

P. Windowpane Flounder (Southern New England-Mid-Atlantic Bight)

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1.0 Background

No stock structure information is available. Therefore, a provisional arrangement has been adopted that recognizes two stock areas based on apparent differences in growth, sexual maturity, and abundance trends between fish from Georges Bank and from Southern New England. The proportion of total landings contributed by the Mid-Atlantic area is low, so data from that area are combined with those from Southern New England.

The southern windowpane flounder stock, which includes the southern New England and Mid-Atlantic Bight regions (SNE-MAB), 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. However, SNE-MAB landings exceeded those from the Gulf of Maine-Georges Bank stock during 1980-1984, 1999 and 2001 (Table P1 and Figure P1). Landings declined rapidly during 1985-1995, from a peak of 2,100 mt to a record low of 100 mt, respectively. During 1996-2000, landings stabilized at the lowest levels observed in the time series, ranging between 100 mt and 200 mt. Landings in 2001 were 112 mt.

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

2.2 Research Survey Indices

Relative biomass indices, stratified mean weight (kg) per tow, of SNE-MAB windowpane flounder from the NEFSC autumn (1963-2001) bottom trawl surveys are presented in Table P1 and Figure P2. Biomass indices are highly variable, but indicate a declining trend during 1982-1993 followed by stable, but low biomass levels during 1994-2000 and a slight increase in 2001.

2.3 Biological Reference Points

Biological reference points for SNE-MAB windowpane flounder that were adopted in Amendment 9 were derived from survey-based proxies of biomass and exploitation and based on an ASPIC-based MSY estimate of 900 mt. The overfishing definition was subsequently revised based on a stock replacement ratio analysis, but target reference points were not revised (NEFSC 2002). The threshold F is defined as an F_{MSY} proxy ($= 0.98$) when the NEFSC autumn survey index is greater than 0.92 kg/tow (equal to a B_{MSY} proxy) and declines linearly to zero at 50% of the B_{MSY} proxy ($= 0.46$ kg/tow).

2.4 Relative Exploitation Rates and Stock Status

Relative exploitation rates (landings/NEFSC autumn survey biomass index) declined sharply after reaching a peak in 1993 (Table P1 and Figure P3) and were below the F_{MSY} proxy (= 0.98) during 1994-2001. The 1999-2001 autumn survey mean biomass index equals 0.21 kg/tow and the 1999-2001 mean exploitation index (landings/NEFSC autumn survey biomass index) equals 0.69. Based on the biological reference points, overfishing is not occurring, but the stock is overfished. However, exploitation rates are based only on landings, and if unaccounted discarding is substantial, then the 1999-2001 average exploitation rate is underestimated.

3.0 Sources of Uncertainty

- 3.1 Stock structure is uncertain.
- 3.2 Discarding is not quantified and may represent a sizable fraction of the multi-species and sea scallop catches.
- 3.3 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 visa versa.

4.0 Literature Cited

Northeast Fisheries Science Center. 2002. Final report of the working group on re-evaluation of biological reference points for New England groundfish. 231 p.

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 P1. Landings (mt), NEFSC autumn survey biomass indices (stratified mean kg per tow, offshore strata 1-12 and 61-76), and exploitation indices (landings/autumn survey biomass index) for Southern New England-Mid-Atlantic Bight windowpane flounder during 1963-2001. Landings include Statistical Areas beginning with 6, 526, 530-539 and 541.

Year	Landings ¹ (mt)	Biomass Indices (kg per tow)	Exploitation Indices (landings/biomass index)
1963		1.99	
1964		0.87	
1965		0.78	
1966		1.11	
1967		0.81	
1968		0.90	
1969		0.37	
1970		0.31	
1971		0.40	
1972		0.57	
1973		0.58	
1974		0.26	
1975	681	0.14	4.76
1976	568	0.36	1.58
1977	647	0.54	1.21
1978	898	0.54	1.67
1979	633	0.76	0.83
1980	532	0.26	2.08
1981	883	0.52	1.70
1982	651	0.87	0.75
1983	798	0.37	2.17
1984	1,088	0.25	4.40
1985	2,065	0.62	3.34
1986	1,381	0.56	2.45
1987	887	0.44	2.02
1988	1,172	0.42	2.76
1989	1,121	0.09	12.18
1990	890	0.18	4.92
1991	817	0.41	2.02
1992	584	0.18	3.24
1993	469	0.03	15.14
1994	200	0.23	0.89
1995	100	0.20	0.50
1996	200	0.26	0.76
1997	7,107	0.13	0.84
1998	123	0.18	0.68
1999	116	0.12	1.00
2000	126	0.17	0.75
2001	112	0.34	0.33

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

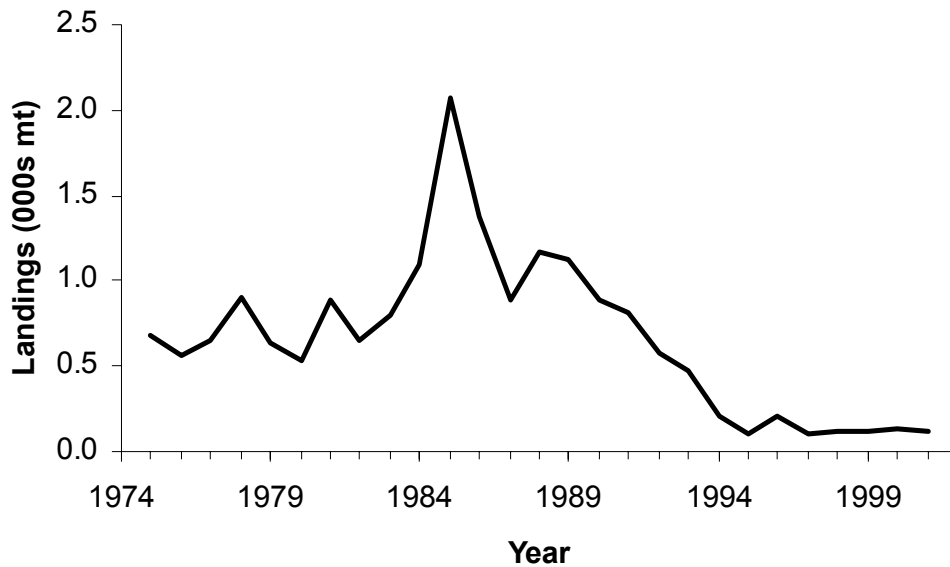


Figure P1. Landings of Southern New England-Mid-Atlantic Bight windowpane flounder during 1963-2001.

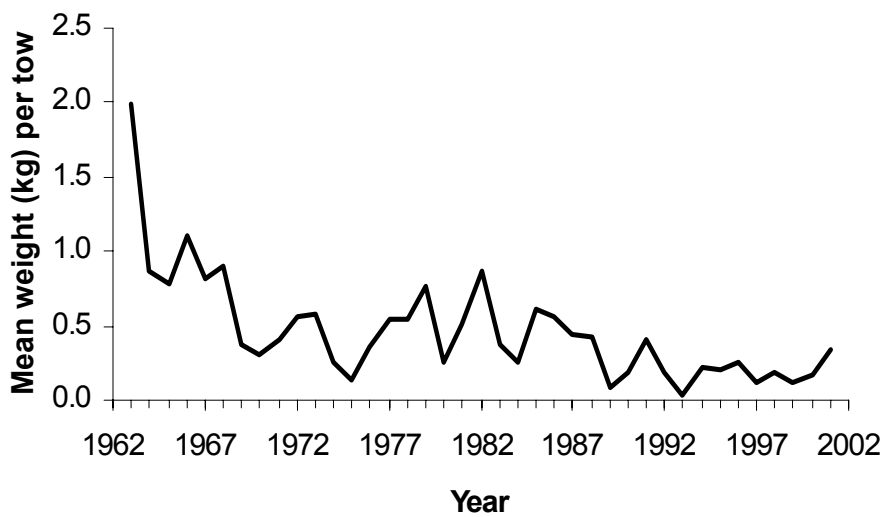


Figure P2. Relative biomass indices (stratified mean kg per tow) for Southern New England-Mid-Atlantic Bight windowpane flounder from the NEFSC autumn research vessel bottom trawl surveys (offshore strata 1-12 and 61-76) during 1963-2001.

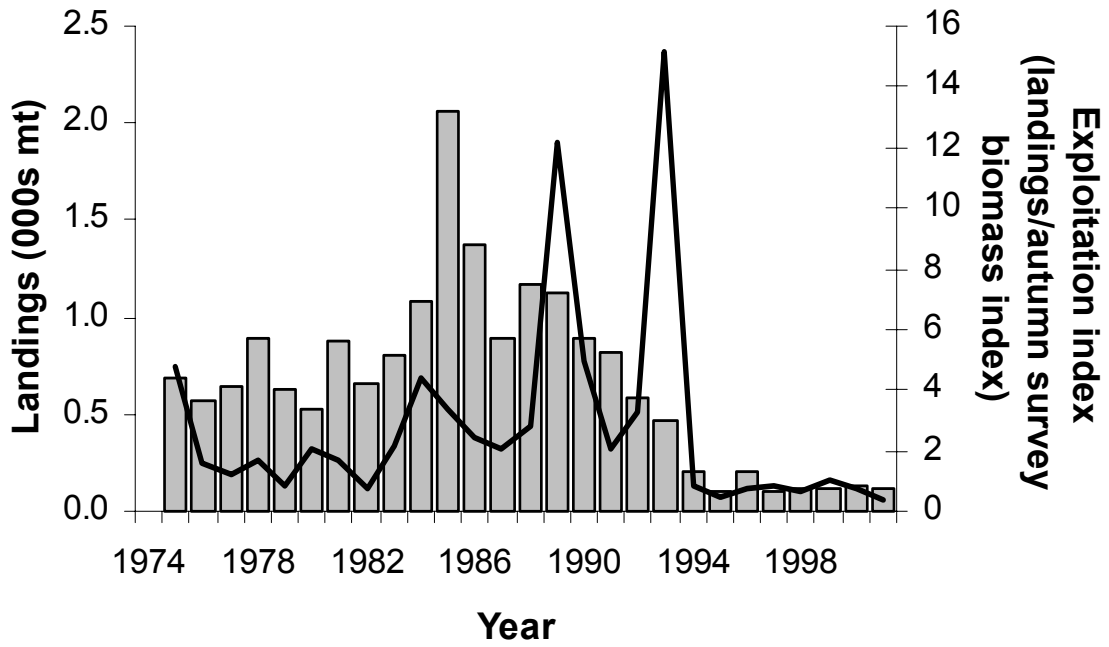


Figure P3. Relative exploitation indices (landings/autumn survey biomass indices) and landings (mt) of Southern New England-Mid-Atlantic Bight windowpane flounder during 1975-2001.