

O. Windowpane Flounder (Gulf of Maine-Georges Bank) by Lisa Hendrickson

1.0 Background

No stock structure information is available for windowpane flounder. However, the assessment assumes two stock areas (Georges Bank and Southern New England) based on apparent differences in growth, sexual maturity, and abundance trends. Landings from the Gulf of Maine are low, so that area is combined with Georges Bank.

The northern windowpane flounder stock, which includes the Gulf of Maine and Georges Bank regions (GOM-GB), has never been formally assessed as part of the SAW/SARC process. The following index-based assessment is an update of the last report on stock status (NEFSC 2001) and a re-evaluation of the overfishing definition (NEFSC 2002).

2.0 Assessment Results

2.1 The Fishery

Windowpane landings were first recorded in 1975. During most years, the GOM-GB stock has comprised a higher proportion of the total landings than the SNE-MAB stock. Following a 1991 record high of 2,900 mt, landings declined sharply to 300 mt in 1994 (Table O1 and Figure O1). High landings during the early 1990s probably reflected an expansion of the fishery to offshore areas, as well as the targeting of windowpane flounder as an alternative to depleted groundfish stocks. Landings declined from 700 mt in 1996 to a record low of 44 mt in 2001.

Discarding of windowpane has not been quantified, so discards were not included in the calculation of exploitation indices.

2.2 Research Survey Indices

Biomass indices of GOM-GB windowpane flounder from the NEFSC autumn bottom trawl surveys (1963-2001) are presented in Table O1 and Figure O2. Survey biomass indices are highly variable, but indicate a declining trend following a time series peak in 1984 and an increasing trend after 1991. The large increase in the 1998 survey index is primarily attributable to a large catch of windowpane at one station.

2.3 Biological Reference Points

Biological reference points for GOM-GB windowpane flounder were derived from survey-based proxies of biomass and exploitation rates and are based on an ASPIC-based MSY estimate of 1,000 mt. The threshold F is defined as an F_{MSY} proxy ($= 1.11$) when the NEFSC autumn survey index is greater than 0.94 kg/tow (equal to a B_{MSY} proxy) and declines linearly to zero at 50% of the B_{MSY} proxy ($= 0.47$ kg/tow). The target exploitation index is defined as 60% of the F_{MSY} proxy ($= 0.67$) when the autumn survey index is greater than 0.94 kg/tow and declines linearly to zero at 0.47 kg/tow.

2.4 Relative Exploitation Rates and Stock Status

Relative exploitation rates (landings/NEFSC autumn survey biomass index) have been declining since reaching a peak in 1991 (Table O1 and Figure O3) and were below the F_{MSY} proxy (=1.11) during 1997-2001. The 1999-2001 autumn survey mean biomass index equals 0.79 kg/tow and the 1999-2001 mean exploitation index (landings/NEFSC autumn survey biomass index) equals 0.10 (Table O3 and Figure O2). Overfishing was not occurring and the stock was not overfished in 2001.

3.0 Sources of Uncertainty

* Stock structure is uncertain.

* Discarding is not quantified and may represent a sizable fraction of the multi-species catches given recent groundfish retention restrictions.

* Vessel trip reports have been used to prorate the landings since 1995, and a fraction of the landings from Southern New England may have been reported as Georges Bank landings or vice versa.

4.0 Literature Cited

NEFSC (Northeast Fisheries Science Center). 2002. Final report of the working group on reevaluation of biological reference points for New England groundfish. 231 p.

NEFSC (Northeast Fisheries Science Center). 2001. Assessment of 19 Northeast groundfish stocks through 2000; a report to the New England Fishery Management Council's Multi-species Monitoring Committee. Northern and Southern Demersal Working Groups, Northeast Stock Assessment Workshop. *Northeast Fish. Sci. Cent. Ref. Doc.* 01-20; 217 p.

Table O1. Landings (mt), NEFSC autumn survey biomass indices (stratified mean kg per tow, offshore strata 13-29 and 37-40), and exploitation indices (landings/autumn survey biomass index) for Gulf of Maine-Georges Bank windowpane flounder during 1963-2001. Landings include Statistical Areas beginning with 51 and 52, with the exception of 526, 530-539 and 541.

Year	Landings ¹ (mt)	Biomass Indices (kg per tow)	Exploitation Indices (landings/biomass index)
1963		0.24	
1964		0.10	
1965		0.17	
1966		0.48	
1967		0.52	
1968		0.26	
1969		0.64	
1970		0.19	
1971		0.16	
1972		0.57	
1973		1.53	
1974		0.82	
1975	1,300	0.39	3.38
1976	1,516	1.17	1.30
1977	1,099	1.56	0.71
1978	923	1.15	0.80
1979	856	0.73	1.18
1980	408	0.63	0.65
1981	413	0.79	0.52
1982	411	0.49	0.83
1983	460	0.55	0.84
1984	743	2.14	0.35
1985	2,141	0.94	2.29
1986	1,842	1.11	1.67
1987	1,396	0.65	2.16
1988	1,377	0.65	2.12
1989	1,577	0.41	3.81
1990	1,078	1.13	0.96
1991	2,862	0.17	16.74
1992	1,519	0.38	4.01
1993	1,212	0.62	1.96
1994	300	0.31	0.97
1995	700	0.80	0.87
1996	700	0.50	1.40
1997	418	0.43	0.96
1998	396	1.66	0.24
1999	46	0.73	0.06
2000	142	0.73	0.20
2001	44	0.92	0.05

¹ Landings from 1995-2001 were prorated based on Vessel Trip Reports.

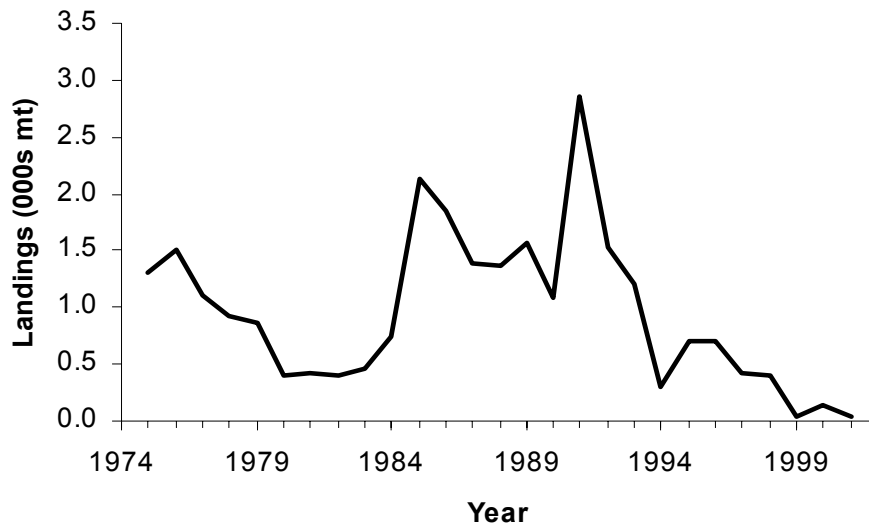


Figure O1. Commercial landings of Gulf of Maine-Georges Bank windowpane flounder during 1975-2001.

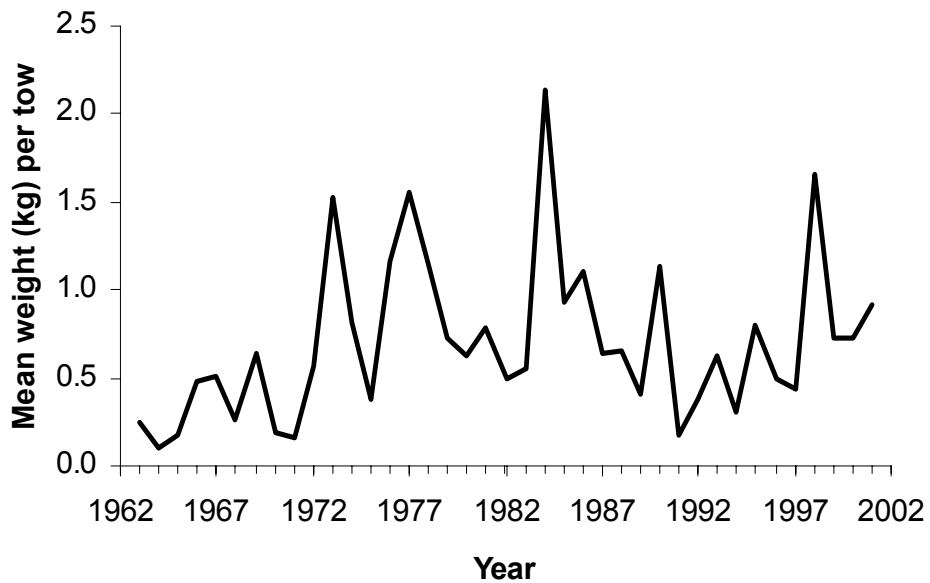


Figure O2. Relative biomass indices (stratified mean kg per tow) for Gulf of Maine-Georges Bank windowpane flounder from the NEFSC autumn bottom trawl surveys during 1963-2001.

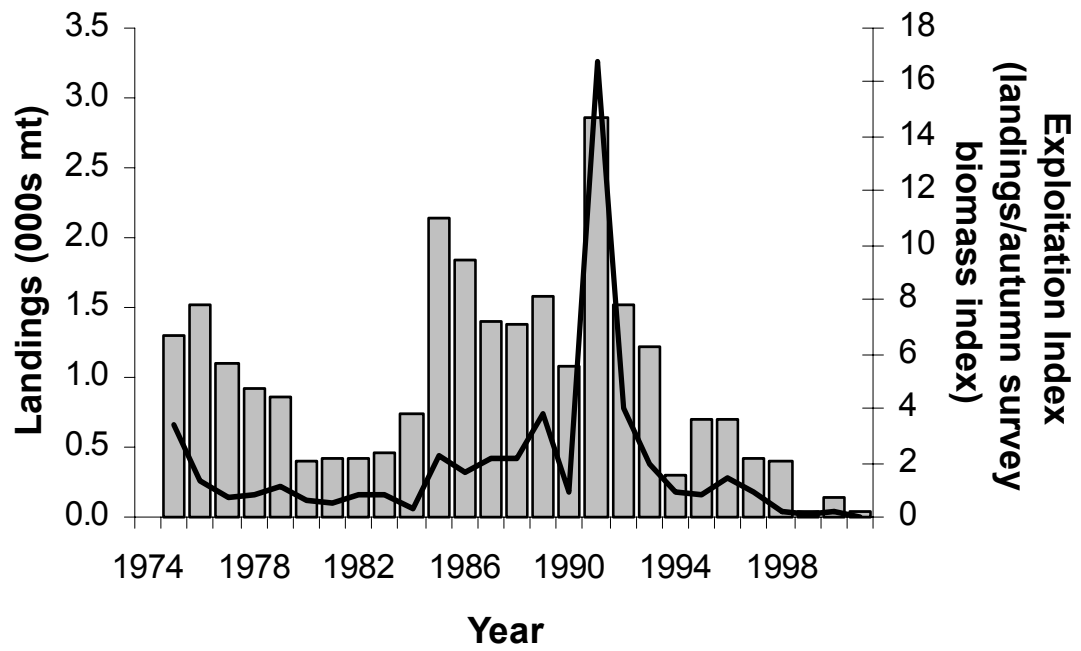


Figure O3. Relative exploitation indices (landings/autumn survey biomass indices) and landings (mt) of Gulf of Maine-Georges Bank windowpane flounder during 1975-2001.