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A Newly Developed Stratification Scheme for  
Selected Areas in NAFO Subareas 0 and 1

by

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INTRODUCTION

The major groundfish resources of Canadian interest in the Davis Strait Region of the Northwest Arctic is Greenland halibut and roundnose grenadier. Until 1986 no research survey effort towards groundfish has been conducted by Canada in this region. In the fall of 1977 a groundfish cruise in Div. 0B was carried out by France and the USSR has conducted a Greenland halibut survey on the Canadian side of Davis Strait for about the past 10 years.

A stratification scheme was developed by France for the 1977 survey (Minet et al. MS 1978), however, the problem of inaccurate charts made its usefulness less than desirable. A basic design by Messtorff (MS 1975) has also been available for Div. 0B, however, this suffers from the same problems and likely made use of the same charts as that of Minet et al. (MS 1978).

In 1986, Canada planned a cruise to NAFO Subareas 0 and 1 to investigate primarily the distribution and biology of Greenland halibut and grenadiers. It was decided that to do the survey adequately, a new stratification scheme should be designed for use on this survey.

MATERIALS AND METHODS

In most areas stratification schemes have been constructed by NAFO division since the divisions generally cross all depth zones to beyond the continental slopes. However, in Davis Strait since there is a continental shelf on both the Canadian and Greenland sides of the Strait it was not considered practical to stratify by NAFO division, therefore, strata were not necessarily confined to a single division.

Working maps of the area were obtained from the Canadian Hydrographic Service with many accurate soundings associated with each (Fig. 1). After a composite was made of these working maps contours were drafted according to the soundings. For areas where work maps were not available such as Div. 1A and the northern part of Div. 1B, up to date Danish navigation charts were used. Very little recent chartwork is available for Div. 0A, therefore, the existing charts were used to supplement the formulation of strata in the southern regions of this division.

#### Results

The final stratification scheme for the area contoured is shown in a composite map in Fig. 2. Since the main species of interest are Greenland halibut and roundnose grenadier stratification was done between depths of 200 and 1500 m. A list of strata, stratum areas, and respective depth ranges are provided in Table 1. Since the strata did not always conform to NAFO division that portion of the area of a stratum covering 2 or more divisions was also calculated and presented in Table 1.

A cruise was successfully conducted in this area in 1986 using this stratification scheme. Of the 240 sets made, the actual depth always conformed to that indicated by the new stratification composite.

#### References

- Messtorff, J. MS 1975. Design of stratification scheme for the Baffin Island area. ICNAF Res. Doc. No. 75, Serial No. 3502.
- Minet, J. P., A. Forest, and J. B. Perodu. MS 1978. Stratification scheme for ICNAF Statistical Division 0B. ICNAF Res. Doc., No. 64, Serial No. 5232.

Table 1. List of strata, stratum areas, and respective depth zones for NAFO Divisions 0 and 1.

Stratum	Total area square mile	NAFO Divisions - Total Area						Depth range (m)
		OA	OB	IA	IB	IC	ID	
001	2,356	-	2,356	-	-	-	-	200-300
002	1,844	-	1,844	-	-	-	-	301-400
003	2,616	-	2,616	-	-	-	-	401-500
004	4,671	-	4,671	-	-	-	-	501-750
005	2,070	-	2,070	-	-	-	-	751-1000
006	1,975	-	1,975	-	-	-	-	1001-1250
007	1,641	-	1,641	-	-	-	-	1251-1500
008	3,550	-	3,550	-	-	-	-	200-300
009	4,018	-	4,018	-	-	-	-	301-400
010	1,566	-	1,566	-	-	-	-	401-500
011	4,305	-	2,311	-	-	1,670	324	501-750
012	2,527	-	943	-	-	787	797	751-1000
013	1,543	-	343	-	-	151	1,049	1001-1250
014	904	-	-	-	-	-	904	1251-1500
015	775	-	-	-	-	-	775	1251-1500
016	2,110	-	-	-	-	-	2,110	1001-1250
017	1,694	-	-	-	-	1,411	283	751-1000
018	652	-	-	-	-	482	170	501-750
019	136	-	-	-	-	91	45	401-500
020	407	-	-	-	-	271	136	301-400
021	1,179	-	-	-	-	488	691	200-300
022	2,288	63	2,225	-	-	-	-	301-400
023	1,061	126	935	-	-	-	-	301-400
024	1,906	457	1,449	-	-	-	-	401-500
025	3,910	1,780	2,130	-	-	-	-	501-750
026	3,547	-	-	-	1,191	2,356	-	501-750
027	271	-	-	-	126	145	-	401-500
028	259	-	-	-	145	114	-	301-400
029	171	-	-	-	69	102	-	201-300
030	1,660	1,099	-	339	222	-	-	751-1000
031	496	496	-	-	-	-	-	1001-1250
032	301	301	-	-	-	-	-	1251-1500
033	633	184	-	259	190	-	-	501-750
034	400	75	-	240	85	-	-	401-500
035	1,207	307	-	-	900	-	-	301-400
036	1,645	107	-	-	1,538	-	-	200-300
037	903	40	-	-	863	-	-	401-500
038	3,126	482	-	810	1,834	-	-	301-400
039	4,534	-	-	4,046	488	-	-	200-300
Totals	70,857	5,517	36,643	5,694	7,651	8,068	7,384	

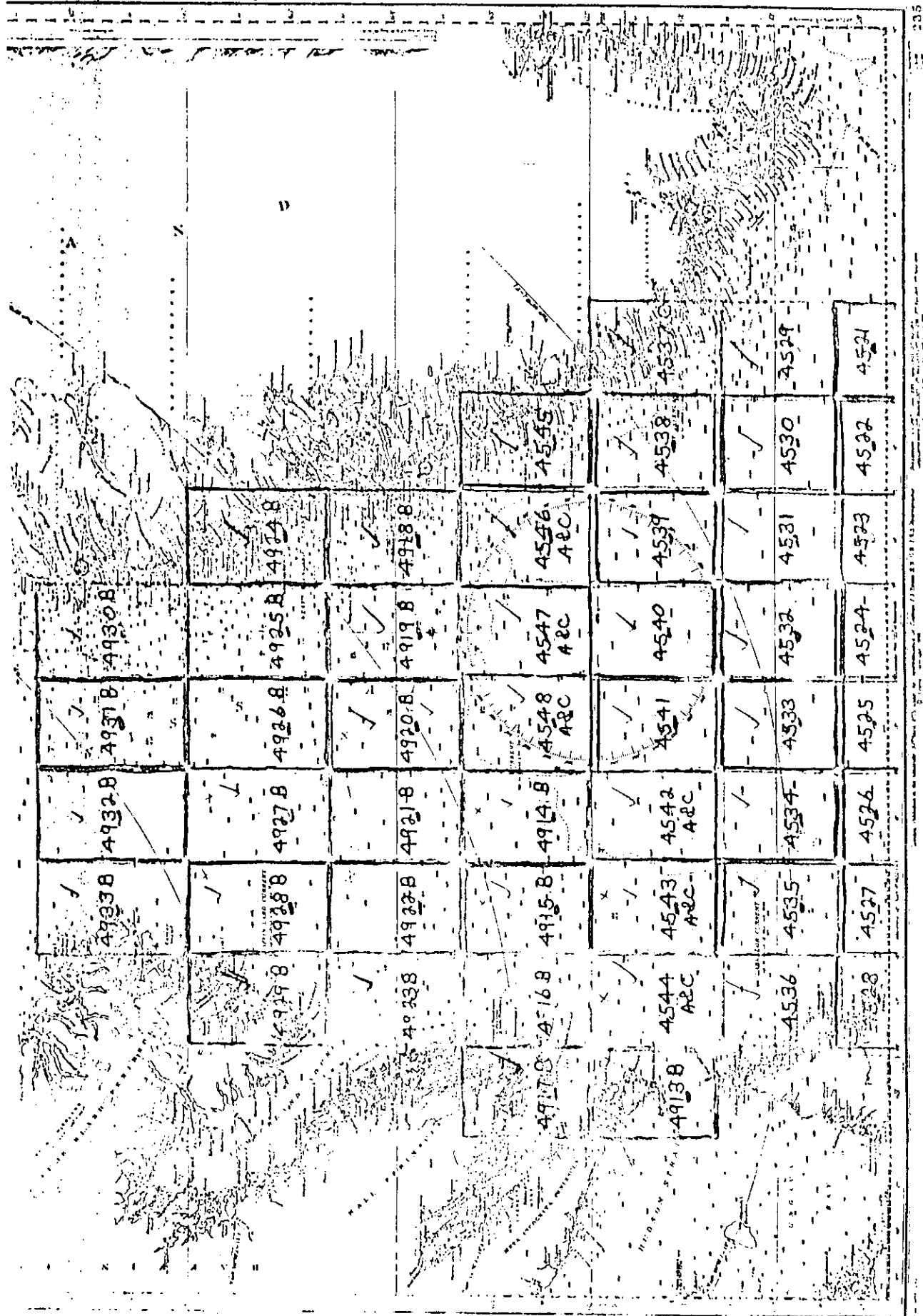


Fig. 1. Plot of work maps from the Canadian Hydrographic Service for the Davis Strait Region.

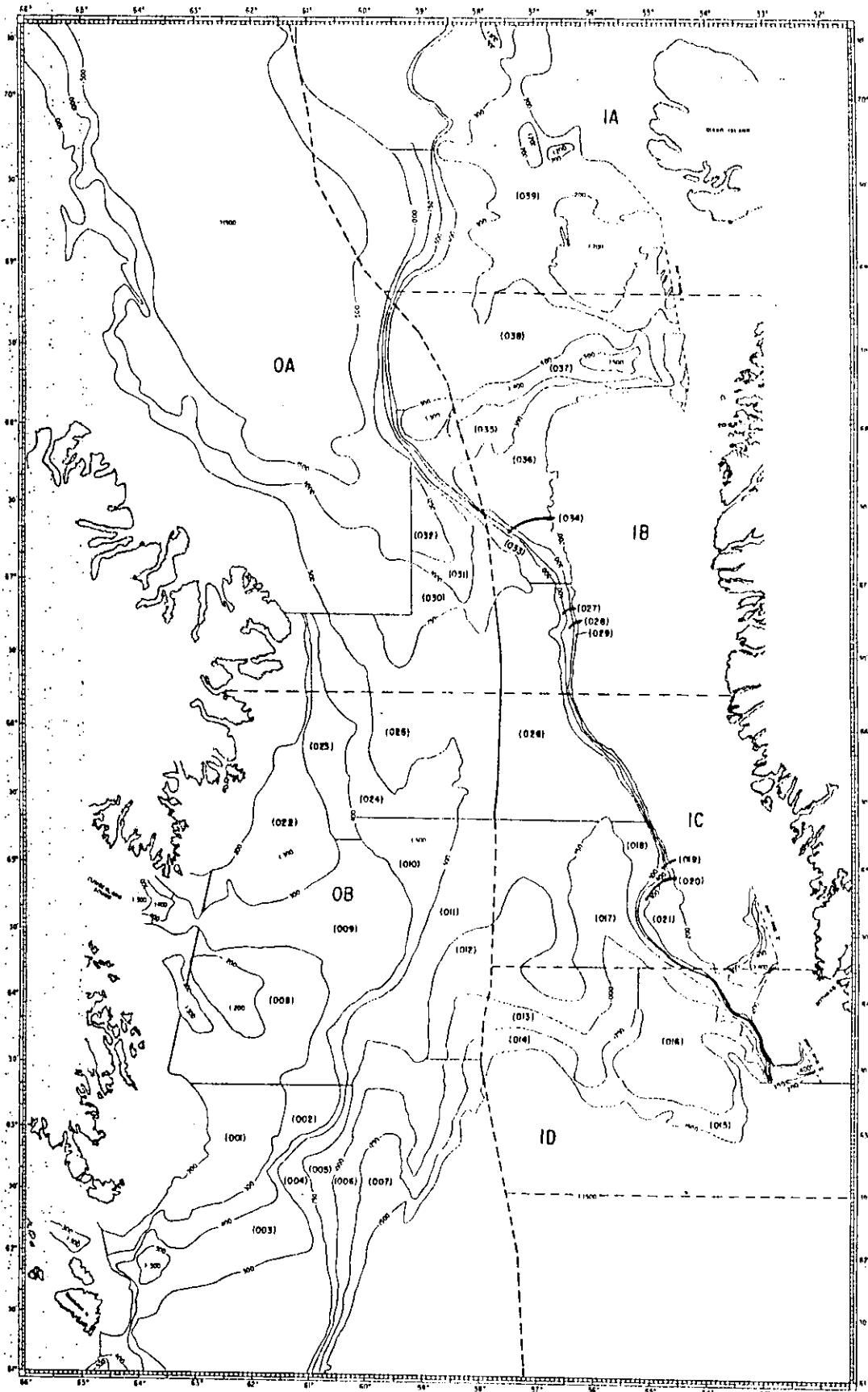


Fig. 2. Stratification scheme developed for a selected portion of NAFO Subareas 0 and 1.