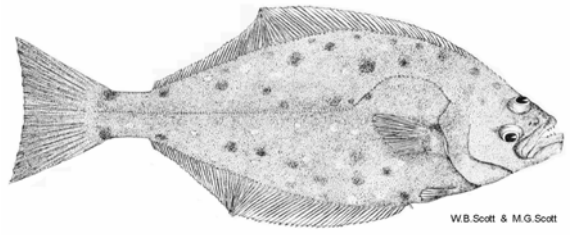

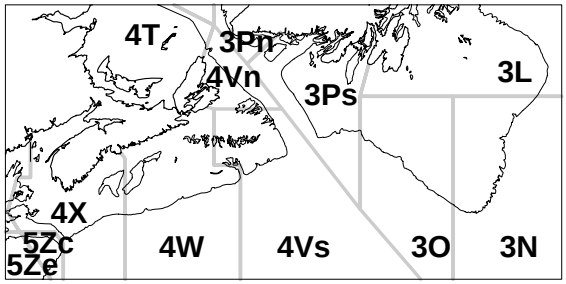

SCOTIAN SHELF AND SOUTHERN GRAND BANK HALIBUT

Background

Atlantic halibut, the largest of the flatfishes, ranges widely over Canada's Atlantic fishing grounds. Halibut are demersal living on or near the bottom at temperatures within a few degrees of 5^{o}C. Atlantic halibut are most abundant at depths of 200-500 m in the deep water channels running between the banks and along the edge of the continental shelf, with larger individuals moving into deeper water in winter. The management unit definition (4VWX3NOPs) was based largely on tagging results which indicated that Atlantic halibut move extensively throughout the Canadian North Atlantic with smaller fish moving further than larger fish. Migrations of larger fish were thought to be related to spawning. Studies have shown that the Brown's Bank area may be an important rearing area for juvenile halibut.

Females grow faster than males, and attain a much larger maximum size. Females start to mature at about age 6 and reach 50% maturity at about 115cm, while males start to mature at about 4 years of age and reach 50% maturity at about 75cm. Most of the commercial catch is taken between 8 and 12 years of age. Halibut are voracious feeders and up to a length of 30cm, food consists almost exclusively of invertebrates. Between 30cm and 66cm both invertebrates and fish are eaten while halibut over this size eat fish almost exclusively.

Prior to 1988 the Atlantic halibut fishery was unregulated. A halibut working group was formed in 1987 to look at management alternatives for the 1988 fishery. With increased interest in the fishery and concerns expressed by industry, a precautionary TAC of 3,200t was set in 1988, based largely on previous catch levels.

The Fishery

Landings (thousands of tonnes)

Year	70-79 Avg.	80-89 Avg.	1991	1992	1993	1994	1995
TAC*	n/a	n/a	3.2	3.2	3.2	1.5	0.9
4VWX							
Canada	0.8	1.5	1.0	0.9	0.9	0.9	0.6
Foreign	0.1	0.1	0.1	0.1	0.1	0.1	
3NOPs							
Canada	0.4	0.7	0.4	0.3	0.3	0.2	0.2
Foreign	0.1	0.2	0.7	0.1	0.4	0.1	0.1
Total							
4VWX	0.8	1.6	1.0	1.0	0.9	0.9	0.6
3NOPs	0.5	1.0	1.1	0.4	0.7	0.2	0.3
TOTAL	1.3	2.5	2.2	1.4	1.6	1.1	0.9

N/A - Not applicable

Canadian domestic **landings** reached a peak in 1985 (3,531t), declined to 1,024t in 1994 and to 708t in 1995. Southern Grand Banks landings for 1995 remained similar to those in 1994 at about 160t; however, the Scotian Shelf fishery declined by about 40%. Declines may be related to the cod moratorium in 4VW and 3NO, and the decrease in Total Allowable Catch (TAC) from 1,500t in 1994 to 850t in 1995. The 1996 TAC is also 850t. Longliners are the dominant fleet in both the Scotian Shelf and southern Grand Banks fishery accounting for over 70% of the landings. In 1995 over 80% of the Scotian Shelf landings can be attributed to this fleet.

Available from: Maritimes Regional Advisory Process, Department of Fisheries and Oceans, P.O.Box 1006, Stn. B105, Dartmouth, N.S., Canada B2Y 4A2. Telephone: 902-426-8487. E-mail: d_geddes@bionet.bio.dfo.ca

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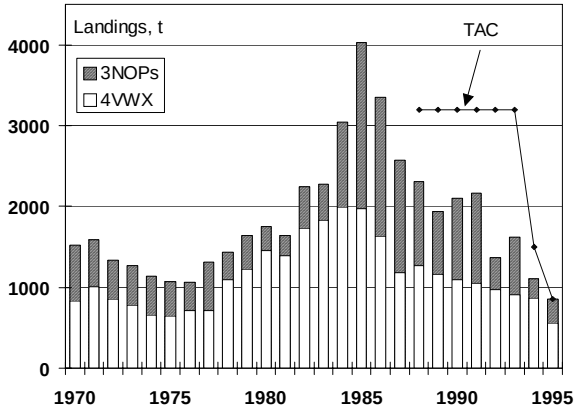
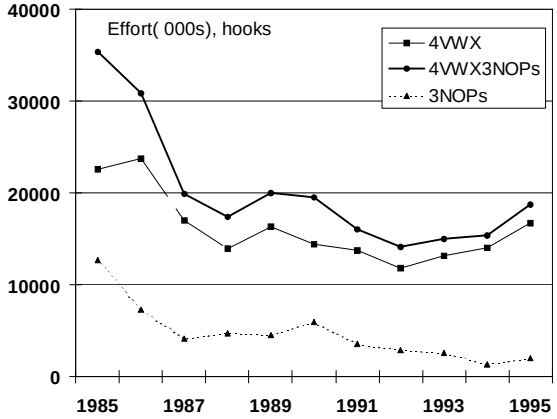




Halibut landings by season indicated that the Canadian fishery is prosecuted mainly in the spring and summer in 4VWX and primarily in the spring in 3NOPs. For 1995, summer landings were somewhat lower, likely due to management measures. Foreign landings are incidental on the Scotian Shelf, taken as by-catch in the silver hake fishery while in 3NO the European Union (EU) prosecute a spring and summer groundfish fishery outside the 200 mile limit. These EU vessels report variable halibut catches (5-30% in the last 5 years) that are not accounted for under the current management plan.

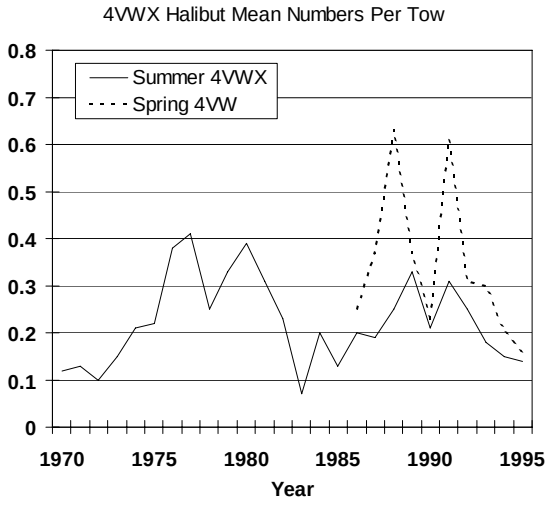
Total estimated effort for the whole stock area, which had remained relatively stable since 1992, increased slightly in 1995. For 4VWX, total effort increased between 1992 and 1995 while effort remained relatively stable during the same time period in 3NOPs. In 1994 concern was expressed by the Fisheries Resource Conservation Council (FRCC) that redirection of fishing effort to halibut would occur as a result of closures in other groundfish fisheries. A large scale redirection of effort was not evident in 1994 or 1995 based on reported landing statistics, however misreporting of catch may be occurring.

Management measures imposed on the less than 65ft fixed gear fleet resulted in the use of monthly quotas, and some quota qroups permitting only a by-catch or catch and release fishery for halibut. Up until two years ago, the fishery was essentially unrestricted. However since that time, large reductions in the TAC and subsequently more restrictive management measures, may have affected the catch rates and consequently, such information may no longer provide useful indices of abundance. Industry comments suggested that the restrictive quotas resulted in misreporting of halibut catches in 1995.

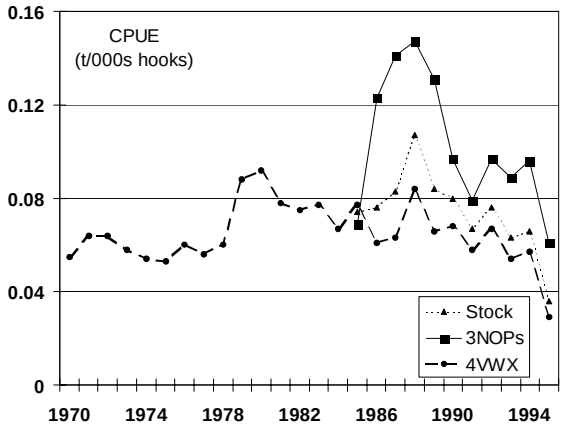
Inshore fleets continued to release less than 32" halibut in 1995. Licence conditions have been used to enforce the regulation for the inshore fleets. For 1996 offshore management plans and licence conditions will require the release of undersized halibut. In 1994, data from the Fisherman and Scientists Research Society (FSRS) indicated that the amount released could be as high as 25% by weight of the total less than 65ft landings. Studies using a 16/0 circle hook have shown that the survival of released halibut from longline gear is in the order of 75%.

Resource Status

Stock status evaluations have concentrated on examining landing statistics, commercial catch and effort trends and length frequencies. Typically the research vessel surveys catch very few halibut, and are quite variable from year to year, making it difficult to interpret the results in terms of resource abundance. The research vessel survey catches a different size distribution (smaller) of halibut compared to the commercial fishery. Because the survey tends to catch smaller halibut, it was considered useful as an indicator of halibut recruitment. Both the spring and summer surveys indicate a decline in recruiting year-classes.



Commercial catch rates which have declined gradually in the 4VWX area for the directed longline fishery in recent years, declined in 1995. Catch rates while indicating stability since 1990 in 3NOPs, also declined in 1995. Although management measures may have contributed to the dramatic decline seen in 1995, even taking this into account the catch rate still declined significantly. Other factors affecting the catch rate may be the introduction of the more efficient circle hook in the mid-1980s and the release of halibut less than 32". Although these effects cannot be quantified, they could confound our perception of the stock. Examining the commercial length frequency information suggests that the proportion of mature (112cm at 50% maturity) female biomass is at a very low level. Fishermen have indicated that the retention of large halibut, through the use of the circle hook has contributed to this decline.



Outlook

The change in management in 1995 made it more difficult to interpret the commercial data. In 1995, the TAC was reduced by over 40% and allocations became restrictive to the directed longline fishery, with domestic catches substantially less than 850t. However, the reduction in TAC did not appear to reduce effective fishing effort in 1995. Based on reports from industry, some catch may have been misreported. All biological indicators suggest a stock in a severely depressed state and maintenance of the existing level of effort on this stock is likely to further the decline in this resource. The resource cannot sustain levels of effort observed in the early 1990s. Failure to reduce effort substantially in this fishery will lead to further deterioration of the state of this depressed stock and diminish the likelihood of future rebuilding.

For More Information

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