

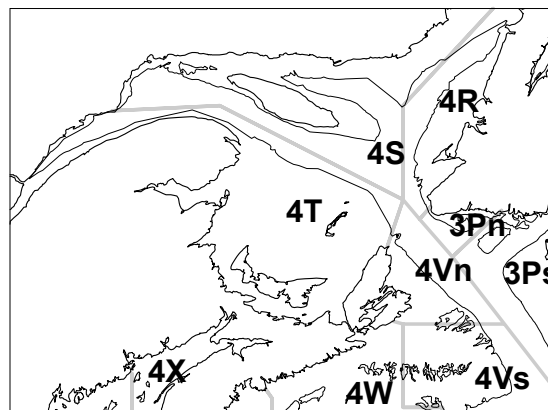
American Plaice in the Southern Gulf of St. Lawrence (Div. 4T)

Background

American plaice are widely distributed throughout the Northwest Atlantic, from West Greenland to the Gulf of Maine. Throughout their range, they are associated with intermediate depths (about 80-250 m) and cold waters (below 0°C to 1.5°C). Male and female plaice differ in their life-history traits: females grow faster and attain larger sizes than males; male plaice have shorter lives than females. Sexual maturity is reached at 7-15 years of age for females and between 5 and 7 years of age for males. Spawning occurs from early spring to summer with each female releasing hundreds of thousands of eggs. The fertilized eggs float near the water surface for several days. After hatching, plaice are pelagic until they reach a minimum length of 18 mm, when metamorphosis occurs and they become benthic. Plaice consume a wide range of organisms throughout their life cycle: young plaice consume bottom organisms such as mysid shrimp, amphipods, polychaetes, echinoderms and molluscs; older plaice consume other small fish species and invertebrates.

In the southern Gulf of St. Lawrence (NAFO Division 4T), American plaice has been under quota management since 1977. The resource was exploited mainly by longlines in the 1930s, but by the 1960s most landings were made by seines and otter trawls. Plaice are now caught by a diverse fishery of fixed and mobile gear, with the dominant sector being seines operated by vessels less than 45 feet. With the growth of mobile gear sectors during the 1960s, a large component of plaice catches in 4T (30-40% by weight) was commercially-undersized and discarded at sea. Recent measures, including increased mesh sizes and mandatory landing of all catches, have likely reduced discarding.

The most recent assessment of this stock was conducted in February 2001 and is summarised in Stock Status Report A3-26 (2001). This report updates fishery and survey data on this stock for 2001.



Summary

- In 2001, landings of **American plaice** declined to 1195 t, the second lowest level since 1965, due to effort reductions and market conditions in 2000 and 2001.
- The research vessel survey abundance index indicates that the stock in 4T has been at its lowest level for the past three years. A decline in the survey index occurred in western 4T, with an increasing proportion of the stock located in eastern 4T.
- Recruitment has remained low since the early 1990s and well below the long-term average.
- Without improved recruitment and at current catch levels, no improvement can be anticipated in the short to medium term.

The Fishery

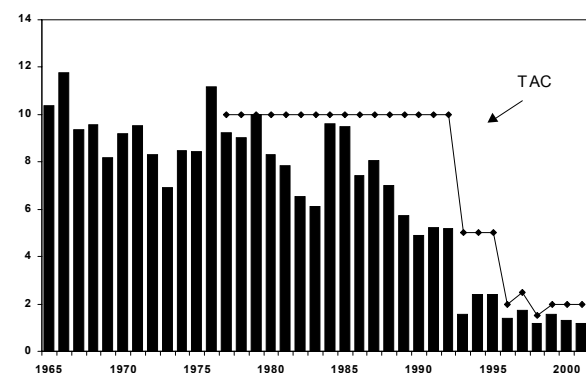
Landings and TAC's (thousands of tonnes)

Year	Average 1980-89	Average 1990-95	Average 1996-98	1999	2000	2001*
TAC	10	7.5	2.0	2.0	2.0	2.0
Landings	7.6	3.6	1.4	1.5	1.3	1.2

* Preliminary statistics

An index fishery for cod was initiated in 1998, followed in 1999 by a limited commercial cod fishery. This may have led to a redirection of fishing effort, contributing to the drop in plaice landings that has occurred since 1997. Other factors, such as the loss of market demand in 2000 and 2001, followed by reduced market pricing after spring 2001, may also have contributed to reduced effort in the fishery.

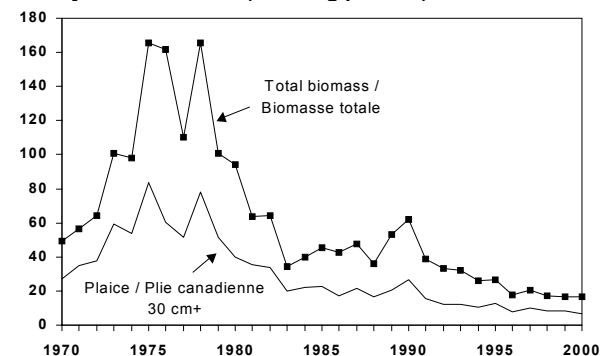
Landings and TAC's (thousands of tonnes)



Resource Status

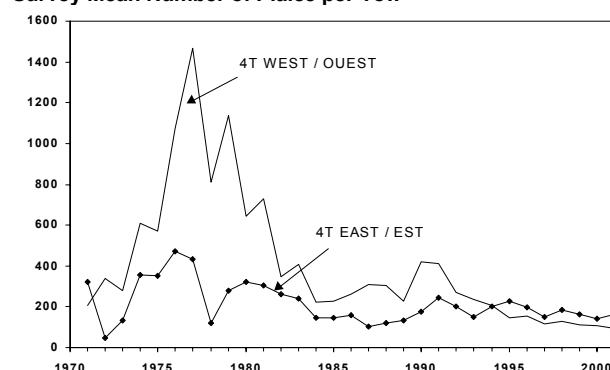
Research surveys (RV) since 1999 have recorded average catches of 130, 121 and 120 plaice per tow, corresponding to the three lowest levels of abundance and biomass of 4T plaice since the survey began in 1971. Commercial-size plaice (minimum 30 cm) composed about a third of the survey biomass in 2001.

Survey Biomass Index (mean kg per tow)



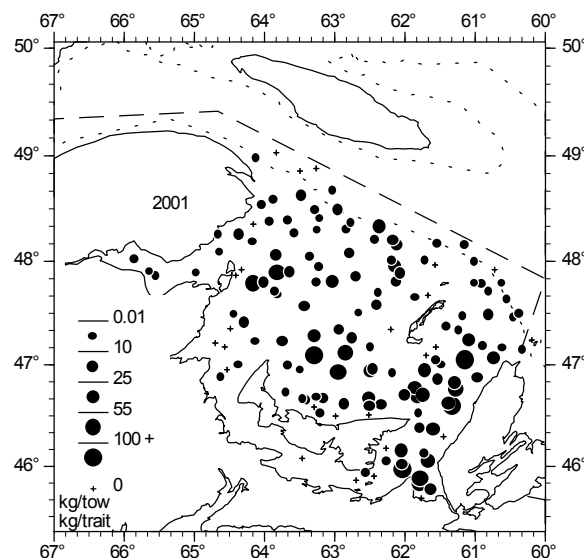
The pattern of decline in abundance of plaice has differed between regions of the southern Gulf. RV survey catch rates have declined in the western half of 4T, but have remained fairly stable in the east. RV survey biomass has been equal or greater in the east compared to the western half of 4T since 1994. Survey data indicate that plaice biomass has varied more widely in the western half of 4T.

Survey Mean Number of Plaice per Tow



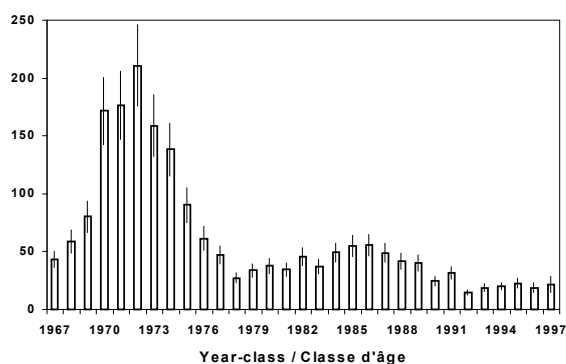
Plaice catches were most abundant in the 2001 groundfish survey off the coast of Cape Breton. Catches in Chaleur Bay and off the Gaspé coast remain very low and the resource is below average on the central Magdalen Shallows.

Catches of Plaice (kg) in Standard Tows of the 2001 Research Survey



Recruitment remains at a low level for this stock. Year-classes were evaluated by their abundance in the RV survey at ages that were not fully recruited to the commercial fishery (ages 4-7). Results indicate strong year-classes born in the early 1970s, with declining year-class strength from the mid 1980s to the early 1990s. Recent year-classes are low but stable.

Survey Mean Number per Tow at Age-5



Sources of Uncertainty

Past discarding of commercially undersized plaice has caused uncertainty in the exploitation level for this resource. Some discarding may continue to occur in this

fishery. Discarding has limited the effectiveness of stock assessment and management, making it difficult to interpret trends in fishing mortality and to develop biological reference points.

RV survey catch rates indicate a decline of the resource in western 4T and relative stability in eastern 4T. An analysis of commercial catch rates that was made in the last assessment indicated similar regional trends. Reasons for these trends cannot yet be provided. Studies of plaice genetics and the comparison of growth rates and year-class abundance suggest that there is a single stock in 4T.

Some fishers believe that seal predation on plaice may be substantial.

Outlook

Plaice in the whole of 4T remain at a relatively low level, mainly due to a decline that has occurred in 4T west. RV survey data indicate that there is no sign of improved recruitment. Without improved recruitment and at recent catch levels, no improvement can be anticipated in the short to medium term.

Management Considerations

In 2000, the minimum mesh size for mobile gear fisheries directing for winter flounder in 4T was increased to 140 mm square mesh. This measure was taken, in part, to reduce plaice by-catch and the capture of plaice less than 30 cm. An evaluation of the effectiveness of this mesh change on plaice discarding is required.

For More Information

Contact:

Roderick Morin
Department of Fisheries & Oceans
Gulf Fisheries Centre
P.O. Box 5030, Moncton
New Brunswick, E1C 9B6

TEL: (506) 851-2073
FAX: (506) 851-2620
E-Mail: morinrb@dfo-mpo.gc.ca

References

DFO, 2001. American plaice (Div. 4T). DFO Science Stock Status Report A3-26 (2001).

Morin, R., I. Forest, and G.A. Poirier. 2001. Status of NAFO Division 4T American plaice, February 2001. DFO Can. Sci. Adv. Sec. Res. Doc. 2001/23.

Poirier, G.A., G.A. Chouinard, D.P. Swain, T. Hurlbut, C. LeBlanc, and R. Morin. 2001. Preliminary results from the September 2001 groundfish survey of the Southern Gulf of St. Lawrence/Résultats préliminaires du relevé de septembre 2001 sur les poissons de fond dans le sud du golfe du Saint-Laurent. DFO Can. Sci. Adv. Sec. Res. Doc. 2001/130.

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Department of Fisheries and Oceans
P.O. Box 1006, Stn. B203
Dartmouth, Nova Scotia
Canada B2Y 4A2
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