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Redfish Fishing by Canadian (Nfld.) Trawlers in the Light
of Proposals for Exemption of Regulated Species in Subarea 3

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Introduction

Amendments to existing trawl regulations for Subarea 3 (involving the introduction of a minimum mesh size of $4\frac{1}{2}$ inches for cod, haddock and other groundfish with exemptions for vessels fishing primarily for redfish in Divisions 3N, 3O and 3P, etc., etc.) were adopted by the Commission at the Eleventh Annual Meeting (June 1961) and were subsequently circulated to Member Governments for consideration and ratification. Since all countries have not yet completed their considerations the proposed regulations have not yet entered into force.

At the Fourteenth Annual Meeting (June 1964) preliminary consideration was given to a Canadian proposal that existing and proposed trawl regulations be further amended and this was referred to the 1965 Annual Meeting for further consideration.

In order to provide information on the effects of these recently proposed amendments as well as the earlier 1961 proposal on the Canadian (Nfld.) fishery, an analysis was carried out on 1962 and 1963 landing statistics for Canadian trawlers operating out of Newfoundland ports. As might be expected, the information available is deficient to the extent

that mesh measurements of trawls are not available for many trips, particularly for those in which redfish was the main species landed. Thus, when a vessel was fishing for redfish (i.e. redfish was the main species landed), it is assumed that a small-mesh trawl was used, although in some cases this may not have been so particularly by some of the vessels which make only a few occasional trips for redfish during the year. Thus the numbers of violations shown in the following Tables are most certainly maxima. The analysis was further complicated by a number of trips, which could be classed as mixed trips (i.e. trips in which quantities of two or more species formed significant parts of the landings). All such trips in which redfish consisted of 50% or more of the total landing by weight of all species were classed as redfish trips.

Groundfish landings

A summary of groundfish landings from Subarea 3 by all Canadian (Nfld.) trawlers (51-500 gross tons) and of groundfish landings by trawlers fishing for redfish is shown in Table 1. Since the proposed exemptions, if introduced, will apply only to Divisions 3N, 3O and 3P, it was necessary to separate the fishing trips and the landings into 3 categories: those in the northern part of Subarea 3 (i.e. 3KLM, but actually 3LM) where the proposed exemptions would not be applicable; those trips in the southern divisions of Subarea 3 (i.e. 3NOP); and those trips which were mixed between one or more of the northern divisions and one or more of the southern divisions (here referred to as 3L(NOP)).

While redfish constituted one-quarter (1962) to one-third (1963) of all groundfish landings by trawlers, it made up about 90% of all groundfish landed by trawlers while redfish fishing. No actual redfish fishing occurred in Divisions 3LM, flounder (American plaice) and cod being the main species sought, and redfish formed a very insignificant part of these landings.

Trips to Divisions 3L(NOP) consisted mostly of flounder trips, but a few were classed as redfish trips. Such trips usually involved the fishing for flounder in 3L for a day or two while en route to or from Division 3N where redfish fishing was carried out. Consequently flounder usually formed significant parts of the landings of such redfish trips. Likewise many of those so-called "mixed division" trips were flounder trips with redfish forming significant parts of the landings.

Most of the redfish fishing by Canadian (Nfld.) trawlers was carried on in Divisions 3NOP, and redfish formed 94% and 90% of the landings of redfish trips in 1962 and 1963 respectively. Trawlers operating out of ports on the east coast of Newfoundland and the eastern part of the south coast normally fish for redfish on the southeastern slope of the Grand Bank (Division 3N), while those operating from ports along the western half of the south coast normally do their redfish fishing in 3P and Subarea 4, the latter not being considered in this analysis.

Effect of the 1961 proposed exemption for cod,
haddock and other groundfish in Divisions 3NOP

This proposal indicates a violation when a vessel, fishing primarily for redfish, has on board amounts of cod (together with other groundfish with the exception of haddock and redfish) or haddock (together with other groundfish with the exception of cod and redfish) in excess of 10% by weight for each of all fish on board such vessel (ICNAF Ann. Proc., Vol. 11, 1961). As pointed out by Sandeman (Doc. , this meeting), Paragraph 6 of the proposed regulations for Subareas 1-3 implies that the regulated species, although embracing many different species in addition to cod and haddock, do not actually include any of the flounders (plaice, witch, yellowtail), despite the fact that they were included in the recommendation of Panel 3 at the time of formulation of the proposed regulations. Since this omission is perhaps technical rather than intentional, flounders have actually been included in "other groundfish" for purposes of this analysis.

Table 2 sets out for 1962 and 1963 the number of presumed violations under the above proposal. For those trips in 3L(NOP) all but one of the redfish trips would have been violations, if such a regulation were in force, and in most cases the presumed violations were the result of excessive quantities of flounder. In 3NOP, where most of the redfish fishing is carried on by Canadian (Nfld.) trawlers, 17% of the redfish trips could be classed as violations in 1962, but this increased to 27% in 1963. While most of the presumed violations in 1962 were due largely

to excessive amounts of flounders landed from trips in Division 3N, the increase in 1963 is due to excessive amounts of cod taken in 3P in conjunction with an increase in the fishing activity for redfish in the winter and spring months. Normally in winter and spring most of the trawlers are involved in haddock fishing, but the rapid decline in abundance of haddock resulted in an increase in redfish fishing in 1963.

Effect of the 1965 proposed amendment for exemption
of cod, haddock and flounders in Divisions 3NOP

This proposal indicates a violation when a vessel, fishing primarily for redfish, has on board amounts of cod, haddock or flounders in excess of 2268 kg (5000 lb) for each or 10% by weight for each, of all fish on board such vessel, whichever is greater, or so long as a vessel does not catch in any period of twelve months cod, haddock or flounders in excess of 10% by weight for each, of all the trawl-caught fish taken by such vessel in that period of twelve months (From the Amendment proposed for consideration at the 1965 Annual Meeting of ICNAF, Serial No. 1467).

Trip exemption for 3NOP

Table 3 sets out for 1962 and 1963 the number of presumed violations on a trip basis. As mentioned before those shown for 3L(NOP) involve redfish trips in most of which the quantity of flounder exceeded the 10% allowance. None of these so-called "mixed division" trips would

be permitted under the proposed regulation since fishing for redfish with a small-mesh net in 3L and all divisions and subareas to the north would be prohibited.

In Divisions 3NOP, where most of the redfish fishing by Canadian (Nfld.) trawlers is carried on, 12% of the redfish trips in 1962 and 21% in 1963 exceeded the 10% allowance for each of cod, haddock and flounders. In 1962 most of the presumed violations were due to excesses of flounders while in 1963 nearly one-half of the presumed violations had quantities of cod in excess of the 10% allowance.

The proposed 2268 kg (5000 lb) trip exemption in 3NOP had only a very slight effect on the number of presumed violations in 1962 and 1963, mainly because of the very small number of small trawlers operating from Newfoundland ports. Actually this part of the proposed regulation would be beneficial to small trawlers operating on short one- or two-day trips and to larger trawlers in cases where trips are terminated due to mechanical or other breakdowns after a day or two fishing.

Annual exemption for 3NOP

In order to comply with this part of the proposed regulation, a vessel would need to fish in those divisions primarily for redfish (using a small-mesh net) for most of a 12-month period. In 1962 and 1963 none of the Newfoundland trawlers in the 151-500 gross tonnage class had landings which came close to the type of situation where such an annual exemption would apply. There was only one small trawler (54 tons) which fished

wholly for redfish during those two years and most of this fishing probably occurred within territorial waters.

If, on the other hand, the proposed annual exemption for 3NOP applied, for any trawler, to those trips in which fishing primarily for redfish occurred (i.e. redfish trips), the landings of regulated species for such trips on an annual basis would for most Canadian (Nfld.) trawlers be considerably below the 10% allowable exemption for cod, haddock or flounders. Table 4 shows that on the basis of redfish trips in 3NOP two of 28 trawlers landed more than the 10% allowance of flounder in 1962, and of 30 trawlers involved in some redfish fishing in 1963 one exceeded the 10% allowance for haddock and 6 for flounders. There is some doubt whether the one vessel which exceeded the 10% allowance for haddock really should be considered, since the one trip in which haddock were caught, although classed as a redfish trip, consisted of (according to the vessel log) haddock fishing during the first half of the trip followed by redfish fishing when haddock became scarce. Incidentally this vessel made only 2 redfish trips in 1963. The average number of redfish trips and of "all species" trips for the trawlers involved in redfish fishing in 3NOP are as follows:

| Year | No. of trawlers | Av. no. of "all species" trips | Av. no. of redfish trips | Range of frequency of redfish trips |
|------|-----------------|--------------------------------|--------------------------|-------------------------------------|
| 1962 | 28 | 24.8 | 9.6 | 1-16 (1 with 49) |
| 1963 | 30 | 21.3 | 10.3 | 1-28 (1 with 36) |

The bracketed values refer to one trawler of the 51-150 tonnage class whose trips in 1962 and 1963 were all classed as redfish trips.

Discussion

Trip exemption (1961 proposal). The 1961 proposed trawl regulations, so far as they relate to Subarea 3, define "groundfish" as including "all those species defined as such in the Statistical Bulletin of ICNAF". Cod, haddock, redfish and halibut are defined as "groundfish", and the term "other groundfish" includes such species as wolffishes, ocean pouts, pollock, white hake, silver hake, sand eels (launces), etc. Although flounders (American plaice, yellowtail, witch, etc.) were included in the recommendation of Panel 3 made at the 1961 Annual Meeting, technically they are not included in the proposal for trawl regulations for Subarea 3 originating from that Meeting, the omission being presumably unintentional.

Except for cod, haddock, redfish, halibut, flounders and possibly white hake, none of the other species mentioned above are caught in sufficient quantities in 3NOP to maintain a fishery for them separately or together, but they do occur almost regularly but incidentally in most catches which result from fishing activity aimed at the main groundfish species. If such species as silver hake and sand eels were fished, they would require an exemption from the regulation because of their small size. Sand eels appear to be plentiful but silver hake appear to be scarce in 3NOP at the present time. As the 1961 proposed exemption now stands, although a 20% maximum is implied, a vessel may have on board as much as 89.9% redfish (with 10% cod or haddock and 0.1% other groundfish) and still violate the regulation. In the light of the 1961 proposed exemption examination of the 1962 and 1963 records of redfish trips in 3NOP by Canadian (Nfld.) trawlers show the following:

| Year | No. of redfish trips | No. of presumed violations | No. of these violations when redfish formed between 80% and 90% of the trip landing |
|------|----------------------|----------------------------|---|
| 1962 | 269 | 46 | 25 |
| 1963 | 309 | 86 | 36 |

Trip exemption (1965 proposal). While cod, haddock, redfish and American plaice are the major species to which nearly all the fishing effort by trawlers is directed in Subarea 3, small quantities of such incidental species as halibut, pollock, white hake and wolffish are regularly caught and landed by Canadian (Nfld.) trawlers. From the 1962 and 1963 landing statistics these "other groundfish" species together amounted to about 1% of the total groundfish (including flounders) taken on redfish trips in 3NOP. While the 1961 proposal for trawl regulations in Subarea 3 provided an exemption for these "other groundfish" species when trawlers are primarily fishing for redfish in 3NOP, no such exemption is provided for in the 1965 proposed amendment.

Annual exemption (1965 proposal). The fishing activity of nearly all the Newfoundland trawlers is normally directed toward various of the major groundfish species, often at different times of the year, and not primarily to redfish. Since this annual exemption clause is only of benefit to trawlers fishing primarily for redfish, under present patterns of fishing it would have little application as an exemption practice for Newfoundland trawlers but would be useful if more trawlers engaged in redfish fishing.

Table 1. Comparative groundfish landings (metric tons) by all Canadian (Nfld.) trawlers (51-500 tons) from Subarea 3 and by those Canadian (Nfld.) trawlers for trips when redfish was the main species (i.e. redfish constituted 50% or more of the landing).

| Year | Species | Landings by all Canadian (Nfld.) trawlers in Subarea 3 | | | Landings by Canadian (Nfld.) trawlers for trips when redfish was main species | | | Total | |
|--------------|------------|--|---------|--------|---|---------|-------|-------------|-------------|
| | | 3L-M | 3L(NOP) | 3NOP | 3L-M | 3L(NOP) | 3NOP | | |
| 1962 | Redfish | 59 | 1,126 | 13,667 | 14,852(26%) | - | 795 | 12,995(94%) | 13,790(91%) |
| | Cod | 1,407 | 785 | 2,985 | 5,177 (9%) | - | 70 | 250 | 320 (2%) |
| | Haddock | - | 312 | 20,906 | 21,218(36%) | - | 2 | 94 | 96 (1%) |
| | Flounders* | 7,164 | 2,616 | 6,092 | 15,872(27%) | - | 317 | 453 | 770 (5%) |
| | Others | 45 | 73 | 877 | 995 (2%) | - | 4 | 98 | 102 (1%) |
| | Total | 8,675 | 4,912 | 44,527 | 58,114 | - | 1,188 | 13,890 | 15,073 |
| No. of trips | 143 | 74 | 693 | 910 | - | 16 | 269 | 285 | |
| 1963 | Redfish | 73 | 507 | 16,910 | 17,490(32%) | - | 345 | 15,160(90%) | 15,505(89%) |
| | Cod | 2,694 | 531 | 4,380 | 7,605(14%) | - | 69 | 695 | 764 (4%) |
| | Haddock | 2 | 73 | 6,704 | 6,779(13%) | - | - | 118 | 118 (1%) |
| | Flounders* | 11,086 | 2,200 | 7,730 | 21,016(39%) | - | 100 | 699 | 799 (5%) |
| | Others | 55 | 37 | 771 | 863 (2%) | - | 3 | 112 | 115 (1%) |
| | Total | 13,910 | 3,348 | 36,495 | 53,753 | - | 517 | 16,784 | 17,301 |
| No. of trips | 199 | 50 | 638 | 887 | - | 6 | 309 | 315 | |

* Flounders - mostly American plaice and witch.

Table 2. Presumed violations by Canadian (Infld.) trawlers under the 1961 proposal for trawl regulations in Subarea 3. (ICNAF Annual Proceedings, Vol. 11 for 1960-61, pp. 15-17).

| Year | Tonnage | No. of vessels making redfish trips | 3L(NOP) | | | 3NOP | | | Subarea 3 | | |
|------|---------|-------------------------------------|----------------------|----------------------------|----------------------|----------------------------|----------------------|----------------------------|----------------------|----------------------------|--|
| | | | No. of redfish trips | No. of presumed violations | No. of redfish trips | No. of presumed violations | No. of redfish trips | No. of presumed violations | No. of redfish trips | No. of presumed violations | |
| 1963 | 51-150 | 3 | - | - | 49 | 11 | 49 | 11 | 49 | 11 | |
| | 151-500 | <u>25</u> | <u>16</u> | <u>15</u> | <u>220</u> | <u>35</u> | <u>236</u> | <u>50</u> | <u>236</u> | <u>50</u> | |
| | | 28 | 16 | 15 (94%) | 269 | 46 (17%) | 285 | 61 (21%) | 285 | 61 (21%) | |
| 1963 | 51-150 | 2 | - | - | 40 | 10 | 40 | 10 | 40 | 10 | |
| | 151-500 | <u>28</u> | <u>6</u> | <u>6</u> | <u>269</u> | <u>74</u> | <u>275</u> | <u>80</u> | <u>275</u> | <u>80</u> | |
| | | 30 | 6 | 6 (100%) | 309 | 84 (27%) | 315 | 90 (29%) | 315 | 90 (29%) | |

Table 3. Presumed violations by Canadian (Hfld.) trawlers in Subarea 3 under the 1965 proposed amendment to trawl regulations (both without and with the 2268 kg trip exemption clause).

| Year | Tonnage | 3L(NOP) | | | | 3NOP | | | | Subarea 3 | | | | | | |
|------|---------|-------------------------------------|----------------------|--|--------------|-----------|----------------------|--|--------------|-----------|----------------------|--|--------------|-------|----|-----------|
| | | No. of vessels making redfish trips | No. of redfish trips | No. of trips over the 10% allowance of redfish | Cod Had. Fl. | Total | No. of redfish trips | No. of trips over the 10% allowance of redfish | Cod Had. Fl. | Total | No. of redfish trips | No. of trips over the 10% allowance of redfish | Cod Had. Fl. | Total | | |
| 1962 | 51-150 | 3 | - | - | - | - | 49 | 3 | - | 1 | 4 | 49 | 3 | - | 1 | 4 |
| | 151-500 | <u>25</u> | <u>16</u> | - | <u>15</u> | <u>15</u> | <u>220</u> | 2 | 3 | 22 | <u>27</u> | <u>236</u> | 2 | 3 | 37 | <u>42</u> |
| | 28 | 16 | | 15 (94%) | 269 | 31(12%) | 285 | | | | 31(12%) | 285 | | | | 46(16%) |
| 1963 | 51-150 | 2 | - | - | - | - | 40 | 7 | - | 1 | 8 | 40 | 7 | - | 1 | 8 |
| | 151-500 | <u>26</u> | <u>6</u> | 2 | <u>4</u> | <u>6</u> | <u>269</u> | 27 | 3 | 28 | <u>58</u> | <u>272</u> | 29 | 3 | 32 | <u>64</u> |
| | 30 | 6 | | 6(100%) | 309 | 66(21%) | 315 | | | | 66(21%) | 315 | | | | 72(23%) |
| 1962 | 51-150 | 3 | - | - | - | - | 49 | 1 | - | 1 | 2 | 49 | 1 | - | 1 | 2 |
| | 151-500 | <u>25</u> | <u>16</u> | - | <u>15</u> | <u>15</u> | <u>220</u> | 1 | 3 | 21 | <u>25</u> | <u>236</u> | 1 | 3 | 36 | <u>40</u> |
| | 28 | 16 | | 15 (94%) | 269 | 27(10%) | 285 | | | | 27(10%) | 285 | | | | 42(15%) |
| 1963 | 51-150 | 2 | - | - | - | - | 40 | 4 | - | - | 4 | 40 | 4 | - | - | 4 |
| | 151-500 | <u>28</u> | <u>6</u> | 2 | <u>4</u> | <u>6</u> | <u>269</u> | 27 | 3 | 28 | <u>58</u> | <u>275</u> | 29 | 3 | 32 | <u>64</u> |
| | 30 | 6 | | 6(100%) | 309 | 62(20%) | 315 | | | | 62(20%) | 315 | | | | 68(22%) |

Without the 2268 kg trip exemption

With the 2268 kg trip exemption

Table 4. Number of Canadian (Nfld.) trawlers landing more than a 10% annual allowance of cod, haddock and flounders while primarily fishing for redfish in 3NOP in 1962 and 1963.

| Year | Tonnage class | No. of vessels | No. of vessels landing more than 10% allowance of | | | | Total |
|------|---------------|----------------|---|----------|-----------|----------|-------|
| | | | Cod | Haddock | Flounders | | |
| 1962 | 51-150 | 3 | 0 | 0 | 0 | 0 | |
| | 151-500 | <u>25</u> | <u>0</u> | <u>0</u> | <u>2</u> | <u>2</u> | |
| | | 28 | 0 | 0 | 2 | 2 | |
| 1963 | 51-150 | 2 | 0 | 0 | 0 | 0 | |
| | 151-500 | <u>28</u> | <u>0</u> | <u>1</u> | <u>6</u> | <u>7</u> | |
| | | 30 | 0 | 1 | 6 | 7 | |