

ANNUAL MEETING - JUNE 1966Report on by-catches of regulated species
in the Canadian (mainland) otter trawl fisheries for unregulated species

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This report is presented in compliance with recommendations of the Standing Committee on Research and Statistics (Redbook 1965, Pt. I, Rec. 7), Panel 4 (1965 Meeting Proceedings No. 4, para. 6) and Panel 5 (1965 Meeting Proceedings No. 6, para. 7).

Analysis of catches

Canadian vessels using small mesh nets in the ICNAF area fish under two separate exemptions:

- (a) fishing for species other than cod or haddock with the proviso that not more than 10% of their total weight of catch per trip comprise cod nor more than 10% of their total weight of catch per trip comprise haddock;
- (b) fishing for species other than cod or haddock with the proviso that the weight of cod per trip not exceed 5,000 pounds and that the weight of haddock per trip not exceed 5,000 pounds.

Canadian vessels fishing under exemption (a) fish for flounders or redfish.

The opinion has been expressed by personnel of the Protection Branch of the Department of Fisheries that Canadian vessels fishing for flounders do not use small mesh nets. The checks made by Fisheries Protection Officers bear this out. In 1965, 47 vessels, 26 to 50 gross tons, were measured on 97 separate trips while fishing for flounders and two measurements only showed the use of small mesh nets. Twenty-eight vessels, 51 to 150 gross tons, were measured 47 times while fishing for flounders and two measurements only showed the use of small mesh nets. During the same year, 20 vessels, 151 to 500 gross tons, were measured 26 times while fishing for flounders and three measurements only showed the use of small mesh nets.

Canadian vessels fishing for redfish may or may not use small mesh nets. The data in Table 1 are based on the assumption that all vessels making redfish trips, except those vessels found to use large mesh nets three or more times while redfishing, continually use small mesh nets while redfishing. (Note: Many redfish trips classed as using small mesh could be and probably were made with nets meeting current cod and haddock regulations. This is particularly true since polyethylene has become so common. Most trawlers have found that the so-called large mesh polyethylene nets were satisfactory for redfish.) For the purpose of this exercise, redfish trips consist of trips where the dominant specie by volume was redfish and where (a) vessels of 26 to 50 gross tons landed in excess of 10,000 pounds of redfish and (b) vessels of 51 or more gross tons landed in excess of 20,000 pounds of redfish. (Note: Setting up a minimum trip of 10,000 pounds is satisfactory for the 26-50 ton vessels and a 20,000 pound minimum is satisfactory for the smaller vessels in the 51-150 ton class. However, for the larger vessels in the latter class and for vessels over 150 tons, the 20,000 pound minimum is conservative. For these larger vessels the redfish trips might really have been mixed trips and the vessels could easily have been using large mesh.)

Table 1. Analysis of redfish landings, Canada (Maritimes), 1965.

	T O N N A G E C L A S S I F I C A T I O N				TOTAL
	26 - 50	51 - 150	151 - 500	501 and over	
Number of vessels landing redfish in Maritimes	61	89	76	1	227
Number of trips on which redfish landed	239	667	578	13	1,497
Volume of specified fish landed on trips on which redfish was landed					
(a) redfish	1,003,200	15,560,500	17,583,300	235,600	34,382,600
(b) cod	892,400	8,806,400	28,948,100	964,100	39,611,000
(c) haddock	570,600	2,333,700	12,733,000	562,500	16,199,800
(d) flounders	1,817,800	41,693,100	21,890,900	1,244,500	66,646,300
Number of vessels making redfish trips (1)	8	38	32	1	79
Number of redfish trips made (1)	26	213	119	1	364
Volume of specified fish landed on redfish trips					
(a) redfish	815,500	13,873,700	14,198,100	138,200	29,025,500
(b) cod	60,500	735,200	1,117,600	121,300	2,034,600
(c) haddock	300	21,400	52,800	600	75,100
(d) flounders	22,100	311,100	596,400	2,400	932,000
Number of trips with more than 10% allowance (2)					
(a) cod	5	36	37	1	79
(b) haddock	0	2	4	0	6
Volume of specified fish landed on trips where allowance was exceeded (2)					
(a) redfish	132,900	1,543,800	3,076,400	138,200	4,891,300
(b) cod	18,300	404,300	859,600	121,300	1,403,500
(c) haddock	300	15,100	48,600	600	64,600
(d) flounders	6,600	155,200	418,100	2,400	582,300

(1) Redfish trips consist of trips where the dominant specie by volume was redfish and where (a) for vessels of 26 to 50 gross tons the volume of redfish exceeded 10,000 pounds and (b) for vessels 51 or more gross tons the volume of redfish exceeded 20,000 pounds.

(2) Vessels found to use regulation size mesh three or more times while redfishing are assumed to use regulation size mesh all the time for redfishing. All other vessels are assumed to use mesh under regulation size. The data refers to the latter group.

Using these assumptions 79 vessels making 364 redfish trips exceeded the allowance on 85 occasions and, on these occasions when the allowance was exceeded, landed 1,403,500 pounds of cod and 64,600 pounds of haddock or 30.0% and 1.3% of the weight of redfish.

Canadian vessels eligible to fish under exemption (b) do not generally use small mesh nets. Only three vessels are known to operate under this exemption. During 1965 these three vessels landed 11,157 pounds of cod, 74,078 pounds of haddock and 70,783 pounds of other species.

Length composition of by-catches

Table 2 presents the results of the only sample available of cod or haddock taken from vessels fishing for unregulated species with small-mesh nets. The cod in the sample were taken with a 4-inch single twine courlene (polyethylene) codend, which is a "large mesh" according to current regulations but would be a "small mesh" when the most recent regulations are adopted, in which a difference between single and double twine is not recognized and in which polyethylene twines are grouped with manila. Few if any of the cod would have been released by a 4 1/2-inch mesh.

Table 2. Length frequency of cod by-catch, Div. 4S (Anticosti Island), 140 fathoms depth, Yankee 35 otter trawl, codend of 4-inch single twine Courlene, 22-28 September 1965. Sample weight 545 lbs; number in sample 104; total weight 700 lb; average weight 5.24 lb; total number in sample 134.

<u>Length Group</u> (cm)	<u>No. Cod</u>	<u>Length Group</u> (cm)	<u>No. Cod</u>
43	1	73	5
46	5	76	13
49	13	79	4
52	10	82	4
55	18	85	1
58	10	88	1
61	19	91	2
64	11	94	-
67	7	97	-
70	10	100	-
		103	-
		106	1
		109	-

Sampling difficulties

Considerable difficulty is encountered in obtaining samples for determination of the length and age composition of by-catches. For example, from Table 1 it is seen that in the 51-150 ton vessel class there were 218 trips classed as redfish trips, which landed 14 million pounds of redfish and only 700 thousand pounds of cod and 21,000 pounds of haddock. Of these quantities, 400 thousand pounds of cod and 15 thousand pounds of haddock were landed on 38 trips. For the remainder, cod landings averaged less than 2000 pounds per trip and haddock less than 300 pounds per trip. Therein lay the difficulties. Even if a port sampler found a redfish trip caught with small mesh, it was unlikely that he could get the cod or haddock to sample from these small quantities. Often they were taken out with the redfish and sorted out later in the plant. Occasionally they were taken out separately. If this happened, the sampler had to be present at that instant. It should be noted that the length sample in Table 2 represents 545 pounds of 700 pounds landed. Such small quantities are not given any consideration in unloading.