



STOCK ASSESSMENT ON SUBDIVISION 3Ps WITCH FLOUNDER

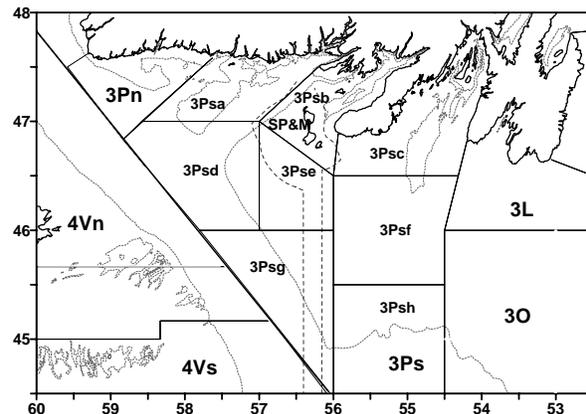
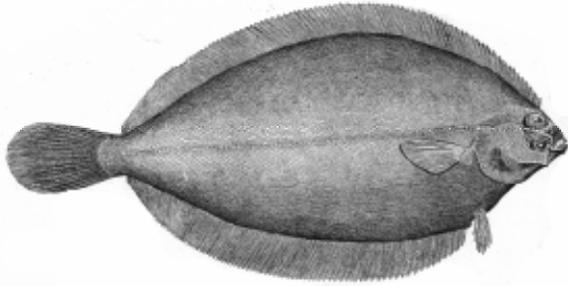


Figure 1: NAFO Subdivision 3Ps with unit areas and major geographic features shown.

Context

Witch flounder is a deepwater flatfish which reaches its northern limits in the Northwest Atlantic near Hamilton Bank off southern Labrador but extends as far south as the east coast of the southern USA. In Subdivision 3Ps, it is primarily distributed along the slope around St. Pierre Bank and in through Hermitage Channel off Hermitage, Connaigre and Fortune Bays on Newfoundland's south coast.

It is a long-lived, slow growing species and has been aged well over 20 years old, however, the number of age groups comprising the witch flounder stock in Subdivision 3Ps has been reduced substantially since the mid 1970's. Fish older than 13 years were rarely seen in either the commercial or survey catches by the early 1990's.

Spawning occurs over a rather protracted period usually extending from March through to September for most areas of the Northwest Atlantic. However, in this area spawning takes place early by comparison with highest intensity in the period January-March. During the winter and spring months it can be found in spawning concentrations along the continental slope of St. Pierre Bank especially in Halibut Channel and it is here at this time when most offshore commercial fishing operations occur and catch rates are generally highest.

SUMMARY

- Mean annual catch has been around 470 t from 1996-2004 compared to the 1983-1990 average of 800 t.
- Mean biomass index from the DFO RV survey during 1996-2005 is about 80% of the 1983-1990 period.
- The DFO RV biomass index reached its lowest point in 1999 but has been increasing since then.
- Biomass index from the GEAC fall survey during 1998-2004 has been relatively stable since 2000.
- There was little change in the length composition of witch flounder over the past 20 years.
- No measurable change in recruitment has been indicated over the same 20 year period.
- American plaice by-catch in the otter trawl directed witch flounder fishery ranged from 93% to 143% of the witch catch in 2000-2002, but decreased since then to about 50% in 2004.

DESCRIPTION OF THE ISSUE

Species Biology

The age structure of the population determined from DFO research vessel (RV) survey (up to 1994) and the Groundfish Enterprise Allocation Council (GEAC) (1998-2004) survey data appears to have remained relatively stable since 1983. Size structure based on these survey series also appears to be stable over time. As well, there has been little apparent change in growth pattern over the same period.

The Fishery

Landings of witch flounder in 3Ps generally fluctuated between 300 and 1000 t annually since the early 1970's (Fig. 1). From 1986-93, landings were relatively stable averaging around 1000 t annually. During the past five years annual landings averaged just over 500 t but were as low as 250 t in 1996. During the 1980's, although a short seasonal directed fishery often occurred, catches were primarily by-catches from other groundfish fisheries.

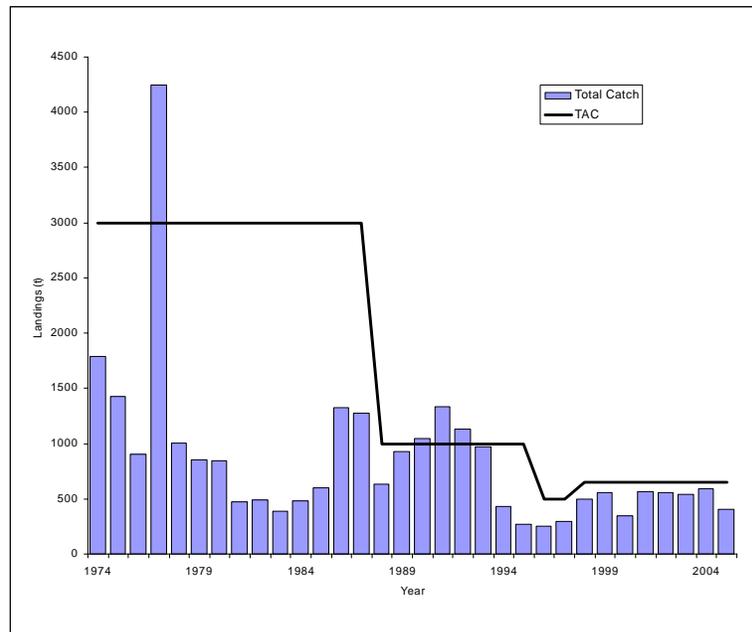


Figure 1. Landings and total allowable catches (TACs) of witch flounder in NAFO Subdivision 3Ps during 1974-2005 (the 2005 landings are to September 2).

Landings from this stock have been taken mainly by Canadian trawlers fishing offshore along the southern slope of St. Pierre Bank. However, a significant portion of the landings is taken also by small Scottish/Danish seiners (20-50% annually over the past 5 years) and, to a lesser extent, gill-netters fishing primarily in Hermitage Channel near the Newfoundland south coast bays. Fishermen from St. Pierre and Miquelon also catch small amounts of witch flounder on St. Pierre Bank.

The fishing pattern for offshore Canadian participants since about 1993 has remained much the same with fishing being conducted mostly at the south-eastern tip of St. Pierre Bank. Although traditionally the otter trawl catches of witch flounder have been taken primarily in depths of about 200-400 meters (109-219 fathoms), more recently the fishery has taken place mainly in very deep water to at least 900 meters (492 fathoms).

Although most of the seine and gillnet landings have been from area 3Psb there has been some increase in the landings from 3Psa in recent years.

American plaice by-catch in the otter trawl directed witch flounder fishery ranged from 93% to 143% of the witch catch in 2000-2002, but has decreased to 50% in 2004.

ASSESSMENT

Key Indicators

Age data from the fishery and DFO RV surveys have not been available since 1994. This precludes the use of any age-based assessment tools needed to evaluate important stock parameters, for example, mortality, growth, and maturity rates.

Although survey stock size indices are highly variable (Fig. 2) the DFO RV survey biomass index during recent years suggests that the biomass is on average about 80% of the 1983-1990 average when catches were around 800 t. Abundance-at-length data do not indicate any increase in recruitment in recent years.

A fall survey conducted by the Groundfish Enterprise Allocation Council (GEAC) from 1998-2004 also provides a biomass index for this stock. The biomass index from this survey (Fig. 2) has been relatively stable from 2000-2004, although trends and scale differ from DFO RV surveys. The 1999 point in the series was considered to be a year effect in the survey.

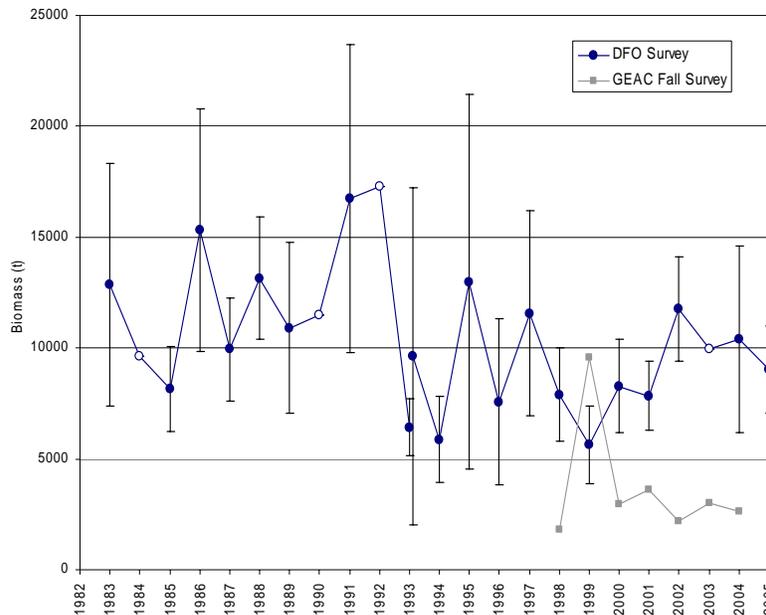


Figure 2. Biomass indices of witch flounder from surveys in NAFO Subdivision 3Ps.

ADDITIONAL STAKEHOLDER PERSPECTIVES

By-catch of American plaice in the witch flounder otter trawl fishery decreased after by-catch restrictions were added to the Conservation Harvesting Plan.

Catch rates in the offshore fishery for witch flounder remained consistent with previous years. Catch rates were highest in February and early March with fish moving out of the area late March as observed in previous years.

CONCLUSIONS AND ADVICE

Stock size estimates during the last several years have fluctuated within a range, which, on average, is about 80% of the average stock size during 1983-1990. The lack of contrast between years in length distributions is hard to interpret. However, considering the apparent stability in distribution, survey biomass and recruitment observed over many years, fishing at recent catch levels should not be harmful to the stock.

OTHER CONSIDERATIONS

Survey abundance at age data is available from the GEAC survey and could provide valuable information on growth and mortality in this stock.

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FOR MORE INFORMATION

Contact: Dawn Maddock Parsons
Northwest Atlantic Fisheries Centre
St. John's, NL
A1C 5X1
Tel: (709) 772-7703
Fax: (709) 772-4188
E-Mail: parsonsd@df-mpo.gc.ca

¹ Updated: January 2006

This report is available from the:

Regional RAP Office
Newfoundland and Labrador Region
Fisheries and Oceans Canada
PO Box 5667
St. John's, NL
A1C 5X1

Telephone: (709) 772-2302/8892

Fax: (709) 772-6100

E-Mail: richardsed@dfo-mpo.gc.ca

Internet address: www.dfo-mpo.gc.ca/csas

ISSN 1480-4913 (Printed)

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CORRECT CITATION FOR THIS PUBLICATION

DFO, 2005. Stock Assessment on Subdivision 3Ps Witch Flounder. DFO Can. Sci. Advis. Sec. Sci. Advis. Rep. 2005/050.