FISHERIES RESOURCE CONSERVATION COUNCIL

1998 Conservation Requirements for Grand Banks, Labrador Shelf and Davis Strait Groundfish Stocks

(Excluding Cod 2GH, 2J3KL and 3Ps, and Witch Flounder 3Ps)

Report to the Minister of Fisheries and Oceans

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Chapter 1: Introduction

This report is one of a series that the Fisheries Resource Conservation Council (FRCC) makes to the Minister of Fisheries and Oceans on conservation measures for groundfish stocks in eastern Canada. This report deals with groundfish stocks in the Davis Strait, the Labrador Shelf and the Grand Banks and makes recommendations for the 1998 fishery.

Every year the Fisheries Resource Conservation Council (FRCC) holds public consultations with stakeholders to gather information on all Atlantic groundfish stocks. This information assists us in forming our recommendations to the Minister of Fisheries and Oceans for annual conservation requirements for Atlantic groundfish. For this report we met with fishers and other concerned stakeholders in Deer Lake, Newfoundland on September 12 and in Clarenville, Newfoundland on September 13. We also received a number of written briefs which are noted in appendix 3.

Although this report deals with groundfish stocks in the Davis Strait, the Labrador Shelf and the Grand Banks, it does not include recommendations for cod stocks in divisions 2GH, 2J3KL and 3Ps and witch flounder in 3Ps. Recommendations for those stocks will be included as part of a separate FRCC report to the Minister in March 1998. Also included at that time will be our recommendation for 3Ps witch flounder. Stakeholders have asked that we delay our advice on this stock as they are hoping to organize a science-industry survey for fall 1997.

Special Zonal Assessment

For this year only, the Department of Fisheries and Oceans (DFO) Science will be holding a special zonal assessment for the following cod stocks: 2J3KL, 3Ps, 4RS,3Pn, 4TVn, and 4VsW. This special assessment will be held during the last week in January in order to incorporate all available information into the assessment, including: the upcoming fall and winter surveys, and the results of this years sentinel fishery. Until this special zonal assessment is held the FRCC will not be receiving advice from DFO Science on these cod stocks. It is important for everyone to have the results of the latest assessment before we consult on these stocks.

As a result of this change, the FRCC's fall groundfish consultations will be staggered through out the fall and into the new year. Our schedule for future consultations includes the following:

October 21 - 23: Scotian Shelf and Bay of Fundy Groundfish Stocks (except 4VsW Cod)
October 24: Redfish Units 1, 2, 3 and 3-0
December 1-5: Gulf Groundfish Stocks
February 1998: Cod Stocks (2J3KL, 3Ps, 4RS,3Pn, 4TVn, and 4VsW)

Conservation Issues

During our consultations many concerns were raised about the state and health of groundfish stocks and most of these concerns are dealt with in Chapter 2 of this report in Stock-by-Stock recommendations. However, the Council wishes to high-light some of these concerns and draw particular attention to certain problems.

Greenland Halibut 0B + 1B-F

As part of our recommendations on this stock in *Building the Bridge (October 1996)*, we recommended that "the emerging fishery by gillnets in deep water be carefully monitored as it appears to have serious problems." We noted again in our *Report on Gear Technology in Eastern Canada (March 1997)* that many concerns had been expressed by fishers and other stakeholders about the practices associated with this gear type in the deep water turbot fishery. We recommended as part of that report that "...protocols should be established that limit the amount of gear permitted to that which can be handled in a reasonable time period for the vessel size and area, and that restrict the length of soak time. In areas where there is potential for gear loss, and hence for ghost fishing, this shall be taken into account in developing the protocols on gear amounts, and additional requirements on gear specifications incorporated. Consideration should be given to requiring tagging of nets to facilitate quantification and identification of lost gear."

This year, during our consultations, the problems associated with the excessive use of gillnets at extreme depths were raised more strongly than ever. Fishers expressed grave concern about the effects of this fishery on the Greenland halibut stocks, especially as it relates to ghost fishing by lost nets, unaccounted mortality as a result of float-outs while the net is being hauled, and discards as a result of deteriorating quality brought on by extended soak times. Participants at consultations also expressed concern with respect to

the ghost fishing of gillnets and marine mammals such as narwhal, bowhead and beluga whales which dive to depths of up to 600 fathoms and can become entangled in gillnets.

The FRCC believes that it is necessary to determine the extent to which these problems do exist and as part of our recommendation for this stock in chapter two of this report, we recommend that at-sea observers be deployed in this fishery.

If the concerns which have been raised repeatedly at consultations are proven to be well founded then there will have to be changes made to the way in which this fishery is conducted. As we recommended in the *Groundfish Conservation Framework for Atlantic Canada (July 1997)*, "...if detrimental effects [of this gear] cannot be mitigated, the technology in question should be banned." Fishers at our consultations made the point that there must be a better way to fish and if changes to this fishery are not forthcoming, a possible change in the type of gear employed may have to be recommended.

Skates

In addition to our recommendations in chapter two, it is important to note the frustration of those fishers present at our consultations with respect to the unregulated skate fishery outside of the Canadian 200 mile limit. The effort on skate on the nose and tail of the Grand Banks is far in excess of the amount allowed to be fished by Canadian fishermen and well in excess of the amount that can be sustainably harvested according to the DFO Stock Status Report. The fishery outside 200 miles is prosecuted using 130 mm diamond mesh while that inside the Canadian zone is prosecuted using 300 mm square mesh. This raises concerns with respect to the level and kinds of bycatch that may be caught in this fishery outside of the Canadian zone.

Cod

Although our consultations focused on groundfish stocks other than cod, those who attended our meetings wanted to discuss the problems associated with this specie. Many noted that they were seeing signs of abundance inshore and picking up clear indications of cod on their sounders. This was especially true of fishers in divisions 3Ps and 3L. They are frustrated with the apparent lack of answers as to why the DFO research vessel surveys are showing little signs of cod abundance offshore. Many fishers expressed their frustration with the lack of progress on "offshore sentinel surveys" for cod and with respect to the lack of progress on cooperative industry-science surveys for other species. The FRCC believes that guidelines should be developed for cooperative surveys and we will expand on this in our next "Science Priorities Letter to the Minister of Fisheries and Oceans".

2J3KL Witch Flounder and 2 + 3K American Plaice

The Council is concerned about the prospects for the rebuilding of these stocks given recent suggestions that they have moved to deeper waters outside of the Canadian zone. Council is particularly concerned that these species are being captured as by-catch in the Greenland halibut fishery outside of the Canadian zone where 130 mm diamond mesh is used. The Council wishes to emphasize that any amount of by-catch, especially that of juvenile fish, can diminish the chances of recovery for these stocks. Canada should continue to be vigilant in its efforts to keep by-catches to an absolute minimum and to continue to push NAFO to increase the minimum mesh size in the Greenland halibut fishery to 155 mm square mesh as soon as possible.

By-catch limits

For a number of stocks for which the Council continues to recommend a moratorium on fishing we have recommended that by-catch protocols be applied. This is somewhat different than our recommendations in previous years where we have recommended that by-catches be limited to a specific number or otherwise be kept to the lowest possible level. We have made this change in light of the obvious difficulty in trying to determine what is an appropriate level of by-catch that will minimize risks for the stocks which are still under moratoria while allowing for continued commercial fishing on other species which are not under moratoria.

We feel that allowing the Department of Fisheries and Oceans (DFO) in conjunction with the industry to determine the appropriate by-catch levels will achieve a compromise that prevents directed fishing or excessive bycatches on species under moratoria while allowing commercial fisheries to continue. This change in wording should not be interpreted as a relaxing of the FRCC's position that by-catches should be kept to the lowest reasonable level.

Chapter 2: Stocks of Grand Banks, Labrador Shelf and Davis Strait

Environmental overview

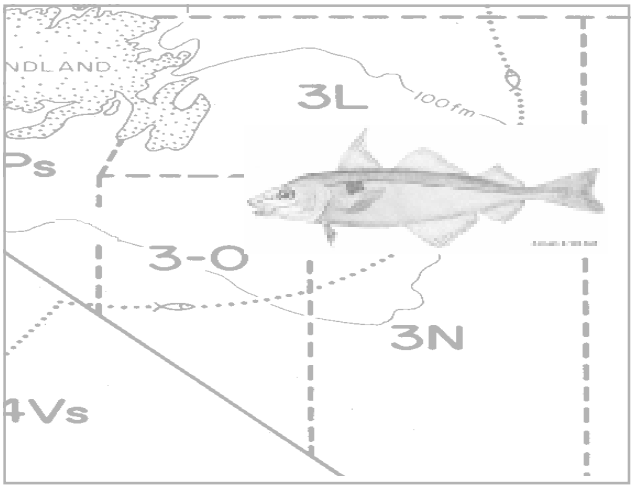
Near-surface oceanographic conditions off Newfoundland and Labrador are strongly related to the general atmospheric circulation over the North Atlantic. The North Atlantic Oscillation (NAO) index provides a simple measure of the strength of northerly winds along Labrador. High positive values of the index, as observed through the 80's and early 90's, are accompanied by cold water temperatures and heavy ice conditions off Labrador and northern Newfoundland. In 1996, the NAO index became negative, a trend which has continued in 1997 and which brought with it milder ocean conditions.

Ice conditions in 1996 were lighter than normal along the Labrador-Newfoundland coast. Relatively warm air temperatures in the fall of 1996 and normal temperatures in the early winter of 1997 led to abnormally low ice conditions in early 1997; by February, however, below normal air temperatures led to heavy ice conditions in the inshore regions in late winter and early spring. Overall, 1997 was also a relatively light ice year, with the ice edge oscillating around its long term median position and total ice area below normal.

Water temperatures, as measured at Station 27, off St. John's, were slightly above normal in 1996 and early 1997, falling about 0.5 to 1.0^{o}C below normal in the summer of 1997 near the surface, but remaining near normal below 100 m. The Cold Intermediate Layer was about normal on the Grand Bank and slightly colder at the Bonavista transect.

Overall then, oceanographic conditions have been rather moderate over the past year and a half, following on recent negative values of the NAO index.

1. Haddock - 3LNO



History Of FRCC Recommendations:

In November 1993, the Council noted that the TAC had been reduced to 500t for 1993, from 4,100t in 1992, following recommendations from scientists that removals be limited to a by-catch fishery with a precautionary ceiling of no more than 500t. In order to prevent a repeat of the heavy exploitation that was exerted in the mid-1980s on the 1980 and 1981 year-classes, the Council recommended that there be no directed fishing for the 3LNO haddock stock in 1994 and that by-catches be limited to 500t. In November 1994, the Council reiterated its advice for no directed fishery and recommended reducing the by-catch limit to 100t for l995. The Council noted in l995 that there had been no signs of improved recruitment and there were no prospects for stock improvement in the near future. It again recommended no directed fishing in l996 and a by-catch limit of l00t.

In October 1996, the Council recommended that there be no directed fishing for 3LNO haddock in l997 and by-catches be limited to 100t.

1997 Consultations:

At the FRCC consultation in Clarenville, it was noted that the by-catches of haddock had increased. Fishers didn't want by-catches of haddock to restrict other fisheries such as redfish. They believed that the by-catch limit should be increased to 500t. It was also noted that the by-catch limit had been exceeded by over 100% this year.

Analysis:

The 1996 DFO Stock Status Report and the 1997 Newfoundland Region Groundfish Overview indicate that:

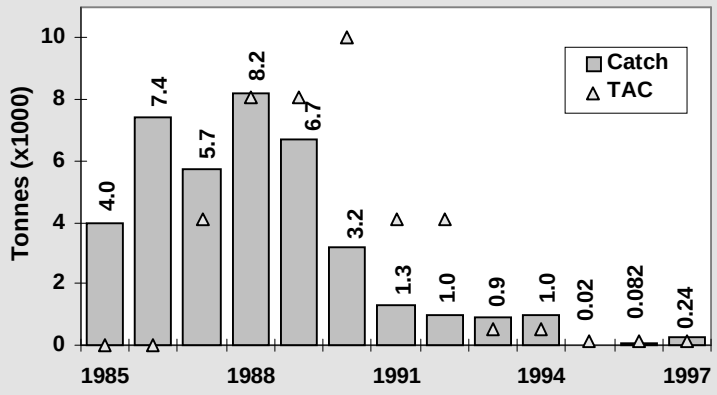
- high catches in the 1980s were due to the strong 1980 and 1981 year classes.
- there is no evidence of more recent strong year-classes.
- there are no prospects of the stock improving in the near future.

Haddock abundance in 3LNO was low throughout the l979's, higher in l984-l988, and subsequently low. Very few haddock have been found in recent research vessel surveys. The research surveys show that recent year classes are weak and there are no prospects of the stock improving in the near future. Fish that reach spawning age must be protected if recruitment is to improve in the future for this stock.

Recommendation # 1:

The FRCC recommends that:

1.1 there be no directed fishing for 3LNO haddock in 1998 and by-catch protocols be applied when prosecuting other fisheries.



*1997 Catch: as of Sept.10/97

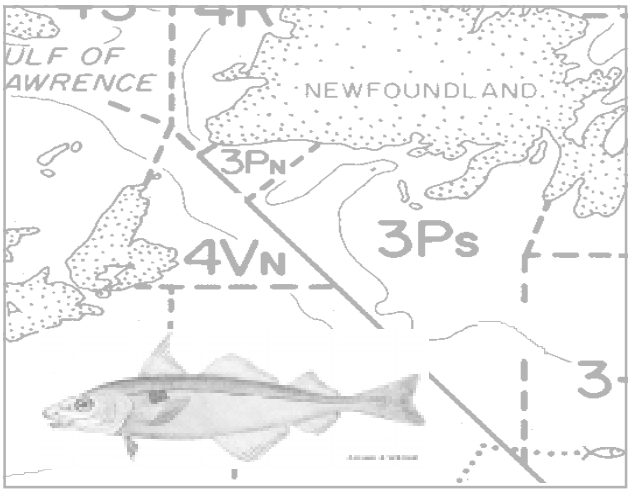
COUNCIL'S VIEWS ON STOCK STATUS:

Overall Stock Indicator: **low**

Compared to average

Spawning Biomass:	**low**
Total Biomass:	**low**
Recruitment:	**no signs of good recruitment**
Growth and Condition:	**not available**
Age Structure:	**all recent year classes weak**
Distribution:	**few in 3L**
Recent Exploitation Level:	**unknown; lower than in the past**

2. HADDOCK - 3PS



HISTORY OF FRCC RECOMMENDATIONS:

In November 1993, the Council noted that the TAC had been reduced to 500t for 1993, from 3,200t in 1992. The by-catch of haddock was significantly reduced because of closures in fisheries for other species. The Council recommended that there be no directed fishing for the 3Ps haddock stock in 1994 and that by-catches be limited to 500t. In November 1994, the Council reiterated its advice for no directed fishery and recommended reducing the by-catch limit to 100t during l995. This advice was repeated for l996.

In October 1996, the Council recommended that there be no directed fishing for 3Ps haddock in l997 and that by-catches be limited to 300t and implemented so as not to impede a limited cod fishery.

1997 CONSULTATIONS:

Haddock were observed at various parts of the division but most were observed at 75-80 fathoms. Fishers reported little sign of recruitment and catches were of mature fish.

ANALYSIS:

The 1996 DFO Stock Status Report and the 1997 Newfoundland Region Groundfish Overview indicate that:

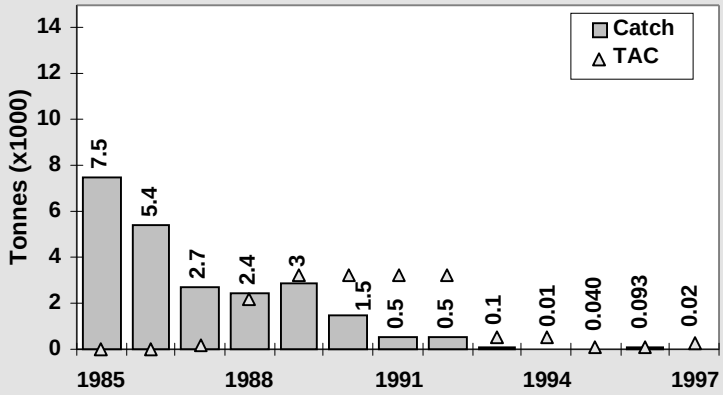
- this stock increased in mid-1980's due to the 1981 year class, which has been fished out.
- there are no signs of improved recruitment in recent years.
- there are no prospects of the stock improving in the near future.

Haddock in Newfoundland waters are at the northern limit of their range in the NW Atlantic. There are few indications of improved recruitment in this stock and there are no prospects of the stock increasing in the near future. The abundance of large fish appears to have increased inshore; an increase in effort for cod would likely exploit this abundance. As this species is taken as by-catch, it is anticipated that catches will increase when cod fishing is re-opened.

RECOMMENDATION # 2:

The FRCC recommends that:

2.1 there be no directed fishing for 3Ps haddock in 1998 and that by-catch protocols be applied when prosecuting other fisheries.



*1997 Catch: as of Sept.10/97

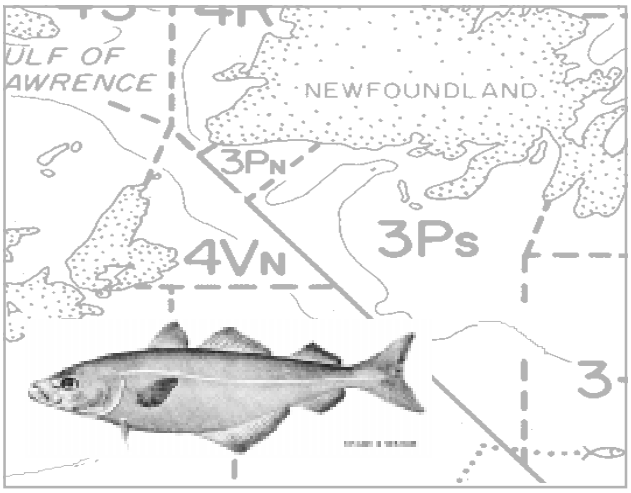
COUNCIL'S VIEWS ON STOCK STATUS:

Overall Stock Indicator: **low**

	Compared to average
Spawning Biomass: low,	**unknown**
Total Biomass:	**low, unknown**
Recruitment:	**poor, no signs of improvement**
Growth and Condition:	**not available**
Age Structure:	**not available**
Distribution:	**increased inshore**

Recent Exploitation Level: low

3. Pollock - 3Ps



History Of FRCC Recommendations:

In November 1993, the Council noted that there were very few pollock in 3Ps and the TAC was reduced from 5,400t to a 600t by-catch limit. The Council recommended that there be no directed fishing for the 3Ps pollock stock in 1994 and that by-catches be limited to 500t. In November 1994, the Council re-iterated its advice for no directed fishing in 1995 and recommended reducing the by-catch limit to 100t. This recommendation was repeated for l996.

In October 1996, the Council recommended that there be no directed fishing for 3Ps pollock in 1997 and that by-catches be limited to l,500t, and implemented so as not to impede a limited cod fishery.

1997 Consultations:

Fishers noted that the 1,500t by-catch limit was not restrictive to other fisheries.

Analysis:

The 1996 DFO Stock Status Report and the 1997 Newfoundland Region Groundfish Overview indicate that:

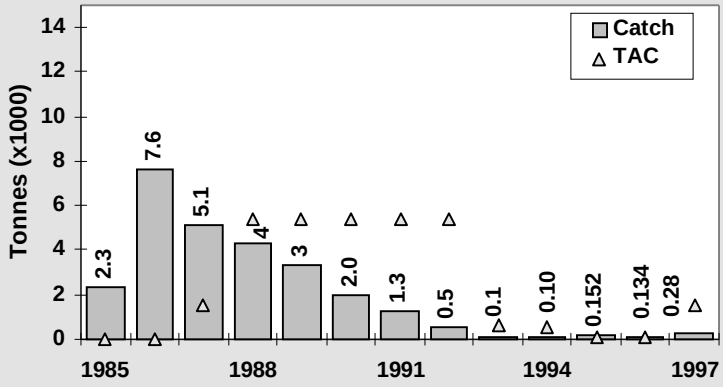
- this stock is at the extreme north of geographic distribution for pollock.
- recent surveys showed low abundance and biomass.
- schools of small pollock were observed in 1995 in some inshore areas.
- an abundance of large pollock has been reported in some areas.

Pollock in Newfoundland waters are at the northern limit of their range in the NW Atlantic. Recruitment to commercial fisheries has been unpredictable. Commercial catches have varied greatly and have been based on occasional pulses of abundance. Because of the movements of pollock, research vessel estimates of abundance are difficult to interpret and may not be reliable. Recent research surveys indicate poor abundance. However, in l995, there were many small pollock reported around wharfs by fishermen. Exceptionally large fish in unusual quantities have appeared throughout 3Ps recently and there continues to be good evidence of young fish inshore.

Recommendation # 3:

The FRCC recommends that:

3.1 there be no directed fishing for 3Ps pollock in 1998 and that by-catch protocols be applied when prosecuting other fisheries.



*1997 Catch: as of Sept.10/97

COUNCIL'S VIEWS ON STOCK STATUS:

Overall Stock Indicator: unknown; likely increasing

Compared to average

Spawning Biomass: unknown; large fish present

Total Biomass: unknown

Recruitment: positive signs inshore

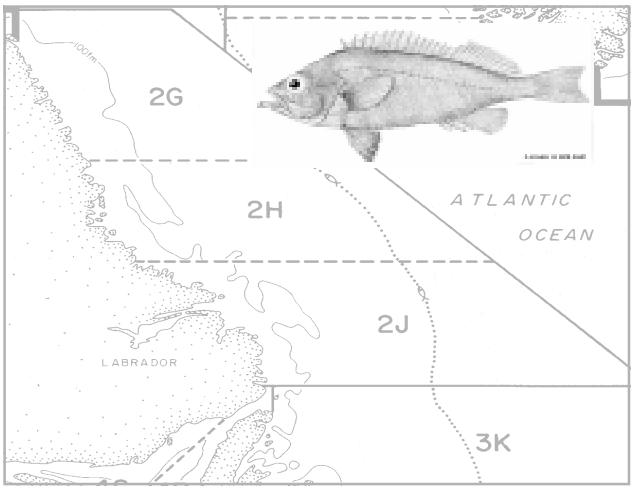
Growth and Condition: growth not available; condition good

Age Structure: variety of sizes observed; unknown

Distribution: sporadic at northern limit of range

Recent Exploitation Level: low, by-catch

4. Redfish - 2+3K



History Of FRCC Recommendations:

In 1993, the Council observed that, given the very low level of this stock, the TAC of 20,000t was too high and recommended, as a precautionary measure, that the 1994 TAC for the 2+3K redfish stock be set at 1,000t. There was practically no fishing during 1994. In November 1994, the Council recommended that any directed fishery, should it be allowed, be carried out within the framework of a scientifically coordinated test fishery and that a nominal amount of 200t be provided for that purpose in 1995. This advice was repeated for l996.

In October 1996, the Council recommended that there be no directed fishing in 1997 on 2+3K redfish.

1997 Consultations:

No specific comments were received on this stock during the 1997 consultations.

Analysis:

The 1996 DFO Stock Status Report and the 1997 Newfoundland Region Groundfish Overview indicate that:

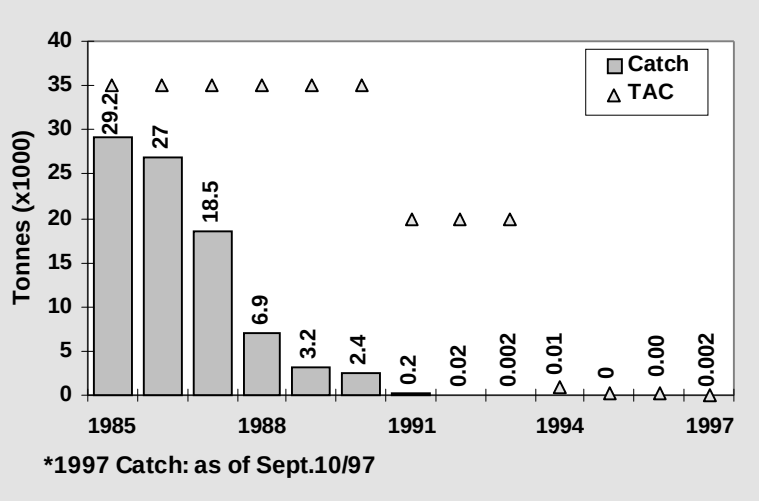
- there has been virtually no recruitment since early 1970s.
- this stock is at a very low level.
- there is no recovery possible until the occurrence of good recruitment.

The survey biomass indices fell to extremely low levels in 1994; declines were of the magnitude of about 95-99%. The most recent survey produced somewhat higher catches of small fish but cannot be directly related to historical estimates because of a change in the survey vessel and gear. These index estimates are still low compared to estimates from the mid-1980s. There are no indications of good recruitment. Recruitment into this stock, when it occurs, would require a minimum of 10 years before if would contribute to any fishery. No fishing on this stock is justified.

Recommendation # 4:

The FRCC recommends that:

4.1 there be no directed fishing in 1998 on 2+3K redfish and that by-catch protocols be applied when prosecuting other fisheries.



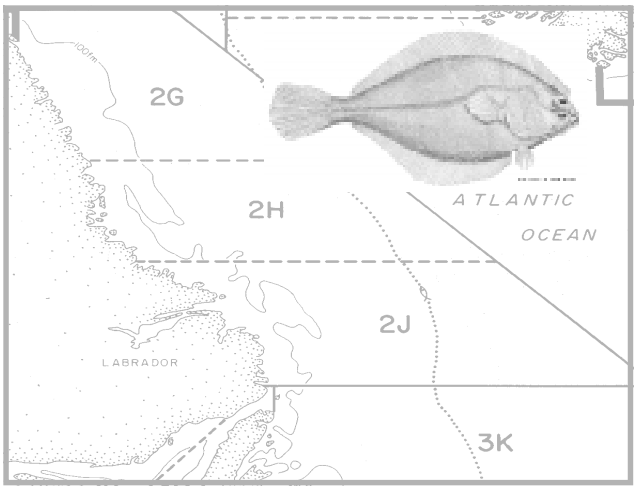
COUNCIL'S VIEWS ON STOCK STATUS:

Overall Stock Indicator: **extremely low**

	Compared to average
Spawning Biomass:	**low**
Total Biomass:	**low; unknown**
Recruitment:	**very poor**
Growth and Condition:	**not available**
Age Structure:	**poor**
Distribution:	

Recent Exploitation Level: low

5. American Plaice - 2+3K



History Of FRCC Recommendations:

In November 1993, the Council noted that the spawning biomass was far below any previous level and that there were no signs of good recruitment for this stock. The Council recommended that there be no directed fishing for 2+3K American plaice in 1994 and that by-catches be limited to 500t. The Council re-iterated its recommendation in November 1994 for no directed fishing, together with a reduction in the by-catch limit to 100t. This advice was repeated for l996.

With no new scientific data available, and no evidence of a change in status of this stock, the advice of previous years - no directed fishing and a bycatch TAC of 100 t - was reiterated for 1997. It was also recommended that cooperative science-industry surveys be encouraged in an attempt to increase the data base on the current and ongoing status of this stock.

1997 Consultations:

Concern was expressed that the by-catch limits for some closed fisheries could result in premature closures of the few fisheries remaining open. A view was expressed that ongoing fisheries should not be closed because of by-catch limits. An increase in allowable bycatch for this and other species was suggested - for example witch flounder, haddock and skate.

Analysis:

The 1996 DFO Stock Status Report and the 1997 Newfoundland Region Groundfish Overview indicate that:

- abundance and biomass are very low.
- the spawning biomass is only about 2% of peak values.
- reported catches cannot explain the decline.
- in recent years recruitment has been low.
- prospects for rebuilding in foreseeable future are poor.

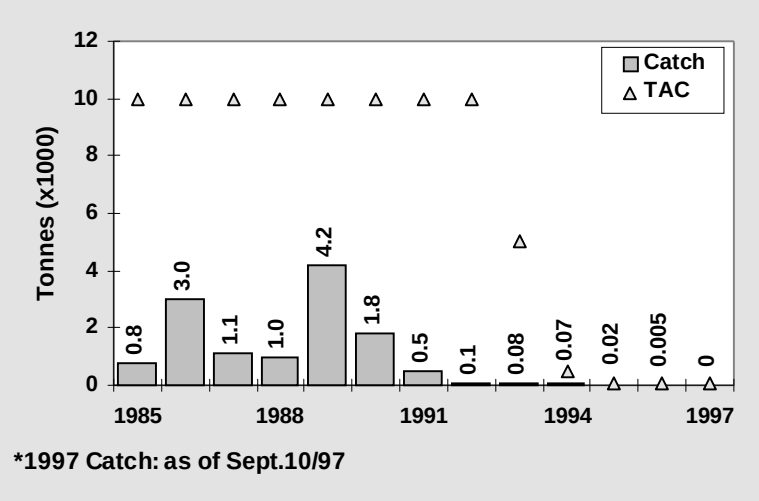
In recent research surveys, 2+3K plaice have been found in deeper waters. The l996 research vessel survey indicates that estimates of abundance for this stock continue to be very low, a small percentage of peak values. Abundance has declined in all age groups. It is generally believed that fishing mortality alone cannot be responsible for the observed declines in this stock, since reported

Recommendation # 5:

The FRCC recommends that:

5.1 there be no directed fishing for 2+3K American plaice during l998 and that by-catch protocols be applied when prosecuting other fisheries; and

5.2 co-operative science-industry surveys should be developed to increase the data base for this species.



*1997 Catch: as of Sept.10/97

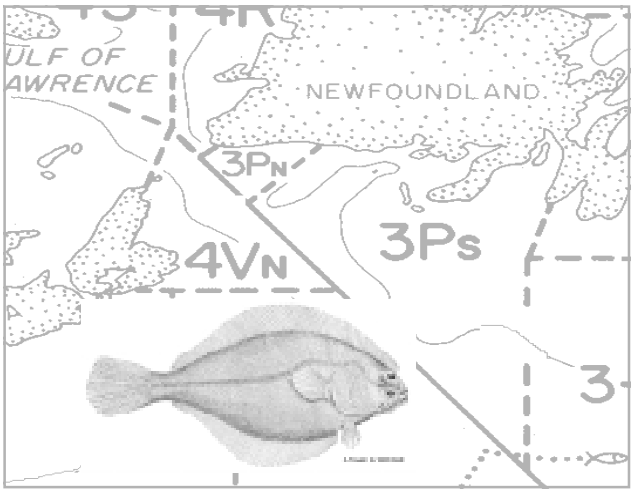
catches never exceeded about 9% of the survey biomass index. Generally, the low abundance and lack of recruitment in this stock indicate poor prospects for recovery.

Council's views on Stock Status:

Overall Stock Indicator:	**poor**
	Compared to average
Spawning Biomass:	**very low**
Total Biomass:	**very low**
Recruitment:	**poor**
Growth and Condition:	**not available**
Age Structure:	**not available**
Distribution:	**moved to deeper water**

Recent Exploitation Level: low; by-catch only

6. American Plaice - 3Ps



History Of FRCC Recommendations:

In November 1993, the Council noted that this stock had declined below any previously-observed level and that there were no signs of good recruitment. The Council recommended that there be no directed fishing and that by-catches be limited to 500t during l994. The recommended by-catch limit was further reduced in l995. Closure and minimal by-catch were again recommended for l996.

With no new scientific data available, and no evidence of a change in status of this stock, the advice of previous years - no directed fishing and a bycatch TAC of 100 t - was reiterated for 1997. It was also recommended that cooperative science-industry surveys be encouraged in an attempt to increase the data base on the current and ongoing status of this stock.

1997 Consultations:

Concern was voiced that with no directed fisheries and no survey work done in certain areas, no information leading to reopening of stocks could be gathered. Some discussion on the feasibility of science/industry test fisheries followed, and this highlighted the problem of how to finance or compensate fishermen who carry out test fisheries on closed stocks.

There were reports that American plaice was plentiful in some bays on the south coast, although it was also suggested that distributional shifts had taken place and that on once-good grounds, crab was now the dominant species.

Concern was expressed that the bycatch TAC could result in premature closures of open fisheries. A view was expressed that ongoing fisheries should not be closed because of bycatch TACs, and an increase in allowable bycatch for this and other species (witch flounder, haddock and skate) was suggested.

Analysis:

The 1996 DFO Stock Status Report and the 1997 Newfoundland Region Groundfish Overview indicate that:

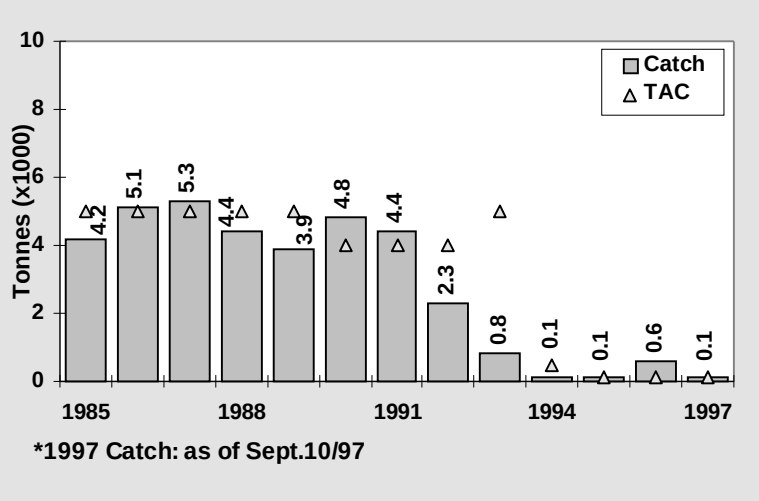
- This stock remains at a very low level
- Surveys still show a lack of recruitment
- Surveys conducted in 1995, 1996 and 1997 all give very low biomass estimates for this stock

Recommendation # 6:

The FRCC recommends that:

6.1 there be no directed fishing for 3Ps American plaice in l998 and that by-catch protocols be applied when prosecuting other fisheries; and

6.2 cooperative science-industry surveys should be encouraged.



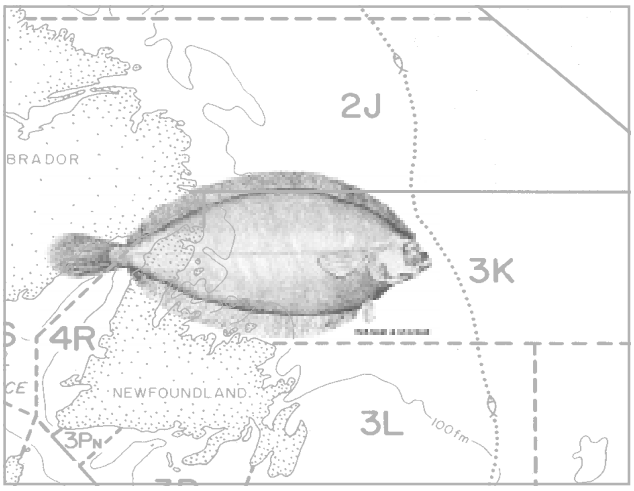
Catches of 3Ps plaice were highest from l968-l973 and averaged over l0,000 t. Since l980, catches have exceeded 5,000t only twice and there have been clear indications that the stock has declined dramatically. Research vessel surveys continue to indicate that the stock is at a very low level. All age groups have declined and recruitment in recent years has been very low. The outlook for this stock is very pessimistic. There are plaice found in low numbers inshore, however, and a slight expansion of by-catch limits may be necessary to permit a limited cod fishery.

Stock rebuilding in the near or medium term is unlikely. Any fishing on this stock in 1998 could be detrimental to stock rebuilding.

COUNCIL'S VIEWS ON STOCK STATUS:

Overall Stock Indicator:	**poor**
	Compared to average
Spawning Biomass:	**very low**
Total Biomass:	**very low**
Recruitment:	**poor**
Growth and Condition:	**not available**
Age Structure:	**all years low recently**
Distribution:	**in deeper water than usual**
Recent Exploitation Level:	**unknown; by-catch only**

7. Witch Flounder - 2J3KL



History Of FRCC Recommendations:

In 1993, the Council noted that the biomass of witch flounder in 2J3KL was far below any previous estimate in the 15-year time series, and consequently recommended that, as a precautionary measure, the 1994 TAC for 2J3KL witch flounder be reduced to 1,000t. In November 1994, the Council recommended that there be no directed fishing for 2J3KL witch flounder in 1995 and that by-catches be limited to 100t in l996. The Council repeated this recommendation for l997.

In October 1996, the Council recommended that there be no directed fishing for 2J3KL Witch flounder in l997 and that by-catches be limited to l00t. The Council also recommended that cooperative science-industry surveys should be encouraged.

1997 Consultations:

It was noted that Witch has not been in evidence since 1990. It moved to deeper channels and then outside the 200 mile limit.

Analysis:

The 1997 Report of the NAFO Scientific Council indicate that:

- this stock remains at a very low level.
- there are some indications of movement to deeper waters of 3L.

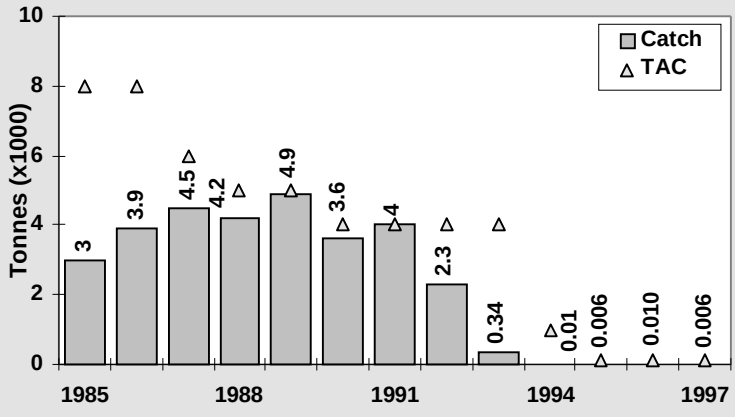
Witch is a slow-growing species that may live to 30 years. Age groups in the 2J3KL stock have been reduced substantially since the l970s. There are fewer older fish now. Fishing has generally taken fish from pre-spawning and spawning concentrations. Recently, witch appears to have moved to deeper water (in excess of 900 m). Recent data on this stock indicate that it has dramatically declined since the l980s; relative biomass in l994 was estimated to be 4% of the l986 level. Research surveys in l996 found that witch was somewhat more abundant in the Flemish Pass area and may have migrated from Canadian waters. Generally, the stock is at the lowest level ever observed and there are no signs of improving recruitment. The shrinking area of distribution of this stock, despite its low biomass, may increase its vulnerability to fishing.

Recommendation # 7:

The FRCC recommends that:

7.1 there be no directed fishing for 2J3KL witch flounder in l998 and that by-catch protocols be applied when prosecuting other fisheries; and

7.2 cooperative science-industry surveys should be encouraged.

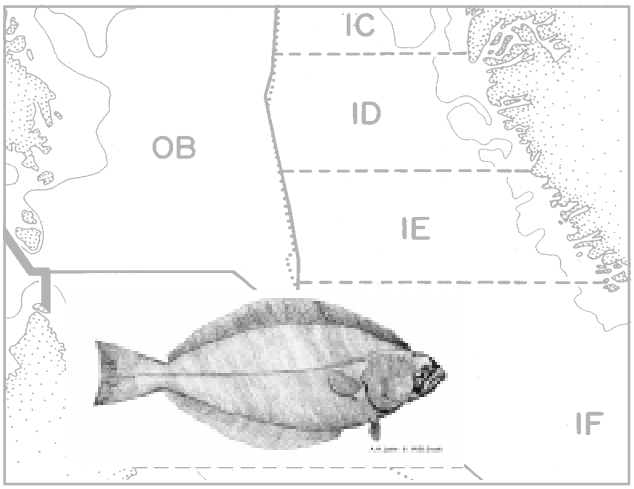


*1997 Catch: as of Sept.10/97

COUNCIL'S VIEWS ON STOCK STATUS:

Overall Stock Indicator:	**very poor**
	Compared to average
Spawning Biomass:	**very low**
Total Biomass:	**very low**
Recruitment:	**poor**
Growth and Condition:	**not available**
Age Structure:	**age groups reduced**
Distribution:	**Mainly at depths between 550 - 1,100 m along the deep continental slope area in 3L, both inside and outside the 200 mile limit.**
Recent Exploitation Level:	**low; NAFO catches unregulated**

8. Greenland Halibut 0B+1B-F



History Of FRCC Recommendations:

In its first reports (November 1993 and June 1994) on Greenland halibut, the Council recommended that the TAC for Subareas 0+1 Greenland halibut be set at 25,000t (12,500t for Subarea 0). Further work of the NAFO Scientific Council in June 1994 led to the recommendation that the 1995 TAC be set below 11,000t for Divisions 0B and 1B-F, i.e., below the offshore catch levels (11,000-15,000t) seen in recent years.

In November 1994, the Council recommended that the 1995 TAC be set below 11,000t and recommended that the conservation merits and feasibility of closing a spawning area in Davis Strait be evaluated in bilateral discussions with Greenland on appropriate sharing arrangements. The 1995 Canadian quota for Subarea 0 was set at 5,500t.

The Councils' recommendations for l996 were for a TAC below 11,000t. It was further recommended in view of the international nature of this resource that the feasibility of closing a spawning area in the Davis Strait be given consideration in discussions with Greenland. Once again in 1997 the Council recommended that Canada and Greenland seek consistency in controls on harvesting and that the feasibility of closing spawning and nursery areas be explored with

Recommendation #8:

The FRCC recommends that:

8.1 **the 1998 TAC for Greenland halibut in 0B+1B-F be set below 11,000t;**

8.2 **Canada and Greenland should seek consistency in controls on harvesting Greenland Halibut in area 0B+1B-F;**

8.3 **closed spawning areas and closed nursery areas should be implemented in the Davis Strait in 1998; and**

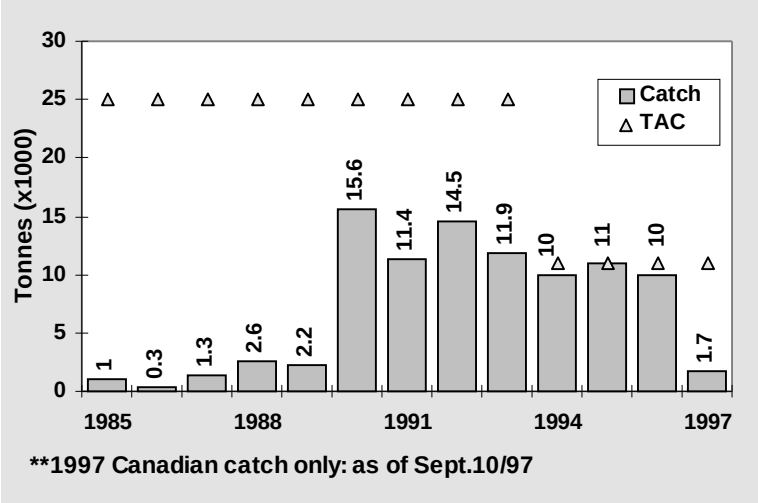
8.4 **if small turbot in the West Greenland nursery area recruit to Canadian fisheries, by-catch in the shrimp fishery may become a problem and should be explored with Greenland.**

The FRCC is concerned about the conduct of this fishery, especially with respect to the loss of gillnets, soak time, and the waste associated with ghost fishing and extended soak times, therefore, the FRCC recommends that:

8.5 **fishing plans for 1998 should be such that, net limits reflect the number that can be handled in a period of time that will minimize waste due to quality deterioration, and measures be implemented to reduce net loss and the associated ghost fishing;**

8.6 **observers should be deployed in this fishery to gather information on soak times, discard levels, adherence to net limits, net loss and any other information that will assist in decision making related to the conservation of this stock; and**

8.7 **otter trawlers pursuing this fishery should be required to use a minimum of 155mm square mesh.**



Greenland. In addition the FRCC expressed concern about the emerging fishery by gillnets in this area and concern about potential for juvenile Greenland Halibut by-catch in the shrimp fishery in this area.

1997 Consultations:

During the 1997 consultations representatives of the Nunavut Wildlife Management Board (NWMB) and industry representatives from Baffin Island expressed concern over the previous Minister's decision early in 1997 to unilaterally increase Canada's share in this fishery.

Concerns were expressed about the increased use of gillnets in this area, the length of the soak times, the amount of fish lost due to deteriorating quality as a result of lengthy soak times, and the effect of ghost fishing by lost nets. It was also noted that ghost fishing by lost gillnets was a problem for Bowhead, Beluga, and Narwhal as they dive to depths of up to 600 fathoms.

The point was made that there must be a better way to fish this stock. It was recommended that alternatives to gillnetting in this area, such as longlining, be explored. It was noted that one boat had fished this year with longlines and it had reported good catches.

Analysis:

Turbot have a relatively low reproductive rate compared to other deep water fish species. Redirection of effort to deepwater fishing of this species make the impact on stocks difficult to assess.

Since 1987, bottom-trawl surveys have been conducted in subarea 1 jointly by Japan and Greenland. In division 1A, trawlable biomass was slightly higher than that estimated in 1994; other areas were also slightly higher in depths between 400-1,500m. The increase was most pronounced in age group 4, the 1991 year-class. Shrimp trawl surveys off West Greenland in waters from the 3 mile limit to 600m depths increased from 1991-1994, but dropped in 1995. These catches were 1-2 year old fish. Biomass in the nursery area (1As and 1B) is below the level found in 1992-1994 but above the 1990-1991 level. The 1997 NAFO Scientific Council report notes that the 1995 year class appears to be the strongest in the time series.

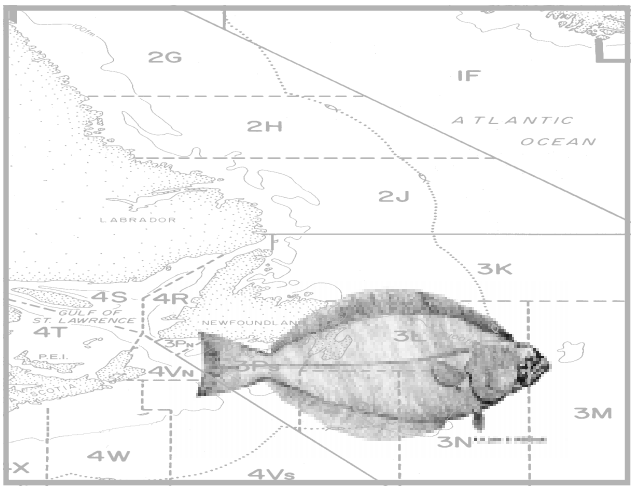
Changes in the commercial fishery have changed the relative age distributions in catches. Age 7 was still the most dominant year-class in 1996 overall catches, but due to increases in longline and gillnet fishing there is a tendency to larger, older fish in the catches compared to previous years. Catch rate series are incomplete and it is difficult to determine overall trends.

Council's views on Stock Status:

Overall Stock Indicator:	**average**
	Compared to average
Spawning Biomass:	**unknown**
Total Biomass:	**unknown; deep water abundance difficult to assess**
Recruitment:	**strong 1991 and 1995 year-classes; other year-classes average**
Growth and Condition:	**unknown**
Age Structure:	**age 7 dominant in 1996 catches; increases of older fish in recent catches**
Distribution:	**normal**

Recent Exploitation Level: unknown

9. Greenland Halibut 2 + 3



History of FRCC Recommendations:

In August 1993, the Council called for significant reductions in catches in the NAFO Regulatory Area and for a joint commitment to address scientific questions related to stock structure. In November 1993, the Council concluded that the 1994 TAC for Greenland halibut should be reduced substantially and that catches in the order of the historical catch level of 25,000t should be a maximum level.

In June 1994, the Council noted the absence of controls on the foreign fishery outside 200 miles and recommended that all means be taken by Canada to limit the effort on this stock. In November 1994, the Council reiterated that catches in the order of the historical catch level of 25,000t should be a maximum level.

The NAFO Scientific Council concluded in June 1995 that the TAC for Greenland halibut in 2+3KLMNO should continue to be set at levels well below the catches achieved in previous years until it became clear that the stock was increasing. In addition, the Scientific Council recommended that measures be considered to reduce, as much as possible, the exploitation of juvenile Greenland halibut.

In August 1995, the FRCC re-iterated the need for maintaining reduced TACs. The conclusion of the Scientific Council that the large catches of immature Greenland halibut were a major impediment to stock rebuilding was noted. The Council suggested that Canada's objective for the near future should be to rebuild the stock to biomass levels of the early 1980s in order to support a sustainable fishery in the long-term. The NAFO Fisheries Commission concluded at the September 1995 meeting that the 1996 TAC would be set at 20,000t for Greenland halibut in 3LMNO, with an additional TAC of 7,000t to be allowed in SA2+3K (Canada only).

Recommendation #9:

The FRCC recommends that:

9.1 **the current Canadian quota in 2+3K be maintained at 7,000t for 1998;**

9.2 **measures be taken to protect juveniles such as small fish protocols;**

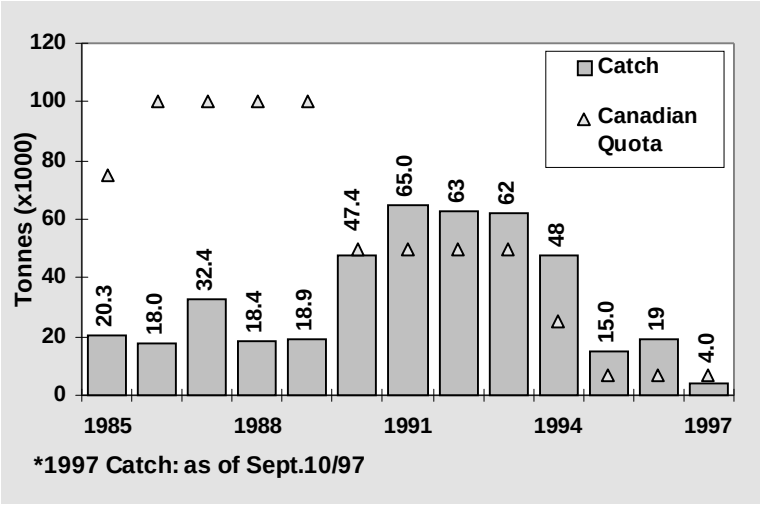
9.3 **Canada propose to NAFO that the minimum mesh be increased to 145mm in the NAFO Regulatory Area; and**

9.4 **the by-catch of American plaice be kept to the lowest possible level.**

Following the September 1997 NAFO Annual meeting, the FRCC further recommends that:

9.5 **efforts by DFO Science to determine distribution and abundance (by management area) through out the stock area should continue with a view to presenting new information for consideration by the NAFO Scientific Council in June 1998; and**

9.6 **otter trawlers pursuing this fishery should be required to use a minimum of 155mm square mesh.**



In August 1996, the FRCC was encouraged by the new evidence of good recruitment for Greenland halibut. The Council indicated that the above-average year-classes from the 1990's must be protected to allow the stock to rebuild and that catching large numbers of these fish as juveniles would waste the potential for rebuilding the stock. In September 1996, the NAFO Fisheries Commission concluded that the 1997 TAC would continue to be set at 20,000t for Greenland halibut in 3LMNO. The Canadian quota for 1997 in 2+3K was established at 7,000t in keeping with the FRCC recommendations.

1997 Consultations:

During the 1997 consultations there were again concerns expressed about the effect of the deep water fishery on this stock. There was some suggestions that the catch rates in this fishery are declining and that fishermen are reducing mesh size and moving to shallower water where the reduced mesh size is permitted. It appears however that the recruitment that was seen in the research vessel survey is starting to show up in the commercial fishery. There was concern that if the catch rates are declining in the deep water and that if this is an indication of declining abundance of mature fish then there is a danger that this stock is being overfished.

Analysis:

The June 1997 report of the NAFO Scientific Council makes the following observations:

- Biomass of older fish remains at a low level.
- 1990-1994 year-classes appear to be above average; 1995 year-class also possibly large.
- Improvements in most indices of abundance in 1996.

The FRCC notes that the additional controls in the NAFO Regulatory Area have likely resulted in a substantial reduction of fishing mortality on the stock in 1995 and 1996. The Council is encouraged by the signs of good recruitment since 1990 and notes that continued conservation measures should allow these year classes to grow and contribute to the spawning biomass in the near future.

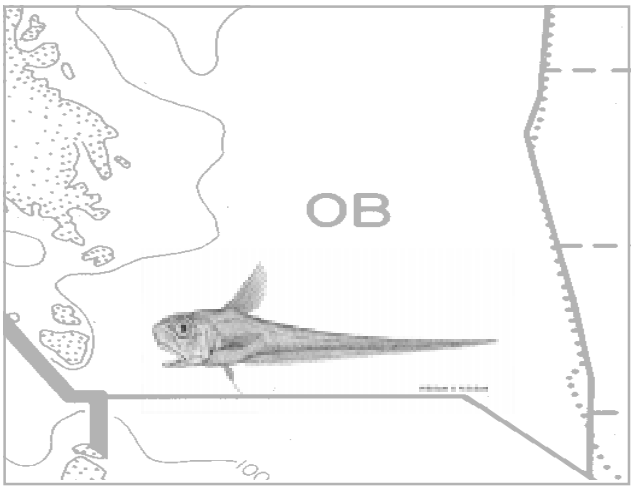
Despite these positive signs, we believe it would be premature at this stage to increase catch levels until the stock has benefitted more substantially from this recruitment.

The Council notes that catches from this stock have consisted mainly of immature fish and believes that additional measures such as increased mesh size and small fish protocols should be implemented in the NAFO Regulatory Area so as to be consistent with similar practices inside the Canadian zone.

Council's views on Stock Status:

Overall Stock Indicator:	**Improving**
	Compared to average
Spawning Biomass:	**Fishable biomass, low**
Total Biomass:	**Showing signs of recovery**
Recruitment:	**Good year-classes since 1990**
Growth and Condition:	**No special observation**
Age Structure:	**Older age-groups remain at low levels**
Distribution:	**1996 fall survey shows distribution at 17% 2GH, 65% 2J3K, 18% 3LMNO**
Recent Exploitation Level:	**Reduced in 1995 and 1996**

10. Roundnose Grenadier - Subarea 0



Analysis:

The 1997 NAFO Scientific Council Report indicates that catches of recent years have occurred principally as by-catch in Greenland Halibut fisheries in the regulatory area. There was little new information available in 1997 and it was not possible to provide advice on this stock. Small quantities of roundnose grenadier are also taken in domestic Greenland halibut fisheries in this area.

History Of FRCC Recommendations:

In its 1993 and 1994 reports, the Council recommended the TAC for 2+3 roundnose grenadier be set at 3,000t. In its 1995 report, Council recommended that should there be directed fishing on this stock, it be done in the context of a scientifically conducted test fishery. In Building the Bridge, Council's November 1996 report, it was recommended that there be no directed fishery on this stock and cooperative industry-science surveys should be encouraged.

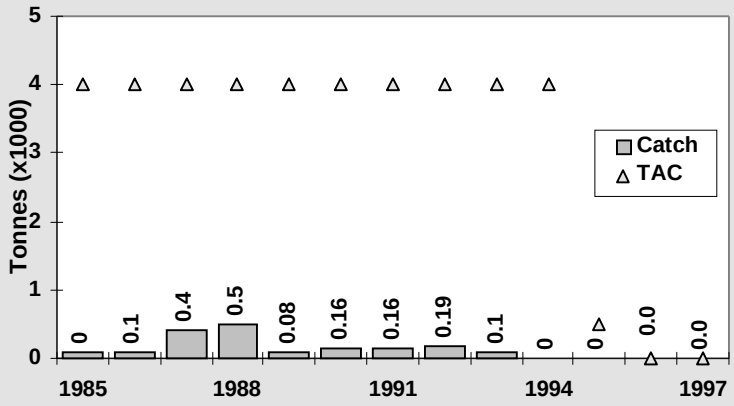
1997 Consultations:

There were no specific comments on this stock during the 1997 consultations.

Recommendation # 10:

The FRCC recommends that:

10.1 there be no directed fishing for roundnose grenadier in subarea 0 in 1998.



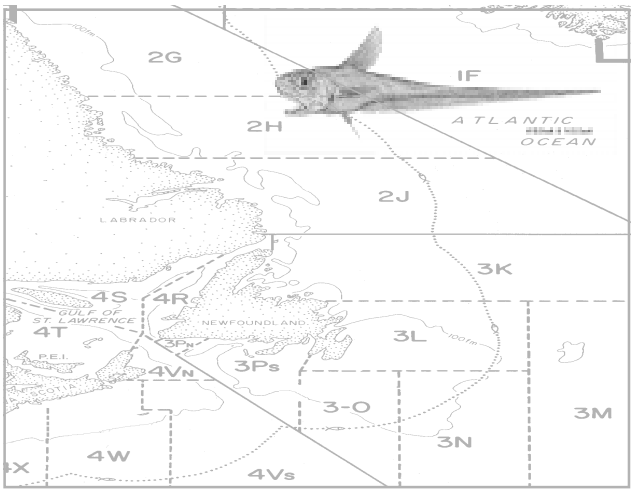
*1997 Catch: as of Sept.10/97

Council's views on Stock Status:

Overall Stock Indicator:	**likely low**
Compared to average	
Spawning Biomass:	**likely low; unknown**
Total Biomass:	**likely low; unknown**
Recruitment:	**not available**
Growth and Condition:	**not available**
Age Structure:	**not available**
Distribution:	**unknown**

Recent Exploitation Level: unknown, low

11. Roundnose Grenadier - 2+3



History Of FRCC Recommendations:

In earlier reports, released in the fall of 1993, and 1994, the Council recommended that the TAC for roundnose grenadier be set at 4,000t in 1994 and again for 1995. The TAC was set at 500t for 1995. For 1996 and 1997, the FRCC recommended there be no directed fishing on roundnose grenadier in Subarea 0 and that cooperative industry science surveys would assist in furthering the knowledge on this stock.

1997 Consultations:

There were no specific comments on this stock during the 1997 consultations.

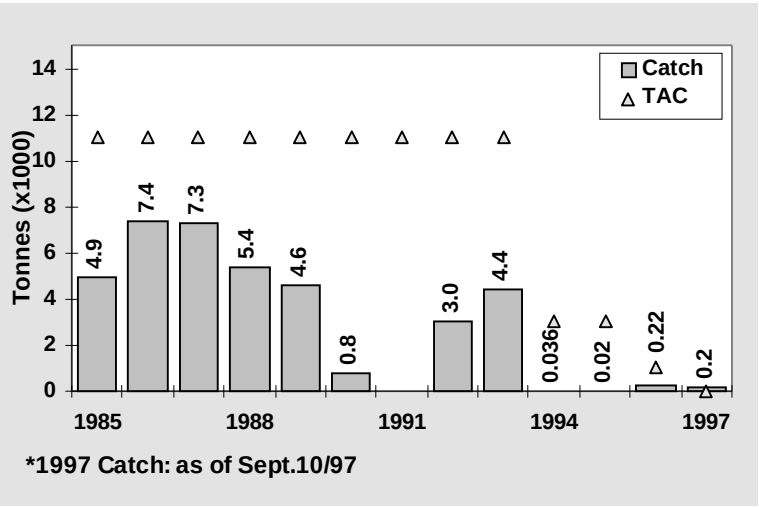
Analysis:

The 1997 report of the NAFO Scientific Council reveals the stock remains at a very low level despite the absence of directed fisheries since the late 1970's. The reason for the continued poor performance of the Subarea 0 roundnose grenadier stock is not known. Since 1996 the NAFO Scientific Council has recommended no directed fishing. As there is no information to indicate any improvement in this stock for 1998, the NAFO Scientific Council again recommends no directed fishing and that catches be restricted to by-catches.

Recommendation # 11:

The FRCC recommends that:

11.1 there be no directed fishing for roundnose grenadier in 2+3 in 1998.



*1997 Catch: as of Sept.10/97

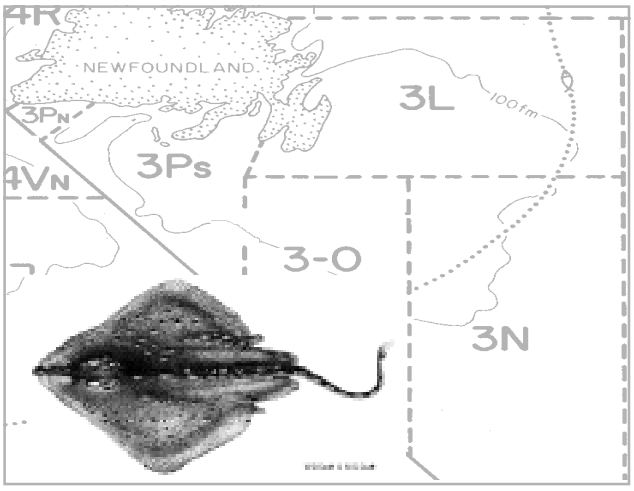
Council's views on Stock Status:

Overall Stock Indicator: **unknown**

	Compared to average
Spawning Biomass:	**unknown**
Total Biomass:	**unknown**
Recruitment:	**unknown**
Growth and Condition:	**unknown**
Age Structure:	**unknown**
Distribution:	**unknown**

Recent Exploitation Level: unknown

12. SKATES - 3LNOPS



HISTORY OF FRCC RECOMMENDATIONS:

A directed fishery for skates developed on the southern Grand Banks during 1993. Council conducted its first review of this stock in 1995 and recommended a precautionary TAC of 2,000t for 1996 for this new fishery. It was further recommended that steps be taken to distribute effort throughout the management area to prevent heavy exploitation on concentrations. For 1997, Council acted further in its efforts to have the fishery distributed across the entire stock area. Council recommended a 3,000t TAC for 1997 with a provision that it be divided among three separate management units, 3LN, 3O AND 3Ps, as defined in the 1996 stock status report. As well, to supplement information gathering on this resource, cooperative industry science initiatives were encouraged.

1997 CONSULTATIONS:

Fishers indicated that while the distribution of fishing effort across 3Ps, 3LN and 3O had remained unchanged for this stock during 1997, there was little difficulty in catching the quota. As in previous years, the bulk of the fishery occurred in Division 3O. One fisher indicated that the redfish fishery in 3O was hampered by the by-catch of skate. While there was no action on Council's recommendation for the distribution of effort and industry-science cooperative initiatives for 1997, fishers expressed their desire to engage in science-based undertakings and to provide more fisheries data. Fishers did indicate that the conditions attached to the present science-industry initiatives should be consistent with other fisheries. Based on their observations in the directed fishery and by-catches of skate in other fisheries, fishers requested that the skate TAC be raised to 6,000t.

The issue of the directed, unregulated skate fishery outside of the 200 mile limit was raised as a problem for this stock. It was noted that there are many foreign vessels directing for skate between the 200 mile limit and the edge of the shelf in area 3LNO.

ANALYSIS:

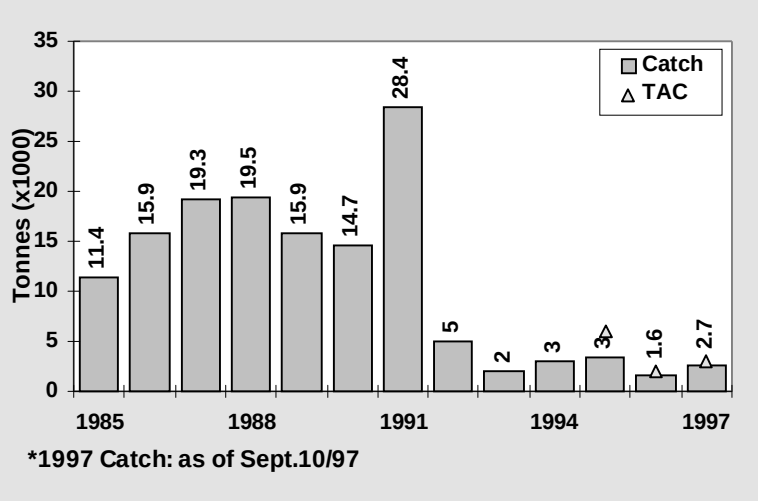
Of the 8-10 species of skate found in waters around Newfoundland and Labrador, thorny and smooth skates comprise the bulk of catches by commercial fishery and research vessels. Although thorny skates are widely distributed, tagging studies reveal they exhibit limited movement, with re-captured animals found infrequently beyond 100 kms of the site of initial capture.

RECOMMENDATION # 12:

The FRCC recommends that:

12.1 3LN, 30, and 3Ps continue to be treated as separate management areas; and

12.2 the overall TAC be set at 3,000 t for 1998: this should be distributed between management areas, as recommended in the 1996 Stock Status Report.



In comparison to an individual cod which can release millions of eggs a year during a relatively short spawning period, a female skate will lay only 6-40 eggs throughout the year. Special challenges are presented by the limited reproduction potential of this species and insufficient biological information.

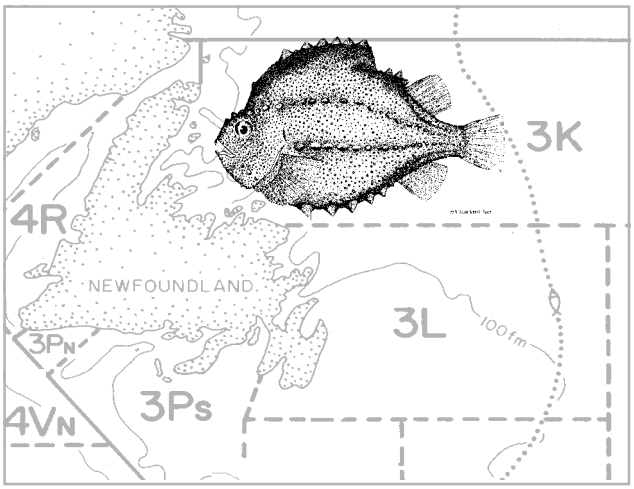
The 1996 DFO stock status report reveals there has been a continuing decline of biomass across the entire stock area, and particularly for Divisions 3N and 3O during 1996. Catch and catch rate trends have been declining over this same period. The catch of 1,600t in 1996 marked a low for the Canadian directed fishery but this increased of 2,440t in 1997, with the bulk of removals occurring during May and June. The majority of the catch is still taken from Division 3O but the implementation of Council's recommendation for three separate management units for 1997 has begun the process of shifting effort across the entire stock area. The serious deficiency of biological and abundance information on this resource has been emphasized and the lack of regulation of the skate fishery outside 200 miles continues to be a problem.

Council's views on Stock Status:

Overall Stock Indicator:	**unknown, declining**
	Compared to average
Spawning Biomass:	**unknown**
Total Biomass:	**declining recently**
Recruitment:	**unknown**
Growth and Condition:	**size declining in RV survey**
Age Structure:	**not available**
Distribution:	**local concentrations**

Recent Exploitation Level: unknown

13. LUMPFISH



HISTORY OF FRCC RECOMMENDATIONS:

The FRCC first reported on this particular stock in l995. The Council recommended that management measures, such as shortened season, be used to reduce the effort on this stock. It further recommended that roe content monitoring programs, similar to those employed in the capelin fishery, be established to ensure that fishing takes place at an appropriate time and that closed and protected areas be established for this stock.

In October 1996, the Council recommended that dramatic new management measures be taken to insure conservation of lumpfish in l997 and that these measures include a combination of the following:

- roe content monitoring programs should be established to determine timing of the fishery to maximize yield/fish;
- closed and protected spawning areas must be established throughout the range of the stock;
- more localized management must be established
- effort must be further reduced;
- gear limits must be decreased and the season shortened.

Unless these measures are effectively implemented, the closure of this fishery is imminent.

1997 CONSULTATIONS:

Many comments were received on this stock at all Newfoundland consultations in 1997. It was noted that the stock appears to be stable at very low levels on the north east coast, but there were signs of increases, including landings on the south coast. It was noted that the lumpfish stocks had appeared to increase following the decline of trawling activity. Some noted that there had been no trawling on cod spawning areas in the last few years and this had had a very positive effect on the lumpfish.

ANALYSIS:

The 1996 DFO Stock Status Report indicates that:

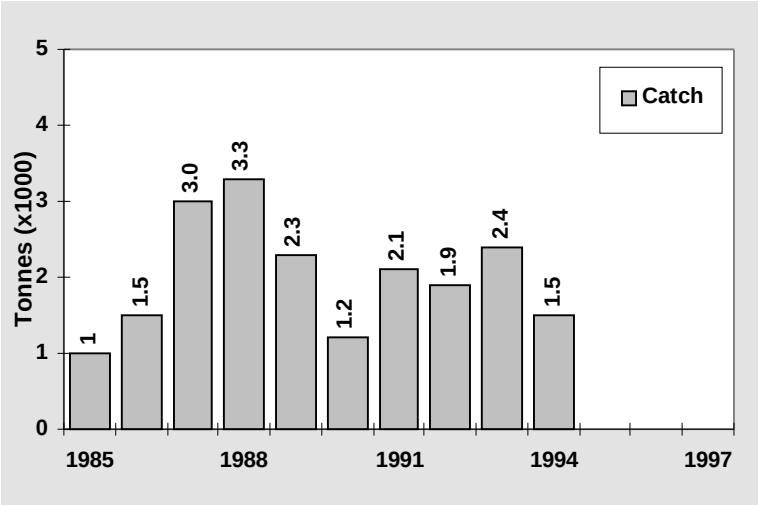
- there is little scientific information and inadequate biological sampling.
- there has been a 40% decline in roe landings from the recent average.
- inshore fishermen are nearly unanimous in view that this stock is declining, especially in northern areas.

RECOMMENDATION # 13:

The FRCC recommends that:

13.1 measures taken to control effort in the past few years should be continued; and

13.2 fishers and science gather more information on this stock through the establishment of an Index Fishermen Program especially with respect to: catch and effort levels, spawning patterns, growth rates, maturation, population structure, temperature preferences and habitat preferences.



Lumpfish males establish breeding territories inshore; these may be used year after year. Data from studies which have monitored these territories indicate exceptional impact from the fishery. Landings of roe averaged 2,000t from l988-l995. In l996 they declined to 1,200t. There is nothing known about stock structure and no research planned to study this. Biomass indices have declined by an order of magnitude from l985 to l995. The biomass estimate for l996 is the lowest since the l980s. Fishermen have expressed concern over effort in the fishery. Catch rates by monitors in 3Ps were the lowest reported since the fishery began in the l970s.

Council's views on Stock Status:

Overall Stock Indicator:	**stable at very low levels on Northeast coast/ stable on South coast**
	Compared to average
Spawning Biomass:	**declining**
Total Biomass:	**declining**
Recruitment:	**unknown**
Growth and Condition:	**not available**
Age Structure:	**unknown**
Distribution:	**inshore**
Recent Exploitation Level:	**decreasing in some areas, landings up in 3Pn and 3Ps**

APPENDIX 1:

FRCC MANDATE AND MEMBERSHIP

APPENDIX 1: FRCC TERMS OF REFERENCE AND MEMBERSHIP

1. INTRODUCTION

The Government of Canada is committed to a more comprehensive approach to the conservation and management of our fisheries resource. This approach demands a better understanding of complex fisheries ecosystems - the interaction of fish with other species, predator-prey relationships, and also changes in the marine environment like ocean currents, water temperatures and salinity.

The Government of Canada is also committed to a more effective role in decision-making for those with practical experience and knowledge in the fishery.

The Minister of Fisheries and Oceans has established the Fisheries Resource Conservation Council (FRCC) as a partnership between government, the scientific community and the direct stakeholders in the fishery. Its mission is to contribute to the management of the Atlantic fisheries on a 'sustainable' basis by ensuring that stock assessments are conducted in a multi-disciplined and integrated fashion and that appropriate methodologies and approaches are employed; by reviewing these assessments together with other relevant information and recommending to the Minister total allowable catches (TACs) and other conservation measures, including some idea of the level of risk and uncertainty associated with these recommendations; and by advising on the appropriate priorities for science.

2. DEFINITION OF CONSERVATION

Fisheries conservation is that aspect of the management of the fisheries resource which ensures that its use is sustainable and which safeguards its ecological processes and genetic diversity for the maintenance of the resource. Fisheries conservation ensures that the fullest sustainable advantage is derived from the resource and that the resource base is maintained.

3. COUNCIL OBJECTIVES

3.1 To help the government achieve its conservation, economic and social objectives for the fishery. The conservation objectives include, but are not restricted to:

3.1.1 rebuilding stocks to their 'optimum' levels and thereafter maintaining them at or near these levels, subject to natural fluctuations, and with 'sufficient' spawning biomass to allow a continuing strong production of young fish; and,

3.1.2 managing the pattern of fishing over the sizes and ages present in fish stocks and catching fish of optimal size.

3.2 To develop a more profound understanding of fish-producing ecosystems including the inter-relationships between species and the effects of changes in the marine environment on stocks.

3.3 To review scientific research, resource assessments and conservation proposals, including, where appropriate, through a process of public hearings.

3.4 To ensure that the operational and economic realities of the fishery, in addition to scientific stock assessments, are taken into account in recommending measures to achieve the conservation objectives.

3.5 To better integrate scientific expertise with the knowledge and experience of all sectors of the industry and thus develop a strong working partnership.

3.6 To provide a mechanism for public and industry advice and review of stock assessment information.

3.7 To make public recommendations to the Minister.

4. Mandate and Scope

4.1 The Fisheries Resource Conservation Council will address these objectives by bringing together industry, DFO science and fisheries management, and external scientific and economic expertise in one body.

4.2 The Council will:

4.2.1 advise the Minister on research and assessment priorities;

4.2.2 review DFO data and advise on methodologies;

4.2.3 consider conservation measures that may be required to protect fish stocks;

4.2.4 review stock assessment information and conservation proposals, including through public hearings, where appropriate; and,

4.2.5 make written public recommendations to the Minister on TACs and other conservation measures.

4.3 The Council may recommend any measures considered necessary and appropriate for conservation purposes such as TACs, closure of areas to fishing during specific periods, approaches to avoid catching sub-optimal sized fish or unwanted species, and restrictions on the characteristics or use of fishing gears.

4.4 The Council's scope includes Canadian fish stocks of the Atlantic and Eastern Arctic Oceans. In the first instance, the Council will address groundfish, and then subsequently take on responsibility for pelagic and shellfish species.

4.5 The Council is also responsible for advising the Minister on Canada's position with respect to straddling and transboundary stocks under the jurisdiction of international bodies such as the Northwest Atlantic Fisheries Organization (NAFO).

5. Size, Structure and Make-Up

5.1 The Council will consist of not more than 14 members with an appropriate balance between 'science' and 'industry'.

5.2 Members are chosen on merit and standing in the community, and not as representatives of organizations, areas or interests.

5.3 'Science' members, are drawn from government departments, universities or international posts, and are of an appropriate mix of disciplines, including fisheries management and economics.

5.4 'Industry' members are knowledgeable of fishing and the fishing industry and understand the operational and economic impacts of conservation decisions.

5.5 All members of the Council are appointed by the Minister.

5.6 All members, including the Chairperson, are appointed for a three year term; terms can be renewed.

5.7 Members appointed from DFO serve 'ex officio'.

5.8 Members have to disclose any interest in the Atlantic or Eastern Arctic fishery and take appropriate measures so as to avoid potential or real conflict of interest situations during the term of appointment.

5.9 The four Atlantic Provinces, Quebec and the Northwest Territories may each nominate one delegate to the Council. These delegates have access to the Council's information, and may participate fully in meetings, but will not be asked to officially endorse the formal recommendations to the Minister.

5.10 The Council is supported by a small Secretariat, to be located in Ottawa. The Secretariat will:

5.10.1 provide administrative support for the functioning of the Council;

5.10.2 provide a technical science and fisheries management support;

5.10.3 organize Council meetings;

5.10.4 record decisions of the Council;

5.10.5 undertake a professional communications function for the Council, providing a central point for communications to and from the Council; and

5.10.6 undertake such other matters as from time to time might be appropriate.

5.11 The Chairman may appoint an Executive Committee, consisting of the Chairman, Vice-Chairman, and three other Members.

5.12 In addition, the Chairman may, from time to time, strike an 'ad hoc' committee to deal with a specific issue.

6. ACTIVITIES:

6.1 Reviews appropriate DFO science research programs and recommends priorities, objectives and resource requirements.

6.2 Considers scientific information - including biology, and physical and chemical oceanography, taking into account fisheries management, fishing practices, economics and enforcement information.

6.3 Conducts public hearings wherein scientific information is presented and/or proposed conservation measures/options are reviewed and discussed.

6.4 Recommends TACs and other conservation measures.

6.5 Prepares a comprehensive, long-term plan and a work plan for the Council which are reviewed annually at a workshop with international scientists and appropriate industry representatives.

6.6 Ensures an open and effective exchange of information with the fishing industry and contributes to a better public understanding of the conservation and management of Canada's fisheries resource.

FRCC MEMBERSHIP:

MEMBERS:

Fred Woodman, Chairman
Jean-Claude Brêthes, Vice-Chair
Michael Belliveau
Bruce Chapman
Tony Charles
Frank d'Entremont
Sam Elsworth
Sally Goddard
Jean-Claude Grégoire
Tom Hallett
Frank Hennessey
Paul LeBlond
Victorin Mallet
Trevor Taylor
Maureen Yeadon

PROVINCIAL DELEGATES:

Bruce Ashley, Northwest Territories
Rob Coombs, Newfoundland and Labrador
Yvon Chiasson, New Brunswick
David Gillis, Prince Edward Island
Dario Lemelin, Québec
Clarrie MacKinnon, Nova Scotia

EX OFFICIO:

Bill Doubleday
Dawn Nicholson-O'Brien
Barry Rashotte

SECRETARIAT:

Catrina Tapley, Executive Director
Linda Brisebois
Renée Brisson
Debra Côté
Denis Rivard
Lisa Tenace

NEWFOUNDLAND AND LABRADOR FRCC GROUNDFISH ASSESSMENT TEAM:

Trevor Taylor, Chair
Rob Coombs
Sally Goddard
Tom Hallett
Paul LeBlond

APPENDIX 2:

LETTER TO STAKEHOLDERS AND QUESTIONS FOR DISCUSSION AT CONSULTATIONS

APPENDIX 2: LETTER TO STAKEHOLDERS

August 15, 1997

To Stakeholders:

The Fisheries Resource Conservation Council (FRCC) will hold public consultations to gather information on Newfoundland groundfish stocks other than cod. This will assist the FRCC in making recommendations to the Minister of Fisheries and Oceans for 1998 conservation requirements for Atlantic groundfish. We will also hold a second round of public consultations in February 1998 to discuss Newfoundland cod stocks.

The consultations will begin at 10:00 AM on September 12 at the Deer Lake Motel, Gate House Room and September 13 at the Lion's Club in Clarenville to discuss and provide advice to the Minister on the following stocks:

AMERICAN PLAICE (2 + 3K, 3Ps)

WITCH FLOUNDER (2J3KL, 3Ps, 4RST)

GREENLAND HALIBUT (TURBOT) (0B+1B-F, 2+3, 4RST)

ATLANTIC HALIBUT (4RST)

SKATE (3LNOPs)

REDFISH (2 + 3K)

ROUNDNOSE GRENADIER (0, 2+3)

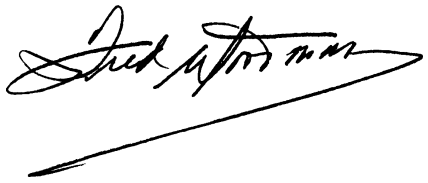
LUMPFISH

Please note that the FRCC will provide advice to the Minister on cod stocks in early 1998. DFO Science will be conducting a full zonal assessment of cod stocks in January 1998. This assessment will include the results of sentinel fisheries and fall and winter research surveys. Once we have received the scientific assessments, the FRCC will hold a more extensive round of consultations to hear your views on cod stocks.

The challenge for groundfish conservation and sustainability is great for all species. The Council bases its advice on sound conservation principles, and advocates a precautionary approach: when we proceed, we must do so with caution. What we have learned from stakeholders is invaluable in helping us form recommendations.

Stakeholders are invited to make public presentations by way of oral presentation or by providing us with a written brief: FRCC, P.O. Box 2001, Station D, Ottawa,ON K1P 5W3, phone (613) 998-0433, fax (613) 998-1146, Internet www.ncr.dfo.ca/frcc.

The success of these consultations is of interest to all Newfoundland stakeholders. Your views are important and we hope you will participate fully.



Fred Woodman
Chairman

Questions For Discussion At Consultations

Greenland Halibut - 0B + 1B-F

There has been increased effort in the deep water turbot fishery. Has catch rate per net increased or decreased? Is gear loss a problem, if so how can it be avoided e.g. transponders, and should these devices be mandatory? Float out and soak time on nets is a problem. Does establishing a limit on soak time address the problem, and if so, what is an appropriate limit on soak time? Should the limit on the number of nets be reduced from 500 in order to reduce soak times? Should a minimum mesh size be increased from 7 inches? What other conservation problems do you see in the deep water gill net fishery?

Greenland Halibut - 2 + 3K

Throughout the late eighties and early nineties the turbot fishery in this area declined dramatically, with the bulk of the fishery concentrating in water depths greater than 400 fathoms. In 1996 and again in 1997 there were signs of some rebuilding in shallower depths as a result of incoming recruitment in the stock. Do you think the 7,000 t quota currently in place in 2 + 3K will allow continued rebuilding in this area? What effect do you think the deep water fishery is having on the turbot stock overall? Is gear loss in this fishery a conservation concern? If so, what measures do you recommend to minimize the problem e.g. gear detection devices? Should net limits and soak time be established? Should mesh size be increased beyond 6 inches?

Greenland Halibut - 4RST

In your experience what is the status of this stock in comparison to the fishery in the past ten years? How do catch rates per net compare in 1997 to past years when the fishery was conducted with 5.5 inch mesh as opposed to the current 6 inch mesh size? Should the mesh size be increased beyond 6 inches?

Lumpfish

Over the past few years there have been significant changes made to reduce effort and thereby improve the health of this stock. In 1997 there appears to have been an increase in the landings along the south, southwest and some parts of the west coast. Has this increase been as a result of improved catch per unit of effort or is it due to increasing effort in this fishery? Do you think that the effort control measures introduced in this fishery are adequate to rebuild and maintain a sustainable fishery?

Skates - 3LNOPs

The FRCC in its 1996 report recommended that this stock be treated as separate management areas 3LN, 30 and 3Ps - have you found concentrations of skate in all areas? Have you found concentrations of skate in other areas? Has your effort increased or decreased in 1997?

Flatfish and Flounders

Should a minimum mesh size be established for all deep water flounder fisheries?

APPENDIX 3:

BRIEFS RECEIVED FOR THE NEWFOUNDLAND CONSULTATIONS

APPENDIX 3: BRIEFS RECEIVED FOR THE NEWFOUNDLAND CONSULTATIONS

FRCC.97.GR-NF.1 Lloyd Phillips - Secretary/Treasurer, Inshore Fishermen's Improvement Committee, Clarenville, NF

FRCC.97.GR-NF.2 Attila J. Potter - MMM, Clarenville, NF

FRCC.97.GR-NF.3 Maxwell Seaward - Seaward Seafoods Co., Ltd., Port aux Basques, NF

FRCC.97.GR-NF.4 Ronald Skinner - Chairman, Fishermen's Committee of McCallum, McCallum, NF

APPENDIX 4:

STOCKS IN THE NAFO REGULATORY AREA

REPORT TO THE MINISTER OF FISHERIES AND OCEANS

FRCC.97.R.4
JULY 1997

Honourable David Anderson, P.C., M.P.
Minister of Fisheries and Oceans
200 Kent St.
Ottawa, Ontario
K1A 0E6

Dear Minister:

The terms of reference of the Fisheries Resource Conservation Council (FRCC) state, "The Council is also responsible for advising the Minister on Canada's position with respect to straddling and transboundary stocks under the jurisdiction of international bodies such as the Northwest Atlantic Fisheries Organization (NAFO)." Having received the report of the NAFO Scientific Council (June 1997), the FRCC is providing you with advice for the forthcoming annual meeting of the NAFO General Council and Fisheries Commission in St. John's, Newfoundland on September 15 - 19, 1997.

As in our previous reports on NAFO stocks, the FRCC wishes to reiterate that the failure of past management practices by NAFO has resulted in devastating over-exploitation of the straddling and transboundary stocks on the once prolific Grand Banks. Despite tremendous effort on the part of Canada, and progress made on key issues, we have yet to succeed at moving NAFO to fully sustainable fishing practices.

The Council remains concerned about the level of by-catch of species under moratorium in divisions 3LNO, e.g. cod, American plaice and witch flounder. Having these stocks recover and reach productive levels is imperative to the Canadian fishery. We are pleased to note that yellowtail flounder, Greenland halibut, and, witch flounder are showing some signs of improvement and we must be careful not to jeopardize this.

We have also noted improvements in the Greenland halibut (turbot) stock in division 2+3 where recruitment has been good throughout the 1990's. Council is concerned, however, about the large number of juvenile fish that appear to have been taken both inside and outside the Canadian zone. We raised this issue in our 1996 report and, at that time, we recommended Canada push for a 145 mm mesh size for this fishery in the NAFO Regulatory Area. We reiterate this recommendation again this year and we would like to see this as Canada's official position at NAFO. Further to this, work should begin in 1997 with a view to adopting a mesh size in 1998 which will allow further escapement of juvenile fish, including turbot and other flatfish species. In addition, we think it is very important to continue research in a timely manner with respect to the relative abundance of Greenland halibut throughout the stock range. It is particularly important to confirm whether or not only 18% of the estimated biomass is in 3LMNO. The current TAC for this area may well be excessive if the relative distribution determined by the recent survey is confirmed.

The FRCC fully supports Canada's position with respect to the pilot project of observer coverage on all vessels in the Regulatory Area and Canada's position that the observer program should be mandatory after the pilot project. However, we are not at all pleased with the lapses in reporting procedures for this project and we believe that Canada should seek to have this strengthened. This program must be uniform and consistent for all parties, especially with respect to data collection, and reports on catch, discards, etc. This is a required prerequisite for accurate assessments and quota setting.

On July 29, 1997, we released publicly to you our Groundfish Conservation Framework for Atlantic Canada. You will note that we have placed an emphasis on the use of closed areas to protect spawning aggregations and concentrations of juvenile fish. We also call for the adoption of Marine Protected Areas (MPAs). The FRCC encourages Canada to identify such areas or species in the NAFO regulatory zone, and to have NAFO adopt these conservation measures. It is the opinion of the Council that with today's technology, fish have nowhere to hide and therefore, MPAs have become necessary.

In our four previous reports to the Minister of Fisheries and Oceans on Atlantic Groundfish Stocks, we have raised our concerns about the tremendous increase in the population of seals -- harp, grey, hooded and others. We believe that this is having a negative impact on the recruitment, and consequently the recovery, of groundfish stocks. This year, the NAFO Scientific Council recognized that the number of seals could be having an effect on the rebuilding of groundfish stocks. The FRCC fully supports this position.

We recognize the difficulty in reaching a consensus in an international forum such as NAFO and we commend Canada for the progress that has been made, especially this year at the Scientific Council meeting, having NAFO discuss, and commit to, the precautionary approach. We are pleased to note that a workshop will be held on the framework for implementing such an approach. The FRCC fully supports Canada's position in this matter and we hope NAFO will adopt the appropriate conservation strategies.

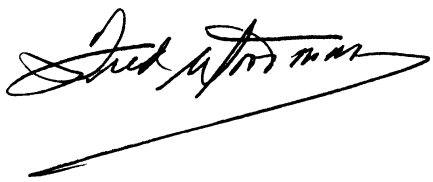
The FRCC believes that Canada must hold fast to its position of no shrimp fishery in division 3LNO until such time as cod, and other groundfish, have recovered in this area and a permanent effective observer program is in place. The Council also wishes to endorse the Canadian position to have the NAFO Fisheries Commission separate discussions of shrimp in divisions 3LNO and 3M from discussions of groundfish in the regulatory zone. The recovery and sustainable utilization of groundfish stocks must continue to be the Canadian priority. In the past, other nations have used the discussion of shrimp on the Flemish Cap to take time away from discussions of concern to Canada about groundfish.

In addition to the six stocks for which we give specific recommendations (see following chapter), the FRCC fully supports the NAFO Scientific Council recommendations for continued moratoria on 3M cod and 3M American plaice. We also believe that the moratorium on 3NO capelin should be continued.

We have noted with interest that the NAFO Scientific Council has recommended a 4,000 t Total Allowable Catch (TAC) for a commercial fishery of 3LNO yellowtail flounder. We also note that the Scientific Council cautions about the by-catch of American plaice in this fishery. As you will note in our stock-by-stock recommendations, the FRCC recommends that 4,000 t be used to determine if this fishery can be conducted cleanly (free of substantial amounts of by-catch of species currently under moratoria). We have also included in our recommendation all other elements of the NAFO Scientific Council's recommendations including: careful monitoring and sampling, delaying the fishery until after the peak spawning season, and confining the fishery to 3NO. The FRCC also recommends the use of small fish protocols.

If the straddling and transboundary groundfish stocks in the NAFO area are to recover, all participants must adhere to sound conservation principles and practices. Canadian fishermen cannot be expected to pay the price alone. **Strong conservation measures which apply inside the 200 mile limit, must also apply outside the 200 mile limit.** We have emphasized this point again in our recently released Groundfish Conservation Framework for Atlantic Canada. We must be ever vigilant with our enforcement regime and make sure all players stay committed to conservation.

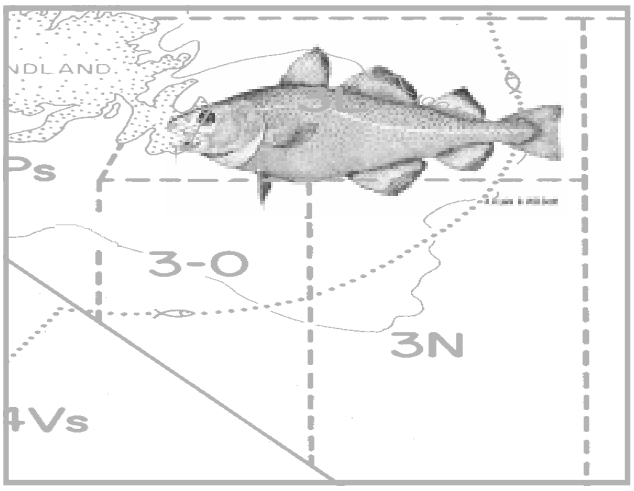
Best wishes for a successful NAFO meeting in September.



Fred Woodman
Chairman

NAFO Stock-by-Stock Recommendations for 1998

1. Cod 3NO



History Of FRCC Recommendations:

In the June 1995 report of the NAFO Scientific Council, scientists indicated that this stock was at an all time low in 1994 and was represented mainly by 2 year-classes (those of 1989 and 1990). In particular, the year-classes since 1990 appeared to be weak and the estimates of the 1989 and 1990 year-classes, which were believed to be average, were much lower than previously estimated. Sampling information indicated that commercial fisheries had targeted these year-classes since 1991. In 1994, scientists warned that the spawning stock biomass could not begin to recover unless the 1989 and 1990 year-classes survive to maturity. In particular, they indicated that rebuilding would not happen if fisheries on immature fish continue at current high levels. The NAFO Scientific Council recommended that there be no direct fishing for cod in Div. 3N and 3O in 1996 and that by-catches in fisheries targeting other species should be kept at the lowest possible level.

In its August 1994 and 1995 letters to the Minister of Fisheries and Oceans, the Fisheries Resource Conservation Council recommended a continuation of the moratorium for cod in division 3NO. The Council was particularly concerned with the low levels of biomass and the lack of recruitment for this stock. The NAFO Fisheries Commission continued the moratorium on 3NO cod.

In August 1996, in a letter to the Minister of Fisheries and Oceans, the FRCC again recommended a continuation of the moratorium on directed fishing for 3NO cod. In September 1996, the NAFO Fisheries Commission agreed to continue the moratorium on fishing 3NO cod in 1997.

Analysis:

The June 1997 report of the NAFO Scientific Council makes the following observations:

- Biomass at extremely low level.
- Stock at an all time low in 1996.
- Only weak year-classes now in the stock.
- No sequential population analysis possible due to lack of biological sampling.

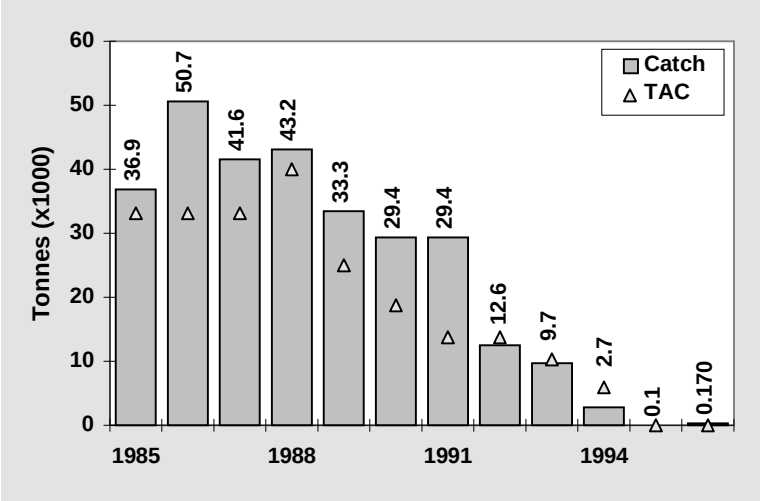
The 1989 and 1990 cohorts which dominated the 1992-1995 surveys were present in the 1996 spring survey but were practically absent from the 1996 fall survey. The Council is concerned with the low level of biomass and the lack of good year classes since 1991. Under these conditions, the prospects of rebuilding for 3NO cod are poor and maximum protection must be given to the upcoming year classes. Consequently, the

Recommendation # 1:

The FRCC recommends that:

1.1 There be no directed fishing in 1998.

1.2 By-catches be kept at the lowest possible level.

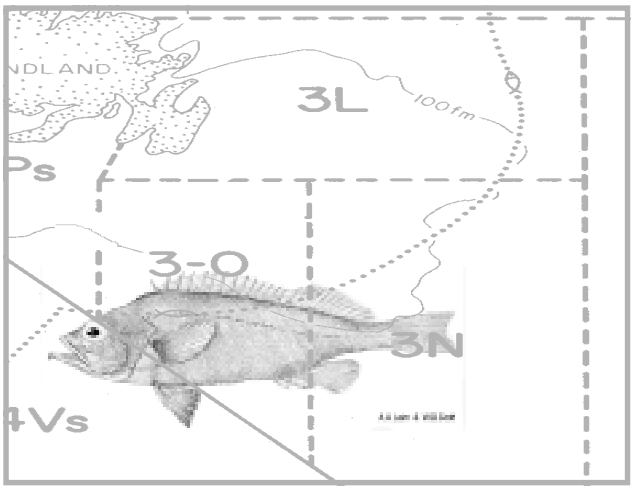


Council considers that no directed fishing should take place on the 3NO cod stock in 1998 and that by-catches of cod should be kept at the lowest possible level.

COUNCIL'S VIEWS ON STOCK STATUS:

Overall Stock Indicator:	**Very low level**
	Compared to average
Spawning Biomass:	**Likely at very low level**
Total Biomass:	**At historically low levels**
Recruitment:	**All year classes at low levels**
Growth and Condition:	**No special comment**
Age Structure:	**All year classes weak**
Distribution:	**No special comment**
Recent Exploitation Level:	**Under moratorium since 1994**

2. REDFISH 3LN



HISTORY OF FRCC RECOMMENDATIONS:

In the June 1995 report of the NAFO Scientific Council, the scientists concluded that redfish abundance was very low in Division 3L, with no sign of good recruitment. In Division 3N, they observed that the stock has declined from 1984 to 1991 but that "the status since then is uncertain". The Scientific Council of NAFO recommended for 1996 that "total catches of redfish in Division 3LN should not exceed 14,000t". At the September meeting of the NAFO Commission, it was agreed to set the 1995 TAC for 3LN redfish at 14,000t. The Fisheries Resource Conservation Council made no specific recommendation on this stock for 1995.

In its August 1995 letter to the Minister of Fisheries and Oceans, the Council concluded that abundance in 3L appeared to be very low, with no sign of good recruitment, and abundance in 3N had declined to an unknown extent, with no sign of good year-classes since those of 1986/87. The Council noted that for the first time in many years, the TAC was not taken in 1994, due largely to unsuccessful fisheries by several member states. The Council concluded that a cautious approach was crucial for 3LN redfish and that the TAC for 1996 should be substantially reduced from the level of 14,000t, probably to a level below the 1994 catch of 7,000t. At the September meeting of the NAFO Commission, it was agreed to reduce the TAC for 1996 to 11,000t.

In its August 1996 letter to the to the Minister of Fisheries and Oceans, the FRCC indicated that they could see little evidence to support a 14,000t TAC for 3LN redfish. The Council noted that the Fisheries Commission set the quota at 11,000 t for 1996. The NAFO Scientific Council considered that this stock had declined since the mid 1980's and continued to be at a low level, particularly in Division 3L. There was some indication of recruitment in 3N but no sign of any good year-classes to follow. For these reasons, the FRCC recommended that Canada should propose a substantial reduction in this TAC. In September 1996, the NAFO Fisheries Commission set the TAC for 1997 at 11,000t for 3LN redfish.

The FRCC also cautioned that any further expansion of the shrimp trawl fishery into 3LN should be discouraged. The FRCC noted with concern the high discard rate of small flatfish and redfish in other shrimp fisheries and the effect this could have on recruitment and loss of yield for these stocks, which were at critically low levels. Given these reasons, the FRCC recommended that approach taken by Canada at NAFO in the previous year with respect to an expanded 3LN Shrimp trawl fishery be continued.

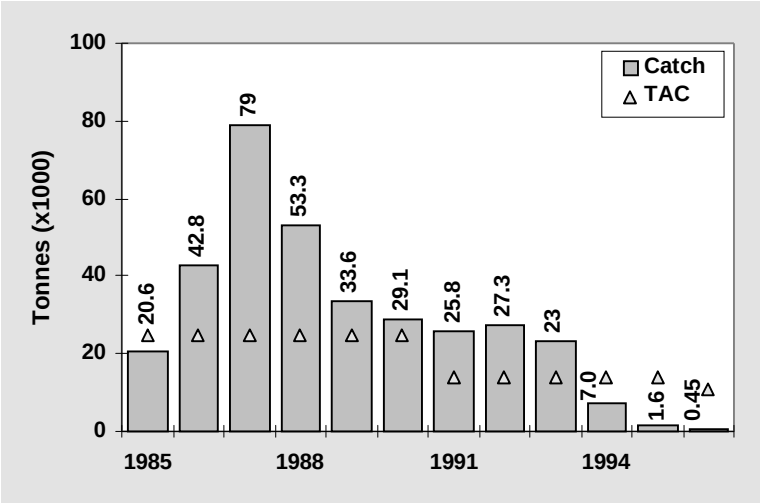
RECOMMENDATION # 2:

The FRCC recommends that:

2.1 There be no directed fishery.

2.2 By-catch be kept at the lowest possible levels.

2.3 There be no expansion of the 3M shrimp fishery into 3LN because of potential by-catch of juvenile redfish in the small mesh shrimp gear



ANALYSIS:

The June 1997 report of the NAFO Scientific Council makes the following observations:

- Biomass low in 3L with no sign of good recruitment.
- Little or no sign of good recruitment since 1986 and 1987 year classes.
- Stock at a very low level.

The Council notes that catches continued to decline in 1996, reaching a historical low (453t) for this fishery. The Council considers that the shortfall of the catch below the total allowable catch in recent years is largely the result of unsuccessful commercial fisheries carried by member states. This is likely an indication of the poor status of the 3LN redfish stock. With no sign of good recruitment since the 1986-87 year classes, the prospects for rebuilding the 3LN redfish stock are poor.

The Council continues to believe that an expansion of the shrimp trawl fishery from 3M to 3LN should be discouraged so that juvenile redfish are given maximum protection. The Council believes that the approach taken by Canada at NAFO with respect to this possible expansion should be continued.

COUNCIL'S VIEWS ON STOCK STATUS:

Overall Stock Indicator: Very low

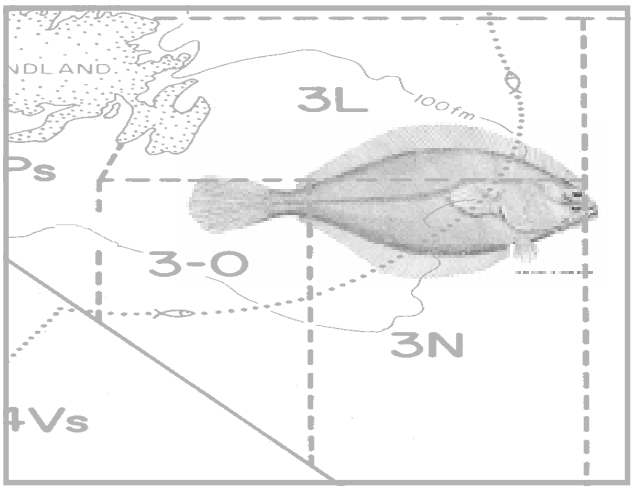
Compared to average

Spawning Biomass: Likely very low level

Total Biomass:	**Very low level**
Recruitment:	**Little sign of good recruitment after 1986-87 year classes**
Growth and Condition:	**Typically slow growth**
Age Structure:	**Dominated by 1986-87 year classes**
Distribution:	**No special comment**

Recent Exploitation Level: Low

3. American Plaice 3LNO



History Of FRCC Recommendations:

In the June 1995 Report of the NAFO Scientific Council, scientists indicated that the abundance of American plaice in 3LNO was at a record low level. Given the extremely low population size, the concerns with respect to the spawning biomass, and the apparently large mortality on juvenile plaice, the NAFO Scientific Council recommended that there be no fishing for American plaice in Div. 3LNO in 1996 and that by-catches be reduced to the lowest possible level.

In its letters of August 1994 and 1995 to the Minister of Fisheries and Oceans, the Fisheries Resource Conservation Council recommended continuing the moratorium for American plaice in Division 3LNO. The Council also pointed at the need to address the concerns raised by the exploitation of immature fish in directed fisheries by non-contracting parties, as well as the suspected high and increasing by-catches of American plaice in the Greenland halibut fishery by both contracting and non-contracting parties. The Council was particularly concerned with the low levels of biomass and the apparent lack of recruitment for this stock.

In August 1996, in a letter to the Minister of Fisheries and Oceans, the FRCC again recommended continuing the moratorium on fishing for 3LNO American plaice. In September 1996, the NAFO Fisheries Commission agreed to continue the moratorium on fishing 3LNO American plaice in 1997.

Analysis:

The June 1997 report of the NAFO Scientific Council makes the following observations:

- Stock at a low level
- No good year-classes since 1987.
- Stock composed of fish less than 6 years old.

Although once the largest flatfish fishery in the Northwest Atlantic, and in spite of being under a moratorium since 1995, surveys suggest that this stock has reached a very low level and could still be in decline.

The Council believes that a recovery of this stock is unlikely in the short term as high abundance of juveniles has not translated into a stronger fishable stock in the past, likely due to high by-catch levels in the Greenland halibut fishery.

Since this stock is in such fragile condition, the Council believes that additional protection of nursery grounds be considered with urgency.

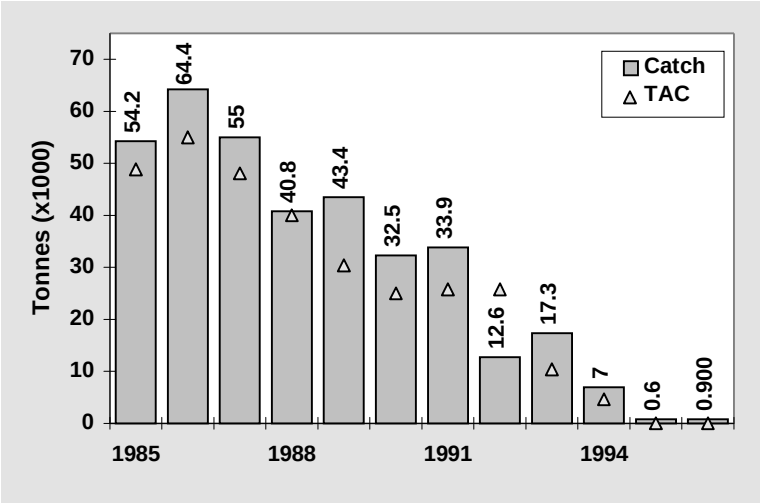
Recommendation # 3:

The FRCC recommends that:

3.1. There be no directed fishing in 1998.

3.2 Measures be undertaken to minimize the by-catch of American plaice in the Greenland halibut fishery, including an increase in the minimum mesh size to 145 mm.

3.3 Protection of key juvenile nursery grounds through the establishment of closed areas to all fishing activity be implemented as a priority in 1998.

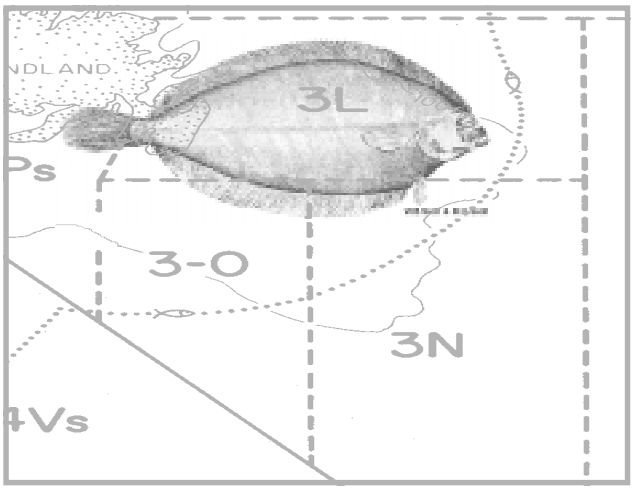


COUNCIL'S VIEWS ON STOCK STATUS:

Overall Stock Indicator:	**Very low**
	Compared to average
Spawning Biomass:	**Very low**
Total Biomass:	**At low levels**
Recruitment:	**No good recruitment since 1987**
Growth and Condition:	**No apparent change**
Age Structure:	**Less than 5% of biomass age 9 or older, most fish < 6 years of age**
Distribution:	**No special observation**

Recent Exploitation Level: Under moratorium

4. Witch Flounder 3NO



History Of FRCC Recommendations:

In the June 1995 Report of the NAFO Scientific Council, scientists indicated that this stock was likely at a very low level. The NAFO Scientific Council recommended that no fishing be permitted on witch flounder in Division 3NO in 1996 in an effort to rebuild this stock to former levels. Scientists also recommended reducing by-catches to the lowest possible level.

In its letters of August 1994 and 1995 to the Minister of Fisheries and Oceans, the Fisheries Resource Conservation Council recommended a continuation of the moratorium for witch flounder in Division 3NO. The moratorium was continued in 1996.

In June 1996, the NAFO Scientific Council recommended that no fishing be allowed on this stock in 1997 to allow for stock rebuilding. It also recommended that by-catches be kept at the lowest possible level. In August 1996, in a letter to the Minister of Fisheries and Oceans, the FRCC again recommended continuing the moratorium on fishing for 3NO witch flounder in 1997. In September 1996, the NAFO Fisheries Commission agreed to continue the moratorium on fishing 3NO witch flounder in 1997.

Analysis:

The June 1997 report of the NAFO Scientific Council makes the following observations:

- Stock remains at a low level;
- Some improvement between 1996 and 1997 survey estimates.

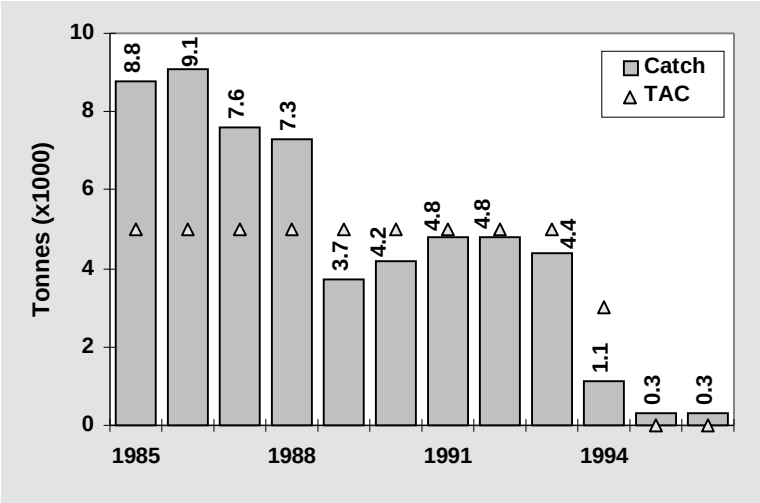
The Council believes that this stock remains at a very low level and that the moratorium in place since 1995 should be continued.

Recommendation # 4:

The FRCC recommends that:

4.1 There be no directed fishing, to allow stock rebuilding.

4.2 Witch flounder by-catch be kept at the lowest possible level



COUNCIL'S VIEWS ON STOCK STATUS:

Overall Stock Indicator: Very low

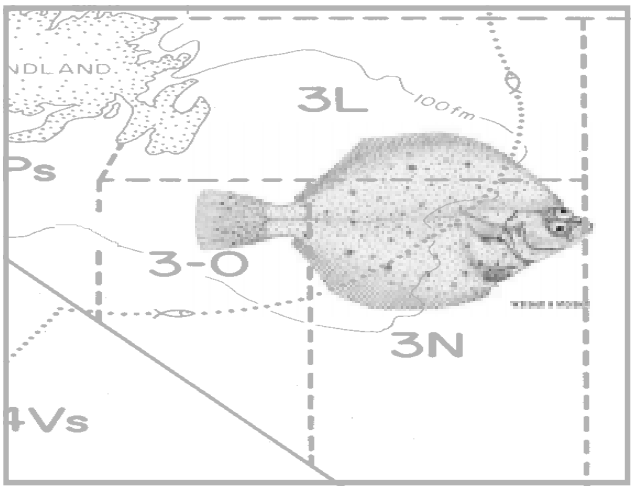
Compared to average

Spawning Biomass: Likely at low level

Total Biomass:	**Low; slight improvement in 96/97 survey**
Recruitment:	**No observation**
Growth and Condition:	**No observation**
Age Structure:	**No data**
Distribution:	**No special observation**

Recent Exploitation Level: Under moratorium

5. Yellowtail Flounder 3LNO



History Of FRCC Recommendations:

In the June 1995 Report of the NAFO Scientific Council, scientists indicated that the potential growth on the stock from the relatively large 1984-86 year-classes had not occurred, likely because of large catches of these cohorts as juveniles by fisheries in the Regulatory Area, and because the TAC had been exceeded each year from 1984 to 1993. The NAFO Scientific Council concluded that this stock was at a low level. The scientists also noted that the geographic distribution of this stock had contracted, making it very vulnerable to over-exploitation. In view of the above, the NAFO Scientific Council recommended that there be no directed fishing on yellowtail flounder in 1996 and that by-catches be reduced to the lowest possible level.

In its letters of August 1994 and 1995 to the Minister of Fisheries and Oceans, the Fisheries Resource Conservation Council recommended the continuation of the moratorium for yellowtail flounder in Division 3LNO. The Council also pointed out the need to address the concerns raised by the exploitation of immature fish in the directed fisheries in the Regulatory Area by non-contracting parties. The Council was particularly concerned with the low levels of biomass and the lack of recruitment for this stock. The NAFO Fisheries Commission continued the moratorium on 3LNO yellowtail flounder.

In its August 1996 letter to the Minister of Fisheries and Oceans, the Council reiterated its recommendation for the continuation of the moratorium on 3LNO yellowtail flounder. The FRCC noted that the potential

Recommendation # 5:

The FRCC recommends that:

5.0 The total allowable catch be established at 4,000 t to permit a limited directed fishery, provided that the following conditions are met;

5.1 The yellowtail fishery be restricted to divisions 3NO.

5.2 By-catches of American plaice, cod and witch flounder be kept at the lowest possible levels, in part through seasonal adjustments to fishing activity.

5.3 The start of the fishing season be delayed until after peak spawning period in July.

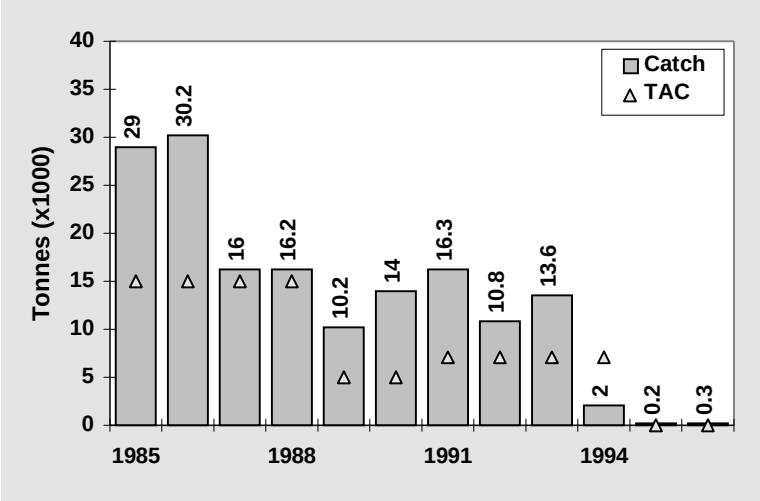
5.4 The protection of key juvenile nursery grounds through the establishment of closed areas to all fishing activity be implemented as a priority in 1998.

5.5. Juveniles be further protected through the implementation of strict small fish protocols and avoidance of key juvenile nursing areas.

5.6. The minimum mesh size in this fishery be established at 145 mm square.

5.7. Monitoring, evaluation and sampling programs be developed prior to the commencement of fishing.

5.8. There be a mid-season review of fishing activity so as to ensure the effectiveness of the by-catch and small fish protocols.



growth from the 1984-86 year-classes had not occurred, probably because of large catches of juveniles in the NAFO Regulatory Area. In September 1996, the NAFO Fisheries Commission agreed to continue the moratorium on fishing 3LNO yellowtail flounder in 1997.

Analysis:

The June 1997 report of the NAFO Scientific Council makes the following observations:

- Stock size has increased since 1994; still lower than in the 1980s.
- Juveniles are concentrated in and around the nursery area located in the transboundary area of division 3N.
- Recent year-classes below average.
- Stock is capable of sustaining a limited directed fishery.

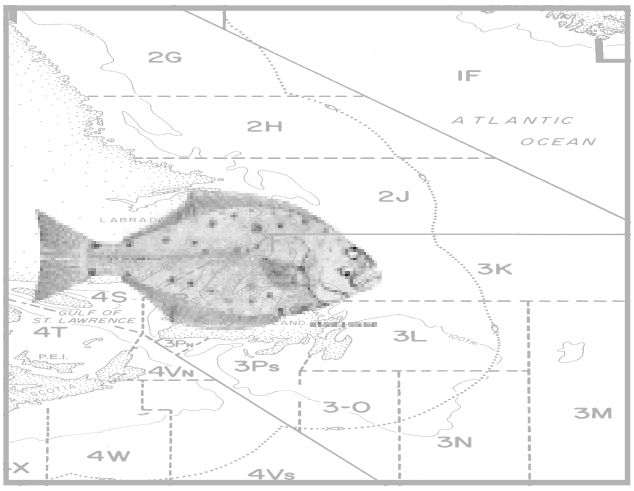
Based on the results of several surveys, there appears to have been a slow but steady increase in biomass over recent years, although it is still well below levels recorded in the early 1980's. The NAFO Scientific Council has recommended using the lowest exploitation rate on record (6%) to establish a TAC (4,000 t) for 1998. However, the FRCC remains concerned with the potential impact of a by-catch of American plaice and cod in such a fishery. The Council is also concerned with the limited geographical distribution of the yellowtail flounder stock, particularly with low densities in division 3L. For these reasons, the Council believes that exploitation rates should be kept at a low level. For the purpose of the 1998 fishery, the TAC should be established at 4,000t. A TAC of 4,000t seems acceptable if proper conservation measures are effectively implemented.

In addition, the FRCC fully supports the recommendations of the NAFO Scientific Council to delay the beginning of the fishery until after peak spawning has taken place, to confine the yellowtail fishery to divisions 3NO, and to ensure that careful monitoring and sampling take place. Because by-catches of American plaice could be substantial in this fishery and because of the necessity to protect juvenile flatfish in the known nursery areas, the FRCC also considers that any fishery on yellowtail should be carried out under strict small fish protocols.

Council's views on Stock Status:

Overall Stock Indicator:	**Gradual improvement**
	Compared to average
Spawning Biomass:	**Undetermined**
Total Biomass:	**Increased since 1994 but likely still below levels of 1980's**
Recruitment:	**Below average**
Growth and Condition:	**Weight at age stable**
Age Structure:	**Stable with several cohorts**
Distribution:	**Expanding compared to early 90's; low densities in 3L**
Recent Exploitation Level:	**Under moratorium since 1995**

6. Greenland Halibut 2+3KLMNO



History Of FRCC Recommendations:

In August 1993, the Council called for significant reductions in catches in the Regulatory Area and for a joint commitment to address scientific questions related to stock structure. In November 1993, the Council concluded that the 1994 TAC for Greenland halibut should be reduced substantially and that catches in the order of the historical catch level of 25,000t should be a maximum level.

In June 1994, the Council noted the absence of controls on the foreign fishery outside 200 miles and recommended that all means be taken by Canada to limit the effort on this stock. In November 1994, the Council reiterated that catches in the order of the historical catch level of 25,000t should be a maximum level.

The NAFO Scientific Council concluded in June 1995 that the TAC for Greenland halibut in 2+3KLMNO should continue to be set at levels well below the catches achieved in previous years until it became clear that the stock was increasing. In addition, the Scientific Council recommended that measures be considered to reduce, as much as possible, the exploitation of juvenile Greenland halibut.

In August 1995, the FRCC re-iterated the need for maintaining reduced TACs. The conclusion of the Scientific Council that the large catches of immature Greenland halibut were a major impediment to stock rebuilding was noted. The Council suggested that Canada's objective for the near future should be to rebuild the stock to biomass levels of the early 1980s in order to support a sustainable fishery in the long-term. The NAFO Fisheries Commission concluded at the September 1995 meeting that the 1996 TAC would be set at 20,000t for Greenland halibut in 3LMNO, with an additional TAC of 7,000t to be allowed in SA2+3K (Canada only).

In August 1996, the FRCC was encouraged by the new evidence of good recruitment for Greenland halibut. The Council indicated that the above-average year-classes from the 1990's must be protected to allow the stock to rebuild and that catching large numbers of these fish as juveniles would waste the potential for rebuilding the stock. In September 1996, the NAFO Fisheries Commission concluded that the 1997 TAC would continue to be set at 20,000t for Greenland halibut in 3LMNO. The Canadian quota for 1997 in 2+3K was established at 7,000t in keeping with the FRCC recommendations.

Recommendation # 6:

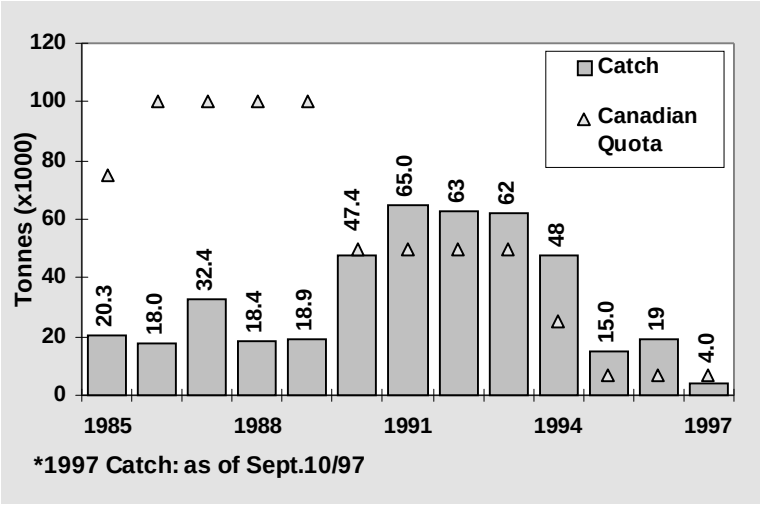
The FRCC recommends that:

6.1 The current Canadian quota in 2+3K be maintained at 7,000t for 1998.

6.2 Measures be taken to protect juveniles such as small fish protocols.

6.3 Canada propose to NAFO that the minimum mesh be increased to 145mm in the NAFO Regulatory Area.

6.4 The by-catch of American plaice be kept to the lowest possible level.



ANALYSIS:

The June 1997 report of the NAFO Scientific Council makes the following observations:

- Biomass of older fish remains at a low level.
- 1990-1994 year-classes appear to be above average; 1995 year-class also possibly large.
- Improvements in most indices of abundance in 1996.

The FRCC notes that the additional controls in the NAFO Regulatory Area have likely resulted in a substantial reduction of fishing mortality on the stock in 1995 and 1996. The Council is encouraged by the signs of good recruitment since 1990 and notes that continued conservation measures should allow these year classes to grow and contribute to the spawning biomass in the near future.

Despite these positive signs, we believe it would be premature at this stage to increase catch levels until the stock has benefitted more substantially from this recruitment.

The Council notes that catches from this stock have consisted mainly of immature fish and believes that additional measures such as increased mesh size and small fish protocols should be implemented in the NAFO Regulatory Area so as to be consistent with similar practices inside the Canadian zone.

COUNCIL'S VIEWS ON STOCK STATUS:

Overall Stock Indicator:	**Improving**
	Compared to average
Spawning Biomass:	**Fishable biomass, low**
Total Biomass:	**Showing signs of recovery**
Recruitment:	**Good year-classes since 1990**
Growth and Condition:	**No special observation**
Age Structure:	**Older age-groups remain at low levels**
Distribution:	**1996 fall survey shows distribution at 17% 2GH, 65% 2J3K, 18% 3LMNO**
Recent Exploitation Level:	**Reduced in 1995 and 1996**