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An Inventory of the Physical/Chemical Data for the Georges Bank Larval Herring Study, 1971-77

by

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Introduction

In late April 1980, the NAFO Task Force on the Georges Bank-Gulf of Maine Larval Herring Program met to discuss progress in the analysis of the data collected during the larval herring study (SCS Doc. 80/VI/6). One of the recommendations of that meeting was that an inventory of the oceanographic cruises should be made in time for the Annual Meeting of the Scientific Council in September 1980. The task of compiling this inventory of physical/chemical data was accepted by the Marine Environmental Data Service (MEDS) of Canada. One of the provisions of the recommendation was that all outstanding data from more than 60 cruises, involved in the study should be forwarded to MEDS by 1 July 1980. At the time of the April meeting, MEDS files contained approximately 25% of the hydrocast data and none of the bathythermograph information. Although the 1 July deadline was not met, most of the outstanding information reached MEDS in time to be included in this inventory.

Contents

The purpose of this inventory is to compile under one cover the physical/chemical information on all of the cruises involved in the larval herring program. Station locations where biological data were collected are included to allow a comparison with the physical/chemical data collections. Table 1 identifies, to the best of our knowledge, all of the participating cruises. It lists ships, dates and the agency, where known, from which the different data types may be requested. The cruises have all been assigned a cruise track number to reference the Figures presented. Numbers in brackets are cruise identification numbers of the particular agencies.

Originally, it was hoped that all multidisciplinary stations for each cruise could be combined onto a single track chart, with appropriate symbols used to distinguish the type of data collected. This was not possible for two reasons. The first was that, for some cruises, some stations at which more than one type of data were collected had different locations recorded for the different data types. It is not known how this occurred. The necessary editing to remedy this situation requires confirmation by the chief scientist or originator and would not have allowed this inventory to be ready in time for the September

meeting. The second reason was that, because of the close spacing of some stations, it would not have been possible to distinguish symbol types (identifying the data types) on one chart.

The cruise tracks have been arranged in chronological order with a reference number as listed under "cruise track" in Table 1. Those for which no cruise tracks were available are annotated by a * after the cruise number. Each cruise is identified by the reference number and a data type. Thus, "BIO" indicates biological data, "BOT" indicates physical/chemical data, and "BT" indicates bathythermograph data were collected. Following the title is the date on which the cruise occurred in order of day, month, year. Finally, the total number of stations in the cruise is listed.

The information for the cruise tracks came from a variety of sources. The station position information for the biological data were supplied by the Northeast Fisheries Center at Woods Hole. These cruise tracks were generated first. It was discovered by comparison to the station information for the physical data that the biological stations were apparently not always ordered chronologically. Since there was not sufficient information to remedy this in all of the cruise tracks, this station order was preserved in all of the tracks. On the figures, some selected stations have been labelled by their number. Notice that stations are not necessarily sequential.

Associated Documents

1. LOUGH, R. G., and W. R. WRIGHT. Progress report on the status of data and sampling processing from the 1978 Georges Bank larval herring patch study. NAFO SCR Doc. 80/IX/125.
2. ALLEN, A. An inventory of the physical oceanographic data collected during the 1978 larval herring patch study on Georges Bank. NAFO SCR Doc. 80/IX/126.
3. ILES, T. D., and G. A. P. BLACK. Inventory of larval herring data for Canadian surveys off western Nova Scotia. NAFO SCR Doc. 80/IX/137.
4. COHEN, E. B. A summary of available data on nutrients, primary productivity, and chlorophyll a for the ICNAF larval herring research area, 1975-78. NAFO SCR Doc. 80/IX/140.
5. BOLZ, G. Current status of sorting and computer listing for ICNAF larval herring surveys, 1971-78. NAFO SCR Doc. 80/IX/141.

TABLE 1: Information on the Cruises in the Georges Bank Larval Herring Study

<u>Cruise</u>	<u>Vessel</u>	<u>Date</u>	<u>Comments</u>	<u>Tracks</u>
1 *	Rorqual	9 - 16 Sept.	1971	BT:NEFC
2	Cryos	9 - 24 Sept.	1971	BT:NEFC
3	Delaware II	21 Sept. - 4 Oct.	1971	BT:NEFC
4 *	Rorqual	22 Sept. - 1 Oct.	1971	BT:NEFC
5	Viandra	9 - 25 Oct.	1971	BT:NEFC
6 *	Rorqual	13 - 25 Oct.	1971	BT:NEFC
7 *	Rorqual	27 Oct. - 8 Nov.	1971	BT:NEFC
8	Walter Herwig	28 Oct. - 12 Nov.	1971	BT:NEFC, BOT:MEDS(06HW01580)
9	Albatross IV	2 - 17 Dec.	1971	BT:NODC(48637)
10 *	Lucille B	2 - 6 Sept.	1972	BT:NEFC
11 *	Albatross IV	21 - 24 Sept.	1972	BT:NEFC
12	Argus	22 - 30 Sept.	1972	BT:NEFC
13	Wieczno	2 - 28 Oct.	1972	BOT/O/N:RD(73/16), BT
14	Argus	12 - 28 Oct.	1972	BT:NEFC
15 *	Duchess II	18 - 22 Oct.	1972	BT:NEFC
16	Anton Dohrn	31 Oct. - 12 Nov.	1972	BT:NEFC, BOT:NODC(060187)
17 *	Duchess II	6 - 12 Nov.	1972	BT:NEFC
18	Albatross IV	2 - 20 Dec.	1972	BT:NODC(48647)
19	Walter Herwig	26 Feb. - 11 Mar.	1973	BT, BIO
20	Cryos	16 - 28 Sept.	1973	BOT:NEFC
21	Wieczno	28 Sept. - 20 Oct.	1973	BOT:MEDS(67WI73002), BT:NEFC
22	Belogorsk	15 Oct. - 1 Nov.	1973	BIO
23	Walter Herwig	28 Oct. - 8 Nov.	1973	BT:NEFC, BOT:NODC(060211)
24	Albatross IV	30 Oct. - 20 Nov.	1973	BOT,
25	Albatross IV	4 - 20 Dec.	1973	BIO
26	Albatross IV	11 - 22 Feb.	1974	BOT, BT, BIO
27	Walter Herwig	19 Mar. - 3 Apr.	1974	BT, BIO
28	Cryos	7 - 24 Sept.	1974	BOT/BT:NEFC
29	Duchess II	9 - 14 Sept.	1974	BT:NEFC
30	Wieczno	27 Sept. - 18 Oct.	1974	BOT:NEFC
31	Delaware II	8 - 16 Oct.	1974	BT:NEFC
32	Prognоз	18 - 30 Oct.	1974	BT:NEFC
33	Albatross IV	30 Oct. - 12 Nov.	1974	BT:NODC(50130)
34	Anton Dohrn	16 - 23 Nov.	1974	BOT:MEDS(06AD74178)
35	Albatross IV	4 - 19 Dec.	1974	BT:NODC(50481), BOT:NODC(312886)
36	Albatross IV	12 - 28 Feb.	1975	BT:NODC(50801), BOT:NODC(312884)
37	Walter Herwig	8 - 26 Mar.	1975	BT:NEFC
38	Challenge	4 - 9 Sept.	1975	BT:NEFC
39	Delaware II	23 Sept. - 2 Oct.	1975	BT:NEFC, BOT/N/C
40	Belogorsk	25 Sept. - 8 Oct.	1975	BT/BOT/O/N/C:NEFC
41	Belogorsk	17 - 30 Oct.	1975	BT/BOT/O/N/C:NEFC
42	Anton Dohrn	1 - 18 Nov.	1975	BT:NEFC, BOT:MEDS(06DA02320), O/N/C : NEFC
43	Albatross IV	7 - 18 Nov.	1975	BOT,
44	Albatross IV	5 - 17 Dec.	1975	BIO
45	Albatross IV	10 - 25 Feb.	1976	BOT:BT, BIO
46	Anton Dohrn	2 - 8 Mar.	1976	BOT, BT, BIO
47	Ernst Haeckel	3 - 16 Mar.	1976	BIO
48	Wieczno	9 Apr. - 4 May	1976	BIO
				BT, BIO

TABLE 1 (Continued)

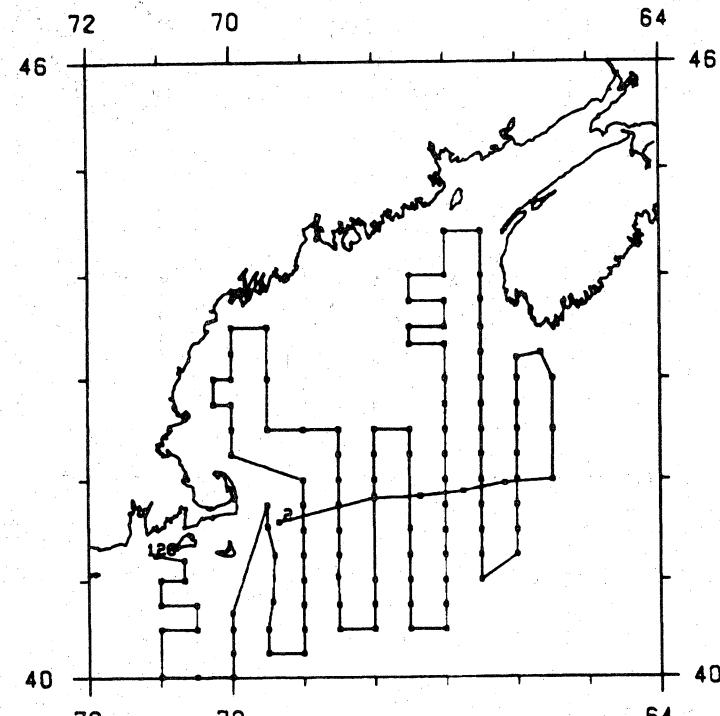
Cruise	Vessel	Date	Comments	Tracks
49	Belogorsk	4 - 11 Oct.	1976	BT:NODC(72714), BOT:MEDS(90BE76003) BOT
50	Annandale	1 - 18 Oct.	1976	BT:NODC(52701), BOT:NODC(312881), N/C:NEFC BOT, BIO
51	Wieczno	14 Oct. - 3 Nov.	1976	BT:NODC(52714), BOT/O/N/C/P :NEFC BT, BIO
52	Albatross IV	9 - 23 Nov.	1976	BIO
53	Anton Dohrn	15 - 29 Nov.	1976	BT/BOT:NEFC, O/N/C: NEFC BT, BIO
54	Researcher	27 Nov. - 11 Dec.	1976	BT:NODC(52698), BOT:NODC(312880), O/N/C:NEFC BOT, BT, BIO
55	Mt. Mitchell	13 - 24 Feb.	1977	BT:NODC(52700), BOT:NODC(312869), O:NODC BOT, BT, BIO
56	Anton Dohrn	15 - 21 Mar.	1977	BT/C/P/N:NEFC BIO
57	Wieczno	4 - 24 Oct.	1977	BT:NODC(52710), BOT:NEFC BT, BIO
58	Argus	15 Oct. - 11 Nov.	1977	BT/C/P/N:NEFC BIO
59	Anton Dohrn	1 - 18 Nov.	1977	BT:NODC(52709), BOT:MEDS(06AD77003) BOT, BT, BIO
60	E.E. Prince	17 - 24 Nov.	1977	BOT:MEDS(180377014) BOT
61	Delaware II	8 - 20 Dec.	1977	BT:NODC(52695) BT, BIO
62	Albatross IV	14 Feb. - 8 Mar.	1978	BT:NODC(52690) BT, BIO

Code:	BIO	- biological data	NODC	- National Oceanographic Data Center Washington, D.C. 20235 U.S.A.
	BOT	- physical/chemical data	MEDS	- Marine Environmental Data Service Department of Fisheries and Oceans 7th Floor West, 240 Sparks Street Ottawa, Ontario, Canada K1A 0E6
	BT	- bathythermograph data		
	O	- oxygen		
	N	- nutrients		
	C	- chlorophyll	NEFC	- Northeast Fisheries Center Woods Hole Laboratory Woods Hole, Massachusetts 02543 U.S.A.
	P	- primary productivity		
	RD	- ICNAF research document		

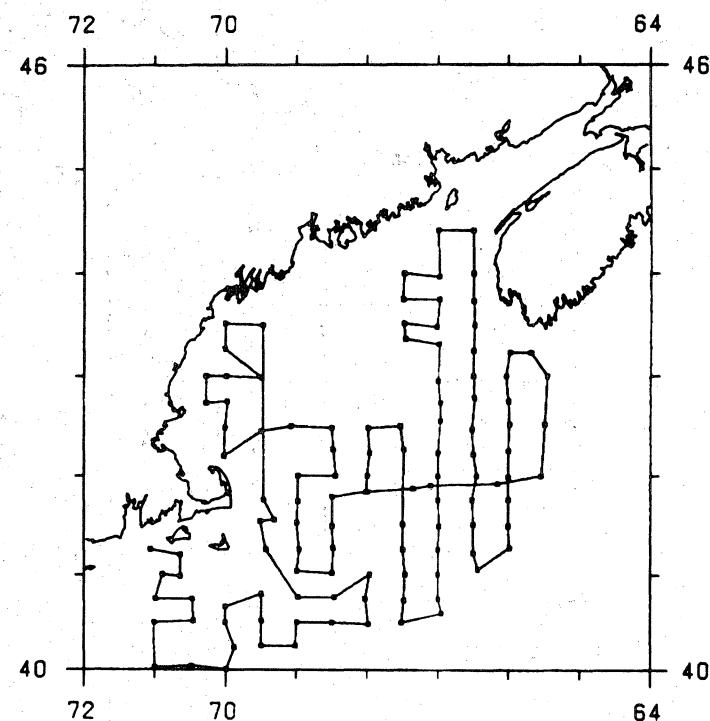
* Cruise track not available.

APPENDIX. CRUISE TRACKS

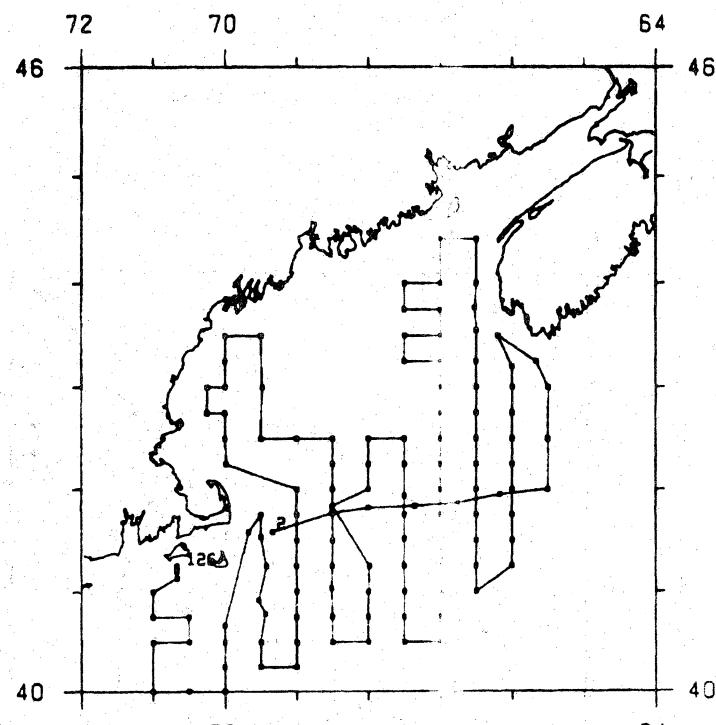
The following figures refer to the cruise numbers given in the first column of Table 1.



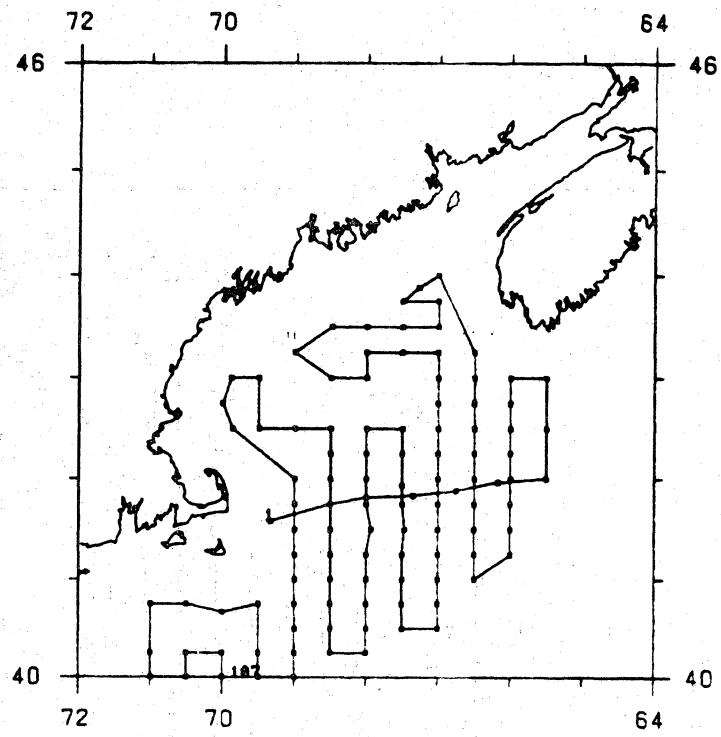
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CRUISE 2 BT 9/ 9/71 - 24/ 9/71 115 STATIONS

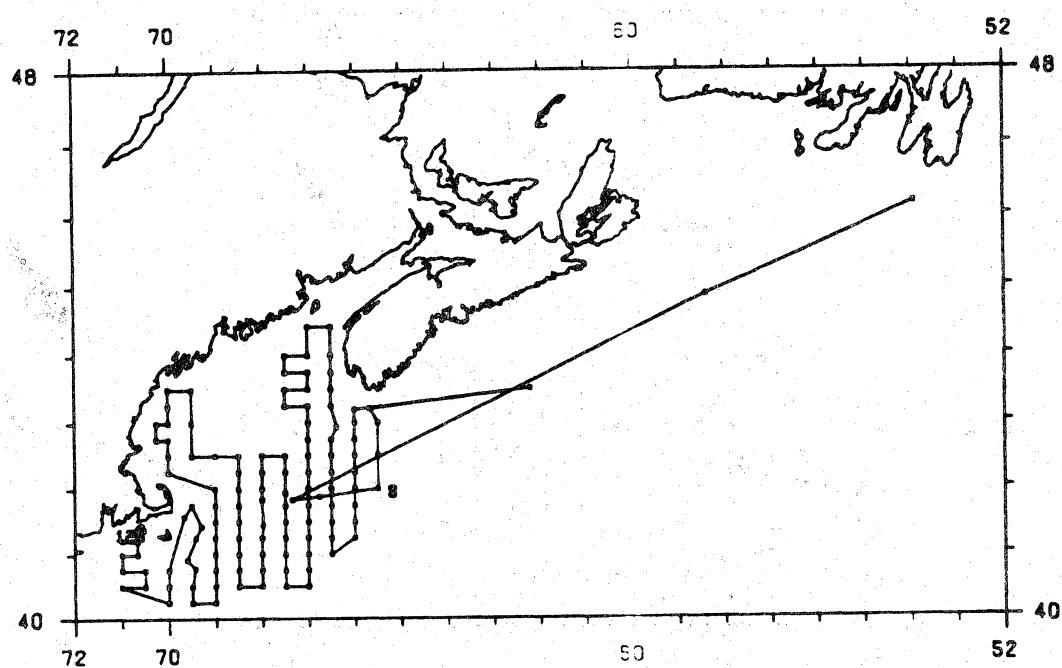


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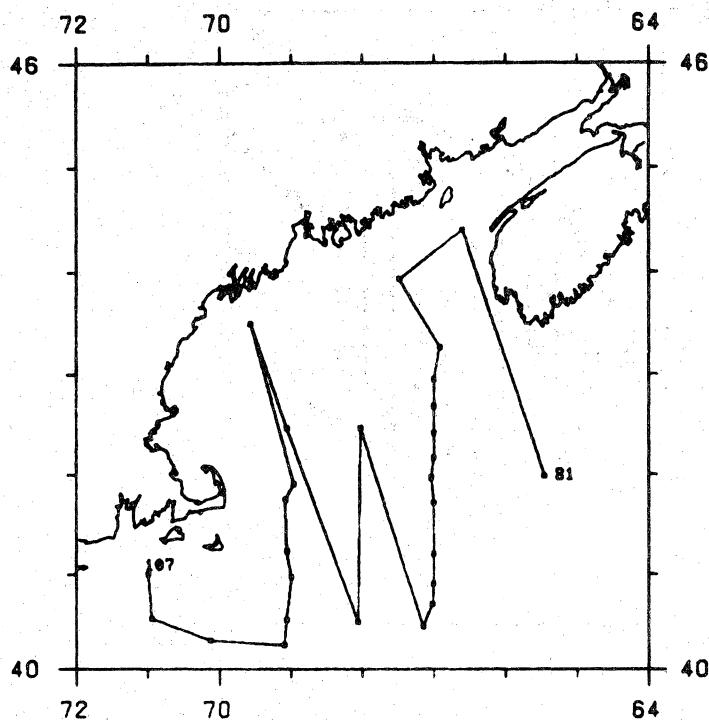


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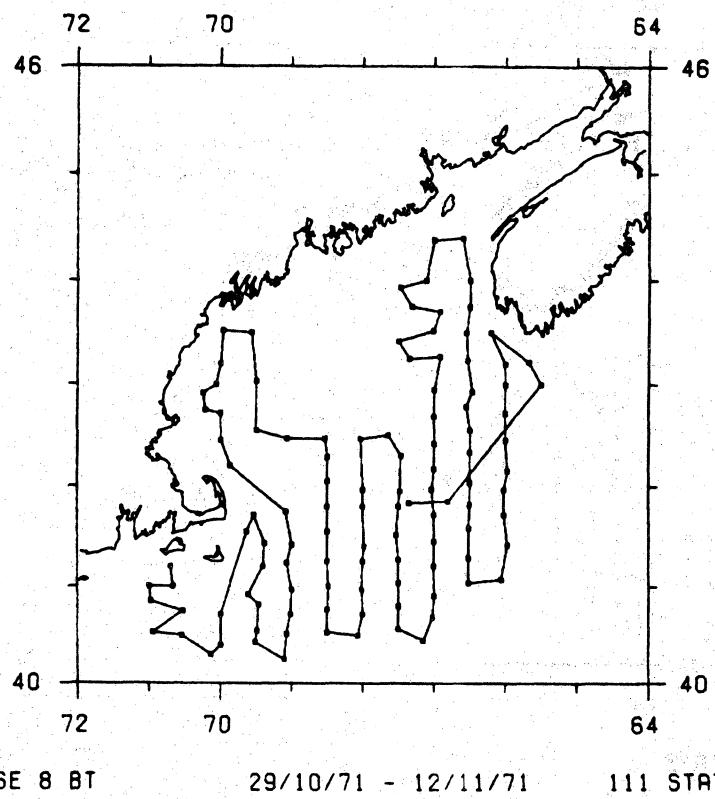
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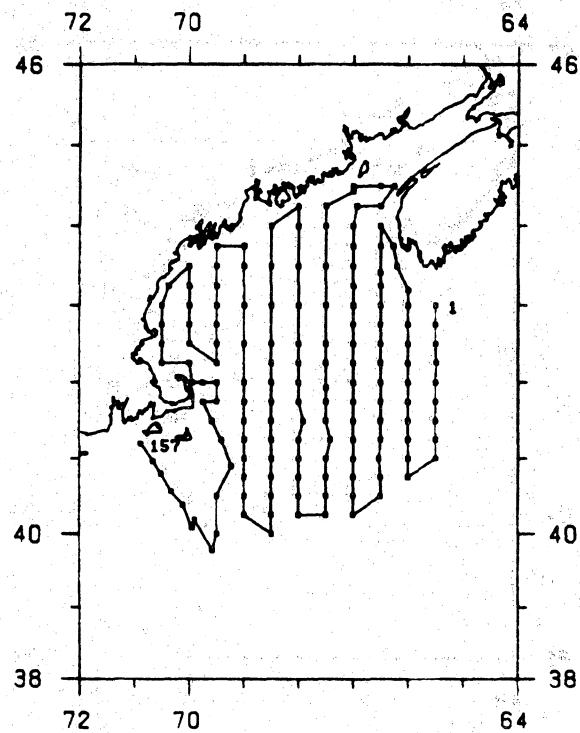
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CRUISE 8 BT

29/10/71 - 12/11/71

111 STATIONS

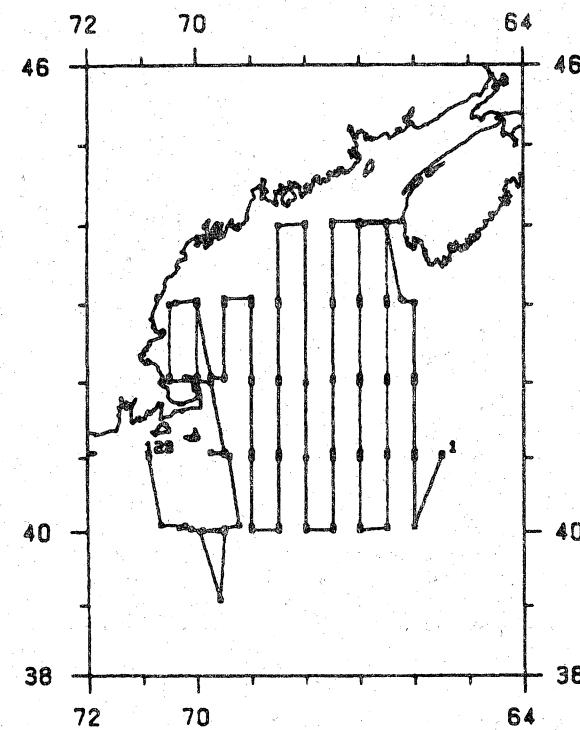


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2/12/71 - 17/12/71

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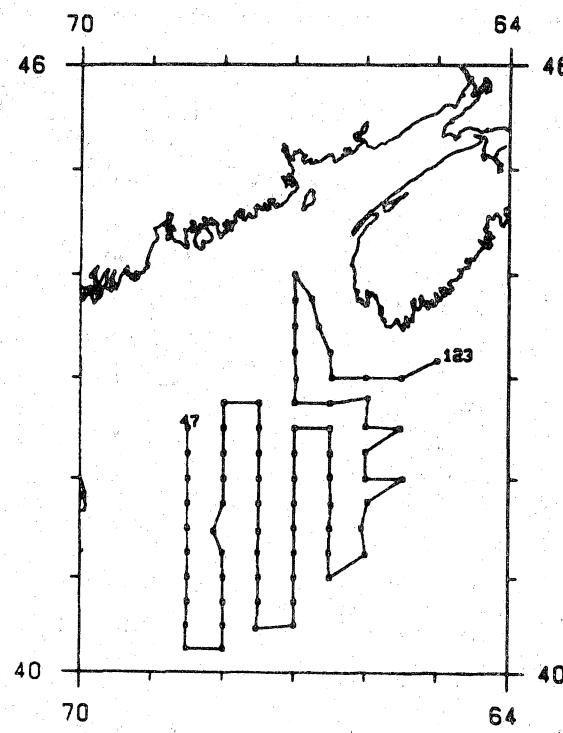
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2/12/71 - 17/12/71

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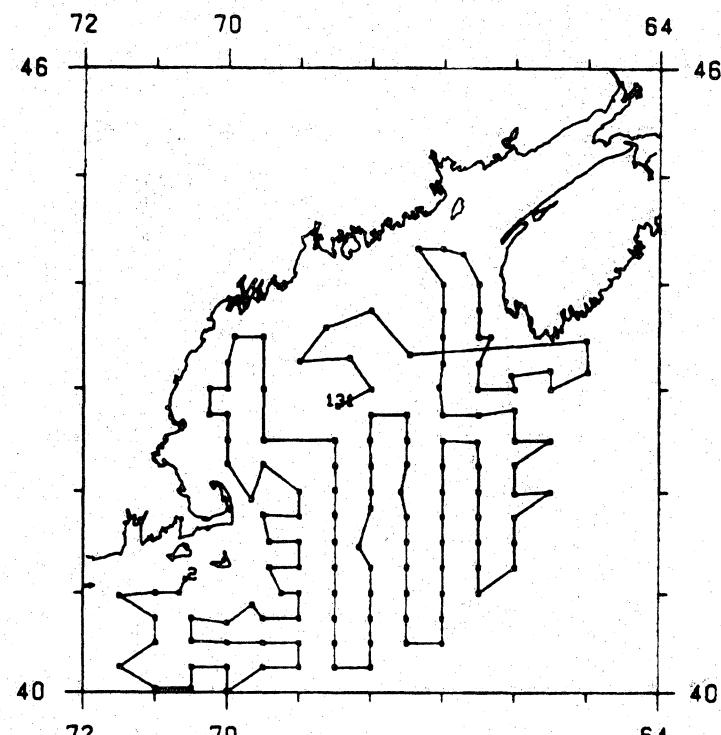


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22/ 9/72 - 30/ 9/72

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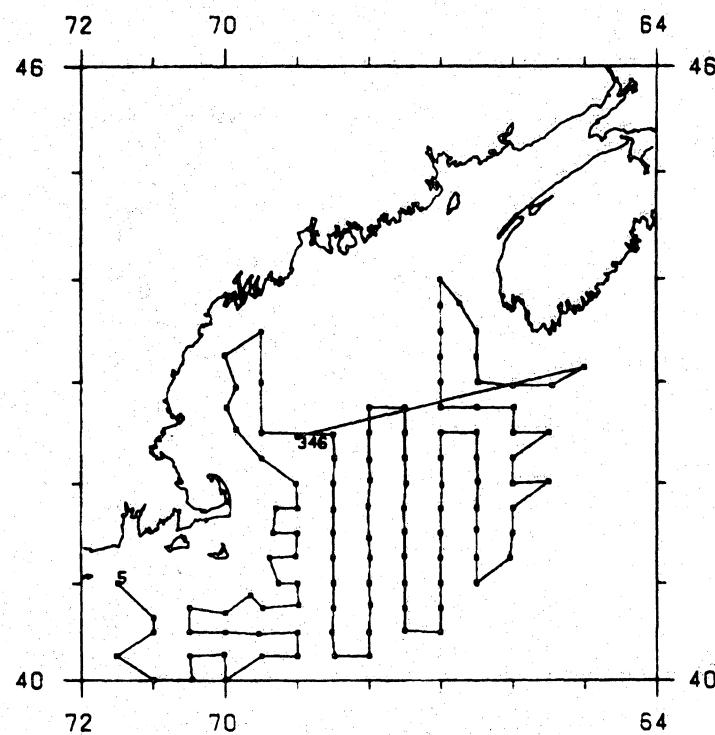
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2/10/72 - 28/10/72

130 STATIONS

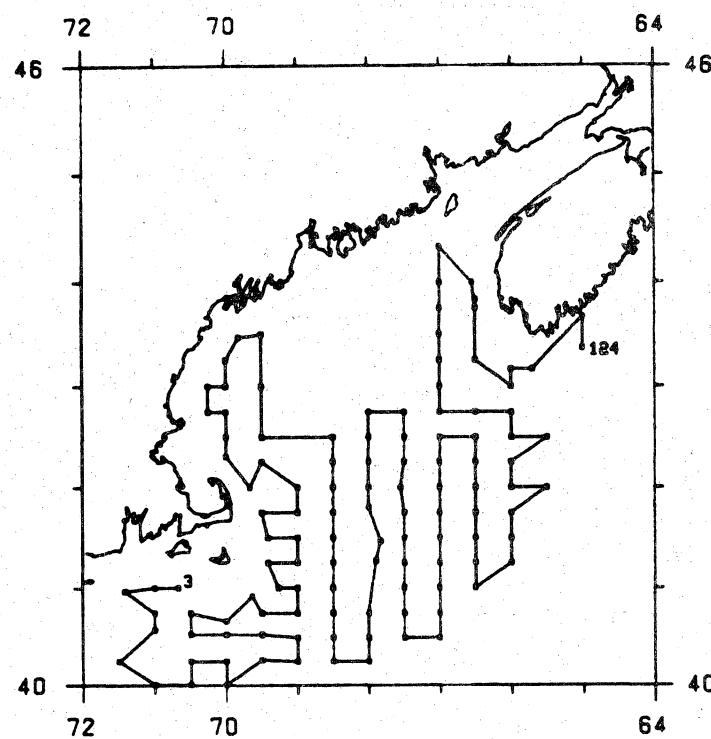


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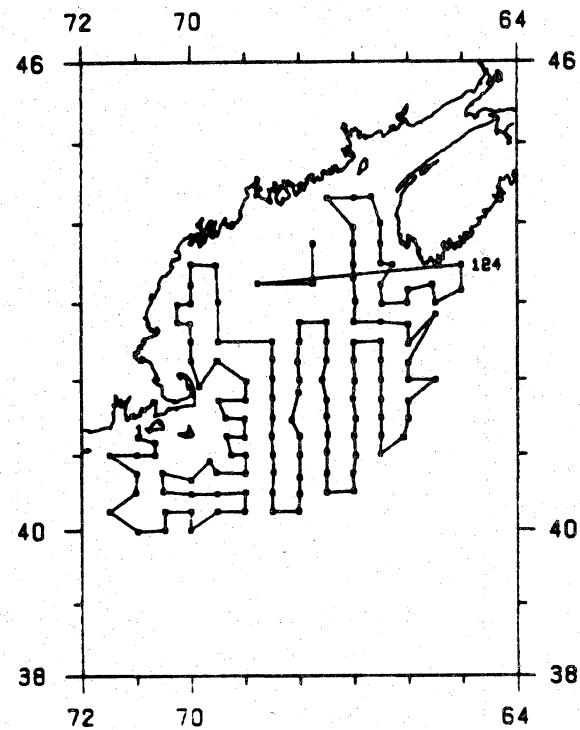
12/10/72 - 28/10/72

108 STATIONS

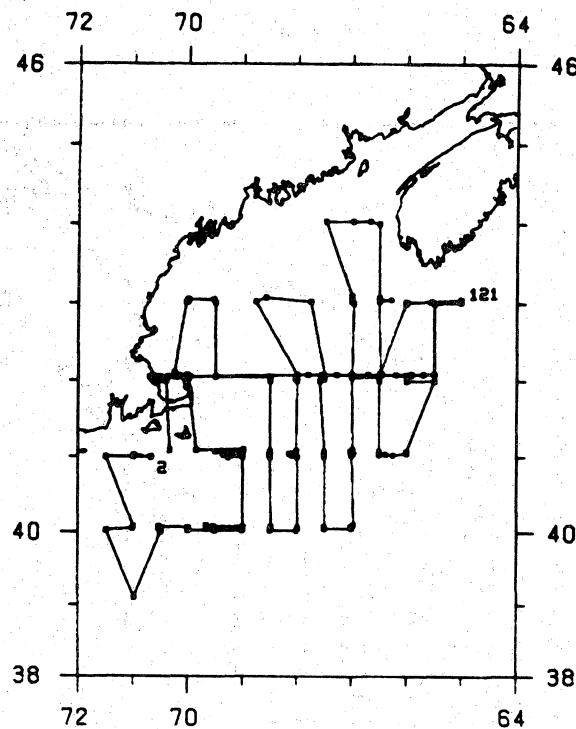
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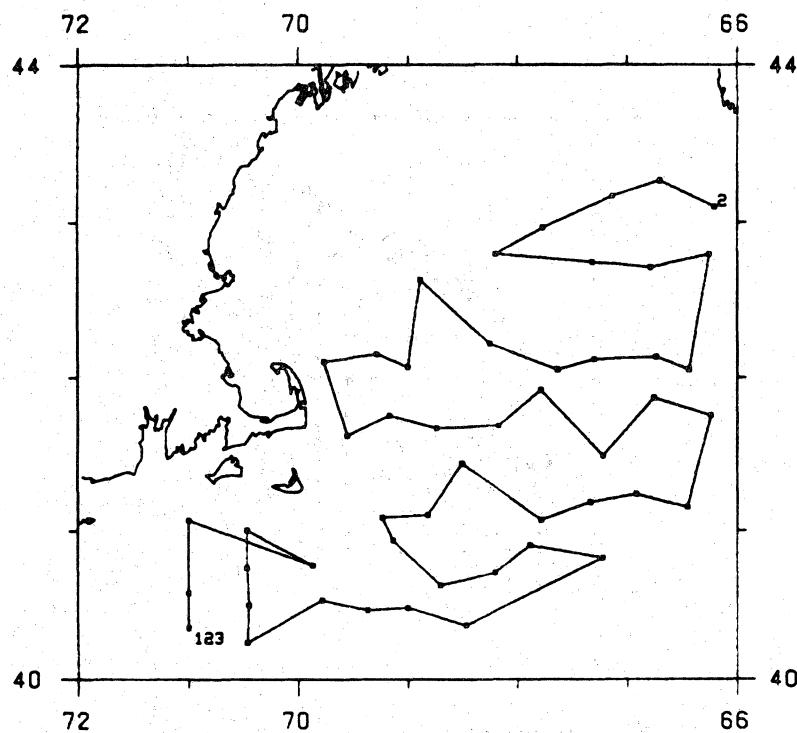
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CRUISE 18 BT

2/12/72 - 20/12/72

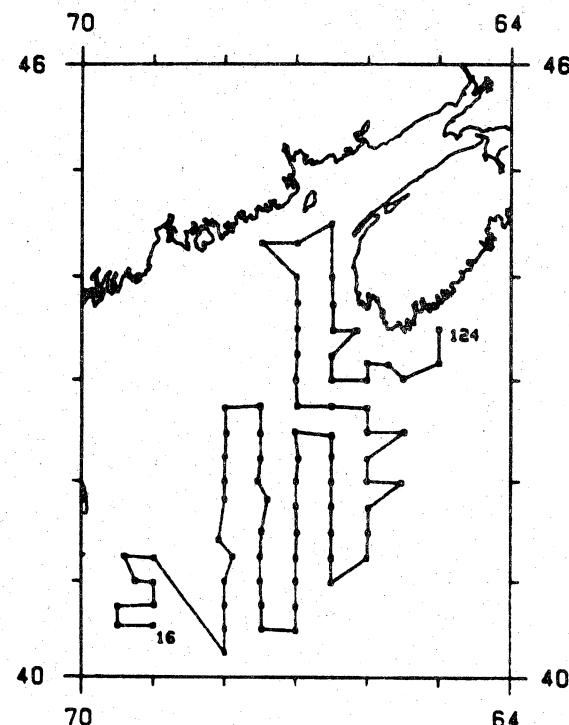
148 STATIONS



CRUISE 19 BIOLOGY

26/ 2/73 - 11/ 3/73

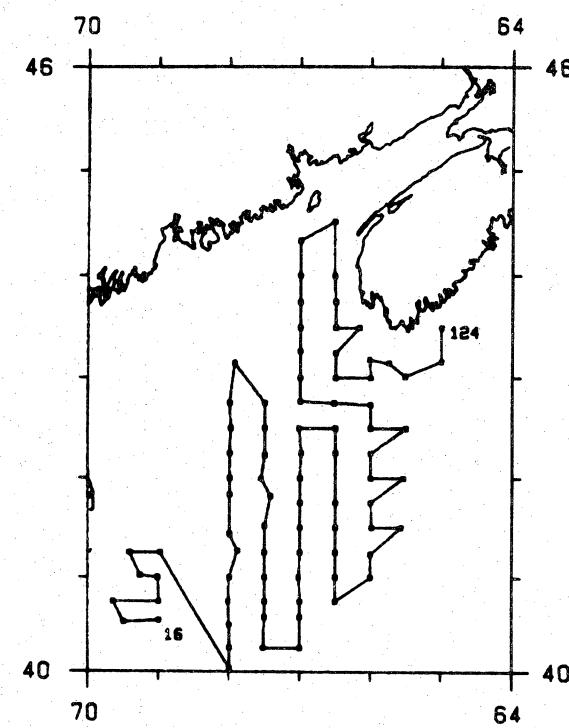
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16/ 9/73 - 28/ 9/73

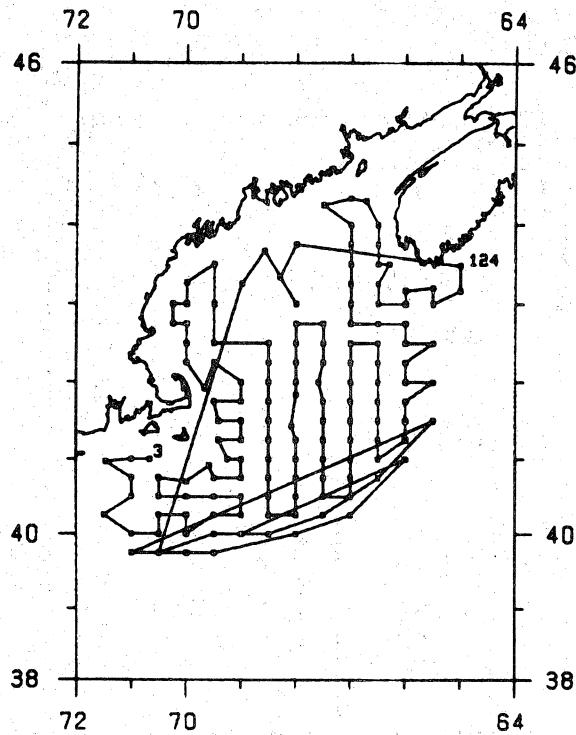
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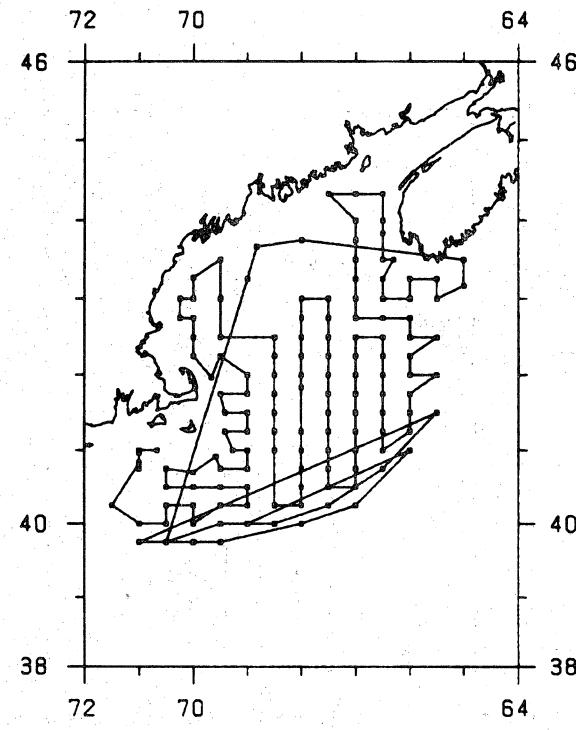
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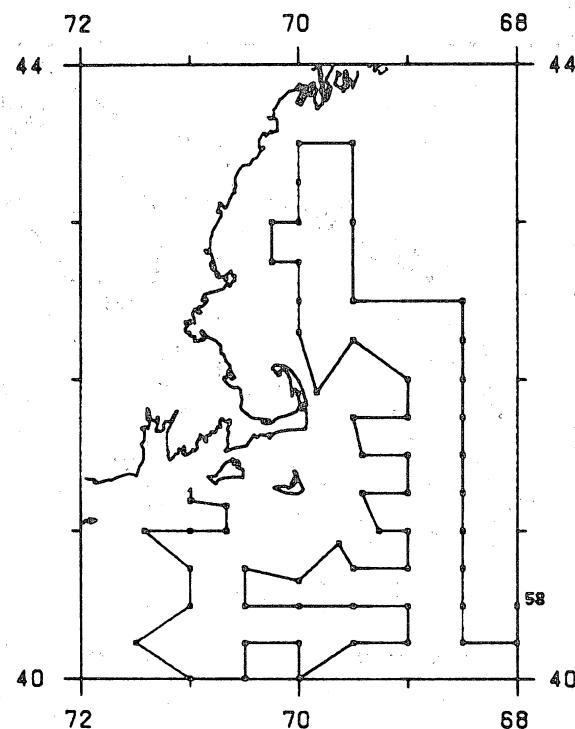
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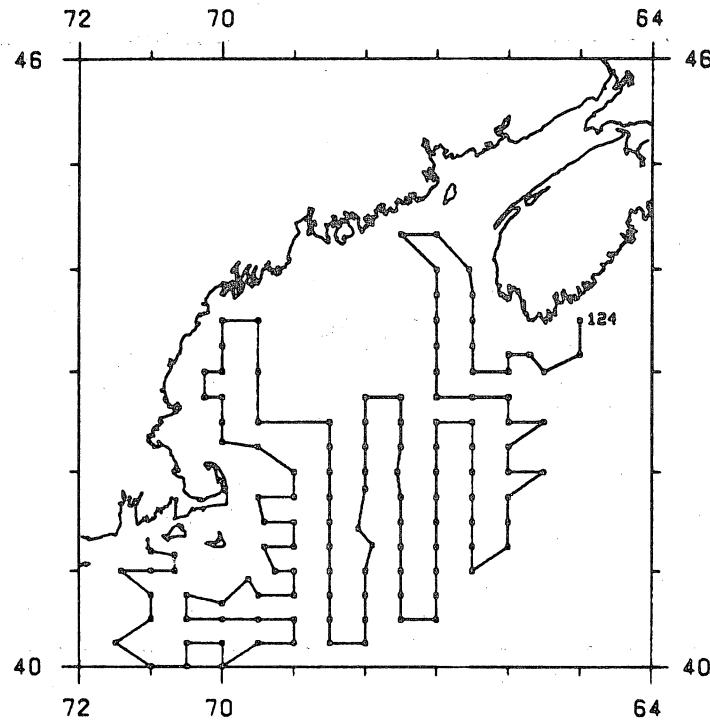
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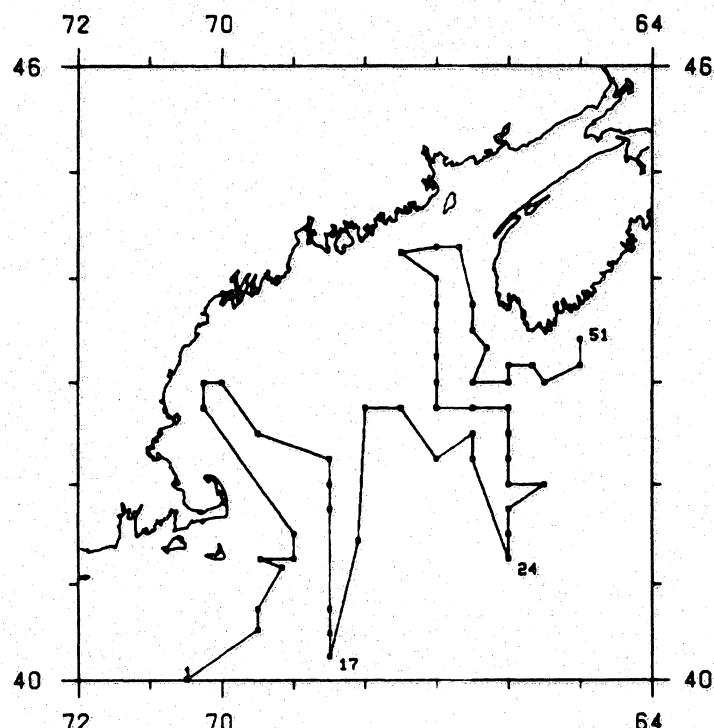
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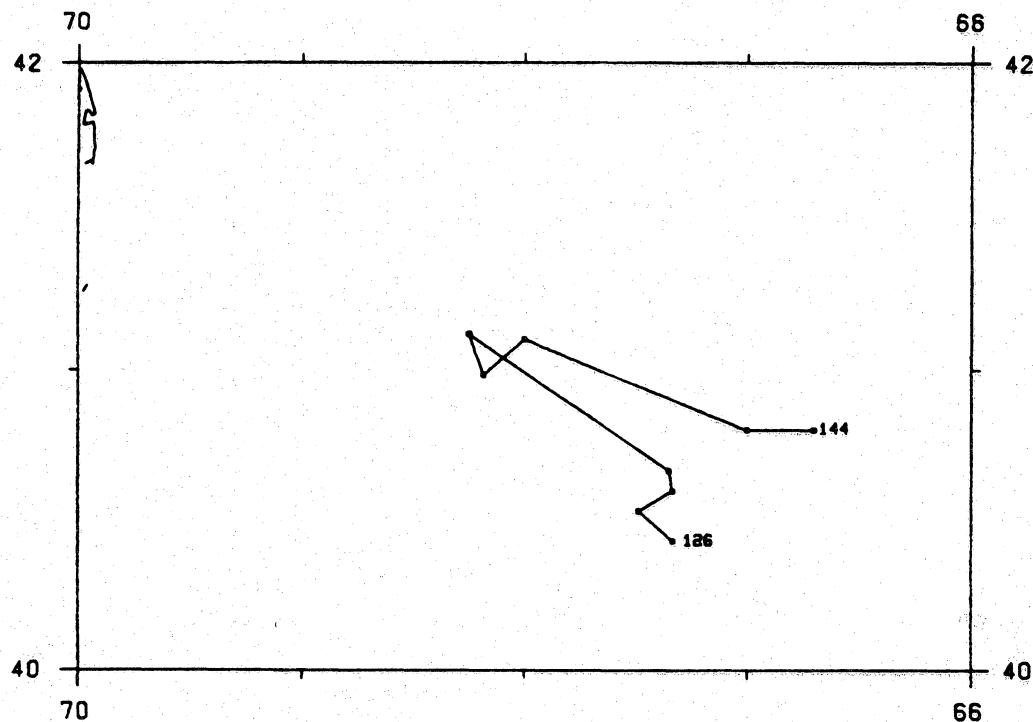
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CRUISE 23 BOTTLE

29/10/73 - 8/11/73

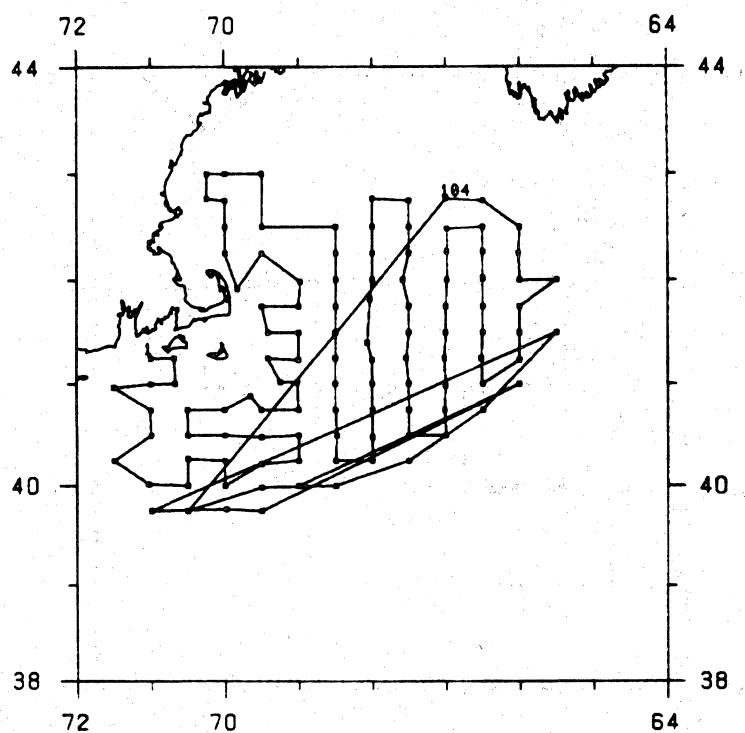
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30/10/73 - 20/11/73

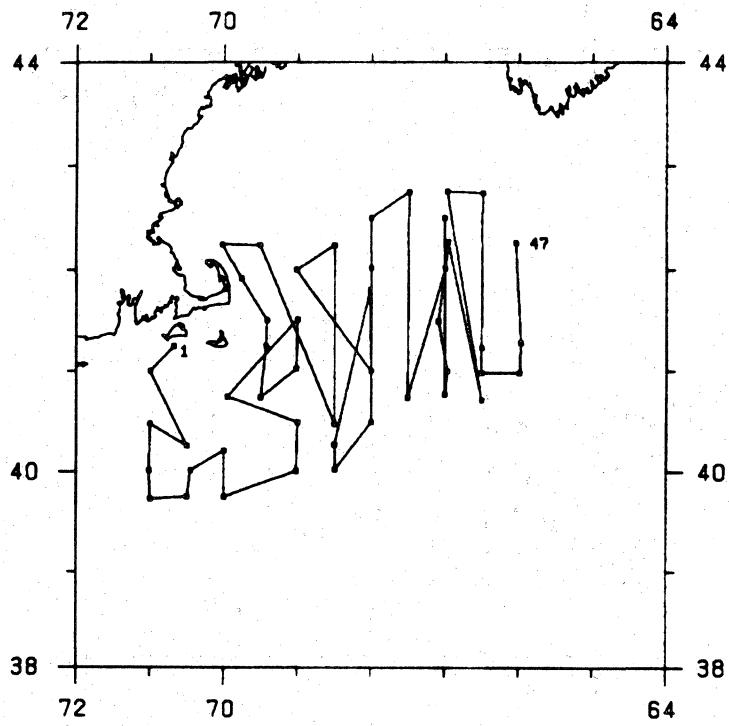
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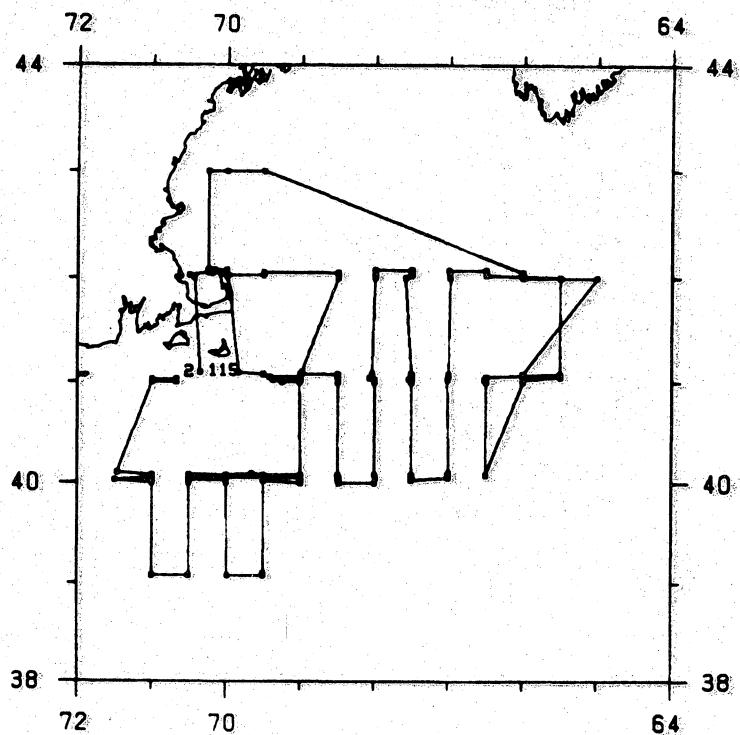
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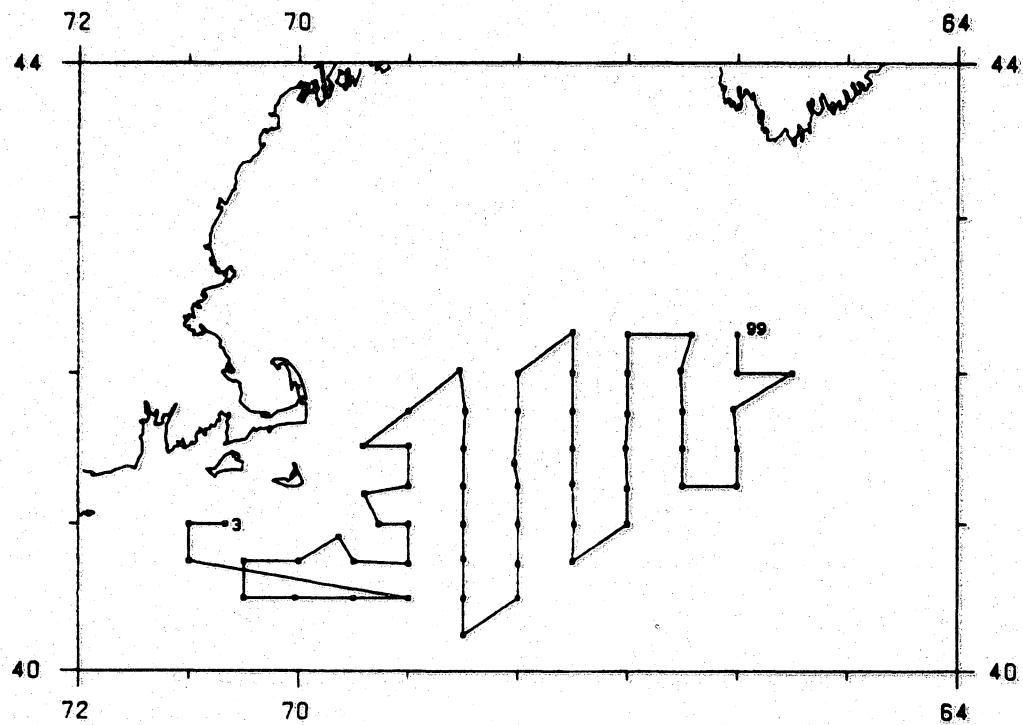
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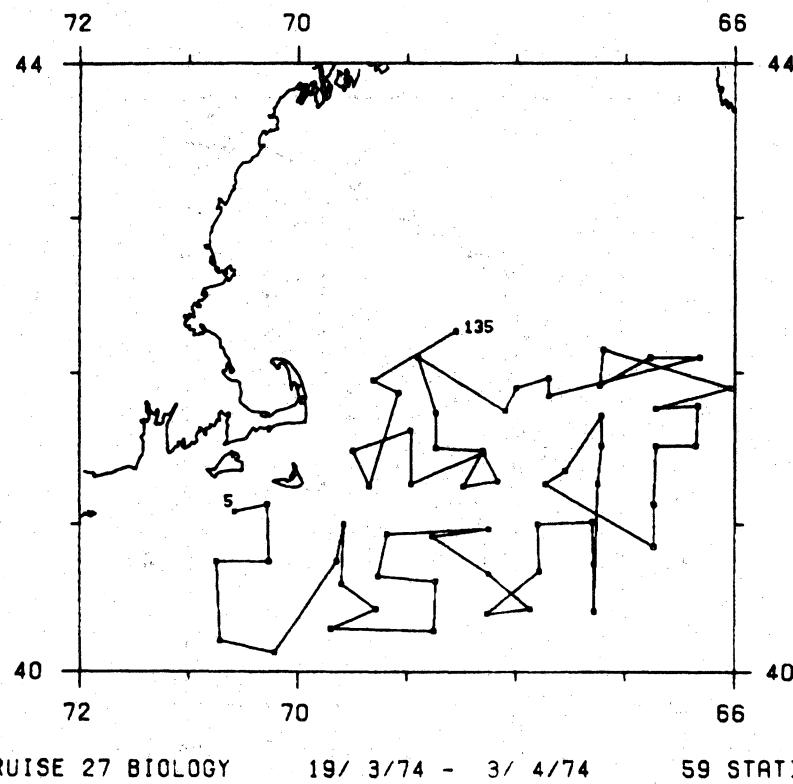
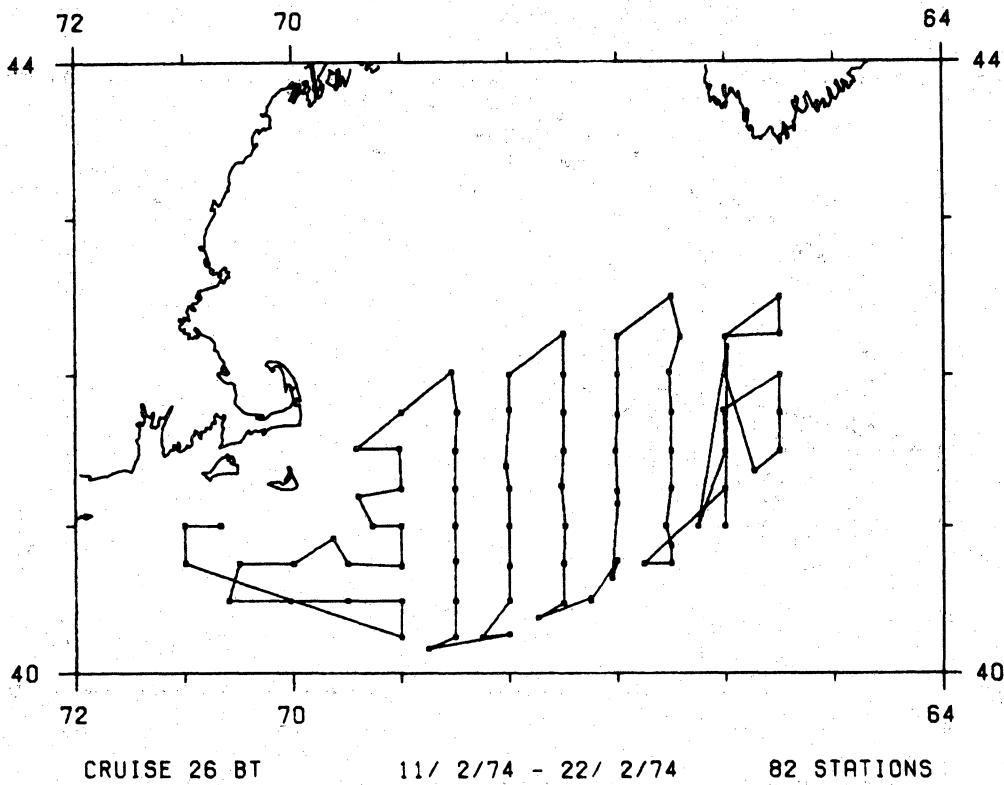
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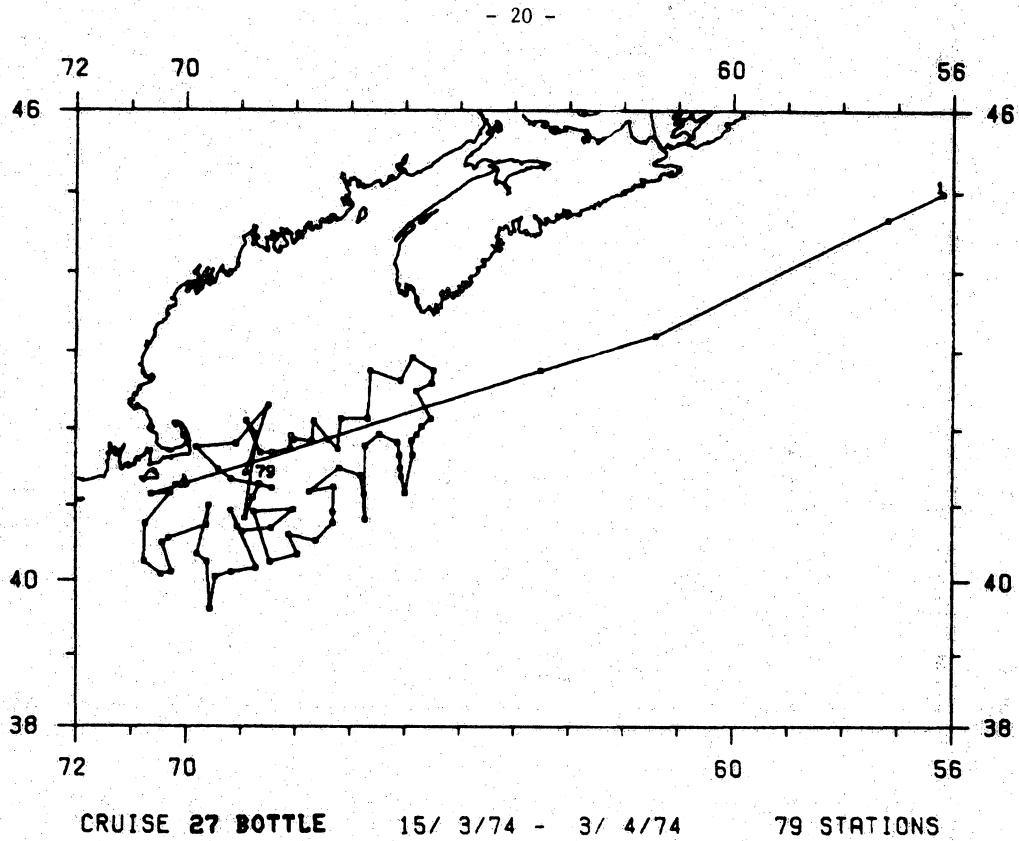


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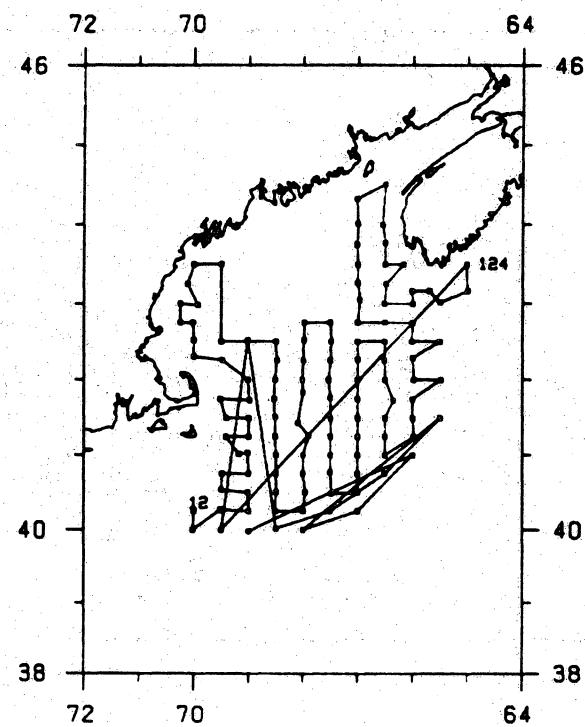
11/ 2/74 - 22/ 2/74

58 STATIONS

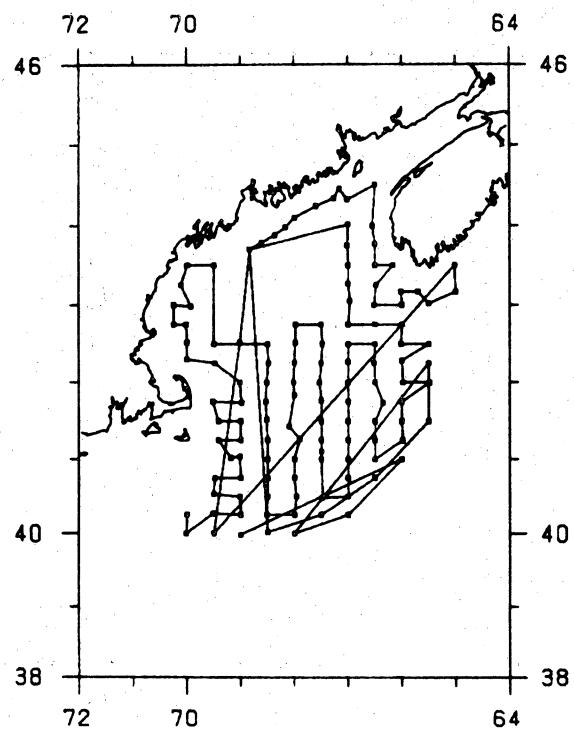




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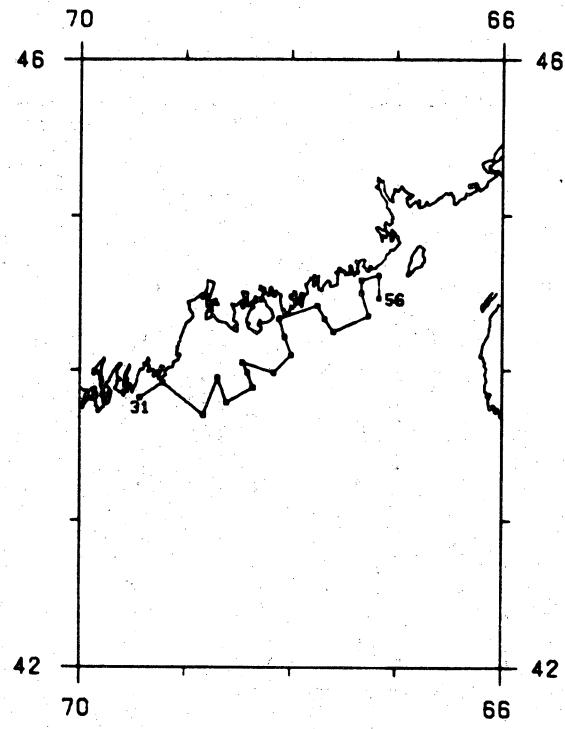
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CRUISE 28 BOTTLE

7/ 9/74 - 24/ 9/74

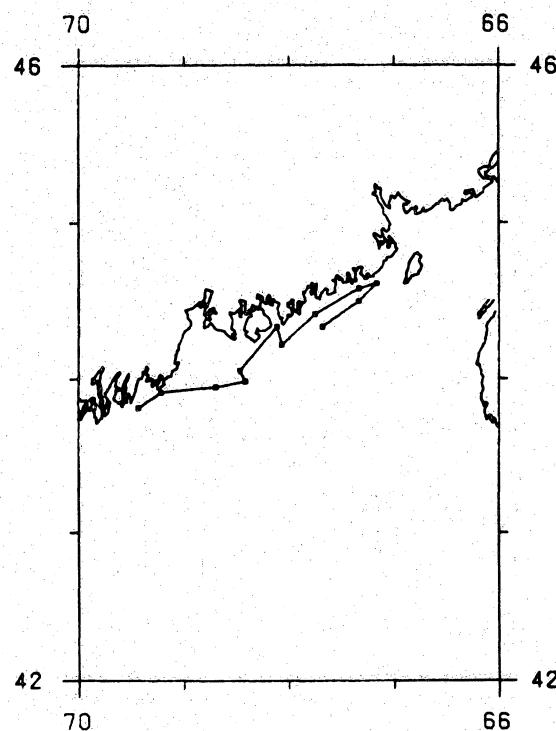
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CRUISE 29 BIOLOGY

9/ 9/74 - 14/ 9/74

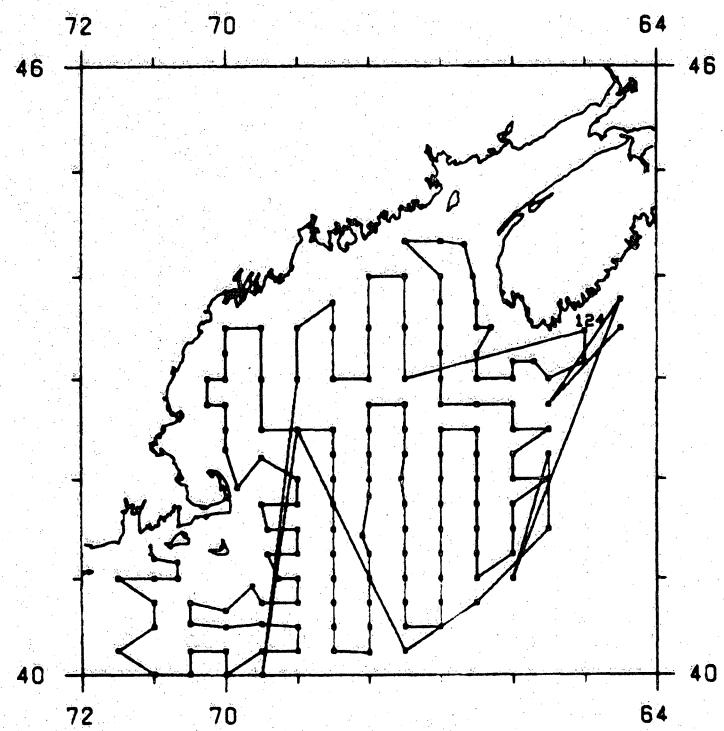
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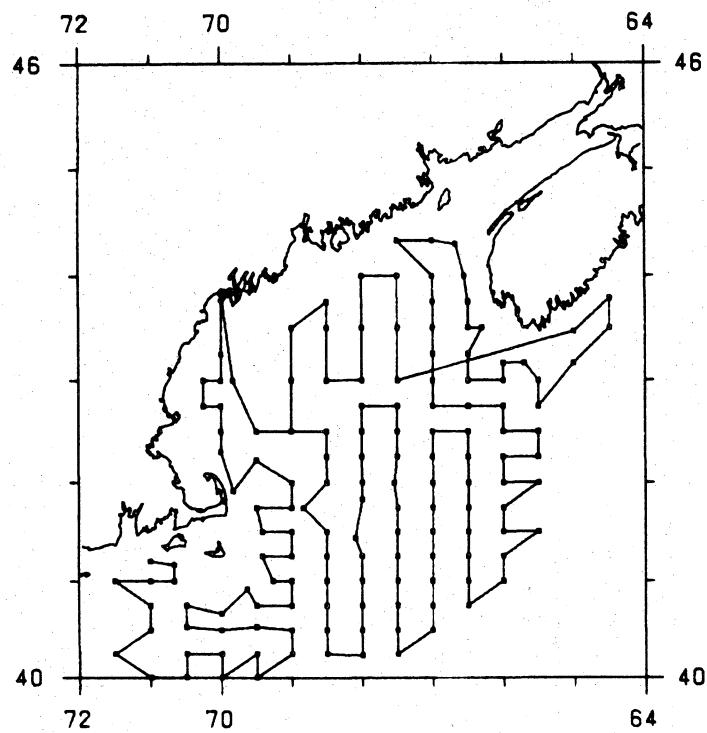
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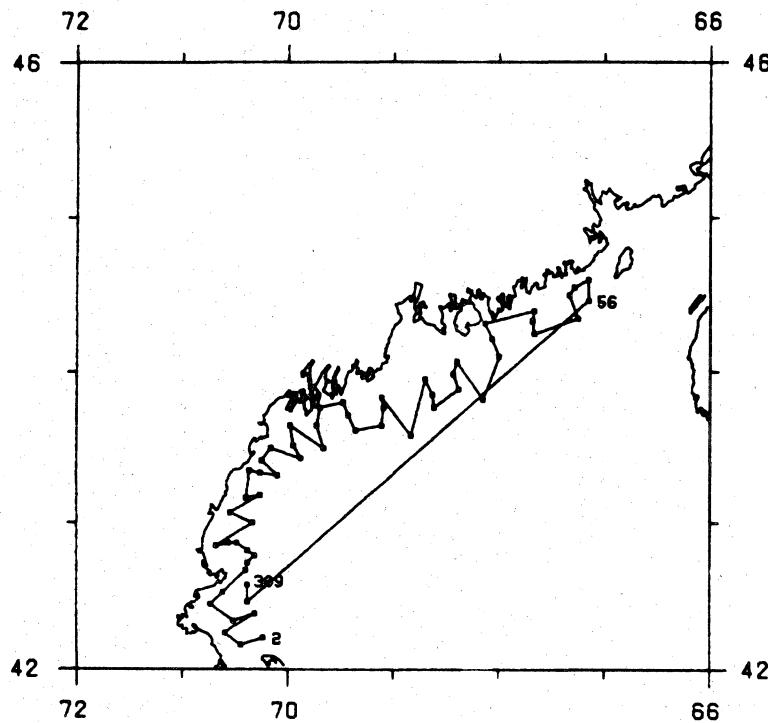
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27/ 9/74 - 18/10/74

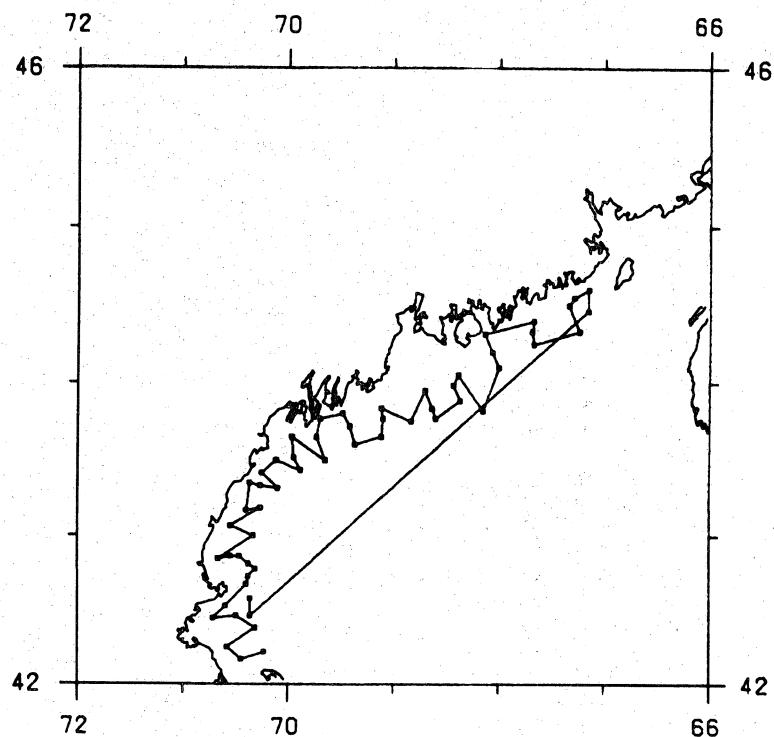
145 STATIONS



CRUISE 30 BOTTLE 27/ 9/74 - 18/10/74 144 STATIONS



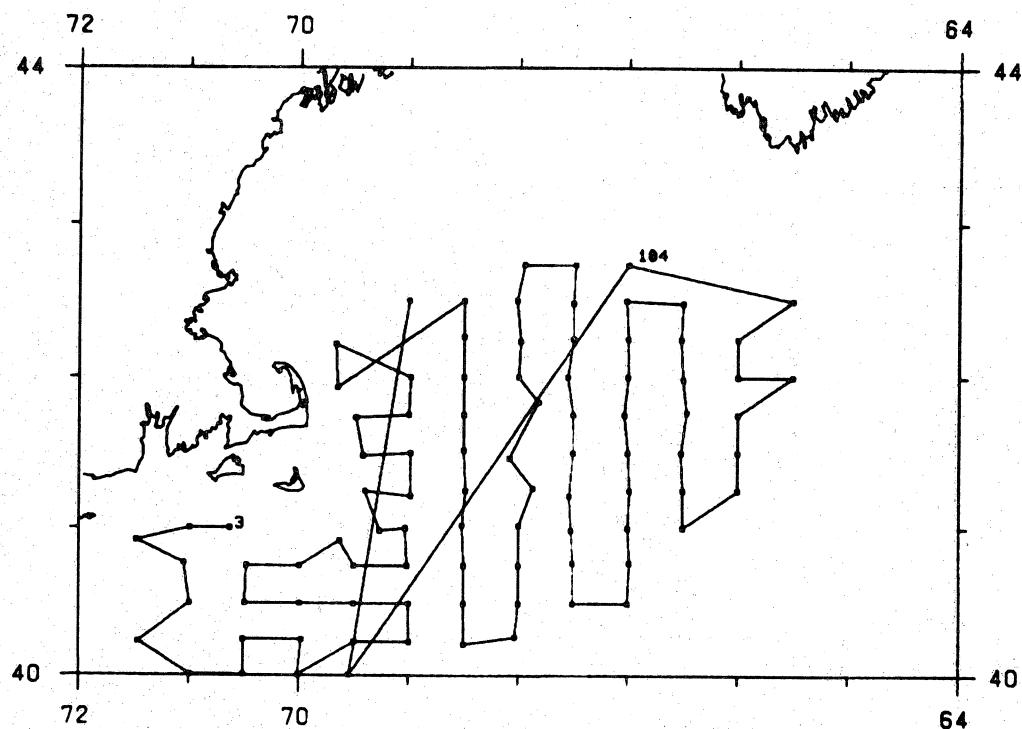
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CRUISE 31-BT

8/10/74 - 16/10/74

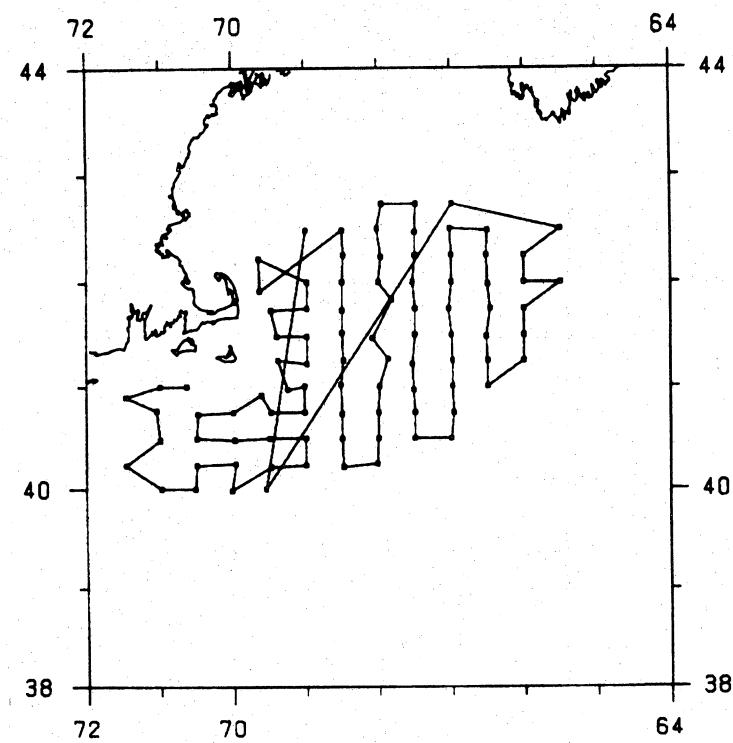
56 STATIONS



CRUISE 32 BIOLOGY

18/10/74 - 30/10/74

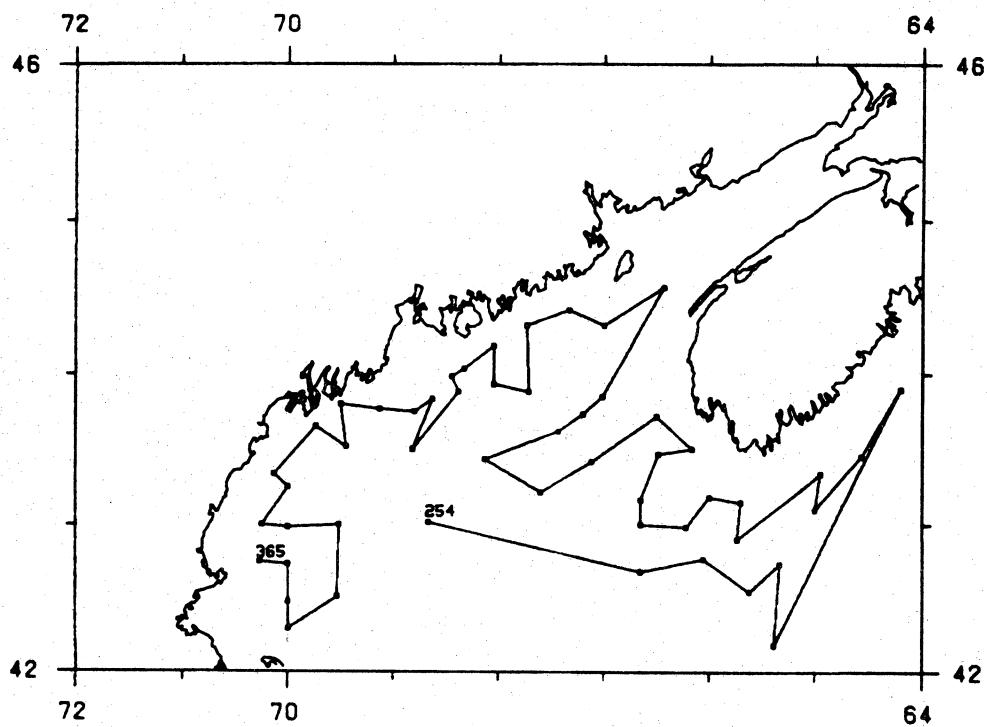
90 STATIONS



CRUISE 32 BOTTLE

18/10/74 - 30/10/74

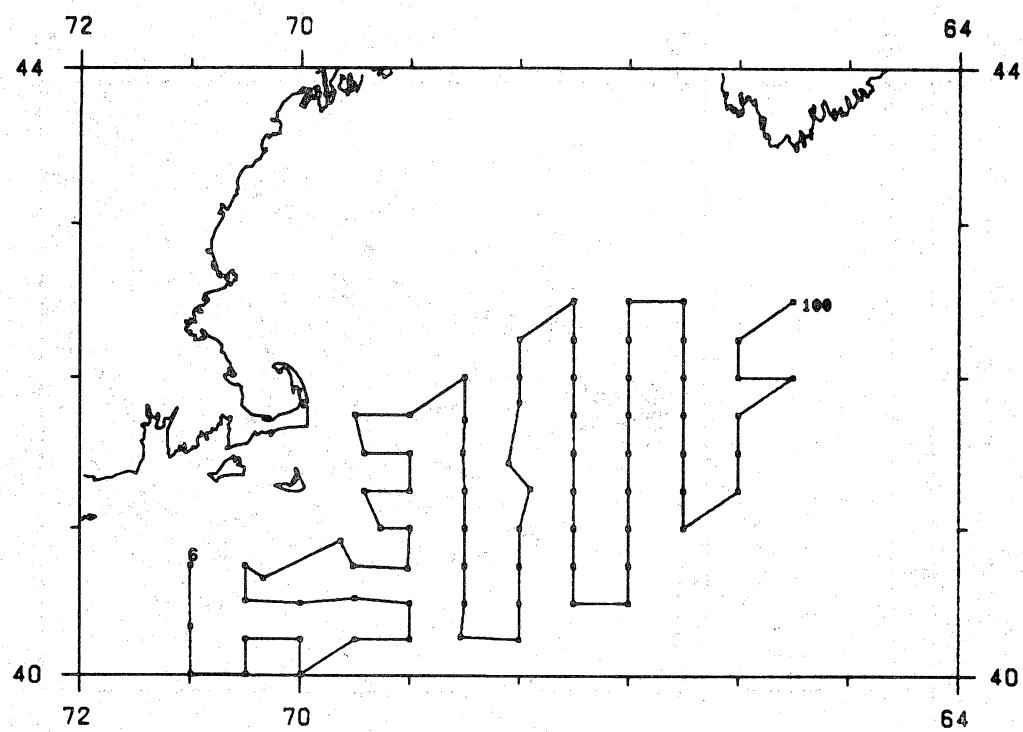
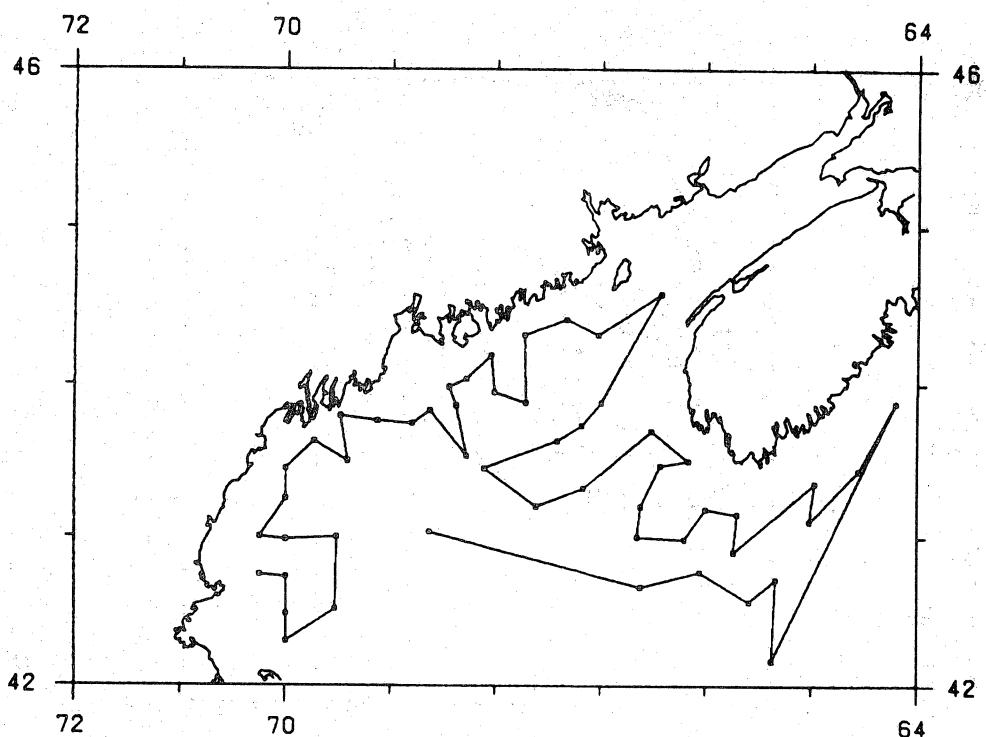
90 STATIONS

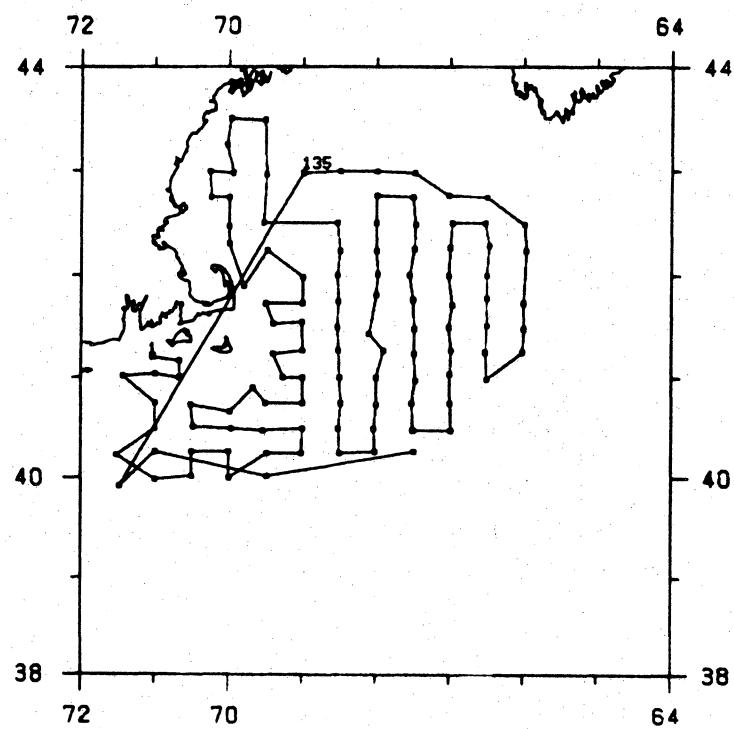
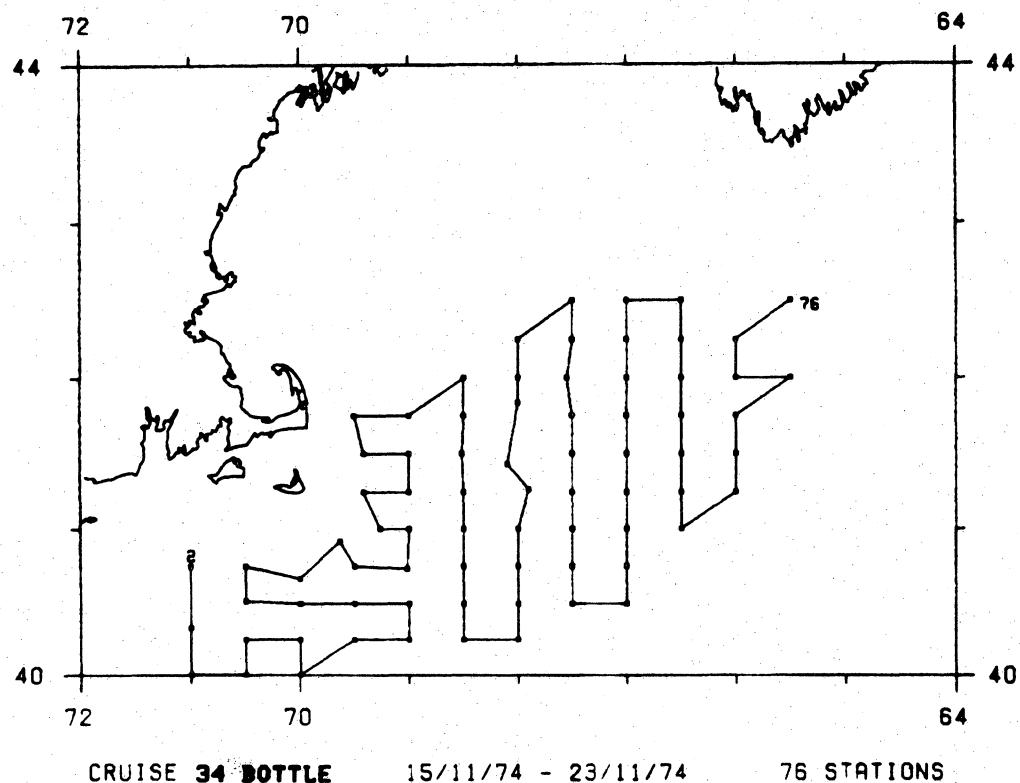


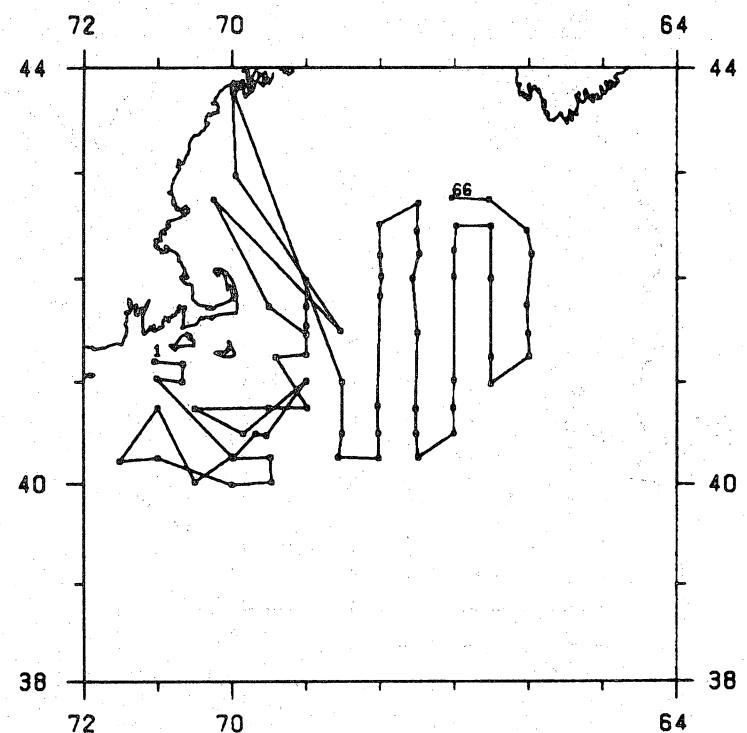
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30/10/74 - 12/11/74

52 STATIONS



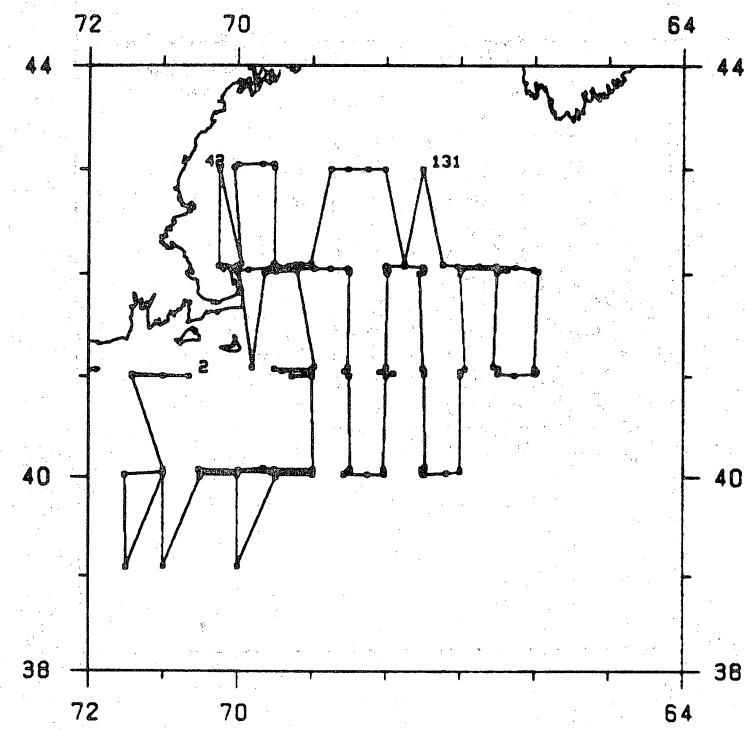




CRUISE 35 BOTTLE

4/12/74 - 18/12/74

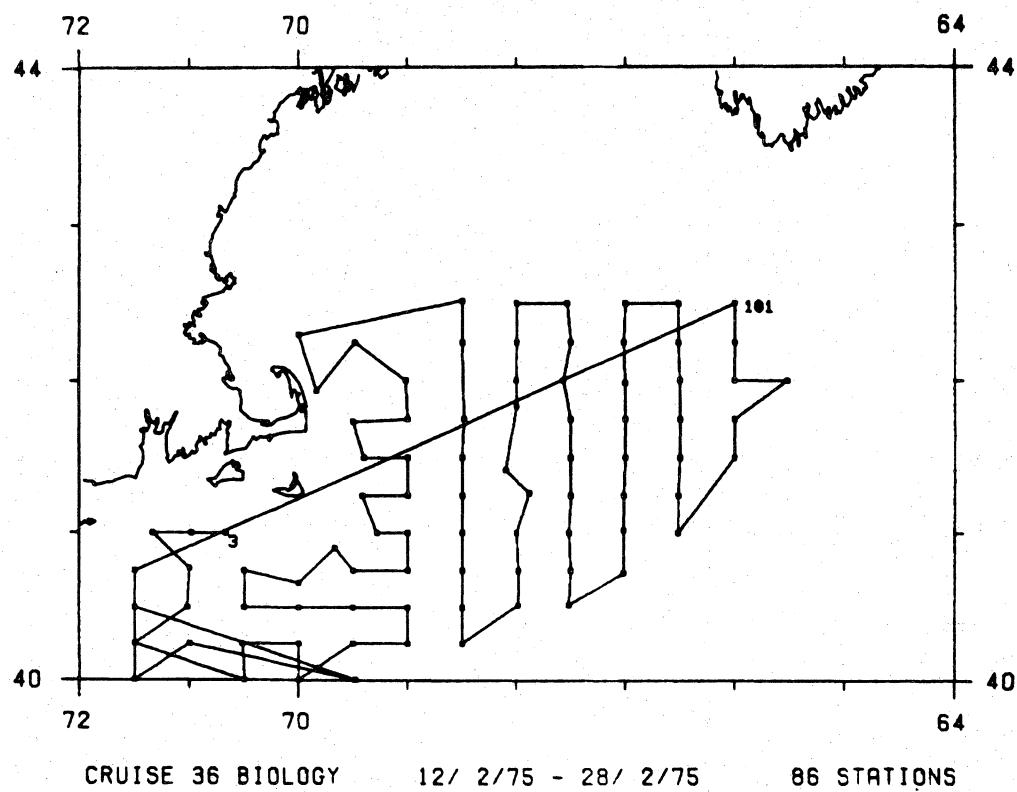
66 STATIONS



CRUISE 35 BT

4/12/74 - 19/12/74

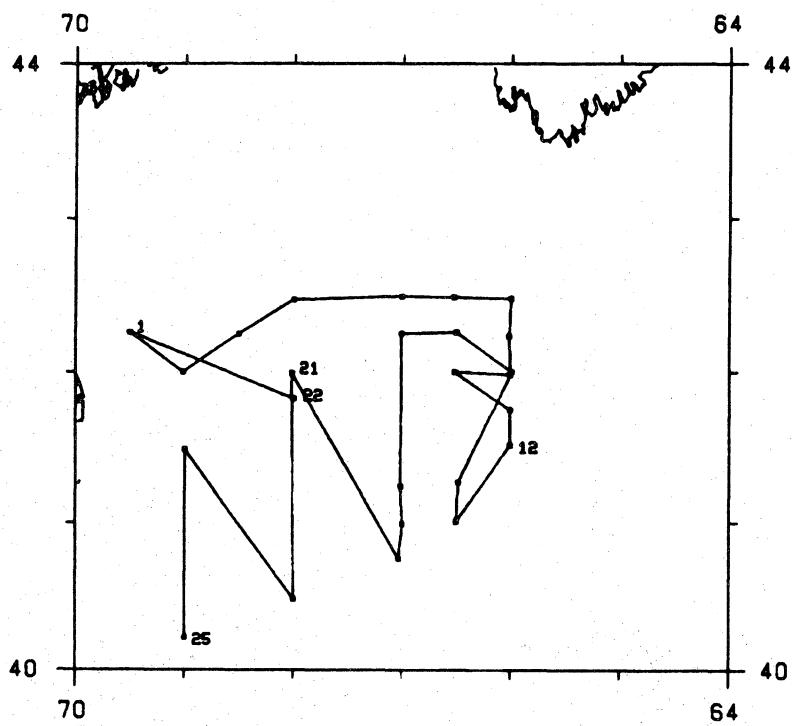
143 STATIONS



CRUISE 36 BIOLOGY

12/ 2/75 - 28/ 2/75

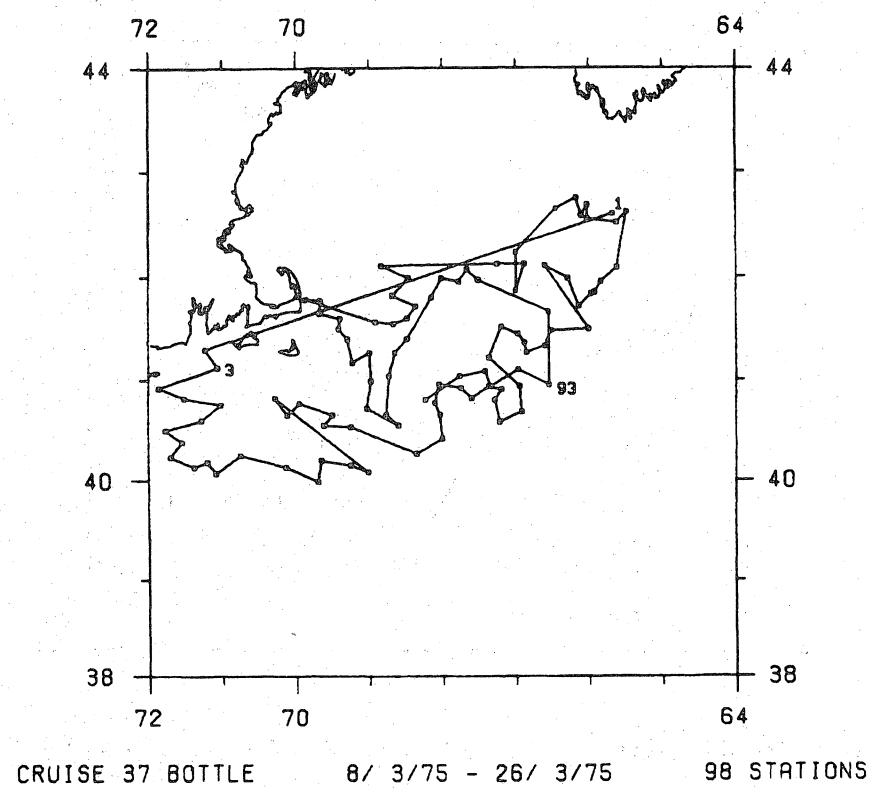
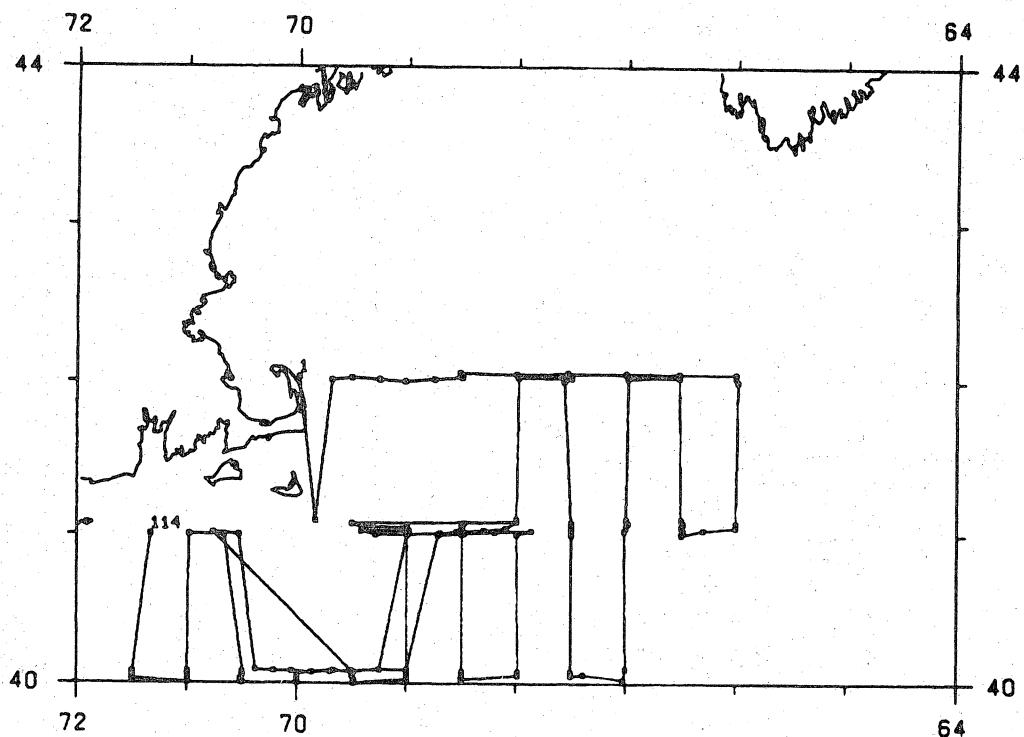
86 STATIONS



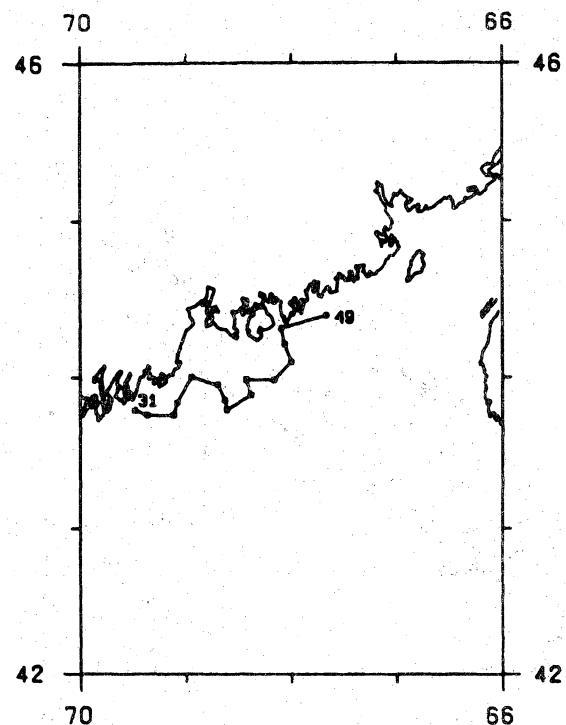
CRUISE 36 BOTTLE

12/ 2/75 - 25/ 2/75

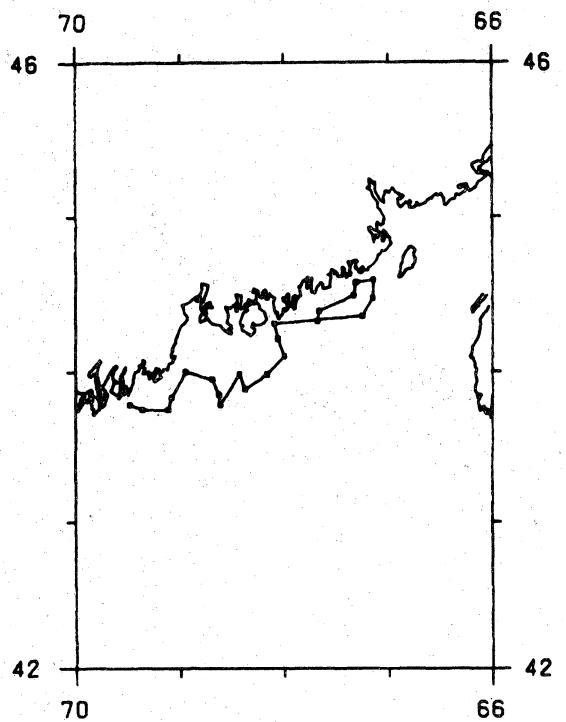
25 STATIONS



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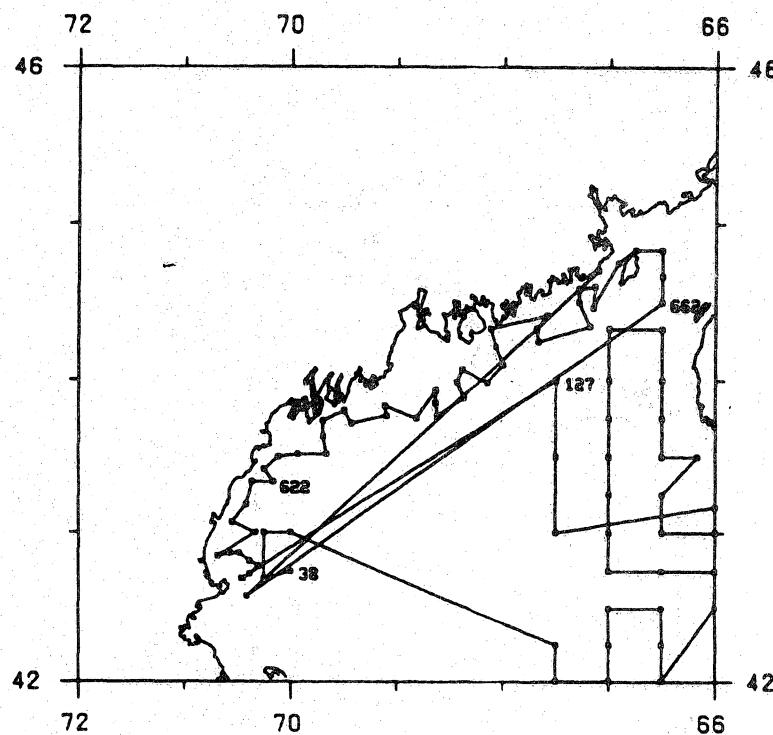


CRUISE 38 BIOLOGY 4/ 9/75 - 9/ 9/75 15 STATIONS

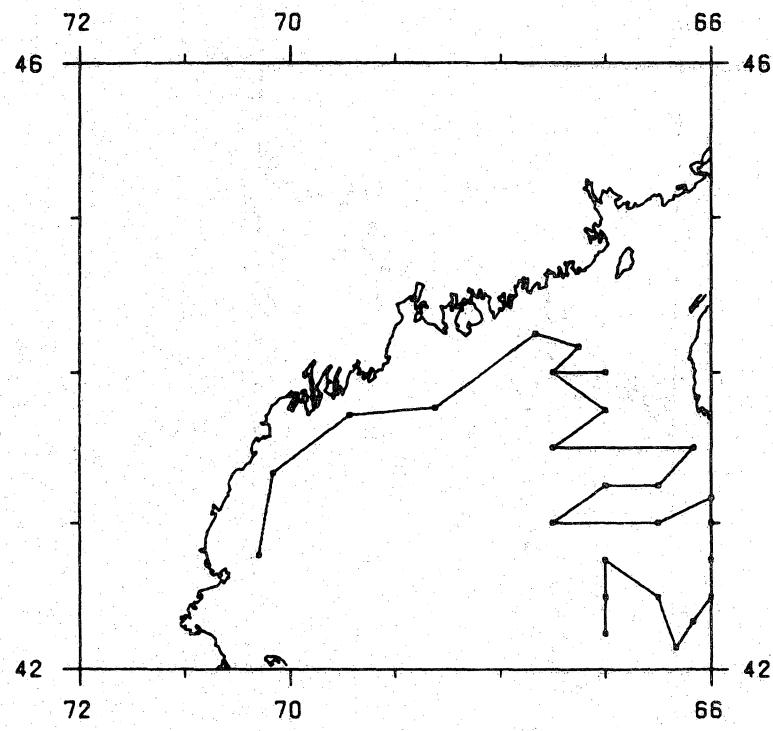


CRUISE 38 BT 4/ 9/75 - 9/ 9/75 21 STATIONS

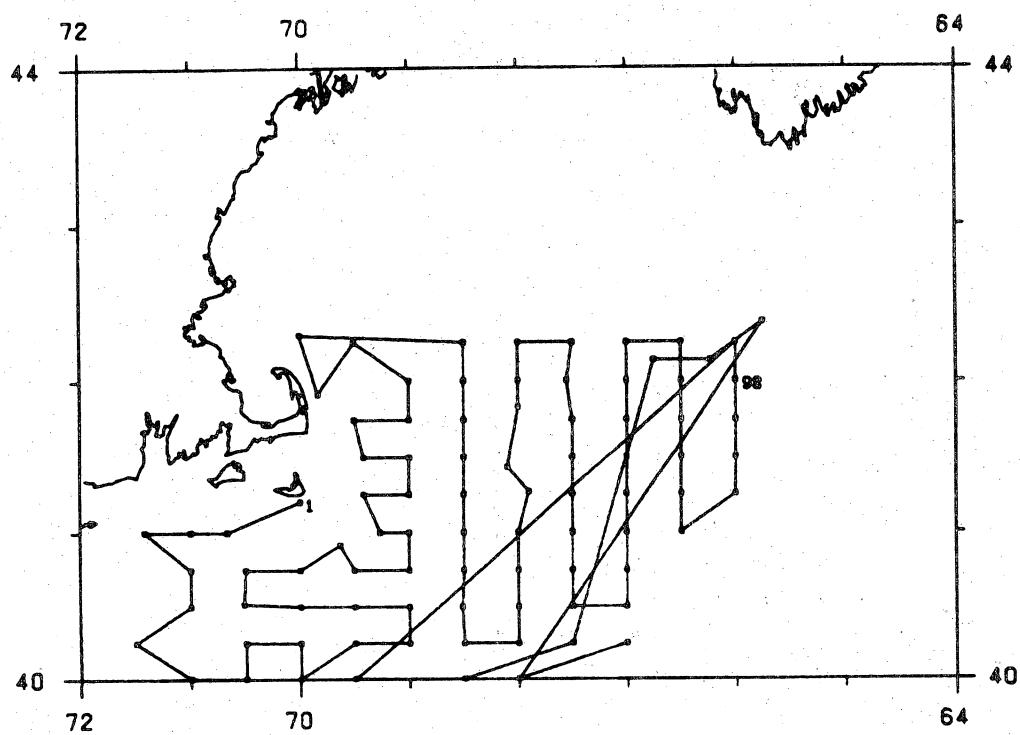
- 32 -



CRUISE 39 BIOLOGY 23/ 9/75 - 2/10/75 84 STATIONS



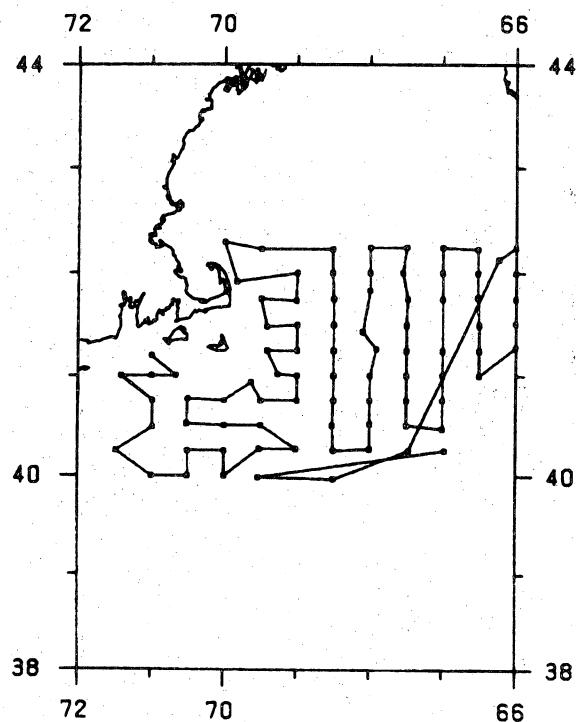
CRUISE 39 BT 23/ 9/75 - 2/10/75 27 STATIONS



CRUISE 40 BIOLOGY

25/ 9/75 - 8/10/75

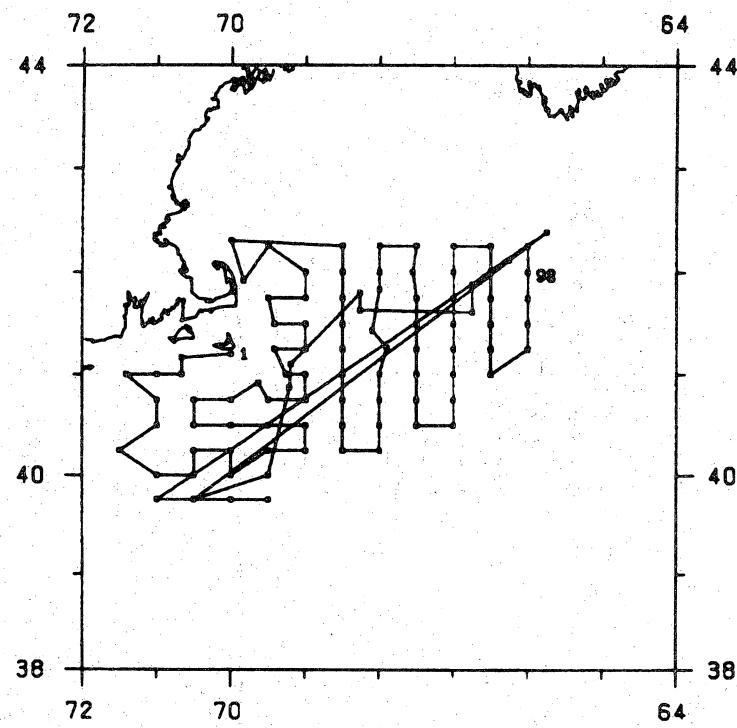
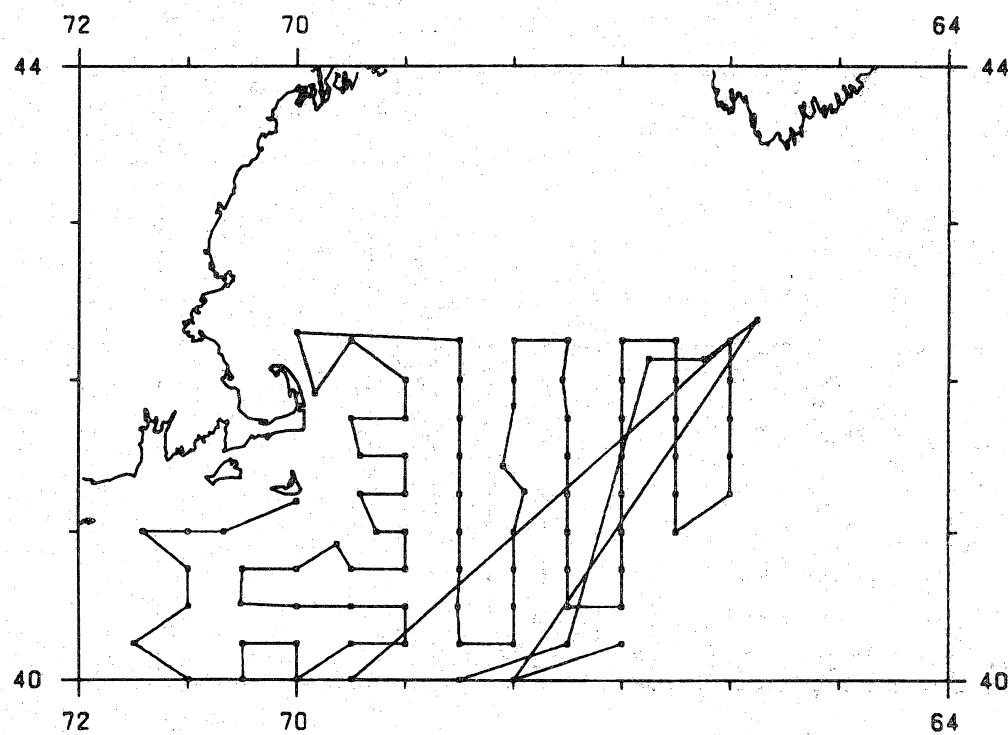
90 STATIONS



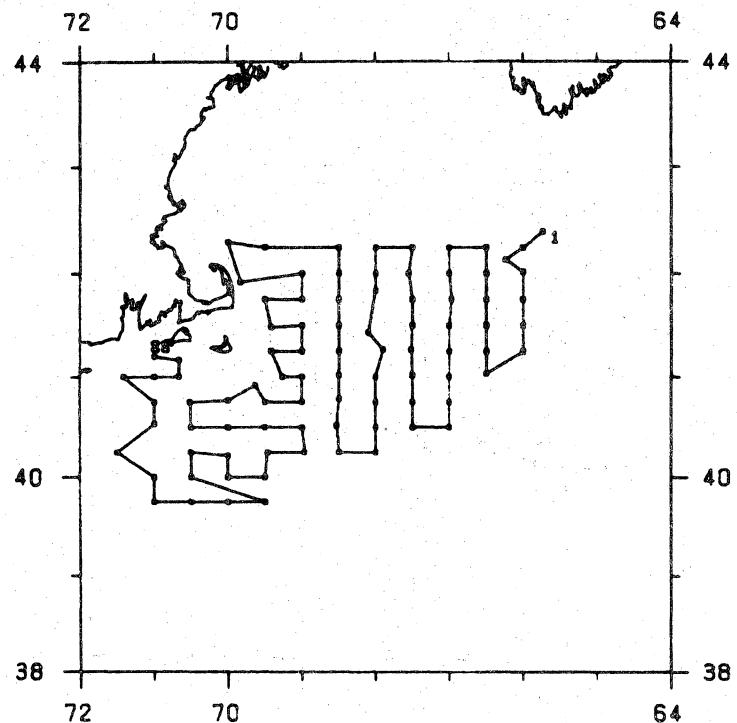
CRUISE 40-BOTTLE

25/ 9/75 - 8/10/75

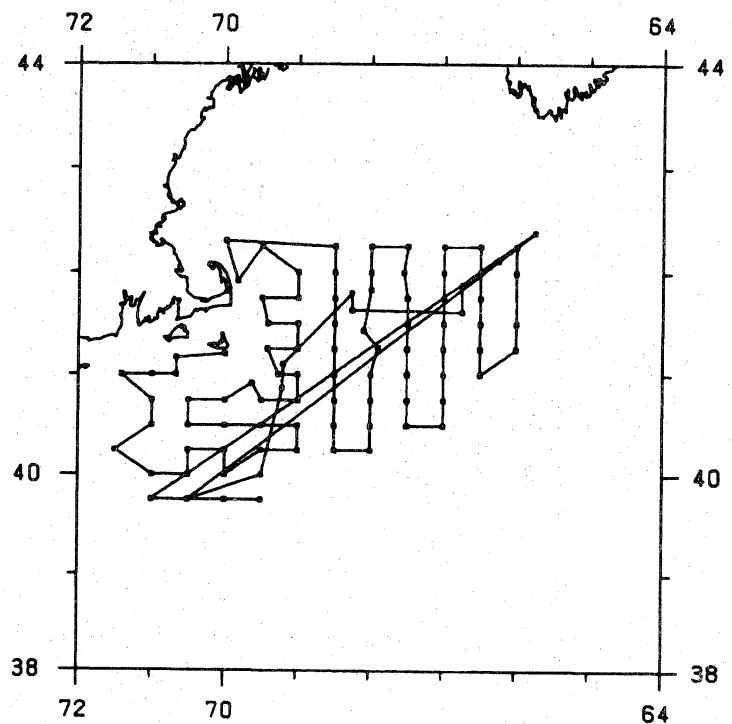
84 STATIONS



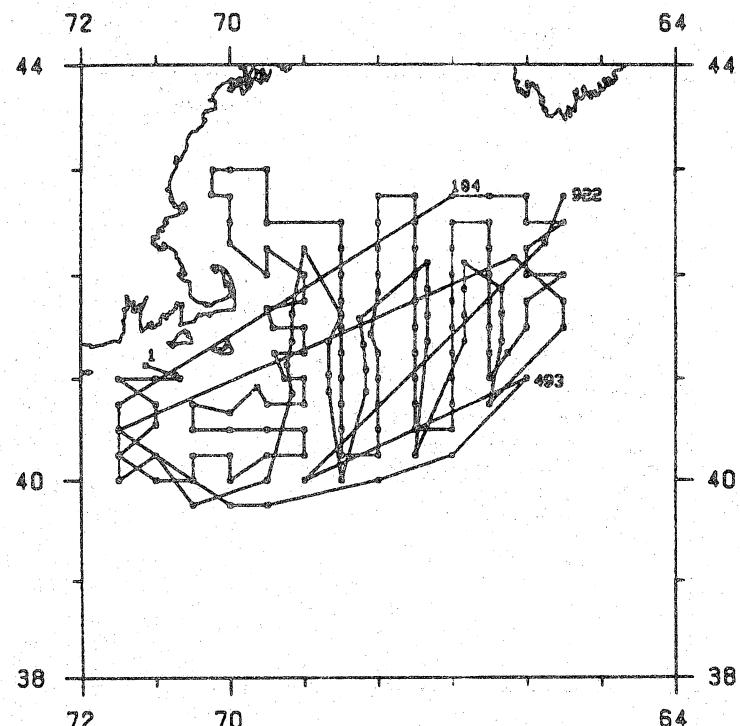
- 35 -



CRUISE 41 BOTTLE 17/10/75 - 30/10/75 88 STATIONS



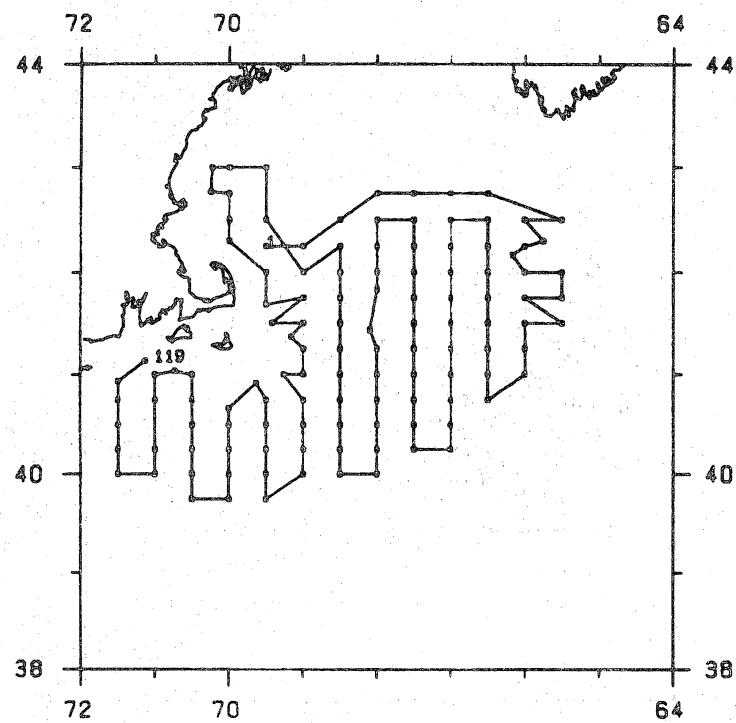
CRUISE 41 BT 17/10/75 - 30/10/75 93 STATIONS



CRUISE 42 BIOLOGY

1/11/75 - 18/11/75

145 STATIONS

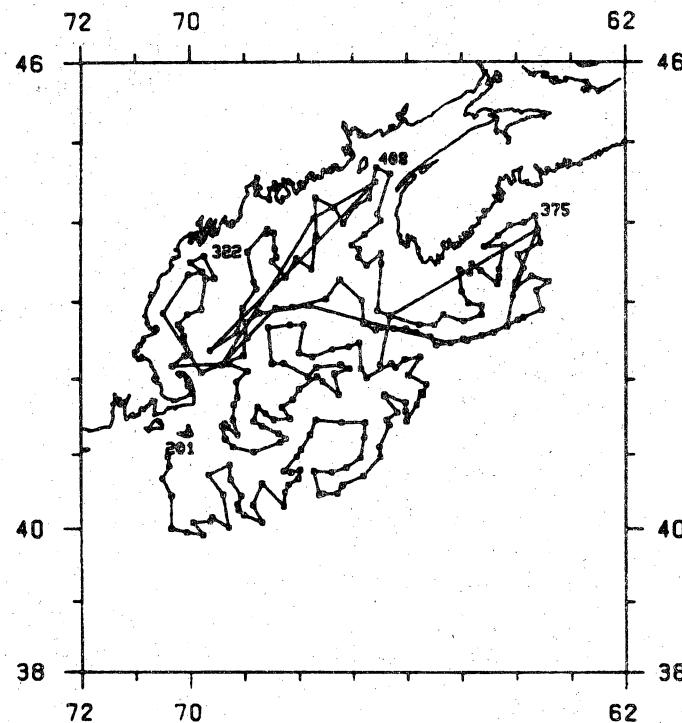


CRUISE 42 BOTTLE

1/11/75 - 15/11/75

119 STATIONS

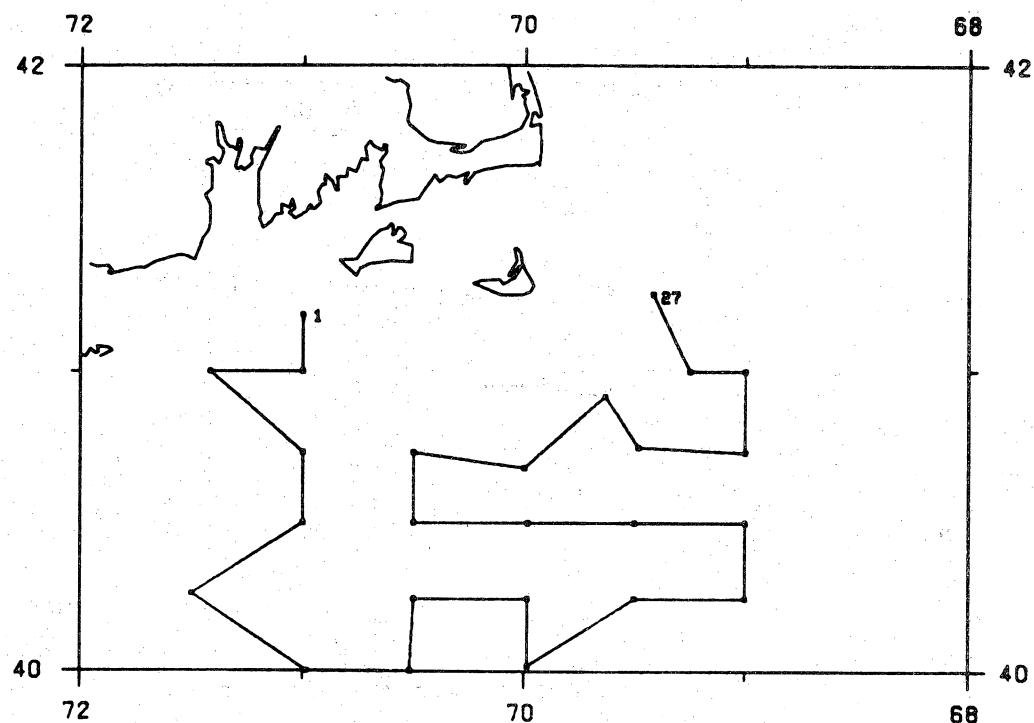
- 37 -



CRUISE 43 BIOLOGY

7/11/75 - 18/11/75

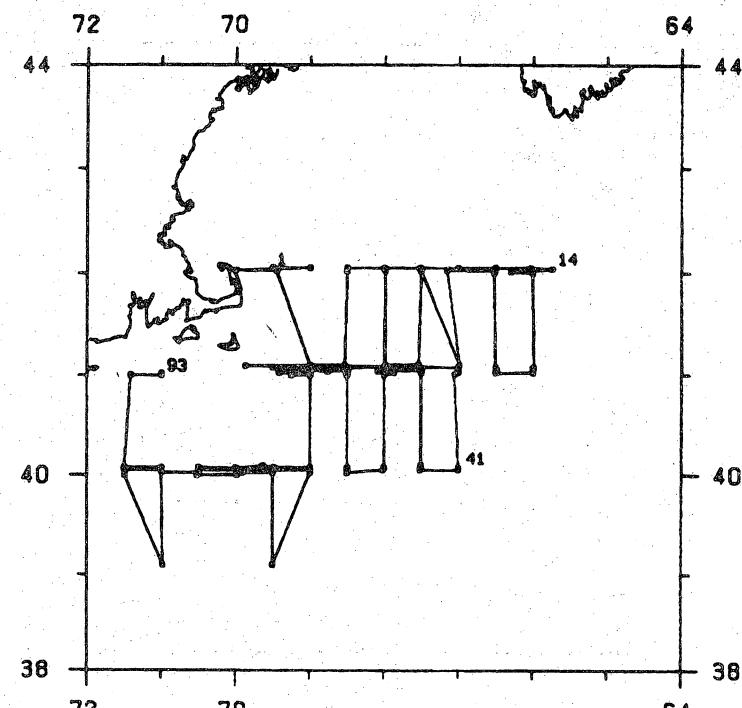
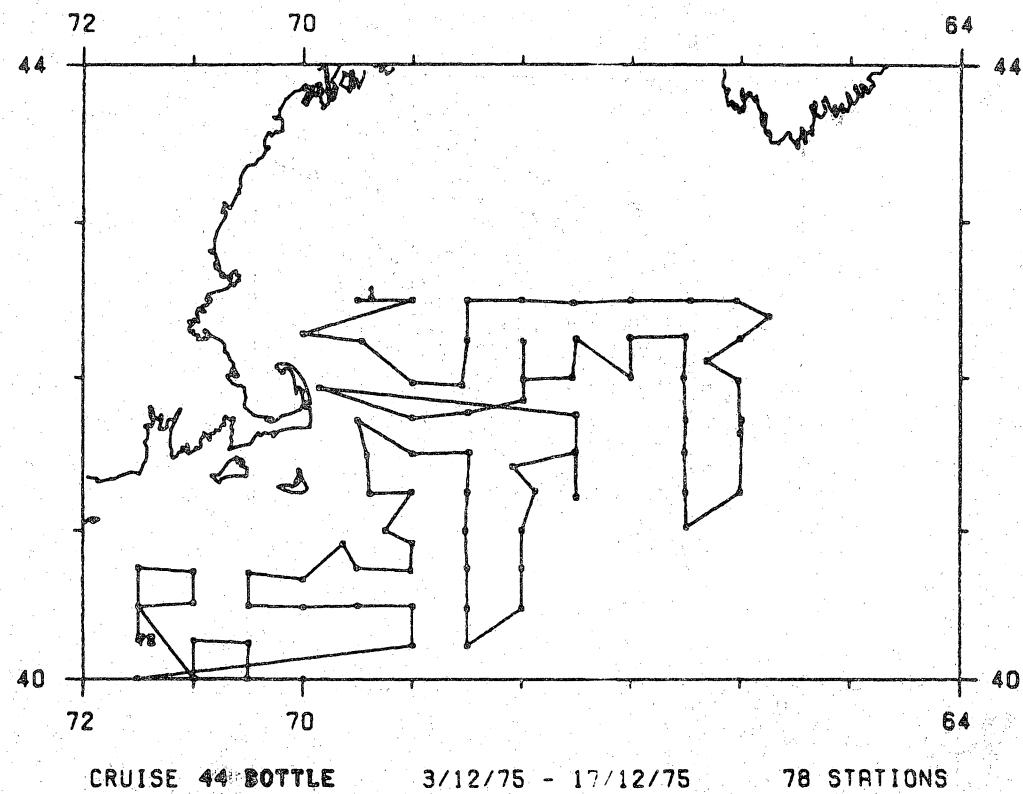
226 STATIONS

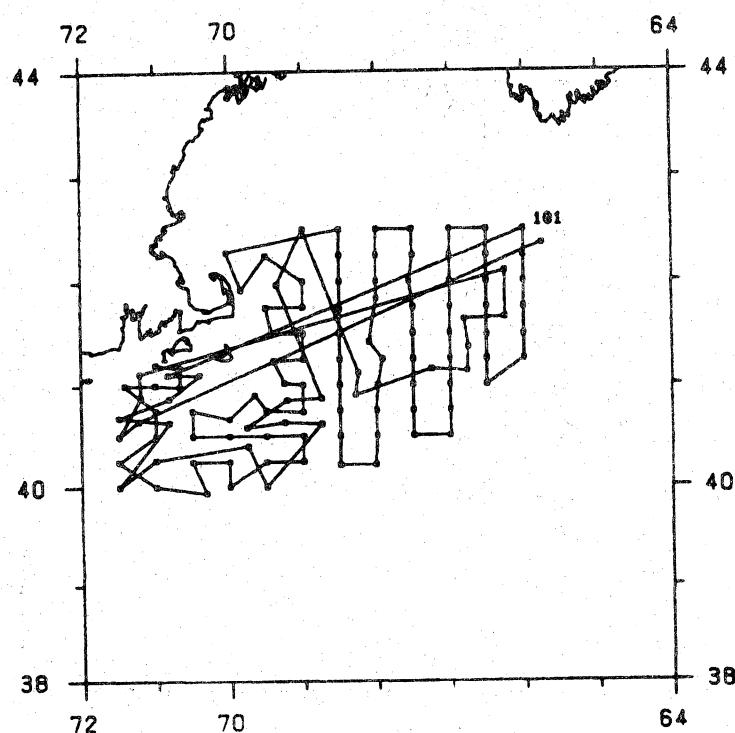


CRUISE 44 BIOLOGY

5/12/75 - 17/12/75

25 STATIONS

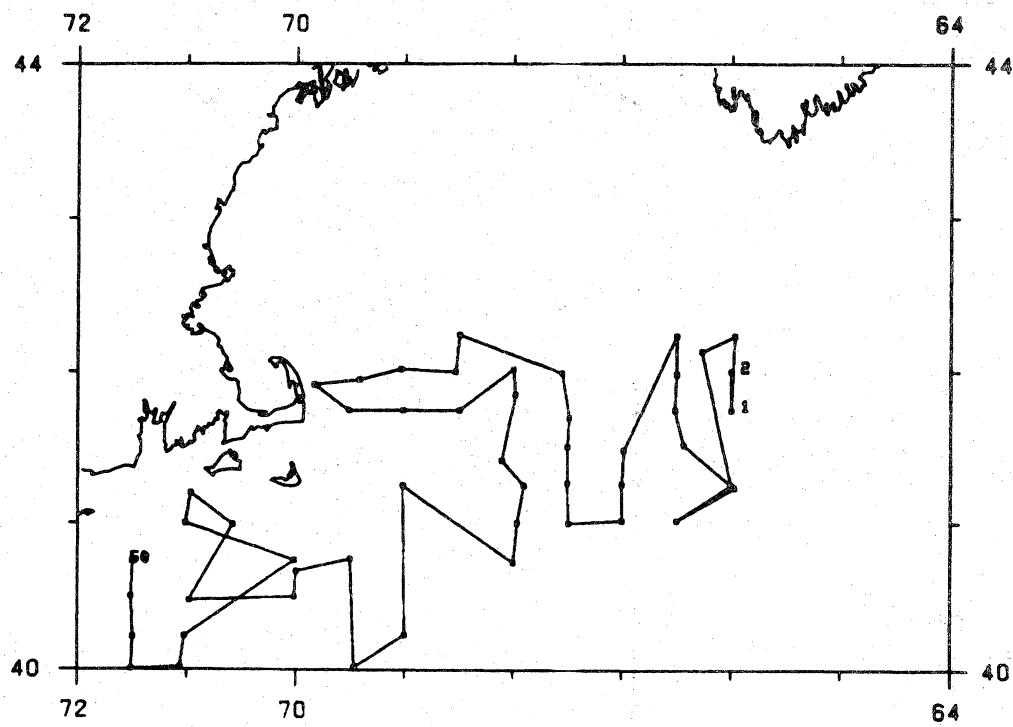




CRUISE 45 BIOLOGY

10/ 2/76 - 25/ 2/76

116 STATIONS

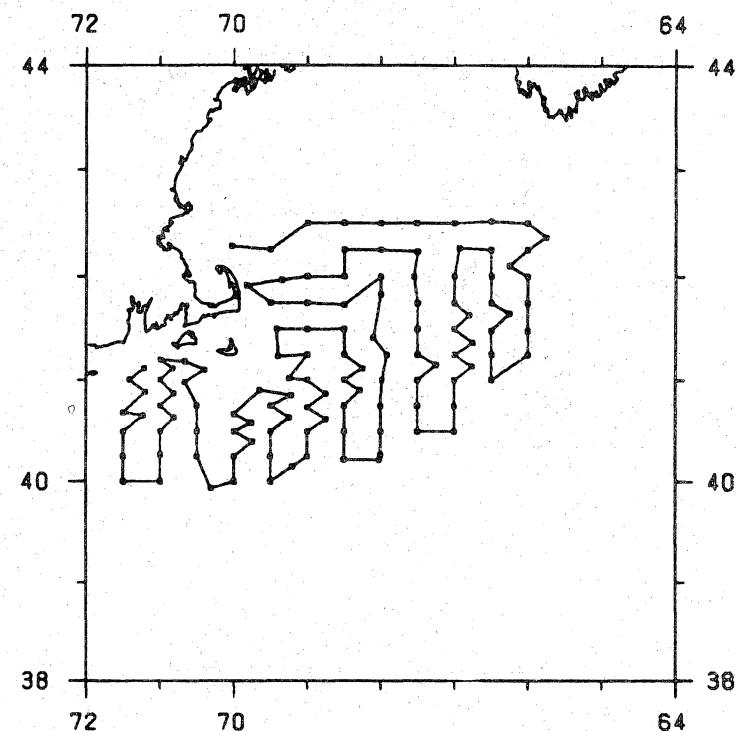


CRUISE 45 BOTTLE

12/ 2/76 - 24/ 2/76

50 STATIONS

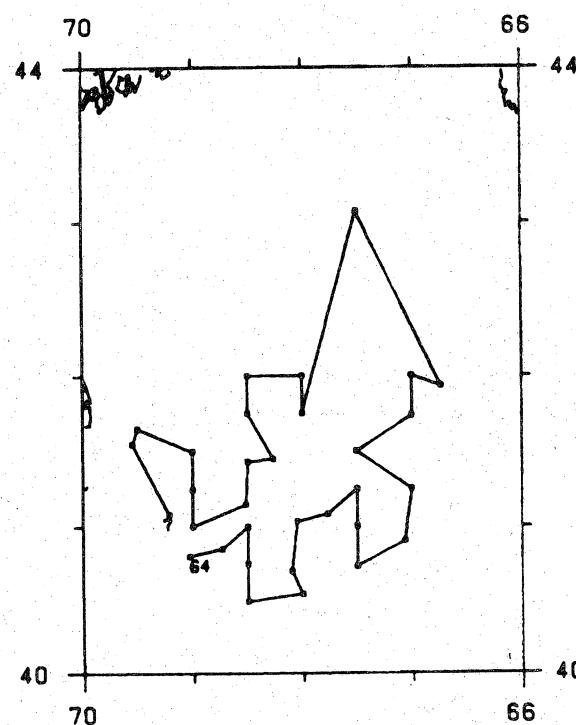
- 40 -



CRUISE 45 BT

10/ 2/76 - 25/ 2/76

118 STATIONS

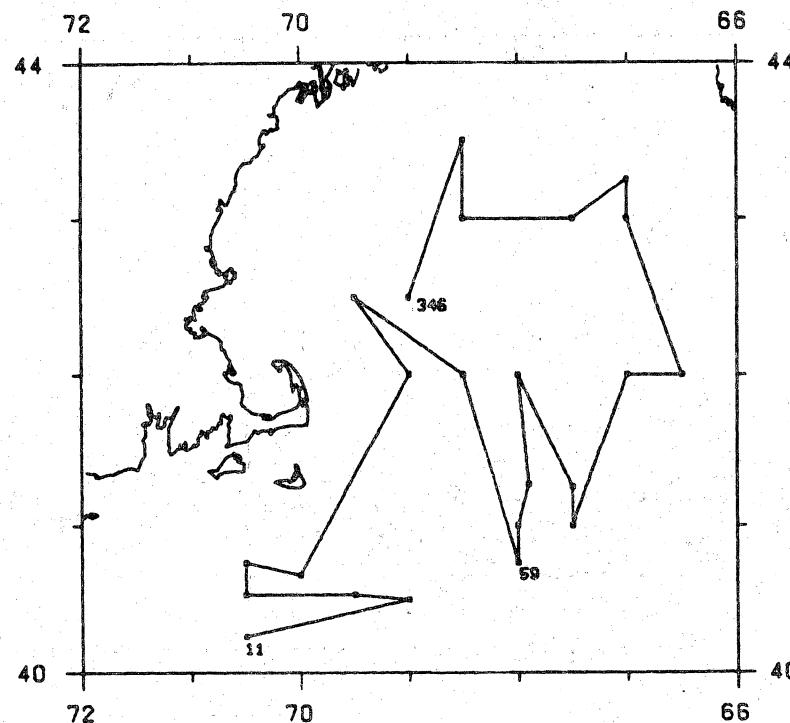


CRUISE 46 BIOLOGY

2/ 3/76 - 8/ 3/76

32 STATIONS

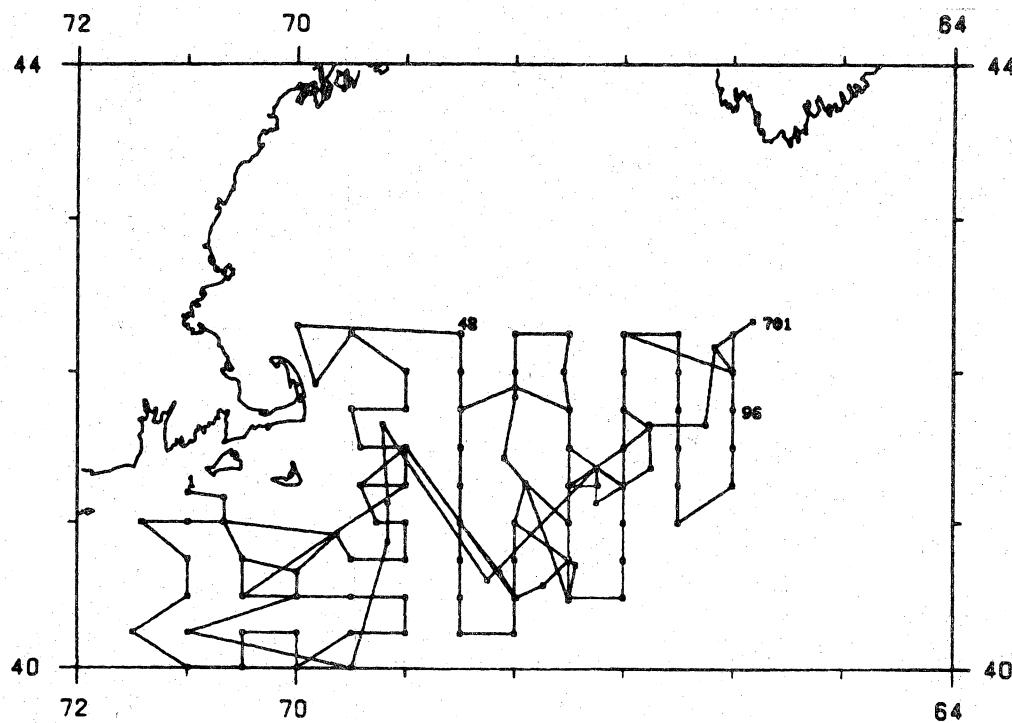
- 41 -



CRUISE 47 BIOLOGY

3/ 3/76 - 16/ 3/76

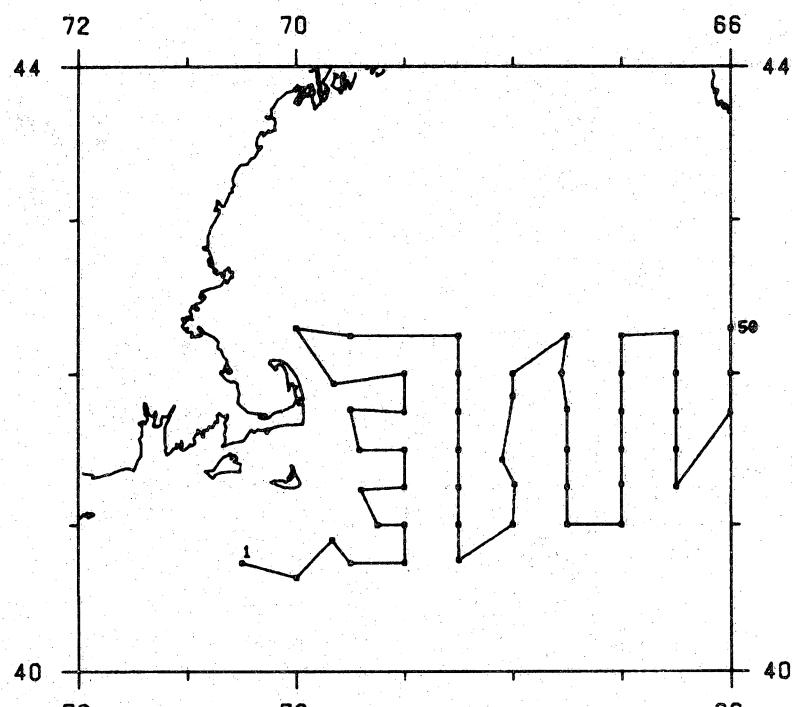
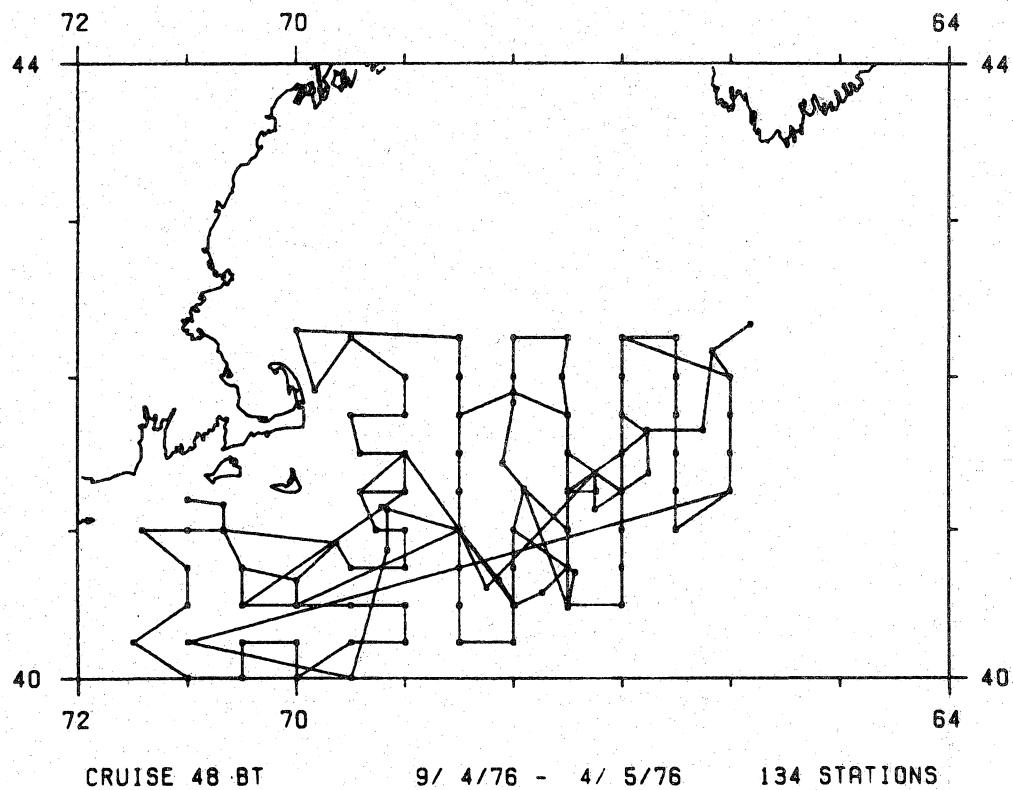
23 STATIONS



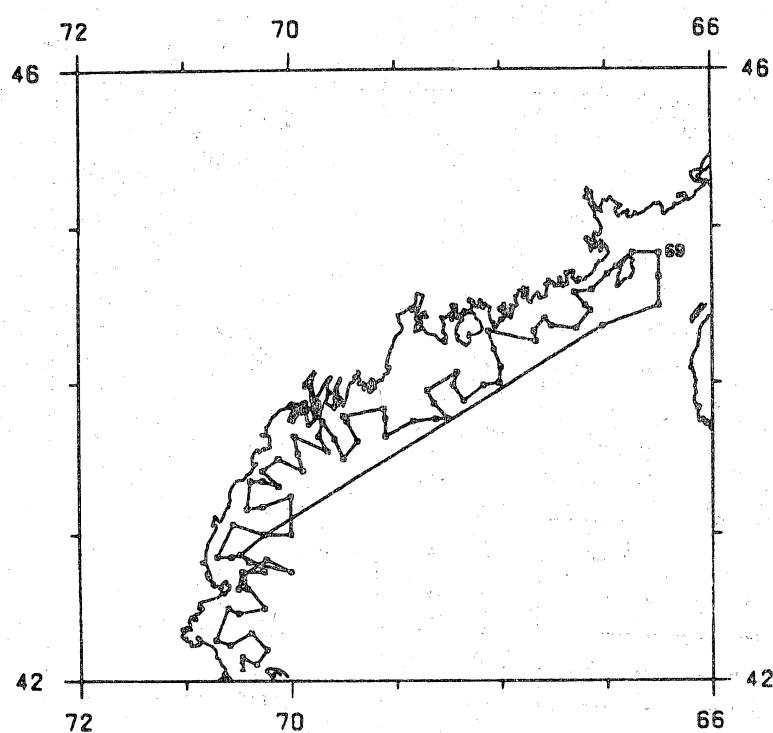
CRUISE 48 BIOLOGY

9/ 4/76 - 4/ 5/76

132 STATIONS



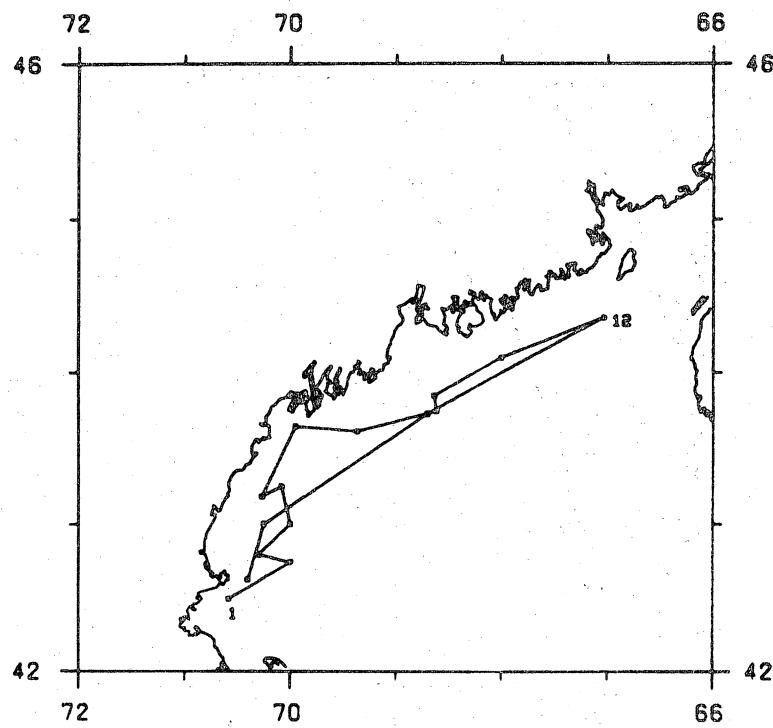
- 43 -



CRUISE 50 BIOLOGY

1/10/76 - 18/10/76

79 STATIONS

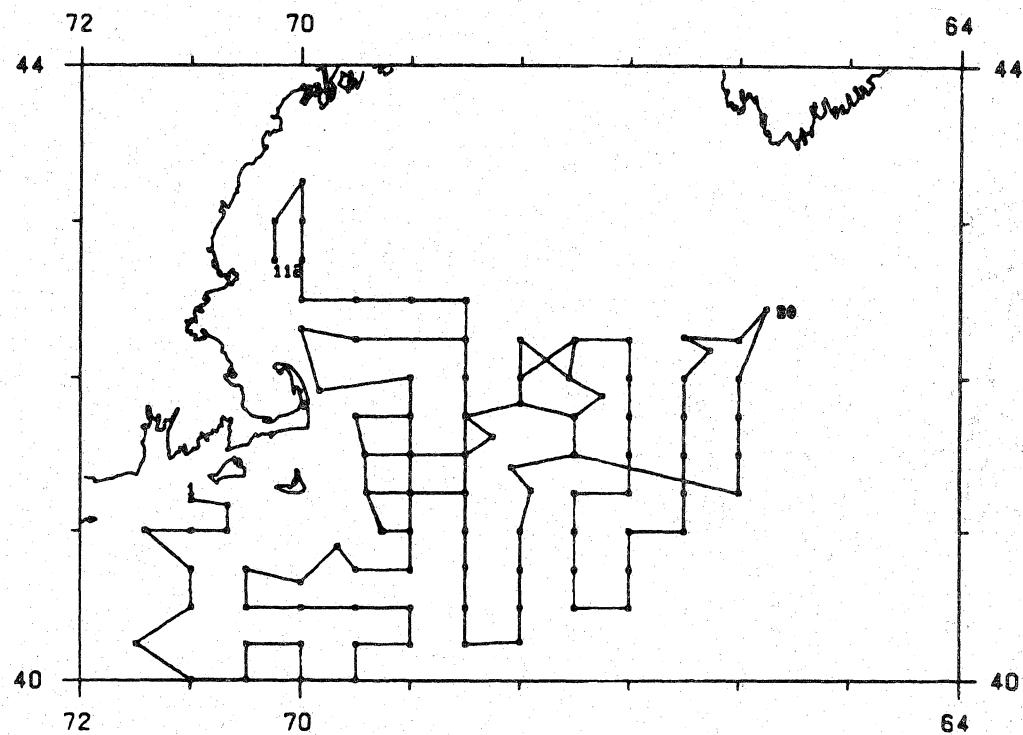


CRUISE 50 BOTTLE

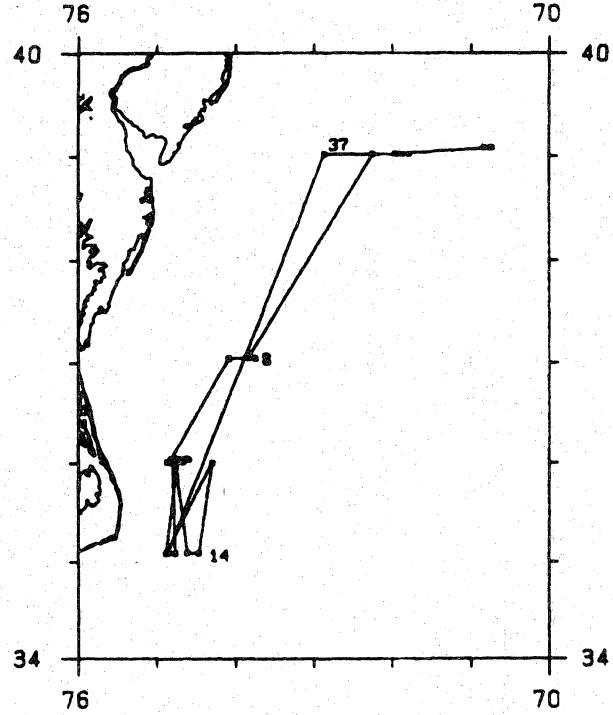
4/10/76 - 18/10/76

15 STATIONS

- 44 -

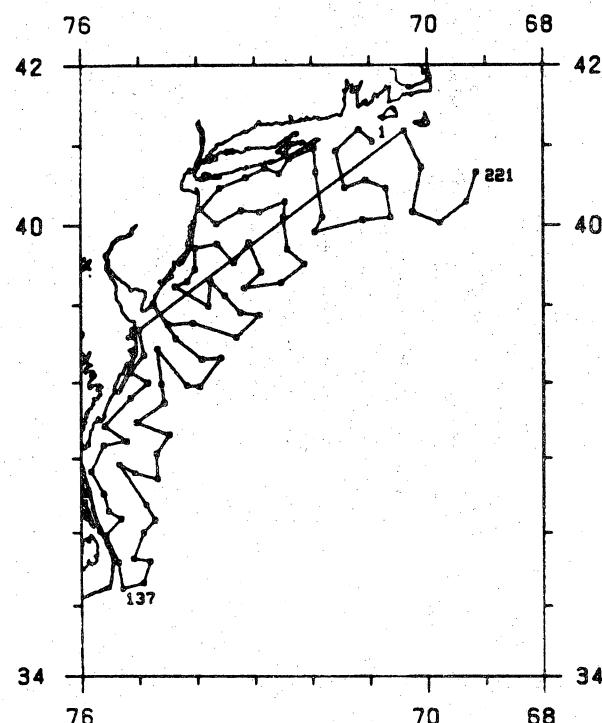


CRUISE 51 BIOLOGY 14/10/76 - 3/11/76 112 STATIONS



CRUISE 51 BT 14/10/76 - 3/11/76 39 STATIONS

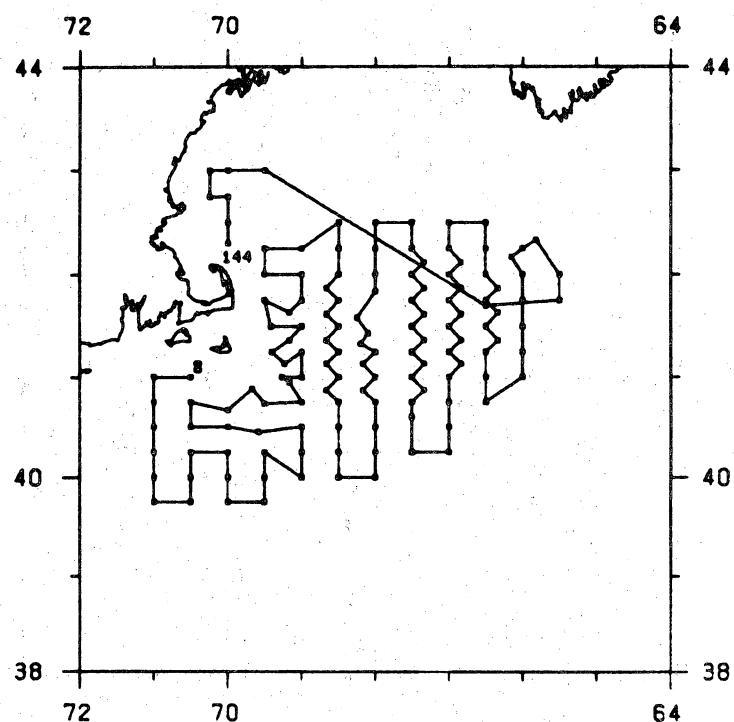
- 45 -



CRUISE 52 BIOLOGY

9/11/76 - 23/11/76

85 STATIONS

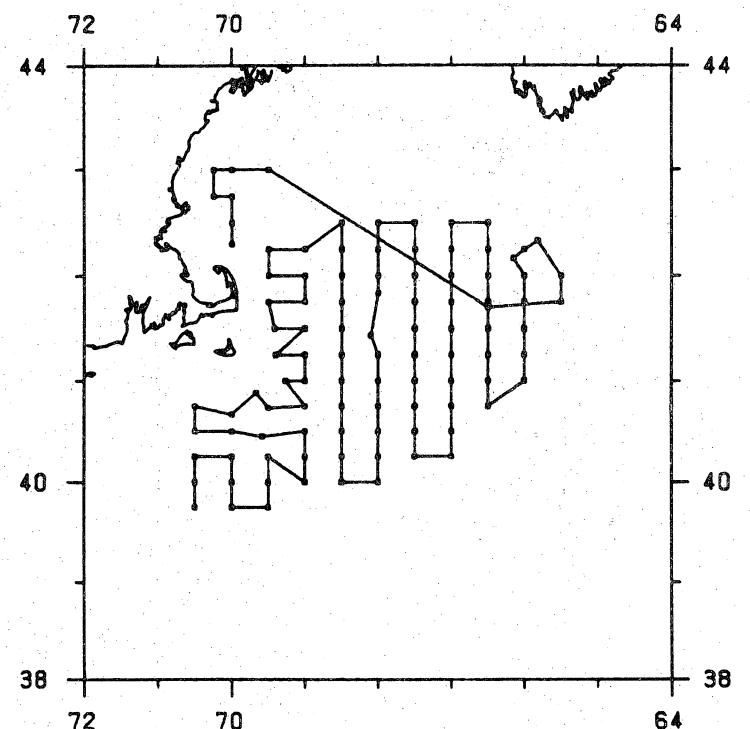


CRUISE 53 BIOLOGY

15/11/76 - 29/11/76

134 STATIONS

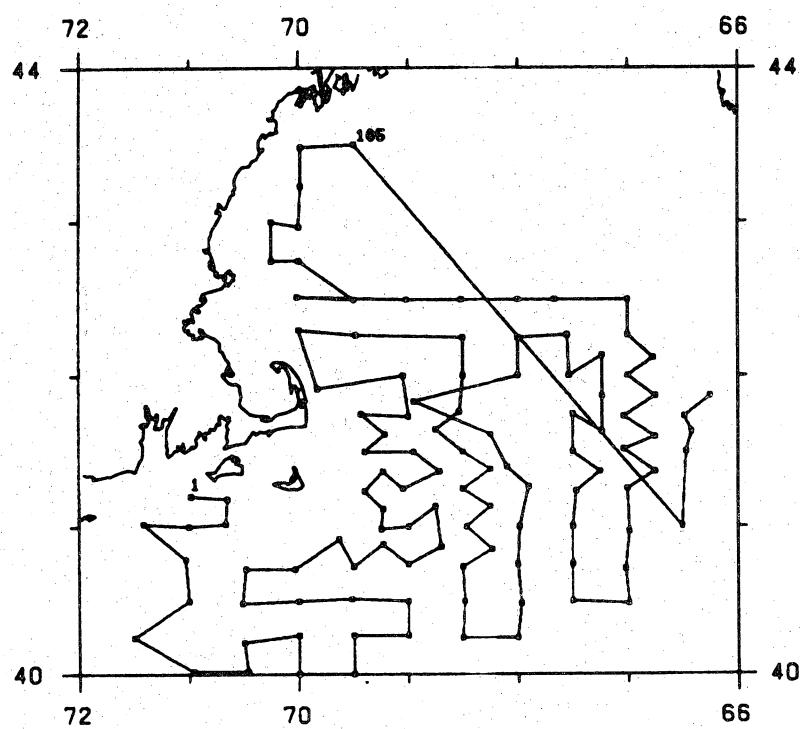
- 46 -



CRUISE 53-BT

15/11/76 - 29/11/76

101 STATIONS

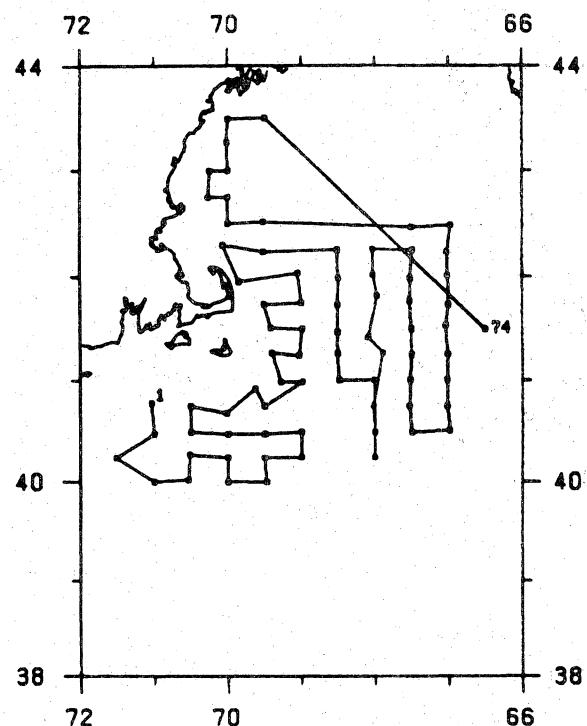


CRUISE 54 BIOLOGY

27/11/76 - 11/12/76

110 STATIONS

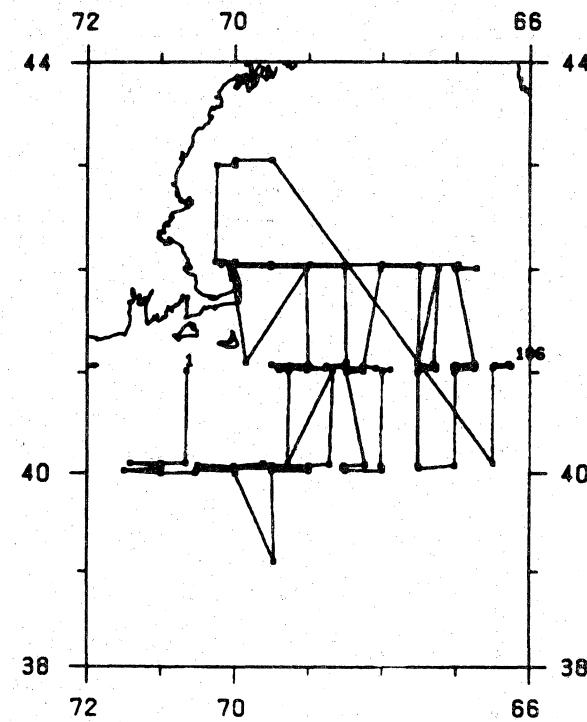
- 47 -



CRUISE 54 BOTTLE

27/11/76 - 11/12/76

74 STATIONS

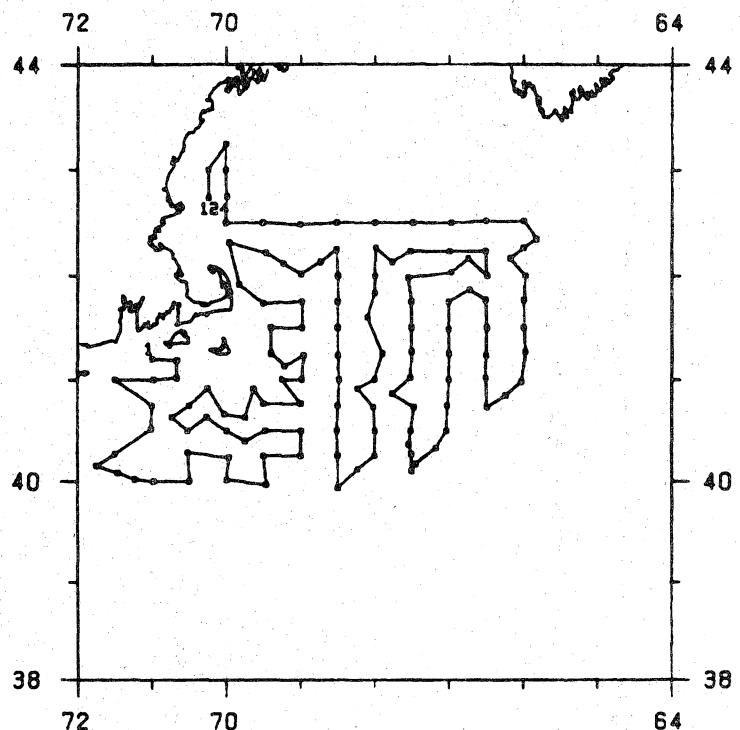


CRUISE 54 BT

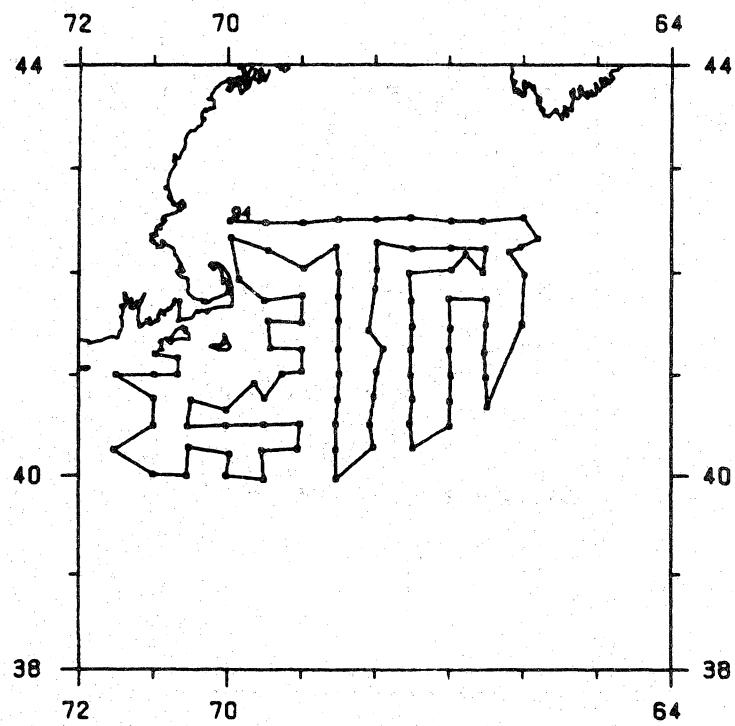
27/11/76 - 11/12/76

106 STATIONS

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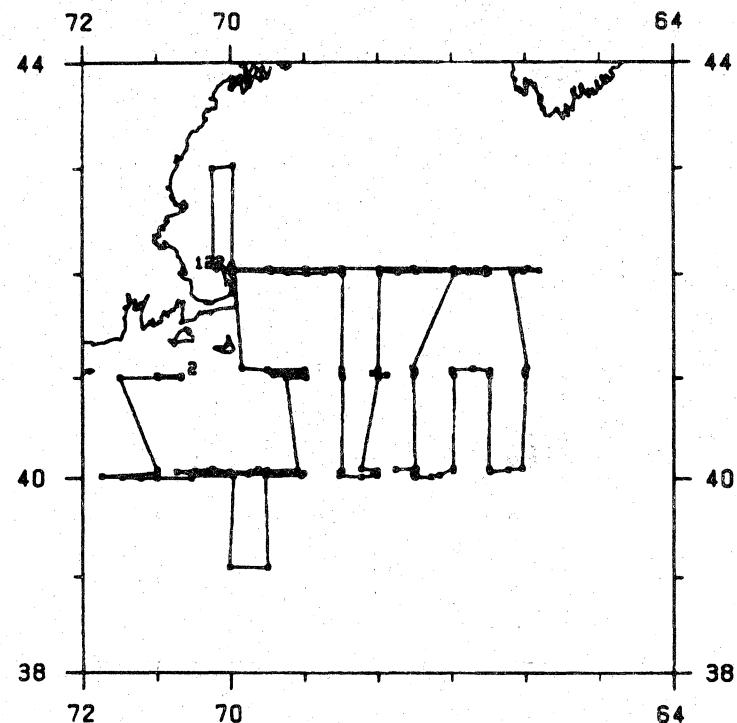


CRUISE 55 BIOLOGY 13/ 2/77 - 24/ 2/77 124 STATIONS



CRUISE 55 BOTTLE 13/ 2/77 - 24/ 2/77 94 STATIONS

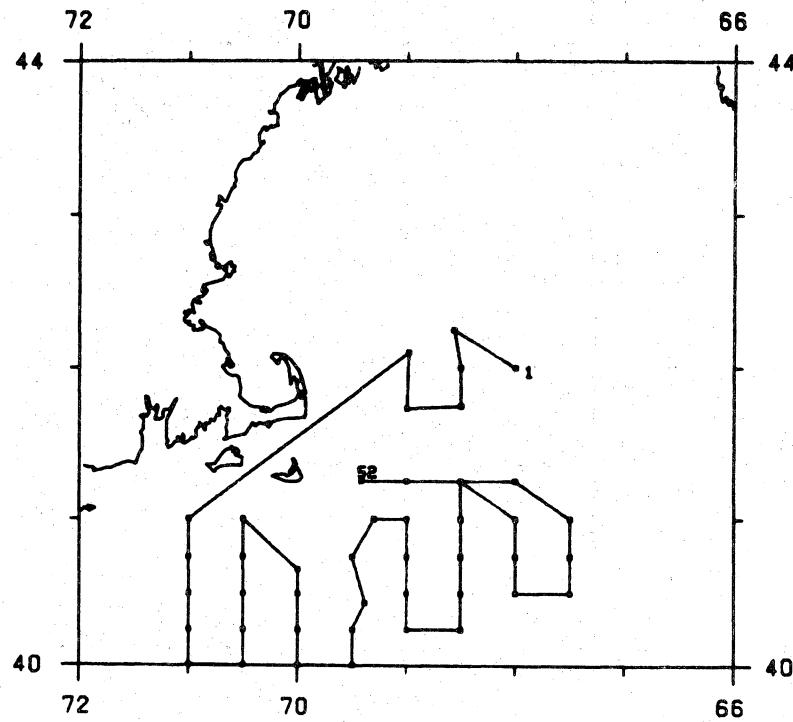
- 49 -



CRUISE 55 BT

13/ 2/77 - 24/ 2/77

122 STATIONS

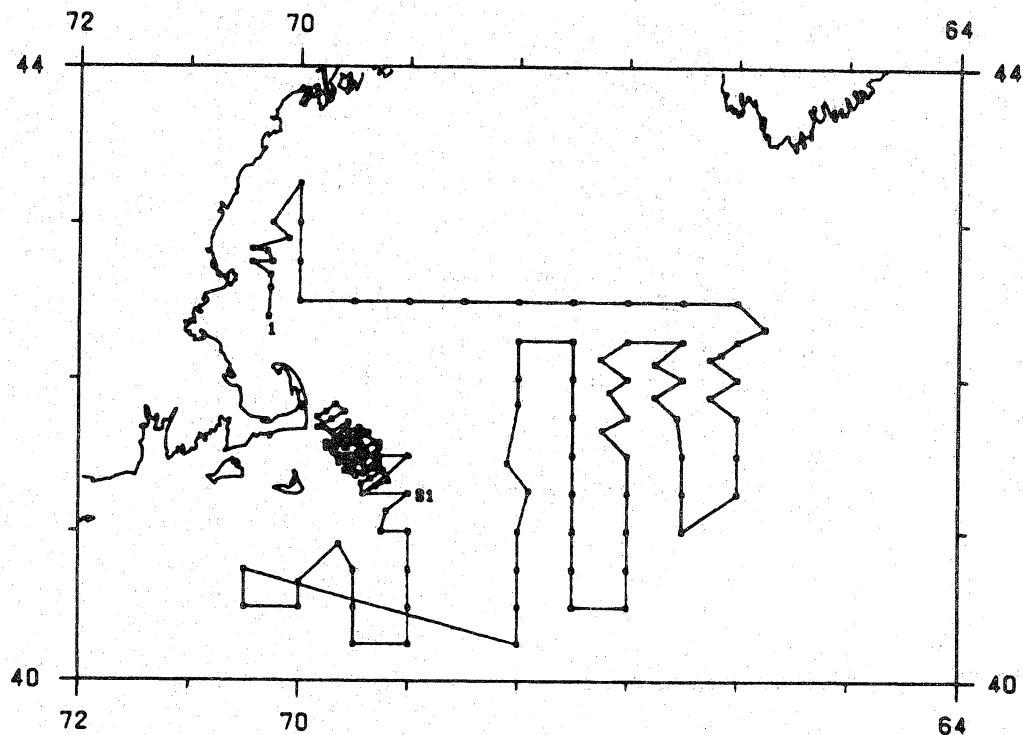


CRUISE 56 BIOLOGY

15/ 3/77 - 21/ 3/77

43 STATIONS

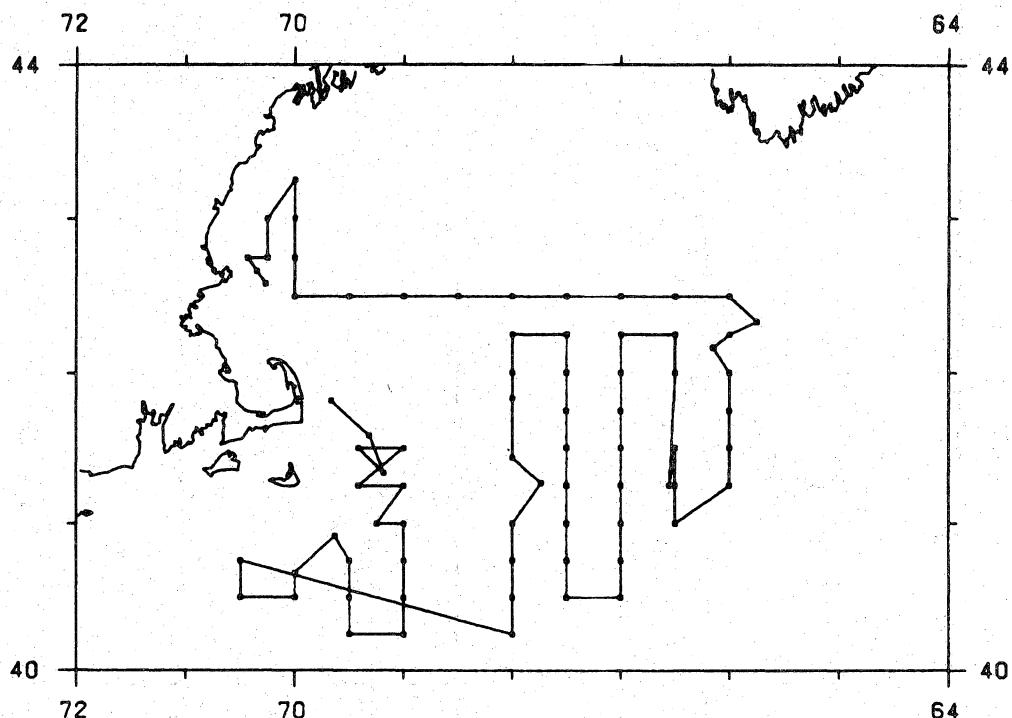
- 50 -



CRUISE 57 BIOLOGY

4/10/77 - 24/10/77

150 STATIONS

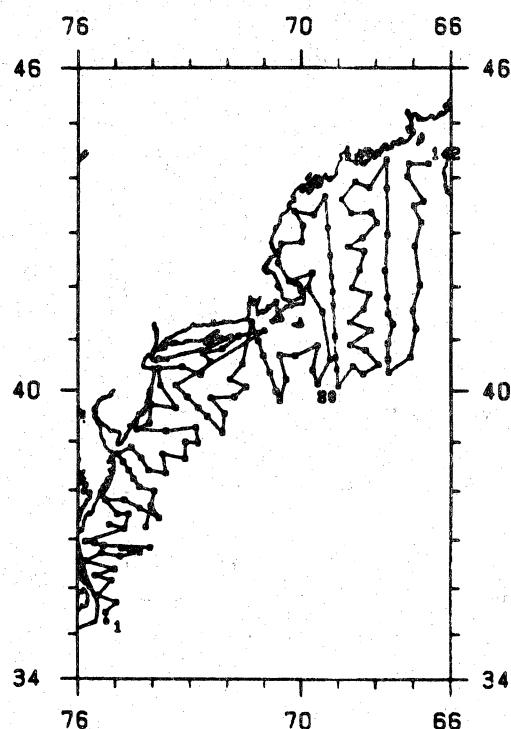


CRUISE 57 BT

4/10/77 - 24/10/77

75 STATIONS

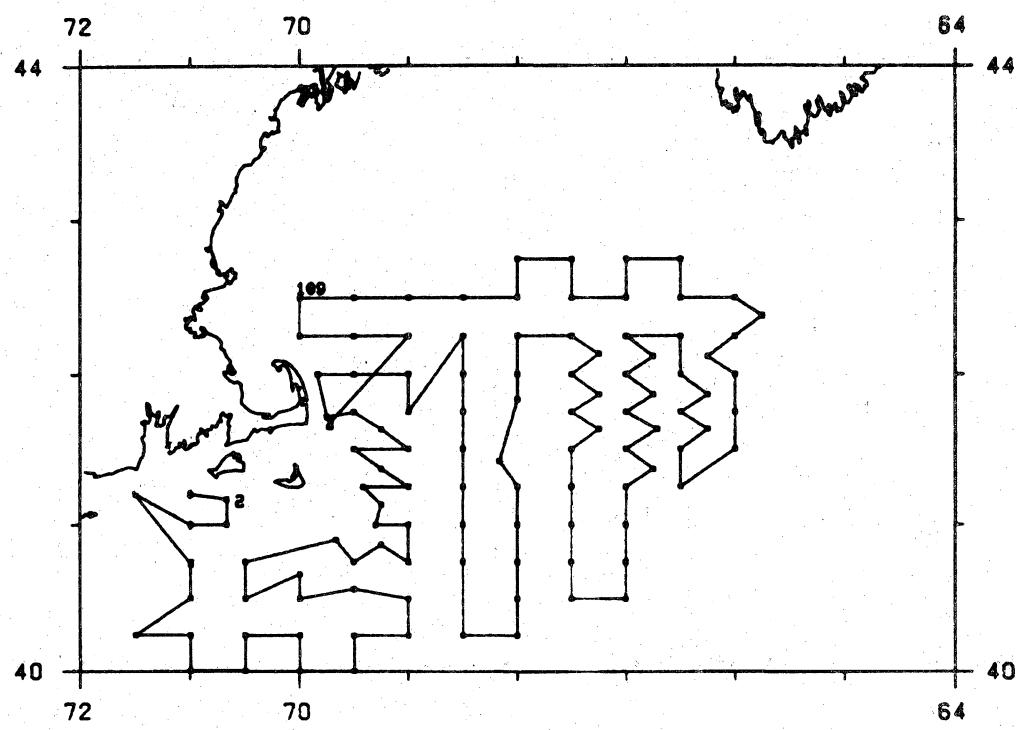
- 51 -



CRUISE 58 BIOLOGY

15/10/77 - 11/11/77

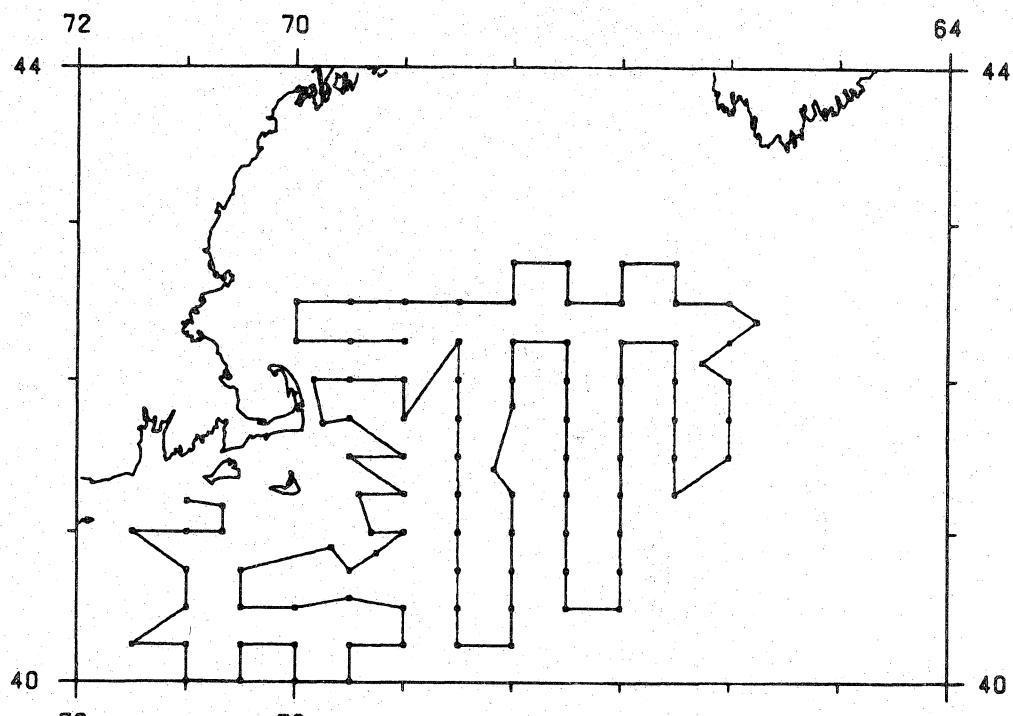
142 STATIONS



CRUISE 59 BIOLOGY

1/11/77 - 18/11/77

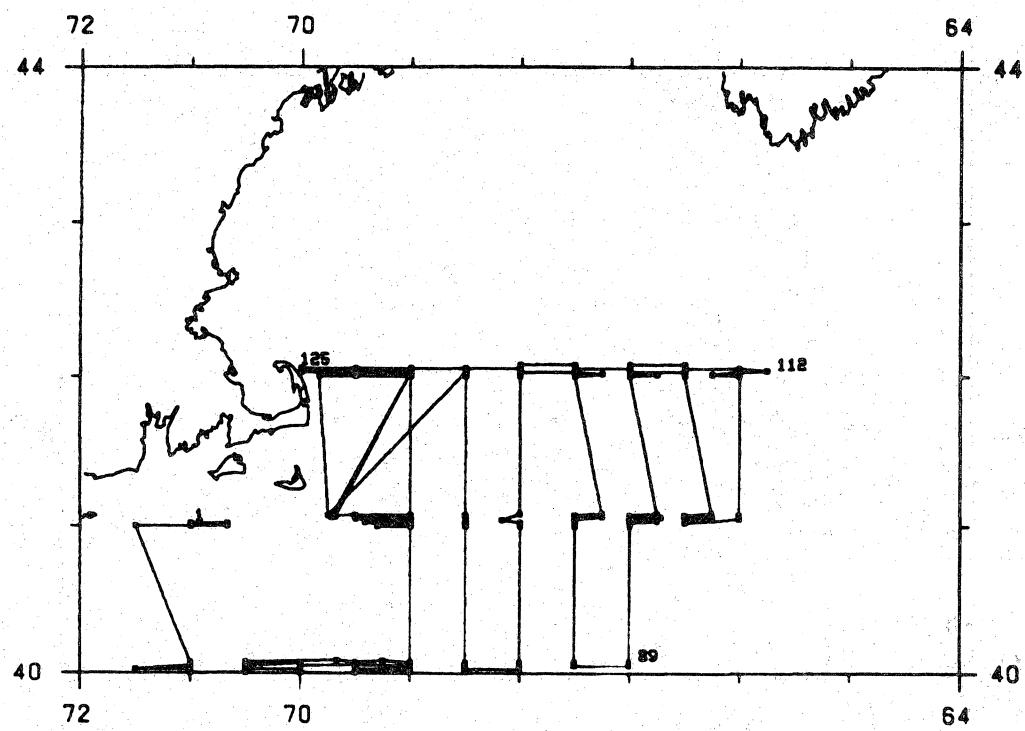
115 STATIONS



CRUISE 59 BOTTLE

1/11/77 - 18/11/77

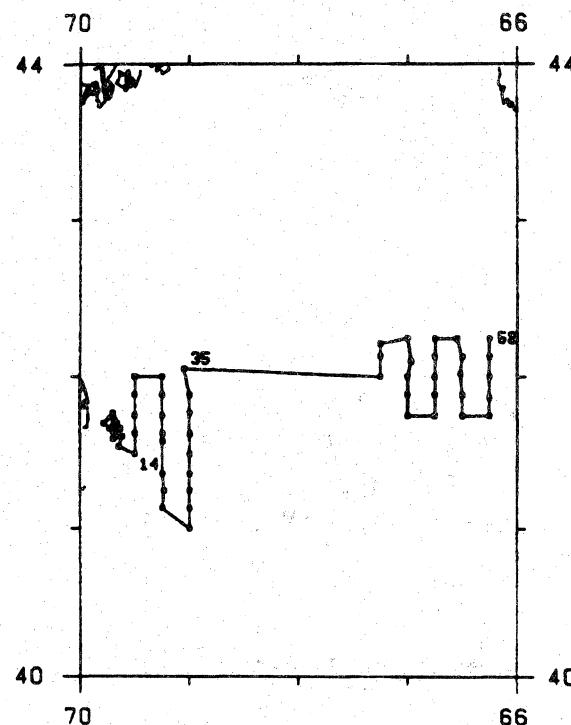
99 STATIONS



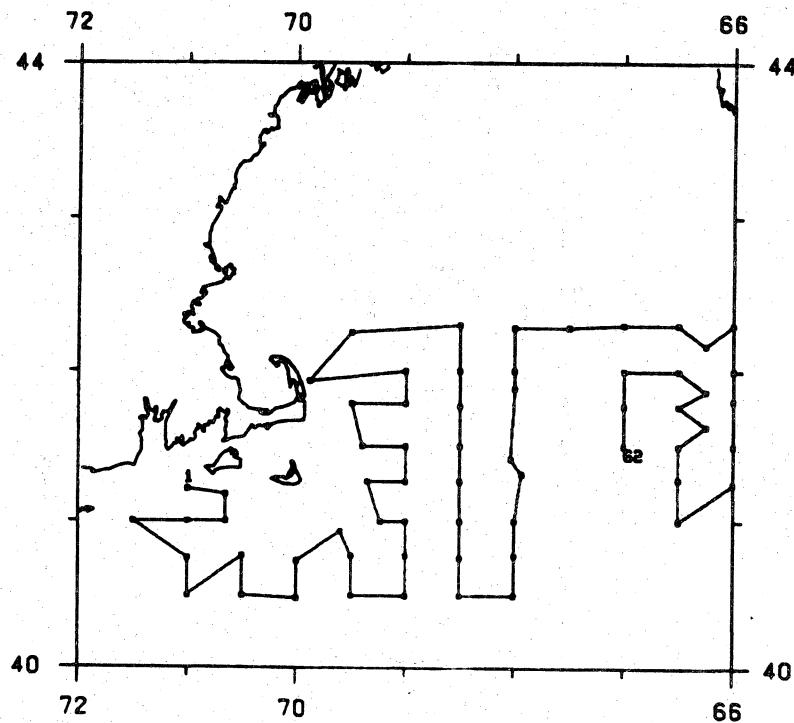
CRUISE 59 BT

1/11/77 - 18/11/77

148 STATIONS

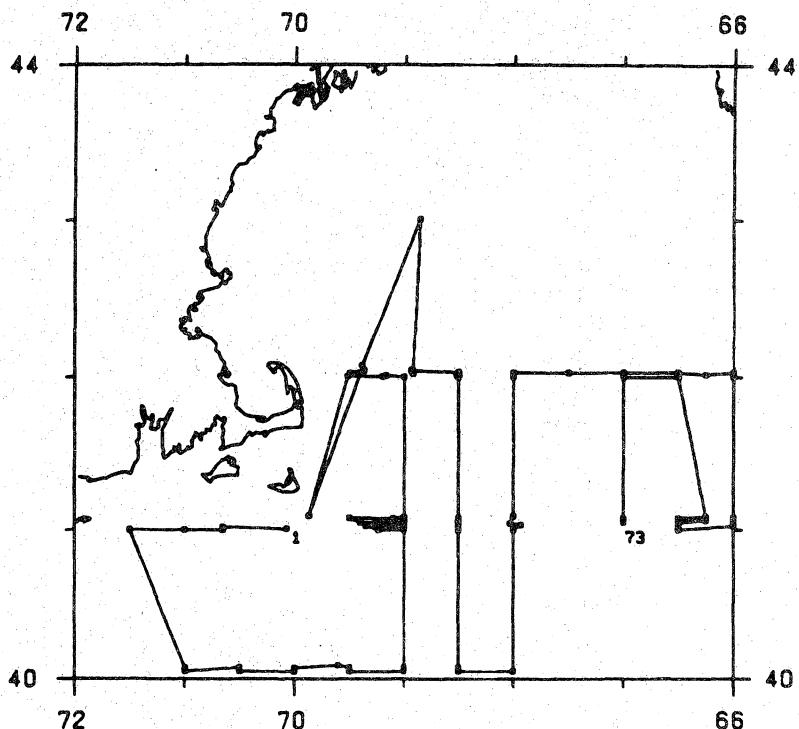


CRUISE 60 BOTTLE 17/11/77 - 23/11/77 58 STATIONS



CRUISE 61 BIOLOGY 8/12/77 - 20/12/77 62 STATIONS

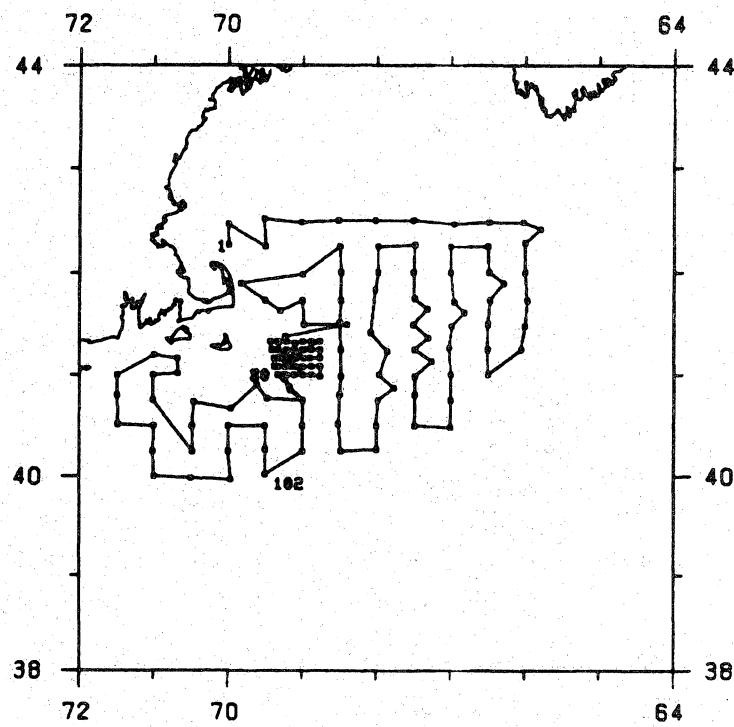
- 54 -



CRUISE 61 BT

8/12/77 - 20/12/77

73 STATIONS

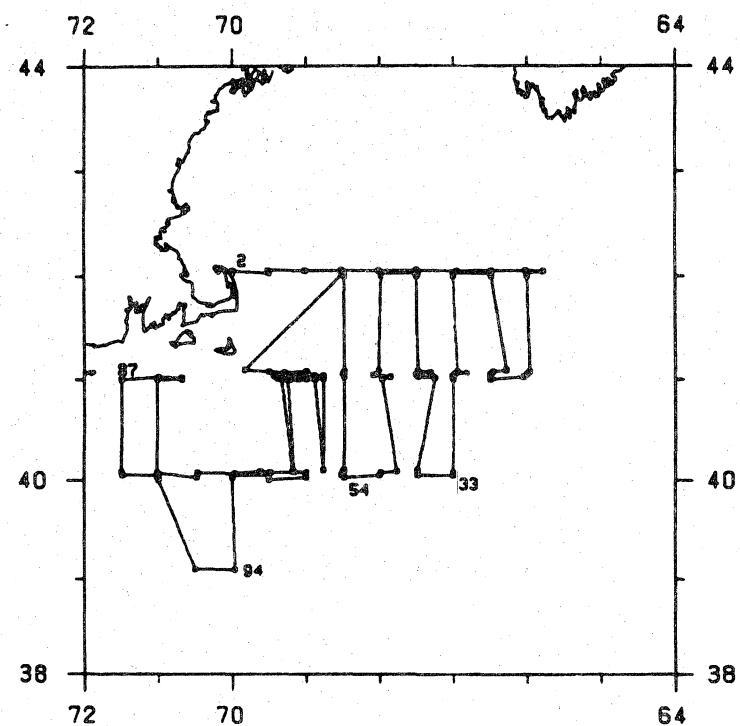


CRUISE 62 BIOLOGY

14/ 2/78 - 8/ 3/78

173 STATIONS

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CRUISE 62 BT

14/ 2/78 - 8/ 3/78

154 STATIONS