

Bronlow

By-catch of non-target species in selected fisheries to which
Canada may receive access through USA - Canadian Boundary Negotiations.

by

Anne M.T. Lange

National Marine Fisheries Service
Northeast Fisheries Center
Woods Hole, Massachusetts 02543
Laboratory Reference Document No. 79-42
September 28, 1979

It is impossible to calculate the exact amount of by-catch to be taken by Canada, or any country, in a given directed fishery, especially if the amount of the allowed directed catch is unknown. However, the following Tables of by-catch ratios indicate catches taken in the past (1976), in the specified directed fisheries.

For each stock/area, the ratio of the by-catch of other major species groups in directed Canadian Fisheries, is calculated (Table 1), based on 1976 data as reported to ICNAF. For those stocks for which Canada did not fish, in 1976, USA values are given (Table 2), assuming similar fishing techniques. Neither the USA nor Canada participated in the directed 5Z red hake fishery, in 1976, so USSR values are presented, in Table 3, for that stock.

Again, the exact quantity of by-catch in any directed fishery can not be predicted, but these tables should provide some qualitative insight to the types of by-catch which may be anticipated in the given directed fisheries. For instance, in the 1976 directed cod fishery, in ICNAF Division 5Z, Canada caught 1418 metric tons (MT) of cod. While prosecuting that fishery, however, they also took an additional 275 metric tons of haddock (19.4% of the cod total); 18 MT of redfish (1.3% of the cod); 254 MT of pollock (17.9% of the cod); etc.

Table 1.

(1) 1976 Canadian by-catch and by-catch ratios, of major species or species groups, (2) taken in directed fisheries, pertinent to the USA - Canadian East Coast Fisheries Agreement.

BY-CATCH SPECIES OR SPECIES GROUP

Directed Fishery by area		Cod	Haddock	Redfish	Sil. hake	Red hake	Pollock	Yellow-tail	Other Grdfish	Herring	Mackerel	Other Pelagics	Other Finfish	Inverts ⁽⁸⁾
Scallops	5Ze ⁽³⁾ (4)	0	0	0	0	0	0	0	0	0	0	0	0	81017 1.000
Mackerel	5+6	(5)												
Pollock	5	577 1.341	380 .224	12 .007	0	0	1694 1.000	1 .001	89 .053	0	0	0	27 .016	9 .005
Cusk	5Ze	(6)												
Lobster	5Ze	0	0	0	0	0	0	0	0	0	0	0	0	133 1.000
Herring	5Y	0	0	0	0	0	0	0	0	.921 1.000	0	0	0	0
Herring	5Z+6	(5)												
Cod	5Z	1418 1.000	275 .194	18 .013	0	0	254 .179	2 .001	267 .188	0	0	0	13 .009	37 .026
Cod	5Y	(5)												
Haddock	5	249 .326	763 1.000	9 .012	0	0	152 .199	2 .003	68 .089	0	0	0	5 .007	4 .005
Silver Hake	5Ze	(5)												
Red Hake	5Ze	(5)												
White Hake	5	(6)												
Argentine	5	(6)												
Squid ⁽⁷⁾	5+6	0	2 .500	0	0	0	0	0	2 .500	0	0	0	0	4 1.000
Redfish	5	4 .027	2 .014	146 1.000	0	0	13 .089	0	6 .041	0	0	0	0	4 .027
Yellow tail	5Ze	(5)												
Yellow tail	5+6	(5)												
Other Grdfish	5+6	90 .443	30 .148	0	0	0	3 .015	1 .005	203 1.000	0	0	0	2 .010	0

Table 2:
1976 USA by-catch and by-catch ratios of major species and species groups for which Canada had no directed fishery. (See footnote 5)

		BY-CATCH SPECIES OR SPECIES GROUP												
Directed Fishery By area		Cod	Had-ock	Red-fish	Sil. hake	Red hake	Pol-lock	Yellow-tail	Other Grdfish	Herring	Mackerel	Other Pelagics	Other Finfish	Inverts
Mackerel	5+6	0	0	0	8 .007	0	0	0	3 .002	21 .017	1203 1.000	28 .023	16 .013	1 .001
Herring	5Z+6	0	0	0	0	0	0	0	0	620 1.000	0	0	0	0
Cod	5Y	4042 1.000	248 .061	40 .010	167 .041	40 .010	445 .110	172 .043	634 .157	4 .001	1 *	0	1 *	19 .005
Silver Hake	5Ze	51 .014	13 .003	3 .001	3732 1.000	5 .001	13 .003	2 .001	42 .011	0	0	1 *	1 *	43 .012
Red Hake	5Ze	(1)												
Yellow tail	5Ze	606 .052	106 .009	0	2 *	0	38 .003	11690 1.000	1642 .140	0	0	1 *	0	143 .012
Yellow tail	5+6	796 .061	109 .008	0	37 .003	3 *	39 .003	12990 1.000	2009 .155	0	0	1 *	4 *	145 .011

Table 3. 1976 By-catch and by-catch ratios in the USSR Red Hake Fishery.

Red Hake	5Ze	6 *	4 *	0	363 .028	12862 1.000	64 .005	0	151 .012	0	356 .028	118 .009	848 .066	1902 .148
----------	-----	--------	--------	---	-------------	----------------	------------	---	-------------	---	-------------	-------------	-------------	--------------

1. USA had no directed red hake fishery in 5Ze, refer to USSR ratios.

* Less than .0005

Footnotes to Tables

1. Ratio of the incidental catch of the given species or species group, to the catch of the main species sought in the fishery.
2. Major species and species groups as reported by ICNAF. Other groundfish includes all groundfish species not described as a main species, while other pelagics and other finfish include all pelagics except herring and mackerel, and any other finfish not covered by other groupings, respectively.
3. First line in table is actual catch in metric tons.
4. Second line in table is the by-catch ratio. (Example: whatever catch of pollock which Canada took, an additional 34.1% in tons, of cod was also taken).
5. Canada did not have a directed fishery on this stock, refer to USA table for ratios.
6. This is not considered a main species by ICNAF and therefore was not separated to species. It is included in the other groundfish values.
7. Squid (5+6) includes catches of both Loligo and Illex. By-catch data for separate species is not available.
8. Invertebrates include squid, lobster, scallops, and other non-specified invertebrate catches.