

August 20, 1993

Honourable Ross Reid, P.C., MP
Minister of Fisheries and Oceans
House of Commons
Ottawa, Ontario
K1A 0A6

Dear Minister:

Section 4.5 of the Terms of Reference of the Fisheries Resource Conservation Council (FRCC) states:

“The Council may also advise the Minister on the position to be taken by Canada with respect to straddling and transboundary stocks under the jurisdiction of international bodies such as the Northwest Atlantic Fisheries Organization (NAFO)”.

Consequently, the FRCC, has reviewed the Report of the NAFO Scientific Council (NAFO SCS Doc. 93/17) with specific reference to matters of particular interest to Canada, and offers advice on NAFO managed stocks as well as 2J3KL cod, Greenland halibut in Subarea 2 and Divisions 3K and 3L, and shrimp in Division 3M.

A. 2J3KL COD

Based upon the stock assessment report by scientists in the Department of Fisheries and Oceans, as well as the Report of the Scientific Council of NAFO, the situation of the 2J3KL cod (Northern Cod) stock can be characterized as follows:

1. The Stock continues to decline and is in a very depressed state, believed to be at the lowest level of abundance experienced during the 20th century.
2. Total biomass is estimated to be as low as 100,000 to 150,000 tonnes and the spawning biomass as low as 15,000 to 22,000 tonnes (these numbers are less than 10% of comparable numbers just a few years ago).
3. The distribution of the remaining fish is considerably different from historical patterns. The latest surveys show the reduced biomass to be approximately 2% in 2J; 15% in 3K; and 83% in 3L as compared to the longer term average of about 33% in each division. Furthermore, the fish have moved to deeper water in recent years. In fact, the only significant concentration of fish located by DFO acoustic surveys in February and June 1993 was on the “Nose” of the Grand Bank, outside the 200 mile limit.
4. The precise cause of this situation is not clear. Total mortality has been very high - higher than can be accounted for by known fishing mortality and the normal assumptions of natural mortality. To quote from the NAFO Scientific Council report, “Natural mortality may have increased as a result of harsh climatic conditions, poor feeding, predation by seals or competition with them, or emigration out of the area.”
5. Environmental conditions are having an adverse impact on recruitment and the growth of young fish. After the 1986/87 year classes there have been 5 consecutive years of observed, or predicted to be, poor recruitment. In addition, the spawning biomass has collapsed.
6. Stock recovery in the near future is unlikely and substantial recovery of the spawning biomass is unlikely before the year 2000 at the earliest. At this stage, there are no reasons to be optimistic about stock recovery even then.

7. Realistic projections about stock rebuilding are impossible until we better understand the reasons for the decline and until the various stock indicators reverse their downward trends.

From a conservation point of view, it is clear that given the continuing decline and continuing poor recruitment, it is prudent not to fish. Within Canadian waters, this means that the moratorium on commercial fishing will have to be continued past May 1994. (The FRCC will be addressing this, as well as the 2J3KL recreational fishery, more specifically in subsequent reports.) In addition, there should be no fishing whatsoever on 2J3KL cod outside the 200 mile limit and every effort must be made to protect any portion of the stock on the "Nose" of the Bank and to keep the catch in that area to zero.

The Fisheries Resource Conservation Council recommends that Canada's position be a continuing moratorium on fishing 2J3KL cod outside 200 miles.

The Council also notes the importance of increased monitoring of (a) the location of 2J3KL cod concentrations in the area, and (b) the location and extent of all fishing activity in the area, with cooperation in this effort by all members.

B. FOUR KEY STOCKS ON THE GRAND BANK

There are four NAFO managed straddling stocks on the Grand Bank which are of significant importance to Canada. These are:

- American plaice in Divisions 3L, 3N and 3O
- Witch flounder in Divisions 3N and 3O
- Yellowtail flounder in Divisions 3L, 3N and 3O
- Cod in Divisions 3N and 3O

The following table shows the TAC and catches of these stocks since 1986.

TACs and Catches of the 4 Key Stocks
(000's tonnes)

Year		1986	1987	1988	1989	1990	1991	1992	1993
American plaice 3LNO	TAC	55	48	40	30.3	24.9	25.8	25.8	10.5
	Catch	64.6	55	40.8	43.4	32.5	34	11.1	
Yellowtail flounder 3LNO	TAC	15	15	15	5	5	7	7	7
	Catch	30.2	16.3	16.3	10.2	14	16.3	10.8	
Witch flounder 3NO	TAC	5	5	5	5	5	5	5	5
	Catch	9	8	7	4	2.7	3.3	4.8	
Cod 3NO	TAC	33	33	40	25	18.6	13.6	13.6	10.2
	Catch	51	42	43	33	29	29	12.6	

Source: Report of NAFO Scientific Council (NAFO SCS Doc. 93/17)
NAFO Quota Table - 1993

As can be seen, catches have significantly exceeded TACs. These excess catches have occurred in the regulatory area outside the 200 mile limit and have included large amounts of juvenile fish both by member and non-member countries. Canada's share of the TAC is: American Plaice (98.5%); Witch Flounder (60%); Yellowtail flounder (97.5%) and Cod (47.6%). The following highlights key information on these stocks based on the report of the NAFO Scientific Council:

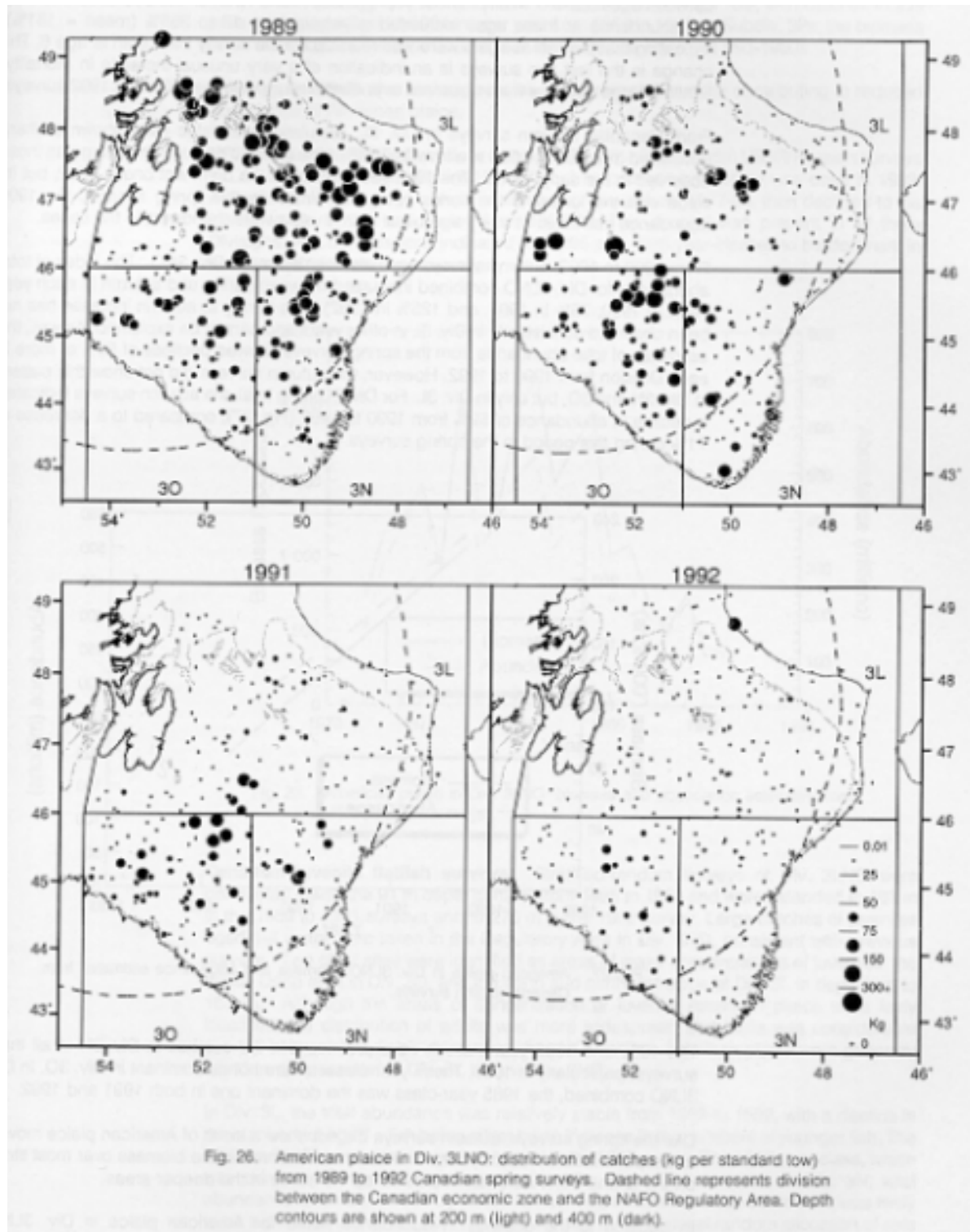
American Plaice in Divisions 3L, 3N and 3O

This stock has experienced very rapid decline in recent years and is far below its historic average. Catches, which were stable at about 50,000 tonnes during the 1970's, declined to 33,000 tonnes in 1990-91, and 11,000 tonnes in 1992. The spawning biomass has declined since 1985 to just 15-20% of its previous level.

The revised 1993 $F_{0.1}$ projection of 4,600 tonnes and the projected $F_{0.1}$ catch for 1994 of 4,800 tonnes are about 10% of the average catch from this stock from 1978 to 1991. Further, it is suggested in the report that this projected catch level for 1994 should be perhaps 40% lower, which is about the magnitude of the retrospective error experienced in the assessment of this stock. This would give a revised catch level in the order of 3,000 tonnes.

In addition to the dramatic stock decline (particularly in Division 3L), there has been a drastic change in the relative distribution of American Plaice, including a virtual disappearance from many former areas of high abundance on the Grand Bank. The remaining biomass is concentrated in Division 3O where, in 1991 and 1992, for the first time the Canadian directed fishery was higher than in either 3N or 3L. Information from the commercial fishery indicates that this factor is even more pronounced in 1993.

The following figure shows the change in distribution:



The scientific report further states that the prospects for rebuilding the stock are unknown and it is not clear if the current decline will be halted even in the absence of a fishery.

Given the extremely low population size in 1992, concerns about the spawning stock biomass, and the expectation of very poor recruitment, the NAFO scientific Council concluded “that a cautious approach was warranted and recommended that the American Plaice catch in Division 3LNO in 1994 should be kept at the lowest possible level, and should not exceed a maximum of 4,800 tonnes. Prospects for rebuilding the stock are unknown, as there are no data to suggest that this stock has ever been at such a low level before.”

Witch Flounder in Division 3N and 3O

During the mid to late 1980’s, catches exceeded TACs by large margins but have been relatively stable at the TAC level of 5,000 tonnes since then.

The biomass in Division 3N continues to be extremely low and in Division 3O, where most of the stock is located, the biomass declined slightly during the 1984-90 period and more sharply thereafter. The 1993 value is near the lowest observed in the time series.

Distribution data from the spring surveys indicated that witch flounder was most abundant along the southwest side of the Grand Bank, primarily in Division 3O. The Canadian fishery has been almost entirely in this Division.

The Scientific Council of NAFO suggests that recent catch levels in Division 3O are too high and advises that catches of this stock should not exceed 3,000 tonnes in 1994. The Council was not able to calculate an appropriate lower value. It noted, however, that even with average catches of only 2,600 tonnes in Division 3O during 1984-90, the survey biomass in that division declined.

Yellowtail Flounder in Divisions 3L, 3N and 3O

Given poor recruitment prospects, this stock shows no sign of rebuilding from the low levels experienced since 1988, which have been approximately at the lowest observed level. The biomass is approximately one-half of what it was in 1985. The potential growth from the 1984-86 year classes has not occurred, probably because of huge catches of juveniles in the NAFO Regulatory Area and overall catches in recent years around 10,000 - 16, 000 tonnes (versus TACs of 5,000 - 7,000 tonnes). There is still considerable uncertainty with respect to the catch data for this stock.

There has also been a change in stock distribution, with a contraction, as the stock declined, towards a centre on the western side of the Southeast Shoal in Division 3N. The research survey data shows that most of the biomass of this stock is in 3N where it is relatively stable at lower levels. In Division 3L it has declined to practically zero. In Division 3O, there has been an increase.

Control of catches of small fish in the regulatory area is necessary to protect future recruitment and increase the potential for stock rebuilding. The Scientific Council of NAFO noted that catches have to be kept in line with the TAC and advised that the TAC for 1994 be 7,000 tonnes.

Cod in Divisions 3N and 3O

In recent years, catches have declined from approximately 51,000 tonnes in 1986 to 12,600 tonnes in 1992. During the same period, the spawning biomass has declined from approximately 200,000 tonnes to 60,000 tonnes.

The total biomass of this stock is near the lowest level ever recorded. Recent declines have been much greater in Division 3N than in 3O. The adult population will continue to decline as several weak year classes recruit to the spawning biomass. The 1989 year class (age 3 in 1992) may have been above the recent average, however “the fishery in the Regulatory Area during 1991 and 1992 caught a substantial number of individuals from this year class. It was estimated that 4.5 million cod of age 3 were caught primarily in the first half of 1992 when they were 30 to 40 cm in length.” This was additional to approximately 6 million caught at age 2 in 1991. The report went on to state that “the catch of such high numbers of cod in this length range would suggest that an effective trawl mesh size considerably smaller than 130 mm might have been used.”

The Scientific Council observed that the spawning biomass may never improve beyond current estimates if fisheries on immature cod continue at the current high levels. They recommend that catches of cod in Divisions 3NO in 1994 should not exceed 6,000 tonnes.

Conclusions:

1. Estimated biomass levels for all four stocks are at or near the lowest levels ever observed and stock rebuilding is uncertain. With the possible exception of yellowtail flounder, these stocks are in a precarious state. The most notable concern is for American Plaice.
2. Actual biomass levels may be even lower than estimated, given continuing catch data reliability problems with respect to fisheries in the regulatory area.

3. There are continuing problems with the catch of juveniles of 3LNO American Plaice, 3LNO Yellowtail Flounder and 3NO Cod to the extent that the rare above average year classes are not contributing to rebuilding the spawning stock biomass.
4. Most of the remaining biomass of all four stocks is now found in Divisions 3N and 3O, primarily 3O. So is much of the Canadian commercial fishing effort.
5. The revised 1993 $F_{0.1}$ projection for 3LNO American plaice is 4,600 tonnes and for 3NO cod, approximately 8,000 tonnes. However, TACs established by the NAFO Fisheries Commission (although intended to be conservative) have not stopped the continuing decline of these stocks. Given the current precarious state, the Council believes that setting TACs at the $F_{0.1}$ reference level, or any other reference level, will not be effective in stopping the decline. A more radical approach is necessary.
6. To cease fishing all four stocks is the only logical stock rebuilding option.

C. GREENLAND HALIBUT IN SUBAREA 2 AND DIVISIONS 3K AND 3L

Canadian catches of this stock in traditional areas have experienced significant declines since the mid-80s. In 1991 and 1992 the Canadian gillnet effort shifted to the deep slopes of the continental shelf in Division 3K and northern Division 3L at depths in excess of 800-1,000 metres. In addition, in 1990 an extensive fishery developed in the deep water (down to 1,500 m) in the Regulatory Area, around the boundary of Divisions 3L and 3M. By 1991 it had extended into Division 3N and is now into Division 3O.

The report states that a substantial part of the stock being exploited in the Regulatory area of Division 3L, 3M, and 3N is likely to have been re-distributed from Division to the North (2J and 3KL); the recommended catch (50,000 tonnes) for the total stock continues to be exceeded (63,000 tonnes in 1992) with about 90% of the catch continuing to come from the Regulatory Area in Divisions 3LMN; and that practically all of the catch consists of immature individuals.

The Scientific Council of NAFO considers analytical assessments to be unacceptable until migratory patterns and stock structure are fully understood and was therefore unable to advise an appropriate TAC for 1994.

From a conservation point of view, the stock situation here is alarming and is characterized by a significantly declining traditional fishery; the absence of mature individuals; and very few year classes contributing to the total biomass. No analytical assessment is available. At the same time certain members of NAFO are fishing in an unrestricted and indiscriminate way with little or no scientific knowledge of the state of the resource they are exploiting. Therefore, the Fisheries Resource Conservation Council recommends that Canada's position include calling for significant reductions in the catches in the regulatory area and a joint commitment to appropriately address the scientific questions in a timely fashion. The Council notes, in the absence of scientific advice, that the historical total catches for this stock have been in the order of 25,000 tonnes annually, and that this should be considered a maximum catch level until analytical assessments are available.

D. SHRIMP IN DIVISION 3M

A new fishery for shrimp has been developing since the spring of 1993 on the Flemish Cap (Division 3M). At times, in the past few months, this has been prosecuted by more than 60 factory trawlers from various NAFO member countries. In only 3 months, the total catches exceeded 21,000 tonnes of which Canada's catch was 3,800 tonnes.

There are two issues. The first is the need for a conservative approach to managing and fishing this resource, including a continuous monitoring of effort and catch rates, until some scientific assessment can be undertaken. The second is a concern for the levels of by-catches (primarily redfish) which were originally low but have increased to as high as 25% of the total catch on average, and much higher in individual cases.

The Fisheries Resource Conservation Council recommends that Canada urge NAFO to immediately implement a cautious and conservative approach to managing this fishery, including limiting fishing effort, rather than waiting until after over-exploitation by unrestricted heavy fishing, as has happened with Greenland halibut in the Regulatory Area.

E. OTHER

In addition, the Council has concerns with respect to other stocks, such as

redfish in Division 3LN, and grenadier in Sub-areas 2 and 3, and recommends that for these, the recommendations of the NAFO Council be followed.

The Fisheries Resource Conservation Council is pleased to be able to offer this advice, and trusts that it will be of some benefit.

A handwritten signature in black ink, appearing to read "Howard Clarke". The signature is written in a cursive, flowing style.

Attachment

APPENDIX

NAFO DIVISIONS 3L, 3N, 3O AND 3M

