U. S. Department of Commerce
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
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Pascagoula, MS 39568-1207

NOAA SHIP OREGON II CRUISE 88-02 (173)
4/19/88 - 6/1/88

INTRODUCTION

OREGON II cruise 173 was divided into four segments and extended from April 19 to June 1, 1988. Segments 1 and 3 consisted of standard SEAMAP ichthyoplankton sampling and operated throughout the northern Gulf of Mexico (Fig. 1). Segment 2 consisted of ichthyoplankton sampling on each side of the loop current (Fig. 2), and Segment 4 sampled the Mississippi River plume for collections and information pertaining to planktonic and ichthyofaunal distribution relating to the plume (Fig. 3). Cruise segments originated and terminated in Pascagoula with stations occupied within the Exclusive Economic Zone (EEZ) in the northern Gulf of Mexico.

OBJECTIVES

The spring SEAMAP survey monitored seasonal changes in distribution and abundance of fish eggs and larvae, phytoplankton, associated zooplankton, environmental conditions, and ichthyofaunal assemblages along thermal fronts and the Mississippi River plume.

METHODS

Conductivity or salinity, temperature and depth (CTD or STD) profiles were obtained at 67 stations. Temperature profiles were obtained, using a SEAS III XBT system, at 196 stations at which the CTD or STD sensors were inoperable. A secchi disc was used during daylight to determine water clarity and surface chlorophyll samples were taken throughout the cruise with three replicates taken at each station.

Plankton sampling gear consisted of the standard SEAMAP 0.61 cm double bongo, BNF-1 and Tucker trawl frames fitted with two, four and three 0.333 mm mesh nets respectively. Vessel and winch speeds were regulated throughout the tow to maintain a 45° wire angle. Neuston tows, using a 1x2 m frame and 0.947 mm mesh net, were made for 10 minutes at 1.5 knots following plankton tows. Mechanical flowmeters were suspended in the aperture of the right bongo net in both the standard SEAMAP double bongo and the BNF-1 samplers and in the middle and bottom Tucker trawl nets. Mechanical flowmeters were suspended in all three nets of the Tucker trawl during the river plume study. All ichthyoplankton samples were initially preserved in 10% formalin and then transferred to 95% ethenol.

Ichthyoplankton and environmental data were collected during Segments 1 and 3 (April 19 - May 2 and May 12 - 26) in accordance with the 1987 SEAMAP Operations Manual. Segment 2 (May 3 - 11) consisted of a loop current

study. Loop parameters were identified using satellite imagery, then surface water temperature was used to define the inner and outer water masses. Along the sampling transect stations were located five miles apart with samples collected at both the northern and southeastern current interfaces and through an offshore weed line. Extra time at the end of Segment 2 was devoted to a 1-hr. deep (2000 M) neuston tow. Segment 4 (May 27 - June 1) consisted of 63 stations allocated along nine transects in the Mississippi River plume area (Fig. 3). At each station the water column was sampled for chlorophyll-a, phaeopigments and microzooplankton. Neuston and ichthyoplankton samples were taken using the 0.947 mm mesh neuston and the 0.333 mm mesh Tucker trawl. At two stations surface drifters were released in an attempt to understand the hydrodynamic mechanisms responsible for the plume pattern.

Right bongo samples from Segments 1 and 3 will be shipped to Poland for sorting with the left bongo and neuston samples stored at the Gulf Coast Research Laboratory, Ocean Springs, Miss. Plankton and neuston samples collected during Segment 2 were shipped to NMFS, Miami Laboratory, Miami, Fla. for sorting and identification. Samples collected on Segment 4 were split between the NMFS, Beaufort, NC and NMFS, Panama City, Fla. for sorting identification and analysis. Analysis of all chlorophyll-a and salinity samples were completed at the Mississippi Laboratory in Pascagoula, Miss.

CRUISE PARTICIPANTS

Name	Title	Organization
Leg I (4/19-5/2/88):		
Alonzo Hamilton	Field Party Chief	NMFS, Pascagoula, MS
Perry Thompson	Fishery Biologist	NMFS, Pascagoula, MS
Carol Roden	Biological Technician	NMFS, Pascagoula, MS
Caroline Rogers	Biological Aide	NMFS, Pascagoula, MS
Leg II (5/3-5/11/88):		
Elmer Gutherz	Field Party Chief	NMFS, Pascagoula, MS
Jim Benton	Fishery Biologist	NMFS, Pascagoula, MS
Bennie Rohr	Fishery Biologist	NMFS, Pascagoula, MS
Bill Richards	Senior Scientist	NMFS, Miami, FL
Sharon Kelley-Fraga	Fishery Biologist	NMFS, Miami, FL
John Lampkin	NOAA Corps	NMFS, Miami, FL
Bruce Comyns	Cooperator	GCRL, Ocean Springs, MS

CRUISE PARTICIPANTS (Cont'd)

Name	Title	Organization
Leg III (5/12-5/26/88):		
Alonzo Hamilton	Field Party Chief	NMFS, Pascagoula, MS
Robert Ford	Fishery Biologist	NMFS, Pascagoula, MS
Freeman Richmond	Student Trainee Bio.	NMFS, Pascagoula, MS
Douglas DeVries	Fishery Biologist	NMFS, Panama City, FL
Alan Kao	Cooperator	Bowling Green State University
Beth Reardon	Cooperator	Bowling Green State University
Greg Shellenbarger	Cooperator	Bowling Green State University
Jeff Fearnside	Cooperator	Bowling Green State University
Leg IV (4/27-6/1/88):		
Alonzo Hamilton	Field Party Chief	NMFS, Pascagoula, MS
Douglas DeVries	Fishery Biologist	NMFS, Panama City, FL
John Govoni	Ecologist	NMFS, Beaufort, NC
Kristi Sarri	Cooperator	NMFS, Beaufort, NC
John Burke	Fishery Biologist (Res.)	NMFS, Beaufort, NC
Churchill Grimes	Research Ecologist	NMFS, Panama City, FL
John Isley	Fishery Biologist	NMFS, Beaufort, NC
Kathy Lang	Biological Aid	NMFS, Panama City, FL
Mike Murrel	Cooperator	LUMCON
Harold Brusher	Fishery Biologist	NMFS, Panama City, FL

Submitted By:

Alonzo Hamilton, Jr.
Field Party Chief

Approved By:

Andrew J. Niemmerer, Director
Mississippi Laboratories

for Bradford E. Brown, Acting
Science & Research Director

Table 1. Listing of stations occupied throughout OREGON II Cruise 88-02 (173) . Chlorophyll numbers must be multiplied by 3 as 3 replicates were taken at each station.

	Ichthyoplankton				Environmental					
Cruise Segment	Standard Bongo	BNF-1	Tucker	Neuston	Secchi Disc	CTD	STD	XBT	Chlorophyll	Hydrocast
I (4/19 - 5/2)	65	-	-	65	13	2	-	68	65	65
2 (5/3 - 5/11)	22	22	22	22	22	-	-	51	22	22
3 (5/12 - 5/26)	78	-	-	78	15	-	2	76	78	78
4 (5/27 - 6/1/)	63	-	63	63	-	63	-	1	63	63
Total	228	22	85	228	50	65	2	196	228	228

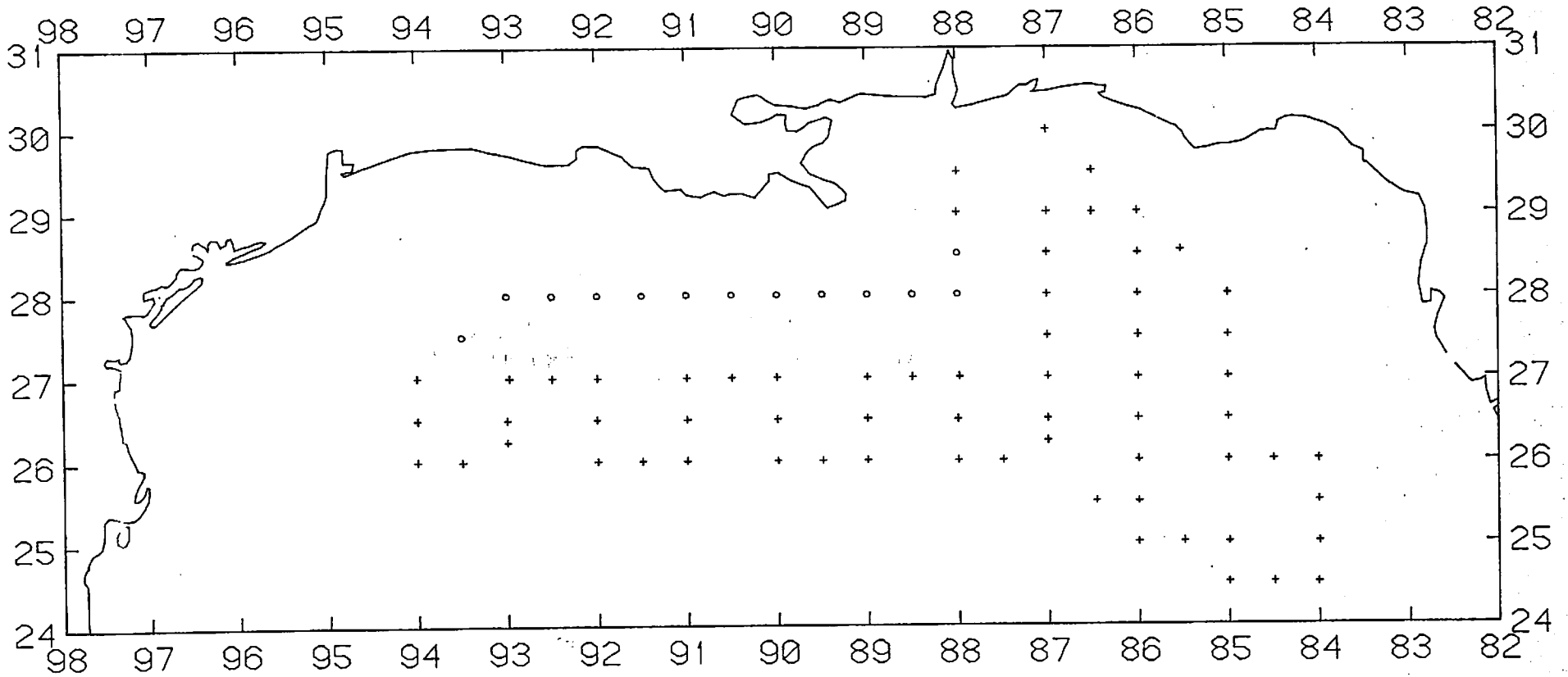
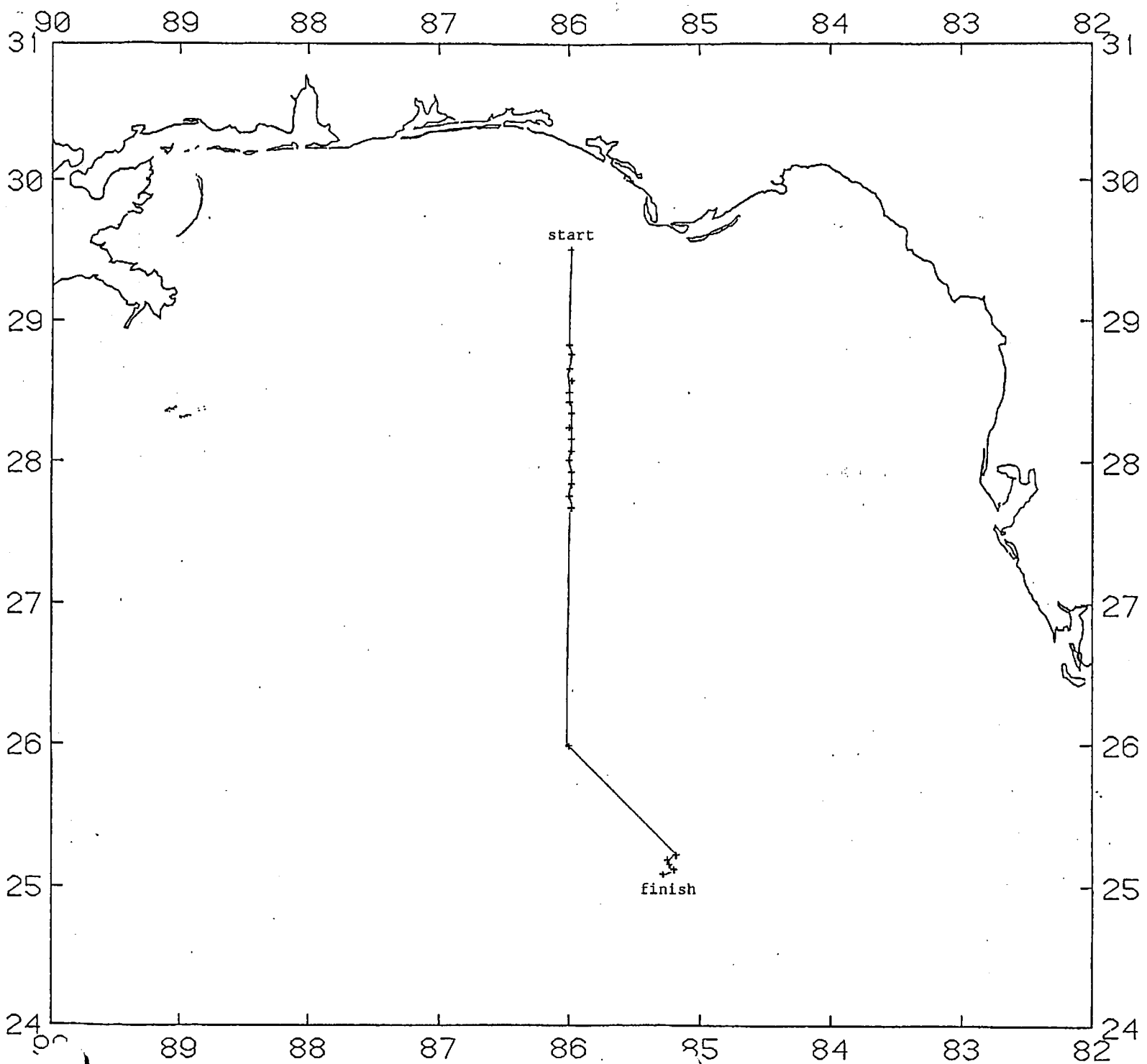


Figure 1. Cruise track with stations occupied on segments 1 and 3.
+ Represents stations completed on both segments.
° Represents stations completed on segment 3.



gure 2. Cruise track with stations occupied on ent 2.

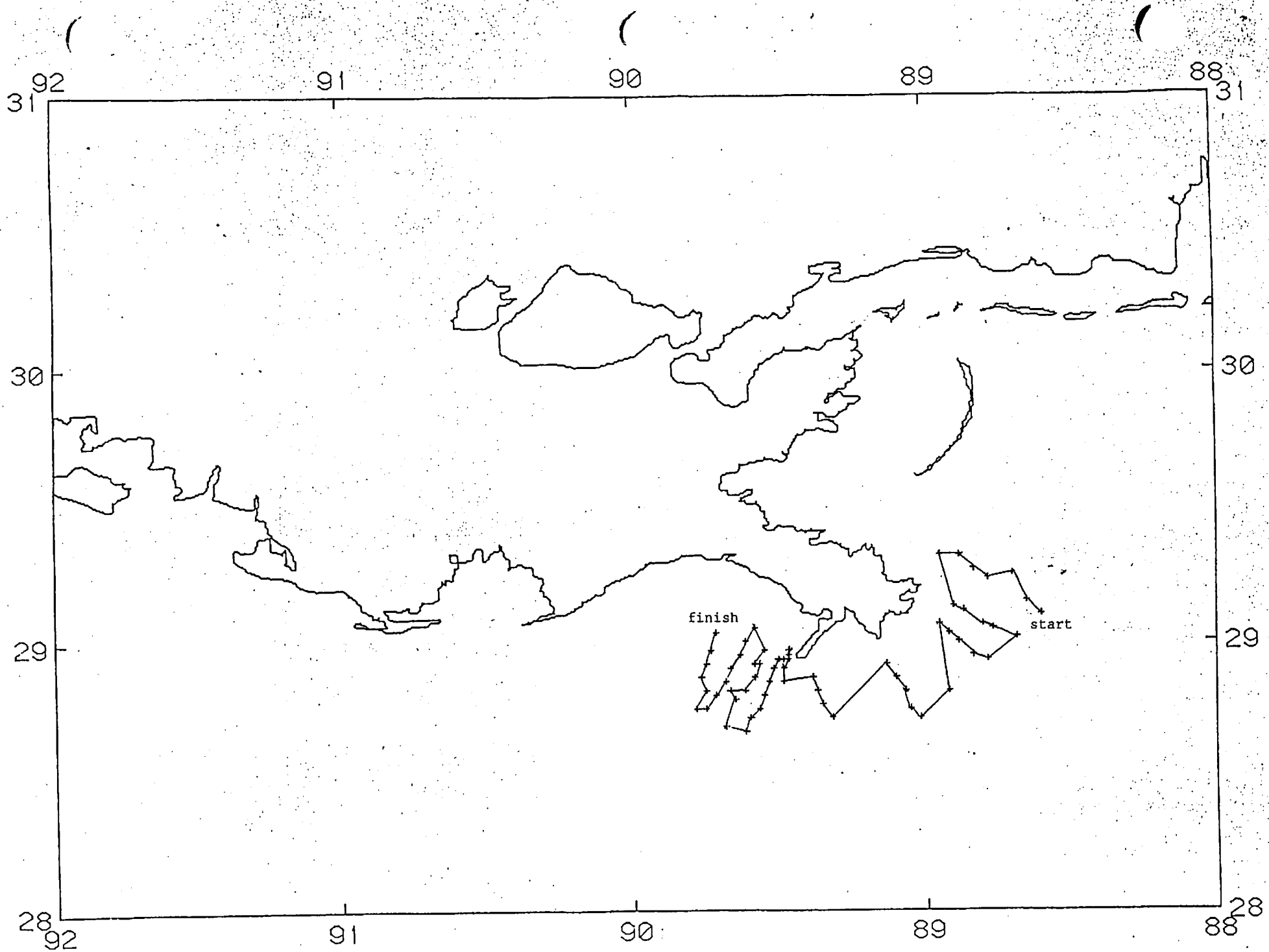


Figure 3. Cruise track with stations occupied on segment 4.