	150	24	13	16	22	24	10	474
1980	14	30	37	34	34	25	24	1	10	6	5	7	227
1981	.	3	0	16	23	59	9	2	7	4	5	12	140
1982	.	3	0	12	30	106	2	1	10	133	19	25	341
1983	10	8	11	6	24	2	2	7	11	51	10	3	145
1984	1	3	0	0	5	23	6	12	13	.	4	.	67
1985	3	0	0	1	21	8	5	4	0	32	.	.	74

Table 44. Sand Flounder. Spar, Mt. Hope Bay. Mean monthly catch in number per 15 min. tow, 1972-1985.

YEAR	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1972	.	.	.	.	12	7	2	1	0	0	7	3	32
1973	1	9	8	15	13	8	3	1	3	0	1	3	65
1974	3	5	4	.	8	6	2	1	3	1	1	2	36
1975	2	3	1	2	14	9	2	0	1	0	1	0	35
1976	0	0	3	2	2	1	4	0	1	1	1	0	15
1977	.	.	0	3	3	1	2	2	1	1	2	3	18
1978	1	0	2	.	15	38	6	2	6	24	7	5	106
1979	4	6	4	22	15	21	10	8	3	2	2	9	106
1980	4	1	1	7	18	2	1	2	3	0	7	0	46
1981	.	0	1	12	23	1	0	0	0	2	4	0	43
1982	.	0	1	1	13	5	0	1	1	0	7	4	33
1983	0	0	2	1	4	4	1	6	2	3	6	2	31
1984	0	2	4	5	0	0	0	0	2	.	1	0	14
1985	0	0	1	4	1	4	0	3	0	0	1	0	14

Table 45. Scup. Intake, Mt. Hope Bay. Mean monthly catch in number per 15 min. tow, 1971-1985.

YEAR	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1971	.	.	.	.	0	0	0	3	19	4	0	0	26
1972	0	0	0	0	0	0	1	0	1	4	0	0	6
1973	0	0	0	0	0	1	0	1	2	1	0	0	5
1974	0	0	0	.	0	0	2	18	6	2	0	0	28
1975	0	0	0	0	0	2	0	0	1	19	0	0	22
1976	0	0	0	0	0	1	32	131	43	9	0	0	216
1977	.	.	0	0	2	0	0	0	1	1	0	0	4
1978	0	0	0	.	0	0	1	1	12	14	0	0	28
1979	0	0	0	0	1	0	47	24	14	1	0	0	87
1980	0	0	0	0	0	2	37	10	23	13	0	0	85
1981	.	0	0	0	0	0	0	0	56	3	0	0	59
1982	.	0	0	0	0	0	0	3	12	0	0	0	15
1983	0	0	0	0	0	0	27	24	14	0	0	0	65
1984	0	0	0	0	0	0	0	1	4	.	0	.	5
1985	0	0	0	0	1	1	0	1	3	0	.	.	6

Table 46. Scup. Spar, Mt. Hope Bay. Mean monthly catch in number per 15 min. tow, 1972-1985.

YEAR	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1972	.	.	.	.	0	1	0	8	2	1	0	0	12
1973	0	0	0	0	0	0	1	0	0	1	0	0	2
1974	0	0	0	.	0	0	4	5	2	1	0	0	12
1975	0	0	0	0	1	0	0	4	5	25	0	0	35
1976	0	0	0	0	0	5	31	19	4	4	0	0	63
1977	.	.	0	0	0	0	2	0	0	0	0	0	2
1978	0	0	0	.	0	0	1	0	1	1	0	0	3
1979	0	0	0	0	0	3	3	19	4	0	0	0	29
1980	0	0	0	0	0	5	16	18	1	0	0	0	40
1981	.	0	0	0	0	5	0	1	0	0	0	0	6
1982	.	0	0	0	1	12	0	3	27	0	0	0	43
1983	0	0	0	0	0	11	0	3	2	0	0	0	16
1984	0	0	0	0	0	1	0	2	11	.	0	0	14
1985	0	0	0	0	0	16	8	1	0	0	0	0	25

Table 47. Total Finfish Catch. Intake, Mt. Hope Bay. Mean monthly catch in number per 15 min. tow, 1971-1985.

YEAR	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1971	.	.	.	.	31	59	13	224	641	282	184	257	1682
1972	493	211	147	128	77	95	129	144	252	201	79	262	2218
1973	465	218	96	57	87	67	119	76	275	144	264	281	2149
1974	691	155	247	.	78	40	70	500	253	152	182	328	2696
1975	187	168	103	50	62	135	60	93	78	73	58	60	1127
1976	103	110	79	36	51	37	81	162	90	48	72	13	882
1977	.	.	34	14	29	5	1	24	9	236	185	140	677
1978	84	7	47	.	71	93	231	124	246	338	621	919	2781
1979	295	250	665	638	642	699	289	313	94	77	81	101	4144
1980	45	52	204	193	174	159	157	189	189	176	114	79	1731
1981	.	50	64	39	269	218	111	83	116	57	104	202	1313
1982	.	63	1	191	160	420	10	59	44	276	147	156	1527
1983	690	84	137	46	134	18	66	139	242	226	70	65	1917
1984	7	23	9	14	33	133	94	109	151	.	28	.	601
1985	23	5	0	2	120	206	71	76	47	154	.	.	704

Table 48. Total Finfish Catch. Spar, Mt. Hope Bay. Mean monthly catch in number per 15 minute tow, 1972-1985.

YEAR	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1972	.	.	.	.	126	77	13	21	11	7	164	24	443
1973	19	27	92	172	94	50	32	40	69	17	30	42	684
1974	12	34	38	.	99	14	20	17	23	14	14	18	303
1975	11	12	19	28	103	24	7	16	15	33	17	14	299
1976	2	8	19	21	31	26	38	20	16	14	12	1	208
1977	.	.	8	22	49	10	12	3	3	13	36	24	180
1978	5	2	12	.	66	133	19	12	19	51	57	32	408
1979	23	10	55	154	118	115	42	50	22	22	28	44	683
1980	12	2	9	43	107	11	27	34	8	3	16	3	275
1981	.	4	7	83	117	22	2	2	4	11	12	6	270
1982	.	4	6	17	87	37	1	12	35	0	66	34	299
1983	6	11	10	32	50	66	21	73	24	16	19	10	338
1984	2	4	9	17	23	10	1	8	38	.	11	1	124
1985	2	5	11	20	36	29	11	8	2	2	4	5	135

Table 49a. Brayton Pt., intake screens, Mt. Hope Bay. Summary statistics for finfishes based on yearly sums of quarterly catch in numbers standardized for flow (n=13), 1973-1975.

COMMON NAME	MEAN	SD	MIN	MAX
ALEWIFE	2417	4662	130	17535
AMERICAN EEL	160	70	102	373
ANCHOVY (BAY)	795	974	76	3018
ATLANTIC HERRING	103	150	0	553
BLUEBACK HERRING	737	1310	38	4545
BLUEFISH	125	386	0	1409
BUTTERFISH	119	159	0	464
CUNNER	173	108	11	401
GRUBBY SCULPIN	41	50	3	176
HOGCHOKER	3343	3227	809	10542
LITTLE SKATE	34	37	2	125
MENHADEN (ATLANTIC)	1139	2382	0	8894
MUMMICHOG	45	32	4	101
NORTHERN PIPEFISH	447	269	137	854
NORTHERN SEAROBIN	25	37	0	134
PUFFER (NORTHERN)	48	63	0	228
SAND FL.[WINDOWPANE]	462	409	11	1139
SCUP	35	39	0	115
SILVER HAKE	1956	2437	276	9060
SILVERSIDE (ATLANTIC)	2109	1804	393	7529
SMELT (RAINBOW)	376	528	3	1621
SQUIRREL (RED) HAKE	107	132	0	498
STRIPED KILLIFISH	187	248	0	917
STRIPED SEAROBIN	72	71	0	169
TAUTOG	487	520	123	1721
THREESPINE STICKLEBACK	1323	1520	85	5224
TOADFISH (OYSTER)	128	73	43	306
TOMCOD (ATLANTIC)	559	857	13	3263
WEAKFISH	226	296	2	891
WHITE HAKE	38	58	0	220
WHITE PERCH	724	576	32	1737
WINTER FLOUNDER	4314	2871	360	10319

Table 49b. Brayton Pt., intake screens, Mt. Hope Bay. Estimated quarterly mean flow of cooling water, in 10^3 m^3 min^{-1}, for units 1, 2, and 3 at New England Power Company, Brayton, Pt. facility.

	Quarter			
Year	1st	2nd	3rd	4th
1973	2.305	2.059	1.896	2.101
1974	1.945	1.329	1.851	1.681
1975	2.040	1.805	1.904	2.044
1976	2.180	2.074	2.070	2.044
1977	2.192	2.029	1.870	2.010
1978	2.222	2.176	1.953	1.938
1979	1.802	1.302	1.665	2.051
1980	2.063	1.783	1.980	1.563
1981	1.582	1.847	1.760	1.400
1982	1.768	1.548	1.961	1.889
1983	2.131	1.730	1.715	1.302
1984	1.298	1.749	2.055	2.139
1985	1.995	1.817	1.684	1.204

Table 50. Brayton Pt., intake screens, Mt. Hope Bay. Yearly sum of quarterly catch in numbers standardized for flow, 1973-1985.

YEAR	SPECIES:	ALW	AEL	ANC	SHR	BHR	BFS	BUT	CUM	GSC	HOG	SKA	MEN
1973		1023	373	130	553	566	0	145	140	16	1036	5	8894
1974		1075	115	484	110	106	26	135	244	9	1429	9	1510
1975		615	143	296	129	264	22	54	69	7	809	2	683
1976		2096	125	666	56	346	48	3	327	39	2342	5	357
1977		18E3	169	1078	78	457	40	162	174	55	11E3	53	1409
1978		1168	147	313	224	246	31	11	401	176	3905	48	729
1979		842	113	3018	17	236	25	40	156	80	1988	17	121
1980		383	131	380	85	110	8	445	200	95	2334	81	453
1981		130	157	76	6	38	6	20	97	3	854	15	20
1982		1003	102	2806	9	2476	8	69	170	4	9787	52	76
1983		162	191	480	0	149	0	5	55	10	1249	3	0
1984		4189	191	285	2	4545	1409	0	203	32	4419	125	59
1985		1199	120	324	73	44	8	464	11	13	2768	32	492

Table 50 cont'd. Brayton Pt., intake screens, Mt. Hope Bay. Yearly sum of quarterly catch in numbers standardized for flow, 1973-1985.

YEAR	SPECIES:	MUM	PIP	MSR	PUF	WMD	SCP	SHK	SLV	SMT	RHK
1973		101	346	31	15	536	1	1602	1831	1437	21
1974		15	187	134	30	164	47	1278	804	473	0
1975		27	197	38	15	137	33	1915	393	65	102
1976		32	215	39	35	122	52	408	596	169	498
1977		83	532	7	228	953	27	9060	1822	299	65
1978		32	838	7	23	1139	36	3889	7529	1621	135
1979		17	582	43	34	583	115	3226	2760	125	79
1980		62	672	10	8	753	10	339	2730	100	181
1981		5	137	7	38	1067	10	276	2174	236	11
1982		75	854	5	132	415	112	2111	2362	221	117
1983		76	267	0	24	21	0	318	915	3	0
1984		54	764	0	0	11	9	721	1825	134	37
1985		4	218	0	40	111	4	287	1681	7	149

Table 50 cont'd. Brayton Pt., intake screens, Mt. Hope Bay. Yearly sum of quarterly catch in numbers standardized for flow, 1973-1985.

YEAR	SPECIES:	STM	SSR	TAU	TSS	TDF	TOM	WFS	WHK	WPR	WFL
1973		78	18	136	5224	201	54	497	56	1485	8851
1974		22	115	123	1226	182	48	88	42	810	5768
1975		61	92	198	814	68	13	83	24	1136	2313
1976		208	66	172	486	139	286	82	220	1558	2415
1977		917	144	1253	643	306	984	891	21	1737	6772
1978		340	169	1073	3560	119	619	225	32	574	10E3
1979		45	163	177	2422	43	283	152	51	473	2066
1980		308	7	333	473	104	475	67	33	388	3630
1981		243	0	459	606	61	103	19	0	112	3255
1982		35	157	1721	323	149	3263	753	0	587	2335
1983		0	0	123	85	45	488	12	0	204	360
1984		152	4	380	328	144	203	2	10	315	4258
1985		23	0	188	1008	99	442	64	4	32	3745

Table 51. Brayton Pt., intake screens, Mt. Hope Bay. Quarterly catch in number standardized for flow, 1973-1975.

YEAR:	1973				1974				1975			
SPECIES QUARTER:	1ST	2ND	3RD	4TH	1ST	2ND	3RD	4TH	1ST	2ND	3RD	4TH
Alewife	297	25	128	573	117	717	129	112	215	224	75	101
American Eel	222	68	34	49	26	38	14	37	72	42	11	18
Anchovy	7	34	49	40	3	154	113	14	0	126	155	15
Atlantic Herring	265	30	0	258	71	9	3	27	72	55	0	2
Blueback Herring	345	15	4	202	36	5	10	55	212	19	0	33
Bluefish	0	0	0	0	0	2	14	10	6	13	3	0
Butterfish	.	0	127	18	.	0	70	65	.	0	46	8
Cunner	21	43	36	40	35	166	33	10	5	19	38	7
Grubby Sculpin	10	0	0	6	2	0	0	7	3	0	0	4
Hogchoker	14	925	95	2	2	1149	138	140	0	742	50	17
Little Skate	4	1	0	0	2	0	0	7	1	0	0	1
Menhaden	282	0	243	8369	461	35	373	641	135	333	125	90
Mummichog	55	14	3	29	6	5	0	4	3	9	0	15
N. Pipefish	249	21	13	63	38	32	35	82	49	47	31	70
Northern Searobin	0	10	7	14	0	0	17	117	0	0	7	31
Puffer	0	5	9	1	0	14	14	2	0	0	12	3
Sand Flounder	311	85	36	104	35	39	13	77	82	7	2	46
Scup	0	0	0	1	7	13	7	20	0	0	9	24
Silver Hake	880	0	17	705	171	11	18	1078	51	4	6	1854
Silverside	461	9	11	1350	593	152	8	51	119	102	25	147
Smelt	590	2	27	818	423	5	38	7	43	8	0	14
Squirrel Hake	14	0	7	0	0	0	0	0	0	6	0	96
Striped Killifish	43	0	0	35	5	5	0	12	18	2	0	41
Striped Searobin	.	1	8	9	.	2	72	41	.	0	37	55
Tautog	43	43	23	27	6	82	26	9	26	74	20	78
Threespine Stickleback	4413	10	.	801	863	6	.	357	567	2	.	245
Toadfish	5	115	63	18	2	127	43	10	3	33	19	13
Tomcod	7	12	4	31	8	32	2	6	1	12	0	0
Weakfish	.	84	363	50	.	21	48	19	.	78	0	5
White Hake	29	2	3	22	30	12	0	0	3	21	0	0
White Perch	715	52	15	703	318	57	8	427	222	61	25	828
Winter Flounder	5612	106	99	3034	4689	540	59	480	1657	47	5	604

Table 51 cont'd. Brayton Pt., intake screens, Mt. Hope Bay. Quarterly catch in number standardized for flow, 1976-1978.

YEAR:	1976				1977				1978			
SPECIES / QUARTER:	1ST	2ND	3RD	4TH	1ST	2ND	3RD	4TH	1ST	2ND	3RD	4TH
Alewife	1369	289	403	35	9	16159	985	382	280	193	103	592
American Eel	89	24	2	10	39	52	24	54	94	16	8	29
Anchovy	4	222	435	5	0	866	183	29	0	163	115	35
Atlantic Herring	55	1	0	[illegible]	33	19	9	17	36	188	0	0
Blueback Herring	295	9	13	29	13	37	18	389	26	7	21	192
Bluefish	0	13	35	0	0	27	13	0	0	6	13	12
Butterfish	.	0	3	0	.	0	0	162	.	5	1	5
Cunner	8	301	11	7	13	14	61	86	68	204	116	13
Grubby Sculpin	3	0	0	36	3	1	0	51	126	17	2	31
Hogchoker	31	2285	21	5	43	10031	396	72	140	3569	82	114
Little Skate	5	0	0	0	26	21	6	0	29	11	0	8
Menhaden	286	32	5	34	2	1	644	762	79	103	71	476
Mummichog	18	0	0	14	17	1	0	65	14	9	0	9
N. Pipefish	39	32	37	107	16	144	99	273	198	233	212	195
Northern Searobin	0	1	12	26	0	1	3	3	0	0	4	3
Puffer	0	3	32	0	0	6	109	113	0	0	23	0
Sand Flounder	74	18	1	29	369	169	28	387	538	289	18	294
Scup	0	21	7	24	0	1	6	20	0	0	27	9
Silver Hake	76	0	0	332	0	0	19	9041	571	2	4	3312
Silverside	157	58	53	328	429	58	155	1180	6761	75	55	638
Smelt	95	5	0	69	167	19	0	113	1321	54	3	243
Squirrel Hake	55	5	0	438	31	5	0	29	108	0	0	27
Striped Killifish	34	0	0	174	325	0	0	592	183	7	2	148
Striped Searobin	.	0	35	31	.	0	34	110	.	0	94	75
Tautog	48	59	12	53	57	208	164	824	268	601	131	73
Threespine Stickleback	452	4	.	30	274	2	.	367	3087	37	.	436
Toadfish	2	89	12	36	0	246	29	31	0	81	27	11
Tomcod	0	251	1	34	5	804	115	60	13	397	70	139
Weakfish	.	5	69	8	.	705	170	16	.	1	214	10
White Hake	7	15	0	198	21	0	0	0	5	2	0	25
White Perch	1010	73	9	466	1394	111	33	199	438	74	12	50
Winter Flounder	1170	702	4	539	4579	1297	145	751	9193	689	80	357

Table 51 cont'd. Brayton Pt., intake screens, Mt. Hope Bay. Quarterly catch in number standardized for flow, 1979-1981.

YEAR:	1979				1980				1981			
SPECIES QUARTER:	1ST	2ND	3RD	4TH	1ST	2ND	3RD	4TH	1ST	2ND	3RD	4TH
Alewife	110	302	260	170	26	82	232	43	35	61	34	0
American Eel	19	5	23	66	45	19	18	49	69	87	1	0
Anchovy	0	281	2466	271	6	251	106	17	0	53	23	0
Atlantic Herring	17	0	0	[illegible]	13	72	0	0	6	0	0	0
Blueback Herring	28	15	16	177	85	16	5	4	12	1	0	25
Bluefish	0	7	17	1	0	6	2	0	0	0	6	0
Butterfish	.	0	1	39	.	4	16	425	.	3	16	1
Cunner	0	23	121	12	4	76	112	8	49	41	7	0
Grubby Sculpin	53	0	0	27	78	0	0	17	3	0	0	0
Hogchoker	13	1271	657	47	80	2121	39	94	161	664	23	6
Little Skate	0	0	0	17	68	3	0	10	13	0	0	2
Menhaden	80	4	1	36	7	26	242	178	3	3	0	14
Mummichog	3	0	2	12	14	2	0	46	3	0	2	0
N. Pipefish	89	80	300	113	124	102	246	200	28	61	31	17
Northern Searobin	0	0	23	20	0	0	0	10	0	0	2	5
Puffer	0	0	18	16	0	0	8	0	0	2	32	4
Sand Flounder	165	37	34	347	463	48	3	239	856	201	3	7
Scup	0	4	106	5	0	7	3	0	3	1	2	4
Silver Hake	99	0	0	3127	111	0	0	228	0	0	0	276
Silverside	2063	242	80	375	919	73	24	1714	1977	28	11	158
Smelt	99	0	2	24	86	2	0	12	229	0	0	7
Squirrel Hake	69	7	0	3	150	3	2	26	11	0	0	0
Striped Killifish	31	0	0	14	79	3	0	226	204	0	0	39
Striped Searobin	.	0	93	70	.	0	0	7	.	0	0	0
Tautog	50	60	34	33	26	162	128	17	148	205	25	81
Threespine Stickleback	2351	4	.	67	350	0	.	123	579	0	.	27
Toadfish	0	11	13	19	0	88	5	11	0	36	5	20
Tomcod	51	136	65	31	33	349	0	93	8	95	0	0
Weakfish	.	0	152	0	.	0	65	2	.	5	14	0
White Hake	37	0	0	14	31	2	0	0	0	0	0	0
White Perch	54	15	19	385	212	13	3	160	85	13	0	14
Winter Flounder	1568	111	103	284	3212	102	26	290	3150	59	26	20

Table 51 cont'd. Brayton Pt., intake screens, Mt. Hope Bay. Quarterly catch in number standardized for flow, 1982-1984.

YEAR:	1982				1983				1984			
SPECIES / QUARTER:	1ST	2ND	3RD	4TH	1ST	2ND	3RD	4TH	1ST	2ND	3RD	4TH
Alewife	168	218	84	533	95	55	12	0	3487	138	118	446
American Eel	2	50	12	38	16	161	12	2	22	29	3	137
Anchovy	0	1302	216	1288	59	364	57	0	0	120	103	62
Atlantic Herring	6	0	3	0	0	0	0	0	2	0	0	0
Blueback Herring	45	2171	18	242	102	23	12	12	4350	188	0	7
Bluefish	0	5	3	0	0	0	0	0	0	1403	3	3
Butterfish	.	0	36	33	.	0	0	5	.	0	0	0
Cunner	31	129	8	2	0	45	4	6	146	34	8	15
Grubby Sculpin	0	0	0	4	10	0	0	0	2	19	3	8
Hogchoker	201	9386	140	60	0	1220	29	0	0	4396	8	15
Little Skate	30	18	0	4	3	0	0	0	50	22	27	26
Menhaden	0	67	9	0	0	0	0	0	45	4	3	7
Mummichog	48	3	3	21	0	76	0	0	45	0	1	8
N. Pipefish	197	472	138	47	23	91	24	129	340	168	73	183
Northern Searobin	0	1	0	4	0	0	0	0	0	0	0	0
Puffer	0	42	70	20	0	0	24	0	0	0	0	0
Sand Flounder	287	109	0	19	13	8	0	0	3	0	3	5
Scup	0	91	15	6	0	0	0	0	0	0	5	4
Silver Hake	34	0	204	1873	172	93	12	41	358	0	27	336
Silverside	1164	761	9	428	434	340	139	2	1138	81	30	576
Smelt	100	2	10	109	3	0	0	0	69	65	0	0
Squirrel Hake	63	54	0	0	0	0	0	0	18	7	3	9
Striped Killifish	29	0	0	6	0	0	0	0	12	121	0	19
Striped Searobin	.	0	0	157	.	0	0	0	.	0	0	4
Tautog	146	1169	382	24	0	103	20	0	35	174	36	135
Threespine Stickleback	223	0	.	100	69	16	.	0	321	0	.	7
Toadfish	0	55	47	47	0	37	8	0	0	95	36	13
Tomcod	0	3184	69	10	0	482	0	6	8	2	5	188
Weakfish	.	0	714	39	.	0	12	0	.	0	0	2
White Hake	0	0	0	0	0	0	0	0	10	0	0	0
White Perch	292	135	15	145	30	43	0	131	257	49	3	6
Winter Flounder	836	625	99	775	243	96	19	2	3745	184	63	266

Table 51 cont'd. Brayton Pt., intake screens, Mt. Hope Bay. Quarterly catch in number standardized for flow, 1985.

YEAR:	1985			
SPECIES / QUARTER:	1ST	2ND	3RD	4TH
Alewife	62	243	894	0
American Eel	106	0	8	6
Anchovy	0	263	61	0
Atlantic Herring	7	0	66	0
Blueback Herring	44	0	0	0
Bluefish	0	0	8	0
Butterfish	.	39	0	425
Cunner	0	6	5	0
Grubby Sculpin	7	0	0	6
Hogchoker	125	2448	189	6
Little Skate	32	0	0	0
Menhaden	6	61	117	308
Mummichog	4	0	0	0
N. Pipefish	157	20	29	12
Northern Searobin	0	0	0	0
Puffer	8	26	0	6
Sand Flounder	60	51	0	0
Scup	0	4	0	0
Silver Hake	20	5	12	250
Silverside	636	702	23	320
Smelt	1	0	0	6
Squirrel Hake	27	0	0	122
Striped Killifish	11	0	0	12
Striped Searobin	.	0	0	0
Tautog	57	72	53	6
Threespine Stickleback	915	0	.	93
Toadfish	0	99	0	0
Tomcod	12	410	8	12
Weakfish	.	0	58	6
White Hake	4	0	0	0
White Perch	14	6	0	12
Winter Flounder	2046	1660	4	35

Table 52. Winter Flounder. Brayton Pt., intake screens, Mt. Hope Bay. Quarterly catch in number standardized for flow, 1973-1985.

YEAR	QUARTER: 1ST	2ND	3RD	4TH	TOTAL
1973	5612	106	99	3034	8851
1974	4689	540	59	480	5768
1975	1657	47	5	604	2313
1976	1170	702	4	539	2415
1977	4579	1297	145	751	6772
1978	9193	689	80	357	10319
1979	1568	111	103	284	2066
1980	3212	102	26	290	3630
1981	3150	59	26	20	3255
1982	836	625	99	775	2335
1983	243	96	19	2	360
1984	3745	184	63	266	4258
1985	2046	1660	4	35	3745

Table 53. Alewife. Brayton Pt., intake screens, Mt. Hope Bay. Quarterly catch in number standardized for flow, 1973-1985.

YEAR	QUARTER: 1ST	2ND	3RD	4TH	TOTAL
1973	297	25	128	573	1023
1974	117	717	129	112	1075
1975	215	224	75	101	615
1976	1369	289	403	35	2096
1977	9	16159	985	382	17535
1978	280	193	103	592	1168
1979	110	302	260	170	842
1980	26	82	232	43	383
1981	35	61	34	0	130
1982	168	218	84	533	1003
1983	95	55	12	0	162
1984	3487	138	118	446	4189
1985	62	243	894	0	1199

Table 54. Hogchoker. Brayton Pt., intake screens, Mt. Hope Bay. Quarterly catch in number standardized for flow, 1973-1985.

YEAR	QUARTER: 1ST	2ND	3RD	4TH	TOTAL
1973	14	925	95	2	1036
1974	2	1149	138	140	1429
1975	0	742	50	17	809
1976	31	2285	21	5	2342
1977	43	10031	396	72	10542
1978	140	3569	82	114	3905
1979	13	1271	657	47	1988
1980	80	2121	39	94	2334
1981	161	664	23	6	854
1982	201	9386	140	60	9787
1983	0	1220	29	0	1249
1984	0	4396	8	15	4419
1985	125	2448	189	6	2768

Table 55. Silver Hake. Brayton Pt., intake screens, Mt. Hope Bay. Quarterly catch in number standardized for flow, 1973-1985.

YEAR	QUARTER: 1ST	2ND	3RD	4TH	TOTAL
1973	880	0	17	705	1602
1974	171	11	18	1078	1278
1975	51	4	6	1854	1915
1976	76	0	0	332	408
1977	0	0	19	9041	9060
1978	571	2	4	3312	3889
1979	99	0	0	3127	3226
1980	111	0	0	228	339
1981	0	0	0	276	276
1982	34	0	204	1873	2111
1983	172	93	12	41	318
1984	358	0	27	336	721
1985	20	5	12	250	287

Table 56. Menhaden. Brayton Pt., intake screens, Mt. Hope Bay. Quarterly catch in number standardized for flow, 1973-1985.

YEAR	QUARTER: 1ST	2ND	3RD	4TH	TOTAL
1973	297	25	128	573	1023
1974	117	717	129	112	1075
1975	215	224	75	101	615
1976	1369	289	403	35	2096
1977	9	16159	985	382	17535
1978	280	193	103	592	1168
1979	110	302	260	170	842
1980	26	82	232	43	383
1981	35	61	34	0	130
1982	168	218	84	533	1003
1983	95	55	12	0	162
1984	3487	138	118	446	4189
1985	62	243	894	0	1199

Table 57. Total Finfish Catch. Brayton Pt., intake screens, Mt. Hope Bay. Quarterly catch in number standardized for flow, 1973-1985.

YEAR	QUARTER: 1ST	2ND	3RD	4TH	TOTAL
1973	14894	1712	1424	17372	35402
1974	7949	3430	1505	3924	16808
1975	3565	2086	701	4465	10817
1976	5382	4517	1212	3097	14208
1977	7865	31005	3448	16178	58496
1978	23576	7033	1508	7561	39678
1979	7049	2615	4606	5822	20092
1980	6222	3632	1285	4249	15388
1981	7632	1619	263	727	10241
1982	3902	20049	2304	6034	32289
1983	1272	3253	384	336	5245
1984	14463	7299	561	2487	24810
1985	4361	6115	1535	1643	13654

Table 58. Manchester Street Station, intake screens, Providence River, Narragansett Bay. Summary statistics for finfishes based on yearly sums of mean daily catch per month (n=11), 1975-1985.

COMMON NAME	MEAN	SD	MIN	MAX
ALEWIFE	25	16	10	62
AMERICAN EEL	14	10	6	33
ATLANTIC HERRING	64	158	0	498
BUTTERFISH	3	3	0	12
CUNNER	4	7	0	24
LITTLE SKATE	5	10	0	32
MENHADEN (ATLANTIC)	436	529	2	1696
MUMMICHOG	374	864	0	2818
SAND FL.[WINDOWPANE]	18	22	3	70
SILVER HAKE	121	122	4	424
SILVERSIDE (ATLANTIC)	297	357	3	1023
STRIPED KILLIFISH	27	35	0	113
TAUTOG	30	59	1	185
TOMCOD (ATLANTIC)	16	21	0	64
WEAKFISH	24	36	0	116
WINTER FLOUNDER	228	244	43	759

Table 59. Manchester Street Station, intake screens, Providence River, Narragansett Bay. Yearly sum of mean daily catch per month, 1975-1985.

YEAR	SPECIES:	ALW	AEL	SHR	BUT	CUN	SKA	MEN	MUM	WND	SHK	SLV	STM
1975		25	6	1	4	1	0	1696	32	9	88	13	2
1976		16	9	2	5	0	0	469	42	8	117	44	7
1977		40	8	1	4	5	0	823	194	9	225	666	22
1978		15	6	3	1	4	0	635	135	8	79	62	31
1979		19	23	0	3	1	6	16	258	46	424	36	25
1981		10	33	129	3	2	4	45	230	20	14	622	58
1982		25	20	0	0	24	5	2	2818	4	100	1023	113
1983		23	24	1	0	0	0	208	4	5	70	351	4
1984		11	7	3	2	0	3	27	0	3	4	3	0
1985		62	7	498	12	2	32	438	26	70	91	148	3

Table 59 cont'd. Manchester Street Station, intake screens, Providence River, Narragansett Bay. Yearly sum of mean daily catch per month, 1975-1985.

YEAR	SPECIES:	TAU	TOM	WFS	WFL
1975		2	1	25	97
1976		2	1	2	44
1977		1	0	46	43
1978		4	7	27	100
1979		185	7	1	482
1981		19	11	19	114
1982		74	64	116	425
1983		2	9	1	156
1984		3	46	0	58
1985		3	17	2	759

Table 60. Manchester Street Station, intake screens, Providence River, Narragansett Bay. Mean daily catch in numbers, 1975.

MONTH:	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Mean Sample Period (hrs.)	11	11	10	11	11	11	137	168	168	168	168	168	1040
SPECIES													
Alewife	0	0	0	1	1	9	7	0	0	0	0	7	25
American Eel	1	0	2	1	1	0	0	0	0	0	0	1	6
Atlantic Herring	1	0	0	0	0	0	0	0	0	0	0	0	1
Butterfish	4	0	0	0	0	0	0	0	0	0	0	0	4
Cunner	0	0	0	0	0	0	1	0	0	0	0	0	1
Little Skate	0	0	0	0	0	0	0	0	0	0	0	0	0
Menhaden	3	0	0	0	1	47	14	481	683	259	118	90	1696
Mummichog	1	0	0	3	6	4	13	1	2	1	1	0	32
Sand Flounder	1	1	0	1	3	1	1	0	0	0	0	1	9
Silver Hake	41	20	6	3	1	2	0	0	0	0	1	14	88
Silverside	2	0	0	0	0	0	2	4	2	0	2	1	13
Striped Killifish	1	1	0	0	0	0	0	0	0	0	0	0	2
Tautog	0	0	0	0	0	0	2	0	0	0	0	0	2
Tomcod	0	0	0	0	0	1	0	0	0	0	0	0	1
Weakfish	0	0	0	0	0	0	25	0	0	0	0	0	25
Winter Flounder	2	0	1	1	1	39	53	0	0	0	0	0	97
Total Fish	56	21	11	8	14	101	117	486	687	259	121	116	1997

Table 60 cont'd. Manchester Street Station, intake screens, Providence River, Narragansett Bay. Mean daily catch in numbers, 1976.

MONTH:	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Mean Sample Period (hrs.)	168	168	168	168	168	168	43	11	11	10	10	11	1104
SPECIES													
Alewife	0	0	0	1	0	8	1	4	0	0	1	1	16
American Eel	1	0	2	1	1	0	0	2	0	1	0	1	9
Atlantic Herring	1	0	0	0	0	0	0	1	0	0	0	0	2
Butterfish	4	0	0	0	0	0	0	0	0	0	0	1	5
Cunner	0	0	0	0	0	0	0	0	0	0	0	0	0
Little Skate	0	0	0	0	0	0	0	0	0	0	0	0	0
Menhaden	1	0	0	0	1	15	8	50	20	264	64	46	469
Mummichog	1	0	0	1	6	4	11	0	6	8	3	2	42
Sand Flounder	1	1	0	1	2	1	0	0	0	0	0	2	8
Silver Hake	36	18	5	3	0	2	0	0	0	0	1	52	117
Silverside	2	0	0	0	0	0	0	3	4	0	0	35	44
Striped Killifish	0	1	0	0	0	0	0	0	0	0	0	6	7
Tautog	0	0	0	0	0	0	1	0	0	0	0	1	2
Tomcod	0	0	0	0	0	1	0	0	0	0	0	0	1
Weakfish	0	0	0	0	0	0	0	1	0	0	0	1	2
Winter Flounder	2	0	1	1	1	36	1	0	0	1	0	1	44
Total Fish	47	19	9	8	11	64	22	60	29	273	68	147	757

Table 60 cont'd. Manchester Street Station, intake screens, Providence River, Narragansett Bay. Mean daily catch in numbers, 1977.

MONTH:	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Mean Sample Period (hrs.)	10	11	11	10	10	10	10	11	10	10	10	10	123
SPECIES													
Alewife	1	0	0	0	0	0	31	0	0	1	0	7	40
American Eel	1	0	0	2	0	1	0	0	0	1	0	3	8
Atlantic Herring	0	0	0	0	1	0	0	0	0	0	0	0	1
Butterfish	0	0	0	0	0	0	0	0	0	0	0	4	4
Cunner	0	0	0	0	0	0	5	0	0	0	0	0	5
Little Skate	0	0	0	0	0	0	0	0	0	0	0	0	0
Menhaden	0	0	0	0	0	13	24	257	27	54	313	135	823
Mummichog	1	1	1	8	1	0	132	6	26	4	11	3	194
Sand Flounder	1	2	0	0	1	0	4	0	0	0	0	1	9
Silver Hake	220	0	0	0	0	0	0	0	0	0	0	5	225
Silverside	14	4	0	1	0	0	556	11	70	4	6	0	666
Striped Killifish	3	3	1	0	0	0	0	0	0	0	10	5	22
Tautog	0	0	0	0	0	0	1	0	0	0	0	0	1
Tomcod	0	0	0	0	0	0	0	0	0	0	0	0	0
Weakfish	0	0	0	0	0	0	3	20	1	1	8	13	46
Winter Flounder	3	6	3	2	1	1	23	0	0	0	2	2	43
Total Fish	243	15	7	14	5	14	779	294	124	64	351	178	2088

Table 60 cont'd. Manchester Street Station, intake screens, Providence River, Narragansett Bay. Mean daily catch in numbers, 1978.

MONTH:	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Mean Sample Period (hrs.)	168	168	168	168	168	168	168	168	168	168	168	168	2016
SPECIES													
Alewife	0	0	3	0	0	0	5	1	0	0	1	5	15
American Eel	0	3	0	1	0	0	0	0	0	0	2	0	6
Atlantic Herring	0	0	0	0	3	0	0	0	0	0	0	0	3
Butterfish	1	0	0	0	0	0	0	0	0	0	0	0	1
Cunner	0	0	0	0	0	0	4	0	0	0	0	0	4
Little Skate	0	0	0	0	0	0	0	0	0	0	0	0	0
Menhaden	9	0	0	0	0	90	86	19	55	28	313	35	635
Mummichog	6	1	4	12	10	6	51	20	1	8	3	13	135
Sand Flounder	0	3	1	2	1	1	0	0	0	0	0	0	8
Silver Hake	35	31	8	0	0	0	0	0	0	0	0	5	79
Silverside	36	1	11	0	0	0	1	5	2	0	0	6	62
Striped Killifish	4	3	5	11	2	0	0	0	0	0	0	6	31
Tautog	0	0	0	0	1	0	2	0	0	0	0	1	4
Tomcod	0	0	0	0	0	0	5	0	0	0	0	2	7
Weakfish	0	0	0	0	0	0	0	9	5	2	11	0	27
Winter Flounder	12	3	26	13	11	7	2	0	0	0	8	18	100
Total Fish	103	45	57	38	29	103	156	55	63	39	337	91	1116

Table 60 cont'd. Manchester Street Station, intake screens, Providence River, Narragansett Bay. Mean daily catch in numbers, 1979.

MONTH:	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Mean Sample Period (hrs.)	168	168	168	168	168	168	168	168	168	168	168	168	2016
SPECIES													
Alewife	1	4	1	0	0	3	2	2	0	2	1	3	19
American Eel	3	1	2	2	0	1	10	1	1	0	1	1	23
Atlantic Herring	0	0	0	0	0	0	0	0	0	0	0	0	0
Butterfish	0	0	0	0	0	0	2	0	0	1	0	0	3
Cunner	0	0	0	0	0	0	1	0	0	0	0	0	1
Little Skate	1	0	1	4	0	0	0	0	0	0	0	0	6
Menhaden	1	4	0	0	0	6	2	1	0	0	1	1	16
Mummichog	6	5	16	27	12	8	140	39	2	3	0	0	258
Sand Flounder	4	1	12	5	6	8	9	0	1	0	0	0	46
Silver Hake	15	364	31	3	0	1	0	0	0	0	0	10	424
Silverside	10	9	7	3	0	2	4	0	0	0	0	1	36
Striped Killifish	4	3	9	6	0	0	0	0	0	0	0	3	25
Tautog	1	1	1	0	1	1	176	4	0	0	0	0	185
Tomcod	1	0	0	0	0	0	6	0	0	0	0	0	7
Weakfish	0	0	0	0	0	0	1	0	0	0	0	0	1
Winter Flounder	17	33	152	99	15	50	113	0	0	1	1	1	482
Total Fish	64	426	232	149	35	80	466	47	5	8	4	18	1534

Table 60 cont'd. Manchester Street Station, intake screens, Providence River, Narragansett Bay. Mean daily catch in numbers, 1981.

MONTH:	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Mean Sample Period (hrs.)	5	4	9	8	8	8	3	5	5	5	7	5	74
SPECIES													
Alewife	0	0	0	0	0	0	0	6	0	0	0	4	10
American Eel	0	1	1	10	6	1	2	3	0	0	7	2	33
Atlantic Herring	0	0	1	128	0	0	0	0	0	0	0	0	129
Butterfish	0	0	0	0	0	0	0	0	0	0	3	0	3
Cunner	0	0	0	1	0	0	0	0	0	0	1	0	2
Little Skate	0	1	1	1	0	1	0	0	0	0	0	0	4
Menhaden	0	0	0	0	1	18	11	1	0	1	8	5	45
Mummichog	0	3	1	8	7	5	57	13	23	60	46	7	230
Sand Flounder	3	12	1	0	2	2	0	0	0	0	0	0	20
Silver Hake	8	0	0	0	0	0	0	0	1	0	0	5	14
Silverside	132	429	4	13	5	10	6	4	5	5	6	3	622
Striped Killifish	6	15	4	19	2	0	0	0	1	6	3	2	58
Tautog	0	0	0	0	1	0	0	1	0	0	2	15	19
Tomcod	0	0	0	1	1	0	4	1	0	0	0	4	11
Weakfish	0	0	0	0	0	0	0	0	0	0	6	13	19
Winter Flounder	19	16	8	10	9	23	10	4	0	1	10	4	114
Total Fish	168	478	21	190	34	59	91	34	30	74	92	62	1333

Table 60 cont'd. Manchester Street Station, intake screens, Providence River, Narragansett Bay. Mean daily catch in numbers, 1982.

MONTH:	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Mean Sample Period (hrs.)	4	3	4	5	4	4	7	6	2	1	4	8	52
SPECIES													
Alewife	7	0	0	0	2	1	4	0	0	0	2	9	25
American Eel	4	0	4	1	1	2	1	3	0	0	2	2	20
Atlantic Herring	0	0	0	0	0	0	0	0	0	0	0	0	0
Butterfish	0	0	0	0	0	0	0	0	0	0	0	0	0
Cunner	1	0	0	0	0	0	10	0	13	0	0	0	24
Little Skate	0	0	0	2	2	0	1	0	0	0	0	0	5
Menhaden	0	0	0	0	0	2	0	0	0	0	0	0	2
Mummichog	1	0	5	4	147	17	9	0	0	2633	0	2	2818
Sand Flounder	0	0	0	1	2	0	0	0	0	0	0	1	4
Silver Hake	34	8	35	5	1	9	0	0	0	0	0	8	100
Silverside	355	0	9	1	16	7	4	0	0	631	0	0	1023
Striped Killifish	0	16	8	0	32	0	0	0	0	55	0	2	113
Tautog	12	0	0	0	2	8	1	4	0	45	0	2	74
Tomcod	1	0	0	1	4	7	47	4	0	0	0	0	64
Weakfish	0	0	0	0	0	0	0	0	0	110	4	2	116
Winter Flounder	22	0	14	23	120	20	82	1	0	123	8	12	425
Total Fish	436	24	75	38	328	73	158	12	13	3597	16	38	4808

Table 60 cont'd. Manchester Street Station, intake screens, Providence River, Narragansett Bay. Mean daily catch in numbers, 1983.

MONTH:	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Mean Sample Period (hrs.)	11	6	4	3	3	3	3	3	3	4	3	3	50
SPECIES													
Alewife	19	0	0	0	0	0	4	0	0	0	0	0	23
American Eel	2	5	7	2	0	4	0	0	0	0	4	0	24
Atlantic Herring	0	0	0	0	0	0	0	0	0	1	0	0	1
Butterfish	0	0	0	0	0	0	0	0	0	0	0	0	0
Cunner	0	0	0	0	0	0	0	0	0	0	0	0	0
Little Skate	0	0	0	0	0	0	0	0	0	0	0	0	0
Menhaden	0	0	0	0	0	0	2	0	0	159	35	12	208
Mummichog	0	.2	0	0	2	0	0	0	0	0	0	0	4
Sand Flounder	2	1	0	0	0	0	2	0	0	0	0	0	5
Silver Hake	42	8	9	4	0	2	0	0	0	0	0	5	70
Silverside	28	57	141	34	63	4	8	16	0	0	0	0	351
Striped Killifish	0	0	2	0	2	0	0	0	0	0	0	0	4
Tautog	0	0	0	2	0	0	0	0	0	0	0	0	2
Tomcod	1	0	0	2	4	0	0	0	0	0	0	2	9
Weakfish	0	1	0	0	0	0	0	0	0	0	0	0	1
Winter Flounder	7	7	37	8	59	6	18	8	0	4	0	2	156
Total Fish	102	81	195	52	129	16	33	24	0	164	39	21	856

Table 60 cont'd. Manchester Street Station, intake screens, Providence River, Narragansett Bay. Mean daily catch in numbers, 1984.

MONTH:	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Mean Sample Period (hrs.)	3	3	3	4	3	7	3	5	9	7	9	2	59
SPECIES													
Alewife	0	0	1	0	0	2	0	0	2	0	0	6	11
American Eel	0	0	3	0	1	0	0	0	0	0	3	0	7
Atlantic Herring	0	0	0	0	0	0	0	0	0	0	3	0	3
Butterfish	2	0	0	0	0	0	0	0	0	0	0	0	2
Cunner	0	0	0	0	0	0	0	0	0	0	0	0	0
Little Skate	0	0	0	0	0	3	0	0	0	0	0	0	3
Menhaden	0	1	0	0	0	0	0	0	20	2	4	0	27
Mummichog	0	0	0	0	0	0	0	0	0	0	0	0	0
Sand Flounder	2	0	0	0	0	1	0	0	0	0	0	0	3
Silver Hake	0	4	0	0	0	0	0	0	0	0	0	0	4
Silverside	0	0	1	0	0	0	0	0	2	0	0	0	3
Striped Killifish	0	0	0	0	0	0	0	0	0	0	0	0	0
Tautog	0	0	0	2	1	0	0	0	0	0	0	0	3
Tomcod	2	0	0	0	0	0	20	18	0	0	0	6	46
Weakfish	0	0	0	0	0	0	0	0	0	0	0	0	0
Winter Flounder	4	0	3	11	10	2	7	12	0	3	0	6	58
Total Fish	9	6	8	14	12	7	27	30	24	6	10	17	170

Table 60 cont'd. Manchester Street Station, intake screens, Providence River, Narragansett Bay. Mean daily catch in numbers, 1985.

MONTH:	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Mean Sample Period (hrs.)	6	2	8	10	7	5	6	5	5	8	5	5	72
SPECIES													
Alewife	5	0	0	0	0	21	4	10	5	3	6	8	62
American Eel	0	5	0	1	1	0	0	0	0	0	0	0	7
Atlantic Herring	1	0	0	0	0	115	382	0	0	0	0	0	498
Butterfish	0	0	0	0	0	0	0	0	0	0	7	5	12
Cunner	0	0	0	0	0	0	0	2	0	0	0	0	2
Little Skate	0	15	4	2	3	4	4	0	0	0	0	0	32
Menhaden	1	0	0	0	0	18	81	204	16	3	42	73	438
Mummichog	2	0	0	1	0	2	1	12	5	3	0	0	26
Sand Flounder	2	15	11	1	9	21	9	2	0	0	0	0	70
Silver Hake	48	41	0	0	0	0	0	0	0	0	0	2	91
Silverside	82	27	0	0	0	1	4	20	8	3	3	0	148
Striped Killifish	0	0	1	0	0	0	0	0	2	0	0	0	3
Tautog	0	0	0	0	0	2	1	0	0	0	0	0	3
Tomcod	1	3	0	0	0	4	5	4	0	0	0	0	17
Weakfish	0	0	0	0	0	0	0	2	0	0	0	0	2
Winter Flounder	22	72	17	26	7	25	569	21	0	0	0	0	759
Total Fish	164	178	33	31	21	211	1060	275	36	12	58	89	2168

Table 61. Winter Flounder. Manchester Street Station, intake screens, Providence River, Narragansett Bay. Mean daily catch in numbers, 1975-1985.

YEAR	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1975	2	0	1	1	1	39	53	0	0	0	0	0	97
1976	2	0	1	1	1	36	1	0	0	1	0	1	44
1977	3	6	3	2	1	1	23	0	0	0	2	2	43
1978	12	3	26	13	11	7	2	0	0	0	8	18	100
1979	17	33	152	99	15	50	113	0	0	1	1	1	482
1981	19	16	8	10	9	23	10	4	0	1	10	4	114
1982	22	0	14	23	120	20	82	1	0	123	8	12	425
1983	7	7	37	8	59	6	18	8	0	4	0	2	156
1984	4	0	3	11	10	2	7	12	0	3	0	6	58
1985	22	72	17	26	7	25	569	21	0	0	0	0	759

Table 62. Mummichog. Manchester Street Station, intake screens, Providence River, Narragansett Bay. Mean daily catch in numbers, 1975-1985.

YEAR	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1975	1	0	0	3	6	4	13	1	2	1	1	0	32
1976	1	0	0	1	6	4	11	0	6	8	3	2	42
1977	1	1	1	8	1	0	132	6	26	4	11	3	194
1978	6	1	4	12	10	6	51	20	1	8	3	13	135
1979	6	5	16	27	12	8	140	39	2	3	0	0	258
1981	0	3	1	8	7	5	57	13	23	60	46	7	230
1982	1	0	5	4	147	17	9	0	0	2633	0	2	2818
1983	0	2	0	0	2	0	0	0	0	0	0	0	4
1984	0	0	0	0	0	0	0	0	0	0	0	0	0
1985	2	0	0	1	0	2	1	12	5	3	0	0	26

Table 63. Menhaden. Manchester Street Station, intake screens, Providence River, Narragansett Bay. Mean daily catch in numbers, 1975-1985.

YEAR	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1975	3	0	0	0	1	47	14	481	683	259	118	90	1696
1976	1	0	0	0	1	15	8	50	20	264	64	46	469
1977	0	0	0	0	0	13	24	257	27	54	313	135	823
1978	9	0	0	0	0	90	86	19	55	28	313	35	635
1979	1	4	0	0	0	6	2	1	0	0	1	1	16
1981	0	0	0	0	1	18	11	1	0	1	8	5	45
1982	0	0	0	0	0	2	0	0	0	0	0	0	2
1983	0	0	0	0	0	0	2	0	0	159	35	12	208
1984	0	1	0	0	0	0	0	0	20	2	4	0	27
1985	1	0	0	0	0	18	81	204	16	3	42	73	438

Table 64. Silverside. Manchester Street Station, intake screens, Providence River, Narragansett Bay. Mean daily catch in numbers, 1975-1985.

YEAR	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1975	2	0	0	0	0	0	2	4	2	0	2	1	13
1976	2	0	0	0	0	0	0	3	4	0	0	35	44
1977	14	4	0	1	0	0	556	11	70	4	6	0	666
1978	36	1	11	0	0	0	1	5	2	0	0	6	62
1979	10	9	7	3	0	2	4	0	0	0	0	1	36
1981	132	429	4	13	5	10	6	4	5	5	6	3	622
1982	355	0	9	1	16	7	4	0	0	631	0	0	1023
1983	28	57	141	34	63	4	8	16	0	0	0	0	351
1984	0	0	1	0	0	0	0	0	2	0	0	0	3
1985	82	27	0	0	0	1	4	20	8	3	3	0	148

Table 65. Silver Hake. Manchester Street Station, intake screens, Providence River, Narragansett Bay. Mean daily catch in numbers, 1975-1985.

YEAR	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1975	41	20	6	3	1	2	0	0	0	0	1	14	88
1976	36	18	5	3	0	2	0	0	0	0	1	52	117
1977	220	0	0	0	0	0	0	0	0	0	0	5	225
1978	35	31	8	0	0	0	0	0	0	0	0	5	79
1979	15	364	31	3	0	1	0	0	0	0	0	10	424
1981	8	0	0	0	0	0	0	0	1	0	0	5	14
1982	34	8	35	5	1	9	0	0	0	0	0	8	100
1983	42	8	9	4	0	2	0	0	0	0	0	5	70
1984	0	4	0	0	0	0	0	0	0	0	0	0	4
1985	48	41	0	0	0	0	0	0	0	0	0	2	91

Table 66. Total Finfish Catch. Manchester Street Station, intake screens, Providence River, Narragnasett Bay. Mean daily catch in numbers, 1975-1985.

YEAR	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1975	56	21	11	8	14	101	117	486	687	259	121	116	1997
1976	47	19	9	8	11	64	22	60	29	273	68	147	757
1977	243	15	7	14	5	14	779	294	124	64	351	178	2088
1978	103	45	57	38	29	103	156	55	63	39	337	91	1116
1979	64	426	232	149	35	80	466	47	5	8	4	18	1534
1981	168	478	21	190	34	59	91	34	30	74	92	62	1333
1982	436	24	75	38	328	73	158	12	13	3597	16	38	4808
1983	102	81	195	52	129	16	33	24	0	164	39	21	856
1984	9	6	8	14	12	7	27	30	24	6	10	17	170
1985	164	178	33	31	21	211	1060	275	36	12	58	89	2168

Table 67. Stratum 5, Northeast Fisheries Center, National Marine Fisheries Service. Summary statistics for mean catch per 30 min. tow, autumn survey (n=23), 1963-1985.

COMMON NAME	MEAN	SD	MIN	MAX
ALEWIFE	36	106	0	512
ANCHOVY (BAY)	3	11	0	42
ATLANTIC HERRING	1	3	0	14
BLUEBACK HERRING	8	28	0	134
BUTTERFISH	388	478	3	1727
COD (ATLANTIC)	2	3	0	9
CUNNER	1	1	0	4
FOURSPOT FLOUNDER	18	19	2	84
GOOSEFISH	2	3	0	11
LITTLE SKATE	27	30	3	140
LONGHORN SCULPIN	17	18	0	63
NORTHERN SEAROBIN	24	36	1	178
OCEAN POUT	3	4	0	14
SAND FL. [WINDOWPANE]	9	8	1	27
SCUP	181	286	0	1304
SILVER HAKE	106	122	3	522
SMOOTH DOGFISH	3	5	0	24
SPINY DOGFISH	72	82	0	309
SQUIRREL (RED) HAKE	19	20	0	73
SUMMER FLOUNDER	2	2	0	5
WHITE HAKE	1	2	0	7
WINTER FLOUNDER	24	18	3	65
LOBSTER (AMERICAN)[a]	3	3	1	12
SQUID (LONGFIN)[b]	721	628	92	2602

[a] 1964 - 1985
[b] 1967 - 1984

Table 68. Stratum 45, Northeast Fisheries Center, National Marine Fisheries Service. Summary statistics for mean catch per 30 min. tow, autumn survey (n=11), 1972, 1975, 1977-1985.

COMMON NAME	MEAN	SD	MIN	MAX
ALEWIFE	2	4	0	12
ANCHOVY (BAY)	5	11	0	32
ATLANTIC HERRING	0	0	0	0
BLUEBACK HERRING	1	2	0	6
BUTTERFISH	879	1753	0	5914
COD (ATLANTIC)	0	0	0	0
CUNNER	<.5	<.5	0	1
FOURSPOT FLOUNDER	5	5	0	13
GOOSEFISH	<.5	<.5	0	2
LITTLE SKATE	9	9	0	25
LONGHORN SCULPIN	<.5	<.5	0	1
NORTHERN SEAROBIN	14	34	0	112
OCEAN POUT	<.5	<.5	0	1
SAND FL. [WINDOWPANE]	11	11	0	31
SCUP	718	1141	1	3927
SILVER HAKE	50	97	0	332
SMOOTH DOGFISH	1	1	0	2
SPINY DOGFISH	5	17	0	56
SQUIRREL (RED) HAKE	2	2	0	7
SUMMER FLOUNDER	3	5	0	16
WHITE HAKE	0	0	0	0
WINTER FLOUNDER	15	9	2	36
LOBSTER (AMERICAN)	27	54	0	163
SQUID (LONGFIN)[a]	727	723	9	1707

[a] 1972, 1975, 1977 - 1983

Table 69. Stratum 5, Northeast Fisheries Center, National Marine Fisheries Service. Mean bottom temperature (degrees Celsius) during spring and autumn surveys, 1963-1986.

YEAR	SEASON: SPRING	FALL
1963	.	10.1
1964	.	11.7
1965	.	10.2
1966	.	10.3
1967	.	8.1
1968	2.3	11.1
1969	2.8	9.4
1970	4.2	11.6
1971	3.0	10.8
1972	4.9	15.7
1973	4.0	14.1
1974	6.5	14.0
1975	3.4	13.3
1976	5.4	13.2
1977	4.6	13.4
1978	3.0	12.6
1979	3.8	11.1
1980	3.9	12.6
1981	3.9	12.6
1982	6.6	14.6
1983	4.8	12.0
1984	4.9	14.3
1985	4.2	.
1986	3.6	.

Table 70. Stratum 45, Northeast Fisheries Center, National Marine Fisheries Service. Mean bottom temperature (degrees Celsius) during spring and fall surveys, 1972-1986.

YEAR	SEASON: SPRING	FALL
1972	.	0.0
1973	10.1	.
1974	.	.
1975	.	14.2
1976	.	.
1977	.	15.0
1978	3.0	15.5
1979	4.1	13.7
1980	4.2	16.3
1981	.	12.2
1982	.	15.4
1983	4.7	14.5
1984	3.3	.
1985	.	.
1986	.	.

Table 71. Stratum 5, Northeast Fisheries Center, National Marine Fisheries Service. Mean catch per 30 min. tow, autumn survey, 1963-1985.

YEAR	SPECIES: ALW	ANC	SHR	BHR	BUT	COD	CUN	FSP	GOO	SKA	LSC	MEN	NSR	OPT	WND	SCP
1963	3	0	15	0	8	1	0	10	2	40	2	4	5	6	27	0
1964	1	0	0	0	38	0	1	10	2	15	17	0	18	0	6	1304
1965	59	0	1	17	34	5	4	4	2	8	16	0	4	1	1	7
1966	6	0	7	0	12	2	1	5	2	25	41	0	11	3	9	3
1967	19	0	1	3	11	8	0	4	1	3	35	0	11	7	11	6
1968	29	0	1	8	120	6	1	13	8	3	63	0	5	2	1	607
1969	0	0	0	0	623	9	1	31	3	14	30	0	14	0	8	284
1970	2	0	0	0	3	4	2	10	1	5	14	0	19	1	2	21
1971	0	0	2	4	1727	1	0	12	3	140	20	0	50	3	12	81
1972	57	0	0	0	691	0	0	6	4	67	23	0	41	3	23	173
1973	0	0	0	0	7	0	0	30	1	17	14	0	22	1	8	18
1974	0	0	0	0	49	6	0	11	0	16	2	0	3	0	6	6
1975	0	0	0	0	296	0	0	3	2	9	0	0	6	0	3	139
1976	0	0	0	0	769	0	0	48	1	20	1	0	26	4	6	65
1977	14	0	0	0	76	0	0	35	1	35	11	0	16	2	3	386
1978	0	0	0	0	92	2	0	15	2	19	13	0	25	1	22	136
1979	33	0	1	25	602	0	2	34	3	28	10	0	178	2	23	37
1980	512	0	0	134	1112	1	2	3	1	7	50	0	3	14	3	117
1981	36	37	0	0	1226	0	2	6	0	38	0	0	21	0	13	160
1982	0	42	0	0	167	0	1	11	11	46	36	0	9	11	9	205
1983	0	0	0	0	23	0	0	31	3	21	4	0	48	0	8	41
1984	53	0	1	0	733	1	1	9	0	5	0	0	1	0	2	68
1985	0	0	0	0	496	0	0	84	1	46	0	0	19	1	7	303

Table 71 cont'd. Stratum 5, Northeast Fisheries Center, National Marine Fisheries Service. Mean catch per 30 min. tow, autumn survey, 1963-1985.

YEAR	SPECIES: SHK	SMD	SPD	RHK	SSR	FLK	TAU	TOM	WFS	WHK	WFL	LOB	SQD
1963	83	0	23	31	0	0	0	0	0	2	6	0	.
1964	40	2	33	48	0	1	0	0	0	1	32	1	.
1965	76	0	48	42	0	0	0	0	0	0	61	0	.
1966	41	0	29	22	0	1	0	0	0	1	36	1	.
1967	72	0	66	34	0	0	0	0	0	3	17	2	142
1968	17	1	110	73	0	0	0	0	0	2	21	1	976
1969	19	0	309	33	4	2	0	0	0	0	44	1	480
1970	47	0	82	19	0	1	0	0	0	1	22	1	92
1971	56	2	17	45	2	0	0	0	0	0	12	3	104
1972	29	11	57	2	0	2	0	0	2	0	31	2	367
1973	67	4	11	0	0	4	0	0	0	0	7	3	2602
1974	67	3	6	1	0	5	0	0	0	0	3	1	578
1975	25	1	82	3	0	2	0	0	0	0	4	3	312
1976	316	24	1	21	0	5	0	0	0	2	3	2	1628
1977	166	2	74	15	1	3	0	0	0	3	14	3	531
1978	209	2	40	10	2	3	0	0	0	1	11	9	327
1979	179	3	104	10	0	2	0	0	1	0	41	2	506
1980	88	1	5	4	0	1	0	0	0	7	65	4	1123
1981	252	1	242	6	1	2	0	0	0	3	39	8	387
1982	36	2	15	10	2	4	0	0	3	0	16	5	720
1983	26	3	0	3	0	1	0	0	0	0	44	3	865
1984	3	1	223	0	0	3	0	0	0	0	11	12	1242
1985	522	3	80	0	0	5	0	0	0	0	10	3	.

Table 72. Stratum 45, Northeast Fisheries Center, National Marine Fisheries Service. Mean catch per 30 min. tow, autumn survey, 1972-1985.

YEAR	SPECIES: ALW	ANC	SHR	BHR	BUT	COD	CUN	FSP	GOO	SKA	LSC	MEN	NSR	OPT	WND	SCP
1972	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
1973	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
1974	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
1975	1	2	0	0	10	0	0	12	2	24	0	0	3	0	18	54
1976	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
1977	0	0	0	0	2	0	0	10	0	11	0	0	29	1	25	1234
1978	0	0	0	6	5914	0	1	0	1	0	0	0	0	0	0	3927
1979	2	0	0	0	1327	0	0	1	0	2	0	0	1	0	21	26
1980	0	0	0	1	438	0	0	0	0	0	1	0	0	0	1	312
1981	12	32	0	0	9	0	0	7	0	3	0	2	0	0	4	194
1982	1	0	0	1	1481	0	0	1	0	10	0	0	1	0	4	94
1983	0	0	0	0	10	0	0	13	0	25	0	0	112	0	31	485
1984	6	0	0	0	221	0	1	6	0	15	0	0	8	0	2	1044
1985	0	23	0	0	256	0	0	7	0	14	0	0	0	0	17	517

Table 72 cont'd. Stratum 45, Northeast Fisheries Center, National Marine Fisheries Service. Mean catch per 30 min. tow, autumn survey, 1972-1985.

YEAR	SPECIES: SHK	SMD	SPD	RHK	SSR	FLK	TAU	TOM	WFS	WHK	WFL	LOB	SQD
SQD													
1972	0	0	2	0	0	0	0	0	0	0	2	0	39
1973	.	.	.	.	.	.	.	.	.	.	.	.	.
1974	.	.	.	.	.	.	.	.	.	.	.	.	.
1975	21	1	56	1	0	1	1	0	1	0	10	1	9
1976	.	.	.	.	.	.	.	.	.	.	.	.	.
1977	63	1	3	2	2	1	0	0	1	0	17	1	93
1978	0	1	0	0	0	4	1	0	0	0	11	15	1615
1979	14	0	0	2	1	1	0	0	0	0	24	5	427
1980	1	0	0	0	0	1	3	0	0	0	12	0	1707
1981	332	2	0	7	0	5	0	0	2	0	14	99	195
1982	3	1	0	0	1	1	0	0	0	0	18	3	1517
1983	5	1	0	0	1	16	0	0	0	0	37	2	940
1984	43	0	0	4	3	5	0	0	0	0	10	163	0
1985	70	0	0	1	0	0	0	0	0	0	13	6	.

Table 73. Stratum 5, Northeast Fisheries Center, National Marine Fisheries Service. Mean catch per 30 min. tow, spring and autumn surveys, 1963-1967.

YEAR: SPECIES SEASON:	1963 FALL	1964 FALL	1965 FALL	1966 FALL	1967 FALL
Alewife	3	1	59	6	19
Anchovy	0	0	0	0	0
Atlantic Herring	15	0	1	7	1
Blueback Herring	0	0	17	0	3
Butterfish	8	38	34	12	11
Cod	1	0	5	2	8
Cunner	0	1	4	1	0
Fourspot Flounder	10	10	4	5	4
Goosefish	2	2	2	2	1
Little Skate	40	15	8	25	3
Longhorn Sculpin	2	17	16	41	35
Menhaden	4	0	0	0	0
Northern Searobin	5	18	4	11	11
Ocean Pout	6	0	1	3	7
Sand Flounder	27	6	1	9	11
Scup	0	1304	7	3	6
Silver Hake	83	40	76	41	72
Smooth Dogfish	0	2	0	0	0
Spiny Dogfish	23	33	48	29	66
Squirrel Hake	31	48	42	22	34
Striped Searobin	0	0	0	0	0
Summer Flounder	0	1	0	1	0
Tautog	0	0	0	0	0
Tomcod	0	0	0	0	0
Weakfish	0	0	0	0	0
White Hake	2	1	0	1	3
Winter Flounder	6	32	61	36	17
Lobster	0	1	1	1	2
Squid	.	.	.	.	142

Table 73 cont'd. Stratum 5, Northeast Fisheries Center, National Marine Fisheries Service. Mean catch per 30 min. tow, spring and autumn surveys, 1968-1970.

YEAR:	1968			1969			1970		
SPECIES / SEASON:	SPRING	FALL	TOTAL	SPRING	FALL	TOTAL	SPRING	FALL	TOTAL
Alewife	1	29	30	2	0	2	27	2	29
Anchovy	0	0	0	0	0	0	0	0	0
Atlantic Herring	40	1	41	35	0	35	193	0	193
Blueback Herring	0	8	8	7	0	7	7	0	7
Butterfish	0	120	120	0	623	623	0	3	3
Cod	1	6	7	11	9	20	4	4	8
Cunner	0	1	1	0	1	1	0	2	2
Fourspot Flounder	0	13	13	0	31	31	0	10	10
Goosefish	1	8	9	0	3	3	2	1	3
Little Skate	56	3	59	32	14	46	3	5	8
Longhorn Sculpin	13	63	76	61	30	91	17	14	31
Menhaden	0	0	0	0	0	0	0	0	0
Northern Searobin	0	5	5	0	14	14	0	19	19
Ocean Pout	25	2	27	50	0	50	19	1	20
Sand Flounder	2	1	3	8	8	16	1	2	3
Scup	0	607	607	0	284	284	0	21	21
Silver Hake	3	17	20	0	19	19	4	47	51
Smooth Dogfish	0	1	1	0	0	0	0	0	0
Spiny Dogfish	2	110	111	2	309	311	9	82	91
Squirrel Hake	0	73	73	1	33	34	2	19	21
Striped Searobin	0	0	0	0	4	4	0	0	0
Summer Flounder	0	0	0	0	2	2	0	1	1
Tautog	0	0	0	0	0	0	0	0	0
Tomcod	0	0	0	0	0	0	0	0	0
Weakfish	0	0	0	0	0	0	0	0	0
White Hake	0	2	2	0	0	0	1	1	2
Winter Flounder	14	21	35	10	44	53	8	22	30
Lobster	0	1	1	0	1	1	0	1	1
Squid	0	976	976	0	480	480	0	92	92

Table 73 cont'd. Stratum 5, Northeast Fisheries Center, National Marine Fisheries Service. Mean catch per 30 min. tow, spring and autumn surveys, 1971-1973.

YEAR:	1971			1972			1973		
SPECIES / SEASON:	SPRING	FALL	TOTAL	SPRING	FALL	TOTAL	SPRING	FALL	TOTAL
Alewife	5	0	5	97	57	154	33	0	33
Anchovy	0	0	0	0	0	0	0	0	0
Atlantic Herring	10	2	12	53	0	53	22	0	22
Blueback Herring	0	4	4	38	0	38	2	0	2
Butterfish	0	1727	1727	0	691	691	0	7	7
Cod	3	1	4	2	0	2	6	0	6
Cunner	0	0	0	0	0	0	0	0	0
Fourspot Flounder	0	12	12	0	6	6	3	30	33
Goosefish	2	3	4	1	4	5	3	1	4
Little Skate	24	140	164	13	67	80	105	17	122
Longhorn Sculpin	11	20	31	14	23	37	14	14	28
Menhaden	0	0	0	0	0	0	0	0	0
Northern Searobin	0	50	50	0	41	41	12	22	34
Ocean Pout	18	3	21	7	3	10	19	1	20
Sand Flounder	7	12	19	4	23	27	23	8	31
Scup	0	81	81	0	173	173	0	18	18
Silver Hake	6	56	62	3	29	32	96	67	163
Smooth Dogfish	0	2	2	0	11	11	0	4	4
Spiny Dogfish	3	17	20	1	57	58	4	11	15
Squirrel Hake	4	45	49	2	2	3	12	0	12
Striped Searobin	0	2	2	0	0	0	0	0	0
Summer Flounder	0	0	0	0	2	2	0	4	4
Tautog	0	0	0	0	0	0	0	0	0
Tomcod	0	0	0	0	0	0	0	0	0
Weakfish	0	0	0	0	2	2	0	0	0
White Hake	0	0	0	0	0	0	1	0	1
Winter Flounder	3	12	15	6	31	36	16	7	22
Lobster	0	3	3	0	2	2	2	3	5
Squid	0	104	104	0	367	367	1	2602	2603

Table 73 cont'd. Stratum 5, Northeast Fisheries Center, National Marine Fisheries Service. Mean catch per 30 min. tow, spring and autumn surveys, 1974-1976.

YEAR:	1974			1975			1976		
SPECIES / SEASON:	SPRING	FALL	TOTAL	SPRING	FALL	TOTAL	SPRING	FALL	TOTAL
Alewife	518	0	518	8	0	8	77	0	77
Anchovy	0	0	0	0	0	0	0	0	0
Atlantic Herring	15	0	15	4	0	4	15	0	15
Blueback Herring	49	0	49	3	0	3	63	0	63
Butterfish	39	49	88	0	296	296	1	769	770
Cod	3	6	9	1	0	1	0	0	0
Cunner	0	0	0	4	0	4	0	0	0
Fourspot Flounder	8	11	19	7	3	9	2	48	50
Goosefish	2	0	2	2	2	3	3	1	4
Little Skate	32	16	48	139	9	147	11	20	31
Longhorn Sculpin	15	2	17	3	0	3	7	1	8
Menhaden	0	0	0	0	0	0	3	0	3
Northern Searobin	1	3	4	1	6	7	1	26	27
Ocean Pout	9	0	9	15	0	15	33	4	37
Sand Flounder	22	6	28	11	3	14	17	6	23
Scup	0	6	6	0	139	139	0	65	65
Silver Hake	68	67	135	91	25	115	31	316	347
Smooth Dogfish	0	3	3	0	1	1	0	24	24
Spiny Dogfish	19	6	25	7	82	90	6	1	7
Squirrel Hake	59	1	60	7	3	10	15	21	36
Striped Searobin	0	0	0	0	0	0	0	0	0
Summer Flounder	0	5	5	0	2	2	0	5	5
Tautog	0	0	0	0	0	0	0	0	0
Tomcod	0	0	0	0	0	0	0	0	0
Weakfish	0	0	0	0	0	0	0	0	0
White Hake	7	0	7	0	0	0	1	2	3
Winter Flounder	21	3	24	4	4	8	8	3	11
Lobster	1	1	2	3	3	6	1	2	3
Squid	0	578	578	0	312	312	31	1628	1659

Table 73 cont'd. Stratum 5, Northeast Fisheries Center, National Marine Fisheries Service. Mean catch per 30 min. tow, spring and autumn surveys, 1977-1979.

YEAR:	1977			1978			1979		
SPECIES / SEASON:	SPRING	FALL	TOTAL	SPRING	FALL	TOTAL	SPRING	FALL	TOTAL
Alewife	4	14	18	14	0	14	22	33	55
Anchovy	0	0	0	0	0	0	0	0	0
Atlantic Herring	42	0	42	36	0	36	82	1	83
Blueback Herring	0	0	0	4	0	4	0	25	25
Butterfish	0	76	76	0	92	92	0	602	602
Cod	2	0	2	6	2	8	2	0	2
Cunner	1	0	1	2	0	2	0	2	2
Fourspot Flounder	1	35	36	0	15	15	1	34	35
Goosefish	2	1	3	2	2	4	3	3	6
Grubby Sculpin	0	0	0	0	0	0	0	0	0
Little Skate	28	35	63	106	19	125	79	28	107
Longhorn Sculpin	71	11	82	47	13	60	15	10	24
Menhaden	0	0	0	0	0	0	0	0	0
Northern Searobin	2	16	18	0	25	25	2	178	180
Ocean Pout	24	2	26	64	1	65	13	2	15
Sand Flounder	5	3	8	21	22	43	11	23	34
Scup	0	386	386	0	136	136	0	37	37
Silver Hake	112	166	278	35	209	244	113	179	292
Smooth Dogfish	0	2	2	0	2	2	0	3	3
Spiny Dogfish	0	74	74	0	40	40	1	104	105
Squirrel Hake	10	15	25	11	10	20	4	10	14
Striped Searobin	0	1	1	0	2	2	0	0	0
Summer Flounder	0	3	3	0	3	3	0	2	2
Tautog	0	0	0	0	0	0	0	0	0
Tomcod	0	0	0	0	0	0	0	0	0
Weakfish	0	0	0	0	0	0	0	1	1
White Hake	0	3	3	0	1	1	0	0	0
Winter Flounder	6	14	20	20	11	31	8	41	49
Lobster	1	3	4	9	9	18	2	2	4
Squid	0	531	531	0	327	327	0	506	506

Table 73 cont'd. Stratum 5, Northeast Fisheries Center, National Marine Fisheries Service. Mean catch per 30 min. tow, spring and autumn surveys, 1980-1982.

YEAR:	1980			1981			1982		
SPECIES / SEASON:	SPRING	FALL	TOTAL	SPRING	FALL	TOTAL	SPRING	FALL	TOTAL
Alewife	33	512	545	7	36	43	3	0	3
Anchovy	0	0	0	0	37	37	0	42	42
Atlantic Herring	111	0	111	39	0	39	2	0	2
Blueback Herring	28	134	162	5	0	5	2	0	2
Butterfish	0	1112	1112	0	1226	1226	1	167	168
Cod	5	1	6	14	0	14	1	0	1
Cunner	1	2	3	2	2	4	0	1	1
Fourspot Flounder	2	3	5	0	6	6	8	11	19
Goosefish	2	1	3	0	0	0	1	11	12
Little Skate	58	7	65	5	38	42	19	46	65
Longhorn Sculpin	9	50	59	30	0	30	25	36	61
Menhaden	0	0	0	0	0	0	0	0	0
Northern Searobin	0	3	3	0	21	21	8	9	17
Ocean Pout	18	14	32	27	0	27	22	11	33
Sand Flounder	10	3	12	5	13	18	15	9	24
Scup	0	117	117	0	160	160	0	205	205
Silver Hake	55	88	142	8	252	260	14	36	49
Smooth Dogfish	0	1	1	0	1	1	0	2	2
Spiny Dogfish	0	5	5	0	242	242	2	15	17
Squirrel Hake	14	4	17	3	6	9	10	10	20
Striped Searobin	0	0	0	0	1	1	1	2	3
Summer Flounder	0	1	1	1	2	3	2	4	6
Tautog	0	0	0	0	0	0	0	0	0
Tomcod	0	0	0	0	0	0	0	0	0
Weakfish	0	0	0	0	0	0	0	3	3
White Hake	0	7	7	0	3	3	0	0	0
Winter Flounder	49	65	113	95	39	134	8	16	24
Lobster	4	4	9	4	8	12	0	5	5
Squid	0	1123	1123	0	387	387	1	720	721

Table 73 cont'd. Stratum 5, Northeast Fisheries Center, National Marine Fisheries Service. Mean catch per 30 min. tow, spring and autumn surveys, 1983-1985.

YEAR:	1983			1984			1985		
SPECIES / SEASON:	SPRING	FALL	TOTAL	SPRING	FALL	TOTAL	SPRING	FALL	TOTAL
Alewife	5	0	5	8	53	61	7	0	7
Anchovy	0	0	0	0	0	0	0	0	0
Atlantic Herring	11	0	11	13	1	14	45	0	45
Blueback Herring	12	0	12	11	0	11	6	0	6
Butterfish	0	23	23	0	733	733	0	496	496
Cod	2	0	2	2	1	3	9	0	9
Cunner	6	0	6	1	1	2	3	0	3
Fourspot Flounder	0	31	31	0	9	9	1	84	85
Goosefish	0	3	3	0	0	0	0	1	1
Little Skate	12	21	34	12	5	17	66	46	113
Longhorn Sculpin	10	4	14	9	0	9	44	0	44
Menhaden	0	0	0	0	0	0	0	0	0
Northern Searobin	0	48	48	0	1	1	0	19	19
Ocean Pout	17	0	17	50	0	50	37	1	38
Sand Flounder	2	8	10	3	2	4	9	7	16
Scup	0	41	41	0	68	68	0	303	303
Silver Hake	5	26	31	4	3	7	19	522	541
Smooth Dogfish	0	3	3	0	1	1	0	3	3
Spiny Dogfish	0	0	0	0	223	223	0	80	80
Squirrel Hake	1	3	4	1	0	1	5	0	5
Striped Searobin	0	0	0	0	0	0	0	0	0
Summer Flounder	0	1	1	0	3	3	0	5	5
Tautog	0	0	0	2	0	2	0	0	0
Tomcod	0	0	0	0	0	0	0	0	0
Weakfish	0	0	0	0	0	0	0	0	0
White Hake	0	0	0	0	0	0	0	0	0
Winter Flounder	5	44	49	9	11	20	37	10	47
Lobster	2	3	5	2	12	13	64	3	68
Squid	0	865	865	0	1242	1242	.	.	.

Table 74. Stratum 45, Northeast Fisheries Center, National Marine Fisheries Service: Mean catch per 30 min. tow, spring and autumn surveys, 1972-1975.

YEAR:	1972			1973			1975		
SPECIES / SEASON:	SPRING	FALL	TOTAL	SPRING	FALL	TOTAL	SPRING	FALL	TOTAL
Alewife	.	0	.	0	.	.	.	1	.
Anchovy	.	0	.	0	.	.	.	2	.
Atlantic Herring	.	0	.	0	.	.	.	0	.
Blueback Herring	.	0	.	0	.	.	.	0	.
Butterfish	.	0	.	0	.	.	.	10	.
Cod	.	0	.	1	.	.	.	0	.
Cunner	.	0	.	0	.	.	.	0	.
Fourspot Flounder	.	0	.	1	.	.	.	12	.
Goosefish	.	0	.	13	.	.	.	2	.
Little Skate	.	1	.	22	.	.	.	24	.
Longhorn Sculpin	.	0	.	6	.	.	.	0	.
Menhaden	.	0	.	0	.	.	.	0	.
Northern Searobin	.	0	.	1	.	.	.	3	.
Ocean Pout	.	0	.	7	.	.	.	0	.
Sand Flounder	.	1	.	5	.	.	.	18	.
Scup	.	1	.	3	.	.	.	54	.
Silver Hake	.	0	.	1	.	.	.	21	.
Smooth Dogfish	.	0	.	7	.	.	.	1	.
Spiny Dogfish	.	2	.	60	.	.	.	56	.
Squirrel Hake	.	0	.	0	.	.	.	1	.
Striped Searobin	.	0	.	0	.	.	.	0	.
Summer Flounder	.	0	.	5	.	.	.	1	.
Tautog	.	0	.	0	.	.	.	1	.
Tomcod	.	0	.	0	.	.	.	0	.
Weakfish	.	0	.	0	.	.	.	1	.
White Hake	.	0	.	0	.	.	.	0	.
Winter Flounder	.	2	.	18	.	.	.	10	.
Lobster	.	0	.	0	.	.	.	1	.
Squid	.	39	.	2	.	.	.	9	.

Table 74 cont'd. Stratum 45, Northeast Fisheries Center, National Marine Fisheries Service. Mean catch per 30 min. tow, spring and autumn surveys, 1977-1979.

YEAR:	1977			1978			1979		
SPECIES / SEASON:	SPRING	FALL	TOTAL	SPRING	FALL	TOTAL	SPRING	FALL	TOTAL
Alewife	.	0	.	1	0	1	5	2	7
Anchovy	.	0	.	0	0	0	0	0	0
Atlantic Herring	.	0	.	45	0	45	407	0	407
Blueback Herring	.	0	.	0	6	6	5	0	5
Butterfish	.	2	.	0	5914	5914	0	1327	1327
Cod	.	0	.	0	0	0	15	0	15
Cunner	.	0	.	1	1	2	0	0	0
Fourspot Flounder	.	10	.	0	0	0	0	1	1
Goosefish	.	0	.	0	1	1	0	0	0
Little Skate	.	11	.	23	0	23	8	2	10
Longhorn Sculpin	.	0	.	9	0	9	5	0	5
Menhaden	.	0	.	0	0	0	0	0	0
Northern Searobin	.	29	.	0	0	0	0	1	1
Ocean Pout	.	1	.	155	0	155	1	0	1
Sand Flounder	.	25	.	52	0	52	3	21	24
Scup	.	1234	.	0	3927	3927	0	26	26
Silver Hake	.	63	.	27	0	27	1	14	15
Smooth Dogfish	.	1	.	0	1	1	0	0	0
Spiny Dogfish	.	3	.	0	0	0	0	0	0
Squirrel Hake	.	2	.	12	0	12	0	2	2
Striped Searobin	.	2	.	0	0	0	0	1	1
Summer Flounder	.	1	.	0	4	4	0	1	1
Tautog	.	0	.	0	1	1	1	0	1
Tomcod	.	0	.	0	0	0	0	0	0
Weakfish	.	1	.	0	0	0	0	0	0
White Hake	.	0	.	0	0	0	0	0	0
Winter Flounder	.	17	.	117	11	128	21	24	45
Lobster	.	1	.	0	15	15	2	5	7
Squid	.	93	.	0	1615	1615	0	427	427

Table 74 cont'd. Stratum 45, Northeast Fisheries Center, National Marine Fisheries Service. Mean catch per 30 min. tow, spring and autumn surveys, 1980-1982.

YEAR:	1980			1981			1982		
SPECIES / SEASON:	SPRING	FALL	TOTAL	SPRING	FALL	TOTAL	SPRING	FALL	TOTAL
Alewife	9	0	9	.	12	.	32	1	33
Anchovy	0	0	0	.	32	.	0	0	0
Atlantic Herring	47	0	47	.	0	.	8	0	8
Blueback Herring	2	1	3	.	0	.	8	1	9
Butterfish	0	438	438	.	9	.	0	1481	1481
Cod	11	0	11	.	0	.	5	0	5
Cunner	1	0	1	.	0	.	0	0	0
Fourspot Flounder	0	0	0	.	7	.	0	1	1
Goosefish	1	0	1	.	0	.	0	0	0
Little Skate	46	0	46	.	3	.	12	10	21
Longhorn Sculpin	29	1	30	.	0	.	3	0	3
Menhaden	0	0	0	.	2	.	0	0	0
Northern Searobin	0	0	0	.	0	.	0	1	1
Ocean Pout	255	0	255	.	0	.	15	0	15
Sand Flounder	35	1	36	.	4	.	5	4	9
Scup	0	312	312	.	194	.	0	94	94
Silver Hake	1	1	2	.	332	.	0	3	3
Smooth Dogfish	0	0	0	.	2	.	0	1	1
Spiny Dogfish	0	0	0	.	0	.	0	0	0
Squirrel Hake	22	0	22	.	7	.	0	0	0
Striped Searobin	0	0	0	.	0	.	0	1	1
Summer Flounder	0	1	1	.	5	.	0	1	1
Tautog	0	3	3	.	0	.	0	0	0
Tomcod	0	0	0	.	0	.	0	0	0
Weakfish	0	0	0	.	2	.	0	0	0
White Hake	0	0	0	.	0	.	0	0	0
Winter Flounder	188	12	199	.	14	.	23	18	41
Lobster	4	0	4	.	99	.	3	3	6
Squid	0	1707	1707	.	195	.	0	1517	1517

Table 74 cont'd. Stratum 45, Northeast Fisheries Center, National Marine Fisheries Service. Mean catch per 30 min. tow, spring and autumn surveys, 1983-1985.

YEAR:	1983			1984			1985		
SPECIES SEASON:	SPRING	FALL	TOTAL	SPRING	FALL	TOTAL	SPRING	FALL	TOTAL
Alewife	2	0	2	0	6	6	0	0	0
Anchovy	0	0	0	0	0	0	0	23	23
Atlantic Herring	1	0	1	7	0	7	111	0	111
Blueback Herring	6	0	6	0	0	0	3	0	3
Butterfish	0	10	10	0	221	221	0	256	256
Cod	1	0	1	3	0	3	0	0	0
Cunner	0	0	0	0	1	1	0	0	0
Fourspot Flounder	0	13	13	0	6	6	0	7	7
Goosefish	0	0	0	0	0	0	0	0	0
Little Skate	187	25	212	28	15	43	148	14	162
Longhorn Sculpin	24	0	24	4	0	4	24	0	24
Menhaden	0	0	0	0	0	0	0	0	0
Northern Searobin	0	112	112	0	8	8	0	0	0
Ocean Pout	59	0	59	16	0	16	39	0	39
Sand Flounder	27	31	58	6	2	7	3	17	20
Scup	0	485	485	0	1044	1044	0	517	517
Silver Hake	19	5	24	1	43	44	1	70	71
Smooth Dogfish	0	1	1	0	0	0	0	0	0
Spiny Dogfish	0	0	0	0	0	0	0	0	0
Squirrel Hake	3	0	3	5	4	9	0	1	1
Striped Searobin	0	1	1	0	3	3	0	0	0
Summer Flounder	0	16	16	0	5	5	0	0	0
Tautog	0	0	0	0	0	0	0	0	0
Tomcod	0	0	0	0	0	0	0	0	0
Weakfish	0	0	0	0	0	0	0	0	0
White Hake	0	0	0	0	0	0	0	0	0
Winter Flounder	74	37	111	30	10	40	11	13	24
Lobster	0	2	2	0	163	163	2	6	8
Squid	0	940	940	0	0	0	.	.	.

Table 75. Winter Flounder. Stratum 5, Northeast Fisheries Center, National Marine Fisheries Service. Mean catch per 30 min. tow, spring and autumn surveys, 1963-1986.

YEAR	SEASON: SPRING	FALL	TOTAL
1963	.	6	6
1964	.	32	32
1965	.	61	61
1966	.	36	36
1967	.	17	17
1968	14	21	35
1969	10	44	53
1970	8	22	30
1971	3	12	15
1972	6	31	36
1973	16	7	22
1974	21	3	24
1975	4	4	8
1976	8	3	11
1977	6	14	20
1978	20	11	31
1979	8	41	49
1980	49	65	113
1981	95	39	134
1982	8	16	24
1983	5	44	49
1984	9	11	20
1985	37	10	47
1986	7	.	7

Table 76. Winter Flounder. Stratum 45, Northeast Fisheries Center, National Marine Fisheries Service. Mean catch per 30 min. tow, spring and autumn surveys, 1972-1986.

YEAR SEASON:	SPRING	FALL	TOTAL
1972	.	2	2
1973	18	.	18
1974	.	.	.
1975	.	10	10
1976	.	.	.
1977	.	17	17
1978	117	11	128
1979	21	24	45
1980	188	12	199
1981	.	14	14
1982	23	18	41
1983	74	37	111
1984	30	10	40
1985	11	13	24
1986	11	.	11

Table 77. Scup. Stratum 5, Northeast Fisheries Center, National Marine Fisheries Service. Mean catch per 30 min. tow, spring and autumn surveys, 1963-1986.

YEAR	SEASON: SPRING	FALL	TOTAL
1963	.	0	0
1964	.	1304	1304
1965	.	7	7
1966	.	3	3
1967	.	6	6
1968	0	607	607
1969	0	284	284
1970	0	21	21
1971	0	81	81
1972	0	173	173
1973	0	18	18
1974	0	6	6
1975	0	139	139
1976	0	65	65
1977	0	386	386
1978	0	136	136
1979	0	37	37
1980	0	117	117
1981	0	160	160
1982	0	205	205
1983	0	41	41
1984	0	68	68
1985	0	303	303
1986	0	.	0

Table 78. Scup. Stratum 45, Northeast Fisheries Center, National Marine Fisheries Service. Mean catch per 30 min. tow, spring and autumn surveys, 1972-1986.

YEAR	SEASON: SPRING	FALL	TOTAL
1972	.	1	1
1973	3	.	3
1974	.	.	.
1975	.	54	54
1976	.	.	.
1977	.	1234	1234
1978	0	3927	3927
1979	0	26	26
1980	0	312	312
1981	.	194	194
1982	0	94	94
1983	0	485	485
1984	0	1044	1044
1985	0	517	517
1986	0	.	0

Table 79. Butterfish. Stratum 5, Northeast Fisheries Center, National Marine Fisheries Service. Mean catch per 30 min. tow, spring and autumn surveys, 1963-1986.

YEAR	SEASON: SPRING	FALL	TOTAL
1963	.	8	8
1964	.	38	38
1965	.	34	34
1966	.	12	12
1967	.	11	11
1968	0	120	120
1969	0	623	623
1970	0	3	3
1971	0	1727	1727
1972	0	691	691
1973	0	7	7
1974	39	49	88
1975	0	296	296
1976	1	769	770
1977	0	76	76
1978	0	92	92
1979	0	602	602
1980	0	1112	1112
1981	0	1226	1226
1982	1	167	168
1983	0	23	23
1984	0	733	733
1985	0	496	496
1986	0	.	0

Table 80. Butterfish. Stratum 45, Northeast Fisheries Center, National Marine Fisheries Service. Mean catch per 30 min. tow, spring and autumn surveys, 1972-1986.

YEAR	SEASON: SPRING	FALL	TOTAL
1972	.	0	0
1973	0	.	0
1974	.	.	.
1975	.	10	10
1976	.	.	.
1977	.	2	2
1978	0	5914	5914
1979	0	1327	1327
1980	0	438	438
1981	.	9	9
1982	0	1481	1481
1983	0	10	10
1984	0	221	221
1985	0	256	256
1986	0	.	0

Table 81. Ocean Pout. Stratum 5, Northeast Fisheries Center, National Marine Fisheries Service. Mean catch per 30 min. tow, spring and autumn surveys, 1963-1986.

YEAR	SEASON: SPRING	FALL	TOTAL
1963	.	6	6
1964	.	0	0
1965	.	1	1
1966	.	3	3
1967	.	7	7
1968	25	2	27
1969	50	0	50
1970	19	1	20
1971	18	3	21
1972	7	3	10
1973	19	1	20
1974	9	0	9
1975	15	0	15
1976	33	4	37
1977	24	2	26
1978	64	1	65
1979	13	2	15
1980	18	14	32
1981	27	0	27
1982	22	11	33
1983	17	0	17
1984	50	0	50
1985	37	1	38
1986	25	.	25

Table 82. Ocean Pout. Stratum 45, Northeast Fisheries Center, National Marine Fisheries Service. Mean catch per 30 min. tow, spring and autumn surveys, 1972-1986.

YEAR	SEASON: SPRING	FALL	TOTAL
1972	.	0	0
1973	7	.	7
1974	.	.	.
1975	.	0	0
1976	.	.	.
1977	.	1	1
1978	155	0	155
1979	1	0	1
1980	255	0	255
1981	.	0	0
1982	15	0	15
1983	59	0	59
1984	16	0	16
1985	39	0	39
1986	22	.	22

Table 83. Silver Hake. Stratum 5, Northeast Fisheries Center, National Marine Fisheries Service. Mean catch per 30 min. tow, spring and autumn surveys, 1963-1986.

YEAR	SEASON: SPRING	FALL	TOTAL
1963	.	83	83
1964	.	40	40
1965	.	76	76
1966	.	41	41
1967	.	72	72
1968	3	17	20
1969	0	19	19
1970	4	47	51
1971	6	56	62
1972	3	29	32
1973	96	67	163
1974	68	67	135
1975	91	25	115
1976	31	316	347
1977	112	166	278
1978	35	209	244
1979	113	179	292
1980	55	88	142
1981	8	252	260
1982	14	36	49
1983	5	26	31
1984	4	3	7
1985	19	522	541
1986	6	.	6

Table 84. Silver Hake. Stratum 45, Northeast Fisheries Center, National Marine Fisheries Service. Mean catch per 30 min. tow, spring and autumn surveys, 1972-1986.

YEAR	SEASON: SPRING	FALL	TOTAL
1972	.	0	0
1973	1	.	1
1974	.	.	.
1975	.	21	21
1976	.	.	.
1977	.	63	63
1978	27	0	27
1979	1	14	15
1980	1	1	2
1981	.	332	332
1982	0	3	3
1983	19	5	24
1984	1	43	44
1985	1	70	71
1986	0	.	0

Table 85. Squirrel Hake. Stratum 5, Northeast Fisheries Center, National Marine Fisheries Service. Mean catch per 30 min. tow, spring and autumn surveys, 1963-1986.

YEAR	SEASON: SPRING	FALL	TOTAL
1963	.	31	31
1964	.	48	48
1965	.	42	42
1966	.	22	22
1967	.	34	34
1968	0	73	73
1969	1	33	34
1970	2	19	21
1971	4	45	49
1972	2	2	3
1973	12	0	12
1974	59	1	60
1975	7	3	10
1976	15	21	36
1977	10	15	25
1978	11	10	20
1979	4	10	14
1980	14	4	17
1981	3	6	9
1982	10	10	20
1983	1	3	4
1984	1	0	1
1985	5	0	5
1986	1	.	1

Table 86. Squirrel Hake. Stratum 45, Northeast Fisheries Center, National Marine Fisheries Service. Mean catch per 30 min. tow, spring and autumn surveys, 1972-1986.

YEAR	SEASON: SPRING	FALL	TOTAL
1972	.	0	0
1973	0	.	0
1974	.	.	.
1975	.	1	1
1976	.	.	.
1977	.	2	2
1978	12	0	12
1979	0	2	2
1980	22	0	22
1981	.	7	7
1982	0	0	0
1983	3	0	3
1984	5	4	9
1985	0	1	1
1986	0	.	0

Table 87. Atlantic Herring. Stratum 5, Northeast Fisheries Center, National Marine Fisheries Service. Mean catch per 30 min. tow, spring and autumn surveys, 1963-1986.

YEAR	SEASON: SPRING	FALL	TOTAL
1963	.	15	15
1964	.	0	0
1965	.	1	1
1966	.	7	7
1967	.	1	1
1968	40	1	41
1969	35	0	35
1970	193	0	193
1971	10	2	12
1972	53	0	53
1973	22	0	22
1974	15	0	15
1975	4	0	4
1976	15	0	15
1977	42	0	42
1978	36	0	36
1979	82	1	83
1980	111	0	111
1981	39	0	39
1982	2	0	2
1983	11	0	11
1984	13	1	14
1985	45	0	45
1986	85	.	85

Table 88. Atlantic Herring. Stratum 45, Northeast Fisheries Center, National Marine Fisheries Service. Mean catch per 30 min. tow, spring and autumn surveys, 1972-1986.

YEAR	SEASON: SPRING	FALL	TOTAL
1972	.	0	0
1973	0	.	0
1974	.	.	.
1975	.	0	0
1976	.	.	.
1977	.	0	0
1978	45	0	45
1979	407	0	407
1980	47	0	47
1981	.	0	0
1982	8	0	8
1983	1	0	1
1984	7	0	7
1985	111	0	111
1986	308	.	308

Table 89. Spiny Dogfish. Stratum 5, Northeast Fisheries Center, National Marine Fisheries Service. Mean catch per 30 min. tow, spring and autumn surveys, 1963-1986.

YEAR	SEASON: SPRING	FALL	TOTAL
1963	.	23	23
1964	.	33	33
1965	.	48	48
1966	.	29	29
1967	.	66	66
1968	2	110	111
1969	2	309	311
1970	9	82	91
1971	3	17	20
1972	1	57	58
1973	4	11	15
1974	19	6	25
1975	7	82	90
1976	6	1	7
1977	0	74	74
1978	0	40	40
1979	1	104	105
1980	0	5	5
1981	0	242	242
1982	2	15	17
1983	0	0	0
1984	0	223	223
1985	0	80	80
1986	0	.	0

Table 90. Spiny Dogfish. Stratum 45, Northeast Fisheries Center, National Marine Fisheries Service. Mean catch per 30 min. tow, spring and autumn surveys, 1972-1986.

YEAR	SEASON: SPRING	FALL	TOTAL
1972	.	2	2
1973	60	.	60
1974	.	.	.
1975	.	56	56
1976	.	.	.
1977	.	3	3
1978	0	0	0
1979	0	0	0
1980	0	0	0
1981	.	0	0
1982	0	0	0
1983	0	0	0
1984	0	0	0
1985	0	0	0
1986	0	.	0

Table 91. Little Skate. Stratum 5, Northeast Fisheries Center, National Marine Fisheries Service. Mean catch per 30 min. tow, spring and autumn surveys, 1963-1986.

YEAR	SEASON: SPRING	FALL	TOTAL
1963	.	40	40
1964	.	15	15
1965	.	8	8
1966	.	25	25
1967	.	3	3
1968	56	3	59
1969	32	14	46
1970	3	5	8
1971	24	140	164
1972	13	67	80
1973	105	17	122
1974	32	16	48
1975	139	9	147
1976	11	20	31
1977	28	35	63
1978	106	19	125
1979	79	28	107
1980	58	7	65
1981	5	38	42
1982	19	46	65
1983	12	21	34
1984	12	5	17
1985	66	46	113
1986	20	.	20

Table 92. Little Skate. Stratum 45, Northeast Fisheries Center, National Marine Fisheries Service. Mean catch per 30 min. tow, spring and autumn surveys, 1972-1986.

YEAR	SEASON: SPRING	FALL	TOTAL
1972	.	1	1
1973	22	.	22
1974	.	.	.
1975	.	24	24
1976	.	.	.
1977	.	11	11
1978	23	0	23
1979	8	2	10
1980	46	0	46
1981	.	3	3
1982	12	10	21
1983	187	25	212
1984	28	15	43
1985	148	14	162
1986	0	.	0

Table 93. Squid. Stratum 5, Northeast Fisheries Center, National Marine Fisheries Service. Mean catch per 30 min. tow, spring and autumn surveys, 1967-1985.

YEAR	SEASON: SPRING	FALL	TOTAL
1967	0	142	142
1968	0	976	976
1969	0	480	480
1970	0	92	92
1971	0	104	104
1972	0	367	367
1973	1	2602	2603
1974	0	578	578
1975	0	312	312
1976	31	1628	1659
1977	0	531	531
1978	0	327	327
1979	0	506	506
1980	0	1123	1123
1981	0	387	387
1982	1	720	721
1983	0	923	923
1984	0	1020	1020
1985	0	616	616

Table 94. Squid. Stratum 45, Northeast Fisheries Center, National Marine Fisheries Service. Mean catch per 30 min. tow, spring and autumn surveys, 1972-1985.

YEAR	SEASON: SPRING	FALL	TOTAL
1972	.	39	39
1973	2	.	2
1974	.	.	.
1975	.	9	9
1976	.	.	.
1977	.	93	93
1978	0	1615	1615
1979	0	427	427
1980	0	1707	1707
1981	.	195	195
1982	0	1517	1517
1983	0	940	940
1984	0	635	635
1985	0	408	408

Table 95. Statistical Area 539, Northeast Fisheries Center, National Marine Fisheries Service. Summary statistics for the annual sum of monthly commercial catch per unit effort, metric tons per day fished (n=23), 1964-1986.

COMMON NAME	MEAN	SD	MIN	MAX
BUTTERFISH	3.65	2.45	1.04	9.20
COD (ATLANTIC)	3.00	2.50	0.40	11.65
OCEAN POUT	1.89	0.84	0.61	3.64
SAND FL. [WINDOWPANE]	4.17	5.89	0.00	17.34
SCUP	12.91	4.18	5.15	19.86
SILVER HAKE	7.39	5.12	0.50	19.62
SQUIRREL (RED) HAKE	1.71	0.51	0.97	2.59
SUMMER FLOUNDER	3.47	2.00	0.98	9.09
WINTER FLOUNDER	22.76	10.32	4.77	45.43
LOBSTER (AMERICAN)	0.62	0.49	0.00	1.62
SQUID (LONGFIN)	3.90	1.34	1.77	5.90

Table 96. Statistical Area 539, Northeast Fisheries Center, National Marine Fisheries Service. Annual sum of monthly commercial catch, metric tons per days fished, 1964-1986.

YEAR	SPECIES:	BUT	COD	OPT	WND	SCP	SHK	RHK	FLK	WFL	LOB	SQD
1964		1.55	1.72	0.21	.	0.98	16.44	2.13	0.89	18.97	0.19	.
1965		1.68	1.97	0.05	.	4.24	10.17	1.32	0.78	16.52	0.01	.
1966		0.94	3.41	0.02	.	2.27	8.80	0.68	0.97	18.04	0.00	.
1967		0.40	4.92	0.00	.	2.44	4.77	0.50	0.61	17.09	0.15	.
1968		1.87	9.11	0.34	.	3.60	19.12	17.32	1.44	19.86	0.11	.
1969		11.65	9.20	0.75	.	2.83	29.43	19.62	1.48	18.68	1.58	.
1970		2.42	8.08	0.17	.	1.83	22.24	12.48	1.49	15.76	1.62	.
1971		1.25	6.11	0.00	.	2.22	17.22	5.04	1.63	12.30	1.38	.
1972		2.47	4.12	0.00	.	4.21	19.43	8.41	3.64	12.03	1.50	.
1973		4.75	3.60	0.93	.	5.66	20.03	8.88	2.01	10.90	0.80	.
1974		7.08	4.92	0.00	.	4.08	28.78	6.57	3.37	7.70	0.67	.
1975		2.20	1.44	1.72	1.21	2.70	29.21	11.11	2.23	5.15	0.65	.
1976		1.70	1.52	13.41	0.97	3.08	45.43	11.84	2.24	6.00	0.36	.
1977		1.75	3.26	12.42	1.64	9.09	27.82	5.38	1.98	8.94	0.73	.
1978		4.99	4.03	17.34	2.12	4.25	35.62	3.72	1.70	10.77	0.50	1.77
1979		2.21	4.20	8.36	2.10	3.33	44.22	6.75	1.91	10.66	0.34	3.34
1980		2.38	2.01	5.73	1.76	2.07	18.90	4.29	0.69	13.89	0.44	2.67
1981		1.41	2.02	13.47	2.59	3.14	22.89	5.16	2.28	13.65	0.26	3.05
1982		5.20	1.47	0.00	2.43	2.95	27.25	10.17	1.92	15.35	0.25	5.90
1983		4.53	2.16	0.04	1.55	1.63	25.19	12.99	1.66	12.32	0.66	5.32
1984		3.28	2.13	0.00	1.32	3.64	26.15	8.58	2.89	13.20	0.68	4.90
1985		1.97	1.59	13.74	1.29	2.44	11.12	3.98	2.75	11.27	0.72	3.85
1986		1.24	1.04	7.18	1.50	2.01	13.28	3.09	2.98	7.87	0.74	4.30

Table 97. Butterfish. Statistical Area 539, Northeast Fisheries Center, National Marine Fisheries Service. Monthly commercial catch in metric tons per day fished, 1964-1986.

YEAR	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1964	0.00	0.00	0.00	0.00	0.00	0.10	0.51	0.25	0.13	0.20	0.27	0.09	1.55
1965	0.01	0.00	0.00	0.00	0.03	0.12	0.10	0.30	0.20	0.32	0.53	0.08	1.68
1966	0.00	0.02	0.00	0.00	0.01	0.15	0.06	0.10	0.08	0.21	0.19	0.11	0.94
1967	0.01	0.00	0.00	0.00	0.00	0.03	0.04	0.03	0.06	0.17	0.05	0.02	0.40
1968	0.00	0.00	0.00	0.16	0.11	0.14	0.16	0.15	0.38	0.26	0.46	0.04	1.87
1969	0.00	6.35	2.62	0.00	0.10	0.15	0.22	0.64	0.28	0.65	0.39	0.24	11.65
1970	0.04	0.00	0.00	0.00	0.06	0.10	0.06	0.56	0.31	0.39	0.64	0.27	2.42
1971	0.04	0.00	0.00	0.00	0.12	0.09	0.13	0.19	0.14	0.18	0.23	0.12	1.25
1972	0.20	0.10	0.68	0.00	0.17	0.04	0.02	0.18	0.35	0.17	0.37	0.19	2.47
1973	0.00	0.00	0.00	0.15	0.52	0.33	0.60	0.60	1.33	0.17	0.34	0.70	4.75
1974	3.42	1.37	1.16	0.10	0.02	0.06	0.05	0.25	0.11	0.16	0.27	0.11	7.08
1975	1.24	0.05	0.01	0.01	0.03	0.11	0.18	0.18	0.03	0.09	0.16	0.11	2.20
1976	0.08	0.01	0.00	0.03	0.05	0.11	0.03	0.10	0.28	0.37	0.35	0.29	1.70
1977	0.12	0.00	0.00	0.03	0.07	0.17	0.14	0.19	0.33	0.35	0.24	0.08	1.75
1978	0.12	1.71	0.00	0.00	0.14	0.63	0.26	0.61	0.24	0.60	0.41	0.27	4.99
1979	0.20	0.01	0.00	0.50	0.06	0.10	0.11	0.41	0.02	0.14	0.31	0.35	2.21
1980	0.35	0.00	0.02	0.04	0.11	0.20	0.19	0.32	0.11	0.35	0.50	0.18	2.38
1981	0.02	0.02	0.00	0.00	0.06	0.07	0.10	0.18	0.14	0.23	0.41	0.16	1.41
1982	0.89	0.00	0.01	0.07	0.05	0.29	0.21	0.45	0.95	0.87	0.92	0.50	5.20
1983	0.26	0.12	0.01	0.06	0.06	0.17	0.21	0.34	0.73	1.69	0.58	0.30	4.53
1984	0.44	0.05	0.01	0.01	0.08	0.17	0.40	0.59	0.58	0.18	0.41	0.36	3.28
1985	0.17	0.09	0.01	0.01	0.14	0.25	0.30	0.13	0.07	0.23	0.12	0.43	1.97
1986	0.11	0.01	0.04	0.02	0.07	0.15	0.30	0.10	0.11	0.08	0.16	0.10	1.24

Table 98. cod. Statistical Area 539, Northeast Fisheries Center, National Marine Fisheries Service. Monthly commercial catch in metric tons per day fished, 1964-1986.

YEAR	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1964	0.42	0.34	0.17	0.16	0.06	0.02	0.01	0.00	0.00	0.02	0.20	0.31	1.72
1965	0.44	0.49	0.37	0.15	0.11	0.02	0.01	0.00	0.00	0.03	0.16	0.18	1.97
1966	0.38	1.00	0.55	0.21	0.13	0.08	0.03	0.02	0.03	0.15	0.31	0.53	3.41
1967	0.76	0.50	1.15	0.46	0.35	0.12	0.07	0.06	0.09	0.32	0.56	0.48	4.92
1968	1.97	1.77	0.83	0.46	0.48	0.49	0.67	0.14	0.06	0.43	1.17	0.63	9.11
1969	1.63	1.72	1.54	0.96	0.60	0.39	0.21	0.05	0.26	0.44	0.60	0.77	9.20
1970	1.17	2.12	1.18	0.68	0.54	0.28	0.28	0.08	0.03	0.46	0.74	0.52	8.08
1971	0.91	1.57	1.38	0.79	0.34	0.25	0.07	0.07	0.04	0.03	0.22	0.45	6.11
1972	0.60	0.97	0.51	0.42	0.33	0.32	0.00	0.03	0.08	0.06	0.33	0.47	4.12
1973	0.55	0.55	0.48	0.30	0.81	0.34	0.00	0.00	0.02	0.09	0.13	0.31	3.60
1974	0.29	0.27	1.12	1.62	0.59	0.06	0.03	0.02	0.00	0.09	0.65	0.20	4.92
1975	0.17	0.22	0.28	0.11	0.16	0.07	0.02	0.01	0.00	0.01	0.19	0.18	1.44
1976	0.19	0.13	0.20	0.09	0.10	0.03	0.08	0.00	0.02	0.07	0.35	0.27	1.52
1977	0.49	0.44	0.39	0.74	0.28	0.15	0.14	0.00	0.00	0.10	0.24	0.29	3.26
1978	0.35	1.16	1.11	0.54	0.23	0.09	0.03	0.01	0.00	0.04	0.14	0.33	4.03
1979	0.21	0.97	1.49	0.93	0.15	0.03	0.04	0.00	0.00	0.06	0.13	0.16	4.20
1980	0.18	0.31	0.50	0.42	0.13	0.04	0.01	0.07	0.00	0.02	0.20	0.13	2.01
1981	0.25	0.68	0.20	0.21	0.07	0.09	0.04	0.24	0.01	0.03	0.08	0.13	2.02
1982	0.34	0.25	0.22	0.16	0.09	0.05	0.02	0.01	0.01	0.01	0.12	0.21	1.47
1983	0.20	0.28	0.23	0.15	0.07	0.02	0.03	0.01	0.01	0.00	0.52	0.65	2.16
1984	0.18	0.22	0.37	0.21	0.05	0.01	0.02	0.01	0.53	0.01	0.22	0.29	2.13
1985	0.13	0.45	0.14	0.14	0.04	0.02	0.02	0.04	0.00	0.33	0.11	0.16	1.59
1986	0.19	0.19	0.21	0.20	0.05	0.02	0.01	0.00	0.00	0.03	0.07	0.07	1.04

Table 99. Ocean Pout. Statistical Area 539, Northeast Fisheries Center, National Marine Fisheries Service. Monthly commercial catch in metric tons per day fished, 1964-1986.

YEAR	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1964	0.01	0.03	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21
1965	0.03	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
1966	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
1967	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1968	0.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.34
1969	0.34	0.17	0.00	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.75
1970	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17
1971	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1972	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1973	0.00	0.00	0.00	0.00	0.52	0.41	0.00	0.00	0.00	0.00	0.00	0.00	0.93
1974	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1975	0.00	0.00	0.00	1.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.72
1976	0.94	1.22	4.21	4.62	1.75	0.11	0.00	0.00	0.00	0.00	0.09	0.47	13.41
1977	1.53	1.24	1.32	4.21	3.76	0.00	0.00	0.00	0.00	0.00	0.00	0.36	12.42
1978	4.66	3.21	3.15	3.95	2.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	17.34
1979	1.70	4.85	1.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.36
1980	0.74	0.74	0.45	2.61	0.58	0.00	0.00	0.00	0.00	0.00	0.00	0.60	5.73
1981	4.24	2.93	6.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.47
1982	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1983	0.00	0.00	0.04	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
1984	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1985	4.98	7.81	0.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.58	13.74
1986	2.46	1.02	2.81	0.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	7.18

Table 100. Sand Flounder. Statistical Area 539, Northeast Fisheries Center, National Marine Fisheries Service. Monthly commercial catch in metric tons per day fished, 1964-1986.

YEAR	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1964	.	.	.	.	.	.	.	.	.	.	.	.	.
1965	.	.	.	.	.	.	.	.	.	.	.	.	.
1966	.	.	.	.	.	.	.	.	.	.	.	.	.
1967	.	.	.	.	.	.	.	.	.	.	.	.	.
1968	.	.	.	.	.	.	.	.	.	.	.	.	.
1969	.	.	.	.	.	.	.	.	.	.	.	.	.
1970	.	.	.	.	.	.	.	.	.	.	.	.	.
1971	.	.	.	.	.	.	.	.	.	.	.	.	.
1972	.	.	.	.	.	.	.	.	.	.	.	.	.
1973	.	.	.	.	.	.	.	.	.	.	.	.	.
1974	.	.	.	.	.	.	.	.	.	.	.	.	.
1975	0.23	0.10	0.12	0.05	0.52	0.04	0.00	0.00	0.00	0.00	0.00	0.16	1.21
1976	0.09	0.02	0.10	0.19	0.17	0.06	0.00	0.08	0.06	0.04	0.00	0.15	0.97
1977	0.24	0.19	0.10	0.07	0.13	0.20	0.01	0.06	0.23	0.19	0.09	0.12	1.64
1978	0.12	0.30	0.57	0.36	0.07	0.04	0.02	0.27	0.16	0.09	0.11	0.01	2.12
1979	0.29	0.34	0.62	0.34	0.04	0.04	0.07	0.11	0.07	0.07	0.03	0.08	2.10
1980	0.27	0.48	0.26	0.15	0.05	0.09	0.09	0.03	0.10	0.10	0.04	0.09	1.76
1981	0.49	0.51	0.50	0.23	0.04	0.04	0.05	0.05	0.00	0.00	0.47	0.21	2.59
1982	0.67	0.46	0.36	0.13	0.05	0.06	0.11	0.15	0.20	0.10	0.01	0.13	2.43
1983	0.15	0.25	0.25	0.16	0.07	0.10	0.29	0.07	0.06	0.04	0.03	0.08	1.55
1984	0.15	0.12	0.21	0.12	0.08	0.08	0.09	0.10	0.17	0.07	0.06	0.08	1.32
1985	0.21	0.32	0.17	0.16	0.08	0.04	0.06	0.07	0.06	0.04	0.03	0.06	1.29
1986	0.17	0.23	0.38	0.21	0.10	0.04	0.12	0.04	0.06	0.06	0.03	0.06	1.50

Table 101. Scup. Statistical Area 539, Northeast Fisheries Center, National Marine Fisheries Service. Monthly commercial catch in metric tons per day fished, 1964-1986.

YEAR	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1964	0.00	0.00	0.00	0.00	0.22	0.14	0.15	0.10	0.28	0.08	0.02	0.00	0.98
1965	0.00	0.00	0.00	0.00	0.02	0.05	0.37	0.69	2.10	0.98	0.02	0.00	4.24
1966	0.00	0.00	0.00	0.00	0.03	0.12	0.06	0.03	0.94	0.96	0.13	0.00	2.27
1967	0.00	0.00	0.00	0.00	0.09	0.07	0.05	0.03	0.49	1.34	0.37	0.00	2.44
1968	0.00	0.00	0.00	0.07	0.07	0.47	0.18	0.66	2.32	3.72	1.13	0.00	8.60
1969	0.00	0.00	0.00	0.02	0.27	0.30	0.05	0.03	0.37	1.11	0.66	0.01	2.83
1970	0.00	0.00	0.00	0.01	0.26	0.09	0.02	0.40	0.08	0.33	0.65	0.00	1.83
1971	0.00	0.00	0.00	0.01	0.24	0.13	0.02	0.17	0.11	0.61	0.91	0.03	2.22
1972	0.00	0.00	0.08	0.08	0.28	0.32	0.12	0.86	0.13	0.82	1.53	0.00	4.21
1973	0.00	0.00	0.00	0.05	0.58	0.39	0.43	0.35	0.27	1.46	1.82	0.31	5.66
1974	0.03	0.00	0.04	0.46	0.27	0.36	0.11	0.15	0.07	1.20	1.37	0.03	4.08
1975	0.00	0.00	0.00	0.17	0.10	0.26	0.18	0.11	0.20	0.46	0.77	0.46	2.70
1976	0.00	0.00	0.00	0.07	0.29	0.60	0.15	0.36	0.12	0.85	0.53	0.11	3.08
1977	0.00	0.00	0.00	0.05	0.17	0.33	0.11	0.38	0.15	1.83	2.66	3.41	9.09
1978	0.00	0.00	0.00	0.02	0.20	0.30	0.07	0.64	0.30	1.45	1.20	0.09	4.25
1979	0.00	0.00	0.00	0.03	0.19	0.17	0.04	0.22	0.12	0.39	1.79	0.38	3.33
1980	0.00	0.00	0.00	0.02	0.18	0.11	0.19	0.12	0.14	0.61	0.70	0.00	2.07
1981	0.00	0.00	0.00	0.01	0.42	0.28	0.12	0.12	0.26	1.34	0.59	0.00	3.14
1982	0.01	0.00	0.01	0.08	0.23	0.76	0.31	0.06	0.17	0.92	0.37	0.03	2.95
1983	0.02	0.01	0.01	0.06	0.10	0.11	0.08	0.11	0.06	0.56	0.51	0.01	1.63
1984	0.00	0.00	0.00	0.04	2.18	0.11	0.04	0.13	0.09	0.60	0.38	0.07	3.64
1985	0.01	0.00	0.01	0.04	0.17	0.26	0.11	0.08	0.17	0.54	0.75	0.31	2.44
1986	0.02	0.00	0.05	0.11	0.22	0.20	0.25	0.16	0.10	0.30	0.56	0.05	2.01

Table 102. Silver Hake. Statistical Area 539, Northeast Fisheries Center, National Marine Fisheries Service. Monthly commercial catch in metric tons per day fished, 1964-1986.

YEAR	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1964	0.17	0.00	0.00	0.00	2.65	2.76	1.81	1.82	1.24	1.83	1.78	2.37	16.44
1965	0.51	0.00	0.00	0.04	1.15	2.09	2.08	1.21	0.29	0.82	1.02	0.95	10.17
1966	0.38	0.01	0.00	0.00	0.28	1.50	0.80	1.24	0.59	2.12	1.06	0.83	8.80
1967	0.19	0.00	0.00	0.00	0.20	1.00	0.47	0.52	0.26	0.52	0.91	0.70	4.77
1968	0.48	0.00	0.00	0.37	1.25	2.39	2.91	3.43	2.79	2.50	1.89	1.11	19.12
1969	0.21	0.58	0.06	1.10	2.60	4.55	3.99	4.10	5.87	3.01	1.89	1.47	29.43
1970	0.23	0.00	0.00	0.05	2.08	2.50	2.76	5.53	5.05	2.12	1.09	0.81	22.24
1971	0.30	0.00	0.00	0.02	1.06	3.52	3.08	2.60	2.52	1.06	0.50	2.54	17.22
1972	2.28	0.71	0.28	0.08	1.71	4.42	2.47	3.21	0.70	0.11	1.52	1.95	19.43
1973	1.33	0.39	0.00	0.13	2.84	4.47	2.63	0.66	1.18	0.90	1.66	3.82	20.03
1974	2.30	1.92	3.23	3.40	4.26	4.48	1.38	0.37	0.51	0.24	1.53	5.17	28.78
1975	5.04	3.28	1.76	1.97	2.46	2.21	2.01	2.22	0.04	0.39	1.15	6.69	29.21
1976	5.49	6.48	1.65	2.28	3.94	6.44	2.48	3.36	2.40	1.51	4.55	4.86	45.43
1977	1.22	0.11	0.00	0.25	3.13	4.31	2.36	1.72	1.44	0.35	3.71	9.21	27.82
1978	5.83	2.43	0.12	0.15	3.43	2.20	1.05	1.71	2.30	0.25	1.83	14.33	35.62
1979	11.73	7.81	0.01	0.30	1.34	1.93	2.48	2.36	3.49	1.79	2.40	8.59	44.22
1980	5.12	0.07	0.09	0.06	0.86	1.31	1.31	1.32	1.23	0.89	2.03	4.59	18.90
1981	0.75	0.24	0.84	1.40	2.05	1.11	1.09	2.44	2.51	0.99	5.59	3.89	22.89
1982	2.04	0.24	0.06	3.96	3.50	1.65	2.43	1.28	1.24	2.29	3.41	5.16	27.25
1983	3.43	0.72	0.03	0.38	1.62	4.09	0.48	1.35	2.26	1.49	2.36	6.97	25.19
1984	2.90	0.66	1.18	0.74	3.37	4.66	3.46	0.47	0.49	0.95	1.15	6.13	26.15
1985	1.94	0.08	0.02	0.55	1.67	2.01	0.59	0.46	0.31	0.30	0.33	2.86	11.12
1986	2.86	0.26	0.30	0.36	1.87	1.00	0.38	0.79	0.57	0.64	0.39	3.87	13.28

Table 103. Squirrel Hake. Statistical Area 539, Northeast Fisheries Center, National Marine Fisheries Service. Monthly commercial catch in metric tons per day fished, 1964-1986.

YEAR	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1964	0.00	0.00	0.00	0.02	0.14	0.55	0.38	0.17	0.08	0.18	0.34	0.25	2.13
1965	0.07	0.00	0.00	0.01	0.23	0.09	0.17	0.27	0.02	0.13	0.29	0.04	1.32
1966	0.02	0.02	0.00	0.00	0.02	0.07	0.09	0.07	0.05	0.02	0.06	0.24	0.68
1967	0.02	0.00	0.00	0.00	0.01	0.02	0.03	0.08	0.01	0.11	0.12	0.10	0.50
1968	1.79	0.00	0.00	0.00	1.70	1.18	1.20	4.24	2.48	1.21	1.72	1.79	17.32
1969	0.00	0.02	0.02	1.72	1.63	1.75	3.47	2.22	1.51	2.66	2.52	2.09	19.62
1970	0.64	0.04	0.03	0.21	1.12	1.83	1.54	1.63	1.31	0.75	1.52	1.87	12.48
1971	0.30	0.01	0.01	0.17	0.55	0.95	0.56	0.48	0.27	0.27	0.18	1.31	5.04
1972	0.71	0.79	0.22	0.17	0.72	0.75	0.87	0.71	0.00	0.00	1.19	2.27	8.41
1973	1.81	0.79	0.35	0.30	0.94	1.06	0.52	0.27	0.15	0.47	0.69	1.56	8.88
1974	0.77	0.32	0.75	0.97	0.97	0.59	0.63	0.06	0.00	0.05	0.61	0.85	6.57
1975	1.11	0.80	0.21	0.38	1.33	0.52	1.82	1.15	0.00	0.10	0.56	3.12	11.11
1976	2.64	0.85	0.77	0.66	0.99	0.48	0.25	0.50	0.33	0.51	1.84	2.01	11.84
1977	0.80	0.21	0.00	0.03	0.38	0.23	0.25	0.21	0.03	0.05	1.43	1.76	5.38
1978	0.26	0.07	0.00	0.04	0.22	0.12	0.09	0.84	0.59	0.04	0.35	1.09	3.72
1979	1.26	0.89	0.34	0.03	0.72	0.44	0.38	0.55	0.50	0.35	0.53	0.77	6.75
1980	0.87	0.10	0.06	0.03	0.06	0.25	0.55	0.22	0.04	0.31	1.14	0.66	4.29
1981	0.19	0.06	0.01	0.43	0.59	0.11	0.34	0.42	0.43	0.14	1.21	1.23	5.16
1982	0.44	0.12	0.00	3.73	0.67	0.39	0.43	0.55	0.48	0.23	1.13	2.00	10.17
1983	2.29	0.69	0.03	1.03	1.11	1.25	0.38	1.47	1.52	0.38	0.55	2.28	12.99
1984	1.21	0.65	1.31	0.99	0.70	0.97	0.31	0.63	0.14	0.12	0.43	1.13	8.58
1985	1.08	0.15	0.02	0.09	0.64	0.50	0.18	0.36	0.13	0.04	0.06	0.74	3.98
1986	0.49	0.14	0.08	0.27	0.55	0.22	0.28	0.24	0.08	0.05	0.16	0.53	3.09

Table 104. Summer Flounder. Statistical Area 539, Northeast Fisheries center, National Marine Fisheries Service. Monthly commercial catch in metric tons per day fished, 1964-1986.

YEAR	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1964	0.00	0.01	0.00	0.00	0.05	0.16	0.11	0.25	0.25	0.02	0.02	0.01	0.89
1965	0.02	0.00	0.00	0.00	0.03	0.07	0.08	0.17	0.36	0.05	0.00	0.00	0.78
1966	0.00	0.00	0.00	0.00	0.07	0.11	0.09	0.18	0.41	0.10	0.00	0.00	0.97
1967	0.00	0.00	0.00	0.00	0.02	0.10	0.04	0.13	0.26	0.06	0.01	0.00	0.61
1968	0.10	0.08	0.03	0.05	0.11	0.13	0.07	0.31	0.35	0.05	0.15	0.00	1.44
1969	0.00	0.28	0.04	0.09	0.09	0.06	0.11	0.22	0.35	0.16	0.01	0.06	1.48
1970	0.09	0.02	0.02	0.09	0.11	0.07	0.05	0.37	0.33	0.07	0.03	0.25	1.49
1971	0.00	0.08	0.26	0.04	0.11	0.09	0.12	0.30	0.25	0.14	0.02	0.22	1.63
1972	0.00	1.03	0.09	0.07	0.10	0.19	0.40	0.58	0.72	0.46	0.00	0.00	3.64
1973	0.00	0.00	0.00	0.05	0.24	0.17	0.09	0.42	0.69	0.27	0.02	0.06	2.01
1974	0.17	0.14	0.09	0.17	0.29	0.12	0.20	0.69	1.07	0.24	0.03	0.17	3.37
1975	0.12	0.01	0.00	0.01	0.16	0.12	0.19	0.58	0.70	0.18	0.08	0.08	2.23
1976	0.01	0.01	0.01	0.09	0.11	0.13	0.24	0.61	0.72	0.24	0.03	0.04	2.24
1977	0.00	0.00	0.01	0.04	0.17	0.08	0.09	0.46	0.77	0.26	0.04	0.07	1.98
1978	0.00	0.04	0.02	0.17	0.09	0.10	0.04	0.31	0.76	0.11	0.02	0.05	1.70
1979	0.01	0.69	0.01	0.02	0.07	0.05	0.04	0.26	0.55	0.08	0.07	0.04	1.91
1980	0.01	0.01	0.01	0.03	0.06	0.02	0.05	0.13	0.19	0.14	0.03	0.01	0.69
1981	0.01	0.02	0.02	0.01	0.08	0.05	0.10	0.33	0.44	0.19	0.89	0.13	2.28
1982	0.09	0.06	0.11	0.07	0.21	0.12	0.16	0.35	0.43	0.18	0.06	0.08	1.92
1983	0.05	0.03	0.03	0.03	0.12	0.10	0.13	0.39	0.51	0.09	0.10	0.10	1.66
1984	0.07	0.03	0.03	0.02	0.13	0.21	0.31	0.36	0.73	0.25	0.18	0.58	2.89
1985	0.16	0.15	0.56	0.12	0.29	0.14	0.15	0.34	0.35	0.14	0.10	0.24	2.75
1986	0.11	0.06	0.04	0.08	0.27	0.22	0.23	0.52	0.57	0.46	0.28	0.13	2.98

Table 105. Winter Flounder. Statistical Area 539, Northeast Fisheries Center, National Marine Fisheries Service. Monthly commercial catch in metric tons per day fished, 1964-1986.

YEAR	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1964	1.00	1.06	1.39	2.14	2.79	4.36	1.26	0.89	0.61	0.83	1.68	0.96	18.97
1965	1.01	1.55	1.56	1.59	2.16	2.35	1.12	0.84	0.70	0.96	1.29	1.39	16.52
1966	1.06	0.85	1.01	1.33	2.02	1.93	1.55	1.52	0.86	1.57	2.45	1.88	18.04
1967	1.12	0.57	1.45	1.21	1.62	2.22	2.46	1.56	0.94	1.43	1.61	0.91	17.09
1968	1.16	0.80	0.94	1.44	2.34	2.62	2.42	2.15	1.05	1.54	2.46	0.95	19.86
1969	0.68	0.66	1.18	1.81	2.06	1.98	2.23	1.42	1.24	1.51	2.35	1.57	18.68
1970	0.86	0.83	0.77	1.16	1.77	1.63	1.76	1.45	0.81	1.16	2.07	1.50	15.76
1971	0.65	0.60	0.81	0.84	1.53	1.81	1.12	1.10	0.95	0.60	1.25	1.05	12.30
1972	0.51	0.81	0.75	0.75	1.61	1.25	0.93	1.38	0.87	0.56	1.47	1.14	12.03
1973	0.62	0.47	0.67	0.93	1.73	1.81	1.61	1.55	0.45	0.24	0.40	0.43	10.90
1974	0.29	0.31	1.35	1.18	1.13	1.05	0.65	0.71	0.24	0.21	0.36	0.22	7.70
1975	0.27	0.35	0.52	0.42	0.76	1.18	0.54	0.23	0.13	0.16	0.28	0.31	5.15
1976	0.16	0.21	0.49	0.40	0.50	0.86	0.65	0.59	0.45	0.43	0.79	0.48	6.00
1977	0.44	0.16	0.36	0.52	0.70	1.38	0.90	1.08	0.56	1.03	1.09	0.71	8.94
1978	0.59	0.45	0.58	0.90	1.52	1.77	1.16	0.78	0.42	0.90	1.15	0.53	10.77
1979	0.50	0.57	0.47	0.59	1.22	1.90	1.30	0.75	0.57	1.07	1.00	0.73	10.66
1980	0.80	0.68	0.81	1.49	1.67	2.28	1.32	1.26	0.39	0.86	1.31	1.01	13.89
1981	0.88	0.65	1.06	1.40	2.28	1.19	1.02	0.50	0.56	1.32	1.68	1.11	13.65
1982	0.57	0.70	1.12	1.29	1.74	2.63	1.69	0.81	0.51	1.28	1.55	1.46	15.35
1983	0.82	0.51	1.07	1.09	1.58	1.46	1.34	0.62	0.55	0.50	1.62	1.16	12.32
1984	0.67	0.66	1.03	1.32	1.42	1.45	1.09	0.88	0.84	1.32	1.36	1.15	13.20
1985	1.36	1.01	1.39	1.58	1.56	1.29	0.74	0.47	0.20	0.37	0.44	0.84	11.27
1986	0.74	0.47	0.73	1.16	1.06	0.96	0.55	0.18	0.18	0.49	0.76	0.58	7.87

Table 106. Lobster. Statistical Area 539, Northeast Fisheries Center, National Marine Fisheries Service. Monthly commercial catch in metric tons per day fished, 1964-1986.

YEAR	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1964	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.01	0.14	0.19
1965	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
1966	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1967	0.01	0.00	0.00	0.00	0.00	0.00	0.02	0.05	0.00	0.00	0.01	0.05	0.15
1968	0.00	0.00	0.00	0.01	0.03	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.11
1969	0.00	0.00	0.12	0.17	0.56	0.00	0.00	0.00	0.00	0.00	0.72	0.00	1.58
1970	0.00	0.00	0.00	0.09	0.00	0.00	0.66	0.33	0.00	0.21	0.00	0.34	1.62
1971	0.23	0.00	0.00	0.00	0.00	0.24	0.06	0.23	0.14	0.24	0.20	0.04	1.38
1972	0.27	0.30	0.15	0.01	0.03	0.09	0.30	0.06	0.03	0.06	0.11	0.09	1.50
1973	0.06	0.03	0.02	0.02	0.06	0.12	0.11	0.03	0.05	0.15	0.09	0.06	0.80
1974	0.03	0.00	0.00	0.04	0.03	0.14	0.07	0.04	0.09	0.07	0.09	0.06	0.67
1975	0.03	0.01	0.00	0.04	0.02	0.17	0.17	0.03	0.02	0.03	0.08	0.05	0.65
1976	0.00	0.00	0.01	0.02	0.01	0.09	0.02	0.01	0.04	0.04	0.05	0.07	0.36
1977	0.08	0.02	0.01	0.06	0.03	0.05	0.14	0.08	0.04	0.05	0.13	0.04	0.73
1978	0.01	0.00	0.00	0.02	0.02	0.08	0.14	0.06	0.02	0.07	0.05	0.01	0.50
1979	0.01	0.00	0.04	0.01	0.01	0.05	0.10	0.03	0.02	0.04	0.02	0.01	0.34
1980	0.02	0.02	0.00	0.17	0.01	0.06	0.09	0.00	0.01	0.01	0.03	0.02	0.44
1981	0.00	0.00	0.01	0.01	0.02	0.06	0.09	0.02	0.01	0.01	0.02	0.03	0.26
1982	0.01	0.00	0.00	0.01	0.01	0.04	0.08	0.03	0.01	0.02	0.02	0.01	0.25
1983	0.01	0.00	0.00	0.01	0.01	0.07	0.20	0.13	0.03	0.05	0.07	0.06	0.66
1984	0.01	0.01	0.01	0.04	0.03	0.05	0.10	0.07	0.13	0.12	0.04	0.05	0.68
1985	0.02	0.01	0.03	0.01	0.01	0.02	0.05	0.07	0.04	0.08	0.25	0.12	0.72
1986	0.03	0.00	0.01	0.01	0.02	0.06	0.35	0.06	0.06	0.06	0.06	0.03	0.74

Table 107. Squid. Statistical Area 539, Northeast Fisheries Center, National Marine Fisheries Service. Monthly commercial catch in metric tons per day fished, 1964-1986.

YEAR	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1964	.	.	.	.	.	.	.	.	.	.	.	.	.
1965	.	.	.	.	.	.	.	.	.	.	.	.	.
1966	.	.	.	.	.	.	.	.	.	.	.	.	.
1967	.	.	.	.	.	.	.	.	.	.	.	.	.
1968	.	.	.	.	.	.	.	.	.	.	.	.	.
1969	.	.	.	.	.	.	.	.	.	.	.	.	.
1970	.	.	.	.	.	.	.	.	.	.	.	.	.
1971	.	.	.	.	.	.	.	.	.	.	.	.	.
1972	.	.	.	.	.	.	.	.	.	.	.	.	.
1973	.	.	.	.	.	.	.	.	.	.	.	.	.
1974	.	.	.	.	.	.	.	.	.	.	.	.	.
1975	.	.	.	.	.	.	.	.	.	.	.	.	.
1976	.	.	.	.	.	.	.	.	.	.	.	.	.
1977	.	.	.	.	.	.	.	.	.	.	.	.	.
1978	0.07	0.04	0.00	0.01	0.03	0.04	0.19	0.10	0.13	0.52	0.34	0.29	1.77
1979	0.14	1.22	0.00	0.48	0.26	0.13	0.23	0.13	0.09	0.22	0.26	0.18	3.34
1980	0.50	0.12	0.24	0.12	0.15	0.09	0.10	0.16	0.14	0.36	0.43	0.27	2.67
1981	0.08	0.08	0.00	0.02	0.31	0.08	0.14	0.15	0.25	0.23	0.38	1.33	3.05
1982	0.28	0.03	0.03	0.03	0.06	0.44	0.43	1.38	0.31	0.78	0.77	1.38	5.90
1983	0.42	0.24	0.03	0.06	0.22	0.67	0.50	0.28	0.54	0.83	0.89	0.64	5.32
1984	0.22	0.04	0.02	0.02	0.17	0.55	0.34	0.35	0.42	0.65	0.93	1.20	4.90
1985	0.63	0.04	0.08	0.04	0.16	0.16	0.33	0.23	0.12	0.72	0.78	0.54	3.85
1986	0.37	0.09	0.13	0.07	0.32	0.58	0.77	0.22	0.27	0.50	0.60	0.37	4.30

Table 108. Statistical Area 539, Northeast Fisheries Center, National Marine Fisheries Service. Monthly commercial catch in metric tons per days fished, 1964.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Butterfish	0.00	0.00	0.00	0.00	0.00	0.10	0.51	0.25	0.13	0.20	0.27	0.09	1.55
Cod	0.42	0.34	0.17	0.16	0.06	0.02	0.01	0.00	0.00	0.02	0.20	0.31	1.72
Ocean Pout	0.01	0.03	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21
Sand Flounder	.	.	.	.	.	.	.	.	.	.	.	.	.
Scup	0.00	0.00	0.00	0.00	0.22	0.14	0.15	0.10	0.28	0.08	0.02	0.00	0.98
Silver Hake	0.17	0.00	0.00	0.00	2.65	2.76	1.81	1.82	1.24	1.83	1.78	2.37	16.44
Squirrel Hake	0.00	0.00	0.00	0.02	0.14	0.55	0.38	0.17	0.08	0.18	0.34	0.25	2.13
Summer Flounder	0.00	0.01	0.00	0.00	0.05	0.16	0.11	0.25	0.25	0.02	0.02	0.01	0.89
Winter Flounder	1.00	1.06	1.39	2.14	2.79	4.36	1.26	0.89	0.61	0.83	1.68	0.96	18.97
Total Fish	1.60	1.43	1.75	2.33	5.91	8.09	4.23	3.49	2.59	3.17	4.32	3.99	42.89
Lobster	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.01	0.14	0.19
Squid	.	.	.	.	.	.	.	.	.	.	.	.	.
Total Invertebrates	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.01	0.14	0.19
Total Catch	1.60	1.43	1.75	2.33	5.91	8.09	4.23	3.49	2.59	3.21	4.32	4.13	43.08

Table 108 cont'd. Statistical Area 539, Northeast Fisheries Center, National Marine Fisheries Service. Monthly commercial catch in metric tons per days fished, 1965.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Butterfish	0.01	0.00	0.00	0.00	0.03	0.12	0.10	0.30	0.20	0.32	0.53	0.08	1.68
Cod	0.44	0.49	0.37	0.15	0.11	0.02	0.01	0.00	0.00	0.03	0.16	0.18	1.97
Ocean Pout	0.03	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
Sand Flounder	.	.	.	.	.	.	.	.	.	.	.	.	.
Scup	0.00	0.00	0.00	0.00	0.02	0.05	0.37	0.69	2.10	0.98	0.02	0.00	4.24
Silver Hake	0.51	0.00	0.00	0.04	1.15	2.09	2.08	1.21	0.29	0.82	1.02	0.95	10.17
Squirrel Hake	0.07	0.00	0.00	0.01	0.23	0.09	0.17	0.27	0.02	0.13	0.29	0.04	1.32
Summer Flounder	0.02	0.00	0.00	0.00	0.03	0.07	0.08	0.17	0.36	0.05	0.00	0.00	0.78
Winter Flounder	1.01	1.55	1.56	1.59	2.16	2.35	1.12	0.84	0.70	0.96	1.29	1.39	16.52
Total Fish	2.09	2.05	1.94	1.79	3.73	4.79	3.94	3.47	3.66	3.30	3.32	2.65	36.73
Lobster	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Squid	.	.	.	.	.	.	.	.	.	.	.	.	.
Total Invertebrates	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Total Catch	2.09	2.05	1.94	1.79	3.73	4.79	3.94	3.47	3.66	3.30	3.32	2.65	36.73

Table 108 cont'd. Statistical Area 539, Northeast Fisheries Center, National Marine Fisheries Service. Monthly commercial catch in metric tons per days fished, 1966.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Butterfish	0.00	0.02	0.00	0.00	0.01	0.15	0.06	0.10	0.08	0.21	0.19	0.11	0.94
Cod	0.38	1.00	0.55	0.21	0.13	0.08	0.03	0.02	0.03	0.15	0.31	0.53	3.41
Ocean Pout	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
Sand Flounder	.	.	.	.	.	.	.	.	.	.	.	.	.
Scup	0.00	0.00	0.00	0.00	0.03	0.12	0.06	0.03	0.94	0.96	0.13	0.00	2.27
Silver Hake	0.38	0.01	0.00	0.00	0.28	1.50	0.80	1.24	0.59	2.12	1.06	0.83	8.80
Squirrel Hake	0.02	0.02	0.00	0.00	0.02	0.07	0.09	0.07	0.05	0.02	0.06	0.24	0.68
Summer Flounder	0.00	0.00	0.00	0.00	0.07	0.11	0.09	0.18	0.41	0.10	0.00	0.00	0.97
Winter Flounder	1.06	0.85	1.01	1.33	2.02	1.93	1.55	1.52	0.86	1.57	2.45	1.88	18.04
Total Fish	1.86	1.90	1.57	1.55	2.56	3.98	2.68	3.16	2.95	5.12	4.21	3.59	35.13
Lobster	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Squid	.	.	.	.	.	.	.	.	.	.	.	.	.
Total Invertebrates	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Catch	1.86	1.90	1.57	1.55	2.56	3.98	2.68	3.17	2.95	5.12	4.21	3.59	35.13

Table 108 cont'd. Statistical Area 539, Northeast Fisheries Center, National Marine Fisheries Service. Monthly commercial catch in metric tons per days fished, 1967.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Butterfish	0.01	0.00	0.00	0.00	0.00	0.03	0.04	0.03	0.06	0.17	0.05	0.02	0.40
Cod	0.76	0.50	1.15	0.46	0.35	0.12	0.07	0.06	0.09	0.32	0.56	0.48	4.92
Ocean Pout	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sand Flounder	.	.	.	.	.	.	.	.	.	.	.	.	.
Scup	0.00	0.00	0.00	0.00	0.09	0.07	0.05	0.03	0.49	1.34	0.37	0.00	2.44
Silver Hake	0.19	0.00	0.00	0.00	0.20	1.00	0.47	0.52	0.26	0.52	0.91	0.70	4.77
Squirrel Hake	0.02	0.00	0.00	0.00	0.01	0.02	0.03	0.08	0.01	0.11	0.12	0.10	0.50
Summer Flounder	0.00	0.00	0.00	0.00	0.02	0.10	0.04	0.13	0.26	0.06	0.01	0.00	0.61
Winter Flounder	1.12	0.57	1.45	1.21	1.62	2.22	2.46	1.56	0.94	1.43	1.61	0.91	17.09
Total Fish	2.09	1.08	2.60	1.67	2.29	3.58	3.17	2.39	2.11	3.93	3.62	2.20	30.73
Lobster	0.01	0.00	0.00	0.00	0.00	0.00	0.02	0.05	0.00	0.00	0.01	0.05	0.15
Squid	.	.	.	.	.	.	.	.	.	.	.	.	.
Total Invertebrates	0.01	0.00	0.00	0.00	0.00	0.00	0.02	0.05	0.00	0.00	0.01	0.05	0.15
Total Catch	2.10	1.08	2.60	1.67	2.29	3.58	3.19	2.44	2.11	3.93	3.63	2.25	30.88

Table 108 cont'd. Statistical Area 539, Northeast Fisheries Center, National Marine Fisheries Service. Monthly commercial catch in metric tons per days fished, 1968.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Butterfish	0.00	0.00	0.00	0.16	0.11	0.14	0.16	0.15	0.38	0.26	0.46	0.04	1.87
Cod	1.97	1.77	0.83	0.46	0.48	0.49	0.67	0.14	0.06	0.43	1.17	0.63	9.11
Ocean Pout	0.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.34
Sand Flounder	.	.	.	.	.	.	.	.	.	.	.	.	.
Scup	0.00	0.00	0.00	0.07	0.07	0.47	0.18	0.66	2.32	3.72	1.13	0.00	8.60
Silver Hake	0.48	0.00	0.00	0.37	1.25	2.39	2.91	3.43	2.79	2.50	1.89	1.11	19.12
Squirrel Hake	1.79	0.00	0.00	0.00	1.70	1.18	1.20	4.24	2.48	1.21	1.72	1.79	17.32
Summer Flounder	0.10	0.08	0.03	0.05	0.11	0.13	0.07	0.31	0.35	0.05	0.15	0.00	1.44
Winter Flounder	1.16	0.80	0.94	1.44	2.34	2.62	2.42	2.15	1.05	1.54	2.46	0.95	19.86
Total Fish	5.84	2.65	1.80	2.56	6.06	7.42	7.61	11.07	9.43	9.73	8.99	4.52	77.66
Lobster	0.00	0.00	0.00	0.01	0.03	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.11
Squid	.	.	.	.	.	.	.	.	.	.	.	.	.
Total Invertebrates	0.00	0.00	0.00	0.01	0.03	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.11
Total Catch	5.84	2.65	1.80	2.57	6.09	7.42	7.61	11.07	9.43	9.80	8.99	4.52	77.77

Table 108 cont'd. Statistical Area 539, Northeast Fisheries Center, National Marine Fisheries Service. Monthly commercial catch in metric tons per days fished, 1969.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Butterfish	0.00	6.35	2.62	0.00	0.10	0.15	0.22	0.64	0.28	0.65	0.39	0.24	11.65
Cod	1.63	1.72	1.54	0.96	0.60	0.39	0.21	0.05	0.26	0.44	0.60	0.77	9.20
Ocean Pout	0.34	0.17	0.00	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.75
Sand Flounder	.	.	.	.	.	.	.	.	.	.	.	.	.
Scup	0.00	0.00	0.00	0.02	0.27	0.30	0.05	0.03	0.37	1.11	0.66	0.01	2.83
Silver Hake	0.21	0.58	0.06	1.10	2.60	4.55	3.99	4.10	5.87	3.01	1.89	1.47	29.43
Squirrel Hake	0.00	0.02	0.02	1.72	1.63	1.75	3.47	2.22	1.51	2.66	2.52	2.09	19.62
Summer Flounder	0.00	0.28	0.04	0.09	0.09	0.06	0.11	0.22	0.35	0.16	0.01	0.06	1.48
Winter Flounder	0.68	0.66	1.18	1.81	2.06	1.98	2.23	1.42	1.24	1.51	2.35	1.57	18.68
Total Fish	2.85	9.79	5.47	5.94	7.35	9.18	10.27	8.70	9.89	9.54	8.43	6.21	93.63
Lobster	0.00	0.00	0.12	0.17	0.56	0.00	0.00	0.00	0.00	0.00	0.72	0.00	1.58
Squid	.	.	.	.	.	.	.	.	.	.	.	.	.
Total Invertebrates	0.00	0.00	0.12	0.17	0.56	0.00	0.00	0.00	0.00	0.00	0.72	0.00	1.58
Total Catch	2.85	9.79	5.59	6.11	7.91	9.18	10.27	8.70	9.89	9.54	9.15	6.21	95.21

Table 108 cont'd. Statistical Area 539, Northeast Fisheries Center, National Marine Fisheries Service. Monthly commercial catch in metric tons per days fished, 1970.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Butterfish	0.04	0.00	0.00	0.00	0.06	0.10	0.06	0.56	0.31	0.39	0.64	0.27	2.42
Cod	1.17	2.12	1.18	0.68	0.54	0.28	0.28	0.08	0.03	0.46	0.74	0.52	8.08
Ocean Pout	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17
Sand Flounder	.	.	.	.	.	.	.	.	.	.	.	.	.
Scup	0.00	0.00	0.00	0.01	0.26	0.09	0.02	0.40	0.08	0.33	0.65	0.00	1.83
Silver Hake	0.23	0.00	0.00	0.05	2.08	2.50	2.76	5.53	5.05	2.12	1.09	0.81	22.24
Squirrel Hake	0.64	0.04	0.03	0.21	1.12	1.83	1.54	1.63	1.31	0.75	1.52	1.87	12.48
Summer Flounder	0.09	0.02	0.02	0.09	0.11	0.07	0.05	0.37	0.33	0.07	0.03	0.25	1.49
Winter Flounder	0.86	0.83	0.77	1.16	1.77	1.63	1.76	1.45	0.81	1.16	2.07	1.50	15.76
Total Fish	3.20	3.01	2.00	2.18	5.93	6.50	6.48	10.01	7.92	5.28	6.73	5.24	64.47
Lobster	0.00	0.00	0.00	0.09	0.00	0.00	0.66	0.33	0.00	0.21	0.00	0.34	1.62
Squid	.	.	.	.	.	.	.	.	.	.	.	.	.
Total Invertebrates	0.00	0.00	0.00	0.09	0.00	0.00	0.66	0.33	0.00	0.21	0.00	0.34	1.62
Total Catch	3.20	3.01	2.00	2.27	5.93	6.50	7.13	10.34	7.92	5.49	6.73	5.58	66.09

Table 108 cont'd. Statistical Area 539, Northeast Fisheries Center, National Marine Fisheries Service. Monthly commercial catch in metric tons per days fished, 1971.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Butterfish	0.04	0.00	0.00	0.00	0.12	0.09	0.13	0.19	0.14	0.18	0.23	0.12	1.25
Cod	0.91	1.57	1.38	0.79	0.34	0.25	0.07	0.07	0.04	0.03	0.22	0.45	6.11
Ocean Pout	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sand Flounder	.	.	.	.	.	.	.	.	.	.	.	.	.
Scup	0.00	0.00	0.00	0.01	0.24	0.13	0.02	0.17	0.11	0.61	0.91	0.03	2.22
Silver Hake	0.30	0.00	0.00	0.02	1.06	3.52	3.08	2.60	2.52	1.06	0.50	2.54	17.22
Squirrel Hake	0.30	0.01	0.01	0.17	0.55	0.95	0.56	0.48	0.27	0.27	0.18	1.31	5.04
Summer Flounder	0.00	0.08	0.26	0.04	0.11	0.09	0.12	0.30	0.25	0.14	0.02	0.22	1.63
Winter Flounder	0.65	0.60	0.81	0.84	1.53	1.81	1.12	1.10	0.95	0.60	1.25	1.05	12.30
Total Fish	2.21	2.26	2.46	1.86	3.95	6.84	5.09	4.90	4.28	2.90	3.31	5.72	45.78
Lobster	0.23	0.00	0.00	0.00	0.00	0.24	0.06	0.23	0.14	0.24	0.20	0.04	1.38
Squid	.	.	.	.	.	.	.	.	.	.	.	.	.
Total Invertebrates	0.23	0.00	0.00	0.00	0.00	0.24	0.06	0.23	0.14	0.24	0.20	0.04	1.38
Total Catch	2.43	2.26	2.46	1.86	3.95	7.09	5.15	5.13	4.42	3.13	3.51	5.76	47.15

Table 108 cont'd. Statistical Area 539, Northeast Fisheries Center, National Marine Fisheries Service. Monthly commercial catch in metric tons per days fished, 1972.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Butterfish	0.20	0.10	0.68	0.00	0.17	0.04	0.02	0.18	0.35	0.17	0.37	0.19	2.47
Cod	0.60	0.97	0.51	0.42	0.33	0.32	0.00	0.03	0.08	0.06	0.33	0.47	4.12
Ocean Pout	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sand Flounder	.	.	.	.	.	.	.	.	.	.	.	.	.
Scup	0.00	0.00	0.08	0.08	0.28	0.32	0.12	0.86	0.13	0.82	1.53	0.00	4.21
Silver Hake	2.28	0.71	0.28	0.08	1.71	4.42	2.47	3.21	0.70	0.11	1.52	1.95	19.43
Squirrel Hake	0.71	0.79	0.22	0.17	0.72	0.75	0.87	0.71	0.00	0.00	1.19	2.27	8.41
Summer Flounder	0.00	1.03	0.09	0.07	0.10	0.19	0.40	0.58	0.72	0.46	0.00	0.00	3.64
Winter Flounder	0.51	0.81	0.75	0.75	1.61	1.25	0.93	1.38	0.87	0.56	1.47	1.14	12.03
Total Fish	4.29	4.41	2.63	1.56	4.92	7.29	4.81	6.95	2.85	2.17	6.42	6.02	54.31
Lobster	0.27	0.30	0.15	0.01	0.03	0.09	0.30	0.06	0.03	0.06	0.11	0.09	1.50
Squid	.	.	.	.	.	.	.	.	.	.	.	.	.
Total Invertebrates	0.27	0.30	0.15	0.01	0.03	0.09	0.30	0.06	0.03	0.06	0.11	0.09	1.50
Total Catch	4.56	4.71	2.78	1.58	4.95	7.37	5.11	7.00	2.88	2.24	6.52	6.11	55.81

Table 108 cont'd. Statistical Area 539, Northeast Fisheries Center, National Marine Fisheries Service. Monthly commercial catch in metric tons per days fished, 1973.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Butterfish	0.00	0.00	0.00	0.15	0.52	0.33	0.60	0.60	1.33	0.17	0.34	0.70	4.75
Cod	0.55	0.55	0.48	0.30	0.81	0.34	0.00	0.00	0.02	0.09	0.13	0.31	3.60
Ocean Pout	0.00	0.00	0.00	0.00	0.52	0.41	0.00	0.00	0.00	0.00	0.00	0.00	0.93
Sand Flounder	.	.	.	.	.	.	.	.	.	.	.	.	.
Scup	0.00	0.00	0.00	0.05	0.58	0.39	0.43	0.35	0.27	1.46	1.82	0.31	5.66
Silver Hake	1.33	0.39	0.00	0.13	2.84	4.47	2.63	0.66	1.18	0.90	1.66	3.82	20.03
Squirrel Hake	1.81	0.79	0.35	0.30	0.94	1.06	0.52	0.27	0.15	0.47	0.69	1.56	8.88
Summer Flounder	0.00	0.00	0.00	0.05	0.24	0.17	0.09	0.42	0.69	0.27	0.02	0.06	2.01
Winter Flounder	0.62	0.47	0.67	0.93	1.73	1.81	1.61	1.55	0.45	0.24	0.40	0.43	10.90
Total Fish	4.31	2.20	1.50	1.91	8.18	8.98	5.88	3.85	4.09	3.61	5.05	7.19	56.76
Lobster	0.06	0.03	0.02	0.02	0.06	0.12	0.11	0.03	0.05	0.15	0.09	0.06	0.80
Squid	.	.	.	.	.	.	.	.	.	.	.	.	.
Total Invertebrates	0.06	0.03	0.02	0.02	0.06	0.12	0.11	0.03	0.05	0.15	0.09	0.06	0.80
Total Catch	4.37	2.23	1.52	1.93	8.24	9.10	5.99	3.88	4.14	3.76	5.14	7.25	57.55

Table 108 cont'd. Statistical Area 539, Northeast Fisheries Center, National Marine Fisheries Service. Monthly commercial catch in metric tons per days fished, 1974.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Butterfish	3.42	1.37	1.16	0.10	0.02	0.06	0.05	0.25	0.11	0.16	0.27	0.11	7.08
Cod	0.29	0.27	1.12	1.62	0.59	0.06	0.03	0.02	0.00	0.09	0.65	0.20	4.92
Ocean Pout	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sand Flounder	.	.	.	.	.	.	.	.	.	.	.	.	.
Scup	0.03	0.00	0.04	0.46	0.27	0.36	0.11	0.15	0.07	1.20	1.37	0.03	4.08
Silver Hake	2.30	1.92	3.23	3.40	4.26	4.48	1.38	0.37	0.51	0.24	1.53	5.17	28.78
Squirrel Hake	0.77	0.32	0.75	0.97	0.97	0.59	0.63	0.06	0.00	0.05	0.61	0.85	6.57
Summer Flounder	0.17	0.14	0.09	0.17	0.29	0.12	0.20	0.69	1.07	0.24	0.03	0.17	3.37
Winter Flounder	0.29	0.31	1.35	1.18	1.13	1.05	0.65	0.71	0.24	0.21	0.36	0.22	7.70
Total Fish	7.27	4.32	7.74	7.89	7.52	6.71	3.05	2.25	2.01	2.18	4.82	6.73	62.50
Lobster	0.03	0.00	0.00	0.04	0.03	0.14	0.07	0.04	0.09	0.07	0.09	0.06	0.67
Squid	.	.	.	.	.	.	.	.	.	.	.	.	.
Total Invertebrates	0.03	0.00	0.00	0.04	0.03	0.14	0.07	0.04	0.09	0.07	0.09	0.06	0.67
Total Catch	7.30	4.32	7.74	7.93	7.55	6.85	3.12	2.29	2.10	2.26	4.91	6.79	63.16

Table 108 cont'd. Statistical Area 539, Northeast Fisheries Center, National Marine Fisheries Service. Monthly commercial catch in metric tons per days fished, 1975.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Butterfish	1.24	0.05	0.01	0.01	0.03	0.11	0.18	0.18	0.03	0.09	0.16	0.11	2.20
Cod	0.17	0.22	0.28	0.11	0.16	0.07	0.02	0.01	0.00	0.01	0.19	0.18	1.44
Ocean Pout	0.00	0.00	0.00	1.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.72
Sand Flounder	0.23	0.10	0.12	0.05	0.52	0.04	0.00	0.00	0.00	0.00	0.00	0.16	1.21
Scup	0.00	0.00	0.00	0.17	0.10	0.26	0.18	0.11	0.20	0.46	0.77	0.46	2.70
Silver Hake	5.04	3.28	1.76	1.97	2.46	2.21	2.01	2.22	0.04	0.39	1.15	6.69	29.21
Squirrel Hake	1.11	0.80	0.21	0.38	1.33	0.52	1.82	1.15	0.00	0.10	0.56	3.12	11.11
Summer Flounder	0.12	0.01	0.00	0.01	0.16	0.12	0.19	0.58	0.70	0.18	0.08	0.08	2.23
Winter Flounder	0.27	0.35	0.52	0.42	0.76	1.18	0.54	0.23	0.13	0.16	0.28	0.31	5.15
Total Fish	8.19	4.80	2.91	4.83	5.53	4.50	4.93	4.49	1.11	1.39	3.19	11.11	56.97
Lobster	0.03	0.01	0.00	0.04	0.02	0.17	0.17	0.03	0.02	0.03	0.08	0.05	0.65
Squid	.	.	.	.	.	.	.	.	.	.	.	.	.
Total Invertebrates	0.03	0.01	0.00	0.04	0.02	0.17	0.17	0.03	0.02	0.03	0.08	0.05	0.65
Total Catch	8.21	4.81	2.91	4.87	5.55	4.67	5.10	4.52	1.12	1.42	3.27	11.16	57.62

Table 108 cont'd. Statistical Area 539, Northeast Fisheries Center, National Marine Fisheries Service. Monthly commercial catch in metric tons per days fished, 1976.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Butterfish	0.08	0.01	0.00	0.03	0.05	0.11	0.03	0.10	0.28	0.37	0.35	0.29	1.70
Cod	0.19	0.13	0.20	0.09	0.10	0.03	0.08	0.00	0.02	0.07	0.35	0.27	1.52
Ocean Pout	0.94	1.22	4.21	4.62	1.75	0.11	0.00	0.00	0.00	0.00	0.09	0.47	13.41
Sand Flounder	0.09	0.02	0.10	0.19	0.17	0.06	0.00	0.08	0.06	0.04	0.00	0.15	0.97
Scup	0.00	0.00	0.00	0.07	0.29	0.60	0.15	0.36	0.12	0.85	0.53	0.11	3.08
Silver Hake	5.49	6.48	1.65	2.28	3.94	6.44	2.48	3.36	2.40	1.51	4.55	4.86	45.43
Squirrel Hake	2.64	0.85	0.77	0.66	0.99	0.48	0.25	0.50	0.33	0.51	1.84	2.01	11.84
Summer Flounder	0.01	0.01	0.01	0.09	0.11	0.13	0.24	0.61	0.72	0.24	0.03	0.04	2.24
Winter Flounder	0.16	0.21	0.49	0.40	0.50	0.86	0.65	0.59	0.45	0.43	0.79	0.48	6.00
Total Fish	9.59	8.93	7.42	8.43	7.91	8.81	3.88	5.60	4.38	4.02	8.53	8.68	86.18
Lobster	0.00	0.00	0.01	0.02	0.01	0.09	0.02	0.01	0.04	0.04	0.05	0.07	0.36
Squid	.	.	.	.	.	.	.	.	.	.	.	.	.
Total Invertebrates	0.00	0.00	0.01	0.02	0.01	0.09	0.02	0.01	0.04	0.04	0.05	0.07	0.36
Total Catch	9.59	8.93	7.43	8.45	7.92	8.91	3.90	5.61	4.41	4.06	8.58	8.74	86.54

Table 108 cont'd. Statistical Area 539, Northeast Fisheries Center, National Marine Fisheries Service. Monthly commercial catch in metric tons per days fished, 1977.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Butterfish	0.12	0.00	0.00	0.03	0.07	0.17	0.14	0.19	0.33	0.35	0.24	0.08	1.75
Cod	0.49	0.44	0.39	0.74	0.28	0.15	0.14	0.00	0.00	0.10	0.24	0.29	3.26
Ocean Pout	1.53	1.24	1.32	4.21	3.76	0.00	0.00	0.00	0.00	0.00	0.00	0.36	12.42
Sand Flounder	0.24	0.19	0.10	0.07	0.13	0.20	0.01	0.06	0.23	0.19	0.09	0.12	1.64
Scup	0.00	0.00	0.00	0.05	0.17	0.33	0.11	0.38	0.15	1.83	2.66	3.41	9.09
Silver Hake	1.22	0.11	0.00	0.25	3.13	4.31	2.36	1.72	1.44	0.35	3.71	9.21	27.82
Squirrel Hake	0.80	0.21	0.00	0.03	0.38	0.23	0.25	0.21	0.03	0.05	1.43	1.76	5.38
Summer Flounder	0.00	0.00	0.01	0.04	0.17	0.08	0.09	0.46	0.77	0.26	0.04	0.07	1.98
Winter Flounder	0.44	0.16	0.36	0.52	0.70	1.38	0.90	1.08	0.56	1.03	1.09	0.71	8.94
Total Fish	4.85	2.37	2.19	5.94	8.80	6.86	4.00	4.10	3.52	4.16	9.49	15.99	72.28
Lobster	0.08	0.02	0.01	0.06	0.03	0.05	0.14	0.08	0.04	0.05	0.13	0.04	0.73
Squid	.	.	.	.	.	.	.	.	.	.	.	.	.
Total Invertebrates	0.08	0.02	0.01	0.06	0.03	0.05	0.14	0.08	0.04	0.05	0.13	0.04	0.73
Total Catch	4.94	2.38	2.20	6.00	8.84	6.91	4.14	4.18	3.56	4.21	9.63	16.03	73.01

Table 108 cont'd. Statistical Area 539, Northeast Fisheries Center, National Marine Fisheries Service. Monthly commercial catch in metric tons per days fished, 1978.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Butterfish	0.12	1.71	0.00	0.00	0.14	0.63	0.26	0.61	0.24	0.60	0.41	0.27	4.99
Cod	0.35	1.16	1.11	0.54	0.23	0.09	0.03	0 01	0.00	0.04	0.14	0.33	4.03
Ocean Pout	4.66	3.21	3.15	3.95	2.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	17.34
Sand Flounder	0.12	0.30	0.57	0.36	0.07	0.04	0.02	0.27	0.16	0.09	0.11	0.01	2.12
Scup	0.00	0.00	0.00	0.02	0.20	0.30	0.07	0.64	0.30	1.45	1.20	0.09	4.25
Silver Hake	5.83	2.43	0.12	0.15	3.43	2.20	1.05	1.71	2.30	0.25	1.83	14.33	35.62
Squirrel Hake	0.26	0.07	0.00	0.04	0.22	0.12	0.09	0.84	0.59	0.04	0.35	1.09	3.72
Summer Flounder	0.00	0.04	0.02	0.17	0.09	0.10	0.04	0.31	0.76	0.11	0.02	0.05	1.70
Winter Flounder	0.59	0.45	0.58	0.90	1.52	1.77	1.16	0.78	0.42	0.90	1.15	0.53	10.77
Total Fish	11.94	9.38	5.55	6.11	8.27	5.24	2.71	5.17	4.78	3.48	5.21	16.70	84.55
Lobster	0.01	0.00	0.00	0.02	0.02	0.08	0.14	0.06	0.02	0.07	0.05	0.01	0.50
Squid	0.07	0.04	0.00	0.01	0.03	0.04	0.19	0.10	0.13	0.52	0.34	0.29	1.77
Total Invertebrates	0.09	0.05	0.00	0.03	0.05	0.13	0.32	0.17	0.15	0.59	0.38	0.30	2.26
Total Catch	12.02	9.42	5.55	6.14	8.32	5.37	3.03	5.34	4.93	4.07	5.59	17.00	86.81

Table 108 cont'd. Statistical Area 539, Northeast Fisheries Center, National Marine Fisheries Service. Monthly commercial catch in metric tons per days fished, 1979.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Butterfish	0.20	0.01	0.00	0.50	0.06	0.10	0.11	0.41	0.02	0.14	0.31	0.35	2.21
Cod	0.21	0.97	1.49	0.93	0.15	0.03	0.04	0.00	0.00	0.06	0.13	0.16	4.20
Ocean Pout	1.70	4.85	1.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.36
Sand Flounder	0.29	0.34	0.62	0.34	0.04	0.04	0.07	0.11	0.07	0.07	0.03	0.08	2.10
Scup	0.00	0.00	0.00	0.03	0.19	0.17	0.04	0.22	0.12	0.39	1.79	0.38	3.33
Silver Hake	11.73	7.81	0.01	0.30	1.34	1.93	2.48	2.36	3.49	1.79	2.40	8.59	44.22
Squirrel Hake	1.26	0.89	0.34	0.03	0.72	0.44	0.38	0.55	0.50	0.35	0.53	0.77	6.75
Summer Flounder	0.01	0.69	0.01	0.02	0.07	0.05	0.04	0.26	0.55	0.08	0.07	0.04	1.91
Winter Flounder	0.50	0.57	0.47	0.59	1.22	1.90	1.30	0.75	0.57	1.07	1.00	0.73	10.66
Total Fish	15.90	16.13	4.74	2.73	3.79	4.66	4.47	4.66	5.33	3.95	6.26	11.11	83.73
Lobster	0.01	0.00	0.04	0.01	0.01	0.05	0.10	0.03	0.02	0.04	0.02	0.01	0.34
Squid	0.14	1.22	0.00	0.48	0.26	0.13	0.23	0.13	0.09	0.22	0.26	0.18	3.34
Total Invertebrates	0.15	1.22	0.04	0.49	0.27	0.18	0.34	0.16	0.10	0.26	0.28	0.19	3.69
Total Catch	16.05	17.36	4.78	3.23	4.06	4.84	4.81	4.82	5.43	4.21	6.55	11.30	87.42

Table 108 cont'd. Statistical Area 539, Northeast Fisheries Center, National Marine Fisheries Service. Monthly commercial catch in metric tons per days fished, 1980.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Butterfish	0.35	0.00	0.02	0.04	0.11	0.20	0.19	0.32	0.11	0.35	0.50	0.18	2.38
Cod	0.18	0.31	0.50	0.42	0.13	0.04	0.01	0.07	0.00	0.02	0.20	0.13	2.01
Ocean Pout	0.74	0.74	0.45	2.61	0.58	0.00	0.00	0.00	0.00	0.00	0.00	0.60	5.73
Sand Flounder	0.27	0.48	0.26	0.15	0.05	0.09	0.09	0.03	0.10	0.10	0.04	0.09	1.76
Scup	0.00	0.00	0.00	0.02	0.18	0.11	0.19	0.12	0.14	0.61	0.70	0.00	2.07
Silver Hake	5.12	0.07	0.09	0.06	0.86	1.31	1.31	1.32	1.23	0.89	2.03	4.59	18.90
Squirrel Hake	0.87	0.10	0.06	0.03	0.06	0.25	0.55	0.22	0.04	0.31	1.14	0.66	4.29
Summer Flounder	0.01	0.01	0.01	0.03	0.06	0.02	0.05	0.13	0.19	0.14	0.03	0.01	0.69
Winter Flounder	0.80	0.68	0.81	1.49	1.67	2.28	1.32	1.26	0.39	0.86	1.31	1.01	13.89
Total Fish	8.35	2.39	2.20	4.87	3.71	4.30	3.72	3.47	2.20	3.29	5.95	7.28	51.71
Lobster	0.02	0.02	0.00	0.17	0.01	0.06	0.09	0.00	0.01	0.01	0.03	0.02	0.44
Squid	0.50	0.12	0.24	0.12	0.15	0.09	0.10	0.16	0.14	0.36	0.43	0.27	2.67
Total Invertebrates	0.52	0.13	0.24	0.29	0.16	0.15	0.19	0.16	0.15	0.37	0.45	0.29	3.11
Total Catch	8.87	2.52	2.44	5.16	3.87	4.44	3.91	3.63	2.36	3.66	6.41	7.57	54.83

Table 108 cont'd. Statistical Area 539, Northeast Fisheries Center, National Marine Fisheries Service. Monthly commercial catch in metric tons per days fished, 1981.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Butterfish	0.02	0.02	0.00	0.00	0.06	0.07	0.10	0.18	0.14	0.23	0.41	0.16	1.41
Cod	0.25	0.68	0.20	0.21	0.07	0.09	0.04	0.24	0.01	0.03	0.08	0.13	2.02
Ocean Pout	4.24	2.93	6.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.47
Sand Flounder	0.49	0.51	0.50	0.23	0.04	0.04	0.05	0.05	0.00	0.00	0.47	0.21	2.59
Scup	0.00	0.00	0.00	0.01	0.42	0.28	0.12	0.12	0.26	1.34	0.59	0.00	3.14
Silver Hake	0.75	0.24	0.84	1.40	2.05	1.11	1.09	2.44	2.51	0.99	5.59	3.89	22.89
Squirrel Hake	0.19	0.06	0.01	0.43	0.59	0.11	0.34	0.42	0.43	0.14	1.21	1.23	5.16
Summer Flounder	0.01	0.02	0.02	0.01	0.08	0.05	0.10	0.33	0.44	0.19	0.89	0.13	2.28
Winter Flounder	0.88	0.65	1.06	1.40	2.28	1.19	1.02	0.50	0.56	1.32	1.68	1.11	13.65
Total Fish	6.83	5.09	8.93	3.69	5.61	2.95	2.86	4.27	4.35	4.23	10.91	6.87	66.60
Lobster	0.00	0.00	0.01	0.01	0.02	0.06	0.09	0.02	0.01	0.01	0.02	0.03	0.26
Squid	0.08	0.08	0.00	0.02	0.31	0.08	0.14	0.15	0.25	0.23	0.38	1.33	3.05
Total Invertebrates	0.08	0.08	0.01	0.03	0.32	0.14	0.23	0.18	0.27	0.24	0.40	1.36	3.31
Total Catch	6.91	5.17	8.94	3.71	5.93	3.09	3.09	4.45	4.61	4.47	11.31	8.23	69.91

Table 108 cont'd. Statistical Area 539, Northeast Fisheries Center, National Marine Fisheries Service. Monthly commercial catch in metric tons per days fished, 1982.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Butterfish	0.89	0.00	0.01	0.07	0.05	0.29	0.21	0.45	0.95	0.87	0.92	0.50	5.20
Cod	0.34	0.25	0.22	0.16	0.09	0.05	0.02	0.01	0.01	0.01	0.12	0.21	1.47
Ocean Pout	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sand Flounder	0.67	0.46	0.36	0.13	0.05	0.06	0.11	0.15	0.20	0.10	0.01	0.13	2.43
Scup	0.01	0.00	0.01	0.08	0.23	0.76	0.31	0.06	0.17	0.92	0.37	0.03	2.95
Silver Hake	2.04	0.24	0.06	3.96	3.50	1.65	2.43	1.28	1.24	2.29	3.41	5.16	27.25
Squirrel Hake	0.44	0.12	0.00	3.73	0.67	0.39	0.43	0.55	0.48	0.23	1.13	2.00	10.17
Summer Flounder	0.09	0.06	0.11	0.07	0.21	0.12	0.16	0.35	0.43	0.18	0.06	0.08	1.92
Winter Flounder	0.57	0.70	1.12	1.29	1.74	2.63	1.69	0.81	0.51	1.28	1.55	1.46	15.35
Total Fish	5.05	1.82	1.88	9.49	6.54	5.95	5.35	3.64	3.99	5.88	7.56	9.58	66.74
Lobster	0.01	0.00	0.00	0.01	0.01	0.04	0.08	0.03	0.01	0.02	0.02	0.01	0.25
Squid	0.28	0.03	0.03	0.03	0.06	0.44	0.43	1.38	0.31	0.78	0.77	1.38	5.90
Total Invertebrates	0.29	0.03	0.03	0.03	0.07	0.49	0.51	1.41	0.32	0.79	0.79	1.39	6.15
Total Catch	5.34	1.85	1.91	9.52	6.61	6.44	5.87	5.06	4.31	6.67	8.35	10.97	72.89

Table 108 cont'd. Statistical Area 539, Northeast Fisheries Center, National Marine Fisheries Service. Monthly commercial catch in metric tons per days fished, 1983.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Butterfish	0.26	0.12	0.01	0.06	0.06	0.17	0.21	0.34	0.73	1.69	0.58	0.30	4.53
Cod	0.20	0.28	0.23	0.15	0.07	0.02	0.03	0.01	0.01	0.00	0.52	0.65	2.16
Ocean Pout	0.00	0.00	0.04	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
Sand Flounder	0.15	0.25	0.25	0.16	0.07	0.10	0.29	0.07	0.06	0.04	0.03	0.08	1.55
Scup	0.02	0.01	0.01	0.06	0.10	0.11	0.08	0.11	0.06	0.56	0.51	0.01	1.63
Silver Hake	3.43	0.72	0.03	0.38	1.62	4.09	0.48	1.35	2.26	1.49	2.36	6.97	25.19
Squirrel Hake	2.29	0.69	0.03	1.03	1.11	1.25	0.38	1.47	1.52	0.38	0.55	2.28	12.99
Summer Flounder	0.05	0.03	0.03	0.03	0.12	0.10	0.13	0.39	0.51	0.09	0.10	0.10	1.66
Winter Flounder	0.82	0.51	1.07	1.09	1.58	1.46	1.34	0.62	0.55	0.50	1.62	1.16	12.32
Total Fish	7.22	2.61	1.70	2.96	4.74	7.30	2.94	4.35	5.71	4.75	6.27	11.55	62.10
Lobster	0.01	0.00	0.00	0.01	0.01	0.07	0.20	0.13	0.03	0.05	0.07	0.06	0.66
Squid	0.42	0.24	0.03	0.06	0.22	0.67	0.50	0.28	0.54	0.83	0.89	0.64	5.32
Total Invertebrates	0.42	0.24	0.04	0.07	0.23	0.74	0.70	0.41	0.58	0.88	0.96	0.70	5.98
Total Catch	7.64	2.86	1.73	3.02	4.97	8.04	3.65	4.76	6.29	5.64	7.23	12.25	68.07

Table 108 cont'd. Statistical Area 539, Northeast Fisheries Center, National Marine Fisheries Service. Monthly commercial catch in metric tons per days fished, 1984.

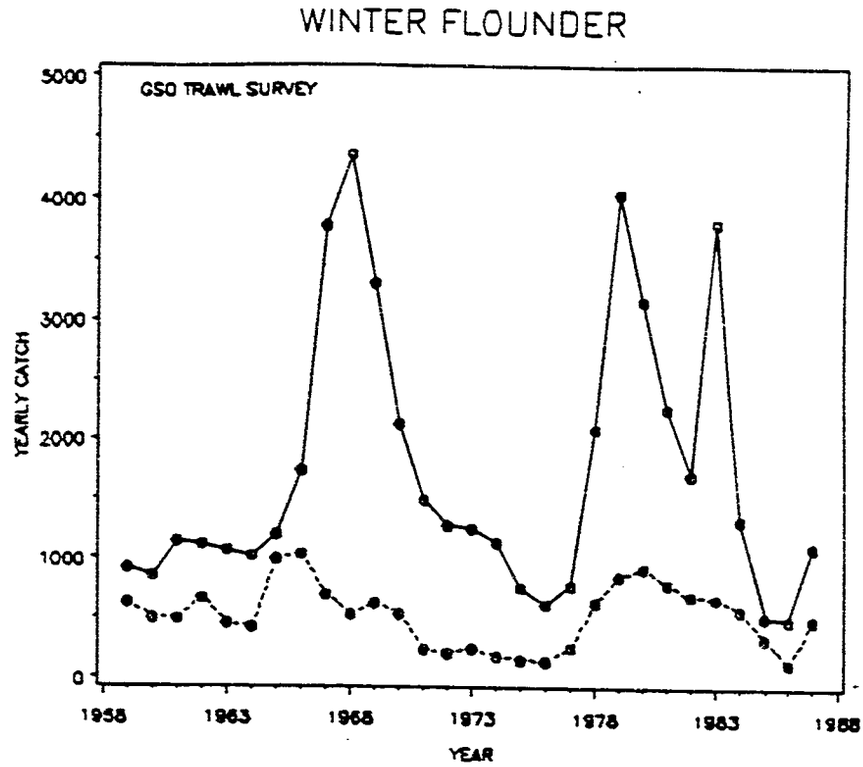
SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Butterfish	0.44	0.05	0.01	0.01	0.08	0.17	0.40	0.59	0.58	0.18	0.41	0.36	3.28
Cod	0.18	0.22	0.37	0.21	0.05	0.01	0.02	0.01	0.53	0.01	0.22	0.29	2.13
Ocean Pout	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sand Flounder	0.15	0.12	0.21	0.12	0.08	0.08	0.09	0.10	0.17	0.07	0.06	0.08	1.32
Scup	0.00	0.00	0.00	0.04	2.18	0.11	0.04	0.13	0.09	0.60	0.38	0.07	3.64
Silver Hake	2.90	0.66	1.18	0.74	3.37	4.66	3.46	0.47	0.49	0.95	1.15	6.13	26.15
Squirrel Hake	1.21	0.65	1.31	0.99	0.70	0.97	0.31	0.63	0.14	0.12	0.43	1.13	8.58
Summer Flounder	0.07	0.03	0.03	0.02	0.13	0.21	0.31	0.36	0.73	0.25	0.18	0.58	2.89
Winter Flounder	0.67	0.66	1.03	1.32	1.42	1.45	1.09	0.88	0.84	1.32	1.36	1.15	13.20
Total Fish	5.63	2.39	4.14	3.43	8.02	7.66	5.72	3.17	3.56	3.51	4.19	9.78	61.20
Lobster	0.01	0.01	0.01	0.04	0.03	0.05	0.10	0.07	0.13	0.12	0.04	0.05	0.68
Squid	0.22	0.04	0.02	0.02	0.17	0.55	0.34	0.35	0.42	0.65	0.93	1.20	4.90
Total Invertebrates	0.23	0.05	0.02	0.06	0.20	0.60	0.45	0.42	0.55	0.77	0.97	1.25	5.58
Total Catch	5.87	2.44	4.16	3.49	8.22	8.26	6.17	3.59	4.11	4.28	5.16	11.03	66.77

Table 108 cont'd. Statistical Area 539, Northeast Fisheries Center, National Marine Fisheries Service. Monthly commercial catch in metric tons per days fished, 1985.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Butterfish	0.17	0.09	0.01	0.01	0.14	0.25	0.30	0.13	0.07	0.23	0.12	0.43	1.97
Cod	0.13	0.45	0.14	0.14	0.04	0.02	0.02	0.04	0.00	0.33	0.11	0.16	1.59
Ocean Pout	4.98	7.81	0.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.58	13.74
Sand Flounder	0.21	0.32	0.17	0.16	0.08	0.04	0.06	0.07	0.06	0.04	0.03	0.06	1.29
Scup	0.01	0.00	0.01	0.04	0.17	0.26	0.11	0.08	0.17	0.54	0.75	0.31	2.44
Silver Hake	1.94	0.08	0.02	0.55	1.67	2.01	0.59	0.46	0.31	0.30	0.33	2.86	11.12
Squirrel Hake	1.08	0.15	0.02	0.09	0.64	0.50	0.18	0.36	0.13	0.04	0.06	0.74	3.98
Summer Flounder	0.16	0.15	0.56	0.12	0.29	0.14	0.15	0.34	0.35	0.14	0.10	0.24	2.75
Winter Flounder	1.36	1.01	1.39	1.58	1.56	1.29	0.74	0.47	0.20	0.37	0.44	0.84	11.27
Total Fish	10.04	10.06	2.69	2.69	4.60	4.53	2.15	1.96	1.29	1.98	1.94	6.22	50.15
Lobster	0.02	0.01	0.03	0.01	0.01	0.02	0.05	0.07	0.04	0.08	0.25	0.12	0.72
Squid	0.63	0.04	0.08	0.04	0.16	0.16	0.33	0.23	0.12	0.72	0.78	0.54	3.85
Total Invertebrates	0.65	0.06	0.11	0.06	0.18	0.18	0.38	0.31	0.16	0.80	1.03	0.66	4.57
Total Catch	10.69	10.12	2.80	2.75	4.77	4.71	2.53	2.27	1.45	2.78	2.97	6.88	54.72

Table 108 cont'd. Statistical Area 539, Northeast Fisheries Center, National Marine Fisheries Service. Monthly commercial catch in metric tons per days fished, 1986.

SPECIES	MONTH: JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Butterfish	0.11	0.01	0.04	0.02	0.07	0.15	0.30	0.10	0.11	0.08	0.16	0.10	1.24
Cod	0.19	0.19	0.21	0.20	0.05	0.02	0.01	0.00	0.00	0.03	0.07	0.07	1.04
Ocean Pout	2.46	1.02	2.81	0.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	7.18
Sand Flounder	0.17	0.23	0.38	0.21	0.10	0.04	0.12	0.04	0.06	0.06	0.03	0.06	1.50
Scup	0.02	0.00	0.05	0.11	0.22	0.20	0.25	0.16	0.10	0.30	0.56	0.05	2.01
Silver Hake	2.86	0.26	0.30	0.36	1.87	1.00	0.38	0.79	0.57	0.64	0.39	3.87	13.28
Squirrel Hake	0.49	0.14	0.08	0.27	0.55	0.22	0.28	0.24	0.08	0.05	0.16	0.53	3.09
Summer Flounder	0.11	0.06	0.04	0.08	0.27	0.22	0.23	0.52	0.57	0.46	0.28	0.13	2.98
Winter Flounder	0.74	0.47	0.73	1.16	1.06	0.96	0.55	0.18	0.18	0.49	0.76	0.58	7.87
Total Fish	7.16	2.39	4.64	3.15	4.19	2.80	2.12	2.04	1.67	2.10	2.42	5.52	40.20
Lobster	0.03	0.00	0.01	0.01	0.02	0.06	0.35	0.06	0.06	0.06	0.06	0.03	0.74
Squid	0.37	0.09	0.13	0.07	0.32	0.58	0.77	0.22	0.27	0.50	0.60	0.37	4.30
Total Invertebrates	0.40	0.09	0.14	0.08	0.34	0.64	1.13	0.28	0.33	0.56	0.66	0.40	5.04
Total Catch	7.56	2.48	4.78	3.22	4.53	3.43	3.25	2.32	2.00	2.66	3.08	5.92	45.24



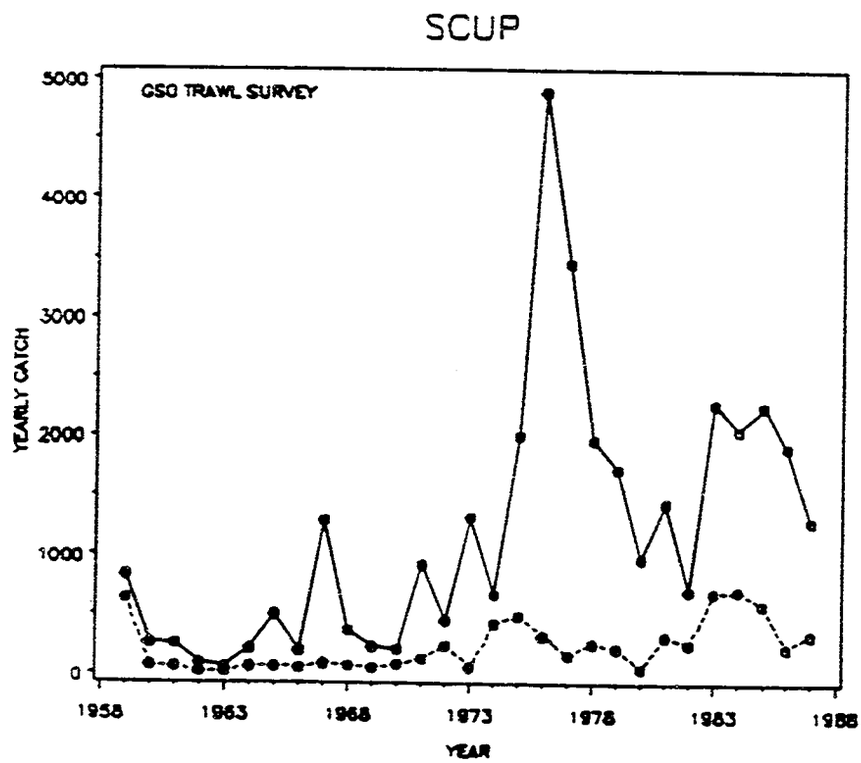
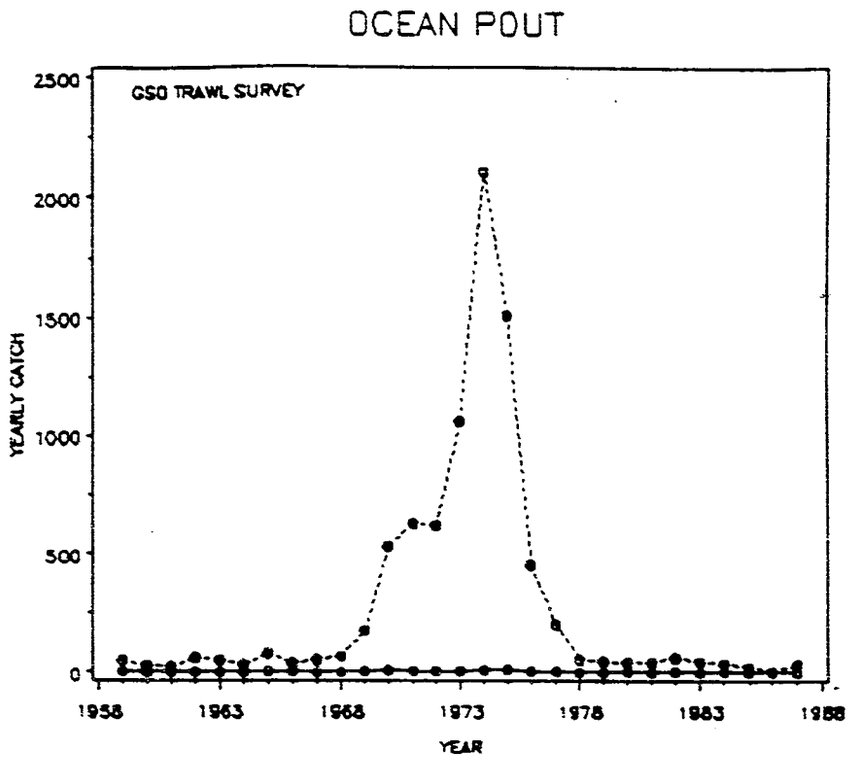


Fig. 3. Narragansett Bay. Winter flounder and scup. Annual sum of mean monthly catch (number per 30 min. tow) at Fox Island (solid line) and Whale Rock (dashed line). 1959-1987.



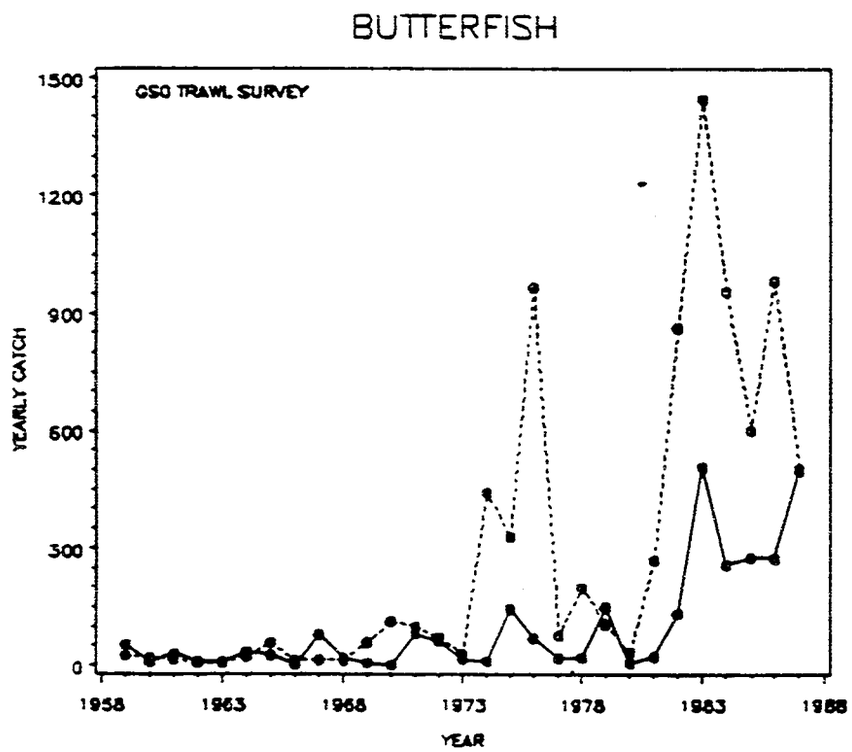
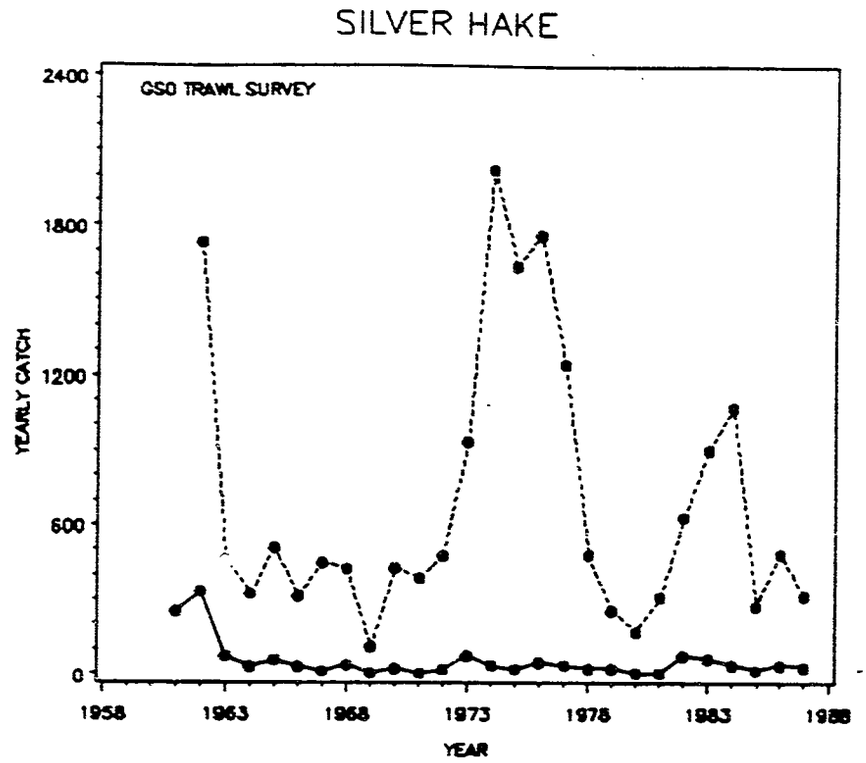


Fig. 4. Narragansett Bay. Ocean pout and butterfish. Annual sum of mean monthly catch (number per 30 min. tow) at Fox Island (solid line) and Whale Rock (dashed line). 1959-1987.



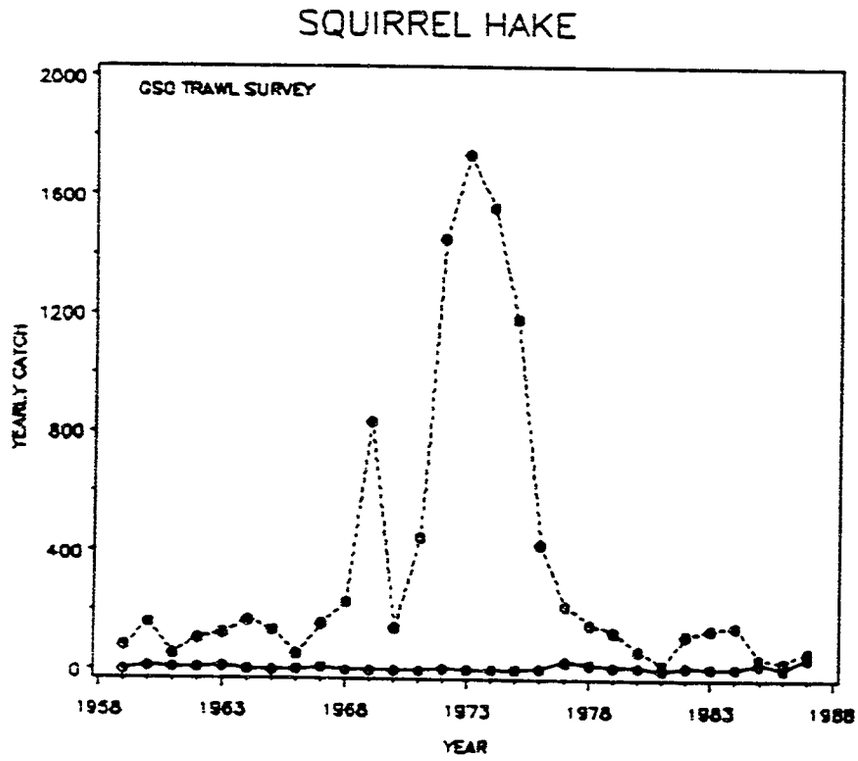
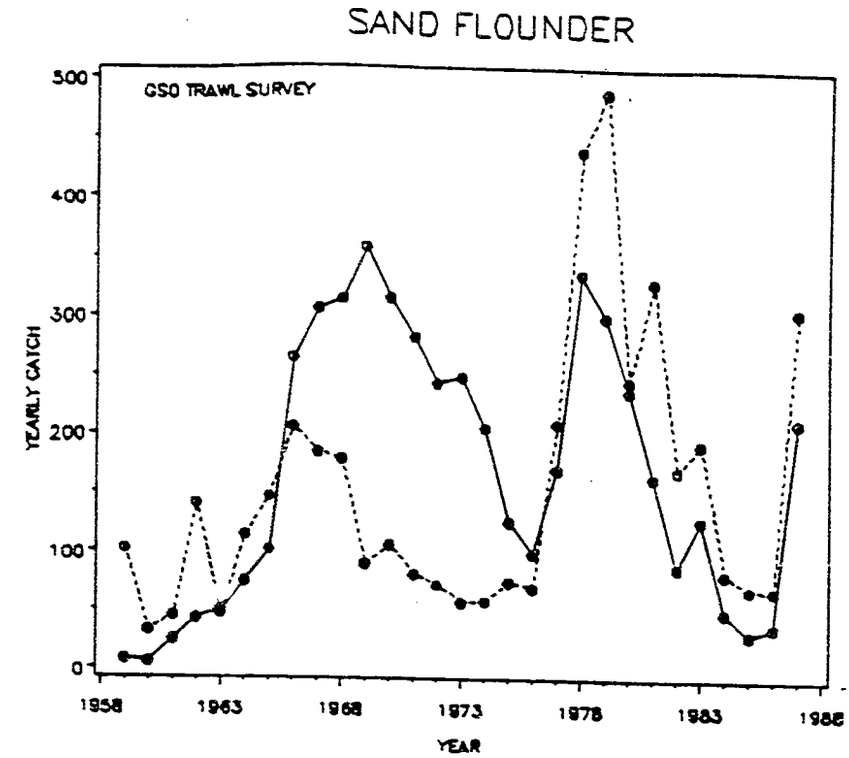


Fig. 5. Narragansett Bay. Silver hake and squirrel hake. Annual sum of mean monthly catch (number per 30 min. tow) at Fox Island (solid line) and Whale Rock (dashed line). 1959-1987.



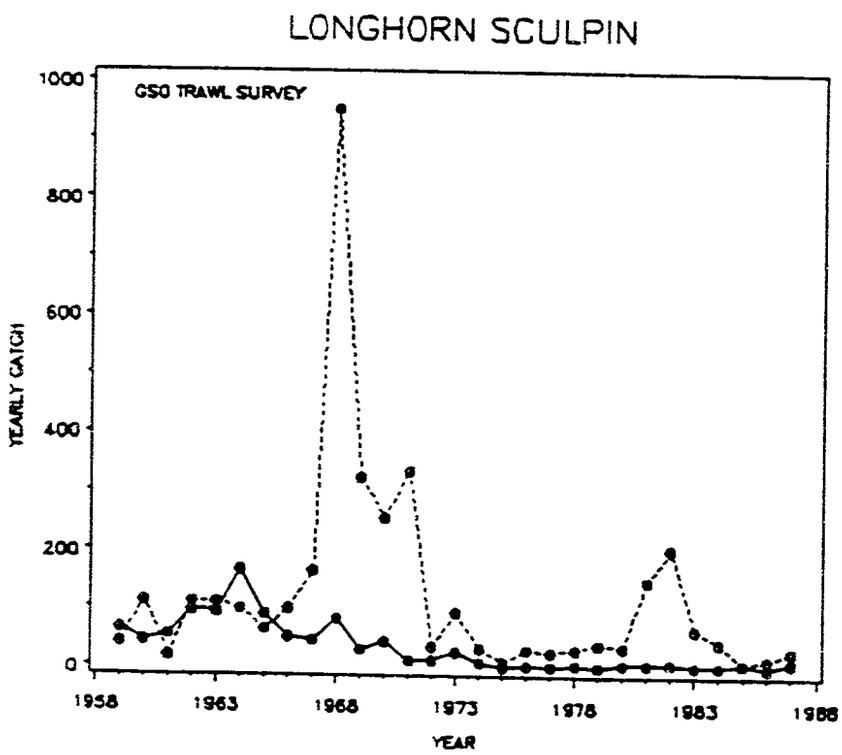
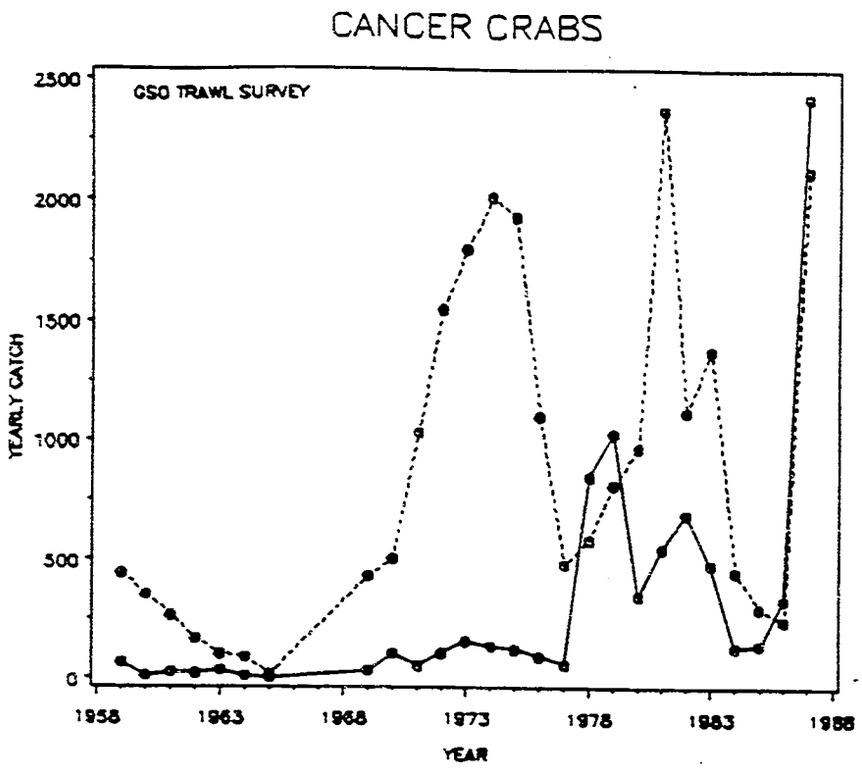


Fig. 6. Narragansett Bay. Sand flounder and longhorn sculpin. Annual sum of mean monthly catch (number per 30 min. tow) at Fox Island (solid line) and Whale Rock (dashed line). 1959-1987.



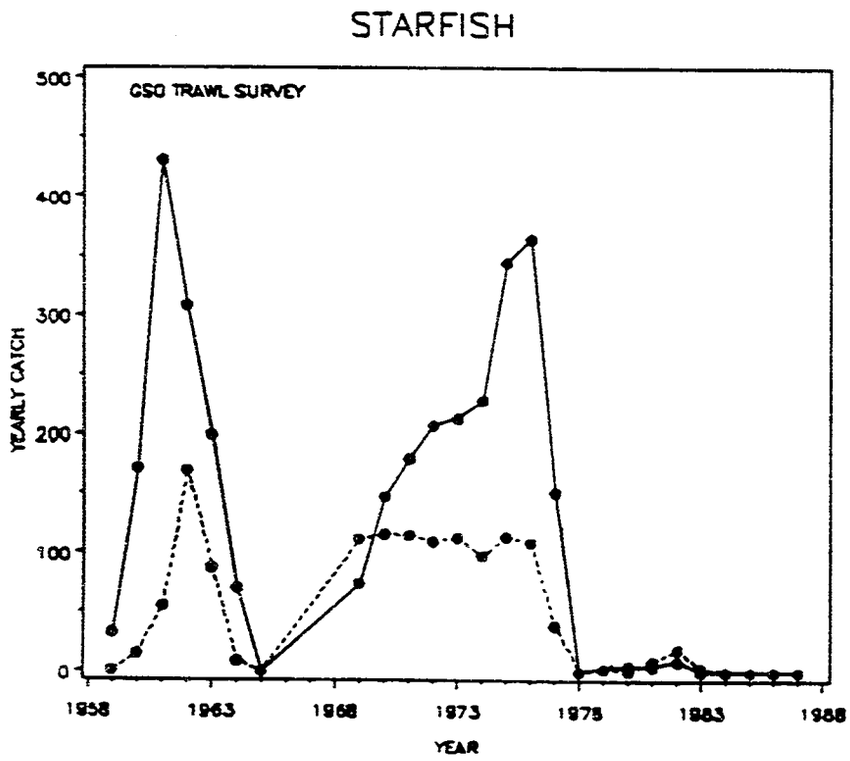
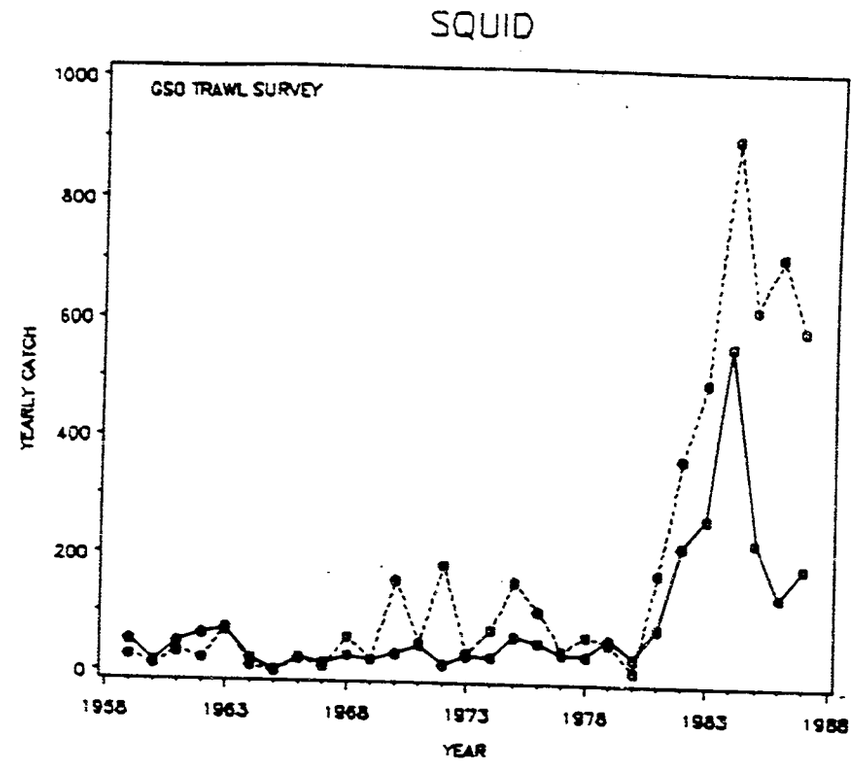


Fig. 7. Narragansett Bay. Cancer crabs and starfish. Annual sum of mean monthly catch (number per 30 min. tow) at Fox Island (solid line) and Whale Rock (dashed line). 1959-1987.



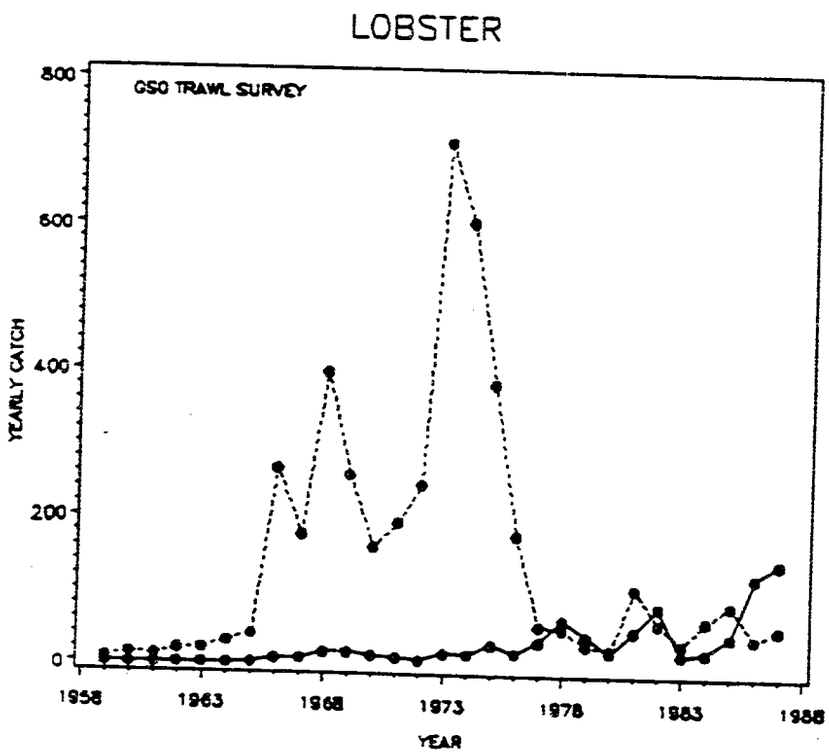
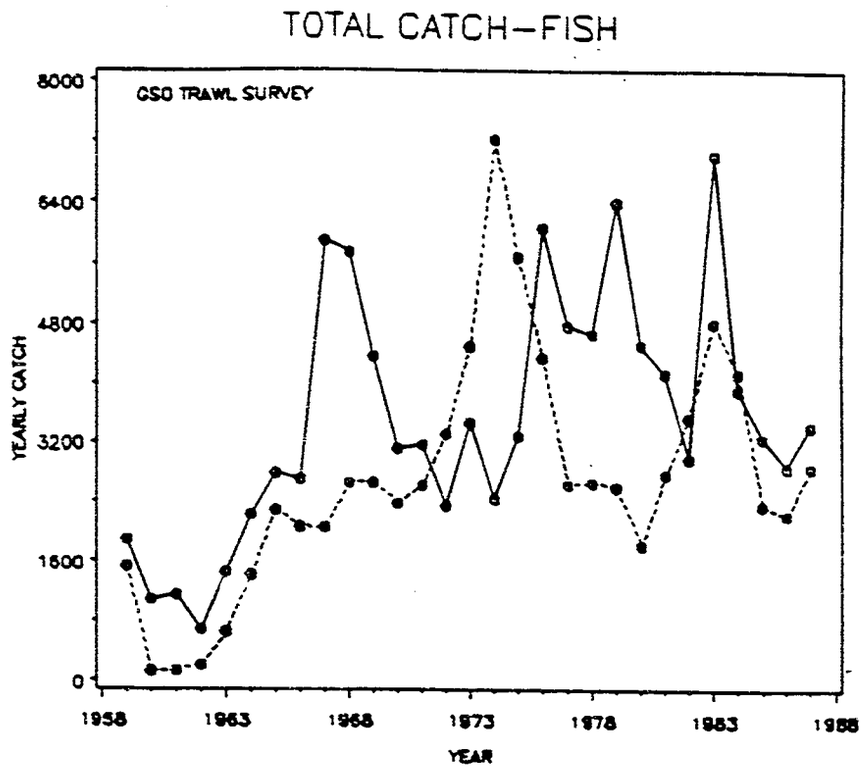


Fig. 8. Narragansett Bay. Squid and lobster. Annual sum of mean monthly catch (number per 30 min. tow) at Fox Island (solid line) and Whale Rock (dashed line). 1959-1987.



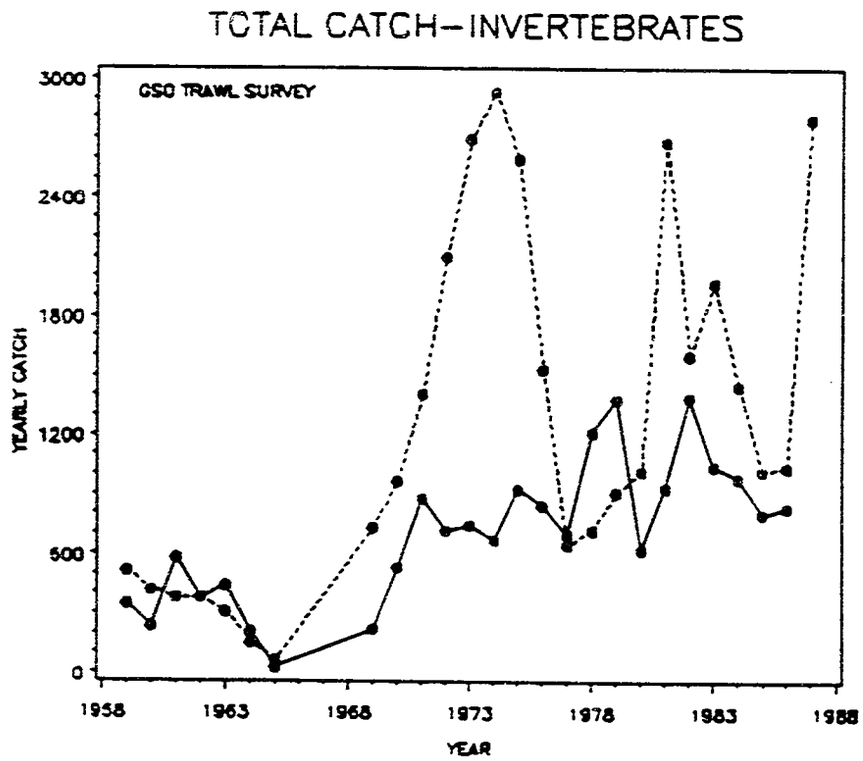
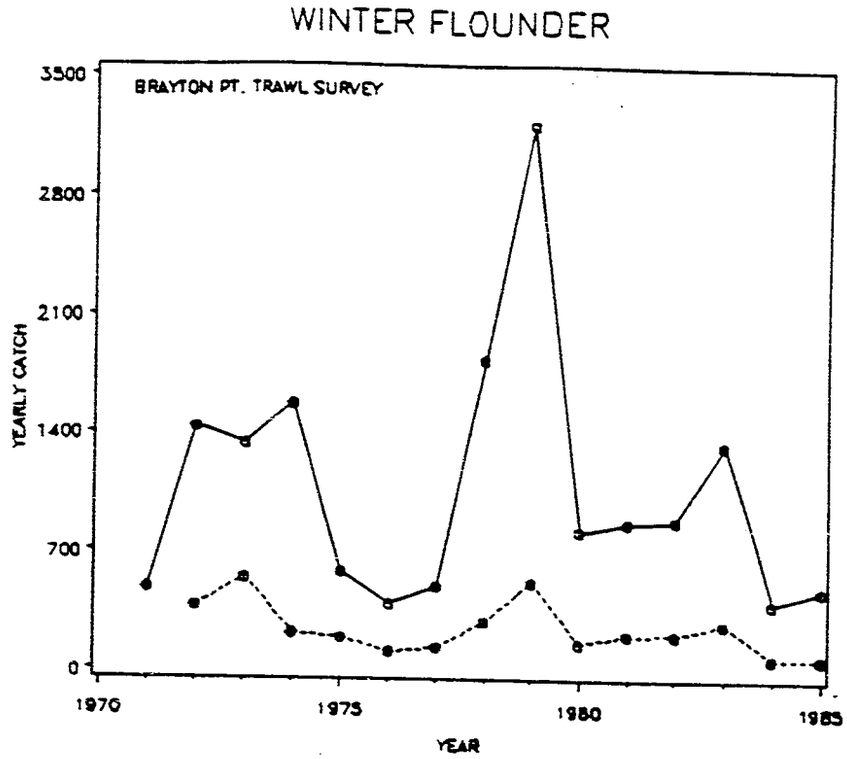


Fig. 9. Narragansett Bay. Total fish and total invertebrates. Annual sum of mean monthly catch (number per 30 min. tow) at Fox Island (solid line) and Whale Rock (dashed line). 1959-1987.



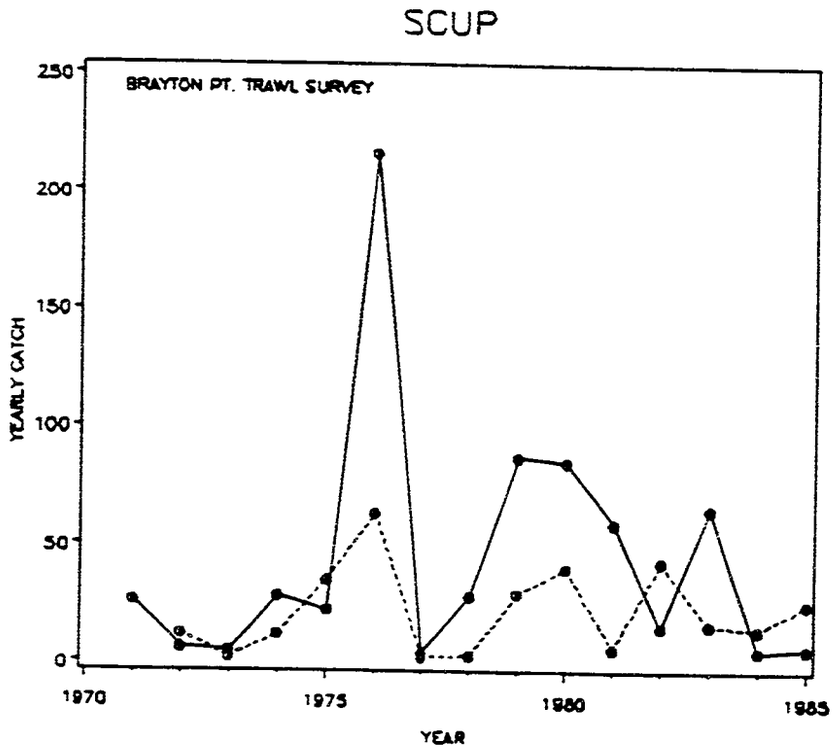
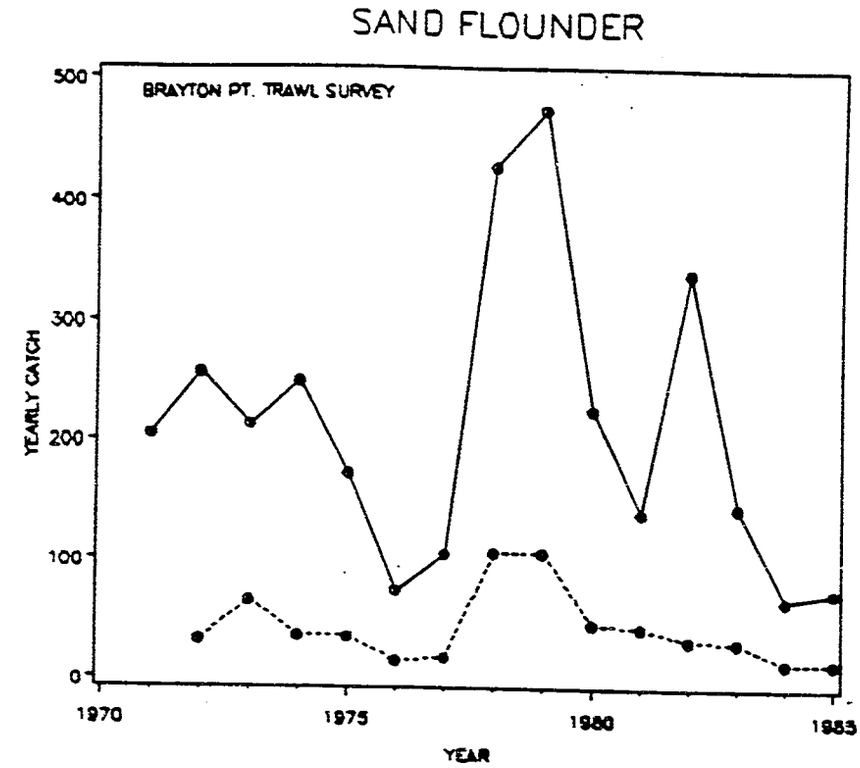


Fig. 10. Mt. Hope Bay. Winter flounder and scup. Annual sum of mean monthly catch (number per 15 min. tow) at Intake (solid line) and Spar (dashed line). 1971-1985.



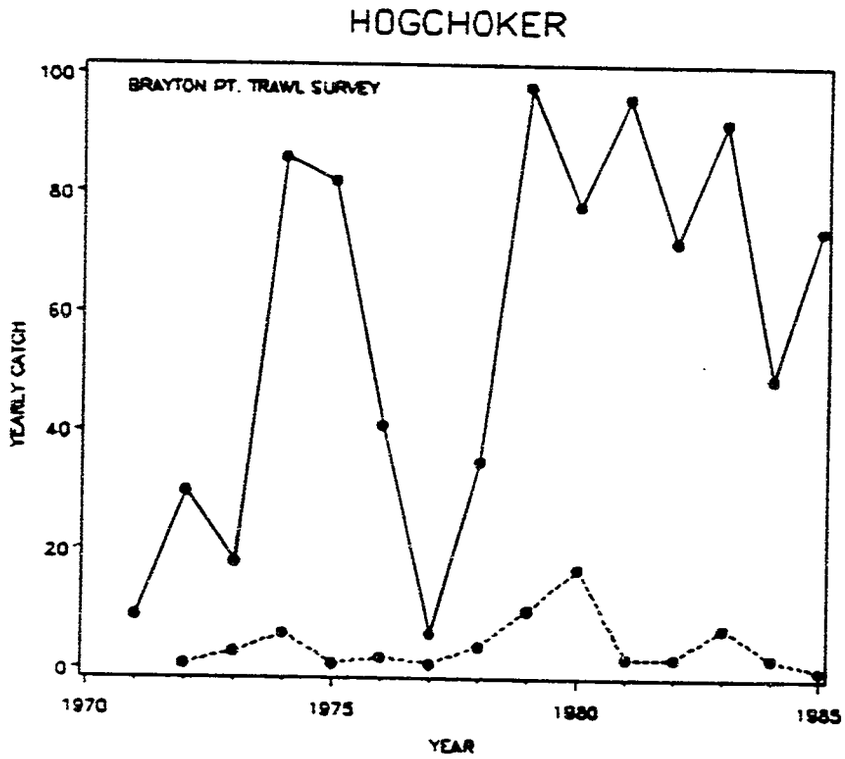
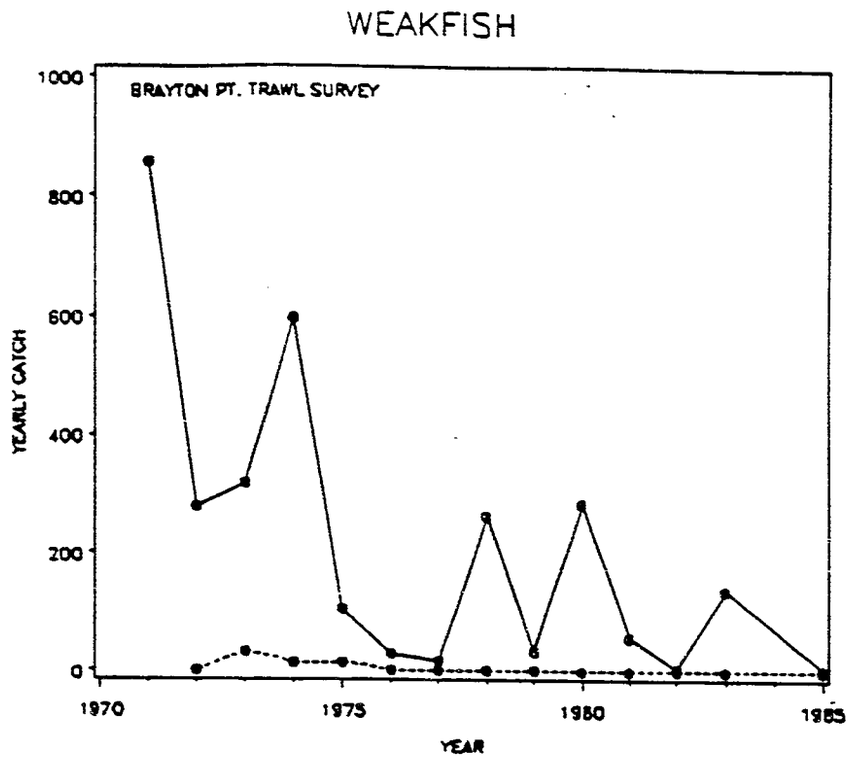


Fig. 11. Mt. Hope Bay. Sand flounder and hogchoker. Annual sum of mean monthly catch (number per 15 min. tow) at Intake (solid line) and Spar (dashed line). 1971-1985.



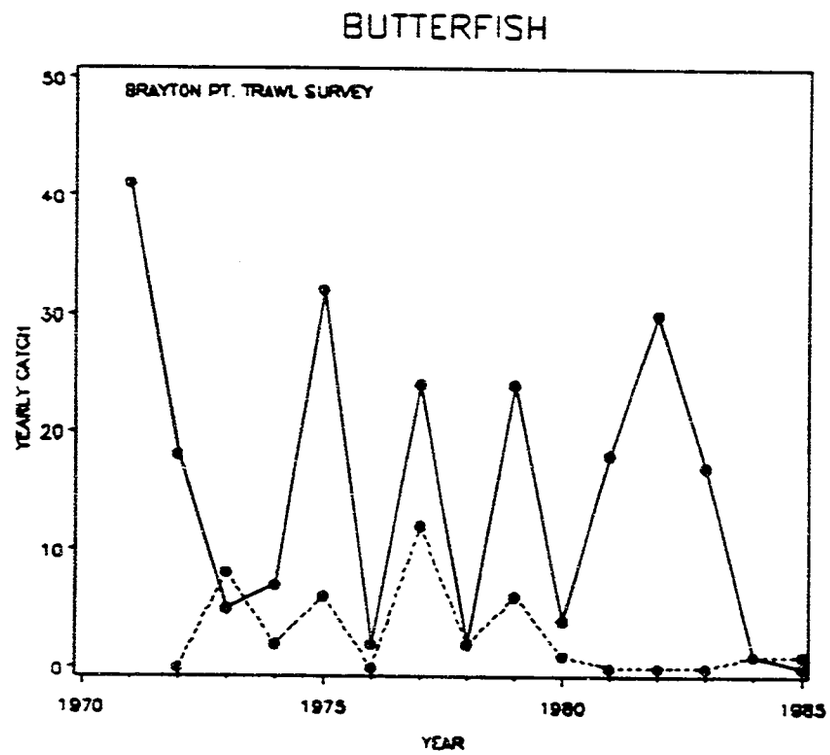
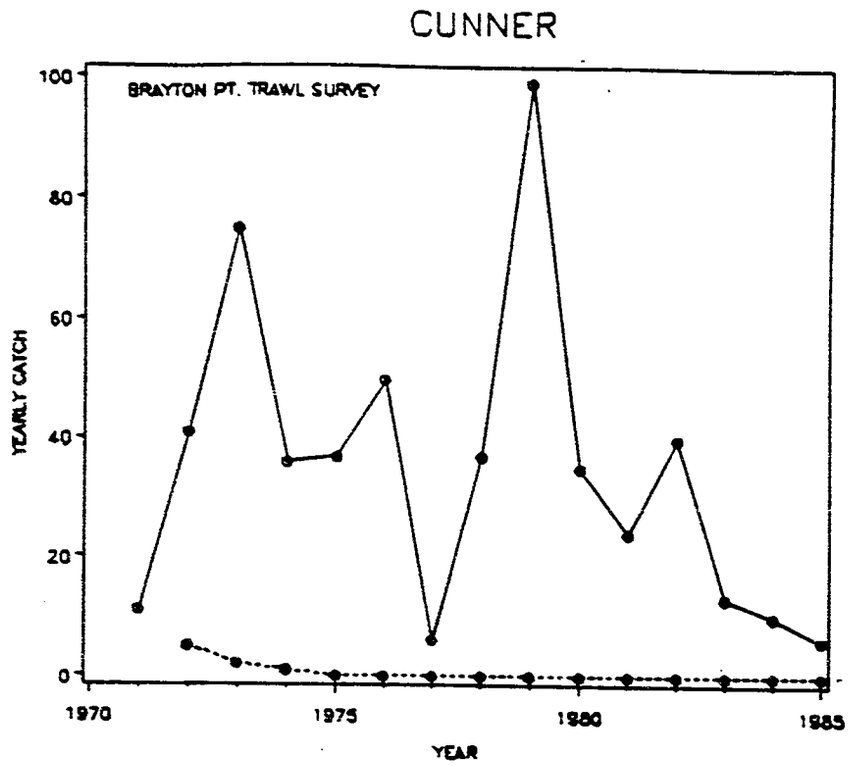


Fig. 12. Mt. Hope Bay. Weakfish and butterfish. Annual sum of mean monthly catch (number per 15 min. tow) at Intake (solid line) and Spar (dashed line). 1971-1985.



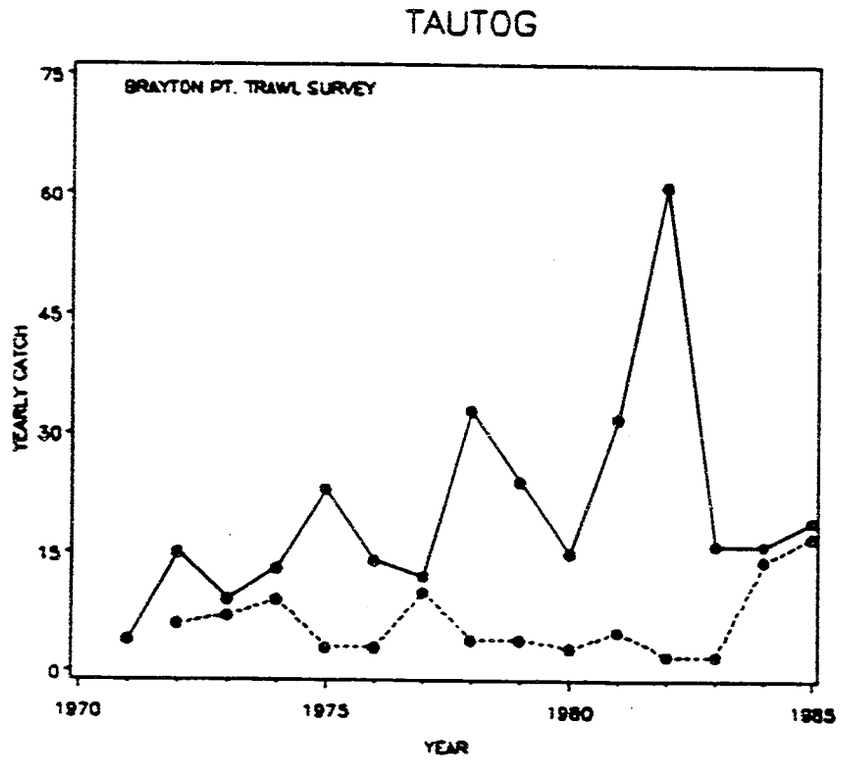
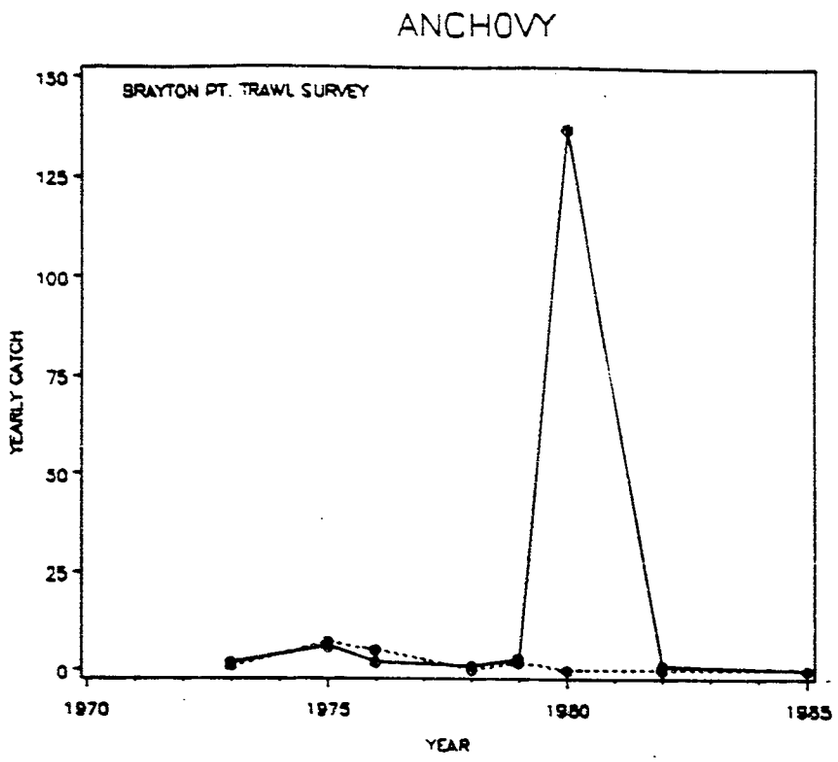


Fig. 13. Mt. Hope Bay. Cunner and tautog. Annual sum of mean monthly catch (number per 15 min. tow) at Intake (solid line) and Spar (dashed line). 1971-1985.



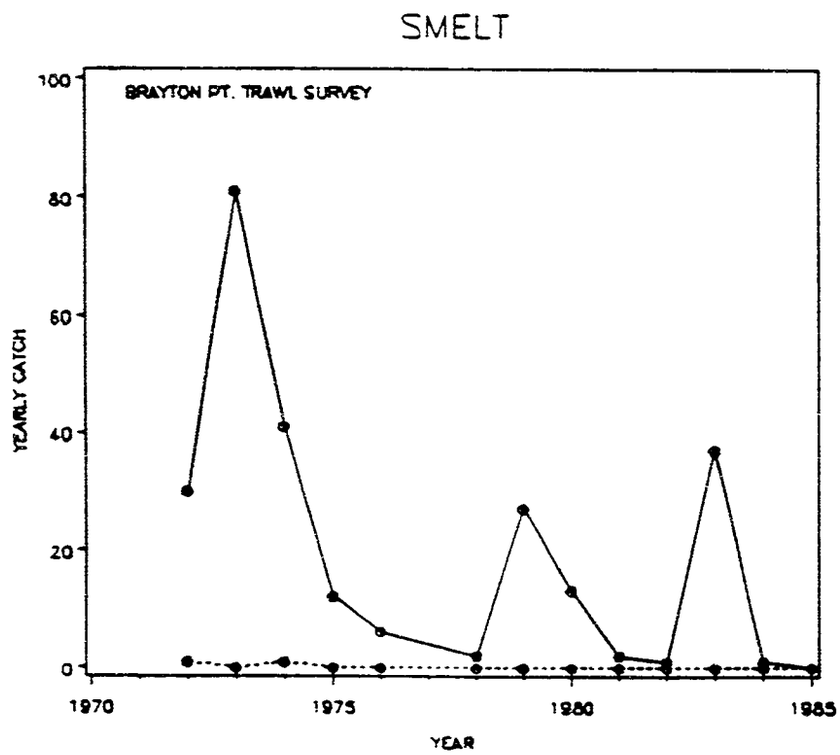


Fig. 14. Mt. Hope Bay. Anchovy and smelt. Annual sum of mean monthly catch (number per 15 min. tow) at Intake (solid line) and Spar (dashed line). 1971-1985.

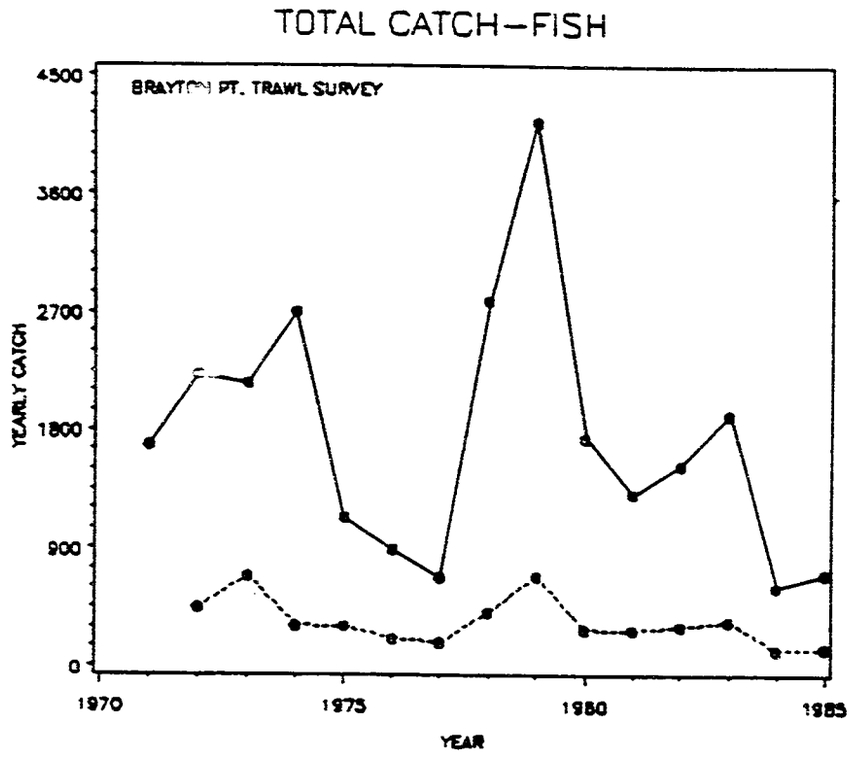
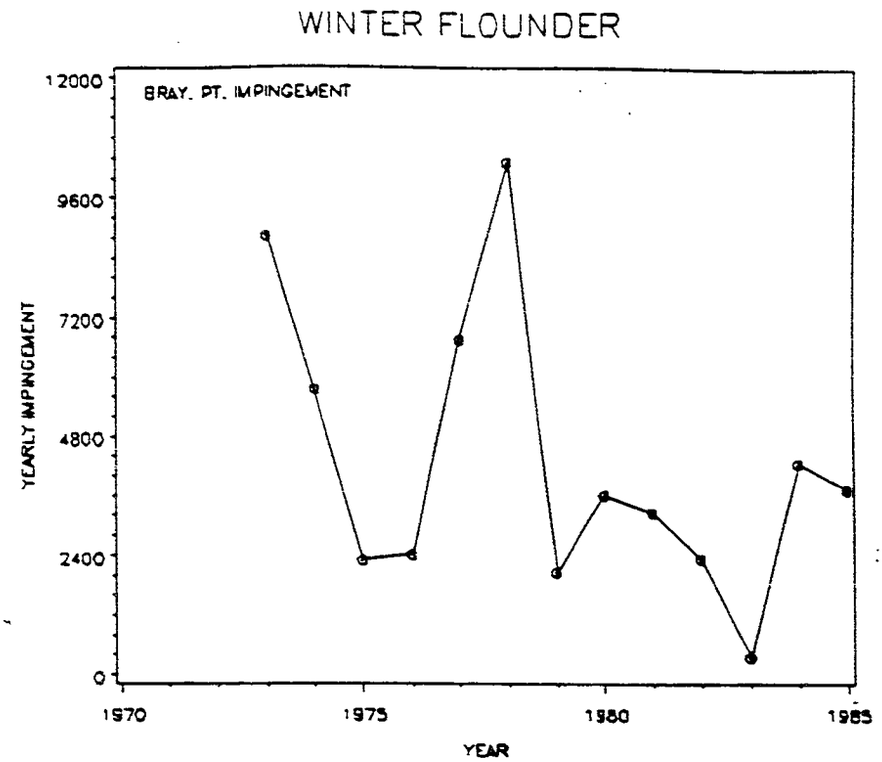


Fig. 15. Mt. Hope Bay. Total fish. Annual sum of mean monthly catch (number per 15 min. tow) at Intake (solid line) and Spar (dashed line). 1971-1985.



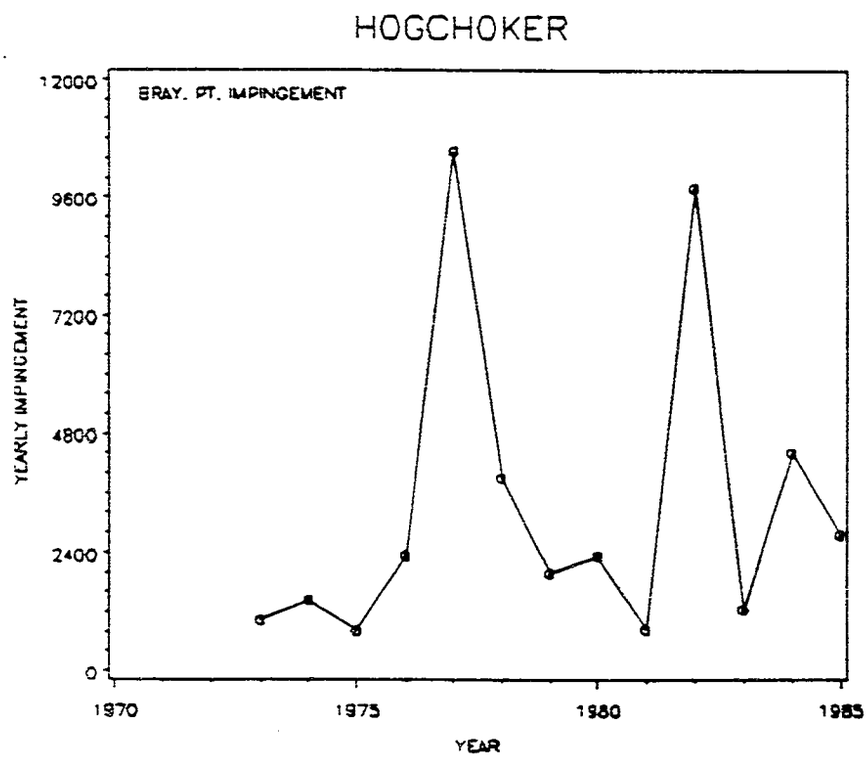
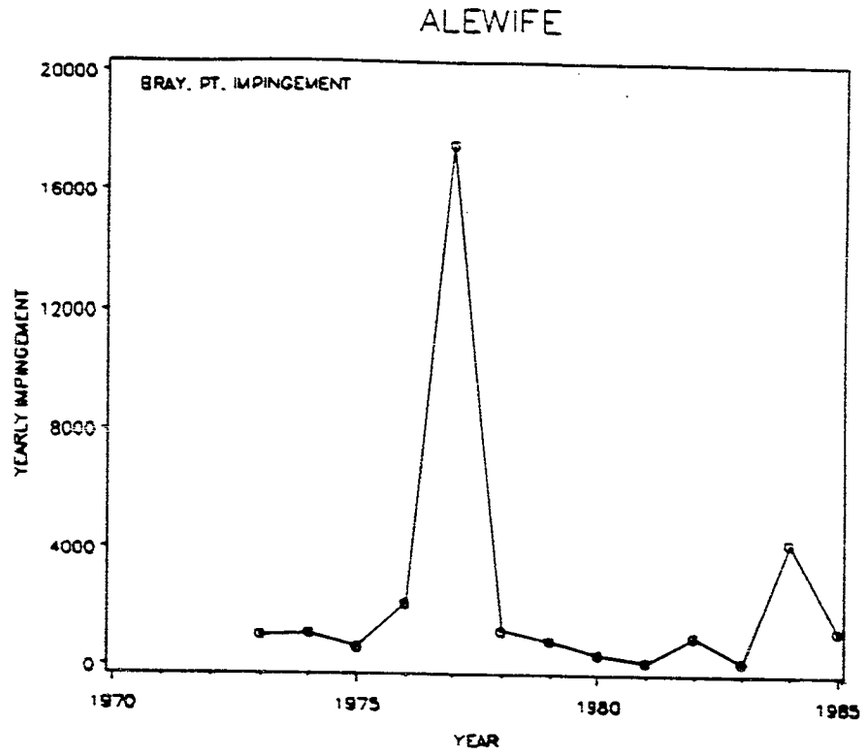


Fig. 16. Brayton Pt. intake screens, Mt. Hope Bay. Winter flounder and hogchoker. Annual sum of quarterly catch in numbers standardized for flow. 1973-1985.



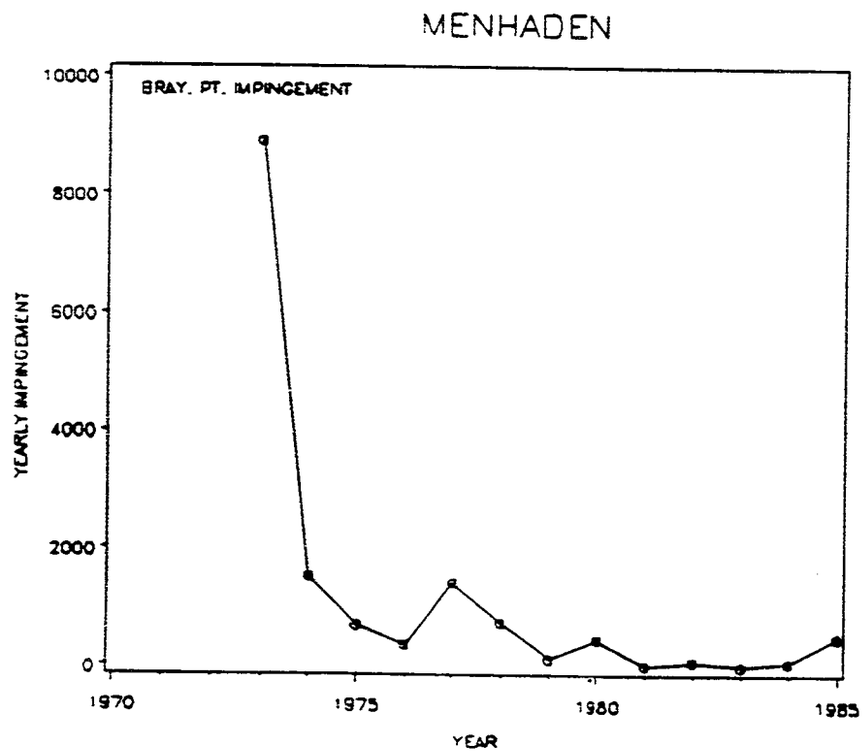
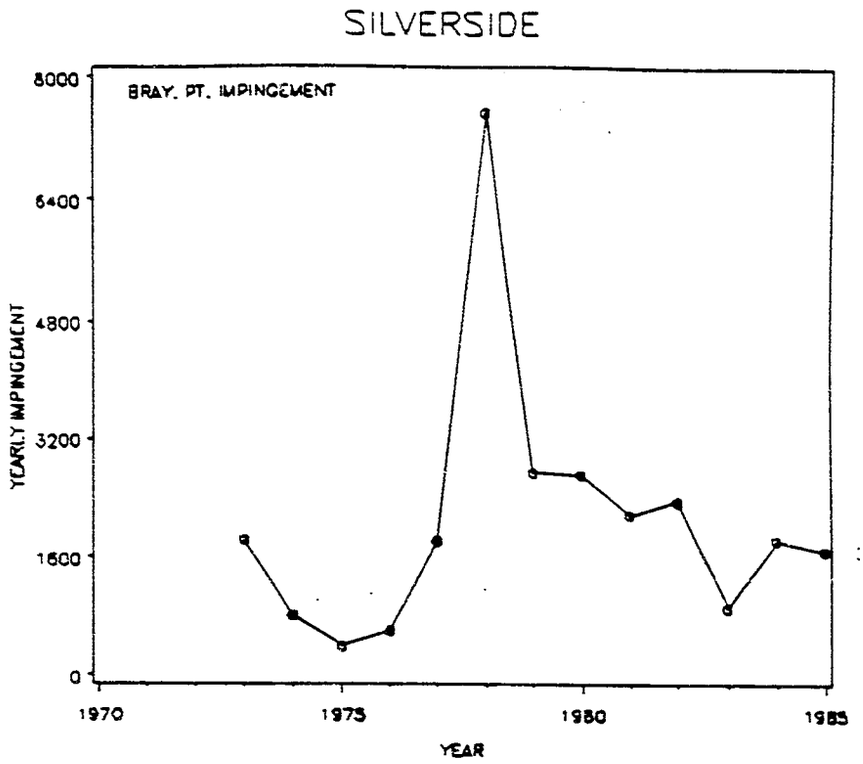


Fig. 17. Brayton Pt. intake screens, Mt. Hope Bay. Alewife and menhaden. Annual sum of quarterly catch in numbers standardized for flow. 1973-1985.



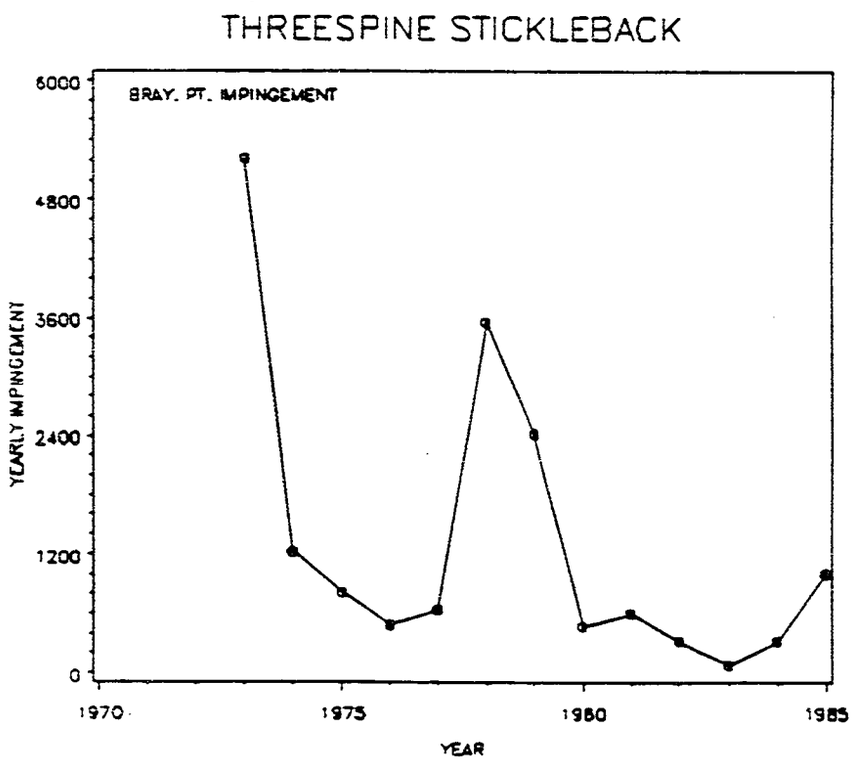
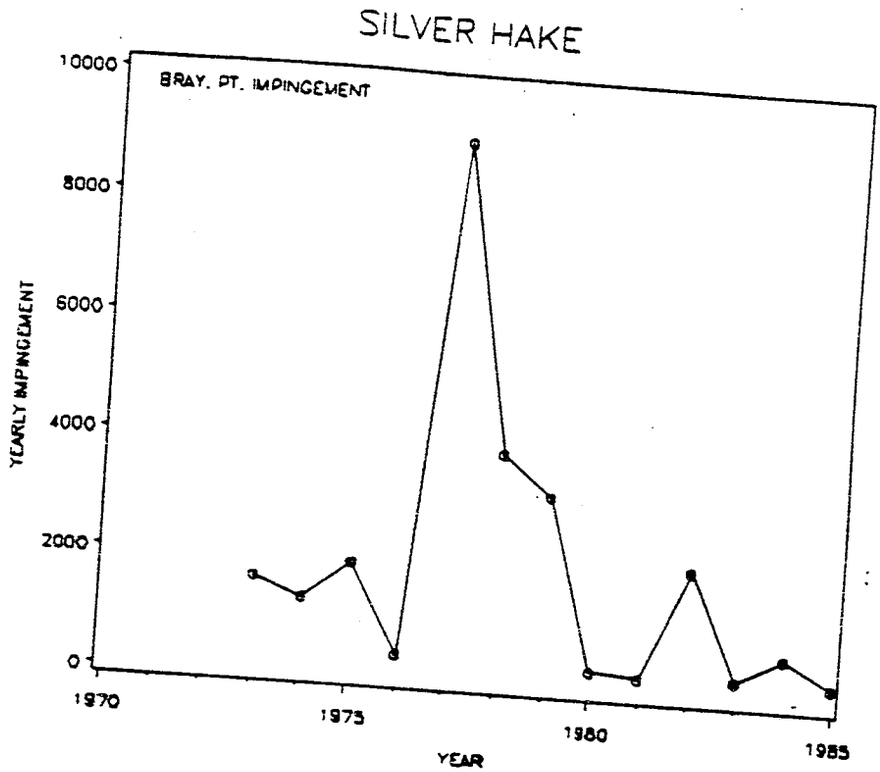


Fig. 18. Brayton Pt. intake screens, Mt. Hope Bay. Silverside and threespine stickleback. Annual sum of quarterly catch in numbers standardized for flow. 1973-1985.



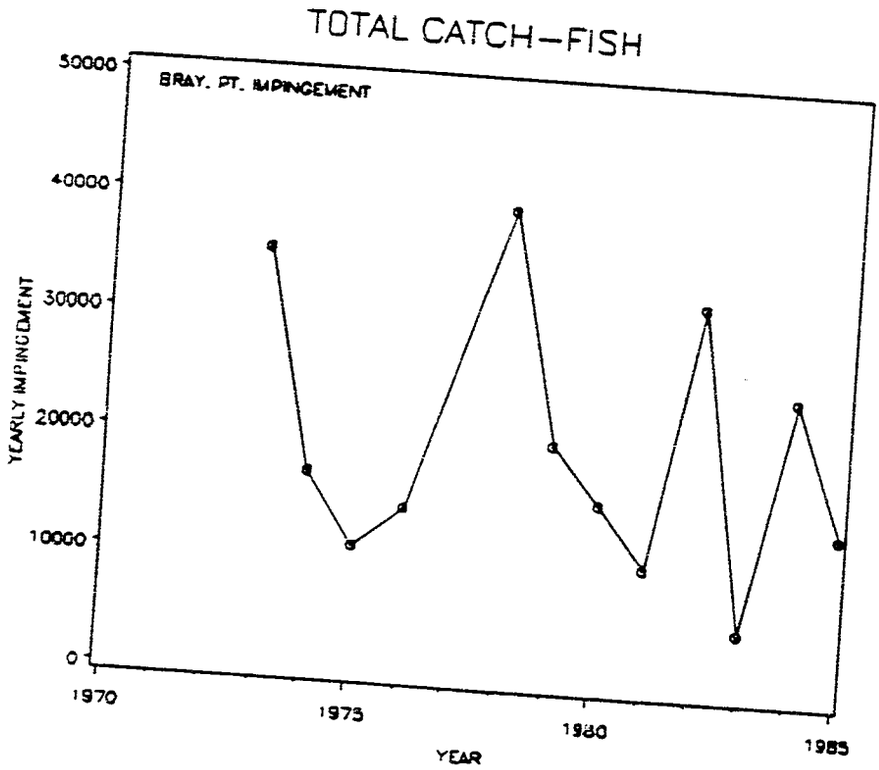
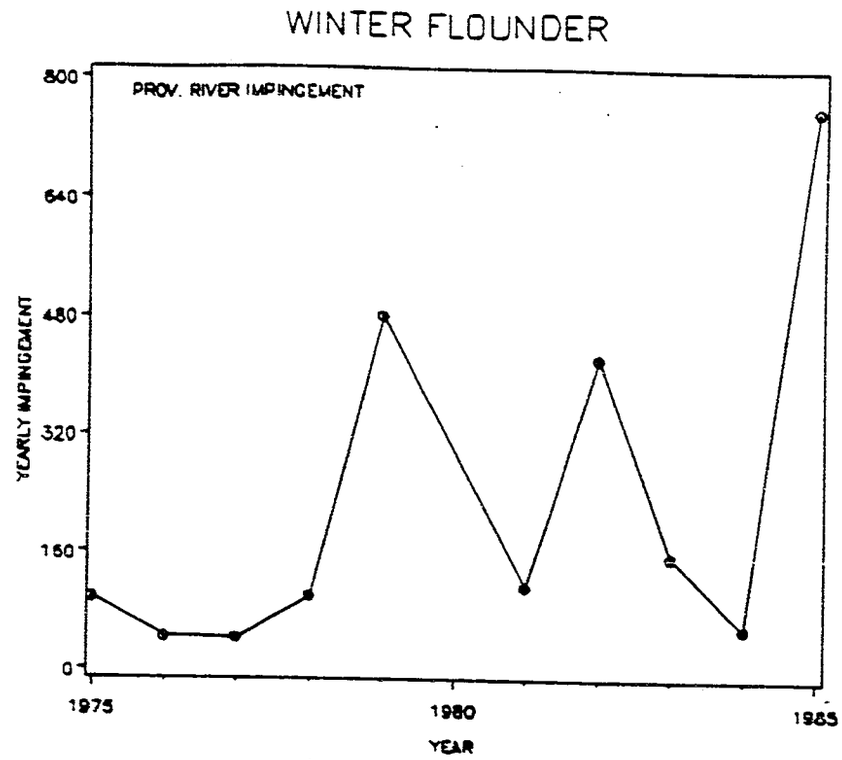


Fig. 19. Brayton Pt. intake screens, Mt. Hope Bay. Silver hake and total fish. Annual sum of quarterly catch in numbers standardized for flow. 1973-1985.



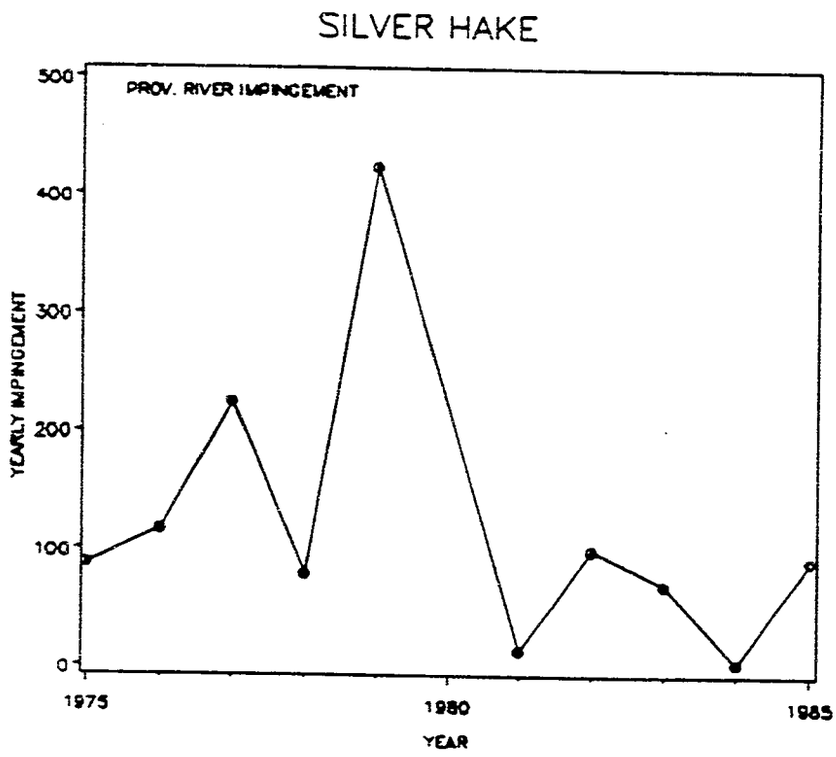
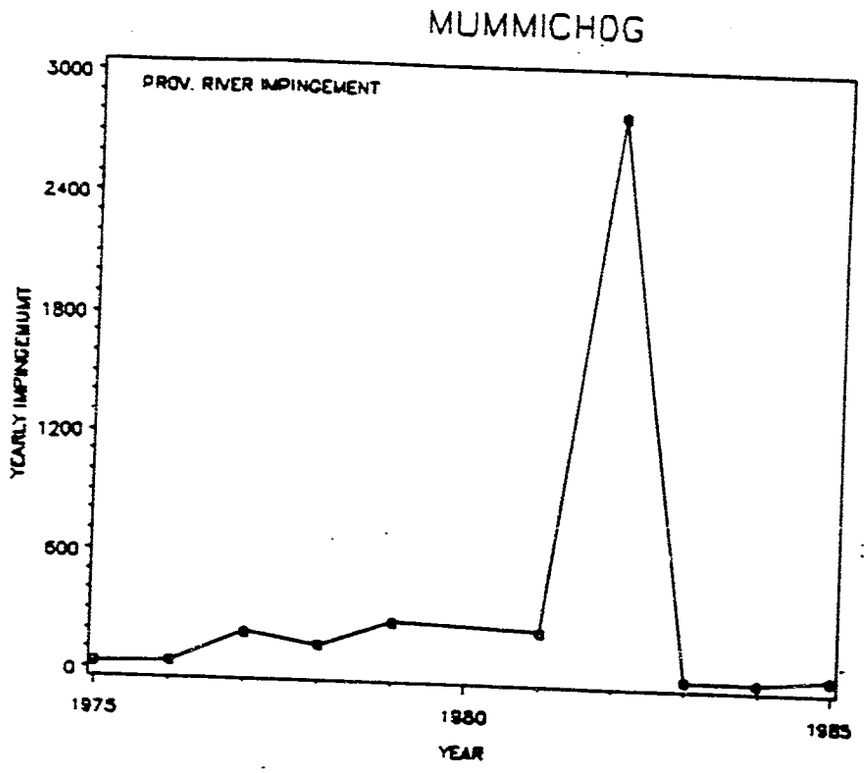


Fig. 20. Manchester Street intake screens, Providence River, Narragansett Bay. Winter flounder and silver hake. Annual sum of mean daily catch by month. 1975-1985.



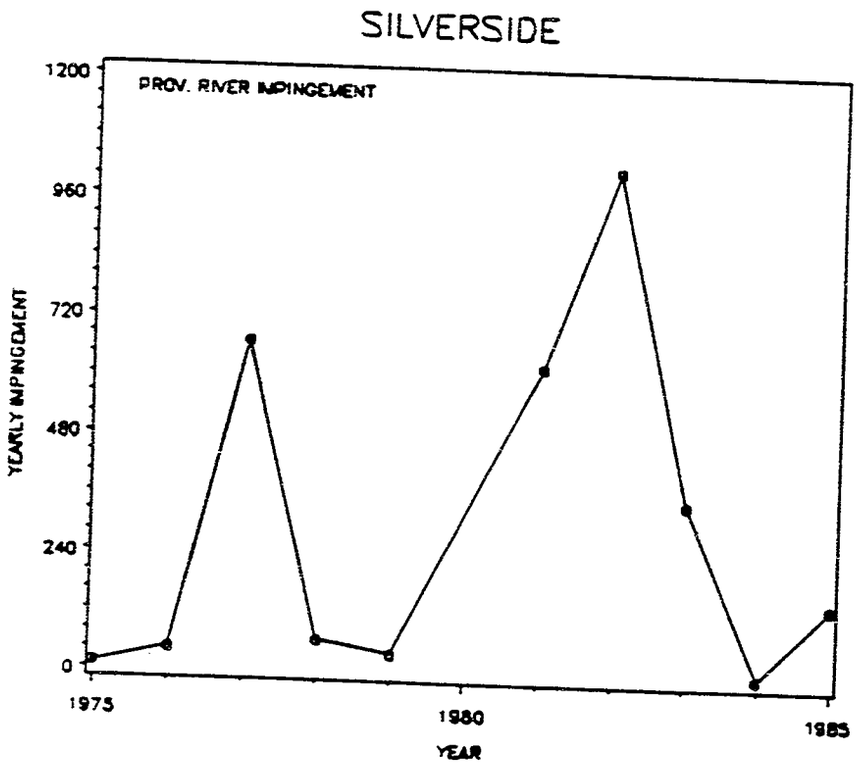
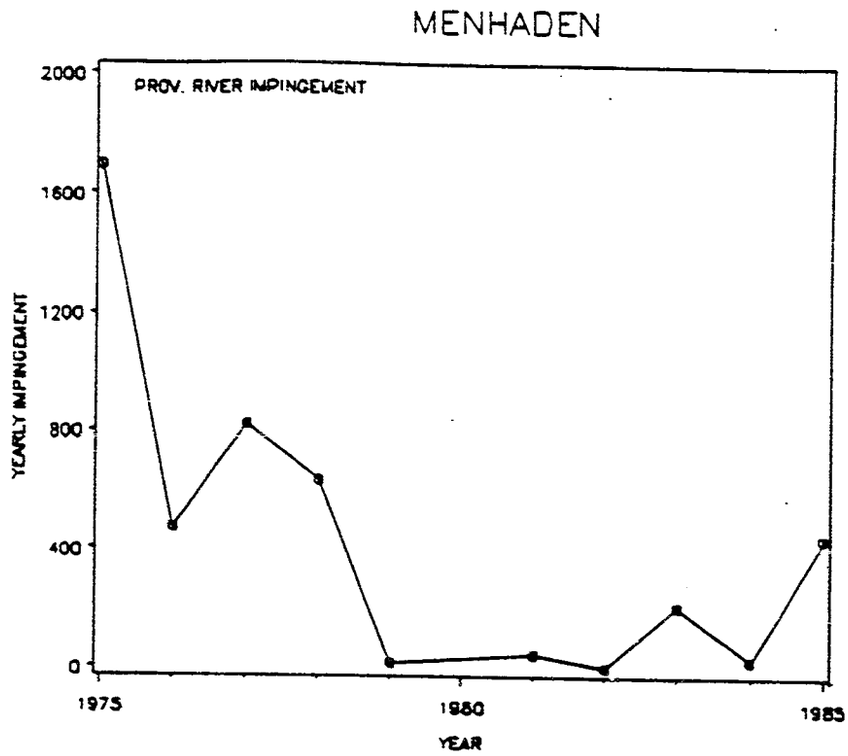


Fig. 21. Manchester Street intake screens, Providence River, Narragansett Bay. Mummichog and silverside. Annual sum of mean daily catch by month. 1975-1985.



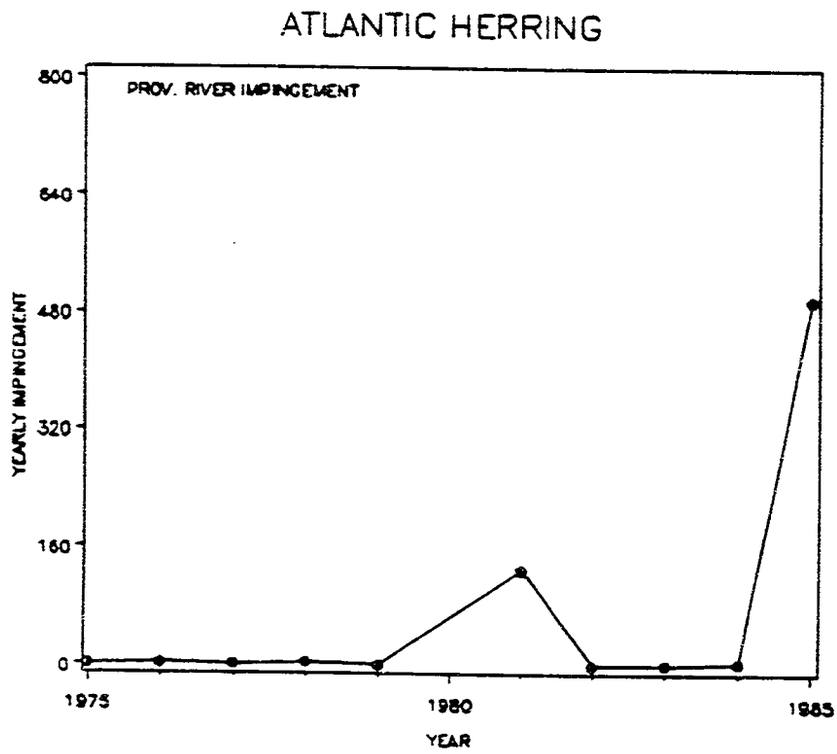
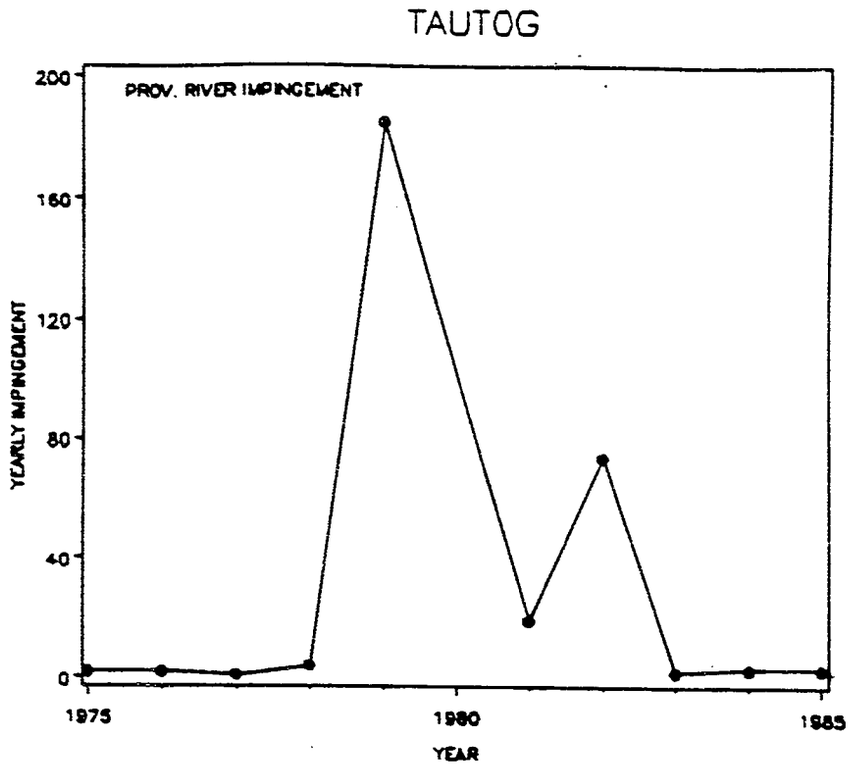


Fig. 22. Manchester Street intake screens, Providence River, Narragansett Bay. Menhaden and Atlantic herring. Annual sum of mean daily catch by month. 1975-1985.



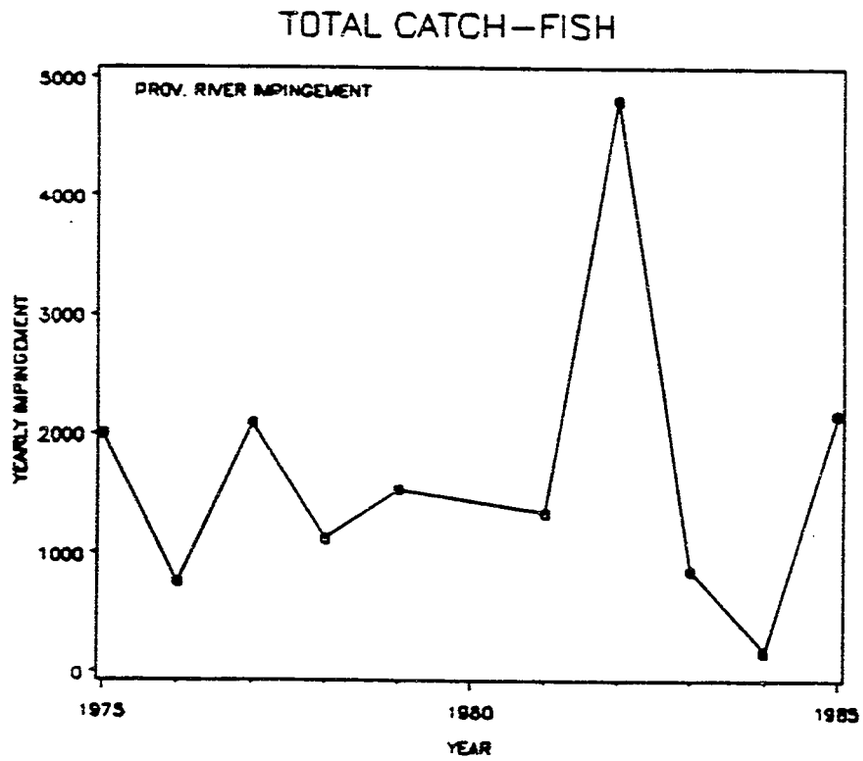


Fig. 23. Manchester Street intake screens, Providence River, Narragansett Bay. Tautog and total fish. Annual sum of mean daily catch by month. 1975-1985.

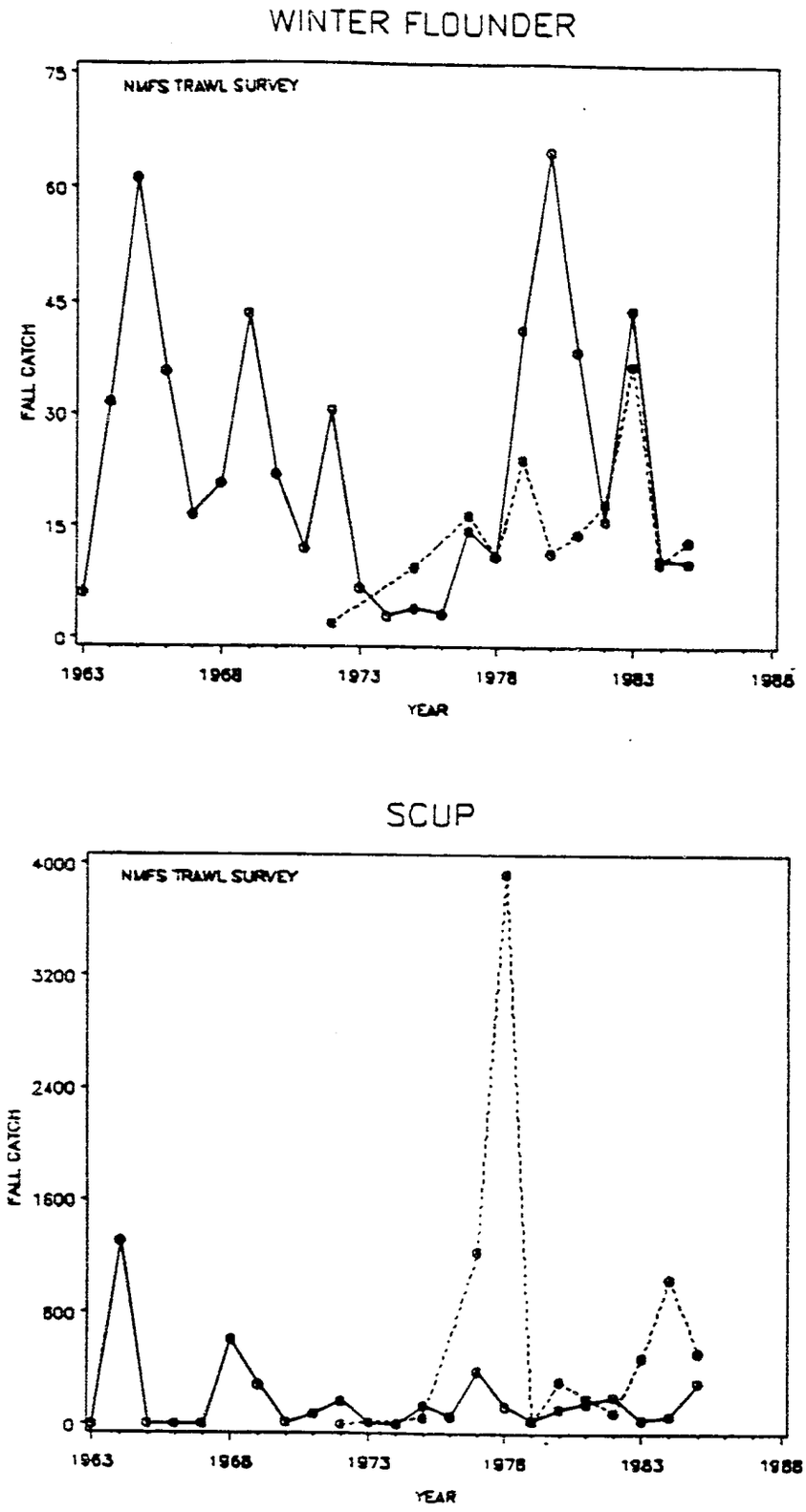
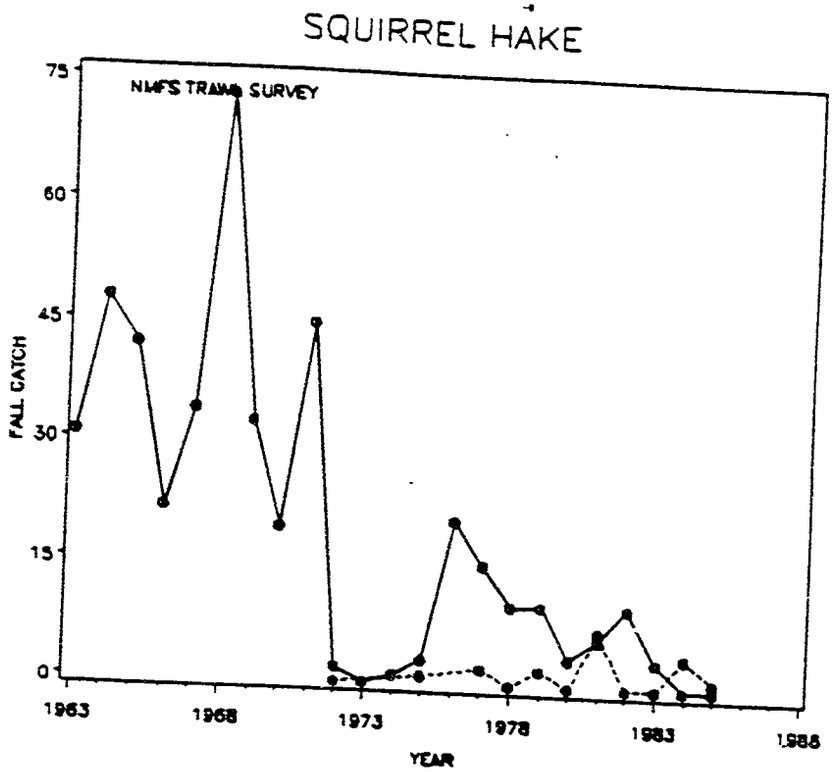


Fig. 24. Winter flounder and scup. National Marine Fisheries Service, Northeast Fisheries Center. Autumn survey. Mean catch per 30 min trawl for stratum 5 (solid line) and stratum 45 (dashed line). 1963-1985.



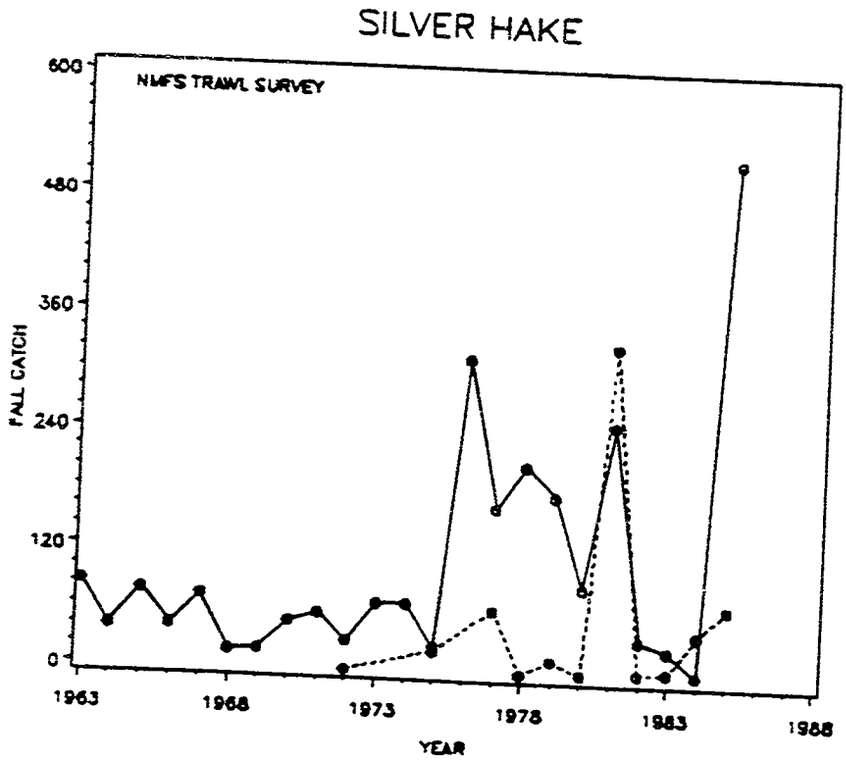
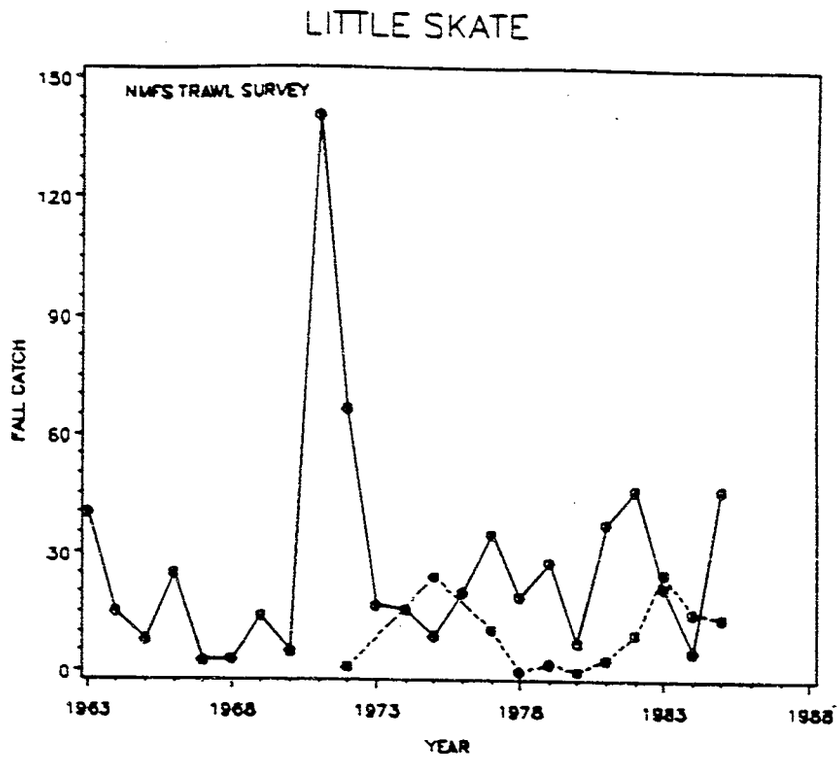


Fig. 25. Squirrel hake and silver hake. National Marine Fisheries Service, Northeast Fisheries Center. Autumn survey. Mean catch per 30 min. trawl for stratum 5 (solid line) and stratum 45 (dashed line). 1963-1985.



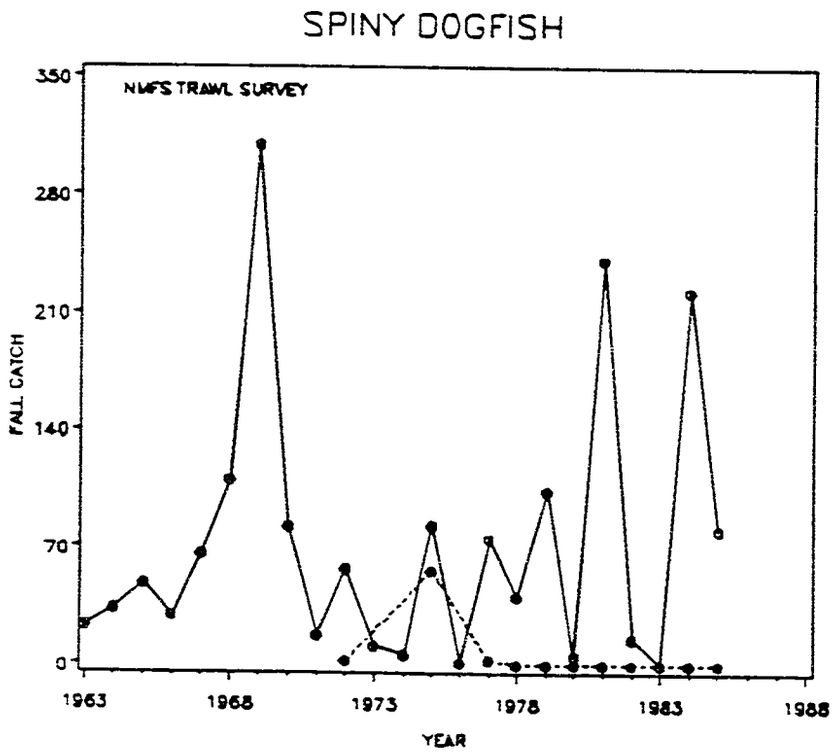
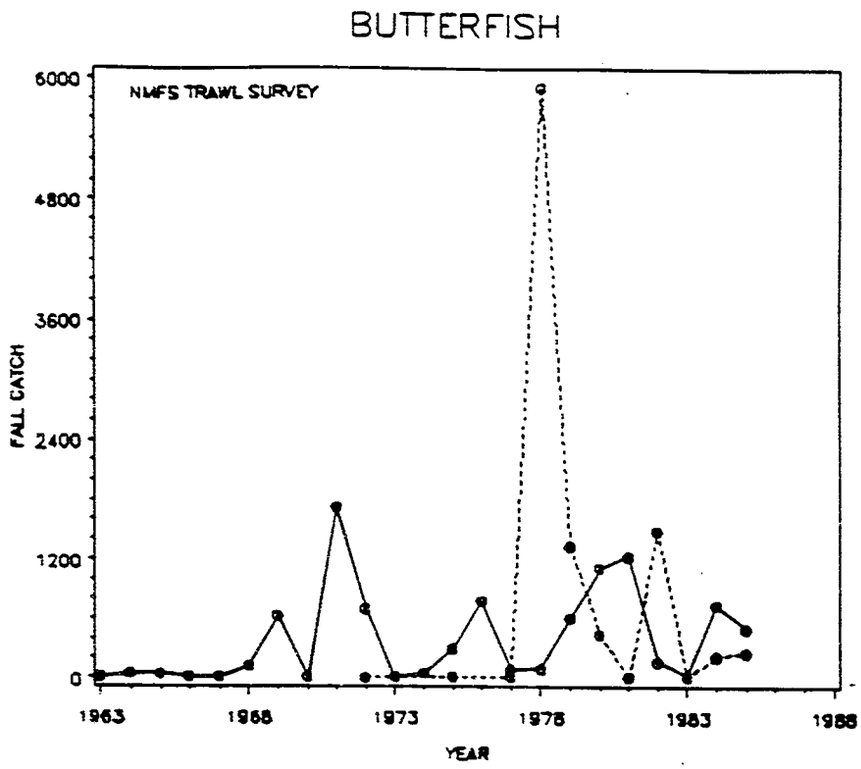


Fig. 26. Little skate and spiny dogfish. National Marine Fisheries Service, Northeast Fisheries Center. Autumn survey. Mean catch per 30 min. trawl for stratum 5 (solid line) and stratum 45 (dashed line). 1963-1985.



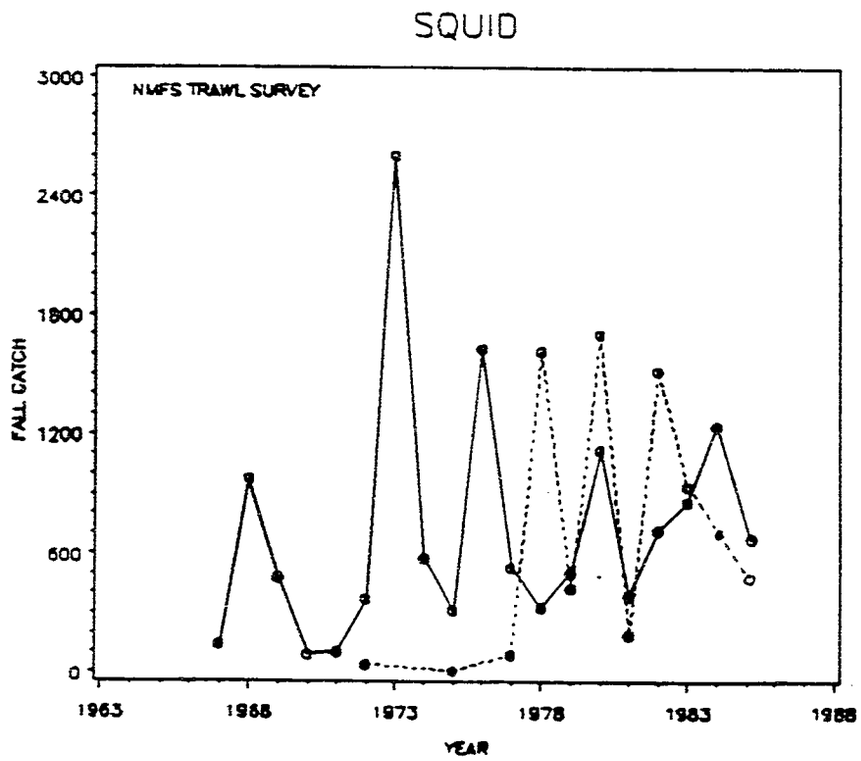
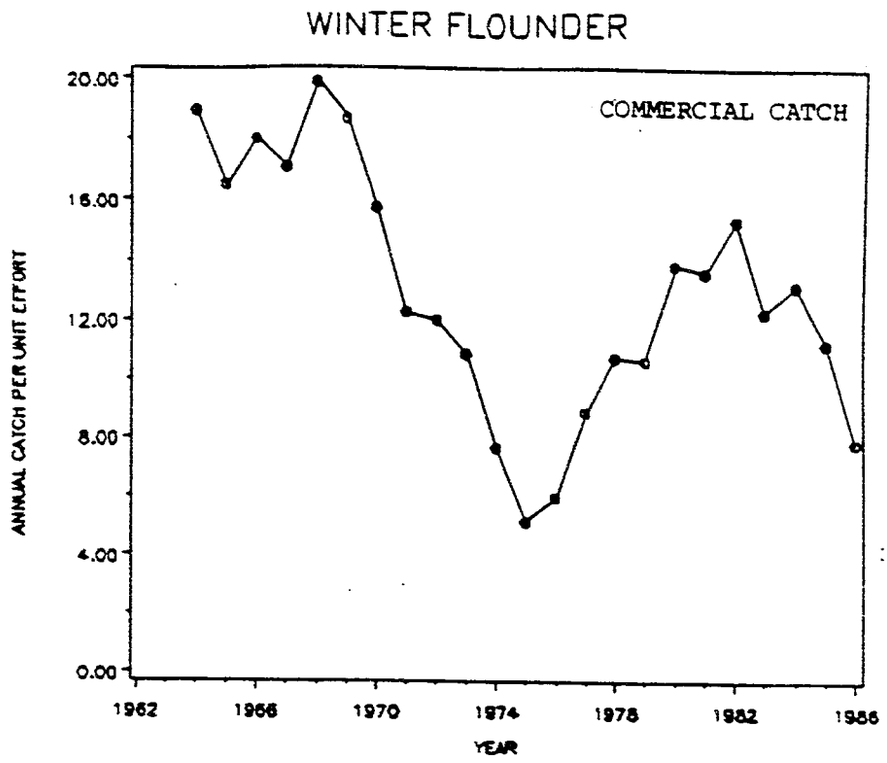


Fig. 27. Butterfish and longfin squid. National Marine Fisheries Service, Northeast Fisheries Center. Autumn survey. Mean catch per 30 min trawl for stratum 5 (solid line) and stratum 45 (dashed line). 1963-1985.



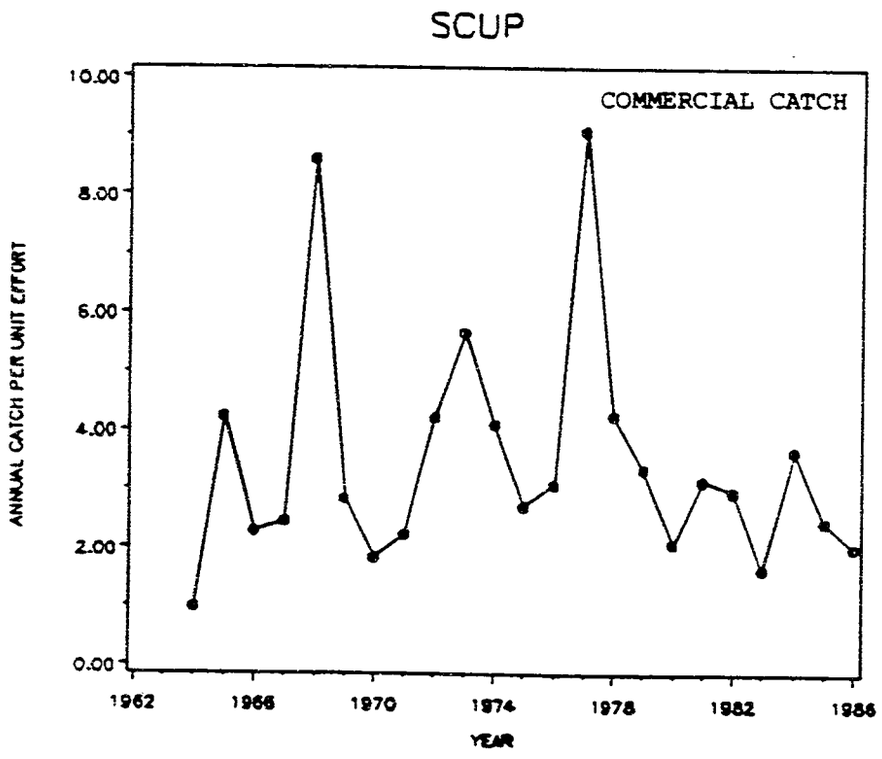
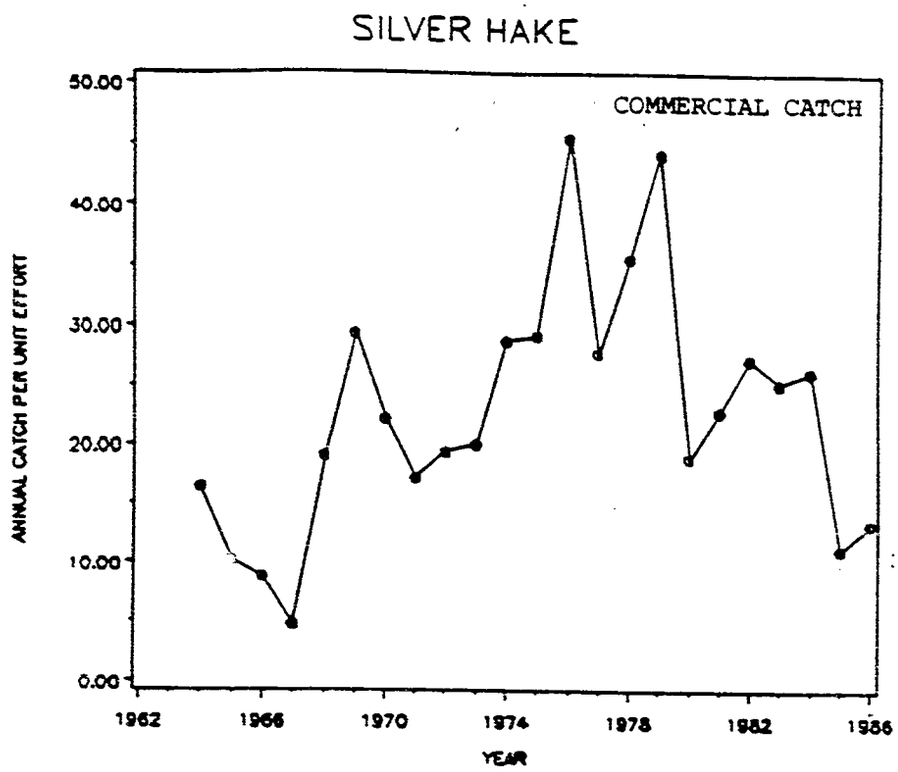


Fig. 28. Winter flounder and scup. National Marine Fisheries Service, Northeast Fisheries Center. Statistical Area 539. Annual sum of monthly commercial catch per unit effort (metric tons per day fished). 1964-1986.



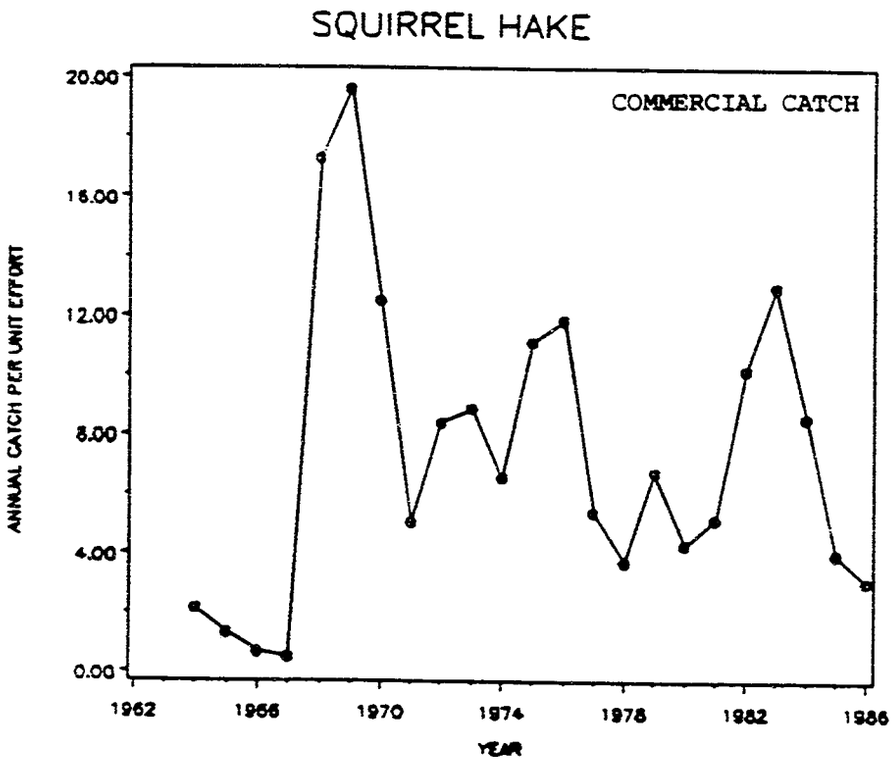
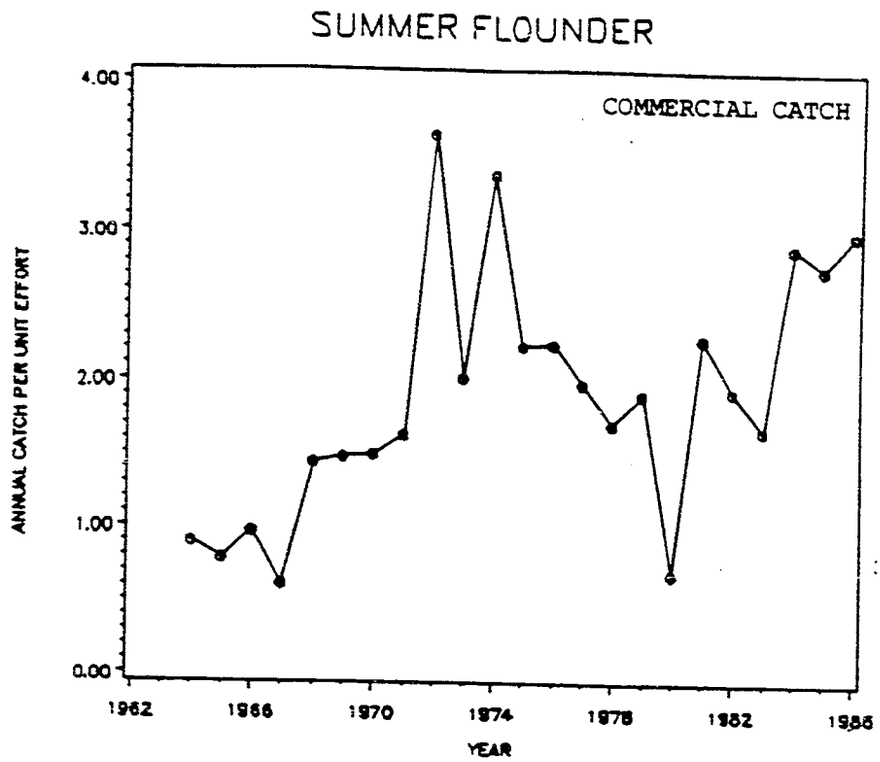


Fig.29. Silver hake and squirrel hake. National Marine Fisheries Service, Northeast Fisheries Center. Statistical Area 539. Annual sum of monthly commercial catch per unit effort (metric tons per day fished). 1964-1986.



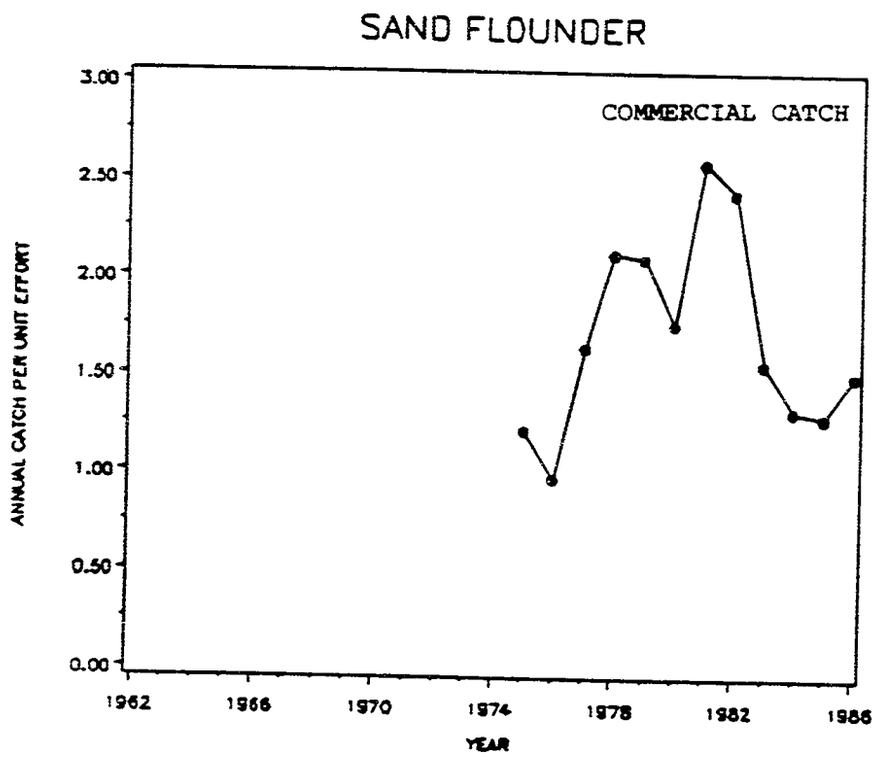
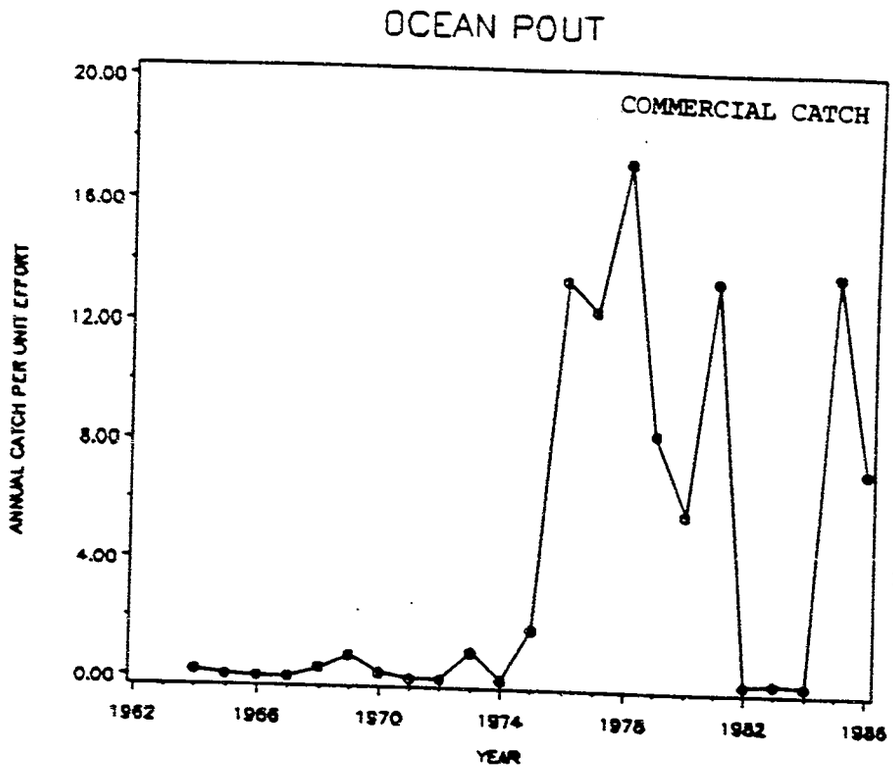


Fig.30. Summer flounder and sand flounder. National Marine Fisheries Service, Northeast Fisheries Center. Statistical Area 539. Annual sum of monthly catch per unit effort (metric tons per day fished). 1964-1986.



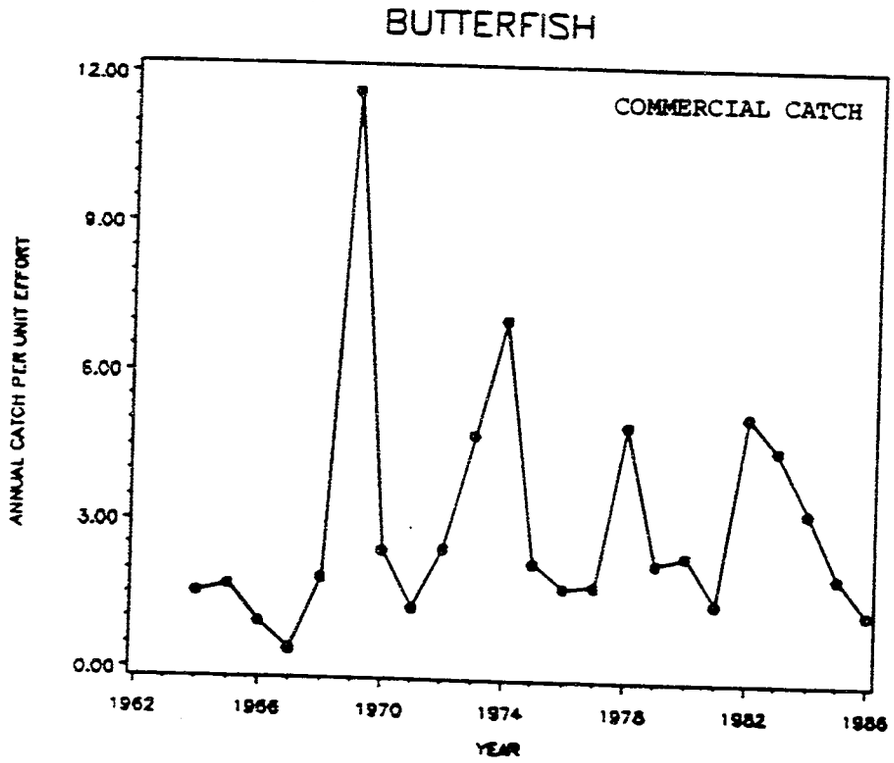
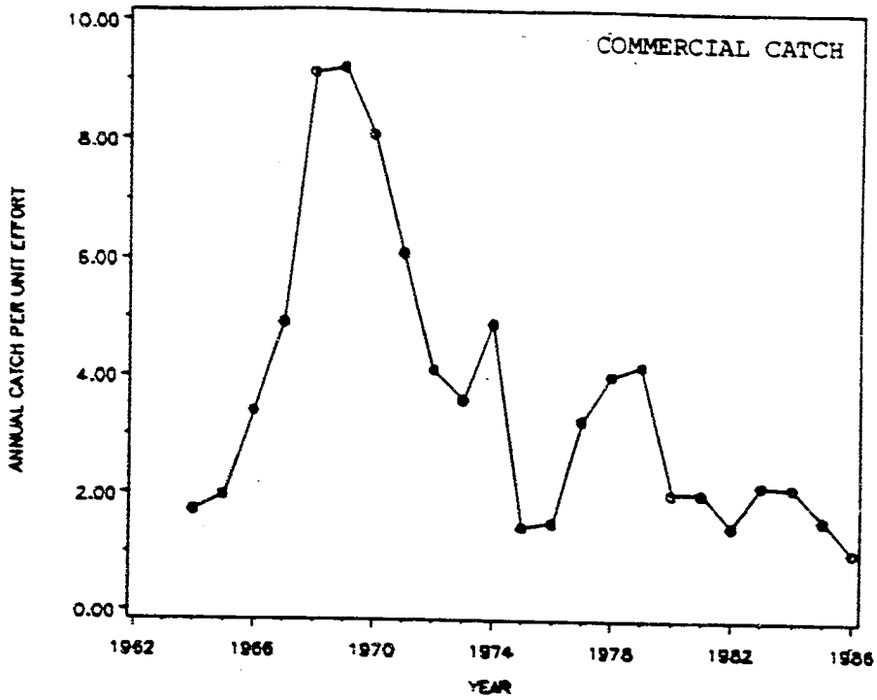


Fig. 31. Ocean pout and butterfish. National Marine Fisheries Service, Northeast Fisheries Center. Statistical Area 539. Annual sum of monthly catch per unit effort (metric tons per day fished). 1964-1986.

COD



TOTAL FISH

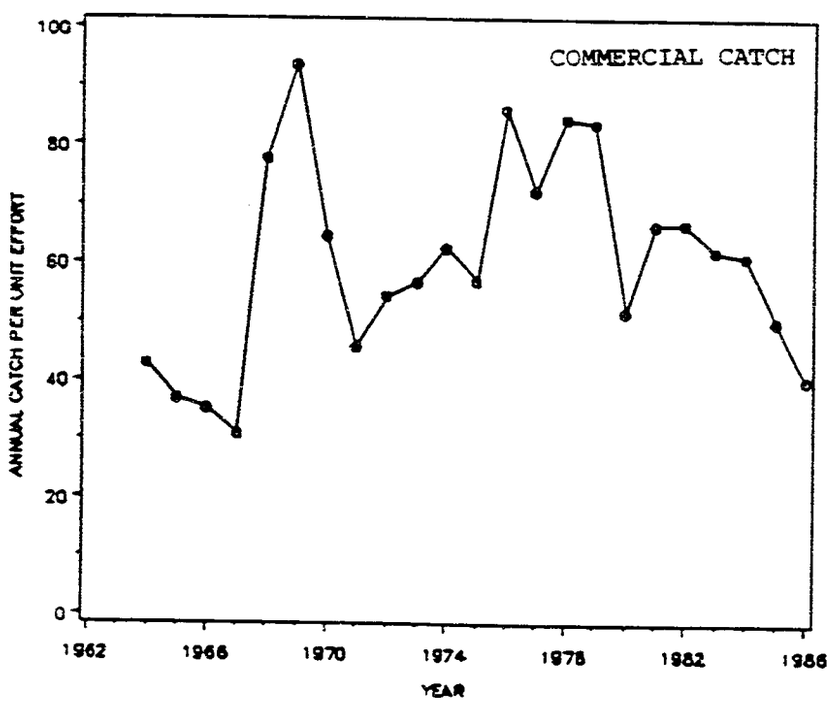
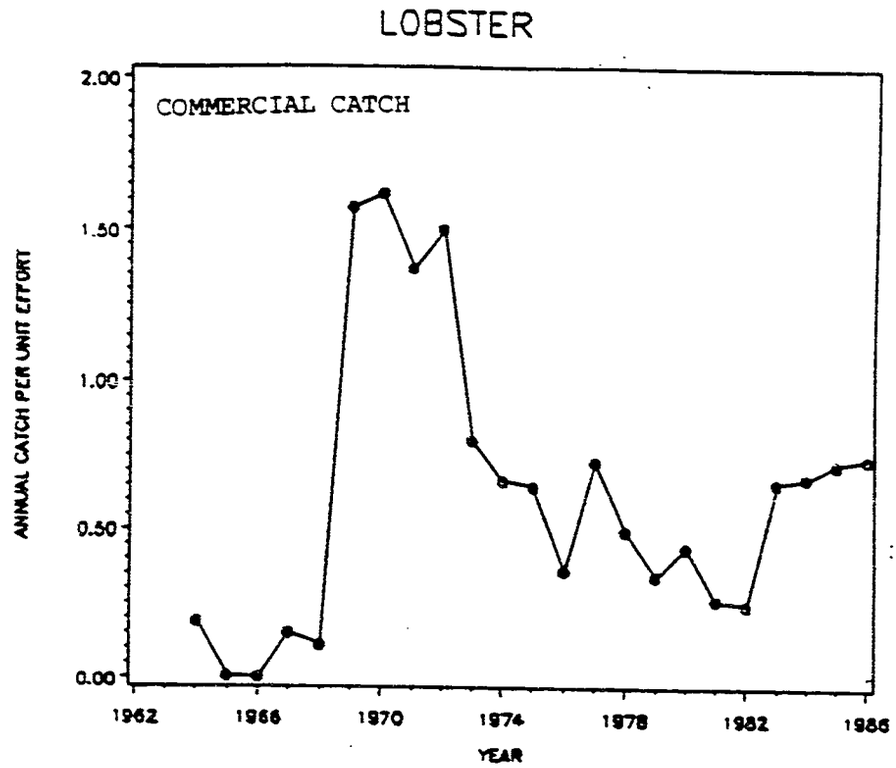


Fig. 32. Atlantic cod and total of all selected fish species. National Marine Fisheries Service, Northeast fisheries Center. Statistical Area 539. Annual sum of monthly catch per unit effort (metric tons per day fished). 1964-1986.



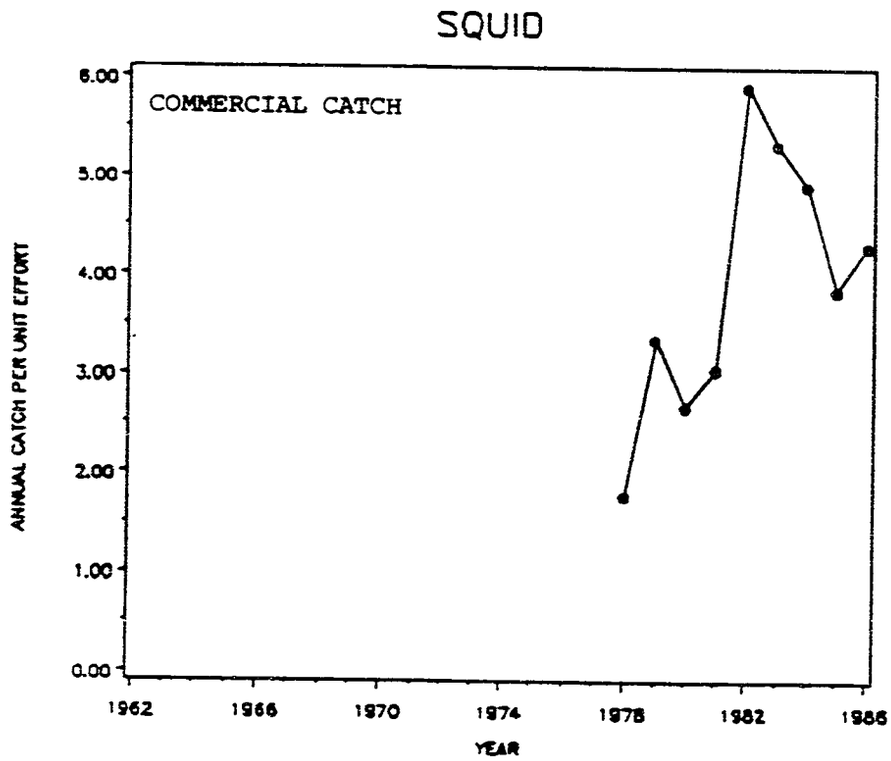
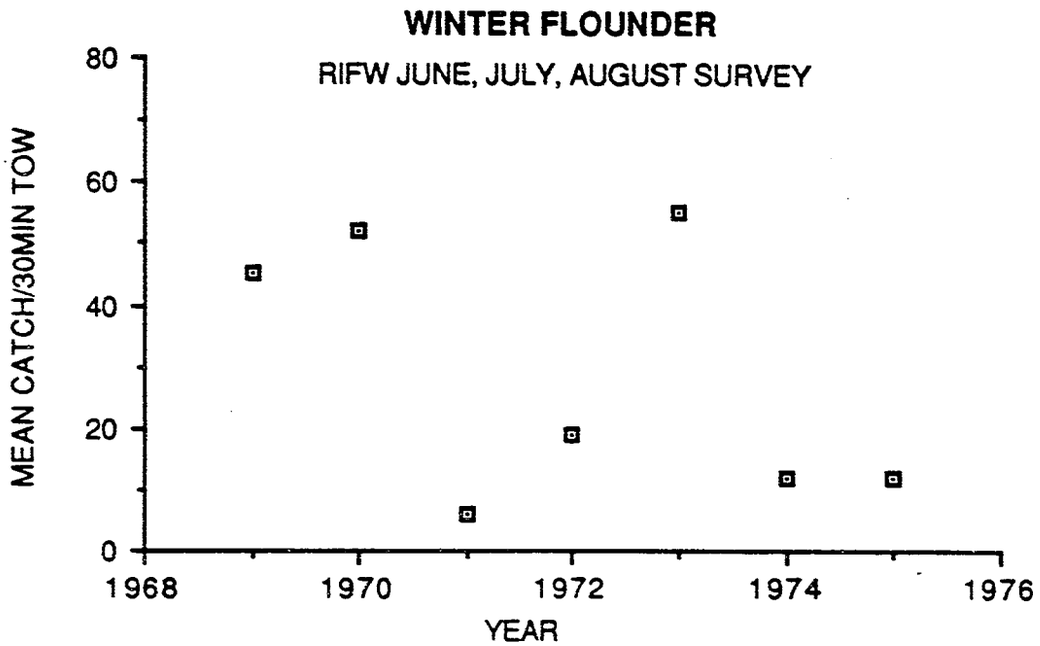


Fig. 33. Lobster and longfin squid. National Marine Fisheries Service, Northeast fisheries Center. Statistical Area 539. Annual sum of monthly catch per unit effort (metric tons per day fished). 1964-1986.



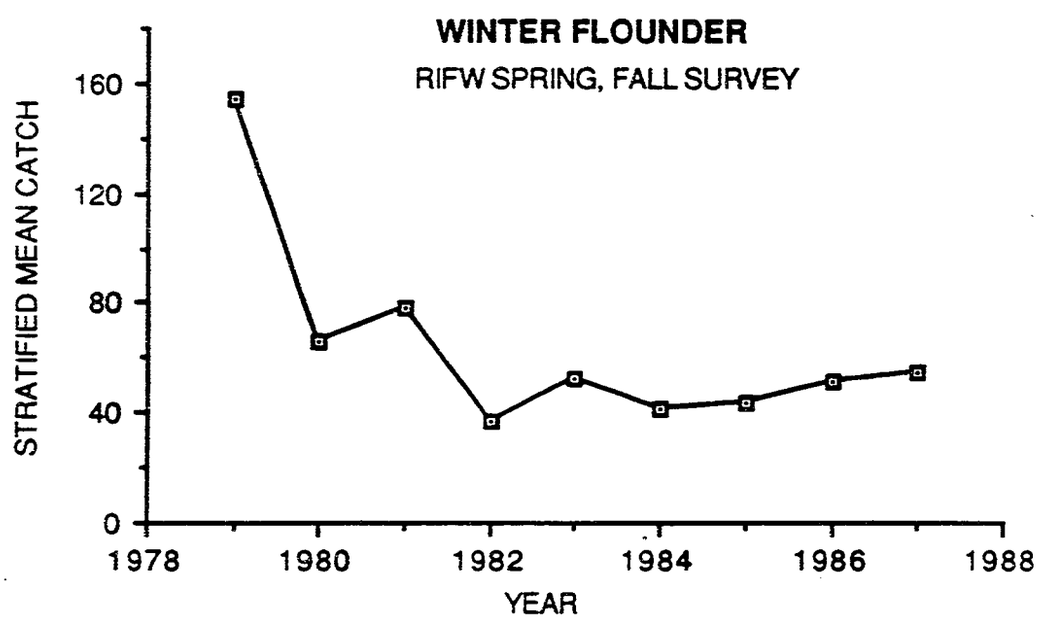
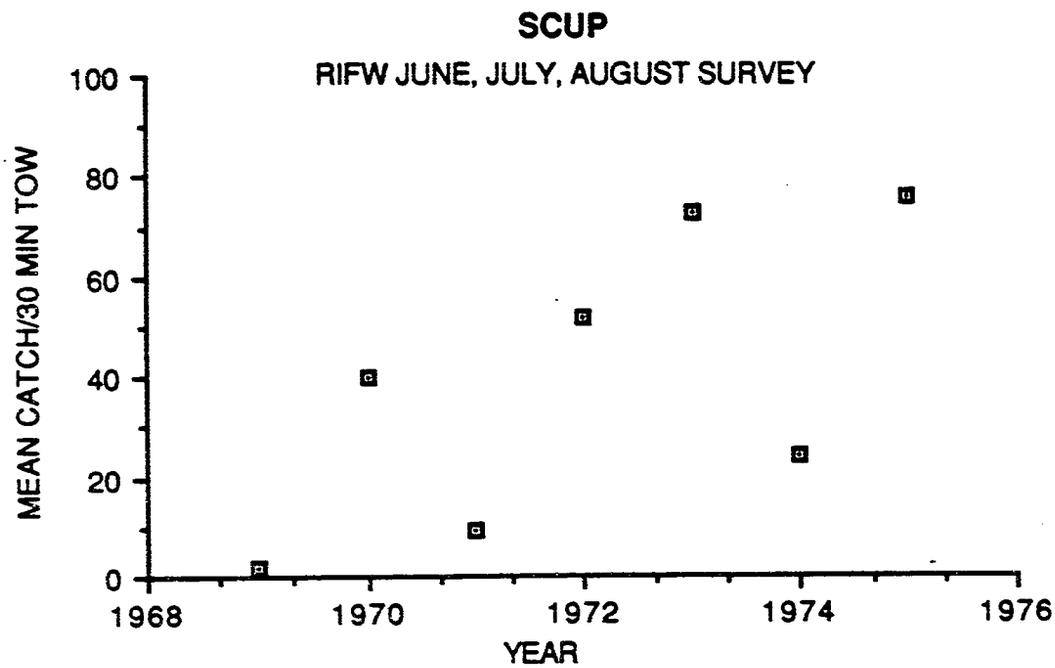


Fig. 34. Winter flounder. Rhode Island Division of Fish and Wildlife. Mean catch per 30 min. trawl, all four stations, June-August, 1969-1975; and stratified mean catch for strata 1 and 2 (Narragansett Bay), spring/fall survey, 1979-1987.



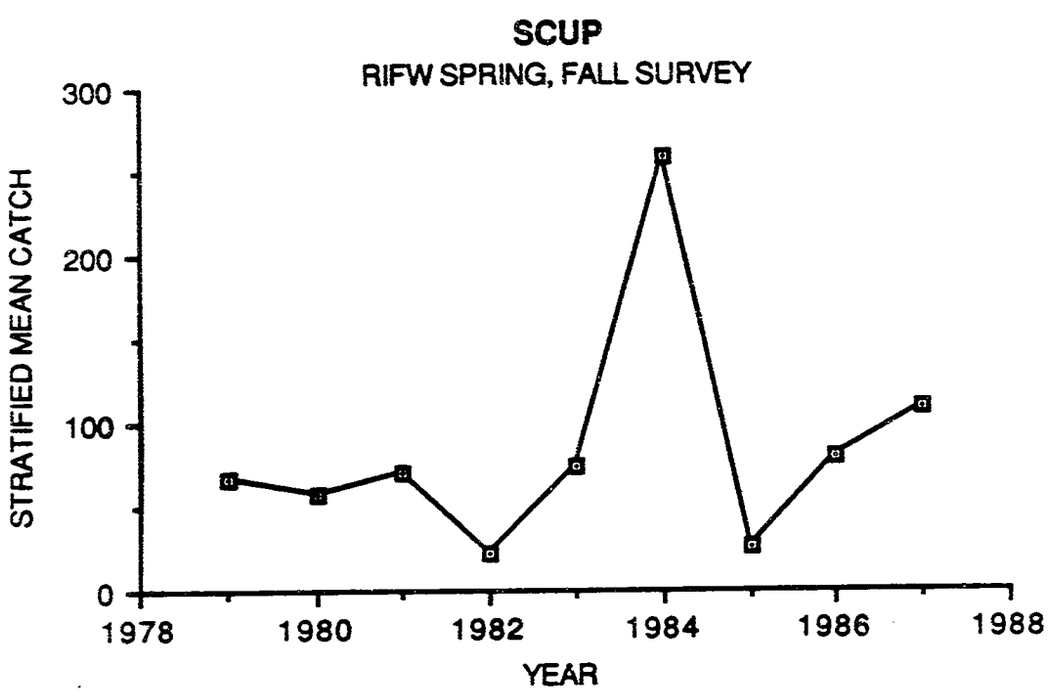
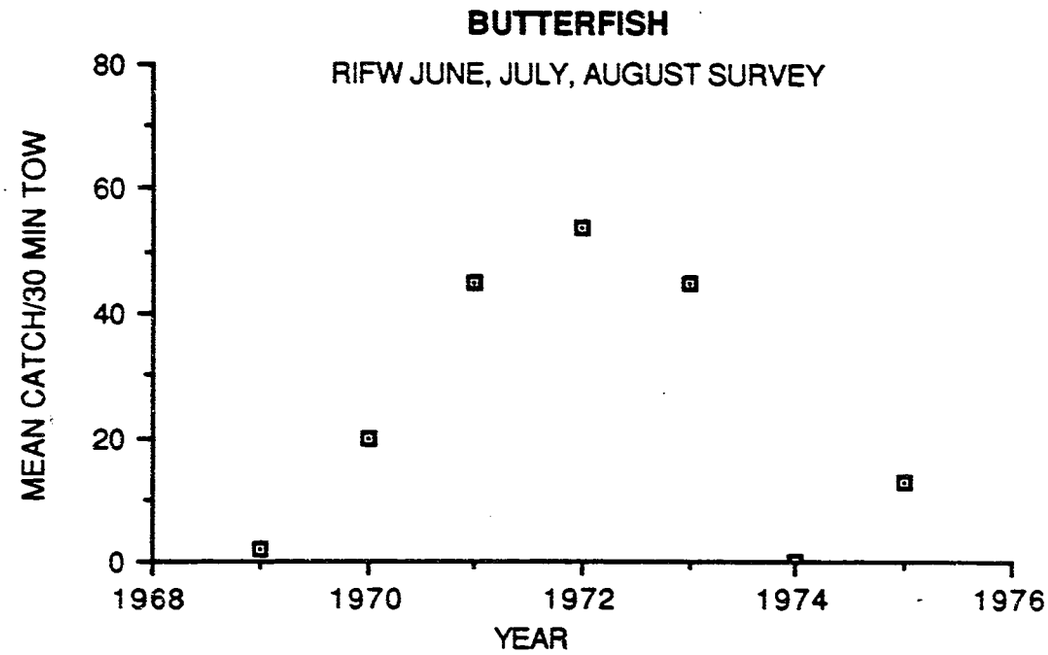


Fig. 35. Scup. Rhode Island Division of Fish and Wildlife. Mean catch per 30 min. trawl, all four stations, June-August, 1969-1975; and stratified mean catch for strata 1 and 2 (Narragansett Bay), spring/fall survey, 1979-1987.



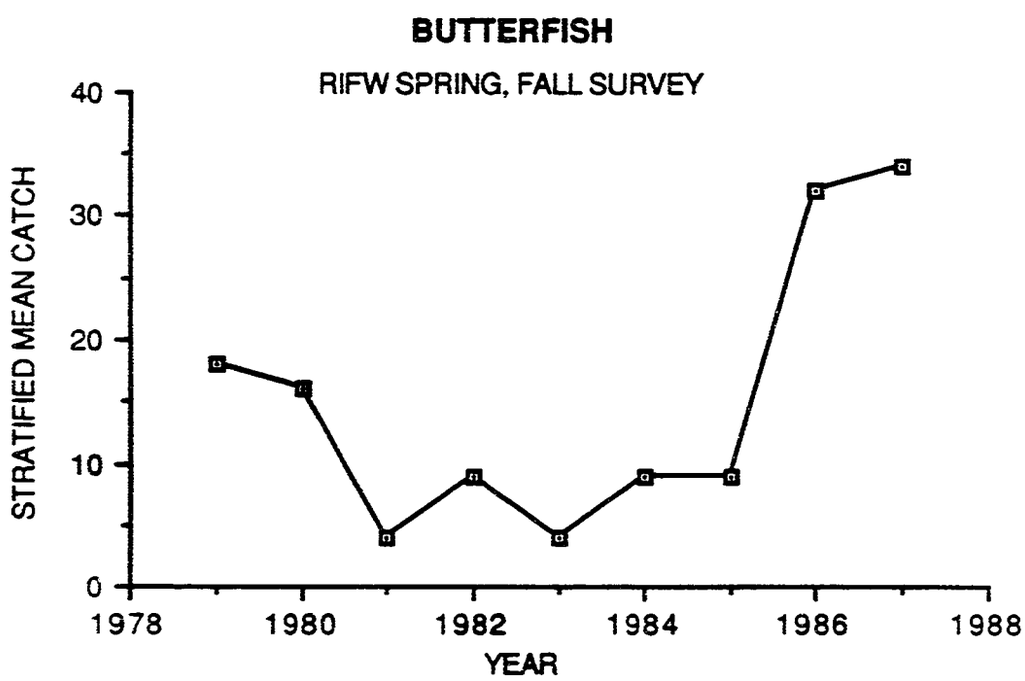


Fig. 36. Butterfish. Rhode Island Division of Fish and Wildlife Mean catch per 30 min. trawl, all four stations, June-August. 1969-1975; and stratified mean catch for strata 1 and 2 (Narragansett Bay), spring/fall survey, 1979-1987.

APPENDIX A

Predicting winter flounder (Pseudopleuronectes americanus) abundances by time series analysis.

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Submitted to:
Canadian Journal of Fisheries and Aquatic Sciences
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ABSTRACT

Long-term changes in abundances of winter flounder were compared at 5 locations within Narragansett Bay, RI and in 3 areas directly offshore. In the lower Bay, relative abundance decreased 86% during warming in the early 1970's, recovered briefly, and then declined to an all-time low in 1986. Time-series analysis successfully predicted a recovery in 1987. Year ahead predictions had a maximum error of 14% (1986); monthly forecasts explained 60-75% of catch variation during the entire investigation; cumulative monthly error (forecast compared to actual over an annual cycle) was 11% in the Bay and 21% offshore. Commercial offshore catch and the fish retained on power plant intake screens in two major rivers showed the same 11-yr pattern of population fall and recovery detected in the lower Bay. Coherent behavior was also demonstrated by the similarity of random processes which generated the time-series data. Thus a single time-series model for southern New England winter flounder seems feasible.

INTRODUCTION

Marine fishes are usually sampled for shorter periods than the long-term environmental variations that are known to affect their abundances. This is only part of the problem in understanding the causes of population fluctuations. If progressive change, such as habitat degradation or climatic warming, is superimposed on a natural cycle the complexity of the situation is increased. We know little about cyclical behavior let alone its interaction with physical-chemical variation. These difficulties haunt modelers attempting to mechanistically predict abundance from simulated couplings of fluxes and compartments--an approach that is as demanding in its requirements as it is uncertain.

From 1968 to 1974, relative abundance of the winter flounder (Pseudopleuronectes americanus) in Narragansett Bay, RI declined 86% (Jeffries and Johnson 1976), to the consternation of fisherman and concern of biologists, for the causes were not clear. A 3-year resurgence to its former abundance (Jeffries and Terceiro 1985) was followed by a second decline terminating in 1986. This once "dominant species" had experienced a population collapse, and no-one knew why. The causes may have been linked with climatic warming and predator control--a difficult situation for mechanistic prediction. Lacking such information, we wanted to see if population fluctuations could be predicted from long-term patterns using time series analysis.

Winter flounder is unique among the demersal fishes inhabiting temperate East Coast waters: it spawns well within estuaries during winter-spring; larger members then swim offshore, returning in the fall to overwinter in brackish water (Saila 1961). Seasonally, the population moves opposite to the great group of visitors that enter estuaries along the Northeast coast during summer and leave in the fall. Success of the flounder's strategy is indicated by abundances ranging up to 98% of otter trawl catches.

Spawning at low temperatures appears to be an "escape in time" (Slobodkin 1962) from warm-water predators, certain members entering the estuarine environment as the flounder population leaves. It follows that warmer winters during the early 70's (average annual warming rate 1969-75 = 0.4° C yr^{-1}) were detrimental to the population. One hypothesis, involving a year-round resident, is that Neomysis americana, an epibenthic mysid common in Narragansett Bay (Herman 1963), had been held in check by cold winters, but during the early 1970's warming period, it was able to feed actively on larval flounder, perhaps at the critical period when they metamorphose, fall from the plankton and develop protective pigmentation. As winters cooled over a 3-year period (1975-78), predation by Neomysis--and perhaps also by sculpins (Myoxocephalus spp.)--was less important, and the winter flounder population recovered (Jeffries and Terceiro 1985).

The population's second decline extending through the mid-1980's reached a near absence, when during summer 1986 several trawls in lower Narragansett Bay came up without a single winter

flounder. The question was: is another recovery likely, based upon the population's long-term behavior, or is the situation new?

Statistical prediction can be approached in several ways (Schaefer 1954, 1957; Pella and Tomlinson 1969; Fox 1970). Time-series analysis has produced successful results with fisheries data (Boudrealt et al. 1977; Saila et al. 1980; Mendelssohn 1981; Kirkley et al. 1982; Jensen 1985; Fogarty et al. 1986; Mendelssohn and Cury 1987). We used the Box-Jenkins (1976) ARIMA (autoregressive-integrated-moving-average) models to sort out the components of cyclical behavior. Combined with correlation analysis, the final result showed similar population behavior extending throughout all of Narragansett Bay and the offshore commercial fishing areas.

METHODS:

Sampling--Abundances were estimated at a total of eight stations (Table 1, Figs. 1, 2). Sampling was by otter trawl and by fish retained on power plant intake screens: trawl stations--one in Narragansett Bay, two in the contiguous Mt. Hope Bay, one immediately adjacent in Rhode Island Sound and two offshore; intake screen stations--single observation points in Mt. Hope Bay and the Providence River. The most intensive program was the authors' weekly otter trawl sampling, which has run from 1959 to the present in the West Passage of Narragansett Bay at Fox Island and in Rhode Island Sound, south of Whale Rock (Jeffries and Johnson 1976). The Bay station was located on the species' migratory route; the Sound station was situated as far seaward as could be visited on a regular

basis. The otter trawl measured 14 m long, tapering from 10 m across at the mouth to 1 m at the throat; stretched mesh size was 7.6 cm in the forward half and 5.1 cm behind the throat. The trawl was towed at about 2.5 knots for 30 minutes.

The landward extreme of the population's range in Narragansett Bay was represented by sampling stations in Mt. Hope Bay and the Providence River. Since 1971, the New England Power Company has sponsored biweekly bottom trawling (Marine Research, Inc., 1972-1986). Their otter trawl measured 11.4 m long with a 7.6 m head rope and an 11.1 m foot rope; stretched mesh sizes were 11.3 cm in the wings and 3.8 cm in the cod end. The net was towed at 2.0-2.5 knots for 15 min at 3-8 stations. A mid-bay station (station 5) was selected for the time-series analysis. Annual catch at station 1, near the intake of the power plant, was included in a correlation analysis. The power-plant intakes in Mt. Hope Bay were typical of shore-line installations, having revolving screens (0.95 cm mesh); additional screens (3.5 cm mesh, units 1 and 2; 2.5 cm unit 3) were positioned in summer to remove horseshoe crabs. We standardized abundances from 1973 to 1986 relative to volume of water pumped by three power units (Jeffries et al. 1988).

Starting in 1975, Narragansett Electric Company's Manchester St. facility in the Providence River has recorded fish caught on cooling-water intake screens. Screened wells (5.1 cm^2 mesh) were protected by revolving screens (1.3 cm^2 mesh). Abundance relative to flow could not be calculated, so we devised an index of annual abundance based on average catch per hour (Jeffries et al. 1988).

The final sampling area was directly offshore from Narragansett Bay. Since 1963, the National Marine Fisheries Service (NMFS) has sampled 2-8 randomly selected stations in Stratum 5 (Fig. 2). Their spring survey entailed gear changes, so we selected the fall program, which employed a Yankee No. 36 trawl, having 12.7 cm mesh in the wings and 11.4 cm mesh in the cod end. The net's top and cod end were lined with 1.3 cm mesh net. Overall dimensions were 30 m length, 18.3 m headrope and 24.4 m footrope. The net was towed on the bottom for 30 min (Grosslein 1969).

Commercial catch data from Narragansett Bay and its offings were provided by NMFS, Woods Hole, for all species caught by all boats fishing in Statistical Area 539 from 1964 to 1986 (about 432,000 records). This included records from Area 529, the area's designation from 1964 to 1967. We calculated daily catch per unit effort and made summations for monthly and annual total catches (Jeffries et al. 1988).

Time Series Analysis-- Monthly time-series models were constructed for catch at Fox Island, Whale Rock and Mt. Hope Bay with the ARIMA procedure available in the Statistical Analysis System (SAS Institute 1982). Annual models (1959-1985) were additionally constructed for the Fox Island and Whale Rock data. Following Jenkins (1979), a time series was defined as consecutive and consistently obtained estimates of relative population size (Y_t) that are equally spaced in time and shaped by both deterministic and stochastic events. Occasional missing data points (one value in our trawl surveys and < 0.06% in the Mt. Hope Bay data) were reconstructed by linear interpolation of adjacent points.

The first step in the analysis consisted of removing deterministic trends from the series (by means of transformation or differencing) so that the resulting values fluctuated around a mean with constant variance (termed a stationary series). To test the assumption of stationarity, each series was divided into segments, and range-mean plots (Jenkins 1979) were examined. Once stationarity was achieved, the catch could be described as: (1) a linear combination of previous catch (an autoregressive component); and (2) the current and past values of error terms (a moving average component).

The general model is represented by a linear stochastic equation of the form:

$$Z_t = \phi_1 Z_{t-1} + \phi_2 Z_{t-2} \ldots \phi_n Z_{t-p} + a_t - \theta_1 a_{t-1} - \theta_2 a_{t-2} \ldots \theta_q a_{t-q} \quad (1).$$

where Z_t is the transformed and/or differenced catch (Y_t) taken at equal time intervals (t), ϕ_i and θ_i are autoregressive and moving average parameters and the a_t's are error terms. Box and Jenkins (1976) use the notation ARIMA (p,d,q) for this model with p the order of the autoregressive component (AR), q the order of the moving average component (MA) and d the degree of differencing (I) required to produce a stationary series.

Using the backshift operator, B (where $B^j X_t = X_{t-j}$), the model is more frequently represented as:

$$(1 - \phi_1 B - \phi_2 B^2 - \ldots \phi_p B^p)(1-B)^d Z_t = (1 - \theta_1 B - \theta_2 B^2 - \ldots \theta_q B^q)\, a_t. \quad (2)$$

Fitting a model to data involved the Box-Jenkins three-step procedure of model identification, estimation and checking. The first step was to identify how many and which terms to retain in equation (2). The second step was to simultaneously estimate the parameters that best fit the data and the final step was to remove insignificant

components from the model and test the residuals for departure from white noise. Model identification and checking required examination of the autocorrelation (ACF) and partial autocorrelation (PACF) functions of the series and their residuals. Following Box and Jenkins (1976), we used characteristics of these functions to indicate model type, and the residuals were used to test the assumption of randomness. If the residuals were not white noise, a new model was identified and the procedure repeated.

Seasonal models were first fitted for Fox Island (Jan 1959 to Dec 1985), Whale Rock (Jan 1959 to Dec 1985), and Mt. Hope Bay (Jan 1972 to Dec 1984). Annual models were subsequently fitted to the 27-year catch record (1959-1985) at Fox Island and Whale Rock. The observed abundance for the year predicted was not included in the estimation of the model's parameters. Goodness of fit was based on the model's coefficients of determination and the variance of the residuals. The final year of data for both annual and monthly catch was not included in the estimation of the model's parameters. These reserved data were compared with predicted values to judge the accuracy of the forecast. The observed abundance for 1987 was based on catch data through September.

Correlation--Next we used all available winter-flounder abundances to compare the population's behavior throughout the entire inshore-offshore sampling area. Pearson correlation coefficients were computed among the eight stations.

RESULTS

Data and Transformation (Monthly Models)-- Monthly means, each representing 2-5 weekly samples, are plotted in Fig. 3. Strong seasonality was superimposed on a long-term cyclical pattern peaking in 1968 and again in 1979. There was a tendency for variance to increase with catch, so we divided the series into yearly segments and plotted the range versus the mean of each year (Jenkins 1979). The linear relation between ranges and means shown in Fig. 4 indicated the need for logarithmic transformation (Jenkins 1979); we added 1 to catch to eliminate zero values and transformed abundances to the natural logarithm.

Transformed data for the West Passage of Narragansett Bay (Fox Island) are shown in Fig. 5a. Dispersion was reduced by transformation, but seasonality persisted; we removed the seasonal trend by taking a differencing of order 12. The resultant series (Fig. 5b) still showed a cyclical trend, requiring a first-order difference of the residuals to achieve the stationary condition. The final series (Fig. 5c) is represented as:

$$(1-B)\ (1-B^{12})\ Z_t = Z_t - Z_{t-1} - Z_{t-12} + Z_{t-13}. \qquad (3)$$

Similar treatment of catch data at the two remaining stations also produced stationary series.

Model Identification, Estimation and Diagnostic Checking-- A tentative model for monthly abundances was chosen based on the pattern of the ACF and PACF for the transformed and differenced winter flounder catch data. The ACF and PACF exhibited similar patterns at the three stations (see Fig. 6a for a representative sample, Fox Island). The significant negative spike at lag 2 in the

ACF suggested a second-order moving-average model, which was confirmed by the decaying PACF pattern after lag 2. The negative spike at lag 12, in both the ACF and PACF (Fig. 6a) further indicated the need for a seasonal moving average parameter. Following Box and Jenkins (1976), seasonal ARIMA models were hypothesized with period S of the form:

$$(1 - B)(1 - B)^{12} Z_t = (1 - \theta_1 B - \theta_2 B^2)(1 - \Theta_1 B^S) a_t \qquad (4)$$

where S = 12, and Θ_1 is the seasonal moving average parameter (with all other parameters as previously defined).

A general nonlinear least squares fitting procedure was used to estimate the parameters of the proposed model (equation 4) for each station. The ACF (Fig. 6a) suggested important terms at lags 5, 11 and 14, but they were found to be insignificant. The final parameter estimates (all are significant) and associated statistics for the monthly models are given in Table 2; residual ACF and PACF for Fox Island, a representative station, are shown in Fig. 6b. A chi-square test indicated that the residuals were not significantly different from white noise.

The goodness of fit is indicated by the low residual variances and the high coefficients of determination for the final models (Table 2). Observed and one-step-ahead predicted values for catch at Fox Island are given in Fig. 7. This model clearly captured the population's seasonal behavior over 324 months.

Annual Models-- Transformation, identification, estimation and diagnostic checking were performed on annual abundances (1959-1985) at Fox Island and Whale Rock. The pattern of the ACF and the PACF indicated that a first-order, autoregressive-moving average

model, ARIMA (1,0,1), was appropriate for the logarithmically transformed abundances:

$$(1 - \phi B) Z_t = (1 - \theta B) a_t \quad (5)$$

where t represented yearly time intervals and all parameters were as previously defined. Final parameter estimates and associated statistics are seen in Table 3. The observed and one-step-ahead forecast values are given in Fig. 8. Once again, correspondence between observed and step ahead forecasts is very close.

The predicted annual index of abundance for 1986 differed from the observed by 5% at Fox Island and 14% at Whale Rock. Most important was our prediction that the size class captured by otter trawls should start to recover in 1987. The prediction is correct based upon increased relative abundance through summer 1987.

Correlation Analysis--For comparing annual catches at all 8 sampling areas, we used correlation analysis (Table 4). Power plant intake-screen catch was lagged by 1 year, since large fish were excluded by coarse screens protecting the finer revolving screens from which the abundance estimates were made. A peak in small fish would not show up in trawl catches until at least one year later. Strongest correlations were generally observed between adjacent areas.

Abundance patterns at significantly correlated areas ($p<0.1$) are plotted in Fig. 9. Data for the Providence River and Mt. Hope Bay power plants (trawl and intake screen catches) closely tracked the downbay pattern, including a precipitous drop in 1982, quick recovery and then decline. Offshore, a similar pattern was revealed in the NMFS fall surveys and commercial catch records.

DISCUSSION

From eight lengthy data sets, we have described the stochastic properties of winter flounder abundance in the Narragansett Bay region. The population is dynamic, both seasonally and in the long-term, but because our base survey at two stations is now in its 30th year, an important prediction for 1987 could be made. We can be confident that the historical pattern and its prediction, as generated by time-series analysis, pertains not just to the 2-station sampling area, but throughout the migratory range of individuals emanating as young from the Narragansett Bay and other southern New England estuaries. Moreover, we can maintain a running check on future developments within the entire population by referencing continuous monitoring programs. The approach is statistical, as opposed to inherently more satisfying deterministic models of fluxes and forcing functions, but the result here is quick and easy prediction. This is useful, both for practical purposes and for research into the causes of long-term population change.

Monthly Analysis--Monthly winter flounder catch in all 3 areas exhibited strong annual seasonality. Points in the series were highly correlated with corresponding data at 1, 12 and 13-month lags. Consequently, the monthly series required non-seasonal as well as seasonal differencing to achieve a stationary condition. After differencing, the population throughout Narragansett Bay was described by seasonal models with the same number and types of parameters (Table 2). Parameter values were also similar between stations. Statistically, the structure of the random processes that generated the monthly catch series was the same at two extremities

of the Bay and midway along its length. A common model type was therefore suggested, indicating similarities in population dynamics and behavior throughout the Bay. In difference format, the common model for catch was:

$$Z_t = Z_{t-1} + Z_{t-12} - Z_{t-13} + (a_t - \theta_1 a_{t-1} - \theta_2 a_{t-2}) \qquad (6)$$
$$- (\Theta_1 a_{t-12}) + (\Theta_1 - \theta_1 a_{t-13}) + (\Theta_1 - \theta_2 a_{t-14})$$

that is, catch this month is equal to the catch last month plus catch during the same month last year, minus catch during the previous month last year all adjusted by a linear combination of the forecasting errors.

The yearly model confirmed that abundance in a given year was related to abundance in the previous year. It further demonstrated that random perturbations in the prior year affected population abundance. Again, both stations in the intensively surveyed lower Narragansett Bay-Rhode Island Sound area were represented by a single model type with similar parameter estimates (Table 3).

Random perturbations affected population abundance. Both the source of the perturbations and when they change direction are unknown, because interannual variation is contained in the error term. The model adopted represented a balance between keeping catch in equilibrium and keeping the error in equilibrium. Interpretation of the model is consistent with the winter flounder's life history.

Applications of time-series analysis to monthly catch-per-tow (constant effort) or catch-per-unit-effort are scarce. Mendelssohn (1981) described fluctuation in the monthly catch of skipjack tuna in

Hawaii with a combined seasonal and regular ARIMA model. Tuna abundances are strongly seasonal; thus, seasonal differencing was required to induce stationarity. Unlike winter flounder, tuna did not show non-seasonal trends. Saila et al. (1980) described monthly fluctuations in lobster catch with a combined autoregressive-moving average model. Mendelssohn and Cury (1987), using a multi-variate time series analysis that included sea-surface temperature, were able to explain 43% of the variation in biweekly catch per unit effort of small pelagic fish species off the Ivory Coast of Africa.

Time series techniques have also been applied successfully to long-term, yearly catch-per-unit-effort (Kirkley et al. 1982; Jensen 1985). Often, only the autoregressive component of the model is considered (Stocker and Hilborn 1981). For many trawl surveys, yearly data exist, but they are inadequate to accurately specify the structure of an appropriate ARIMA model. In such cases, Pennington (1985, 1986) has proposed an a priori model:

$$(1 - B)\, Z_t = (1 - \theta B)\, a_t \qquad (7)$$

Fogarty et al. (1986) used this model to filter measurement error from true (process) error in analyzing yearly catch for 6 species of fish in the Northwest Atlantic. The basic structure of their annual model is similar to the ARIMA model fitted above: the year-to-year behavior for the two models is the same. The data set we used--a 28-year period of carefully standarized observation-- was sufficiently complete to permit both prediction and comparison.

We also compared long-term patterns throughout the Narragansett Bay area. Correlation analyses showed that relative abundance was similar within the estuary and offshore. However,

yearly abundance estimates in the Bay were not, in all cases, correlated with the offshore population (Table 4). Different investigators using different methods were not the reason, for there were several remarkably high correspondences among the individual programs.

Forecasting-The final ARIMA models (Table 2) explained 60-75% of the flounder catch variation over 13 to 27 yr periods at the primary observation sites in Narragansett Bay. To make true monthly predictions, we calculated the parameters from all but the last year's data, and then compared the models' prediction with the actual observed monthly catch.

In Fig. 10, predicted winter flounder catches are compared with actual monthly abundances. Peaks of spring migration out of the Bay, past successive observation points, were successfully predicted in Rhode Island Sound (Whale Rock) and in Mt. Hope Bay. In the Bay's West Passage (Fox Island) the predicted peak occurred one month before the observed peak for that year. It is not unusual to have a migration varying by a month from year to year. Generally, however, the amplitude and duration of seasonal fluctuations were accurately described. Cumulative monthly forecast errors, compared to observed annual indices of abundances, at Fox Island and Whale Rock were 21% and 11% respectively; the error for Mt. Hope Bay was 12%.

The annual models predicted that winter flounder abundance would recover in 1987 (Fig. 8): as of September, Bay catch had increased over the previous year, so it appears that the forecast was accurate.

We conclude that a long (>25 yr) time-series of relative abundance at a single observation point can predict the decline, as well as the recovery, of a most important demersal fish population. The ecological significance is that the time-series parameters are approximately the same for all of Narragansett Bay (Table 2). There appears to be an inherent sameness of behavior--inshore and offshore--on which a single predictive model for winter flounder in the Northeast could be based.

This approach circumvents the oft-encountered problem in marine biology of noisy data and drifting due to random perturbation. Time-series analysis also helps to explain why patterns look as they do, and it indicates which processes shape natural variation. Processes may be the same in time and space even though localized changes in abundances look different. Southern New England's winter flounder population is a clear example.

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Table 1. Summary of data sources in and offshore of Narragansett Bay, which were used in the study.

Station Name	Location	Data Collection Schedule	Period	Source	Data Analyzed
Fox Island,	41° 34' N 71° 24' W	weekly	1959-1987	Jeffries et al., 1988	monthly and yearly
Whale Rock,	41° 26' N 71° 25' W	weekly	1959-1987	Jeffries et al., 1988	monthly and yearly
Mt. Hope Bay Station 1	41° 42' N 71° 11' W	biweekly monthly	1971-1981 1982-1985	Marine Res., Inc. 1972-1986	yearly
Mt. Hope Bay Station 5	41° 41' N 71° 13'W	biweekly monthly	1972-1981 1982-1985	Marine Res., Inc. 1972-1986	monthly and yearly
Brayton Pt. Power Plant	41° 43' N 71° 11' W	weekly	1973-1986	Marine Res., Inc. 1972-1986	yearly
Prov. River Power Plant	41° 49' N 71° 24' W	weekly	1975-1986	Marine Res., Inc. 1980	yearly
NMFS survey Stratum 5	random stations	seasonally (spring, autumn)	1963-1986	NMFS, Woods Hole unpublished	autumn
NMFS survey Area 539	distributed	daily	1964-1986	NMFS, Woods Hole unpublished	monthly and yearly

Table 2. Final parameter estimates and associated statistics for the final fitted seasonal ARIMA models at each station. The chi-square statistics are non-significant for autocorrelation in the residuals (through lag 24).

Station	Parameter	Value (SE)	n	R^2	Residual Variance	Chi-square Statistic
Fox Island	θ_1	0.34 (0.06)	324	0.72	0.32	15.30
	θ_2	0.33 (0.06)				(lag 24)
	Θ_1	0.81 (0.04)				
Whale Rock	θ_1	0.56 (0.06)	324	0.62	0.35	34.37
	θ_2	0.20 (0.07)				(lag 24)
	Θ_1	0.75 (0.05)				
Mt. Hope Bay Station 5	θ_1	0.51 (0.08)	156	0.63	0.61	26.74
	θ_2	0.25 (0.08)				(lag 24)
	Θ_1	0.77 (0.06)				

MODEL: $(1 - B)(1 - B^{12}) \ln(WFL+1) = (1 - \theta_1 B - \theta_2 B^2)(1 - \Theta_1 B^{12})\, a_t$

Table 3. Final parameter estimates and associated statistics for the final fitted annual ARIMA models at each station. The chi-square statistics are non-significant for autocorrelation in the residuals (through lag 24).

Station	Parameter	Value (SE)	n	R^2	Residual Variance	Chi-square Statistic
Fox Island	ϕ_1	0.49 (0.26)	27	0.56	0.18	19.59
	θ_1	-0.59(0.24)				(lag 24)
Whale Rock	ϕ_1	0.50 (0.21)	27	0.69	0.10	12.41
	θ_1	-0.64 (0.19)				(lag 24)

MODEL: $(1 - \phi B) \ln WFL = (1 - \theta B) a_t$

Table 4. Pearson correlation coefficients for indices of yearly abundances for winter flounder in and around Narragansett Bay, R. I.

	Fox Island	Whale Rk.	Sta 1 MHB	Sta 5 MHB	Bray Pt. power sta. (lag 1)	Prov. R. power sta. (lag 1)	Strata 5	Area 539
Fox Island	1.0							
Whale Rk.	0.65 * (<0.01)	1.0						
Sta 1 MHB	0.64 * (0.01)	0.35 (0.22)	1.0					
Sta 5 MHB	0.44 (0.12)	0.11 (0.70)	0.79 * (<0.01)	1.0				
Bray Pt. power sta. (lag 1)	0.21 (0.51)	-0.03 (0.93)	0.80 * (<0.01)	0.73 * (0.01)	1.0			
Prov. R. power sta. (lag 1)	0.62 * (0.08)	0.56 (0.12)	-0.04 (0.92)	0.02 (0.95)	-0.23 (0.52)	1.0		
Strata 5	0.64 * (<0.01)	0.72 * (<0.01)	0.30 (0.30)	0.19 (0.52)	-0.10 (0.75)	0.83 * (0.01)	1.0	
Area 539	0.64 * (<0.01)	0.56 * (0.02)	0.07 (0.82)	0.08 (0.78)	-0.31 (0.30)	-0.04 (0.91)	0.48 * (0.04)	1.0

* ($P < 0.10$)

FIGURE LEGENDS

Fig. 1 Narragansett Bay and Rhode Island Sound, showing the location of sampling sites in the West Passage, Mt. Hope Bay, Providence River and offshore.

Fig. 2 Narragansett Bay and offshore waters, showing the location of National Marine Fisheries Service a) trawl survey stratum 5 and b) commercial catch statistical area 539.

Fig. 3 Time series of mean monthly winter flounder catch (Pseudopleuronectes americanus) from a) Fox Island, West Passage, Narragansett Bay b) Whale Rock, Rhode Island Sound and c) Station 5, Mt. Hope Bay, Narragansett Bay, January 1959 - December 1985.

Fig. 4 Range-mean plots for mean monthly winter flounder catch from a) Fox Island b) Whale Rock and c) Mt. Hope Bay. The ranges and means were calculated for yearly subseries, 1966-1985 (Fox Island and Whale Rock), 1971-1984 (Mt. Hope Bay).

Fig. 5 Successively transformed and differenced mean monthly winter flounder catch at a representative station, Fox Island - a) natural logarithmically transformed catch series b) seasonally differenced (order 12) and transformed catch series and c) 1st and 12th differenced and transformed catch series.

Fig. 6 Estimated autocorrelation and partial autocorrelation functions to lag 24 for a) the transformed and differenced winter flounder catch series and b) the residuals of the catch model, together with their two standard error limits (broken lines) for a representative station, Fox Island.

Fig. 7. Observed (solid line) versus predicted (broken line) for the mean monthly winter flounder catch (natural logarithmic transformation) from 1959 to 1986 for Fox Island.

Fig. 8 Observed (solid line) versus one-step ahead forecasts and 1986, 1987 predictions (broken line) for annual indices of winter flounder catch at a) Fox Island and b) Whale Rock. Shaded area represents 95% confidence interval on predictions.

Fig. 9 Overlay plots of indices of yearly abundance for regions which were significantly correlated (P< 0.1) - a) Fox Island (●——●), Whale Rock (o----o), and Providence River (——) b) Mt. Hope Bay - Station 5 (▲——▲), Station 1 (▲---▲) and Brayton Point (-----) and c) National Marine Fisheries stratum 5 (×——×) and commercial catch (×----×). Providence River and Brayton Point data were lagged by one year.

Fig. 10 Observed (solid line) and predicted (broken line) mean monthly catch for winter flounder as a) Fox Island b) Whale Rock and c) Mt. Hope Bay, station 5.

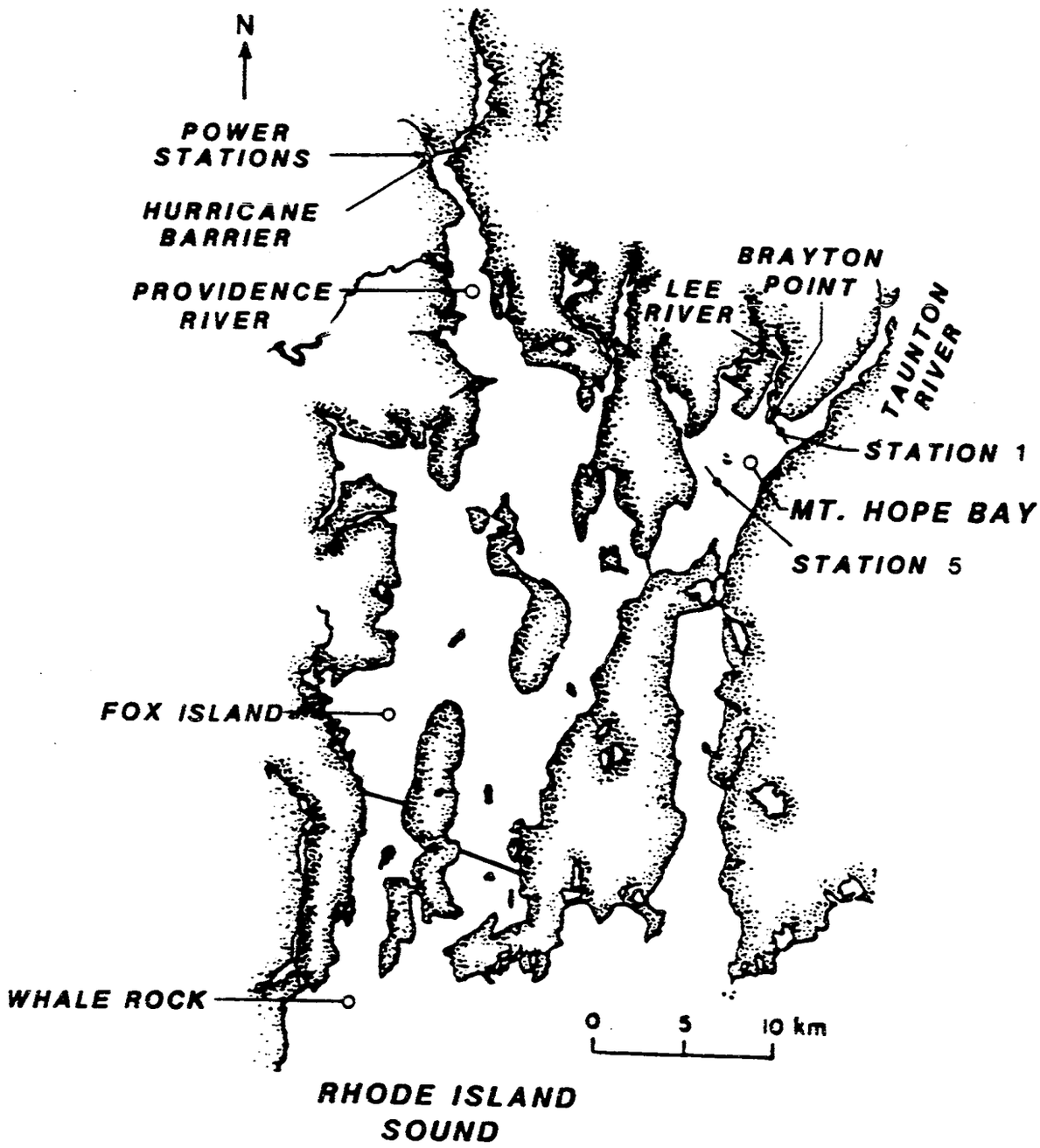
N
POWER STATIONS
HURRICANE BARRIER
PROVIDENCE RIVER
LEE RIVER
BRAYTON POINT
TAUNTON RIVER
STATION 1
MT. HOPE BAY
STATION 5
FOX ISLAND
WHALE ROCK
0 5 10 km
RHODE ISLAND SOUND

Fig. 1

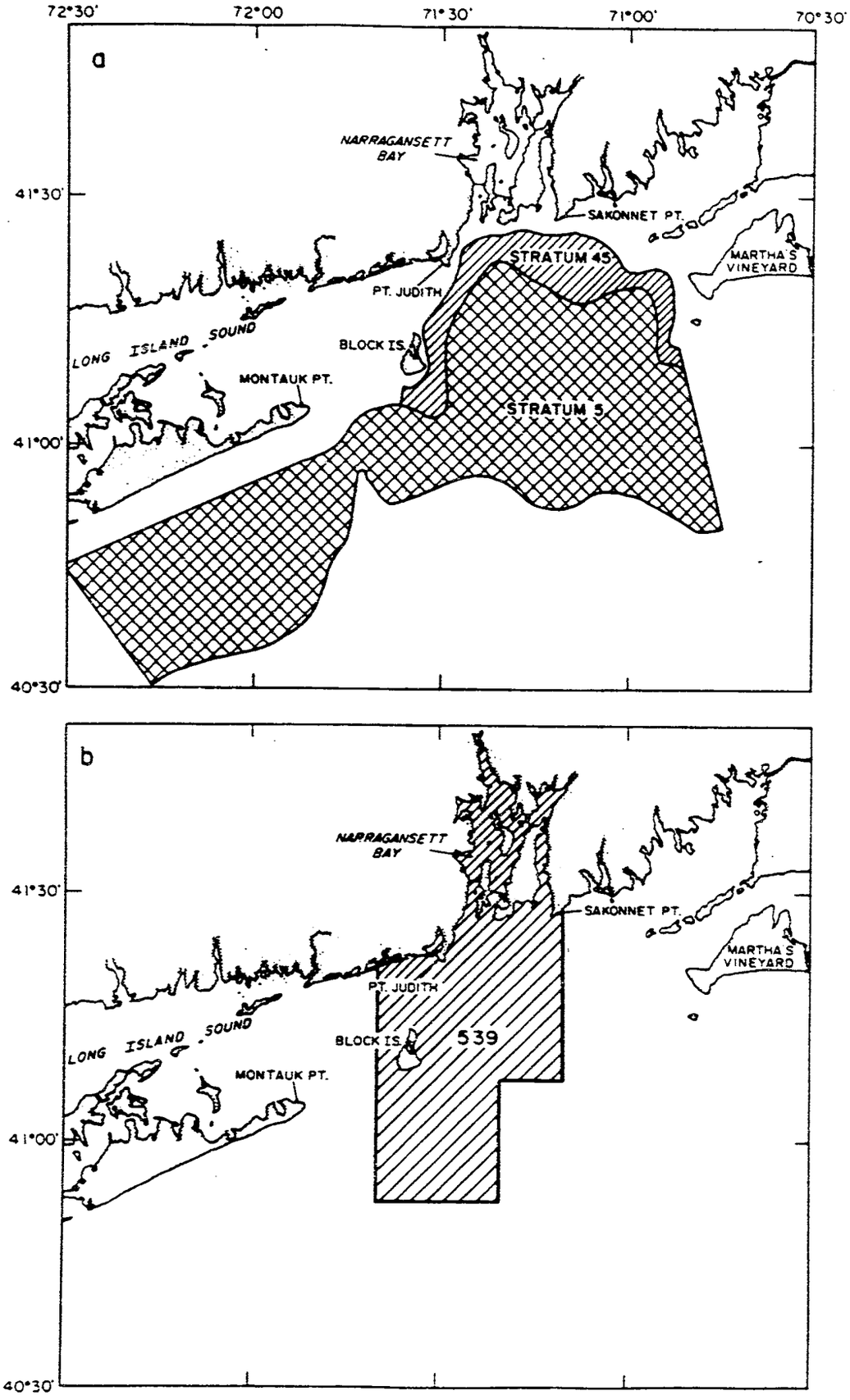
72°30'
72°00
71°30'
71°00'
70°30'
a
NARRAGANSETT BAY
SAKONNET PT.
MARTHA'S VINEYARD
STRATUM 45
PT. JUDITH
BLOCK IS.
LONG ISLAND SOUND
MONTAUK PT.
STRATUM 5
41°30'
41°00'
40°30'
b
NARRAGANSETT BAY
SAKONNET PT.
MARTHA'S VINEYARD
PT. JUDITH
BLOCK IS.
539
LONG ISLAND SOUND
MONTAUK PT.
41°30'
41°00'
40°30'

Fig. 2

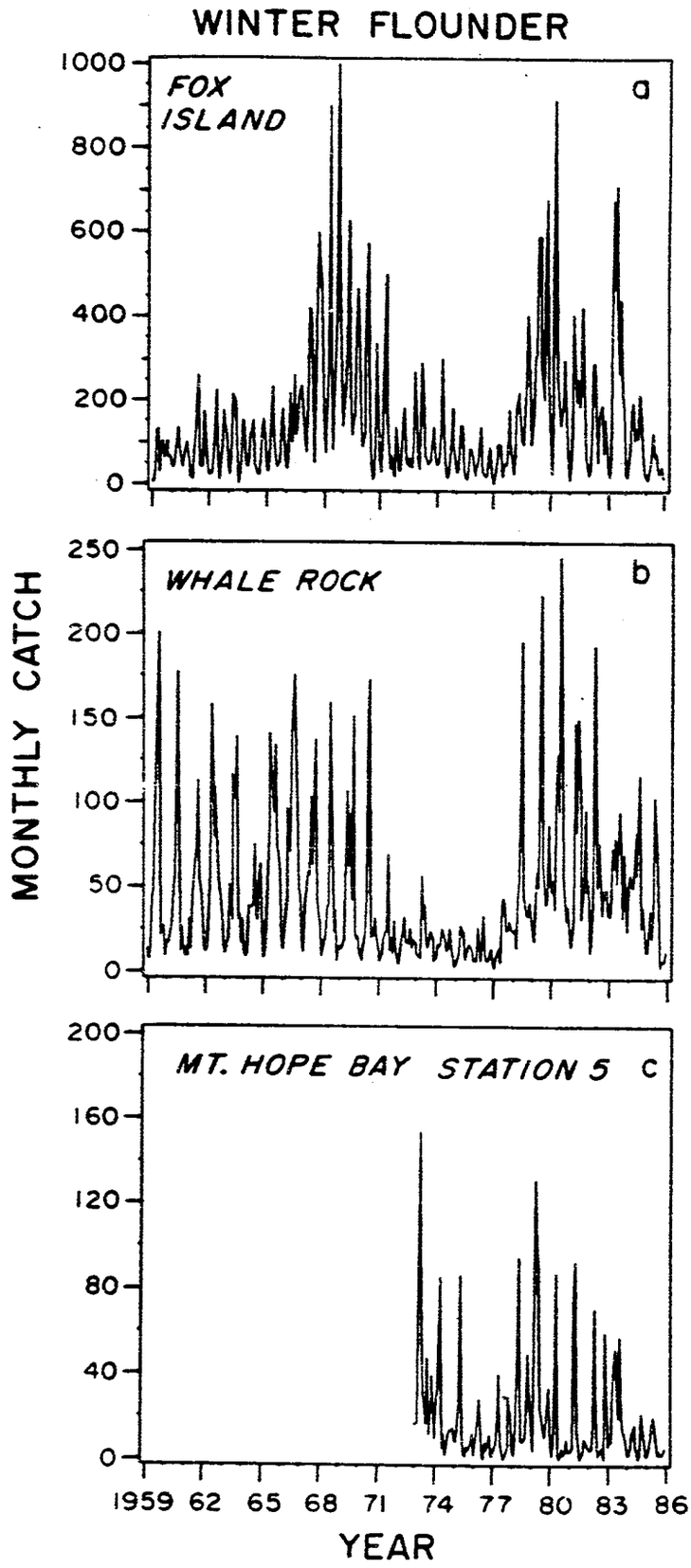
WINTER FLOUNDER
FOX ISLAND
a
WHALE ROCK
b
MT. HOPE BAY STATION 5
c
MONTHLY CATCH
YEAR
1000
800
600
400
200
0
250
200
150
100
50
0
200
160
120
80
40
0
1959
62
65
68
71
74
77
80
83
86

Fig. 3

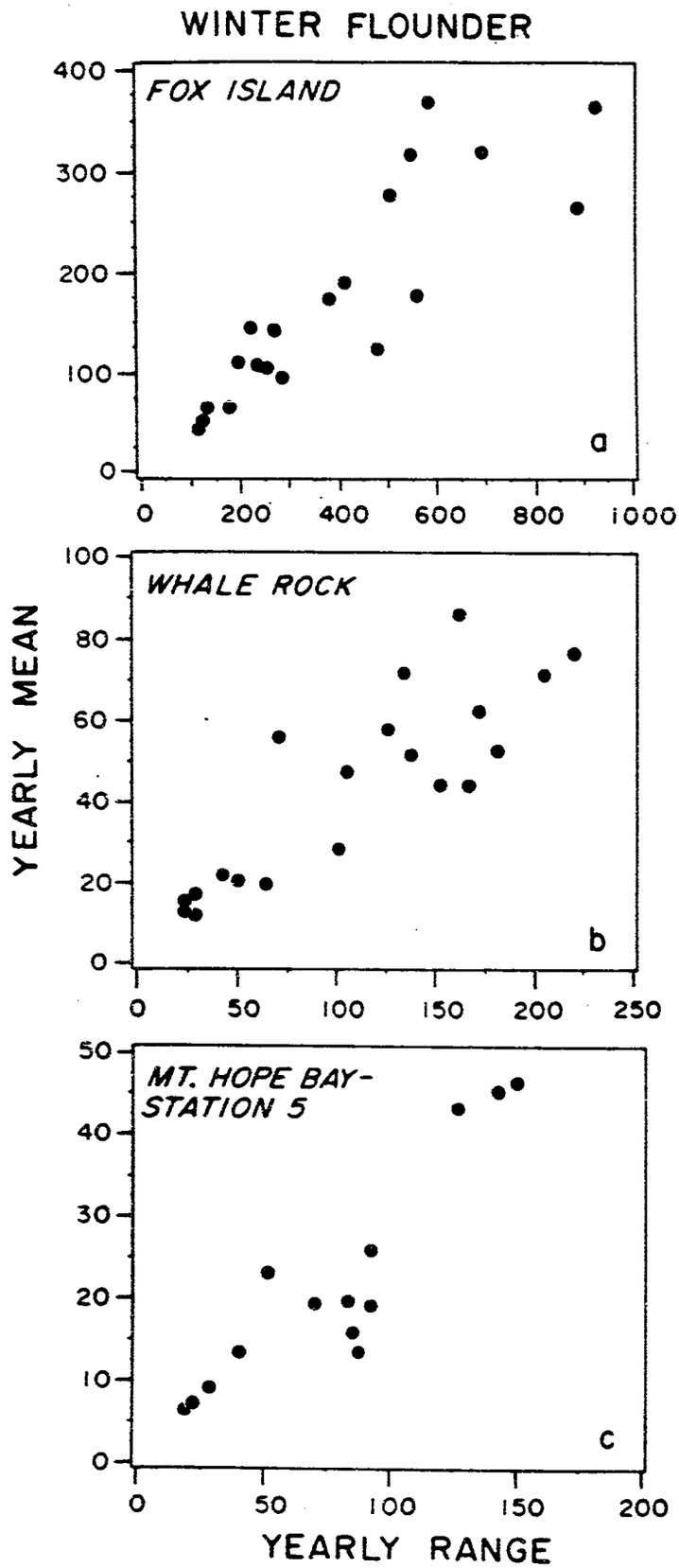
WINTER FLOUNDER
FOX ISLAND
a
WHALE ROCK
b
MT. HOPE BAY-
STATION 5
c
YEARLY MEAN
YEARLY RANGE
0
100
200
300
400
20
40
60
80
10
30
50
150
250
600
800
1000

Fig. 4

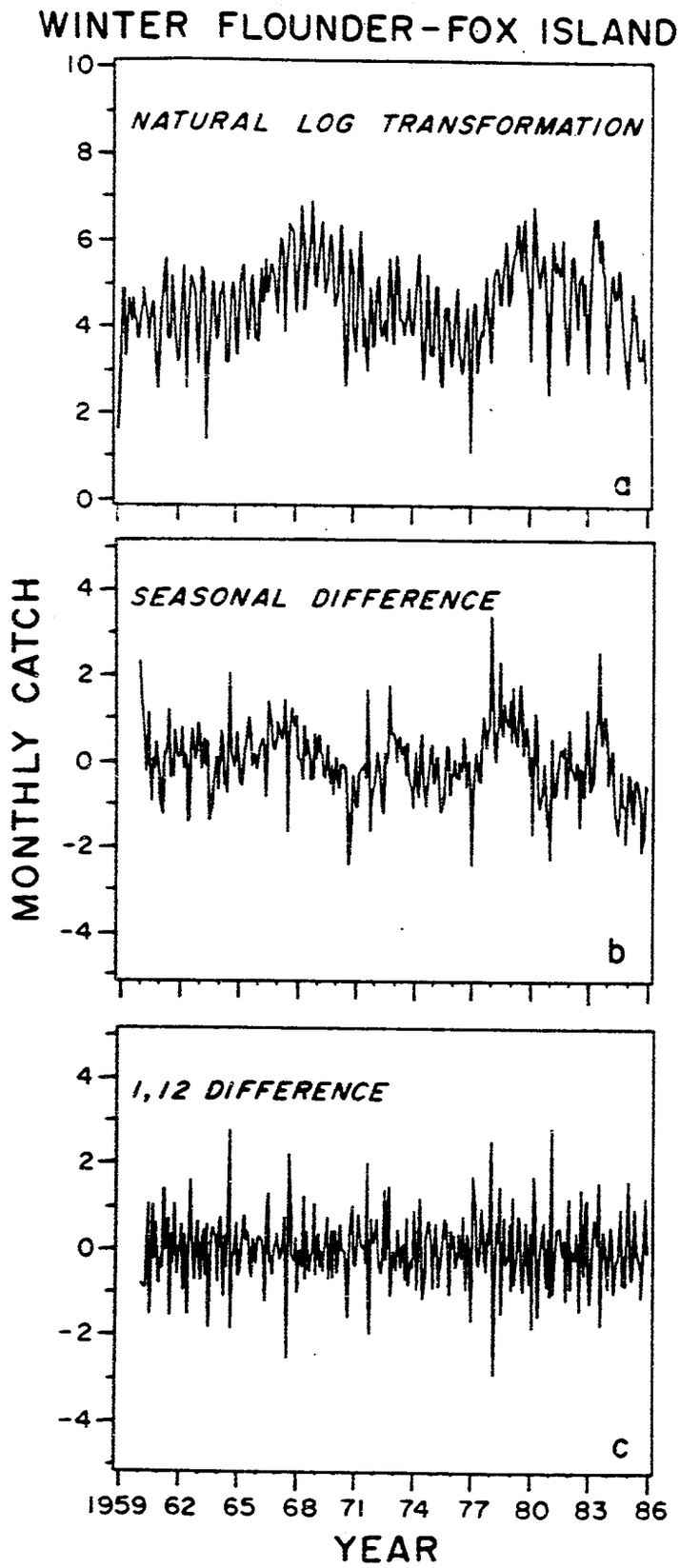
WINTER FLOUNDER-FOX ISLAND
NATURAL LOG TRANSFORMATION
a
SEASONAL DIFFERENCE
b
1,12 DIFFERENCE
c
MONTHLY CATCH
10
8
6
4
2
0
4
2
0
-2
-4
4
2
0
-2
-4
1959 62 65 68 71 74 77 80 83 86
YEAR

Fig. 5

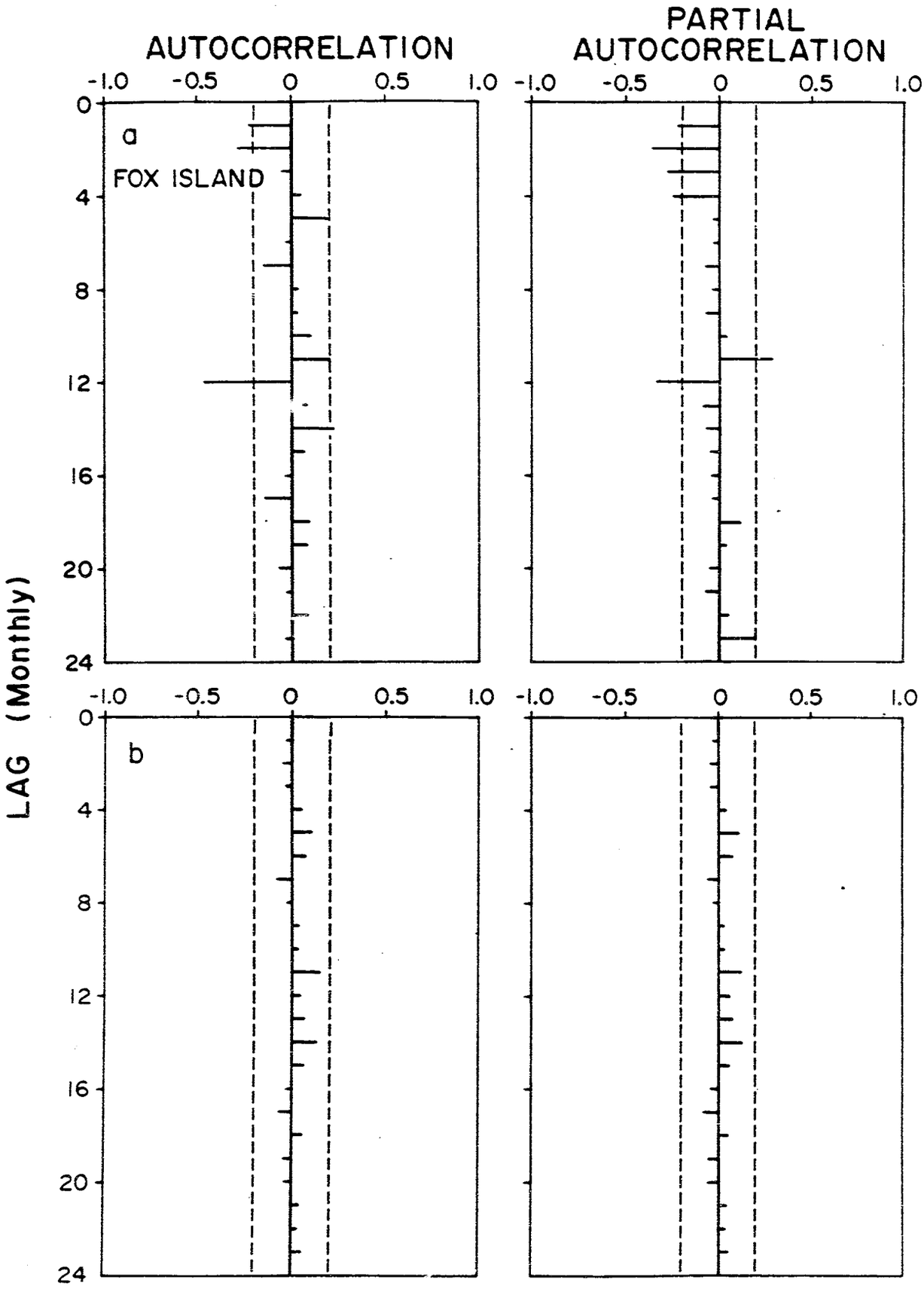
AUTOCORRELATION
PARTIAL AUTOCORRELATION
-1.0
-0.5
0
0.5
1.0
a
FOX ISLAND
b
LAG (Monthly)
0
4
8
12
16
20
24

Fig. 6

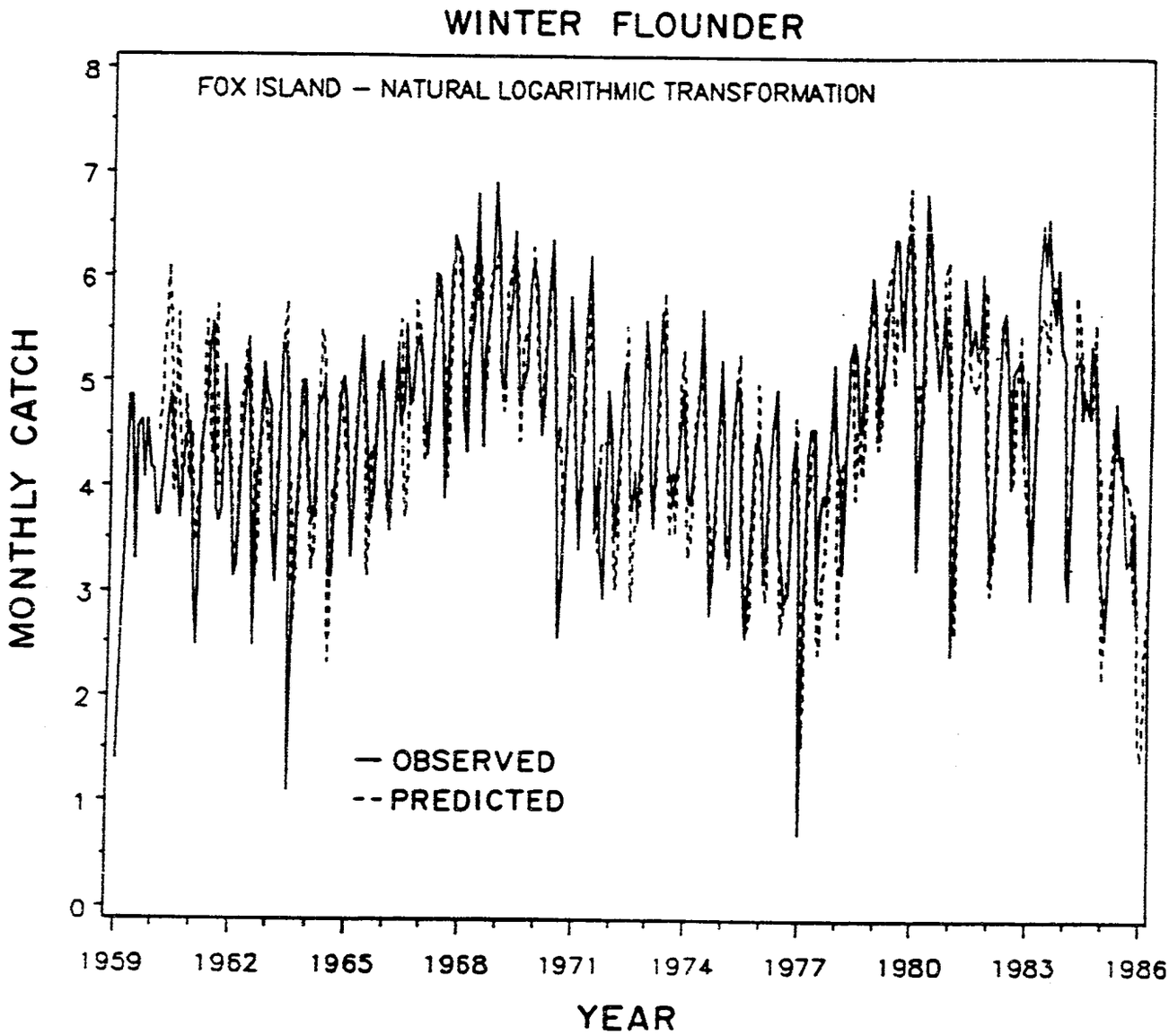
WINTER FLOUNDER
FOX ISLAND — NATURAL LOGARITHMIC TRANSFORMATION
MONTHLY CATCH
0
1
2
3
4
5
6
7
8
— OBSERVED
-- PREDICTED
1959
1962
1965
1968
1971
1974
1977
1980
1983
1986
YEAR

Fig. 7

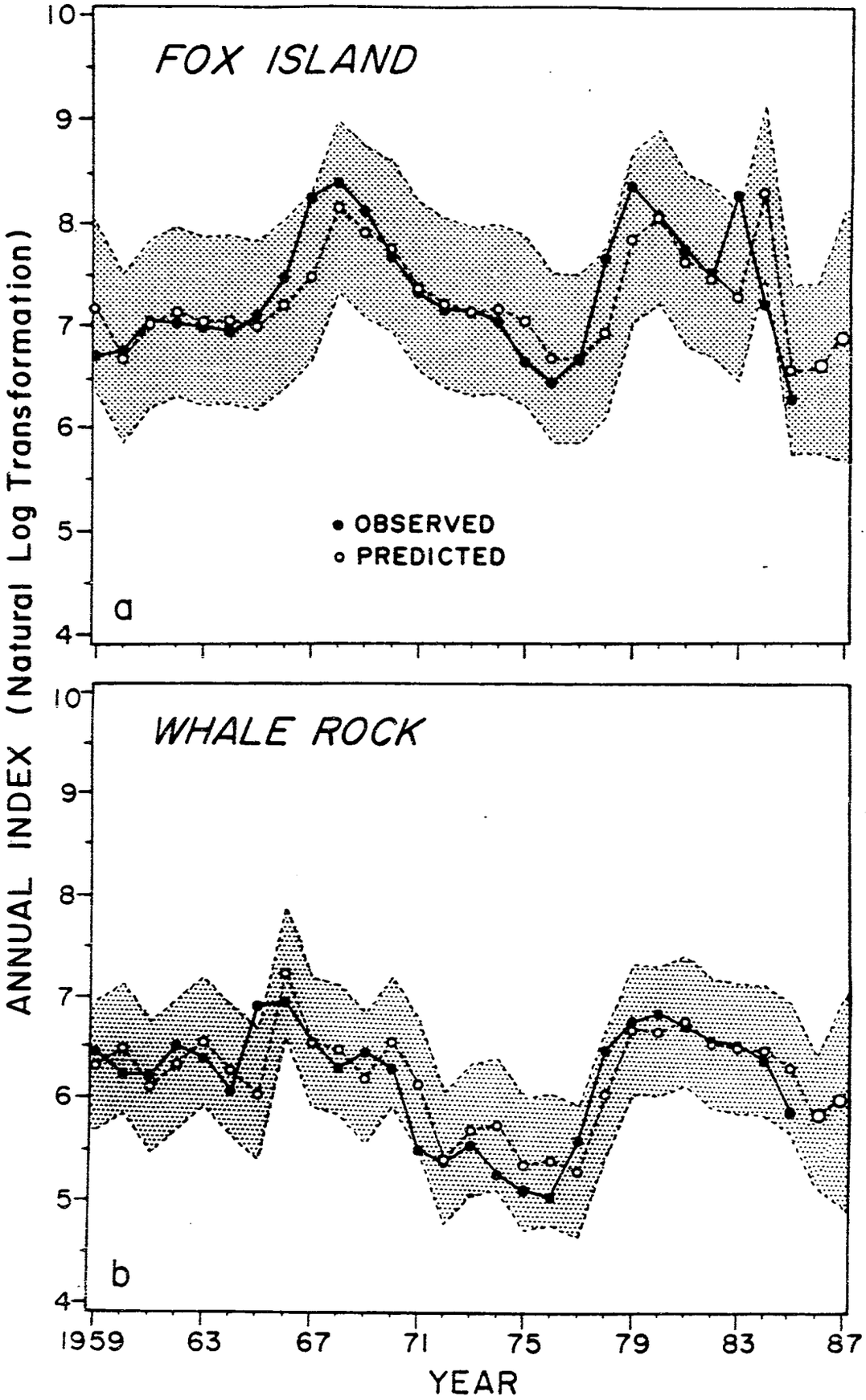
FOX ISLAND
• OBSERVED
○ PREDICTED
a
WHALE ROCK
b
ANNUAL INDEX (Natural Log Transformation)
10
9
8
7
6
5
4
1959
63
67
71
75
79
83
87
YEAR

Fig. 8

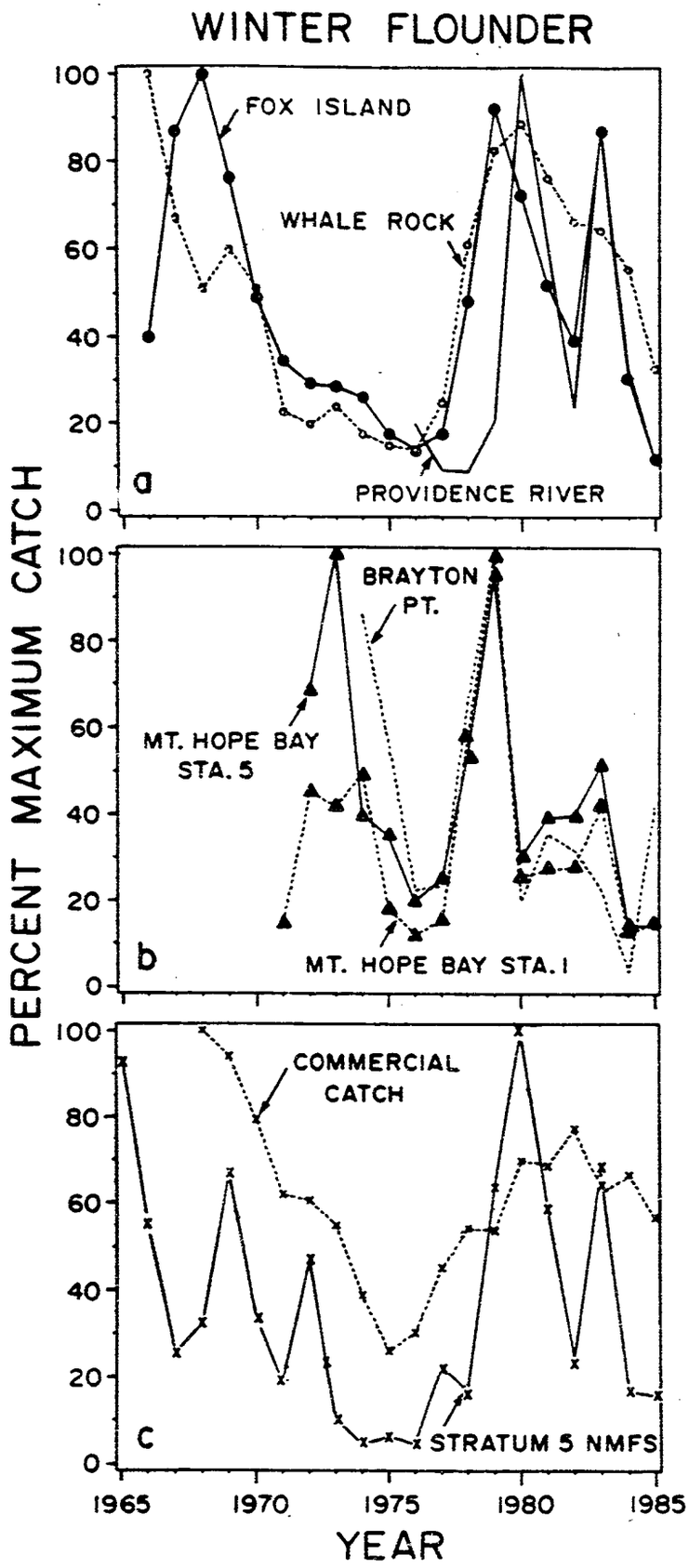
WINTER FLOUNDER
PERCENT MAXIMUM CATCH
FOX ISLAND
WHALE ROCK
PROVIDENCE RIVER
a
BRAYTON PT.
MT. HOPE BAY STA. 5
MT. HOPE BAY STA. 1
b
COMMERCIAL CATCH
STRATUM 5 NMFS
c
0
20
40
60
80
100
1965
1970
1975
1980
1985
YEAR

Fig. 9

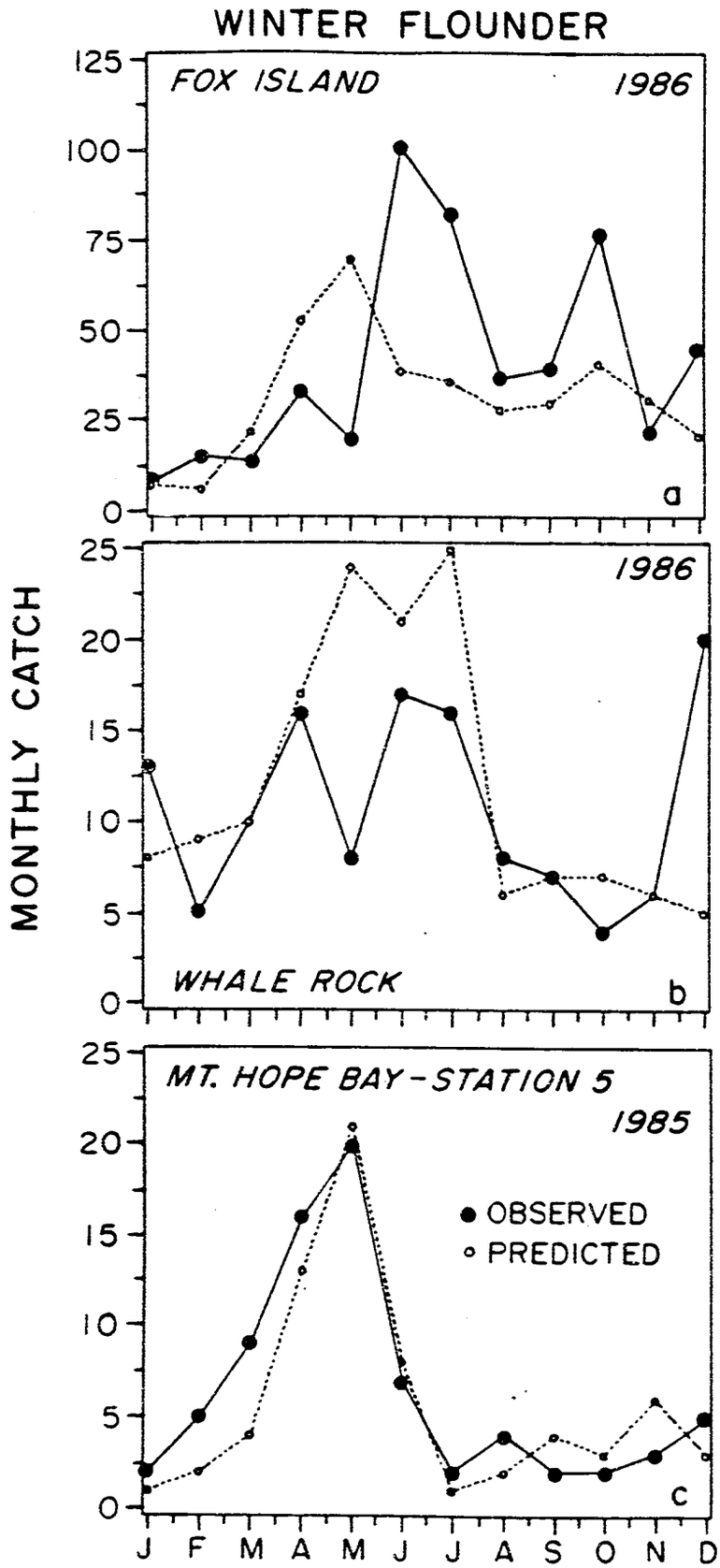
WINTER FLOUNDER
FOX ISLAND
1986
a
1986
WHALE ROCK
b
MT. HOPE BAY-STATION 5
1985
OBSERVED
PREDICTED
c
MONTHLY CATCH
J F M A M J J A S O N D

Fig. 10

APPENDIX B

Winter flounder (Pseudopleuronectes americanus)
length-frequency plots

1977-1978
1985 - 1988

Winter flounder (Pseudopleuronectes americanus) were sexed and lengths measured beginning with the April 1985 weekly trawls. Some earlier measurements from the 1977-1978 trawls are also included in this appendix.

Winter flounder total length (rounded down to the nearest whole cm) for all individuals caught was measured by placing each fish on a measuring board and measuring from the tip of the nose to the end of the tail fins. Sex was identified by visual inspection of the gonads. Female gonads are white to pinkish-orange and are rounded at the anterior end. Male gonads are white and have a fluted anterior lip. Subsampling of at least 30 fish was done to establish the sex ratio in the 10-15 cm size class when more than 100 fish were caught in this size range. Otherwise sex was determined individually for each fish caught.

Length frequencies were standardized to 6 trawls/month by summing the number of individuals of the same length, multiplying by six and dividing by the number of weekly cruises that month. Length frequencies are plotted in Figs. 1-16.

FOX ISLAND-WINTER FLOUNDER(FEMALES)

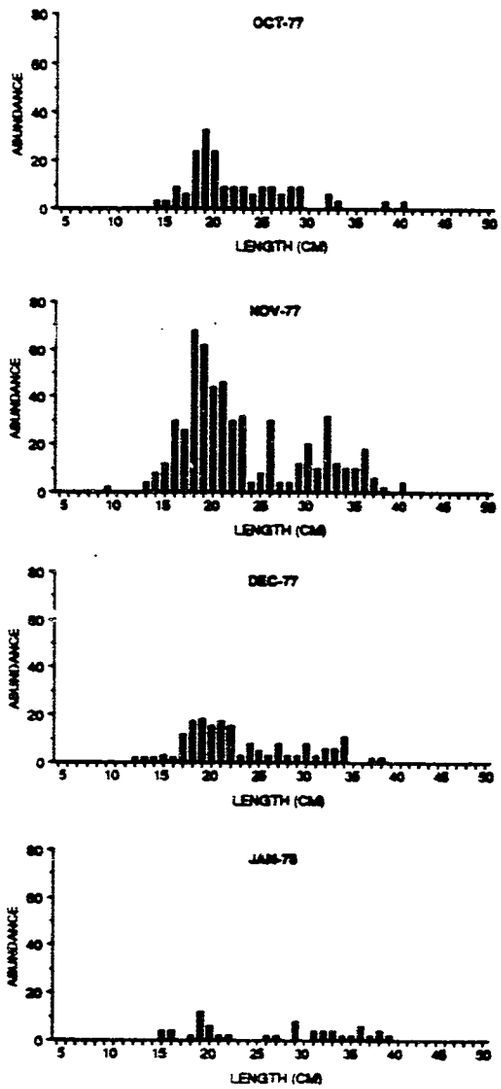

Fig. 1. Length-frequency distribution, winter flounder, female, total monthly catch standardized to 6 trawls per month, Fox Island (Narragansett Bay) 1977-1978.

FOX ISLAND-WINTER FLOUNDER(FEMALES)

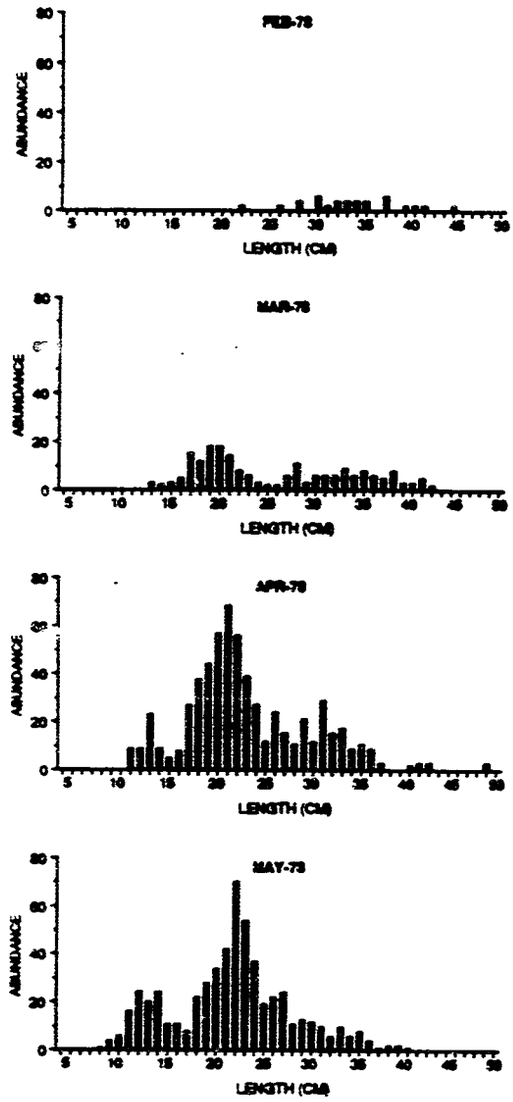

Fig. 1 cont'd

FOX ISLAND-WINTER FLOUNDER(FEMALES)

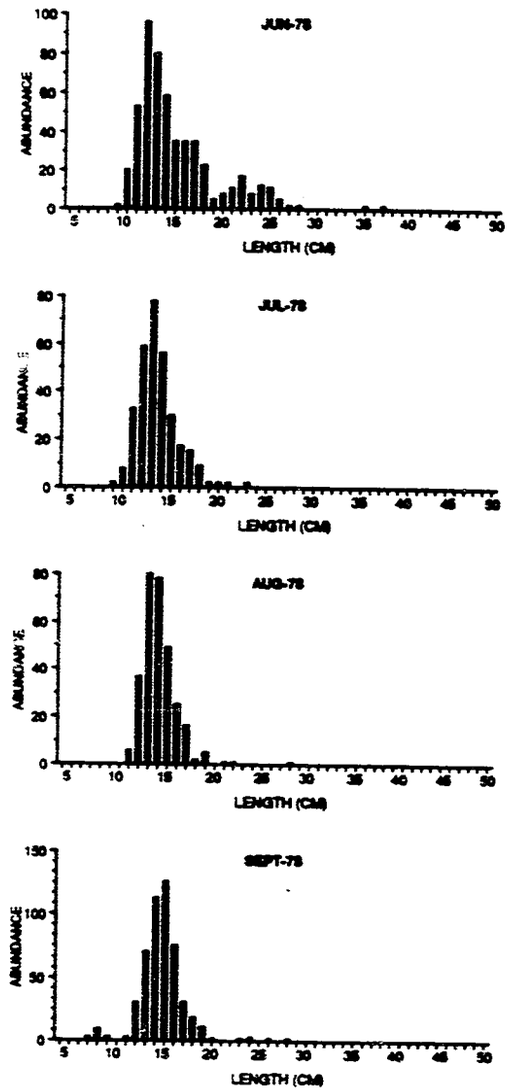

Fig. 1 cont'd

FOX ISLAND-WINTER FLOUNDER(FEMALES)

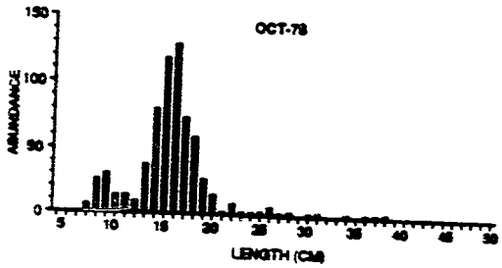

Fig. 1 cont'd

FOX ISLAND-WINTER FLOUNDER(MALES)

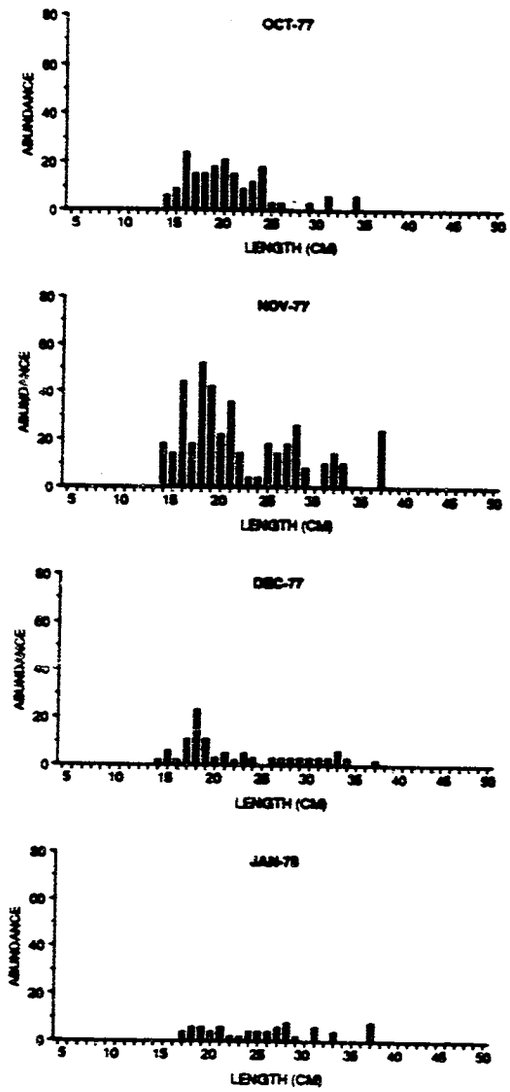

Fig. 2. Length-frequency distribution, winter flounder, male, total monthly catch standardized to 6 trawls per month, Fox Island (Narragansett Bay) 1977-1978.

FOX ISLAND-WINTER FLOUNDER(MALES)

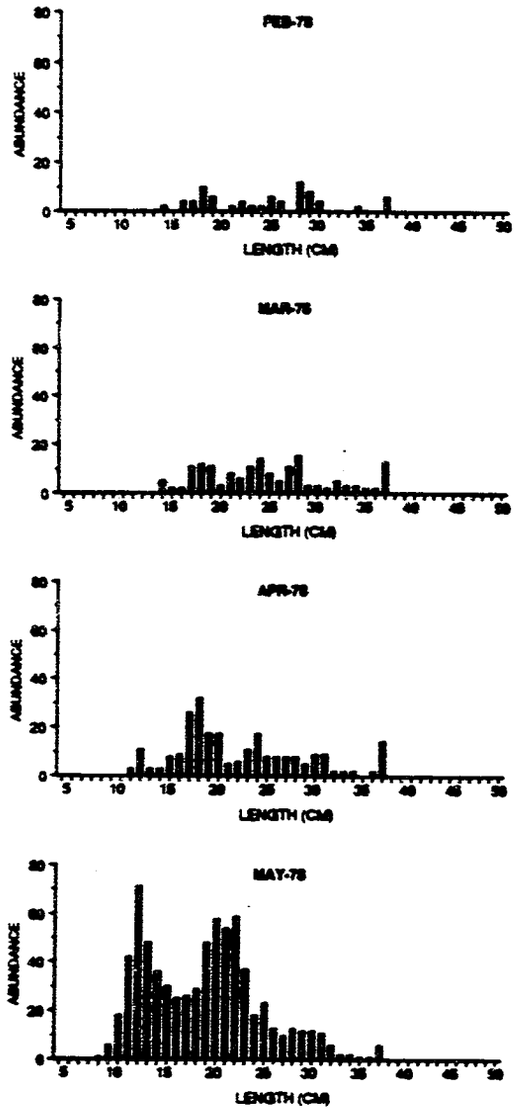

Fig. 2 cont'd

FOX ISLAND-WINTER FLOUNDER(MALES)

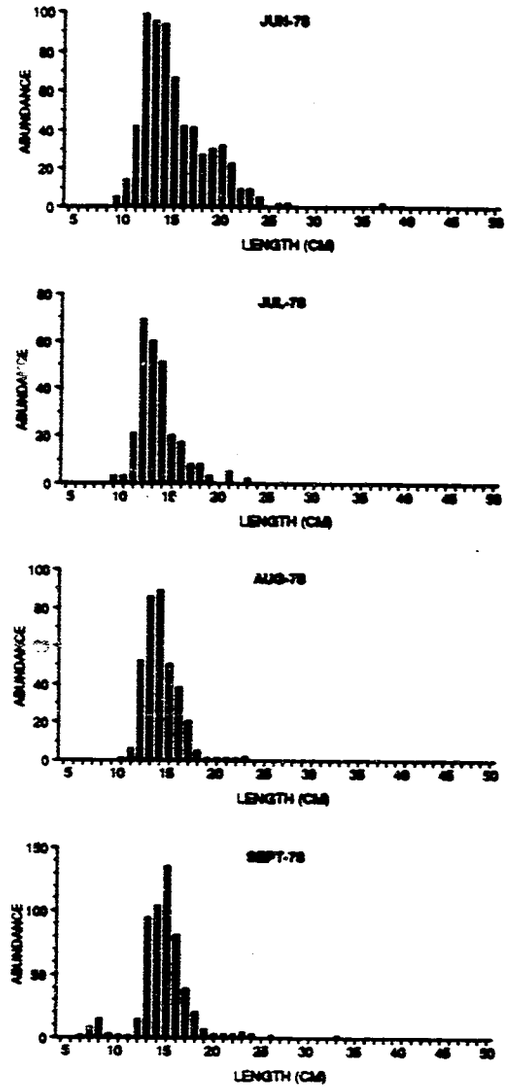

Fig. 2 cont'd

FOX ISLAND-WINTER FLOUNDER(MALES)

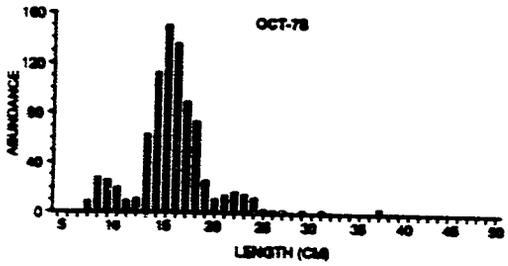

Fig. 2 cont'd

FOX ISLAND-WINTER FLOUNDER(TOTAL)

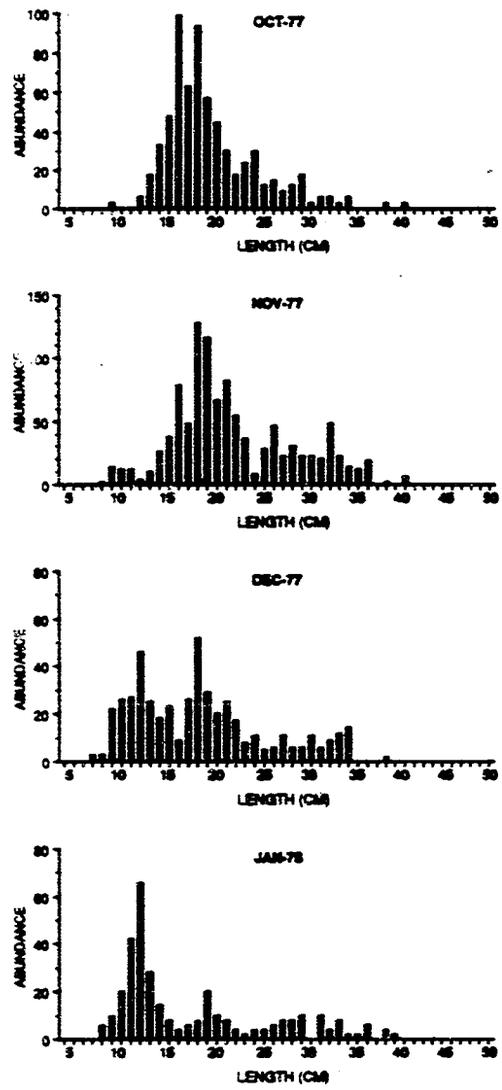

Fig. 3. Length-frequency distribution, winter flounder, both sexes, total monthly catch standardized to 6 trawls per month, Fox Island (Narragansett Bay) 1977-1978.

FOX ISLAND-WINTER FLOUNDER(TOTAL)

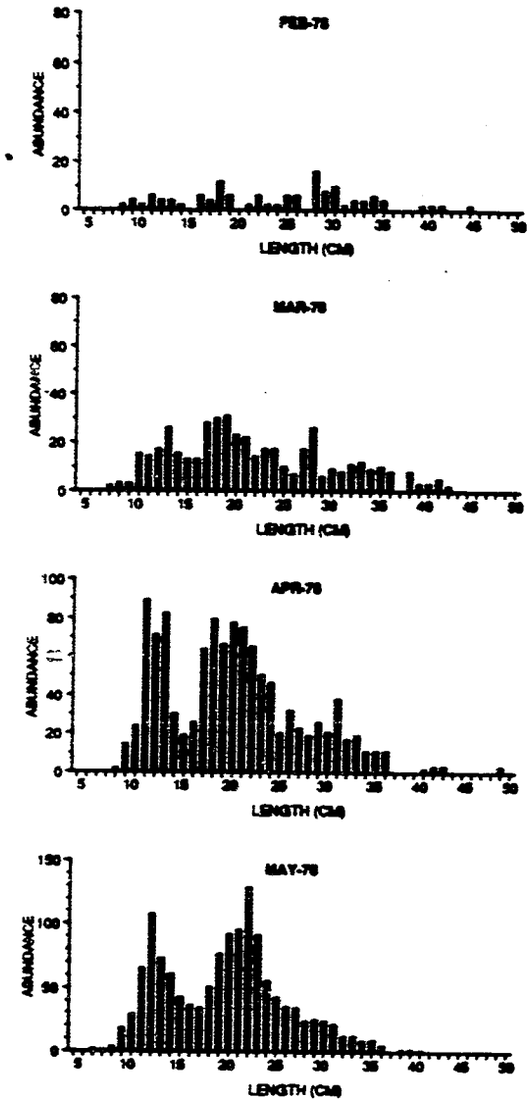

Fig. 3 cont'd

FOX ISLAND-WINTER FLOUNDER(TOTAL)

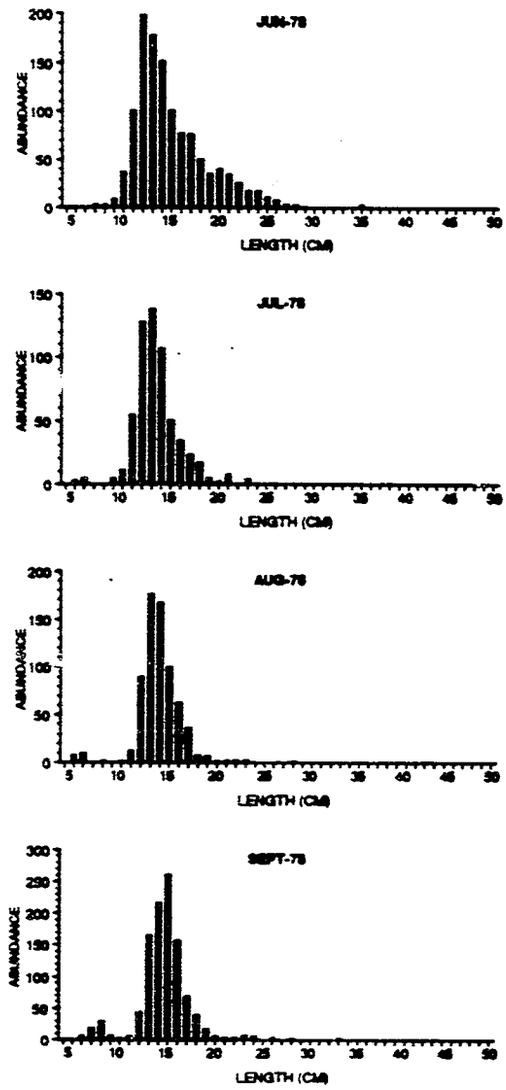

Fig. 3 cont'd

FOX ISLAND-WINTER FLOUNDER(TOTAL)

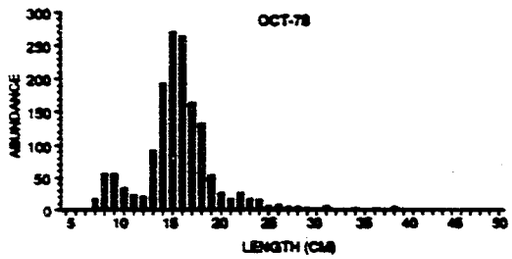

Fig. 3 cont'd

WHALE ROCK-WINTER FLOUNDER(FEMALE)

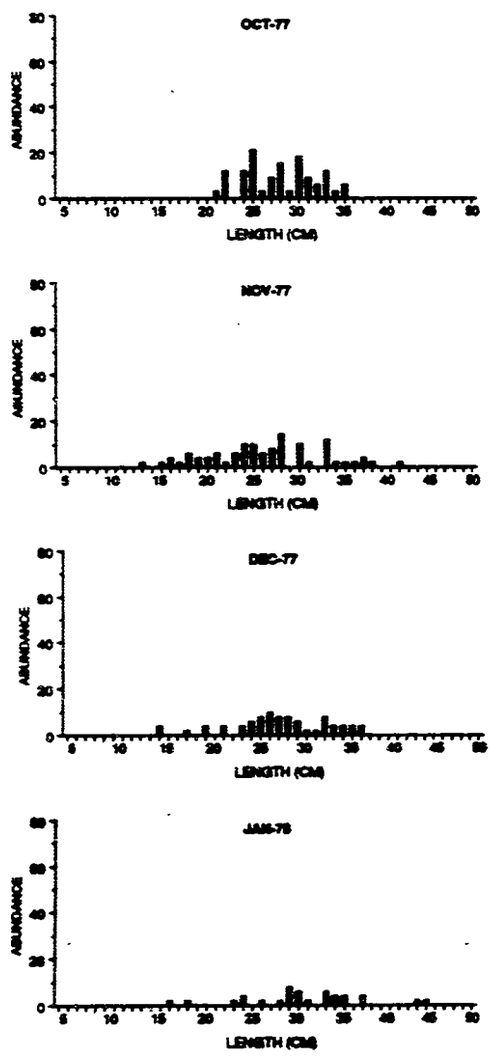

Fig. 4. Length-frequency distribution, winter flounder, female, total monthly catch standardized to 6 trawls per month, Whale Rock (R.I. Sound) 1977-1978.

WHALE ROCK-WINTER FLOUNDER(FEMALE)

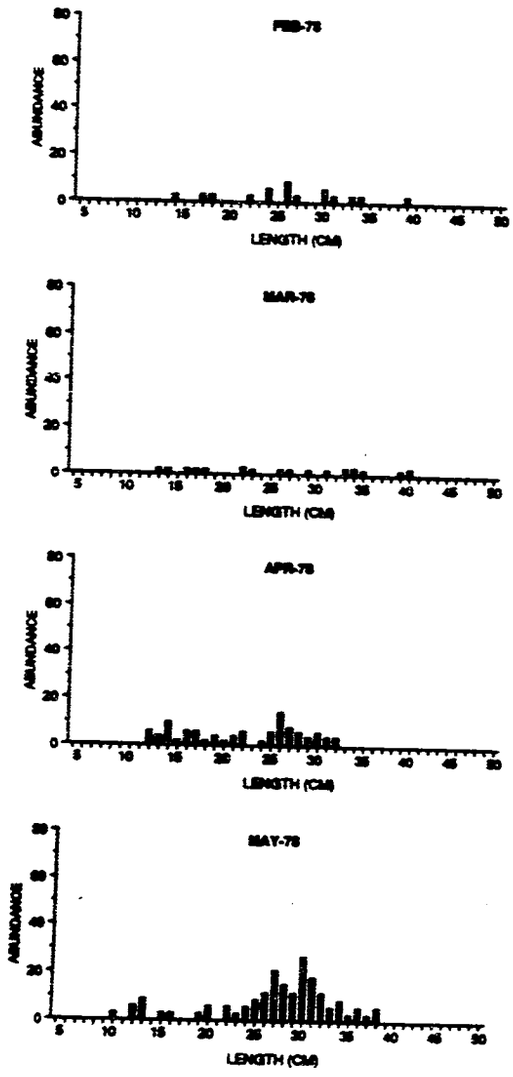

Fig. 4 cont'd

WHALE ROCK-WINTER FLOUNDER(FEMALE)

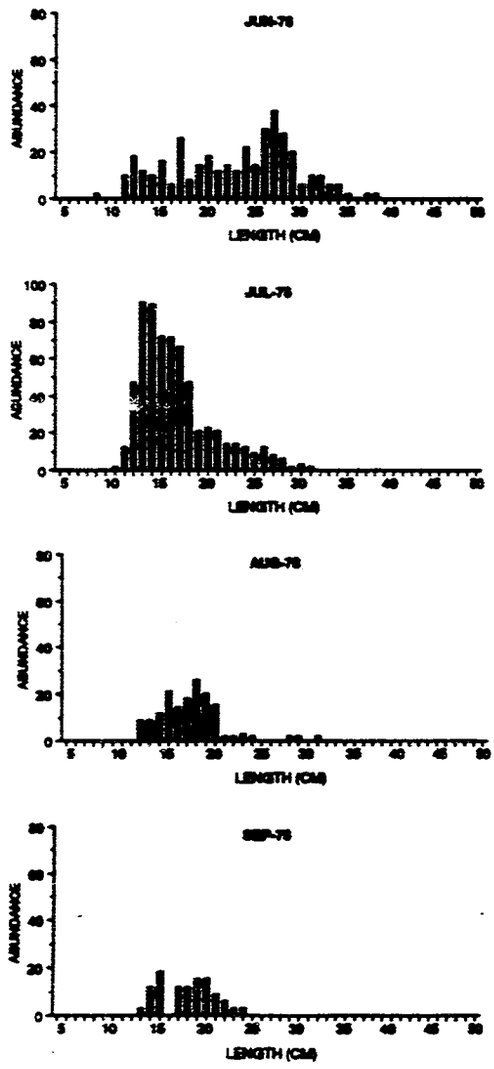

Fig. 4 cont'd

WHALE ROCK-WINTER FLOUNDER(FEMALE)

Fig. 4 cont'd

WHALE ROCK-WINTER FLOUNDER(MALE)

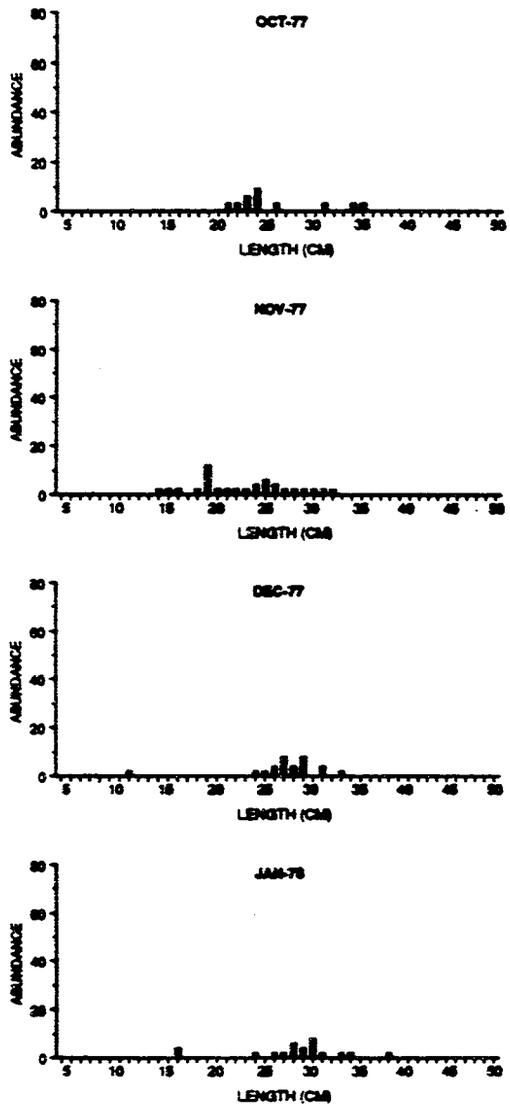

Fig. 5. Length-frequency distribution, winter flounder, male, total monthly catch standardized to 6 trawls per month, Whale Rock (R.I. Sound) 1977-1978.

WHALE ROCK-WINTER FLOUNDER(MALE)

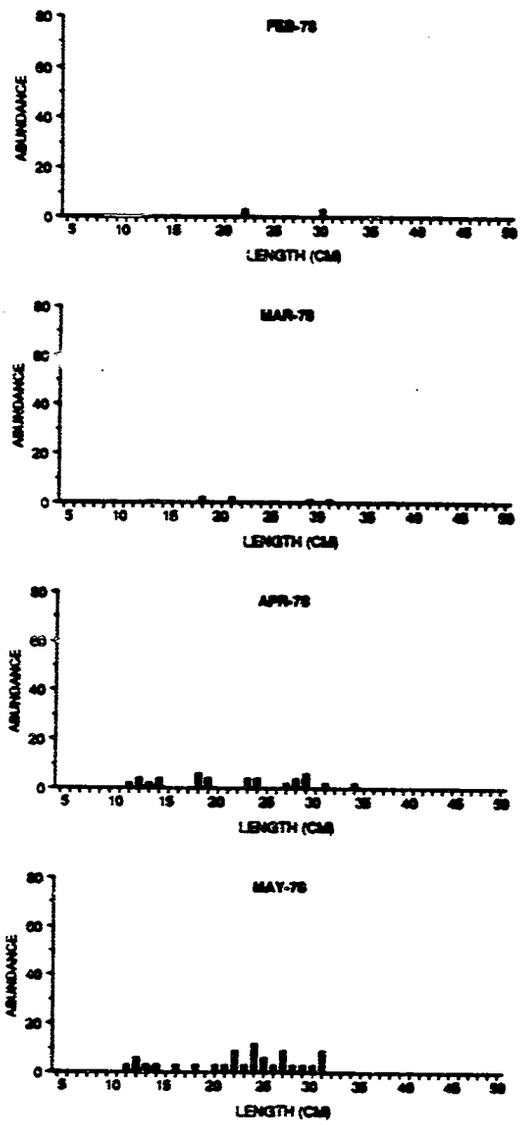

Fig. 5 cont'd

WHALE ROCK-WINTER FLOUNDER(MALE)

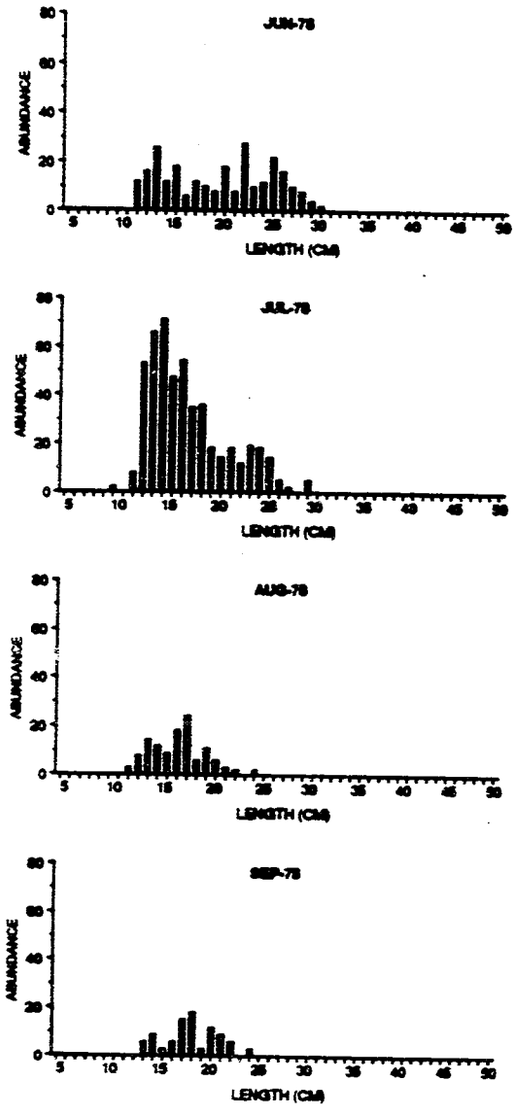

Fig. 5 cont'd

WHALE ROCK-WINTER FLOUNDER(MALE)

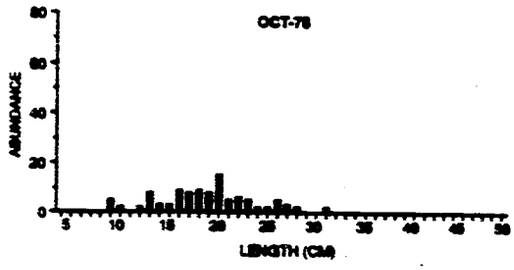

Fig. 5 cont'd

WHALE ROCK-WINTER FLOUNDER(TOTAL)

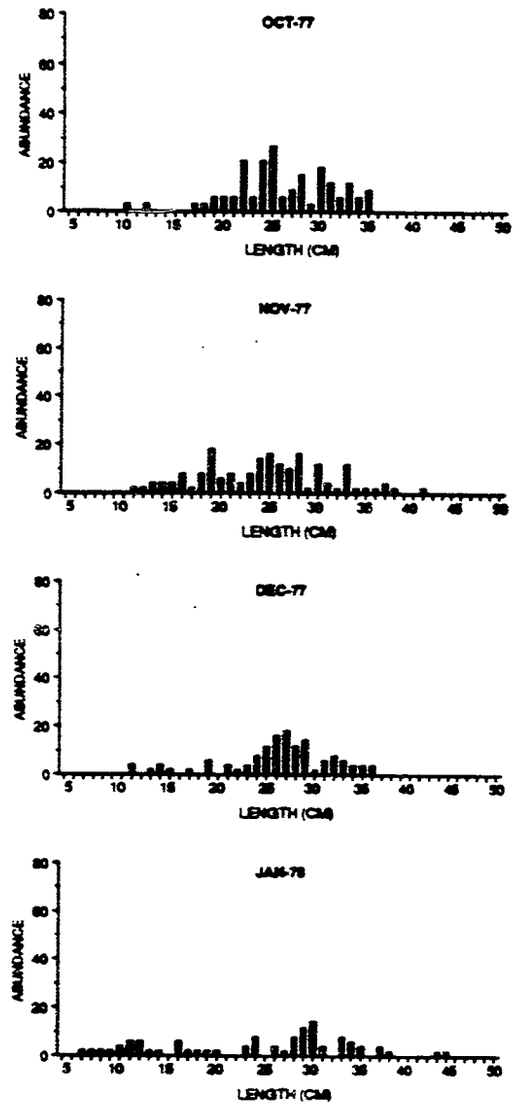

Fig. 6. Length-frequency distribution, winter flounder, both sexes, total monthly catch standardized to 6 trawls per month, Whale Rock (R.I. Sound) 1977-1978.

WHALE ROCK-WINTER FLOUNDER(TOTAL)

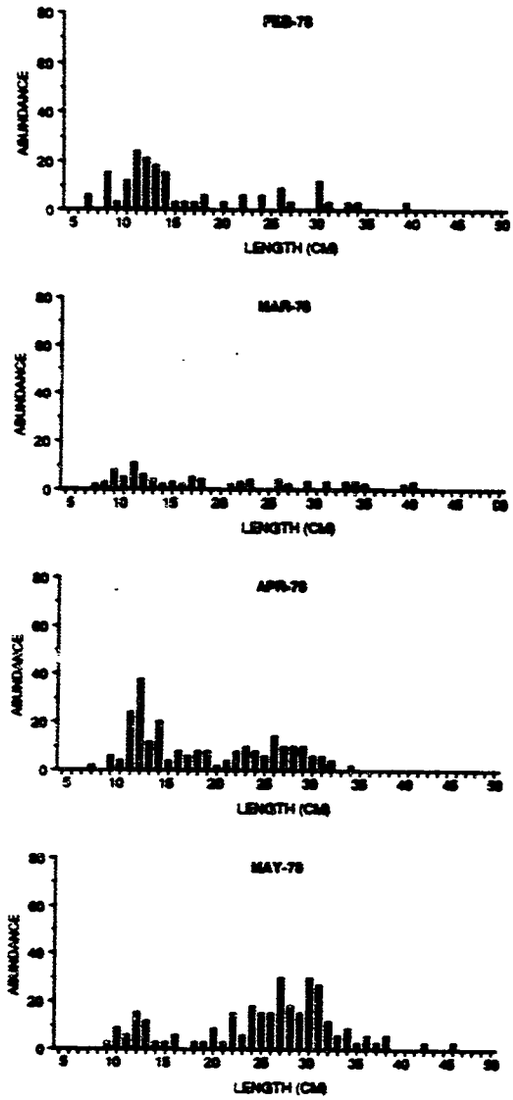

Fig. 6 cont'd

WHALE ROCK-WINTER FLOUNDER(TOTAL)

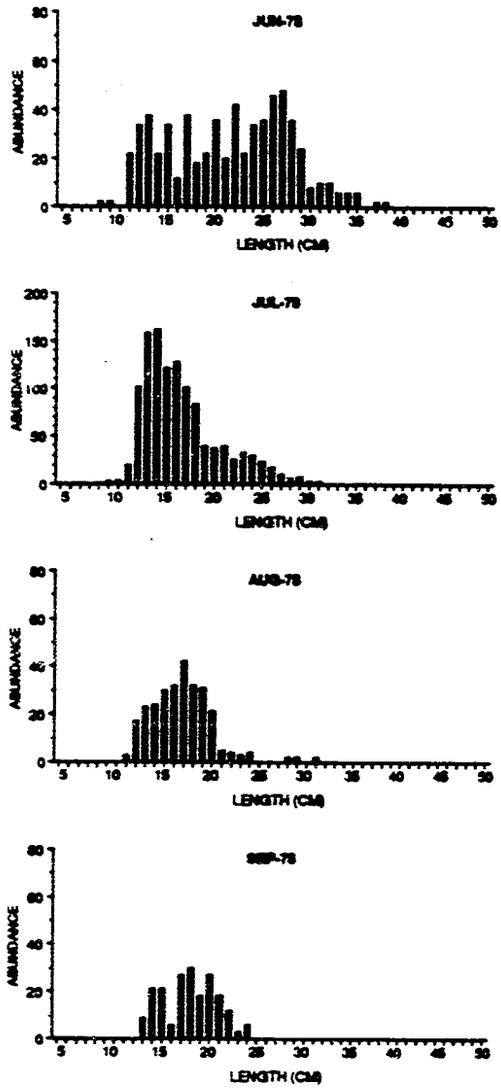

Fig. 6 cont'd

WHALE ROCK-WINTER FLOUNDER(TOTAL)

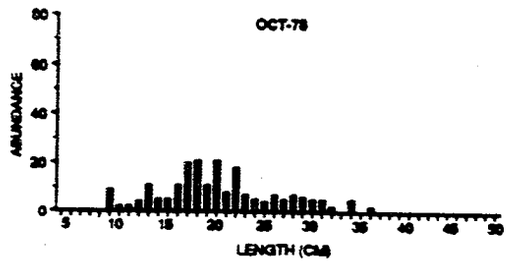

Fig. 6 cont'd

FOX ISLAND - WINTER FLOUNDER (FEMALES)

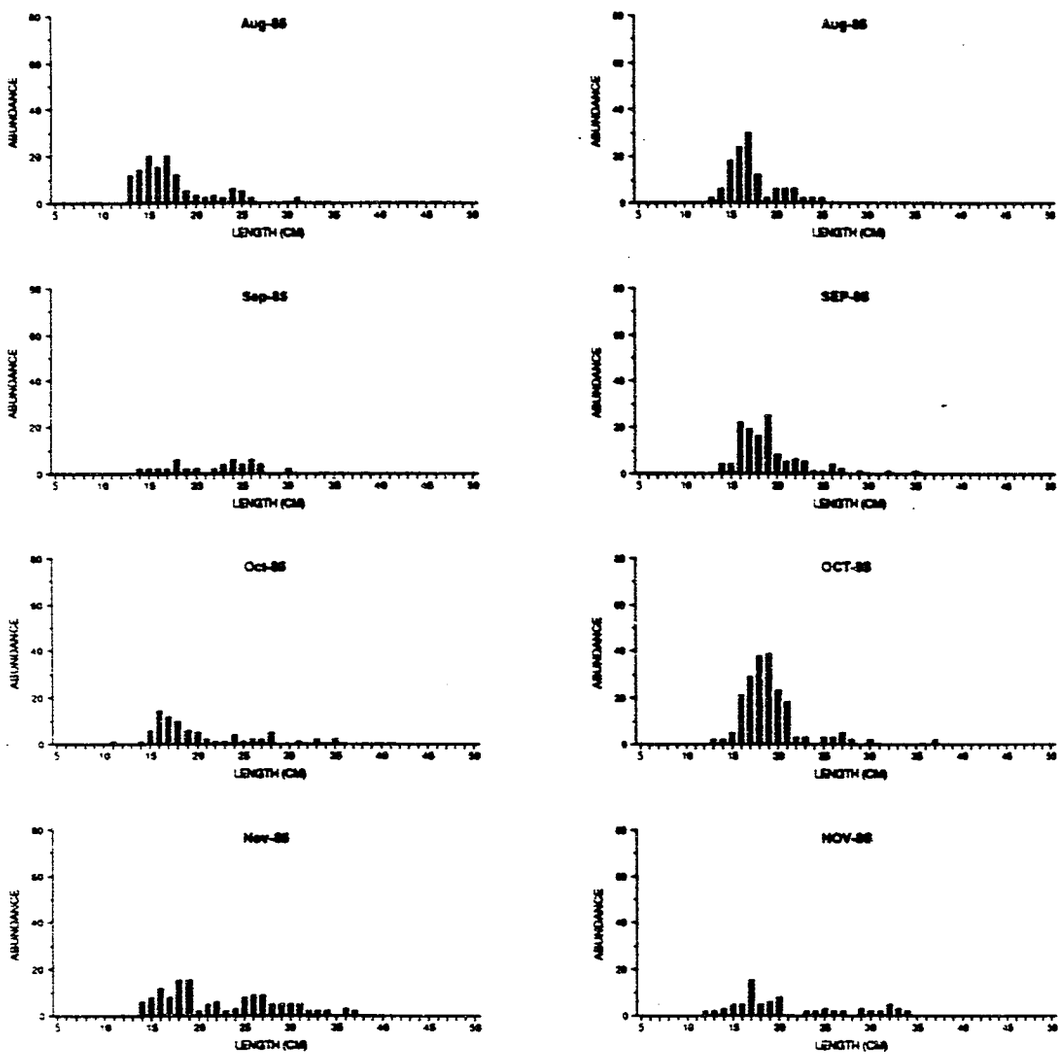

Fig. 7. Length-frequency distribution, winter flounder, female, total monthly catch standardized to 6 trawls per month, Fox Island (Narragansett Bay) 1985-1988.

FOX ISLAND - WINTER FLOUNDER (FEMALES)

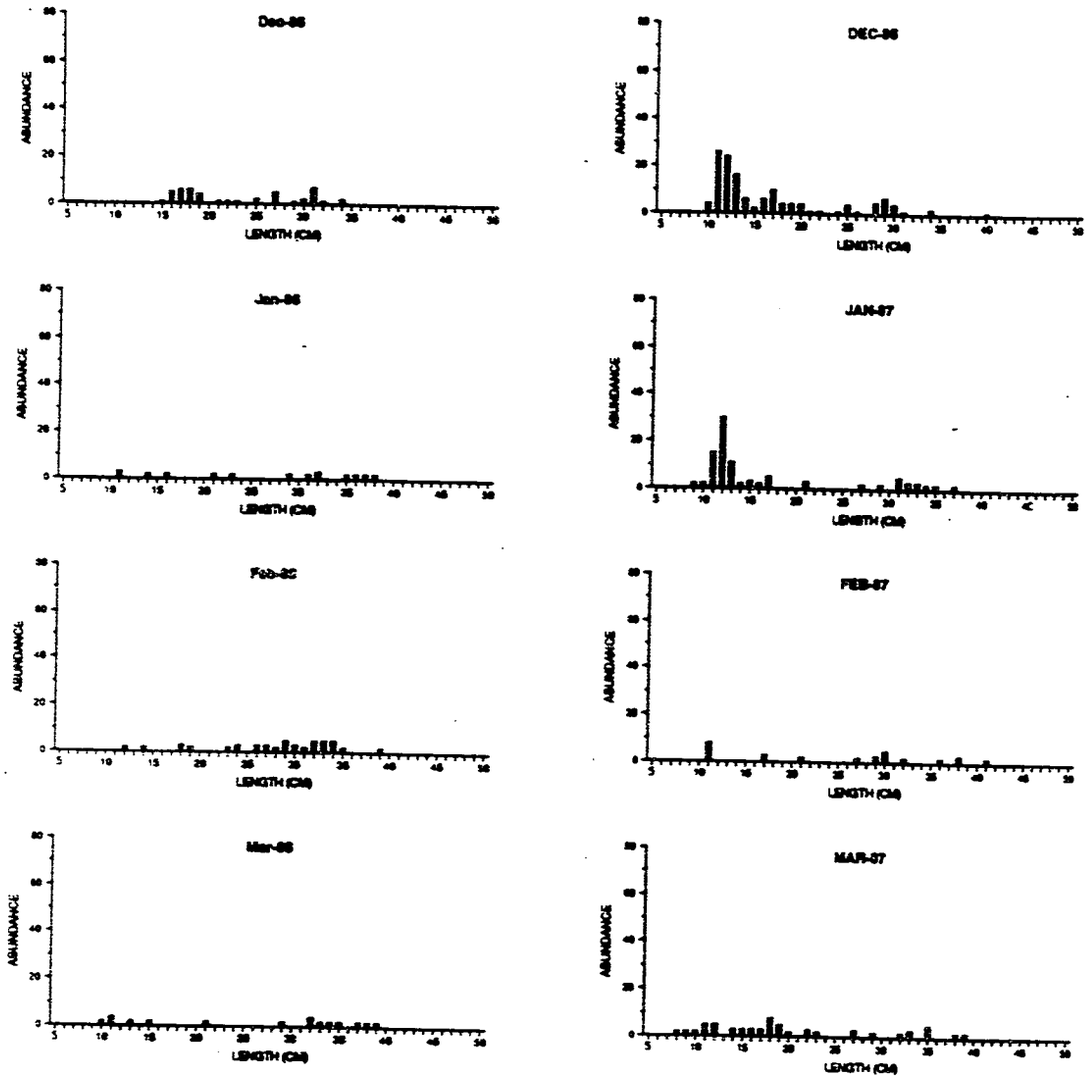

Fig. 7 cont'd

FOX ISLAND - WINTER FLOUNDER (FEMALES)

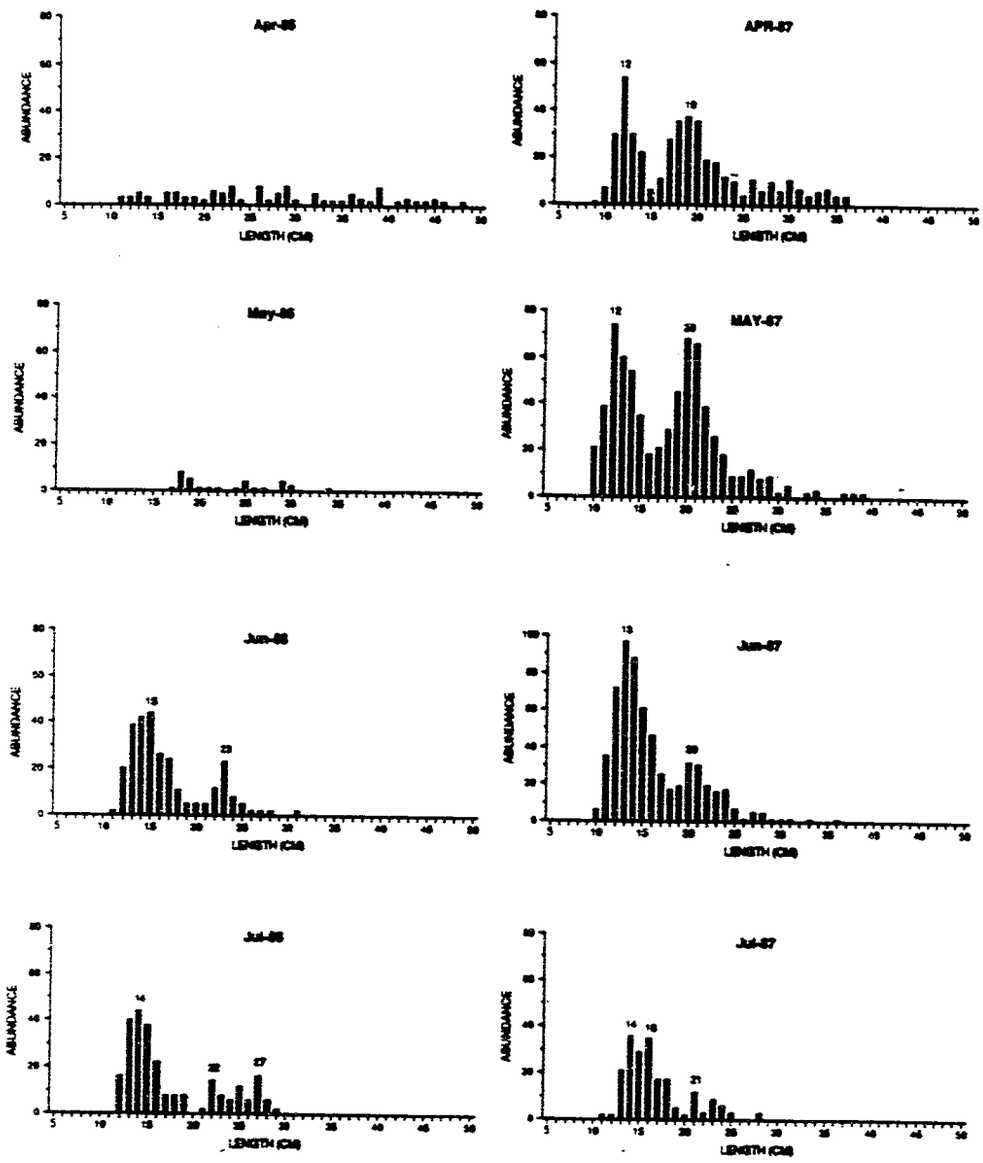

Fig. 7 cont'd

FOX ISLAND - WINTER FLOUNDER (FEMALES)

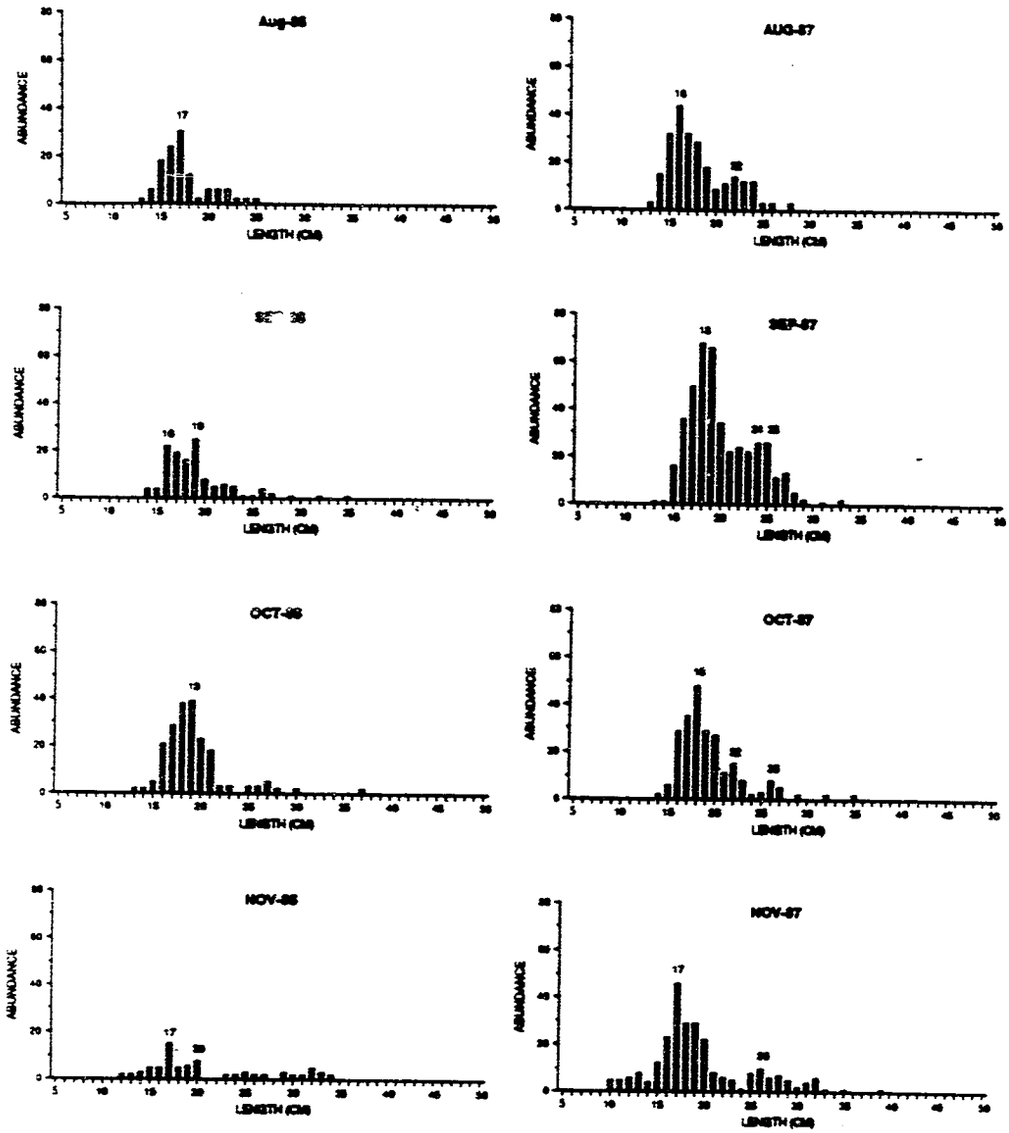

Fig. 7 cont'd

FOX ISLAND - WINTER FLOUNDER (FEMALES)

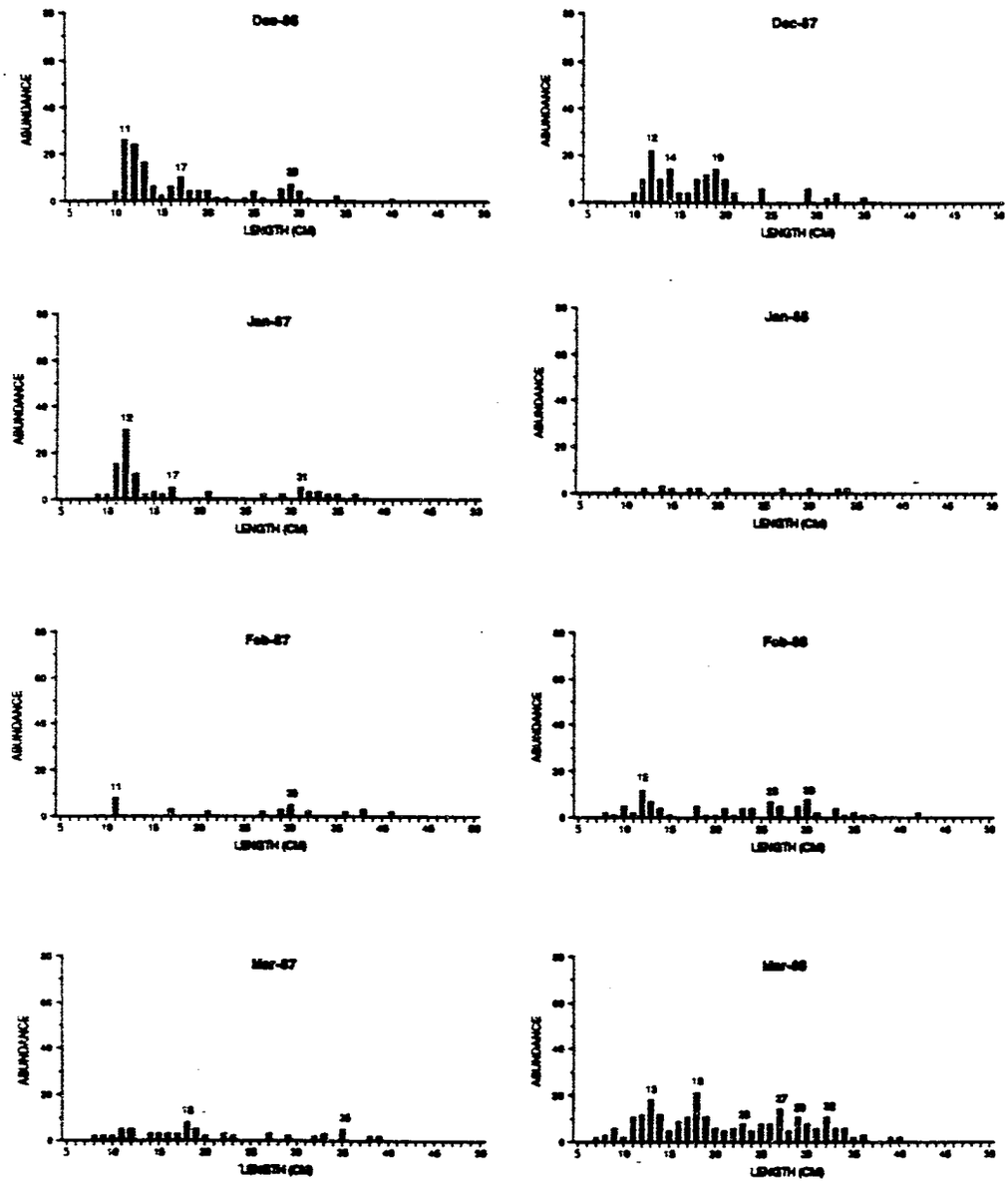

Fig. 7 cont'd

FOX ISLAND - WINTER FLOUNDER (FEMALES)

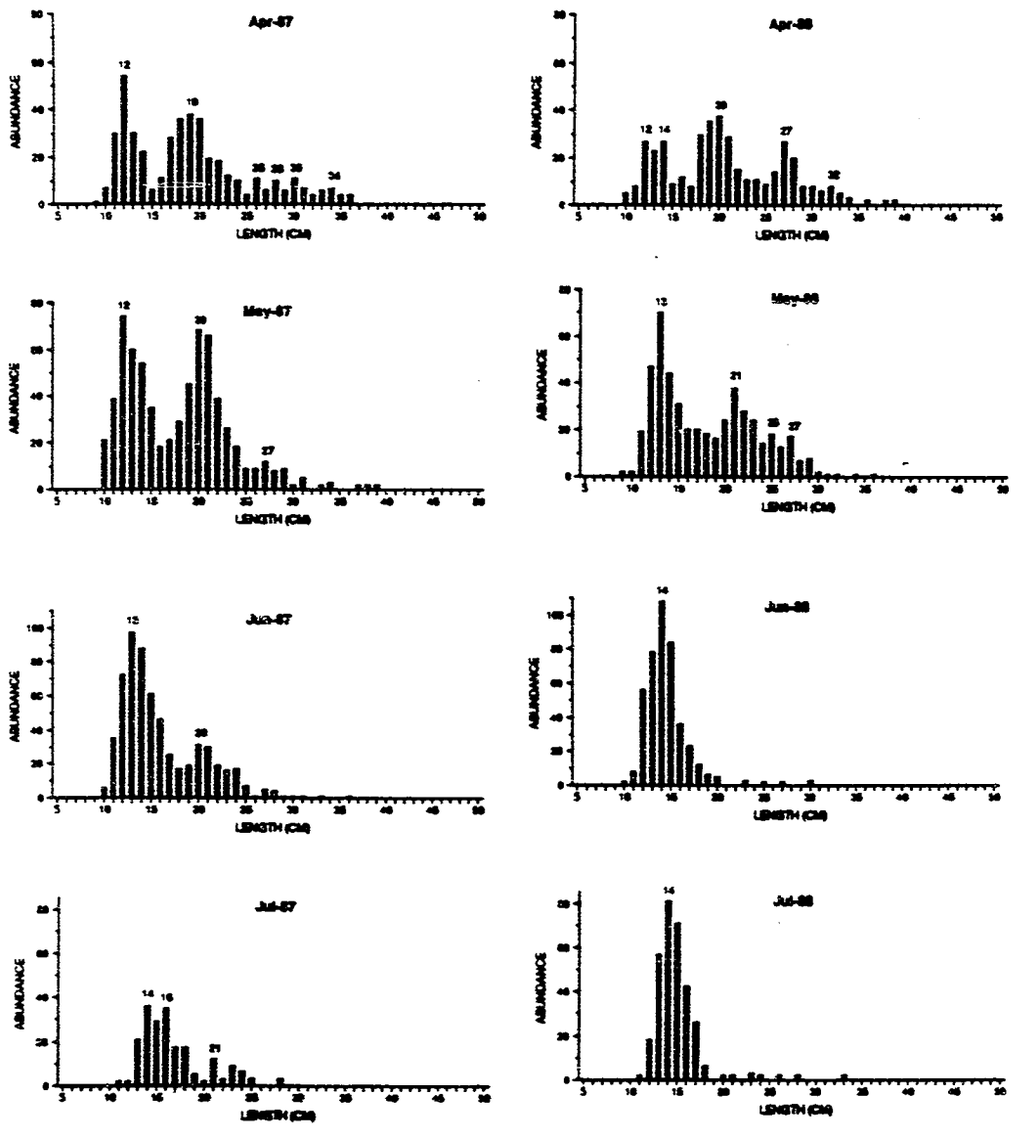

Fig. 7 cont'd

FOX ISLAND - WINTER FLOUNDER (MALES)

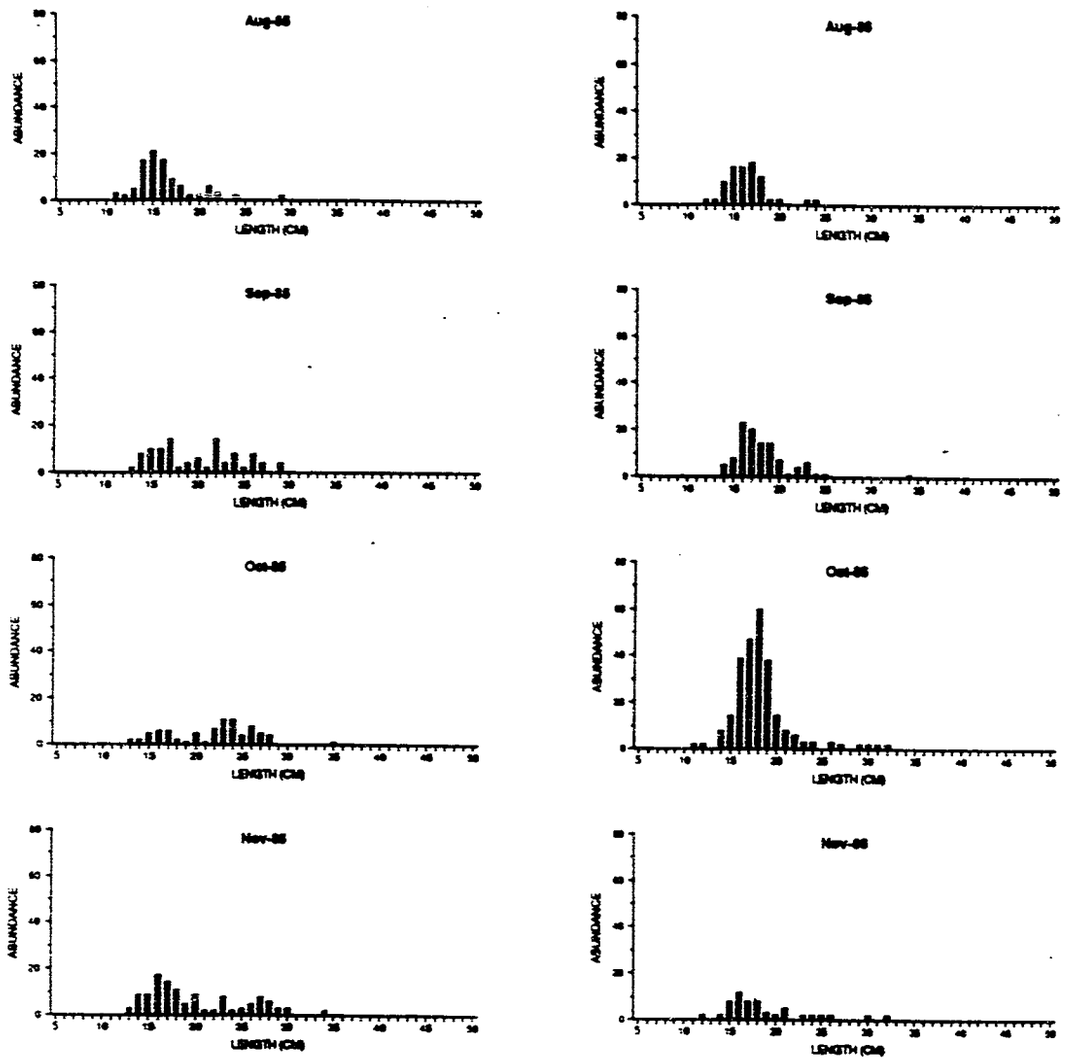

Fig. 8. Length-frequency distribution, winter flounder, male, total monthly catch standardized to 6 trawls per month, Fox Island (Narragansett Bay) 1985-1988.

FOX ISLAND - WINTER FLOUNDER (MALES)

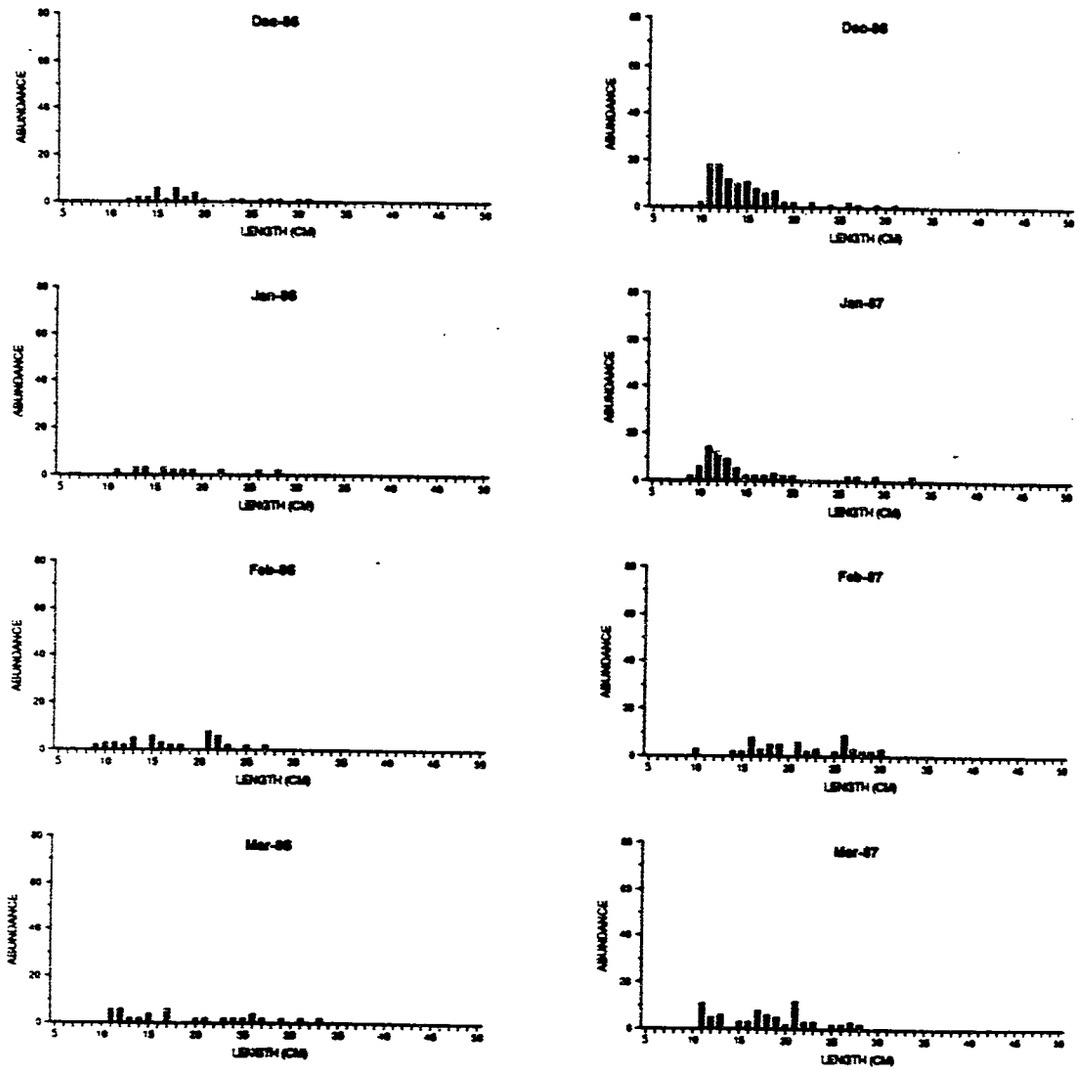

Fig. 8 cont'd

FOX ISLAND - WINTER FLOUNDER (MALES)

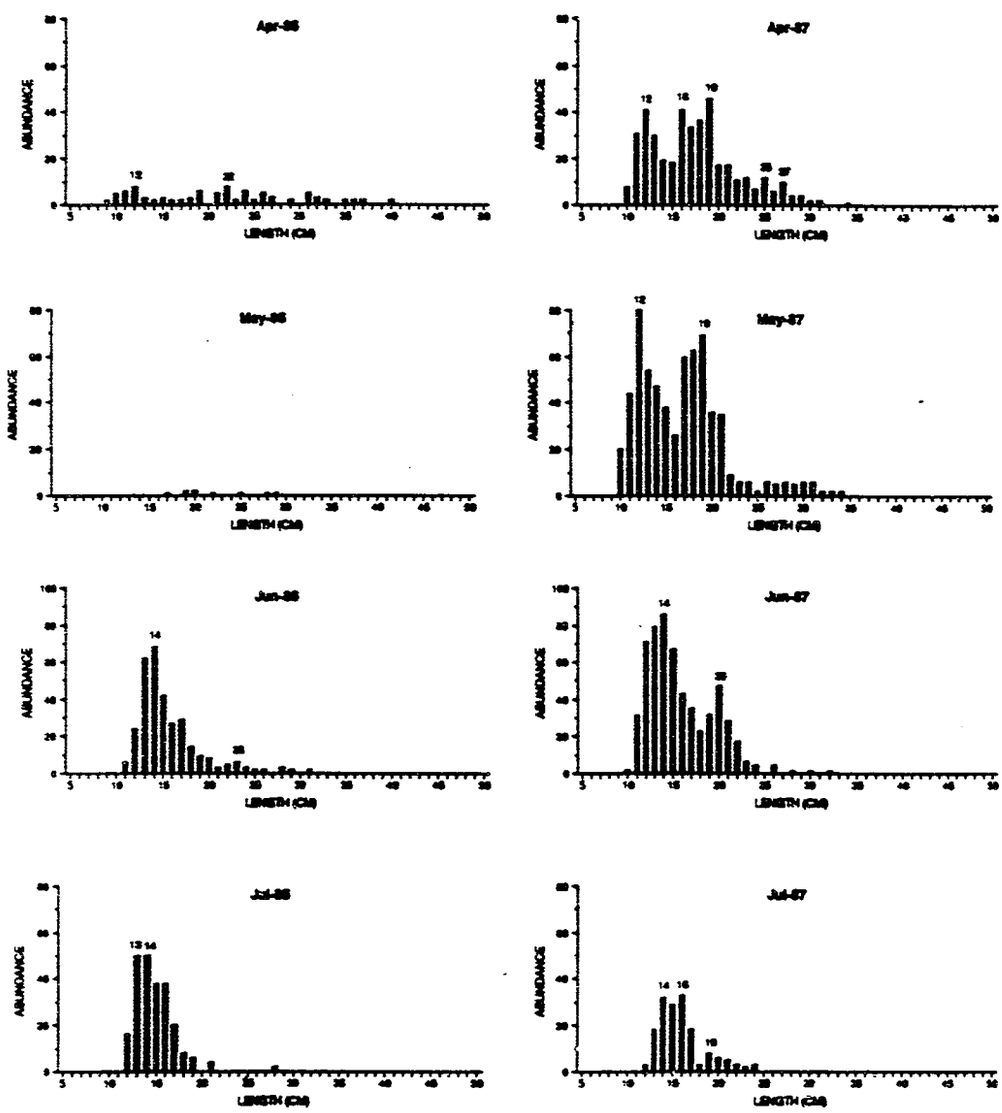

Fig. 8 cont'd

FOX ISLAND - WINTER FLOUNDER (MALES)

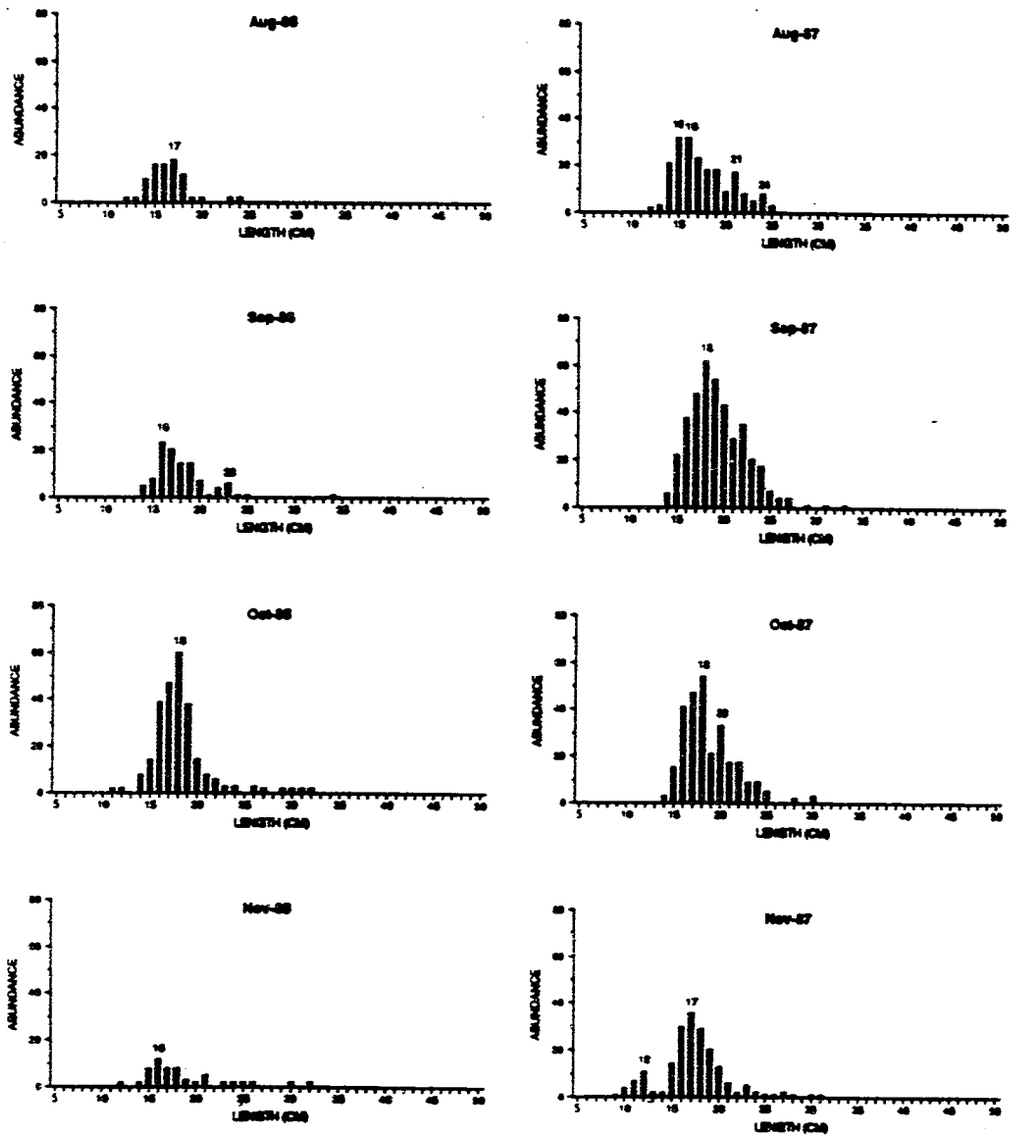

Fig. 8 cont'd

FOX ISLAND - WINTER FLOUNDER (MALES)

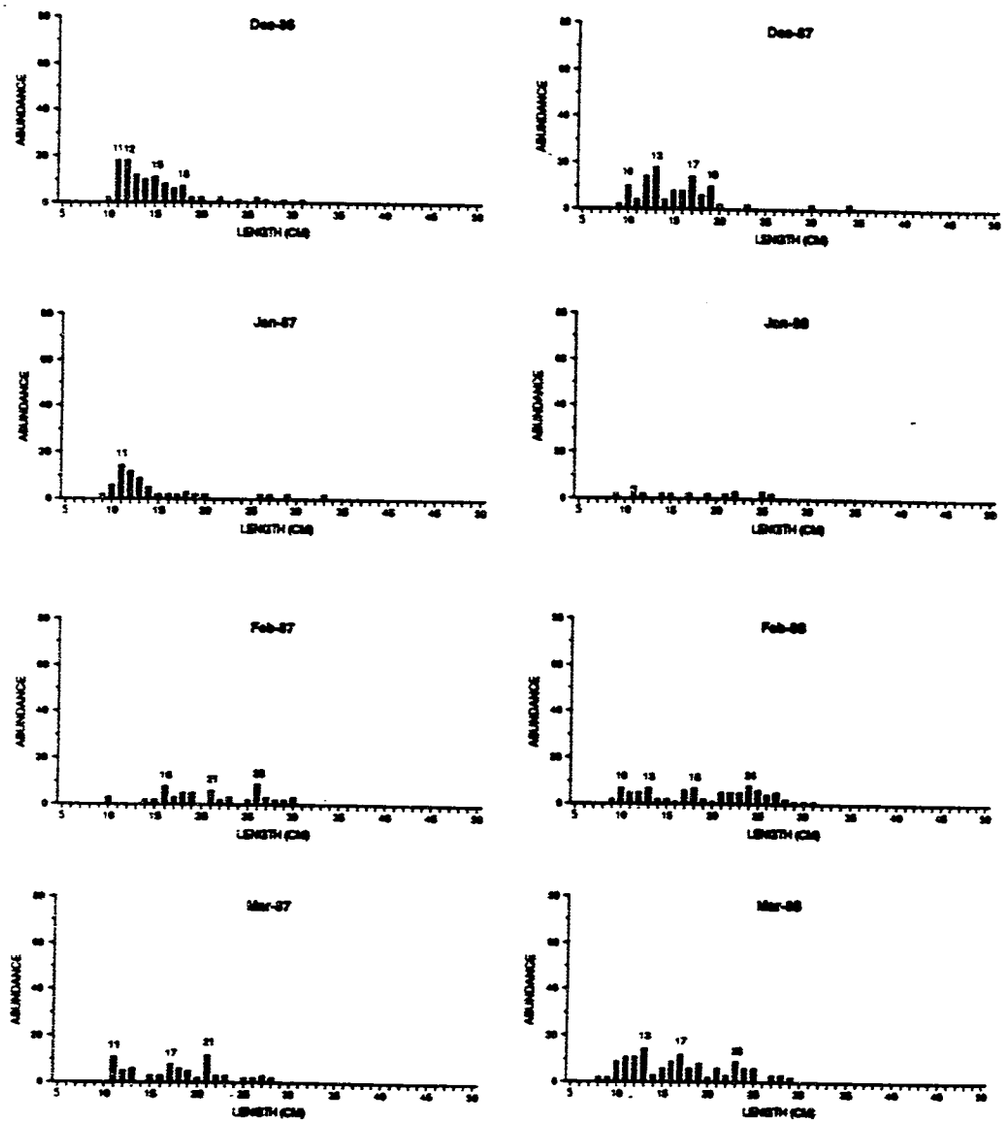

Fig. 8 cont'd

FOX ISLAND - WINTER FLOUNDER (MALES)

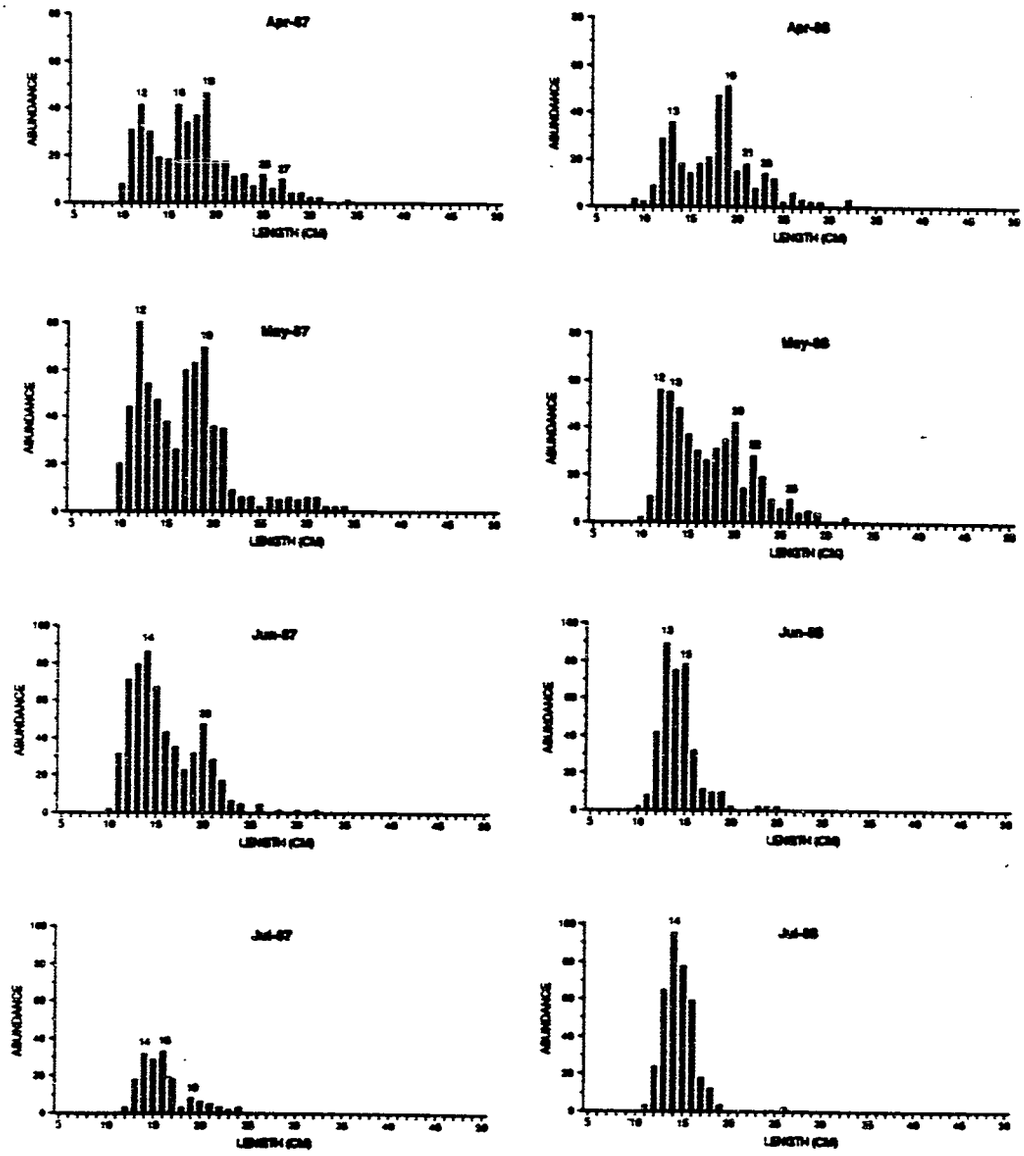

Fig. 8 cont'd

FOX ISLAND - WINTER FLOUNDER (TOTAL)

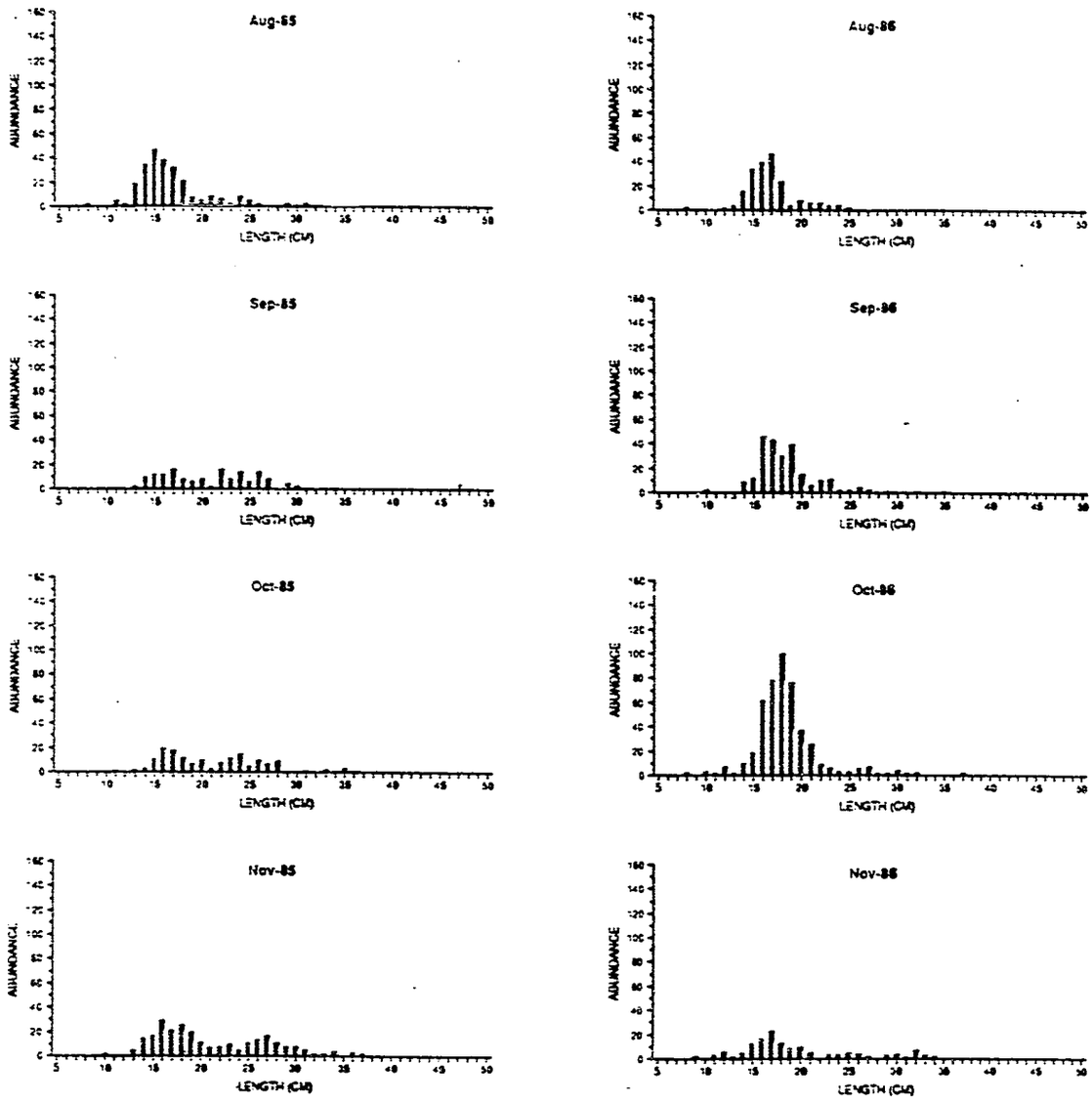

Fig. 9. Length-frequency distribution, winter flounder, both sexes, total monthly catch standardized to 6 trawls per month, Fox Island (Narragansett Bay) 1985-1988.

FOX ISLAND - WINTER FLOUNDER (TOTAL)

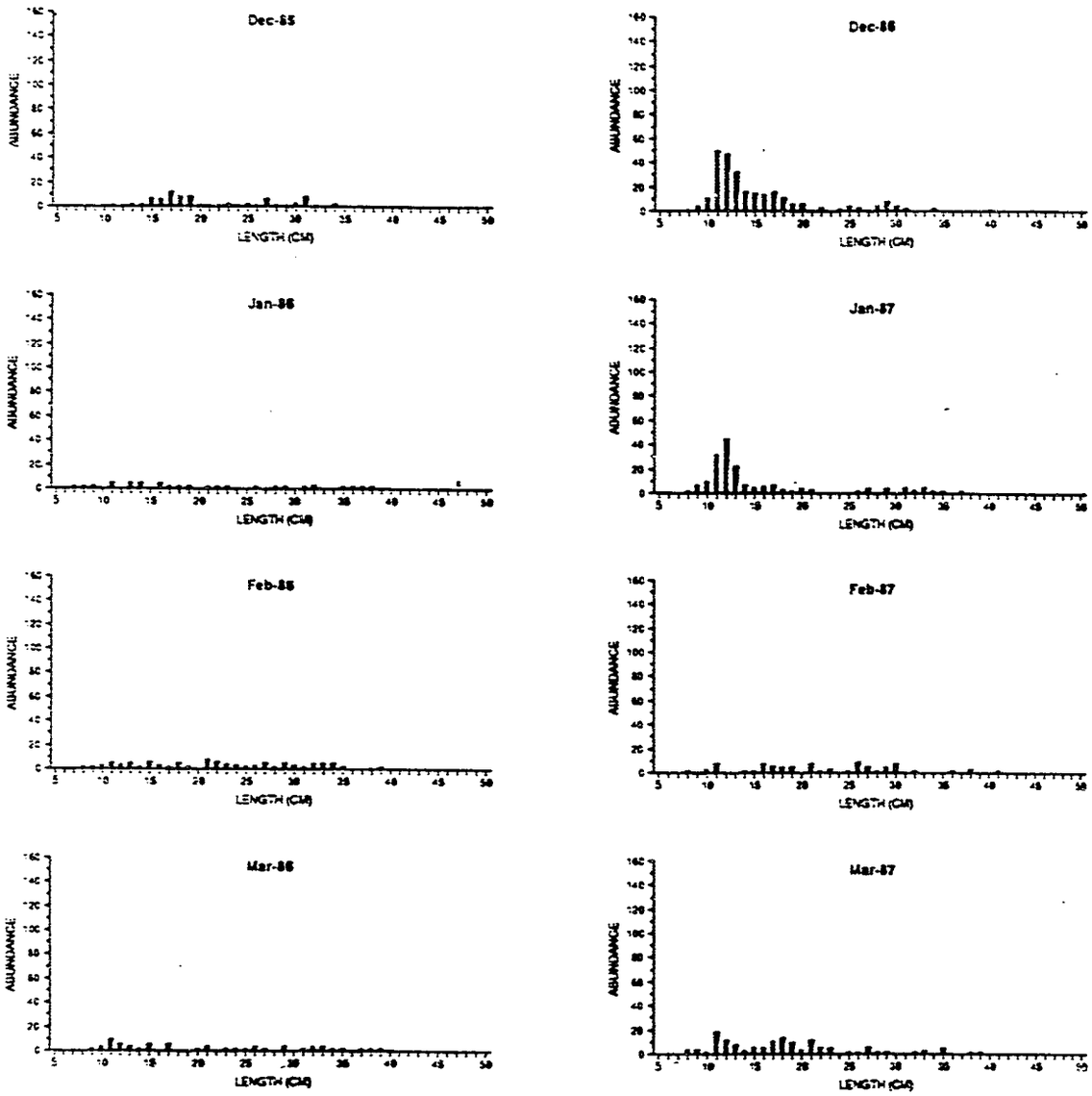

Fig. 9 cont'd

FOX ISLAND - WINTER FLOUNDER (TOTAL)

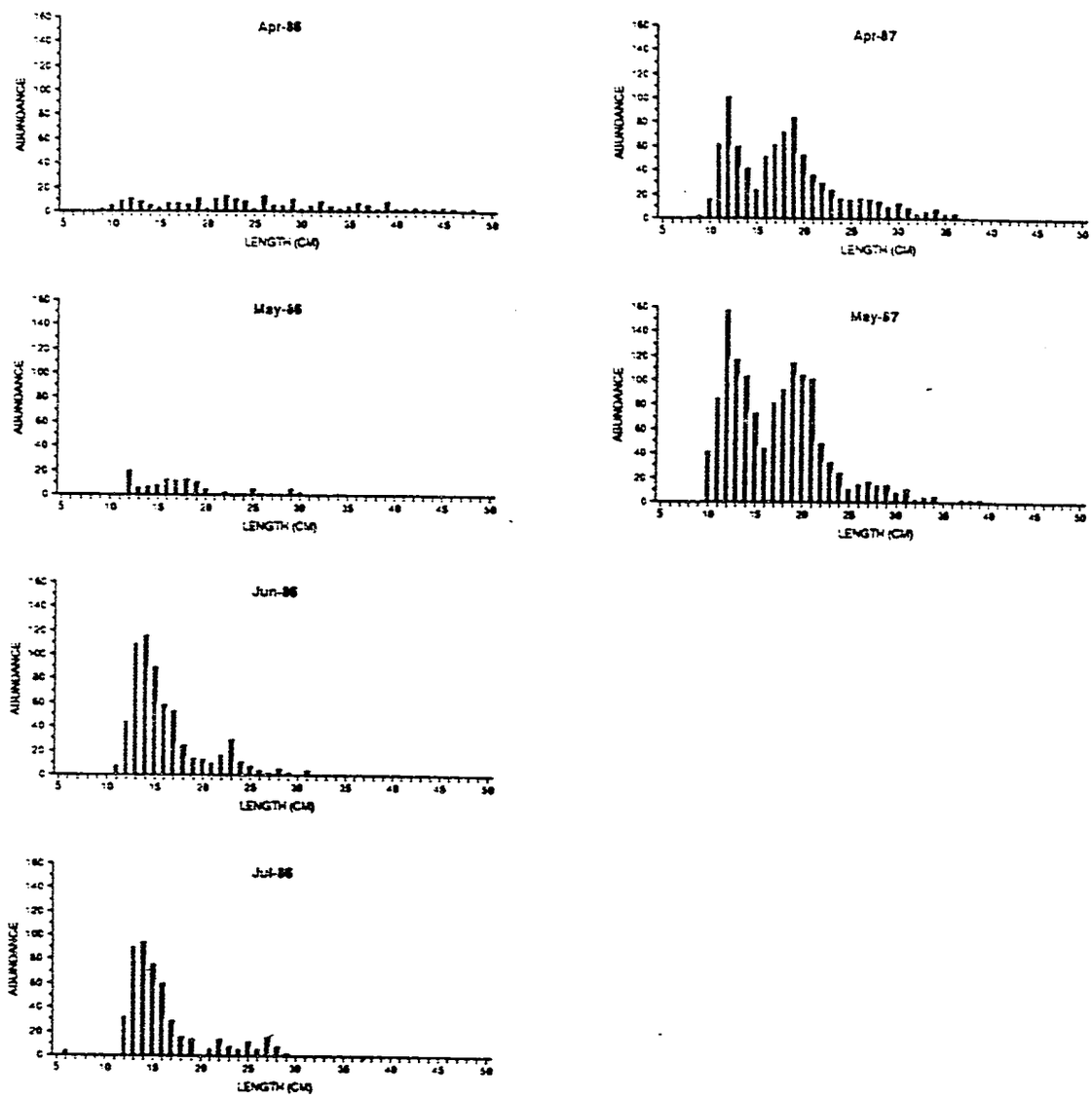

Fig. 9 cont'd

WHALE ROCK-WINTER FLOUNDER (FEMALES)

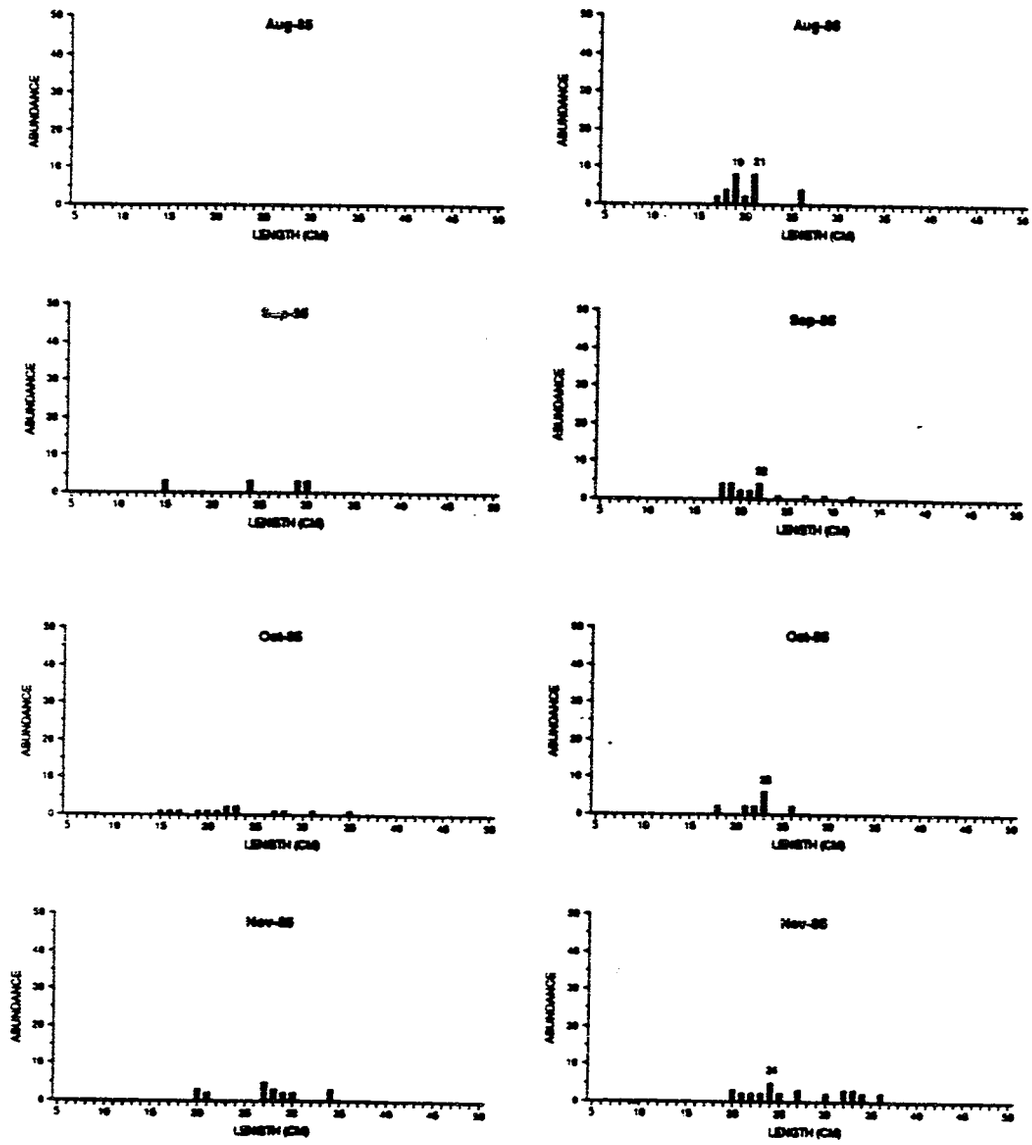

Fig. 10. Length-frequency distribution, winter flounder, female, total monthly catch standardized to 6 trawls per month, Whale Rock (R.I. Sound) 1985-1988.

WHALE ROCK-WINTER FLOUNDER (FEMALES)

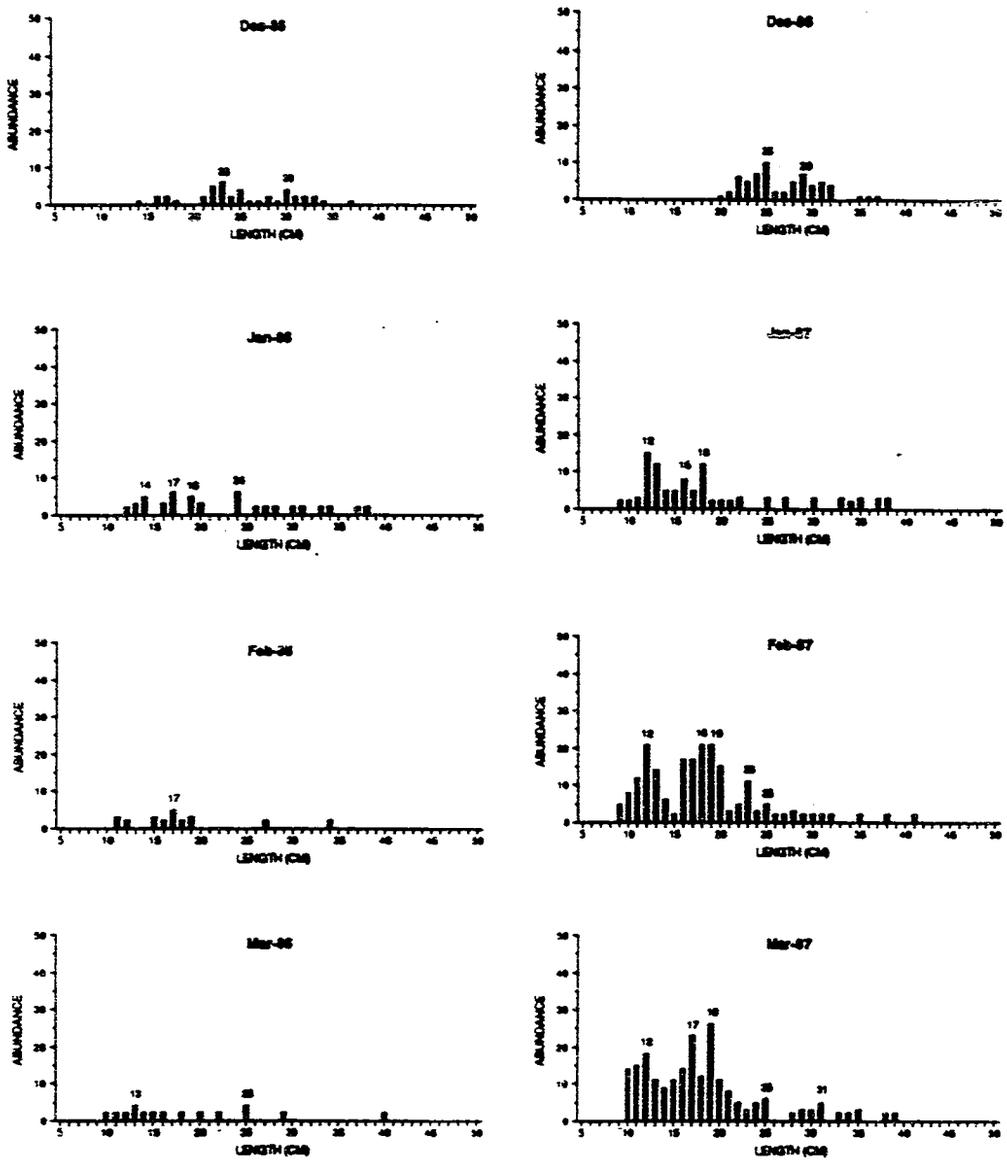

Fig. 10 cont'd

WHALE ROCK-WINTER FLOUNDER (FEMALES)

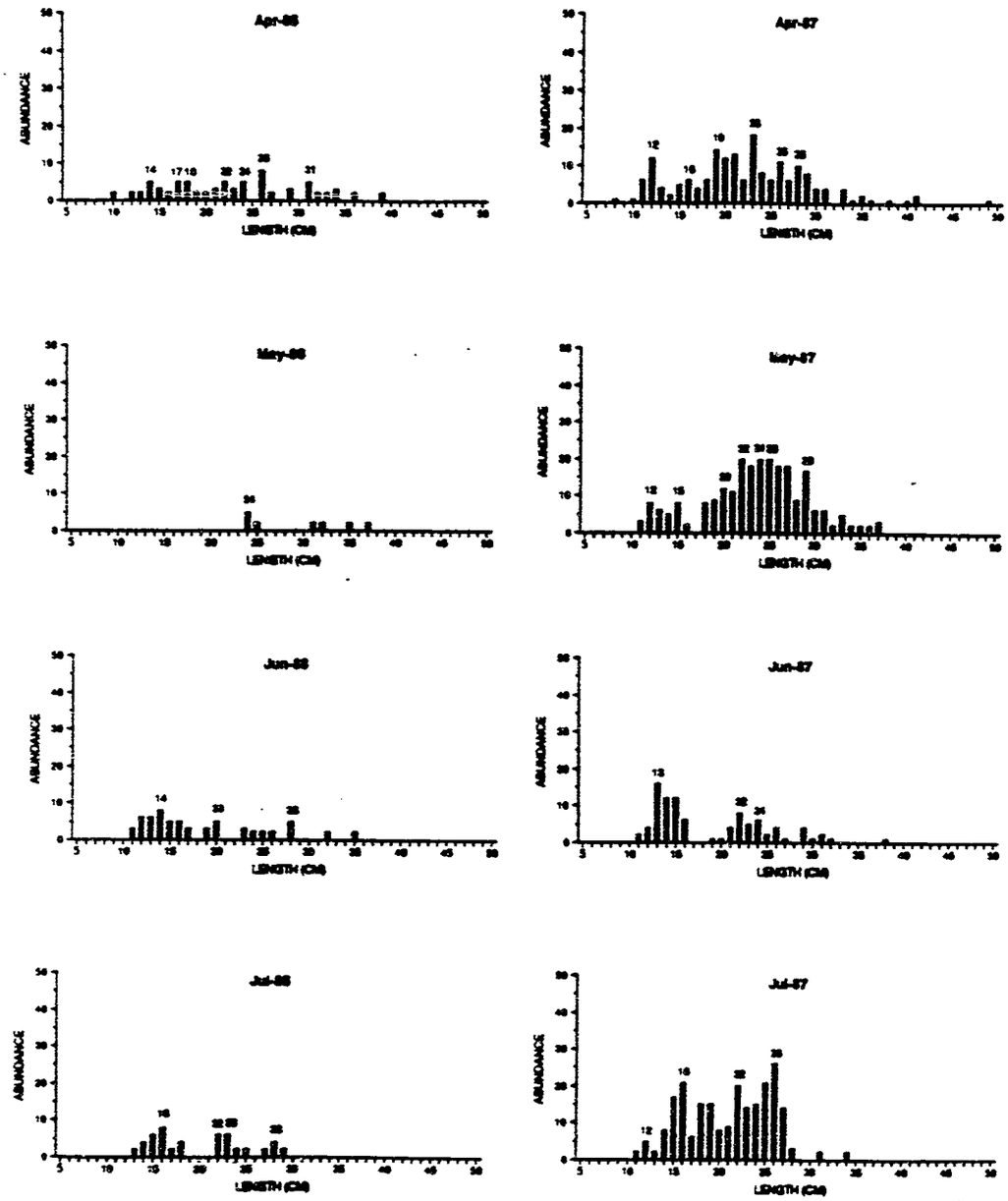

Fig. 10 cont'd

WHALE ROCK-WINTER FLOUNDER (FEMALES)

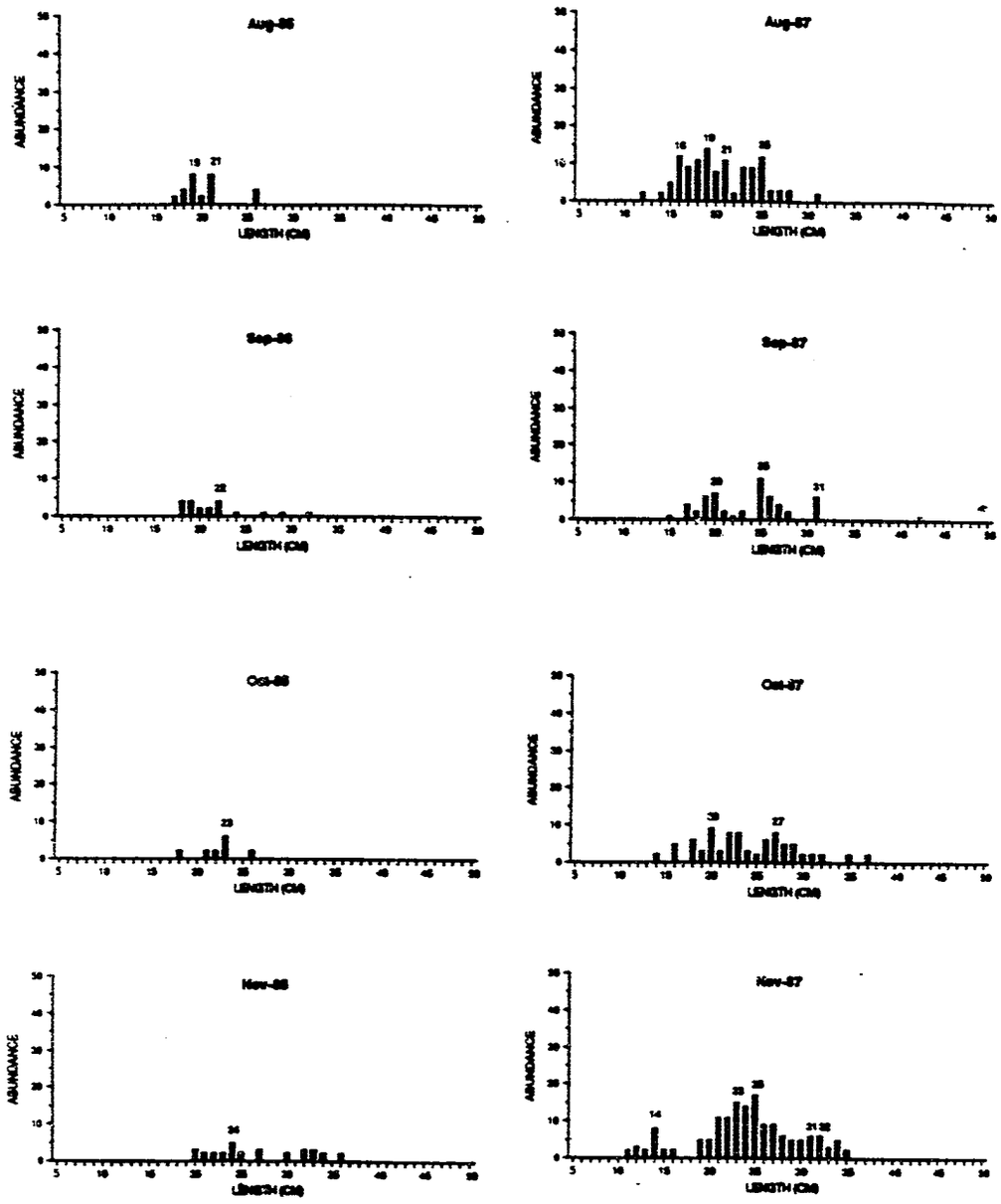

Fig. 10 cont'd

WHALE ROCK-WINTER FLOUNDER (FEMALES)

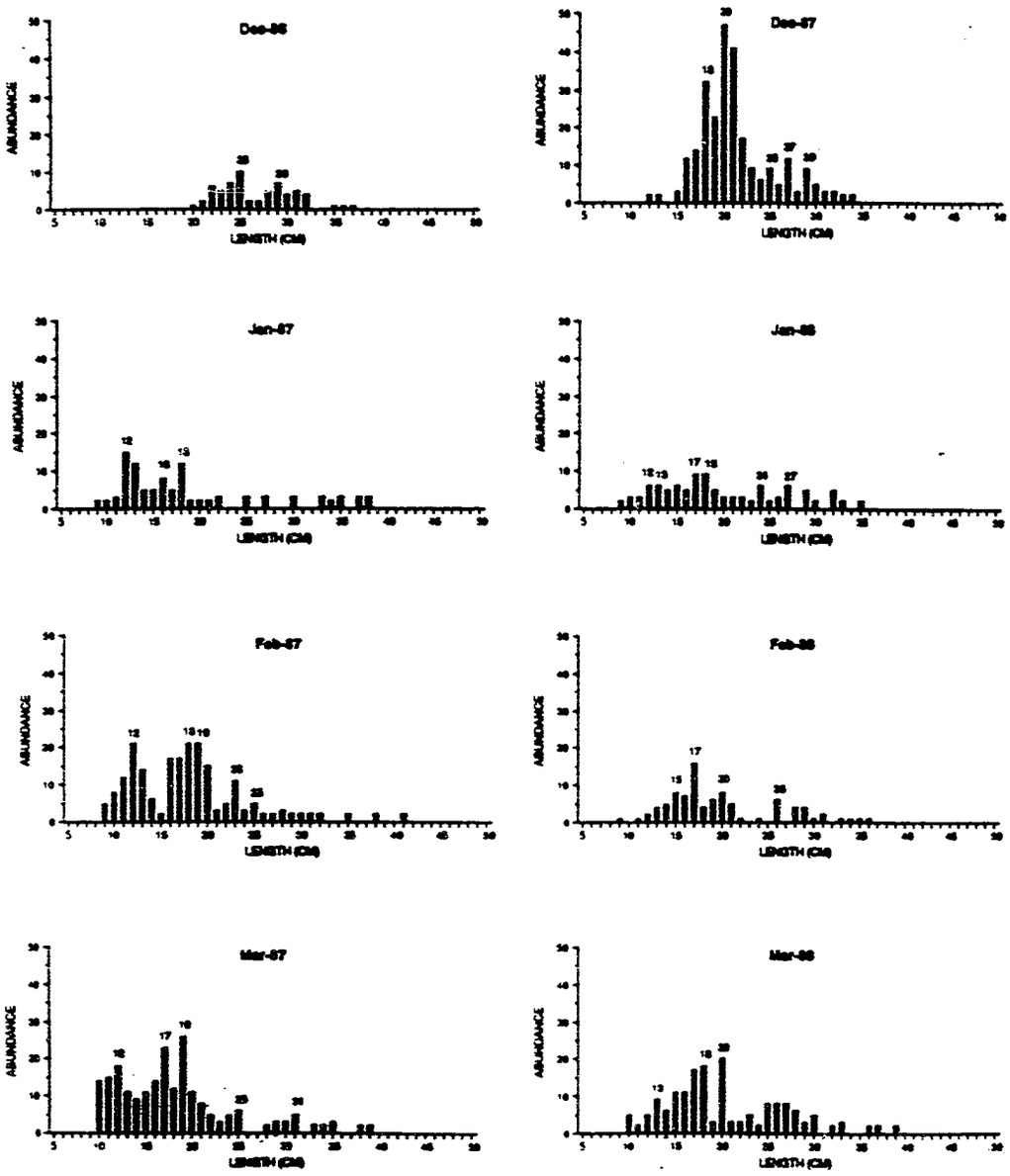

Fig. 10 cont'd

WHALE ROCK-WINTER FLOUNDER (FEMALES)

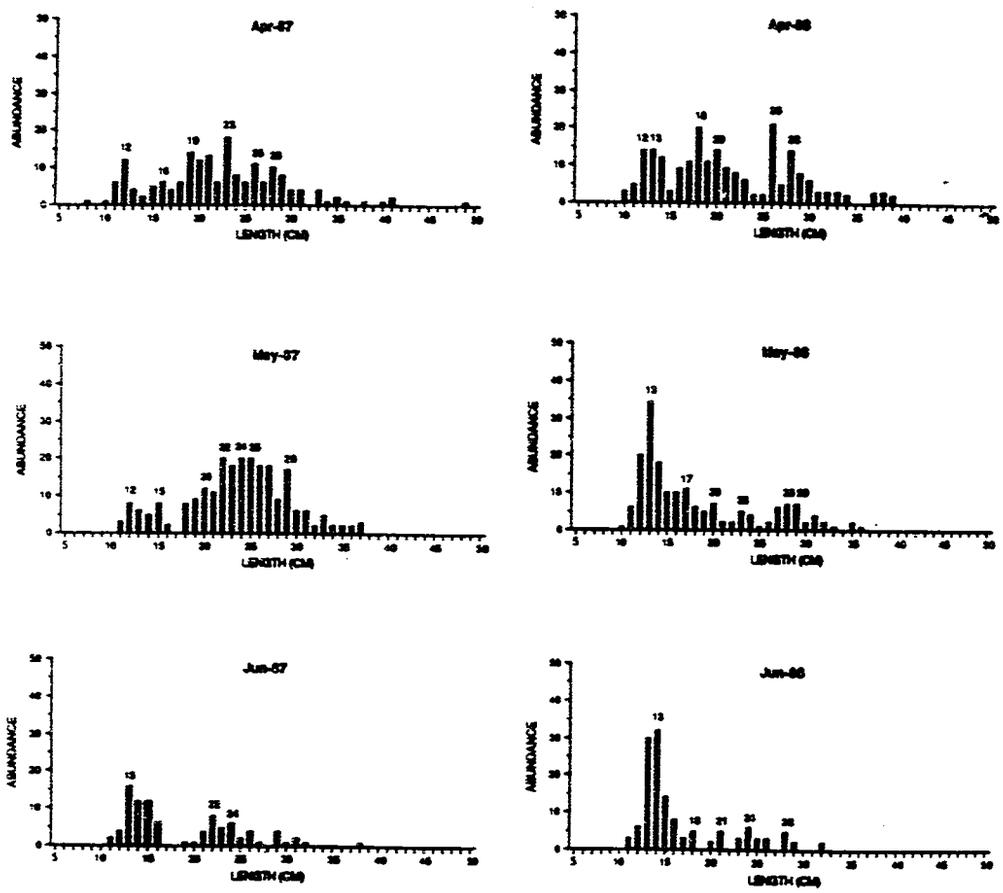

Fig. 10 cont'd

WHALE ROCK - WINTER FLOUNDER (MALES)

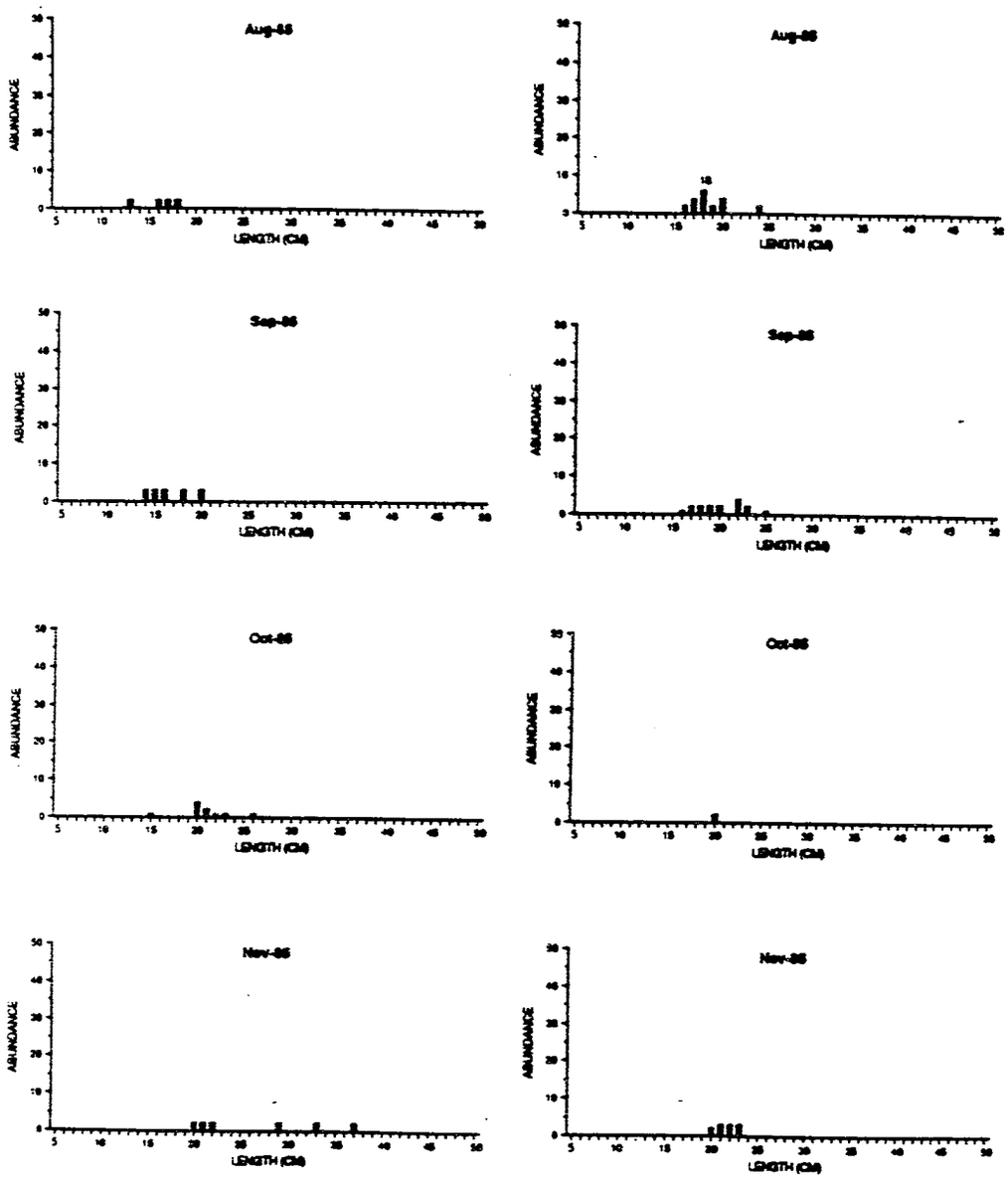

Fig. 11. Length-frequency distribution, winter flounder, male, total monthly catch standardized to 6 trawls per month, Whale Rock (R.I. Sound) 1985-1988.

WHALE ROCK - WINTER FLOUNDER (MALES)

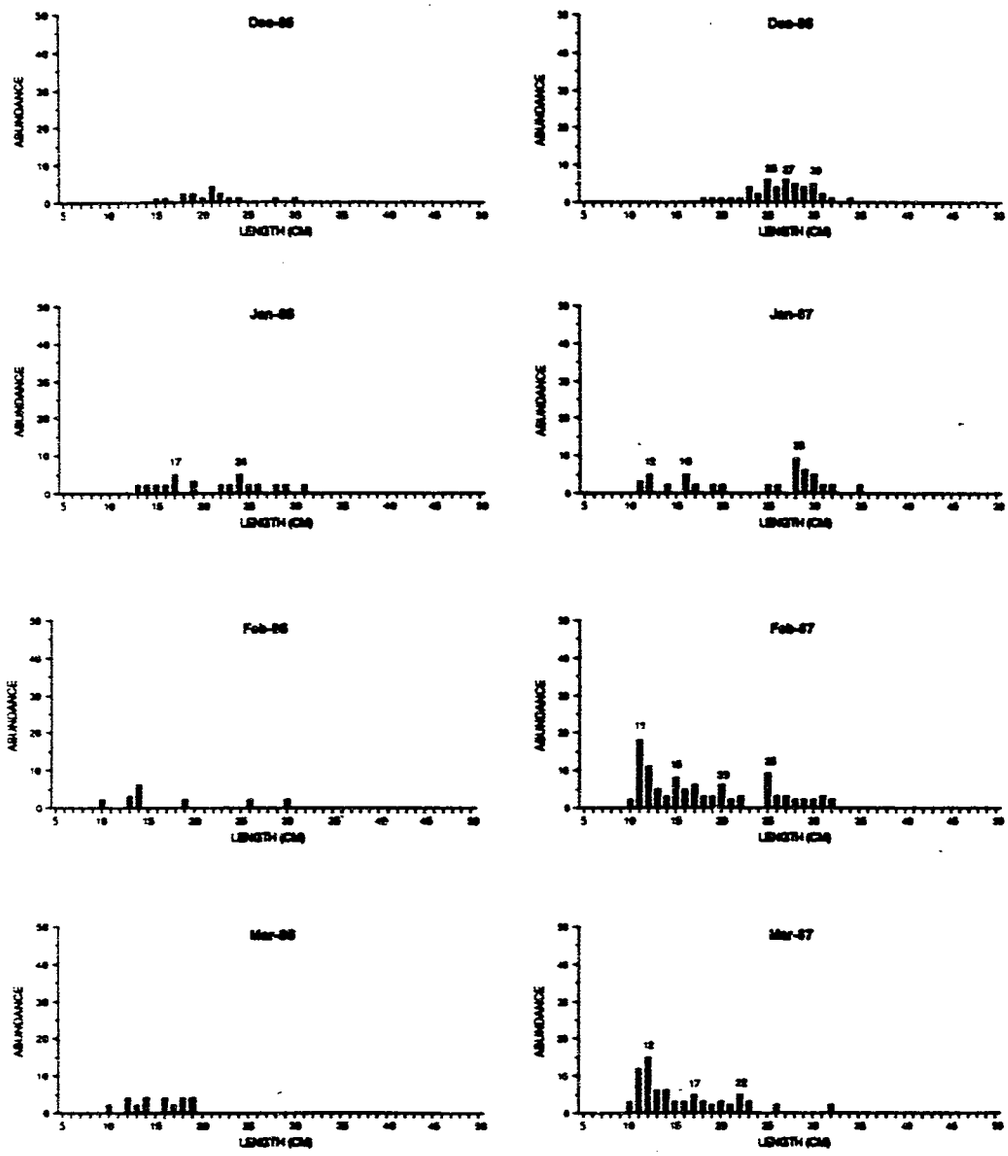

Fig. 11 cont'd

WHALE ROCK - WINTER FLOUNDER (MALES)

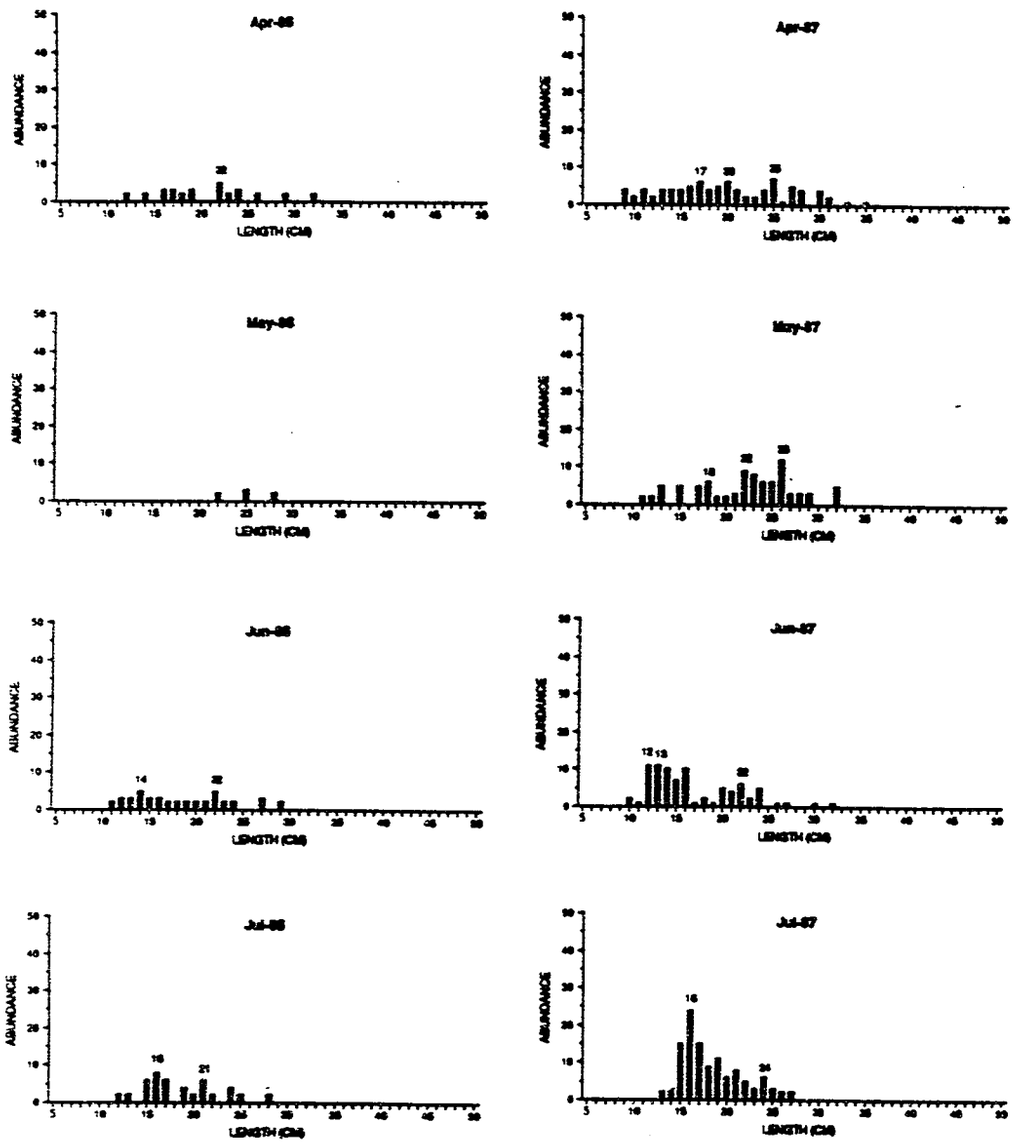

Fig. 11 cont'd

WHALE ROCK - WINTER FLOUNDER (MALES)

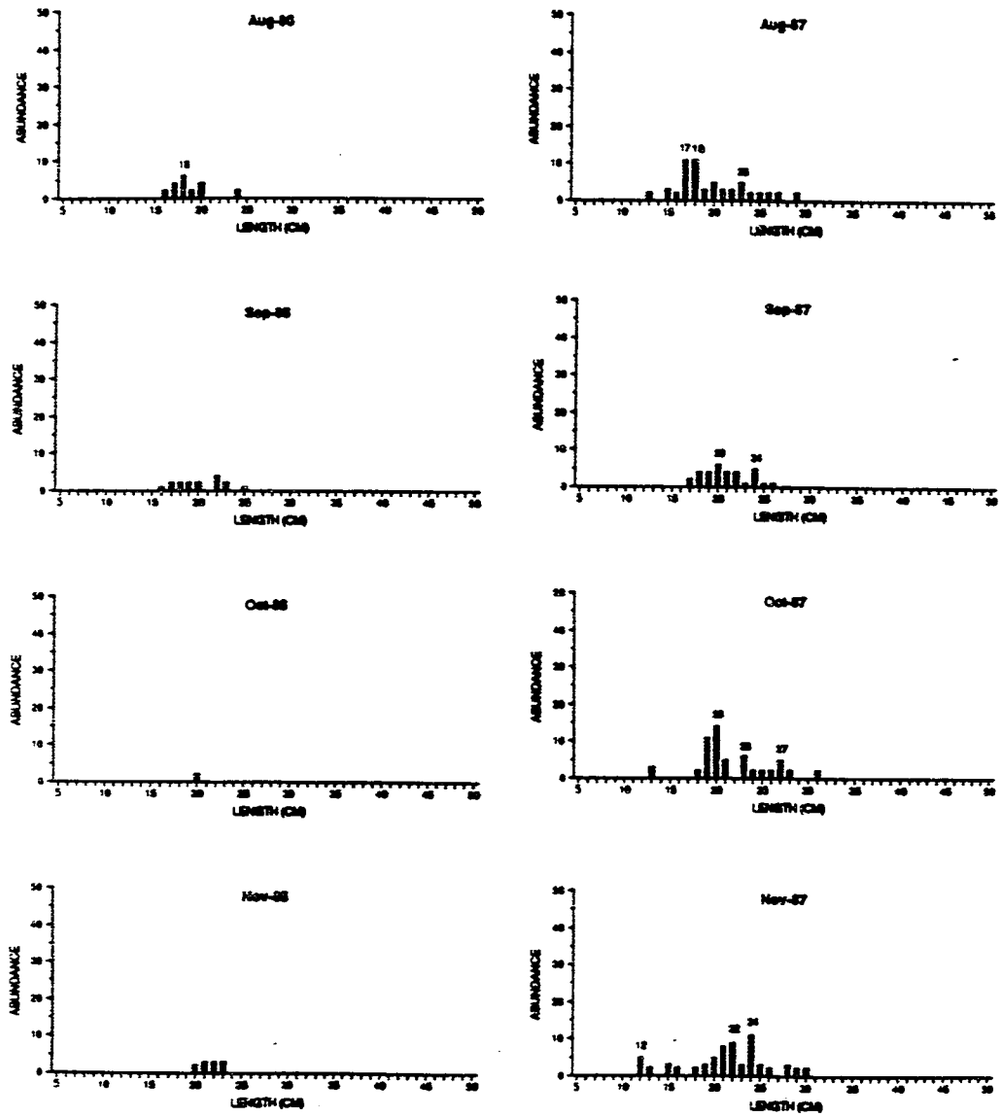

Fig. 11 cont'd

WHALE ROCK - WINTER FLOUNDER (MALES)

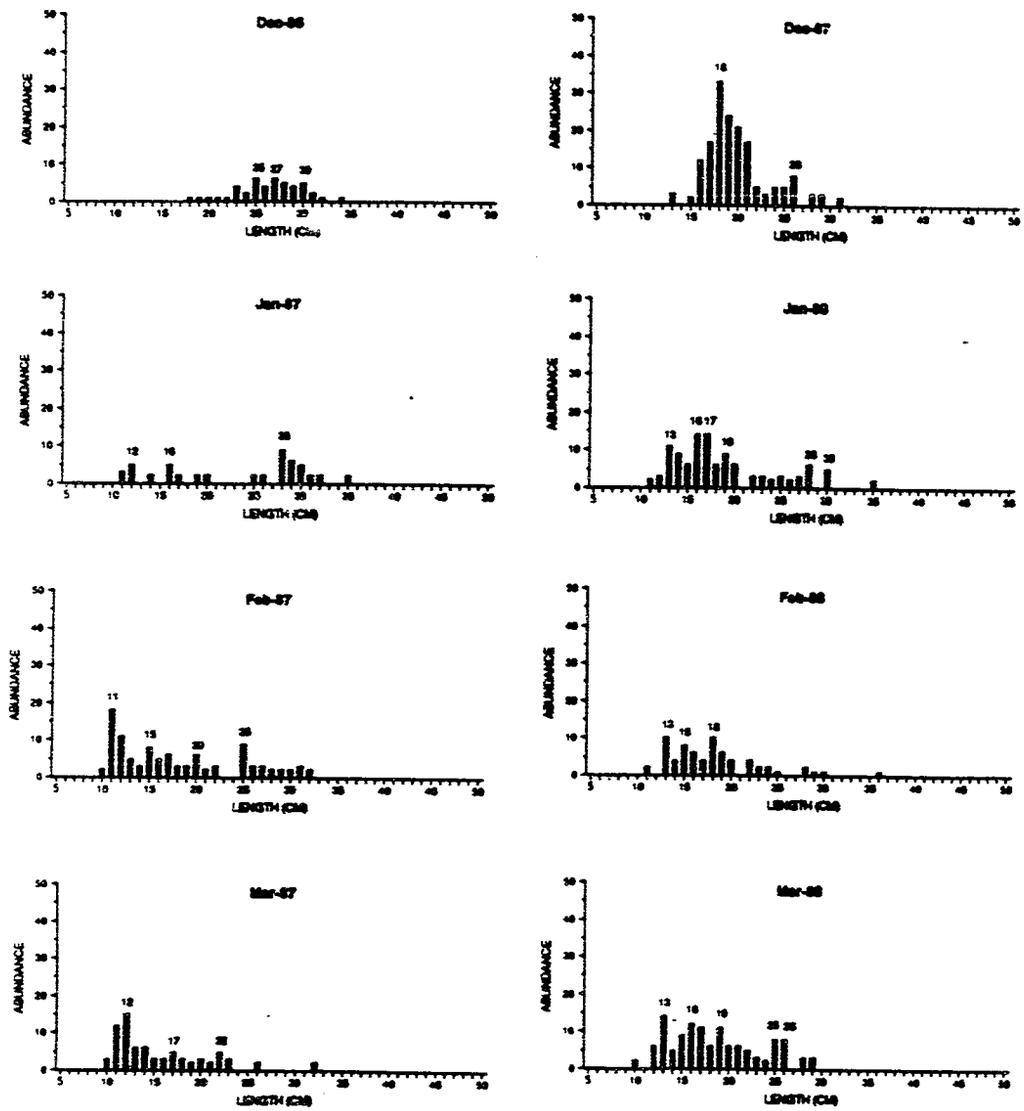

Fig. 11 cont'd

WHALE ROCK - WINTER FLOUNDER (MALES)

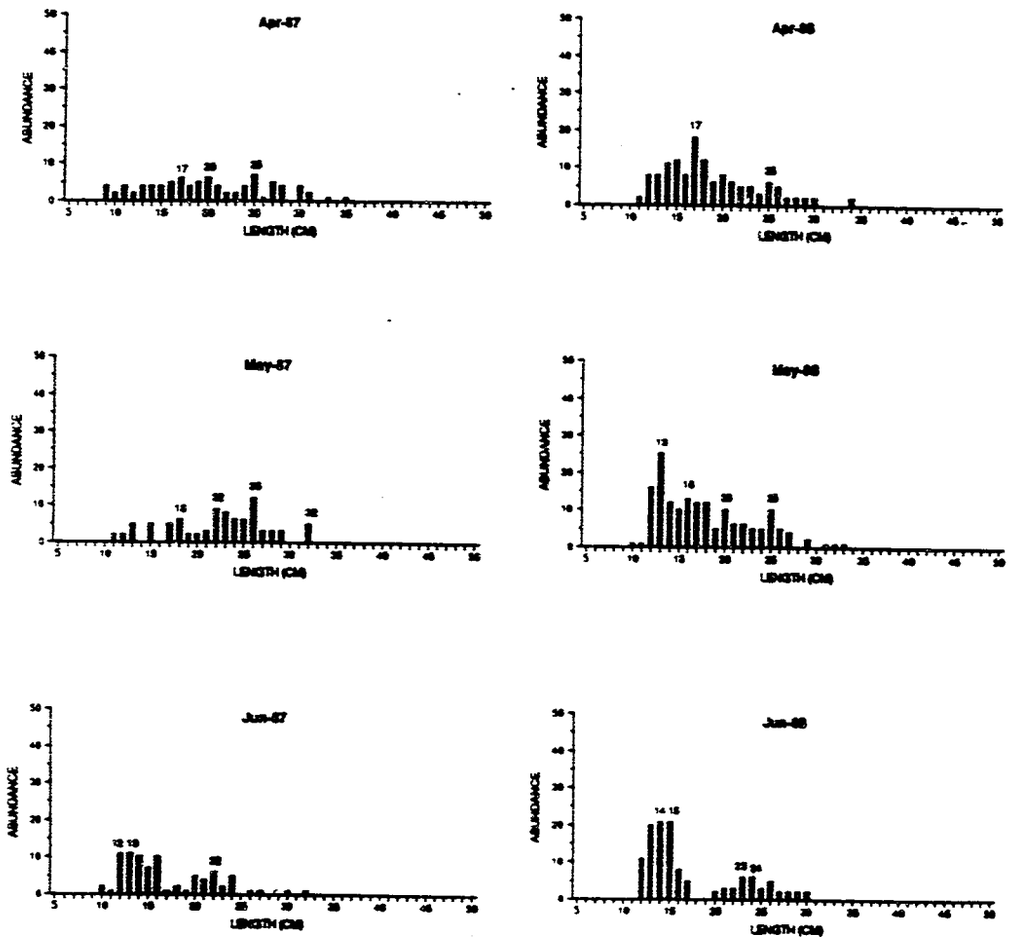

Fig. 11 cont'd

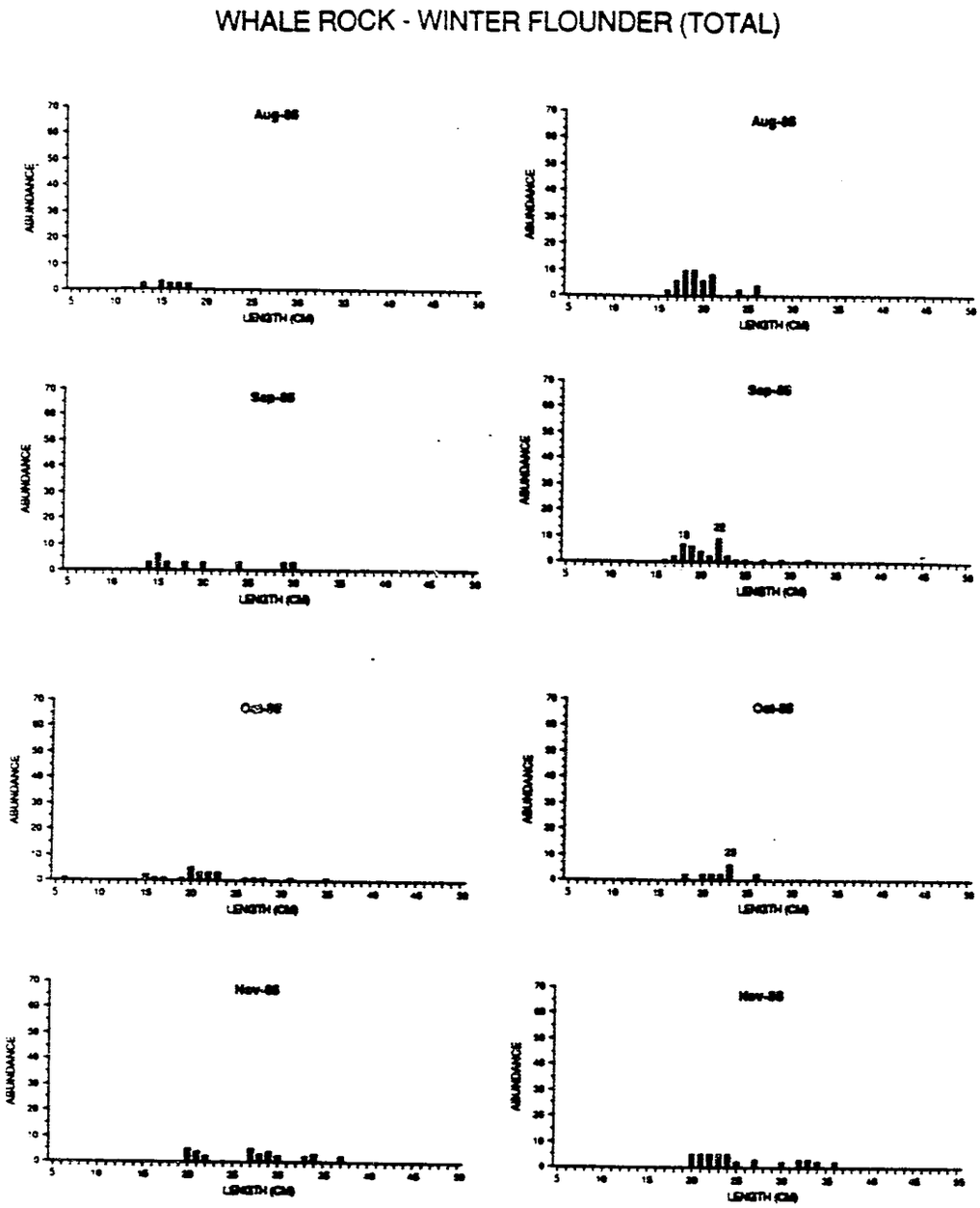

Fig. 12. Length-frequency distribution, winter flounder, both sexes, total monthly catch standardized to 6 trawls per month, Whale Rock (R.I. Sound) 1985-1988.

WHALE ROCK - WINTER FLOUNDER (TOTAL)

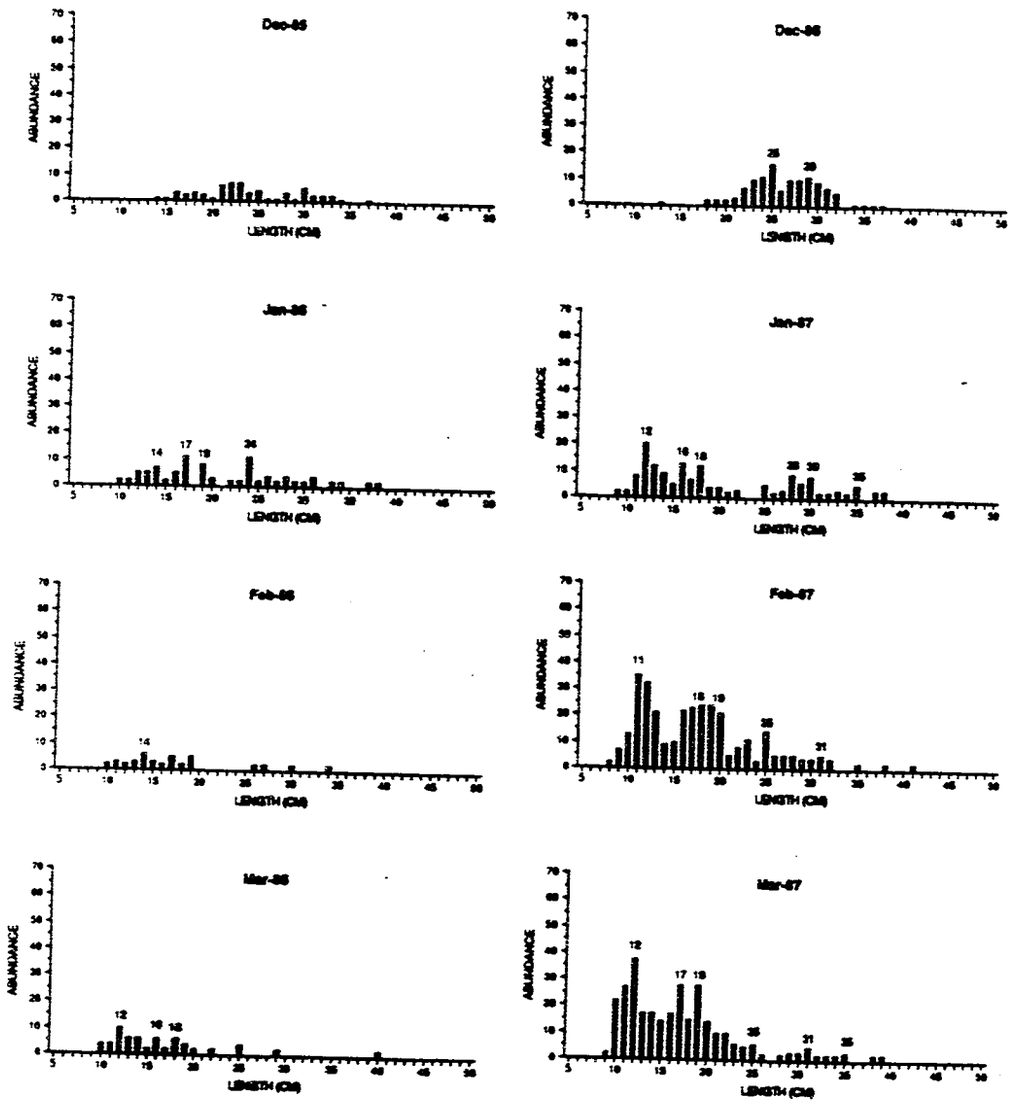

Fig. 12 cont'd

WHALE ROCK - WINTER FLOUNDER (TOTAL)

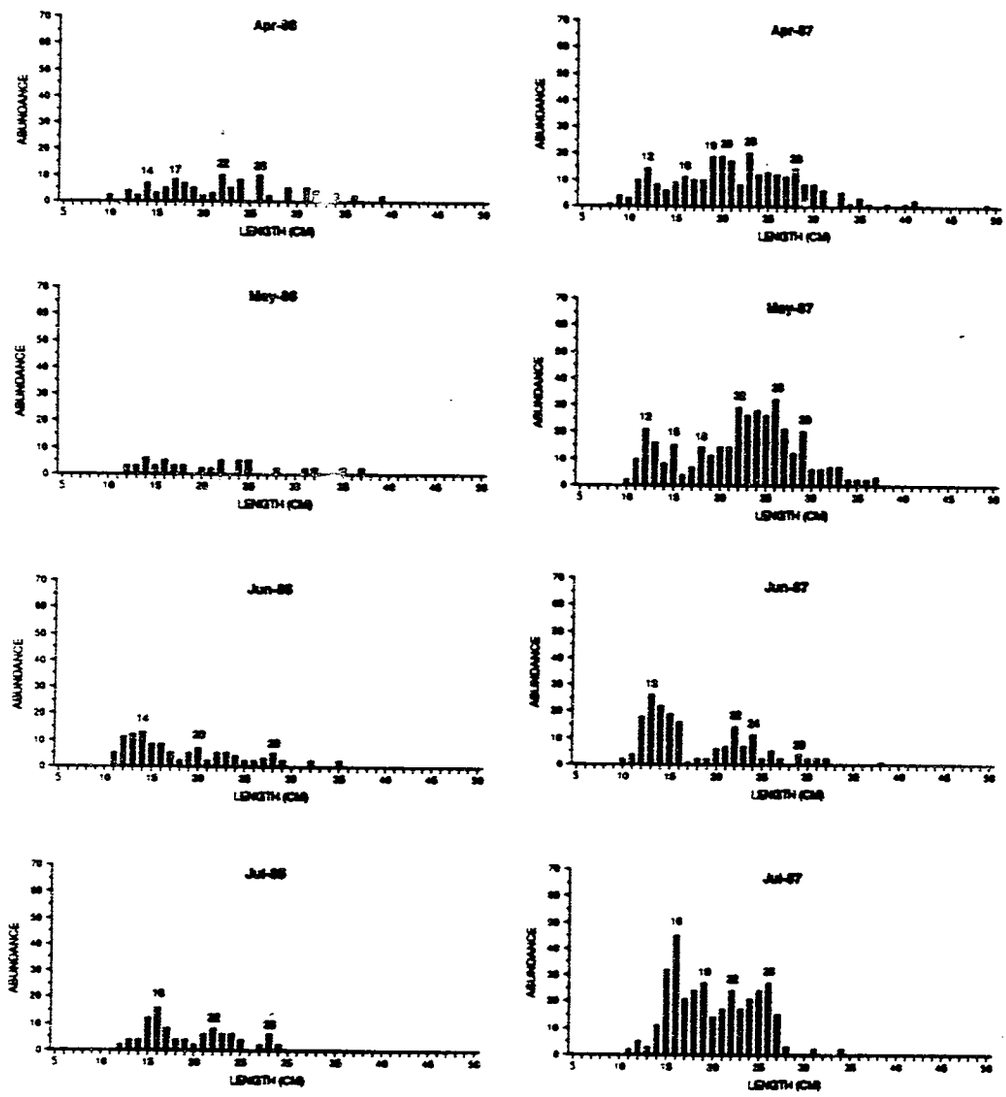

Fig. 12 cont'd

WHALE ROCK - WINTER FLOUNDER (TOTAL)

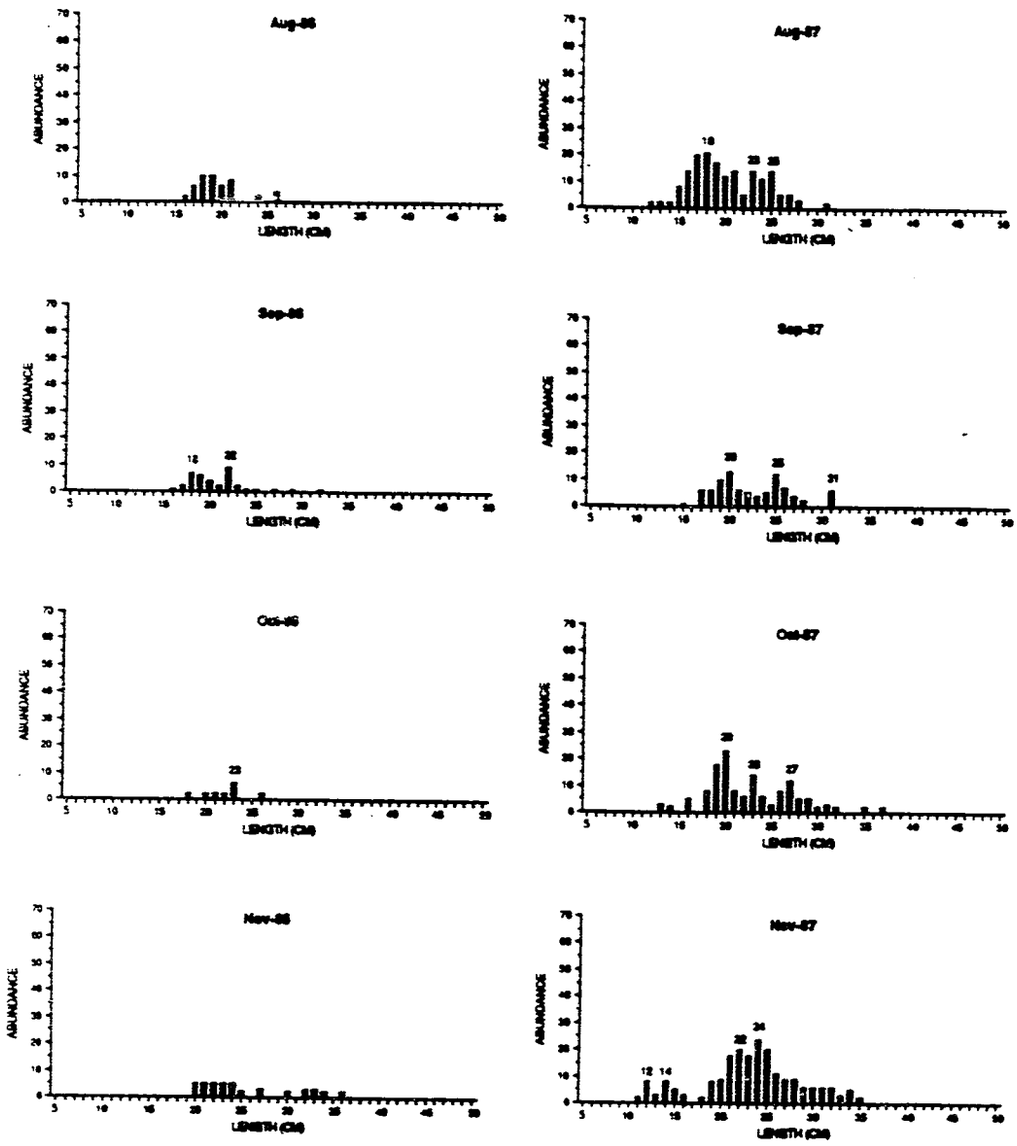

Fig. 12 cont'd

WHALE ROCK - WINTER FLOUNDER (TOTAL)

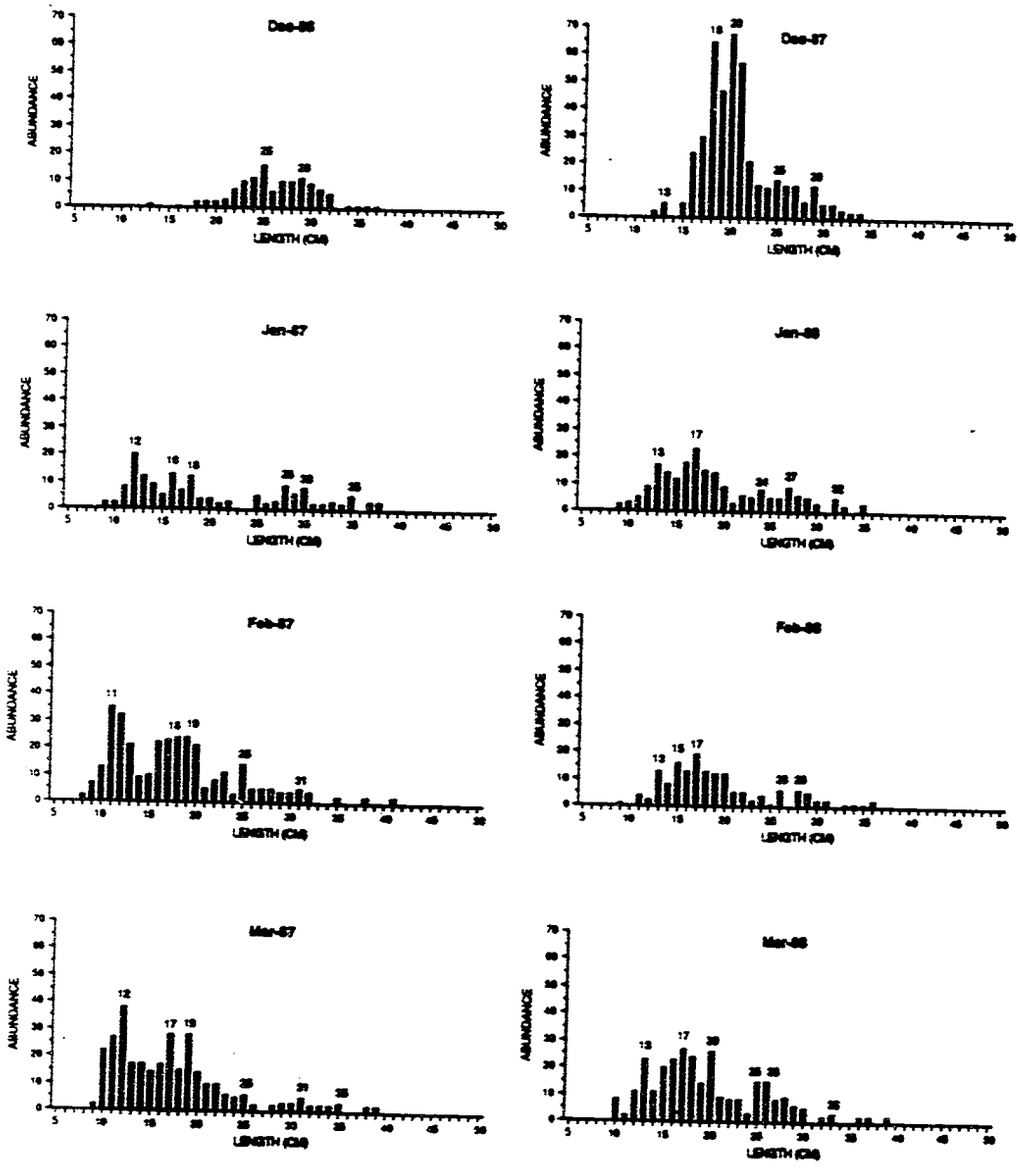

Fig. 12 cont'd

WHALE ROCK - WINTER FLOUNDER (TOTAL)

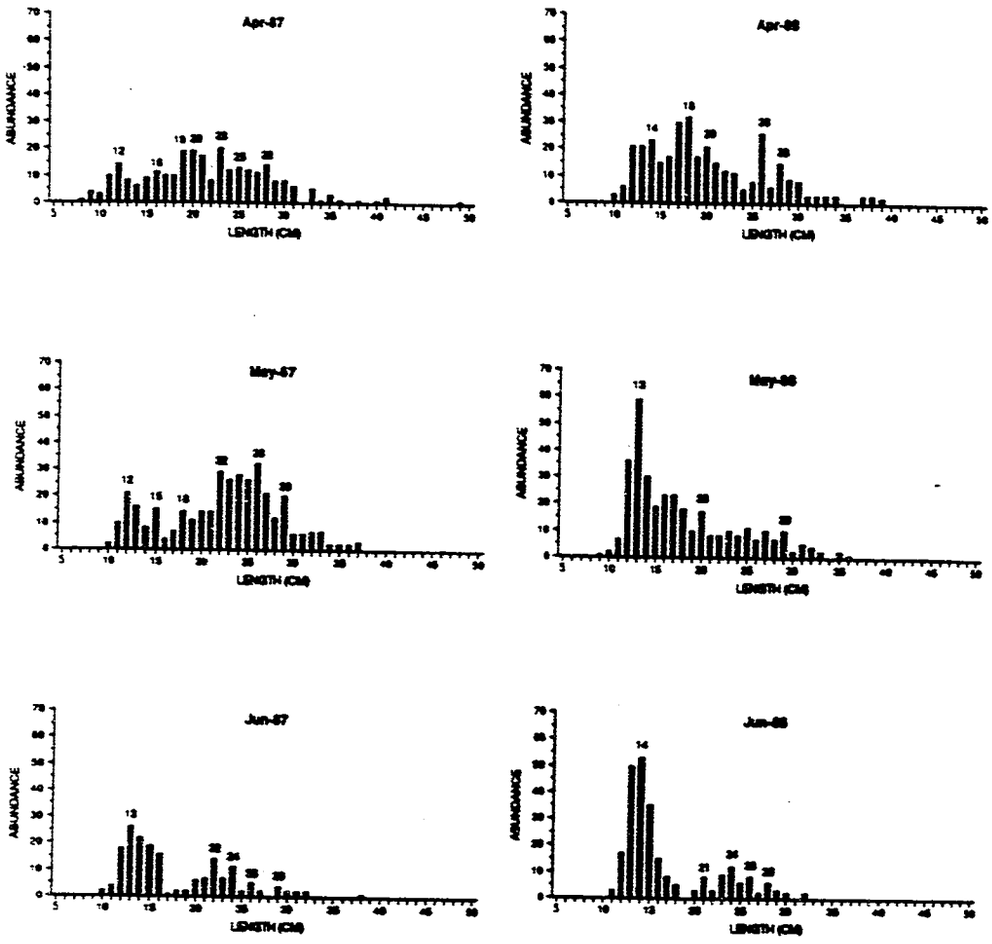

Fig. 12 cont'd

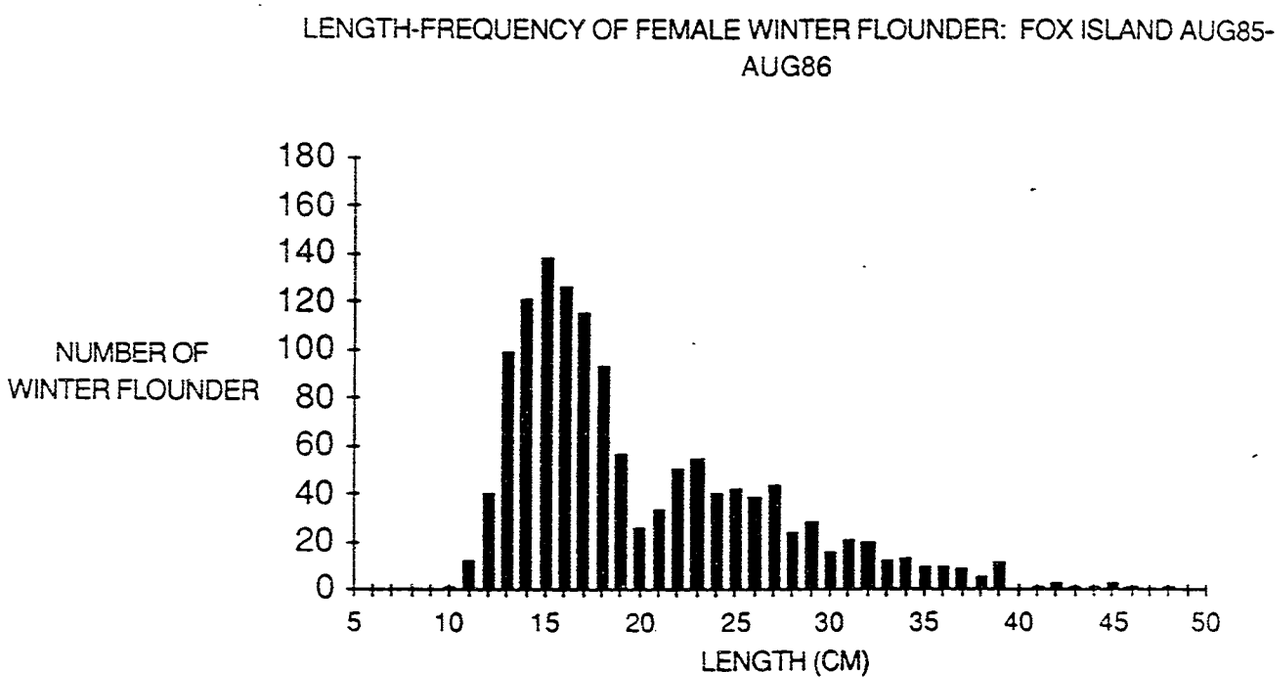

Fig. 13. Length-frequency distribution, winter flounder, female, Fox Island (Narragansett Bay) Aug 1985 - Aug 1986 combined.

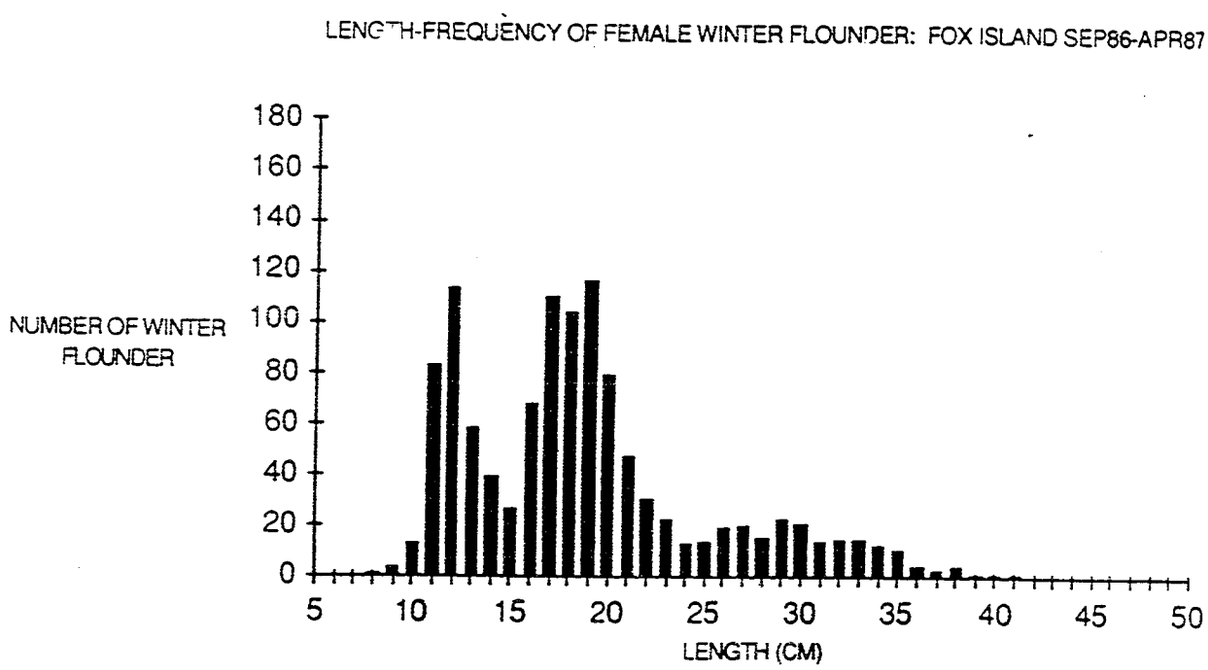

Fig. 14. Length-frequency distribution, winter flounder, female, Fox Island (Narragansett Bay) Sep 1986 - Apr 1987 combined.

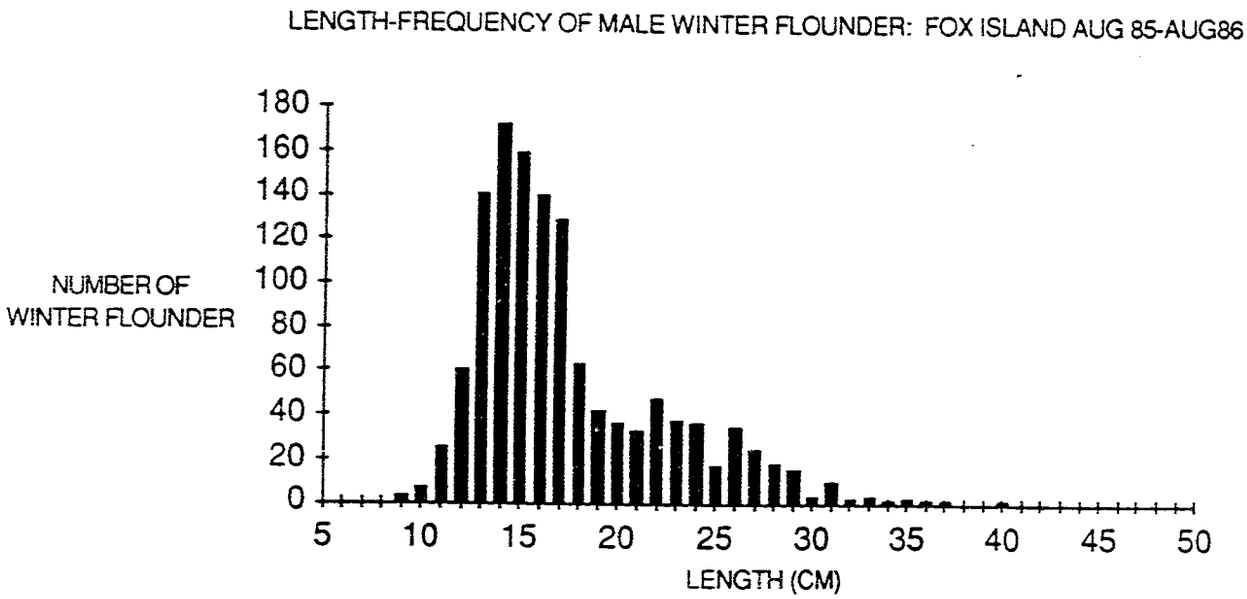

Fig. 15. Length-frequency distribution, winter flounder, male, Fox Island (Narragansett Bay) Aug 1985 - Aug 1986 combined.

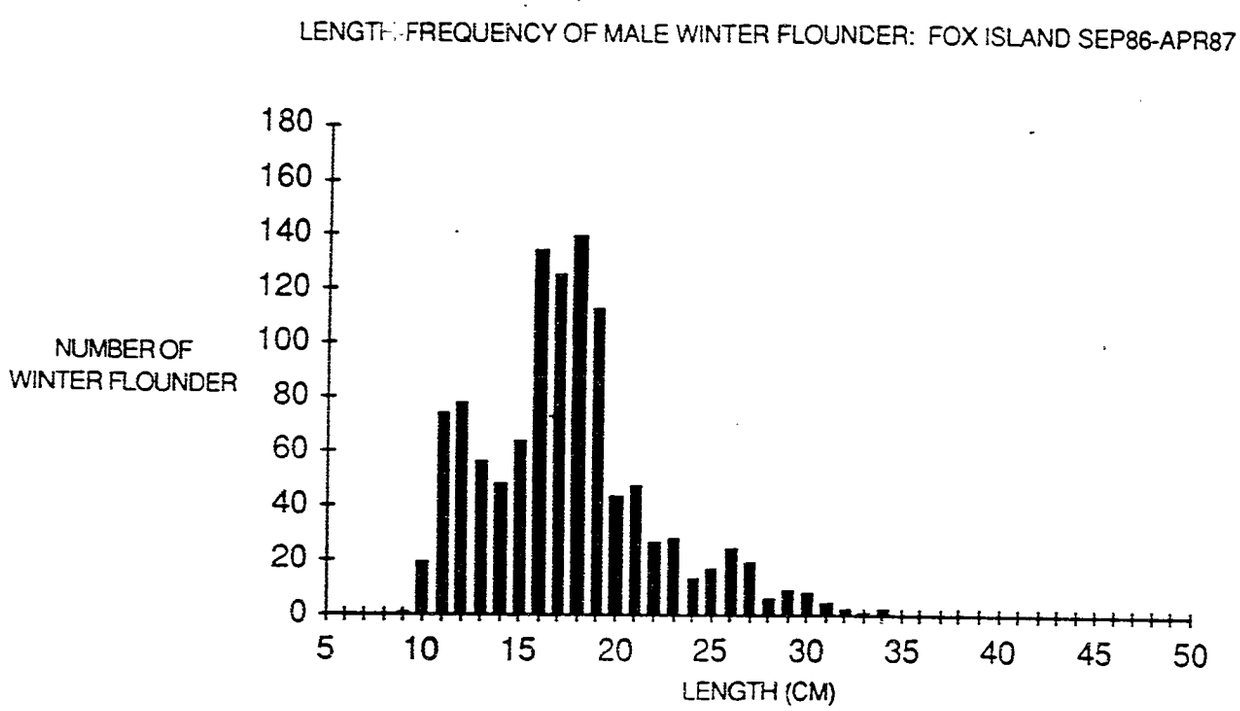

Fig. 16. Length-frequency distribution, winter flounder, male, Fox Island (Narragansett Bay) Sep 1986 - Apr 1987 combined.