Report of the

ICES

Oceanographic Data Centre

Report of the

ICES Oceanographic Data Centre

(1992-1993)

Introduction

This report is a brief overview of the activities of the ICES Oceanographic Data Centre during 1992-1993.

Historical Review of data and GODAR

The review of the historical data bank has continued unabated in the reporting period. This review, being undertaken in close collaboration with, and partial support of, the NODC/-WDCA Washington has consisted of the checking and comparison of the holdings of both centres since records began at the start of the century. This has involved detailed quality control, duplicate checking, identifying missing data (i.e., data identifiable on manuscript, but not in digitised form) and digitising them. The data sets being checked include both the oceanographic profile sets and the surface "route" data. To date data from about half the ICES Member Countries have been reviewed. Occasionally it has not been possible to complete the review because of the unpreparedness of some national data centres, and some individuals, to help in the resolution of questions. On completion of the review it is anticipated that the volume of historical data available in the World Data Centre System will be increased markedly. It is to be noted in particular that many nutrient stations routinely submitted to the World Data Centre have gone "missing", requiring a careful cross-check of the old ICES Punch Card archive.

A recent impetus was given to this project by the establishment by IOC of the Global Oceanographic Data Archaeology Project (GODAR). A first workshop on this project was held in Obninsk, Russia in the summer, and it is likely from this that a substantial additional data volume may accrue from sources that were until now not known. The execution of this project may benefit from significant funding from the Climate Research community, especially from US sources. The Working Group on Marine Data Management plans to address this Project in forthcoming meetings, and it is hoped this activity will help release some 'old' data sets.

Data Acquisition

In terms of the acquisition of new data, the old difficulties persist, with major submissions only coming from North Sea sources. This is due primarily to the efforts of the North Sea Task Force (NSTF) in the preparation of the Quality Status Report (QSR). A significant contribution was also received from the British Oceanographic Data Centre arising from its activities in compiling more than 2,500 stations worked during the NERC North Sea Project.

The QSR has used a considerable amount of the work produced by the ICES Data Centre, and data management, and scientific analysis in support of this activity has utilised most of its resources.

Figure 1 shows the relative success achieved in the acquisition of nutrient data collected on cruises to the North Sea region. It shows that there is a rapid tail-off in the most recent years now that NSTF activities are beginning to wane. In addition several countries have been modifying computer hardware and software in recent years, and this is blamed by some for the present decline.

It is disappointing to report that submission of data from other areas has been extremely poor, with firm rejections being experienced occasionally. The Centre's blacklist policy has however been applied fairly ruthlessly sometimes, and this has helped release some data sets.

Request and Products

The number of requests for data and services has increased markedly in recent months due primarily to the increased capability of the Centre to access the whole data bank. Many requests can now be reacted to within a day, and almost immediately when the requester is a submitter of data to ICES. However there are some requesters requesting various forms of statistical products, and the nature of these is being monitored in case it may become desirable to produce specific routine products.

There has been a recent shift in the nature of media used in data exchange. More than 80% of the data sent out (and received) being undertaken by ftp (internet file transfer protocol), the remainder being on floppy diskette. The trend to ftp is a useful one as this helps to minimise the resource necessary to respond to requests. It also reduces the need to consider other ways to distribute data that are resource intensive, eg CD-ROMS.

Cruise Summary Reports

ROSCOP (Cruise Summary Reports) continue to be the principal mechanism to be used by the Centre to track down oceanographic data. Its development as a tool to track data at ICES itself is also progressing, and products such as Figure 1 is a manifestation of this. This latter use as a data centre catalogue means that if cruise data is received without the prior submission of a Roscop form, then one has to be created. Now about 10% of forms are included into the Roscop data base in this way. This can create some difficulties as the Roscop form is also used as an integral part of the quality control procedures (one has to be sure that the nitrate data is nitrate, and not silicate, for example).

Figures 2 and 3 show the status countryxcountry, of the number of Cruise Reports submitted from each ICES Member Country for cruise conducted in each year since 1980. Figure 2 refers only to those forms that have been submitted, Figure 3 additionally includes forms that were created at ICES in response to data submissions. Figure 2 shows that the performance of some countries in recent years is poor. This is disappointing considering that the main

2

motivation of IOC to provide a simplified, revised Cruise Summary Report from 1990 was to help produce an increase in submission.

The present ICES Roscop data base now extends to some 18,000 cruises conducted since the late 1960s. The volume has recently expanded significantly by the digitisation of many reports produced from cruises of US research ships, and supplied by the WDCA. It is the intention, eventually, to digitise all additional forms presently at the WDCA (with financial support), and then make use of the resulting database in support of tracking data for GODAR.

The ICES Roscop database is supported by both retrieval and form entry software, suitable for use on most PCs. Many copies of this system have been distributed, and some users have retrieved copies from the ICES server by anonymous ftp. Figure 4 is a flier explaining how users may obtain this system in this way. It is the intention to advertise, regularly, this product on the omnet OCEAN Bulletin Board.

OceanPC

The Data Centre has cooperated closely with IOC in the preparation of a PC-based data management system called OceanPC. The aim of this system is to encourage the submission of quality-controlled station data to the National Data Centres. The present structure utilises a great amount of the software created and used by ICES in its everyday data management activities. Some charting software was provided by the Marine Minerals Service (MMS) of Texas, and currently the whole system is being maintained at ICES, though it is intended that IOC Secretariat staff will subsume this role.

The general scheme of the system is shown in Figure 5. This scheme is controlled by a PC-based menu system, which contains full documentation and help facilities. It controls all the software in the system and progresses logically through various modules. Modules include those to enter data and information, convert data to propriety formats, summarise data sets, quality control multi-parameter data sets, display data, and provide import to other software commonly in use by oceanographers, for example Surfer and ATLAST. The system is now due to be launched by IOC for use world-wide, and ICES has already made it available by ftp (Figure 6). An effect of this is that, for a short time at least, the infamous ICES Punch Card format will become famous.

As already mentioned, the main objective of OceanPC is to encourage the submission of data. Significant successes may already be noted in the acquisition of large Polish data sets. It has also allowed a US researcher to take advantage of a contract to digitise many thousands of US data. Here, the exact software supplied by OceanPC was not utilised, but a modified version of it using the source codes supplied with the system was developed.

Data Quality

It is disappointing to report that data quality problems continue to soar. In part, these problems are apparent because of the more sophisticated software that has been put in place to detect it. Unfortunately there are a significant amount of data being submitted that have

such severe quality problems that it is difficult not to notice them. A case in point was this year's data submitted as part of the ICES IYFS(IBTS) project. This data set now extends to some twenty three years, but the 1993 set contains fewer salinity values than received in any previous year. The reason for this is that 30% of the salinity data were seriously in error. Half these bad data were detected by the originator before submission, but the other half slipped through the originator's net. The result produced a rather anomalous North Sea salinity distribution (Figure 7), whereas conditions became more typical when the offending fifty stations were removed (Figure 8).

Harry Dooley
Oceanography Secretary
26/08/93

Status of Reporting of Nitrate Data
(All Cruises 50-60N 10W-10E)
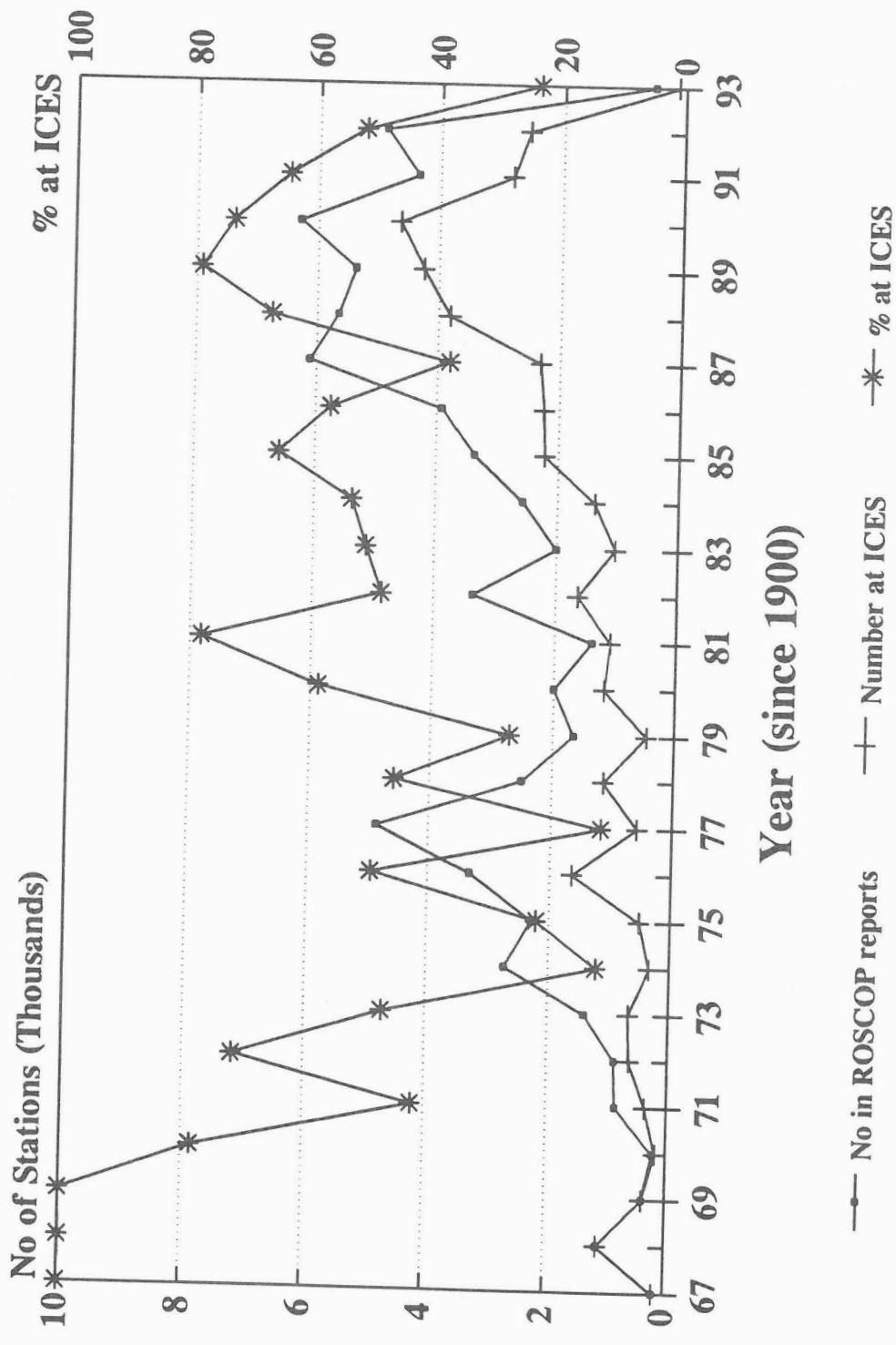
Figure 1

ICES ROSCOP SUBMISSIONS 1980-1993 (as of 13/08/93)

Country/Year	80	81	82	83	84	85	86	87	88	89	90	91	92	93	Total
Belgium	1	1	1	1	1	0	0	0	0	21	26	24	25	0	101
Canada	14	20	16	13	23	25	9	40	52	13	14	17	14	0	270
Denmark	17	9	14	17	20	26	25	23	20	1	1	1	0	0	174
Finland	13	11	10	4	13	12	1	0	0	0	0	0	0	0	64
France	88	71	61	72	56	47	48	32	54	0	0	1	1	0	531
FRG	70	92	91	95	99	124	131	116	141	167	160	157	108	36	1587
GDR	8	13	10	11	13	10	10	8	11	8	15	0	0	0	117
Iceland	18	12	12	14	10	12	9	19	0	0	0	0	0	0	106
Ireland	0	0	0	0	0	0	0	16	4	0	1	1	0	0	22
Norway	35	40	41	48	44	48	38	47	46	49	40	42	71	17	606
Netherlands	70	63	83	74	73	76	74	26	0	83	82	80	3	0	787
Poland	12	11	14	13	16	16	15	11	12	11	14	15	7	1	168
Portugal	1	2	1	0	2	1	1	2	2	1	1	0	0	0	14
Spain	1	0	0	0	0	2	1	5	4	1	4	17	18	2	55
Sweden	9	11	10	14	24	23	22	24	9	3	4	4	0	0	157
UK	148	178	154	133	114	113	101	94	90	104	111	101	50	1	1492
USA	1	0	2	40	66	57	46	28	32	8	64	28	0	0	372
USSR	1	1	4	7	2	3	3	0	0	0	4	1	0	0	26
Other	0	0	0	0	0	0	0	0	0	0	1	2	1	1	5
Total	507	535	524	556	576	595	534	491	477	470	542	491	298	58	6654

Figure 2

6

ICES ROSCOP NUMBERS (Submissions, creations, and NOPs) 1980-1993 (as of 13/08/93)

Country/Year	80	81	82	83	84	85	86	87	88	89	90	91	92	93	Total
Belgium	1	1	1	1	1	1	1	1	1	24	26	25	25	0	109
Canada	14	20	16	13	23	25	9	40	52	13	15	17	14	0	271
Denmark	18	12	18	22	32	30	29	29	30	18	26	17	19	1	301
Finland	15	15	10	4	14	19	14	20	0	0	1	18	0	0	130
France	89	71	61	72	56	47	48	32	54	1	0	2	2	1	536
FRG	93	115	114	110	119	142	154	130	148	174	164	157	104	40	1764
GDR	8	13	10	11	13	10	10	8	11	8	19	0	0	0	121
Iceland	18	12	12	14	10	12	9	19	8	0	0	0	0	0	114
Ireland	0	0	0	0	0	0	0	16	4	0	1	1	1	0	23
Norway	49	50	51	59	60	59	49	54	62	67	63	51	71	17	762
Netherlands	73	63	84	75	74	77	75	29	2	86	85	87	4	2	816
Poland	22	22	23	20	23	20	15	31	22	19	18	18	14	1	268
Portugal	1	2	1	0	2	1	1	2	2	1	1	0	0	0	14
Spain	1	0	0	0	0	2	1	5	4	1	4	17	18	2	55
Sweden	19	19	16	14	25	24	27	28	31	24	27	5	4	1	264
UK	148	178	154	133	114	113	101	95	93	107	115	104	57	19	1531
USA	1	1	2	41	66	57	46	30	35	9	67	28	0	0	383
USSR	11	3	5	7	2	3	3	0	0	0	6	2	1	0	43
Other	0	0	0	0	0	0	0	0	0	0	1	2	1	1	5
Total	581	597	578	596	634	642	592	569	559	552	639	551	335	85	7510

Figure 3

**********************ROSCOP Data and Software from ICES********************

WHAT IS AVAILABLE?

Digitised Roscop forms for most research cruises conducted in the North Atlantic area since the 1960s are available via internet from the server in the ICES Secretariat in Copenhagen. At present about 18,000 cruises are recorded in this system. In addition to the digitised forms, supporting software to allow selection of forms in accordance with user-defined criteria is available. This software can only be run from PCs.

DIGITISED FORMS

The digitised forms are available from 4 self-extracting compressed files, ros6x.exe, ros7x.exe, ros8x.exe, and ros9x.exe. Ros6x.exe contains all the files for the 1960s roscops. On extraction, one file for each year is produced.

SOFTWARE

Rosearch.exe - this is your tool to make extractions from the data set.

Rosin.exe - this is a form entry program to allow you to digitise your own cruises

our2inf - this accepts the output from Rosin, and provides you with a file suitable for use with Rosearch.

RETRIEVAL BY FTP.

To retrieve the above files from the ICES server, the following procedure is recommended:

```
ftp server.ices.inst.dk (or ftp 129.142.180.10)
<user> ftp
<passwd> you're email address.
cd dist/roscop
dir (to check that the files are there!)
binary
prompt off
mget *
exit
```

Following this, you must then transfer the files to a DOS disk and uncompress the compressed files. This is done simply by typing the name of the file (for example ROS6x).

Figure 4   Flier describing access to ROSCOP using anonymous ftp

OceanPC
(IOC/WMO)

```
                        ┌──────────────────┐
                        │       PC         │
                        │ (IBM-Compatible) │
                        └────────┬─────────┘
     ┌───────────┬───────────────┼───────────────┬────────────┐
┌────┴─────┐ ┌───┴──────┐ ┌──────┴───┐ ┌─────────┴┐ ┌─────────┴┐
│ MANUAL   │ │ FORMAT   │ │   QC     │ │ DISPLAY  │ │ ROSEARCH │
│DATA ENTRY│ │CONVERSION│ │& UTILITIES│ │          │ │          │
└──────────┘ └──────────┘ └──────────┘ └──────────┘ └──────────┘
```

MANUAL DATA ENTRY	FORMAT CONVERSION	QC & UTILITIES	DISPLAY
ENTICE	NODC-ICES	ICESORT	OPCPLOT
DATCONV	ICES-NODC	INDEX	LIMITS
ROSIN	CD-ICES	FISUM	WDB (Coastline)
OUR2INF	BLU-ICES	STASUM	STAPLOT
	ICES-CSV	ICESQC	[ATLAST]
	CSV-SUR	TSLOOK	[SURFER]
	CSV-ATLAST	ICE-EDT	
		ICE-EXT	
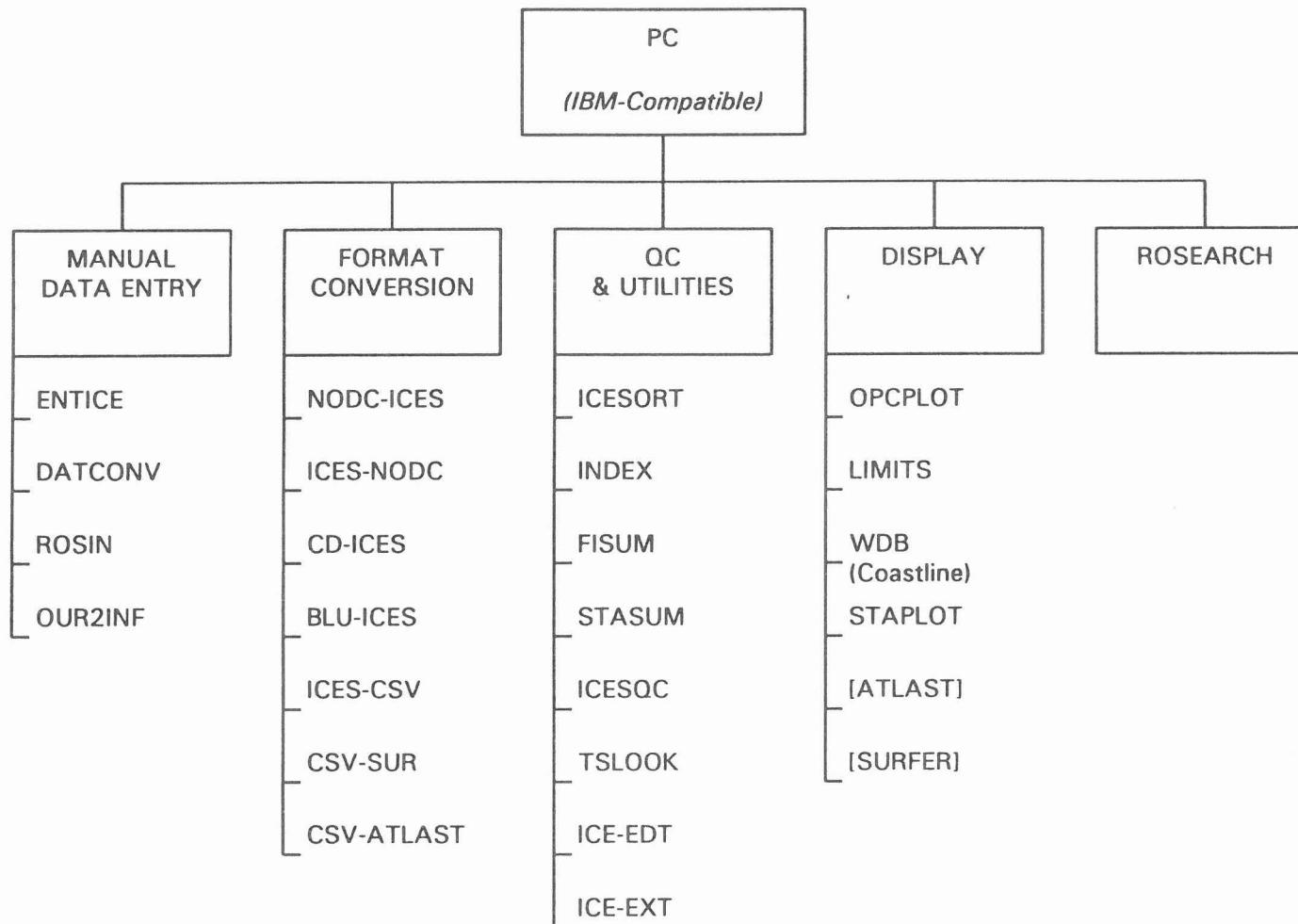
Figure 5   OceanPC outline

*****************OCEANPC acquisition from INTERNET***********************

OCEANPC

OceanPC is a suite of software for ocean profile data management which is available by ftp from the server of the ICES computer on Copenhagen. The software is for use on IBM compatible computers. PCs with VGA screens and co-processors is desirable, though not essential, for a number of modules.

The programs can be controlled by a menu system, which is supplied. An installation program (OPCINST) is provided, and its use is strongly advised. The menu and programs are self-documenting. A manual is also available, and this should be requested if needed. In due course a word perfect file of the manual will be available from the server.

RETRIEVAL OF OceanPC

To retrieve OCEANPC files from the ICES server the following procedure is recommended

```
ftp server.ices.inst.dk (or ftp 129.142.180.10)
<user> ftp
<passwd> your email address
cd dist/oceanpc
dir (to check that files are there).
binary
prompt off
mget *
quit
```

After copying the 3 .EXE Files to Your DOS Disk, move to directory where files are located, which MUST be the root directory on any drive, then type OPCINST. This will Install OceanPC

Problems - send message to ocean@server.ices.inst.dk

Figure 6   Flier describing access to OceanPC using anonymous ftp
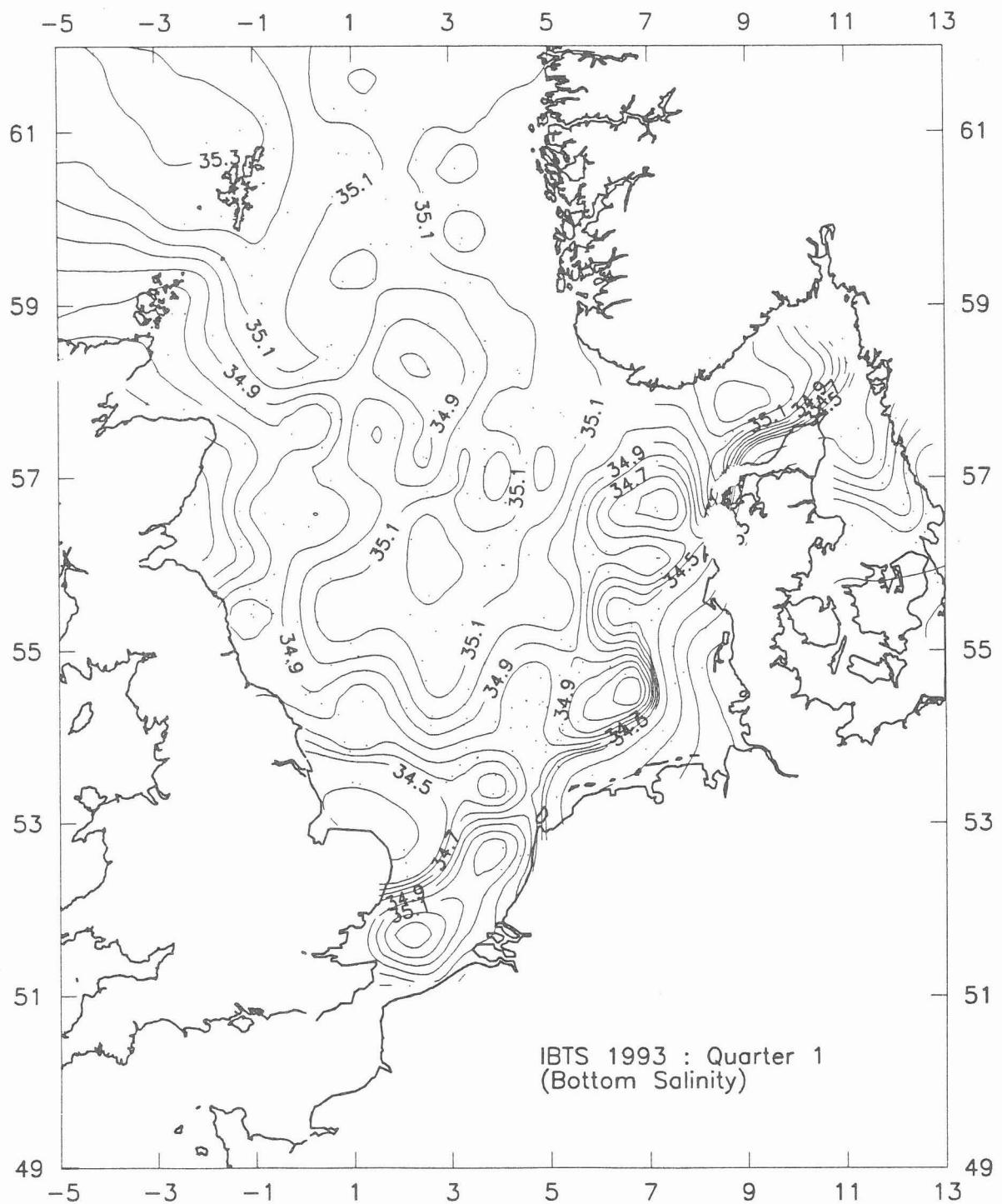
Figure 7   Distribution of Salinity durting IBTS(1) 1993 (all reported data)
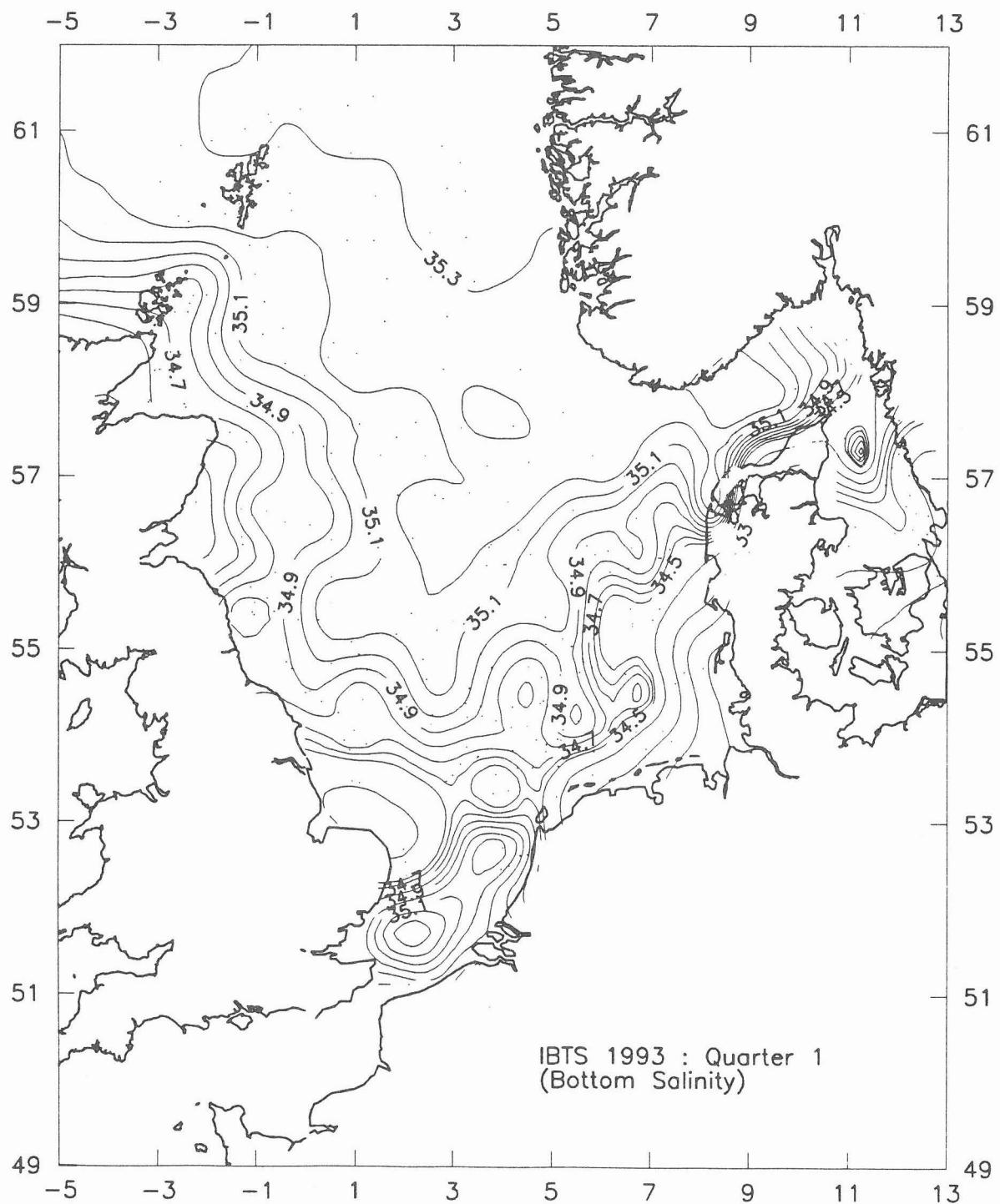
Figure 8   Distribution of Salinity durting IBTS(1) 1993 ("Bad" data removed)