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A note on research vessel survey  
biomass estimates for the  
Scotian Shelf

by

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Canadian research vessel surveys of the Scotian Shelf have been conducted for four consecutive years, 1970-73, in the June-August period with a standardised stratified-random survey design (with the exception of minor gear changes effected between 1970 and 1971 surveys). These surveys were described in detail by Halliday and Kohler (MS 1971). Various segments of the results have been presented to STACRES in studies of the status of a variety of species stocks, but total biomass estimates have been made available only for 1970 and 1971 surveys. Canadian survey results for these years were compared with those of USA and USSR Scotian Shelf surveys in a preliminary evaluation of trawls used (Grosslein and Halliday, MS 1972).

Minimum biomass estimates from 1970-73 Canadian surveys by major species and species group (finfish + squid) are given by ICNAF Division in Table 1, and for the Scotian Shelf as a whole in Table 2. These were calculated by taking the arithmetic mean of catch weights per tow within strata, adjusting on the ratio of stratum area: area swept, and summing over strata.

It has not yet been possible to give these results detailed examination, and thus, extensive interpretation would be inappropriate. However, the implication of the results in the last line of Table 2 that total fish biomass available to the survey gear showed no substantial change in the 1970-73 period may possibly justify this preliminary report.

## REFERENCES

- Grosslein, M. D. and R. G. Halliday, MS 1972. Preliminary evaluation of trawls used for research vessel surveys by Canada, USA and USSR on the Nova Scotia Shelf, and some observations on the resulting biomass estimates. ICNAF Res. Doc. 72/134, Serial No. 2865.
- Halliday, R. G. and A. C. Kohler, MS 1971. Groundfish survey programmes of the St. Andrews Biological Station, Fisheries Research Board of Canada - objectives and characteristics. ICNAF Res. Doc. 71/35, Serial No. 2520.

Table 1. Minimum biomass estimates from Canadian research vessel surveys.

<u>Species group</u>	<u>Estimated biomass (metric tons)</u>			
	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>
<u>Div. 4V</u>				
Cod	39,090	91,660	65,770	38,400
Haddock	6,920	740	2,360	510
White hake	2,520	2,500	3,930	6,970
Silver hake	340	-	40	60
Redfish	53,540	71,750	27,710	29,100
Flatfish	44,310	53,090	48,560	35,600
Skates	27,070	18,500	27,330	41,000
Dogfish	-	-	-	70
Others	13,350	12,610	22,320	17,830
Total	187,140	250,850	198,020	169,540
<u>Div. 4W</u>				
Cod	23,800	26,990	13,840	192,160
Haddock	18,160	15,460	7,140	8,700
White hake	11,870	2,570	4,600	5,360
Silver hake	17,400	3,410	12,010	9,170
Redfish	99,620	45,680	33,530	27,060
Flatfish	25,290	22,410	21,870	35,030
Skates	11,850	11,490	8,930	20,690
Dogfish	-	-	3,420	-
Others	36,720	21,580	14,940	39,480
Total	244,710	149,590	120,280	337,650
<u>Div. 4X</u>				
Cod	50,120	23,720	33,540	18,770
Haddock	38,150	49,680	23,900	29,260
White hake	53,260	7,400	12,390	29,940
Silver hake	5,780	4,470	3,210	28,970
Redfish	19,180	68,830	168,010	140,360
Flatfish	11,360	5,340	8,770	11,100
Skates	9,290	4,260	11,570	16,080
Dogfish	43,640	141,920	22,560	35,820
Others	49,100	33,350	47,220	47,930
Total	279,880	338,970	331,170	358,230

Table 2. Minimum biomass estimates from Canadian research vessel surveys for the Scotian Shelf (Div. 4VWX).

<u>Species group</u>	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>
Cod	113,010	142,370	113,150	249,330
Haddock	63,230	65,880	33,400	38,470
White hake	67,650	12,470	20,920	42,270
Silver hake	23,520	7,880	15,260	38,200
Redfish	172,340	186,260	229,250	196,520
Flatfish	80,960	80,840	79,200	81,730
Skates	48,210	34,250	47,830	77,770
Dogfish	43,640	141,920	25,980	35,890
Others	99,170	67,540	84,480	105,240
Total	711,730	739,410	649,470	865,420

