

Q. Mid-Atlantic Yellowtail Flounder by S.X. Cadrin

1.0 Background

The stock has been at relatively low abundance in recent years (Overholtz and Cadrin 1999, Cadrin 2000). This report updates catch through 1999 and survey indices through 2000.

2.0 2000 Assessment

2.1 1999 Landings

Historical landings were revised according to weighout records. Recent landings (1994-1999) were prorated as described in the Georges Bank assessment (Cadrin et al. 1998; Table Q1; Figure Q1). Landings from Mid-Atlantic yellowtail increased by 118% from 1998 to 1999.

2.3 1999-2000 Survey Indices

Survey abundance and biomass indices are reported in Table Q1. Estimates are from valid tows in the Mid-Atlantic area (offshore strata 1, 2, 69, 70, 73, 74), standardized according to net, vessel, and door changes (Cadrin et al. 1998). All survey indices of total biomass slightly decreased in 2000 (Figure Q2).

3.0 Assessment Results

The average fall biomass index for the last three years (1997-1999 average=0.26 kg/tow) is 2% of the B_{MSY} proxy (1963-1972 median=11.69 kg/tow) and well below the biomass threshold ($B_{MSY}/2=5.85$ kg/tow; Figure Q3). The average exploitation index (landings/fall survey biomass index) for the last three years (2.01) is 724% of the F_{MSY} proxy (0.28), derived as the MSY proxy (1964-1969 average annual landings, 3300 mt) divided by the B_{MSY} proxy.

4.0 Harvest Control Rule

The SFA control rule specifies a biomass threshold of 50% B_{MSY} , a maximum F threshold of F_{MSY} , and exploitation index (landings/fall survey biomass index) as the metric for fishing mortality. When biomass is less than B_{MSY} , threshold F decreases linearly to zero at $1/4 B_{MSY}$. When biomass is below $1/4 B_{MSY}$, threshold F = 0. Target F is 60% of F_{MSY} when biomass exceeds B_{MSY} , and decreases linearly to zero at $1/4 B_{MSY}$.

The amendment #9 B_{MSY} proxy is based on 1963-1972 survey indices. However, strata 69-74 were not sampled until 1967. Therefore the 1963-1972 series is inconsistent. A revised B_{MSY} proxy based on the 1967-1972 median biomass index would be slightly greater (12.91 kg/tow).

5.0 Sources of Uncertainty

- Estimates of prorated landings and discard ratios are based on preliminary logbook data and are subject to change.
- The Mid-Atlantic yellowtail resource may not be self-sustaining and may be an extension of the southern New England stock.

6.0 References

Cadrin, S.X. 2000. Yellowtail flounder. In Status of the Fishery Resources off the Northeastern United States, S.H. Clark, editor. NOAA Tech. Mem. NMFS-NE-115 updated online (2000 January <<http://www.nefsc.nmfs.gov/sos/spsyn/fldrs/yellotail/>>).

Cadrin, S.X., W.J. Overholtz, J.D. Neilson, S. Gavaris, and S. Wigley. 1998. Stock assessment of Georges Bank yellowtail flounder for 1997. NEFSC Ref. Doc. 98-06.

Overholtz, W. and S. Cadrin. 1998. Yellowtail flounder. In Status of the Fishery Resources off the Northeastern United States for 1998, S.H. Clark, editor. NOAA Tech. Mem. NMFS-NE-115: 70-74.

Table Q1. Survey indices, landings and exploitation indices of Mid-Atlantic yellowtail flounder.

Year	NEFSC fall		NEFSC spring		NEFSC winter		Landings (k mt)	Exploitation Index
	#/tow	kg/tow	#/tow	kg/tow	#/tow	kg/tow		
1963	35.17*	11.45*						
1964	20.01*	6.22*					1.80	0.29*
1965	59.84*	7.45*					2.10	0.28*
1966	58.89*	11.33*					2.40	0.21*
1967	67.81	11.93					5.30	0.44
1968	99.21	17.26	106.06	21.78			3.30	0.19
1969	55.33	12.61	83.69	17.67			4.60	0.36
1970	55.16	13.20	58.05	14.41			4.20	0.32
1971	32.91	4.84	44.54	10.10			7.90	1.63
1972	105.21	26.82	46.71	12.69			8.90	0.33
1973	10.05	2.40	39.16	11.76			5.10	2.13
1974	0.80	0.24	16.33	5.62			1.90	7.85
1975	1.06	0.21	2.20	0.90			0.70	3.41
1976	0.46	0.08	5.22	1.22			0.30	3.80
1977	1.75	0.23	8.91	2.26			0.60	2.58
1978	1.45	0.29	12.12	2.59			0.40	1.39
1979	1.27	0.26	2.94	0.77			0.50	1.95
1980	0.97	0.19	14.53	4.60			0.30	1.55
1981	22.81	3.04	34.13	8.16			0.70	0.23
1982	12.47	2.18	29.23	6.71			0.43	0.20
1983	2.31	0.47	16.56	4.27			0.59	1.26
1984	2.05	0.23	4.13	1.22			1.04	4.48
1985	1.71	0.19	5.06	1.37			0.15	0.79
1986	0.97	0.21	2.51	0.56			0.25	1.18
1987	0.15	0.01	0.65	0.23			0.17	11.52
1988	3.93	0.23	0.93	0.33			0.09	0.42
1989	7.16	1.16	10.18	1.65			0.40	0.34
1990	4.23	0.81	9.94	2.62			0.24	0.29
1991	0.37	0.13	6.90	2.08			0.21	1.67
1992	0.00	0.00	2.29	0.83	12.86	4.96	0.24	
1993	0.58	0.09	0.45	0.19	4.19	1.87	0.17	1.90
1994	2.26	0.23	0.09	0.06	3.45	1.42	0.24	1.02
1995	0.08	0.03	1.30	0.28	13.50	2.73	0.02	0.71
1996	0.25	0.06	1.40	0.46	5.84	1.74	0.15	2.77
1997	0.83	0.21	1.14	0.43	12.26	4.52	0.54	2.59
1998	0.30	0.09	2.71	0.68	14.06	3.61	0.22	2.50
1999	2.03	0.50	1.39	0.59	1.75	3.74	0.47	0.95
2000			1.42	0.57	7.76	2.53		
Mean	18.16	3.70	17.36	4.23	8.41	3.01	1.57	1.82
97-99 Mean		0.26						2.01
Bmsy proxy		11.69	(1963-72 median)					
					MSY proxy		3.25	(1964-69 average)
Bmsy proxy					Fmsy proxy		0.28	(MSY/Bmsy)

* not all strata sampled.

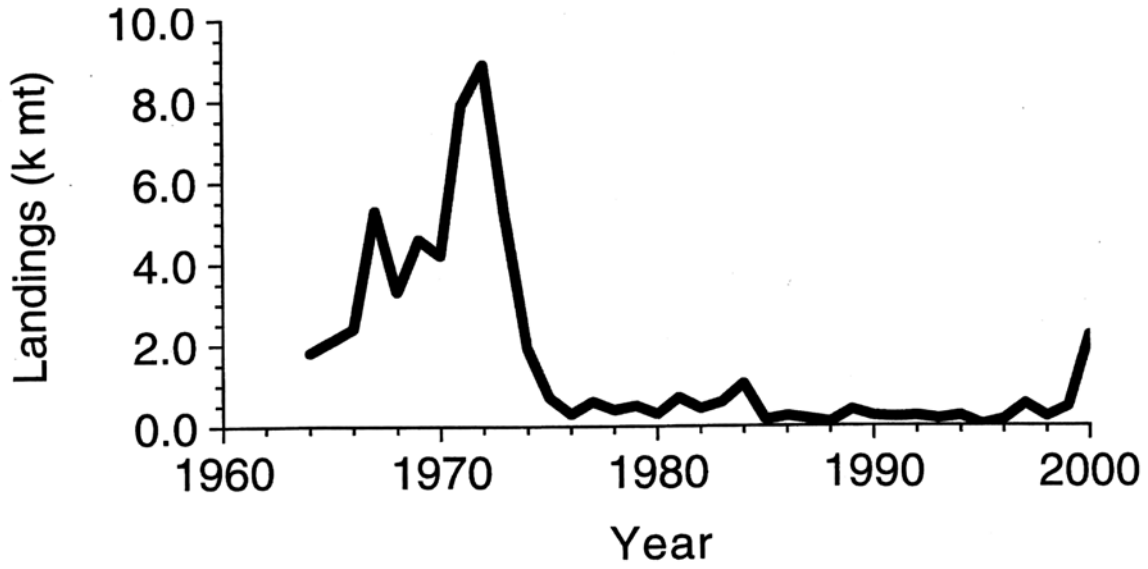


Figure Q1. Landings of Mid-Atlantic yellowtail flounder.

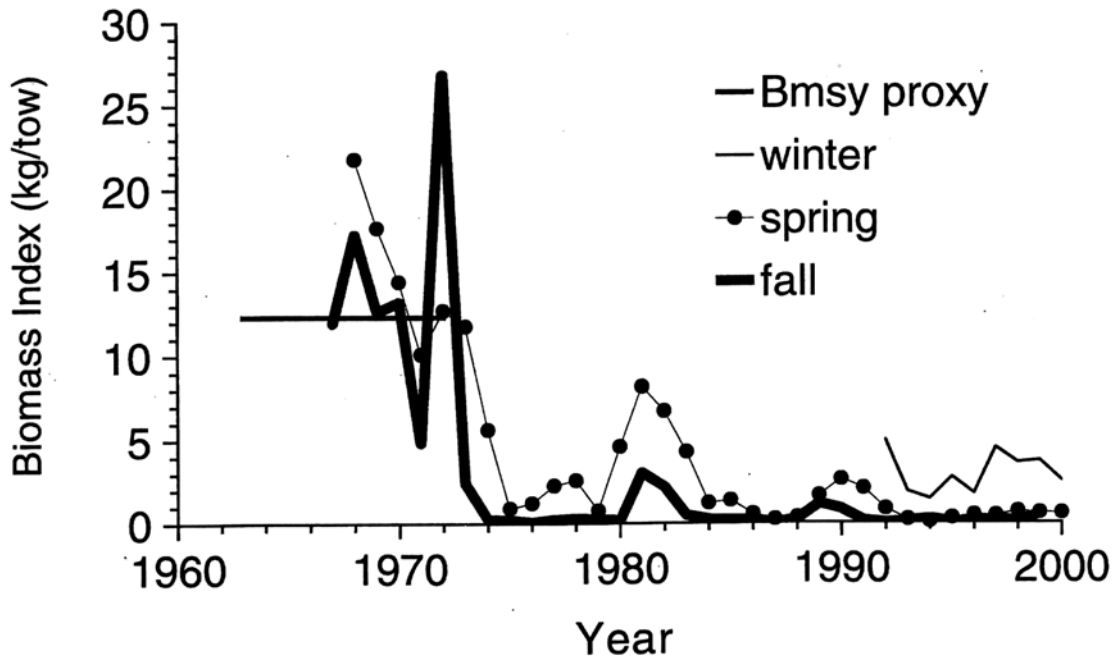


Figure Q2. Survey indices of Mid Atlantic yellowtail flounder biomass.

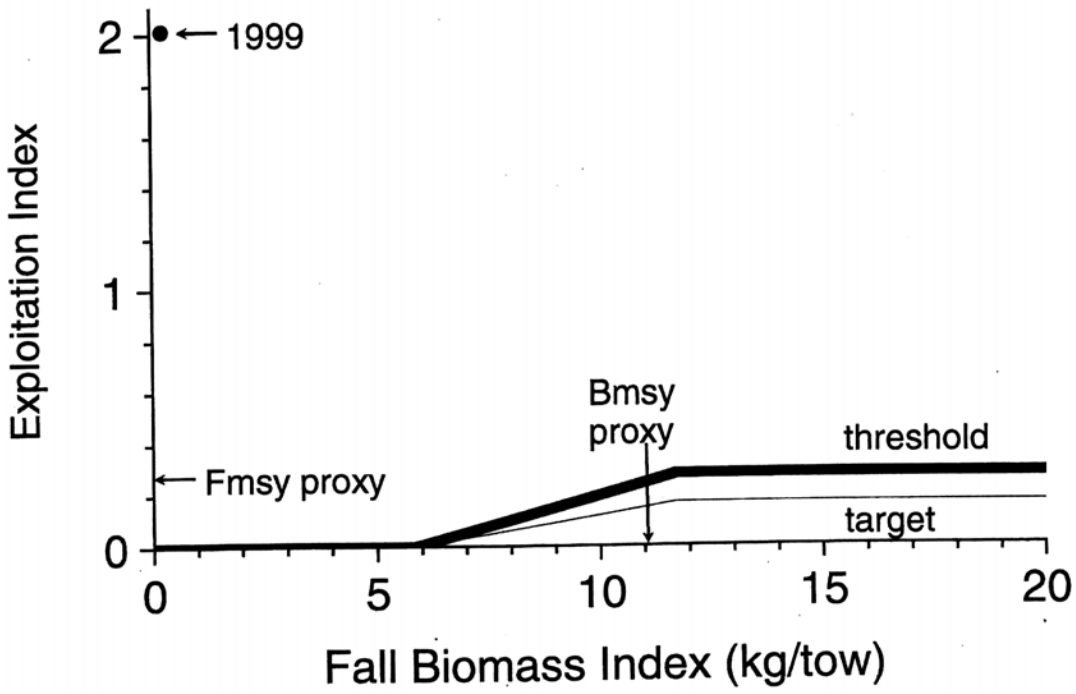
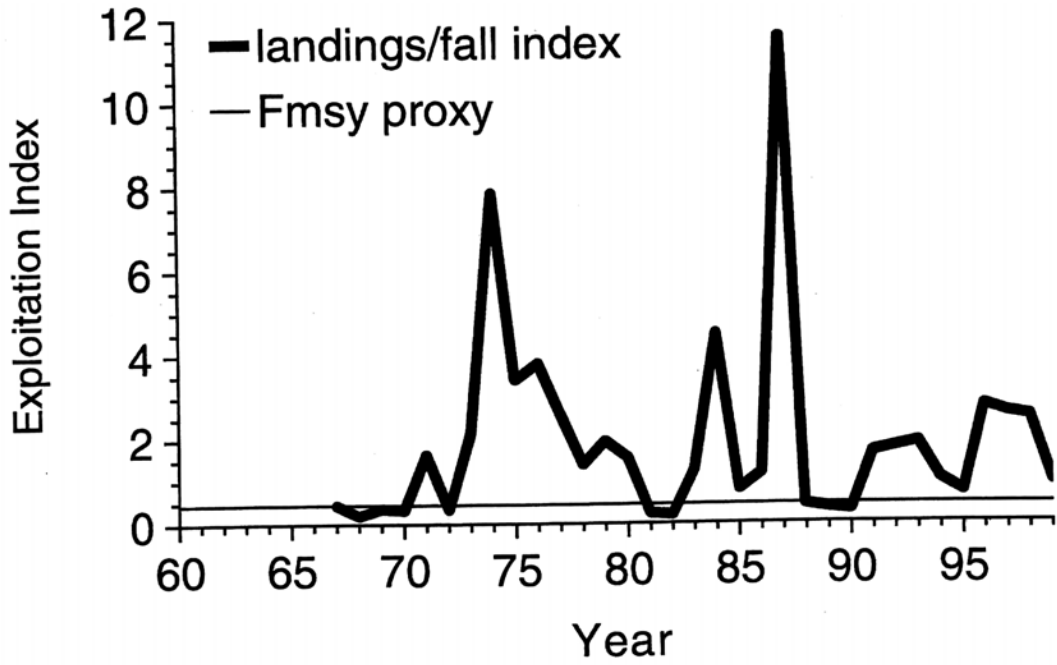


Figure Q3. Status of the Mid Atlantic yellowtail flounder stock.