RESTRICTED

INTERNATIONAL COMMISSION FOR THE NORTHWEST ATLANTIC FISHERIES

Serial No.2168
(D.c.1)

ICNAF Res.Doc.69/34

ANNUAL MEETING - JUNE 1969

SUMMARY REPORT ON U.S. COAST GUARD OCEANOGRAPHIC CRUISES IN THE ICNAF CONVENTION AREA DURING 1968

by

Coastal Oceanography Section, U.S. Coast Guard Oceanographic Unit

Washington, D.C.

INTRODUCTION

Under the Northwest Atlantic Fisheries Act of 1950 (16 USC 981) the U.S. Coast Guard is charged with cooperating with the Bureau of Commercial Fisheries in supporting the International Commission for the Northwest Atlantic Fisheries (ICNAF). Accordingly, two cruises per year, in the Fall and Winter, are conducted by the CGC EVERGREEN in the coastal and slope waters of the Gulf of Maine, and between Cape Cod and Cape Hatteras. These cruises collect hydrographic data which are then correlated with the distribution of various species of food fishes in the area by the Bureau of Commercial Fisheries. A summary of the results for the CGC EVERGREEN-ICNAF Cruise 68-1 conducted in January 1968 was included in the "Intermin Report on CGC EVERGREEN-ICNAF Research Cruises, FY 1968".

The present report contains a summary of the CGC EVERGREEN-ICNAF Cruise 68-2 conducted in September 1968. A complete report of this cruise will appear in Coast Guard Oceanographic Reports (CG-373 series).

CGC EVERGREEN (WAGO 295) - ICNAF CRUISE 68-2, NOVA SCOTIA TO NANTUCKET SHOALS 7-18 SEPTEMBER 1968

Oceanographic Operations:

Sixty-nine stations were occupied in the region bounded by latitudes 39°39'N to 44°30'N and longitudes 64°30'N to 70°30'N (see cruise track fig. (1)). Data for the analysis of the vertical and horizontal distribution of temperature, salinity, dissolved oxygen and chlorophyll were collected. STD (Salinity-Temperature-Depth Recorder) casts were made at 65 stations to the bottom or to a maximum depth of 1500M. Nansen casts were made at all stations to collect water samples at depths of 1, 10, 20, 30, 40, 50, 75, 100, 200, and 250 meters as depth allowed. Forty-seven expendable bathythermographic (XBT) casts were made at locations midway between stations.

Dissolved Oxygen Analysis:

A total of 687 water samples from depths to 250 meters were analyzed for dissolved oxygen content using the modified Winkler method. Standardization of the sodium thiosulphate solution and a blank run on the other reagents were made daily.

Chlorophyll Extractions:

A total of 516 water samples from depths to 100 meters were processed for chlorophyll determinations. Extracts of 125 ml water samples were frozen for chlorophyll analysis ashore at BCF Biological Laboratory Woods Hole, Massachusetts, according to the method of Yentsch and Menzel.

Drift Bottles and Sea-Bed Drifts:

Five drift bottles were released at each station and five sea-bed drifters were released at each station shoaler than 275 meters. A total of 345 drift bottles and 250 sea-bed drifters were released. Serial numbers were recorded on log forms provided by the Woods Hole Oceanographic Institution.

Sonic Sounding Program:

A sonic sounding program was carried out in the operating area. The annotated Echo Sounding Trace was submitted to the Naval Oceanographic Office.

Biological Reporting Program:

Sightings of whales, porpoises, fish schools, etc., were recorded by Watch Officers on Biological Reporting Forms. These records were submitted to Naval Oceanographic Office.

Quality Control:

A Niskin bottle was attached to the STD cable and used to collect water samples for a comparison of salinity with the STD. A standard Nansen bottle cast to the bottom or 1500 meters was made every 24 hours to check data obtained with the STD system. A surface temperature was taken with a bucket thermometer at all XBT stations for comparison with XBT data. A time, adjusted position, and depth log for all STD and XBT stations was maintained by the Coast Guard Oceanographic Unit field party and reviewed for accuracy by CGC EVERGREEN bridge personnel.

Equipment:

An STD sensor and recorder was used to obtain a trace of salinity and temperature as a function of depth. An XBT system was used to obtain a trace of temperature as a function of depth midway between stations. Standard Nansen bottles and reversing thermometers were used for quality control of the STD, while Nansen bottles alone were used to obtain water samples for dissolved 0_2 and chlorophyll analyses. A Niskin bottle was used to collect water samples for quality control directly above the STD. A piston burette assembly was used for titration of water samples for dissolved oxygen determinations. A portable inductive salinometer was used to determine the salinities of water samples collected for quality control.

Data Presentation:

An Interim Report for this cruise is now in preparation and will include surface contours of temperature, salinity and sigma-T, and vertical profiles of temperature, salinity, sigma-t, dissolved oxygen and chlorophyll for seven sections. A complete data listing will appear in the CG-373 Series Oceanographic Report.

Operational Summary:

Oceanographic Stations Occupied	69
STD Casts	65
Nansen Bottle Casts without Reversing Thermometers	57
Nansen Bottle Casts with Reversing Thermometers	11
XBT Stations	47
Dissolved Oxygen Analyses	687
Chlorophyll Extractions	516
Salinity Determinations	149
Drift Bottles Released	345
Sea-Bed Drifters Released	250

OCEAN STATION AND INTERNATIONAL ICE PATROL OCEANOGRAPHIC STATIONS IN THE ICNAF AREA

Stations taken by CGC EVERGREEN were conducted by International Ice Patrol. Oceanographic measurements at these stations were obtained primarily with the STD. In some instances more stations were taken than those listed for the standard section. This was for either duplication of a station or coverage of a wider area. In other instances all stations could not be taken due to adverse weather conditions.

Stations occupied by ships other than the CGC EVERGREEN were taken as part of the Ocean Station Program. Oceanographic measurements at these stations were made using standard Nansen bottle casts. Again, there are instances in which stations were not taken due to adverse weather conditions.

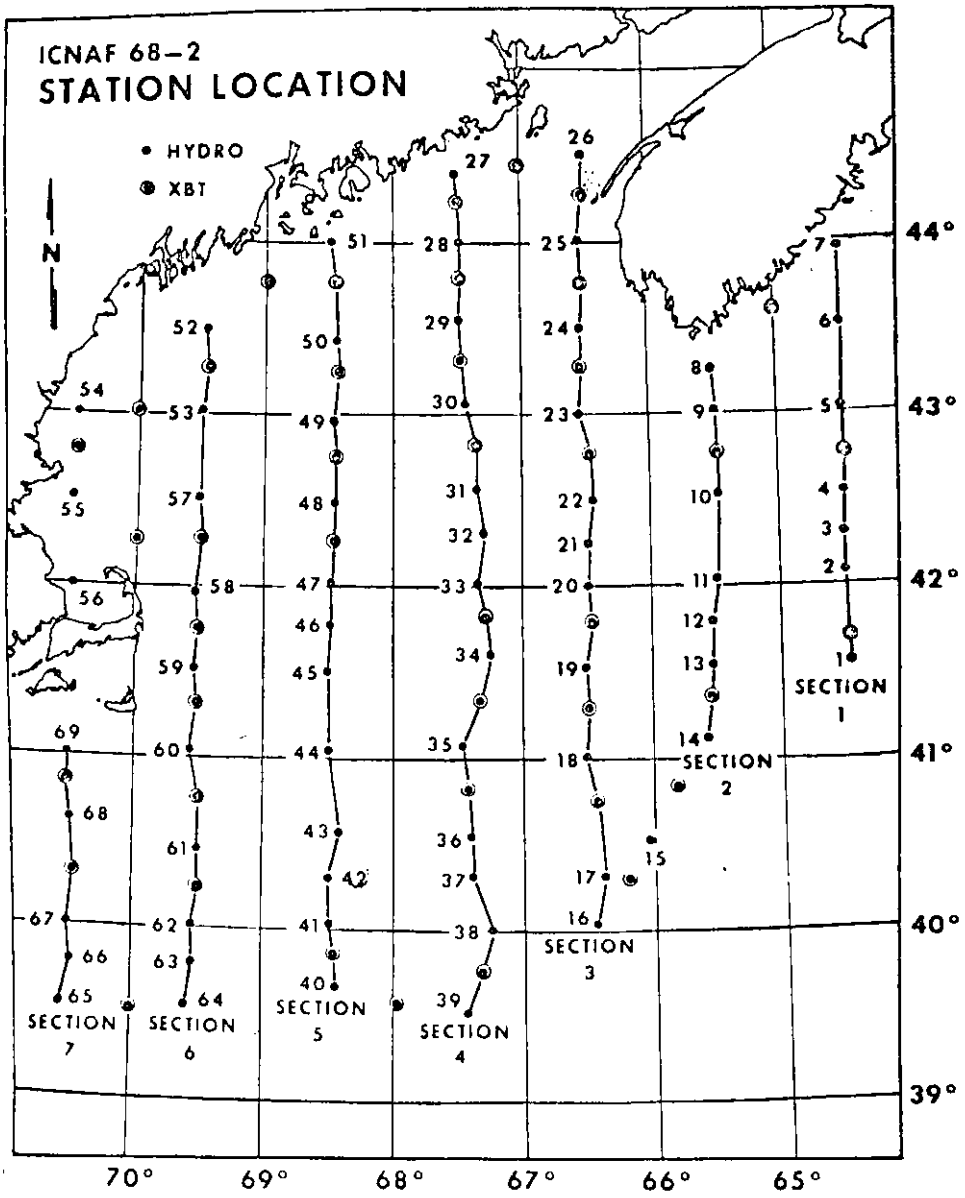
ICNAF 68–2
STATION LOCATION
• HYDRO
XBT
N
SECTION 1
SECTION 2
SECTION 3
SECTION 4
SECTION 5
SECTION 6
SECTION 7
44°
43°
42°
41°
40°
39°
70°
69°
68°
67°
66°
65°

Figure 1

STANDARD SECTIONS AND
OCEAN STATIONS

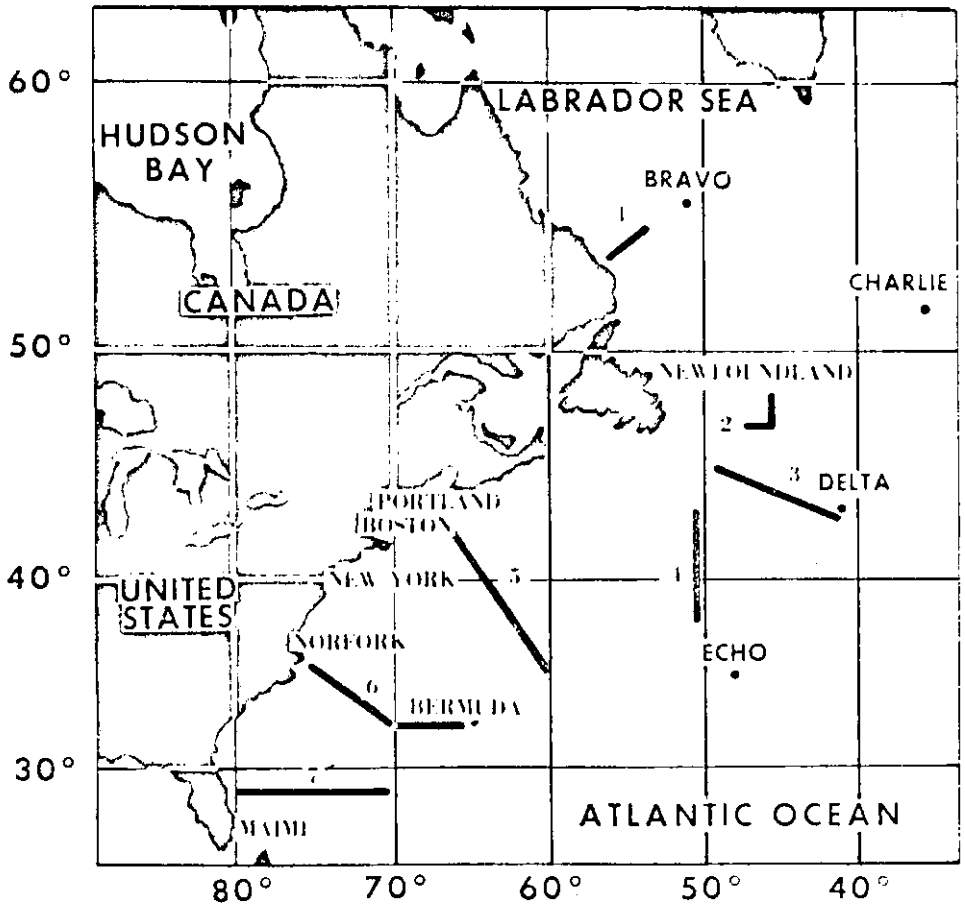

Figure 2