Q. MID ATLANTIC YELLOWTAIL FLOUNDER by Steve Cadrin

1.0 Background

The stock has been at relatively low abundance in recent years (Overholtz and Cadrin 1999, Cadrin 2001). This report updates catch through 2001 and survey indices through 2002. In August 2002, the Southern Demersal Working Group concluded that southern New England and Mid Atlantic yellowtail flounder should be assessed and managed as a single unit stock, and is concurrently preparing an assessment of the southern New England- Mid Atlantic yellowtail resource (SAW36 WP A6). In September 2002, the Working Group reviewed input data, analyses and projections in this report.

2.0 2002 Assessment

2.1 2000-2001 Landings
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 in 2001 (230 mt) was similar to landings in 2000.

2.3 1999-2002 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 remained low (Figure Q2).

3.0 Assessment Results

The average fall biomass index for the last three years (1999-2001 average=0.21 kg/tow) is 2% of the B_{MSY} proxy (12.91 kg/tow) and well below the biomass threshold ($B_{MSY}/2$=6.46 kg/tow). The average exploitation index (landings/fall survey biomass index) for the last three years (2.17) is almost seven times greater than the F_{MSY} proxy (0.33).

Sensitivity to recent NEFSC survey observations was evaluated by increasing recent NEFSC survey observations by 10%, 25%, and 100% (Figure Q3). Results are summarized in Section 5.2 (Summary of Assessment Advice).

4.0 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.

5.0   GARM Discussion

The GARM agreed that the stock appears to be more overfished than the Southern New England stock. Results from combining the two stocks gives the same impression as the two parts separately.

The GARM recommends that ichthyoplankton surveys be processed. This data could be used in meta-population analysis with movement of recruits among stocks.

6.0   References

Cadrin, S.X. 2001. Mid-Atlantic yellowtail flounder. In Assessment of 19 Northeast Groundfish Stocks through 2000. Northeast Fisheries Science Center Reference Document 01-20: 190-194.

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.

	NEFSC fall		NEFSC spring		NEFSC winter		Landings	Exploitation
	#/tow	kg/tow	#/tow	kg/tow	#/tow	kg/tow	(k mt)	Index
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	0.37	0.11	1.42	0.57	7.76	2.53	0.22	1.94
2001	0.07	0.02	0.26	0.16	4.72	2.08	0.23	14.64
Mean	17.24	3.51	16.86	4.11	8.04	2.92	1.50	2.17
3y mean		0.21		0.44		2.78		5.84

* not all strata sampled.

Figure Q1. Landings and exploitation index of Mid Atlantic yellowtail flounder.
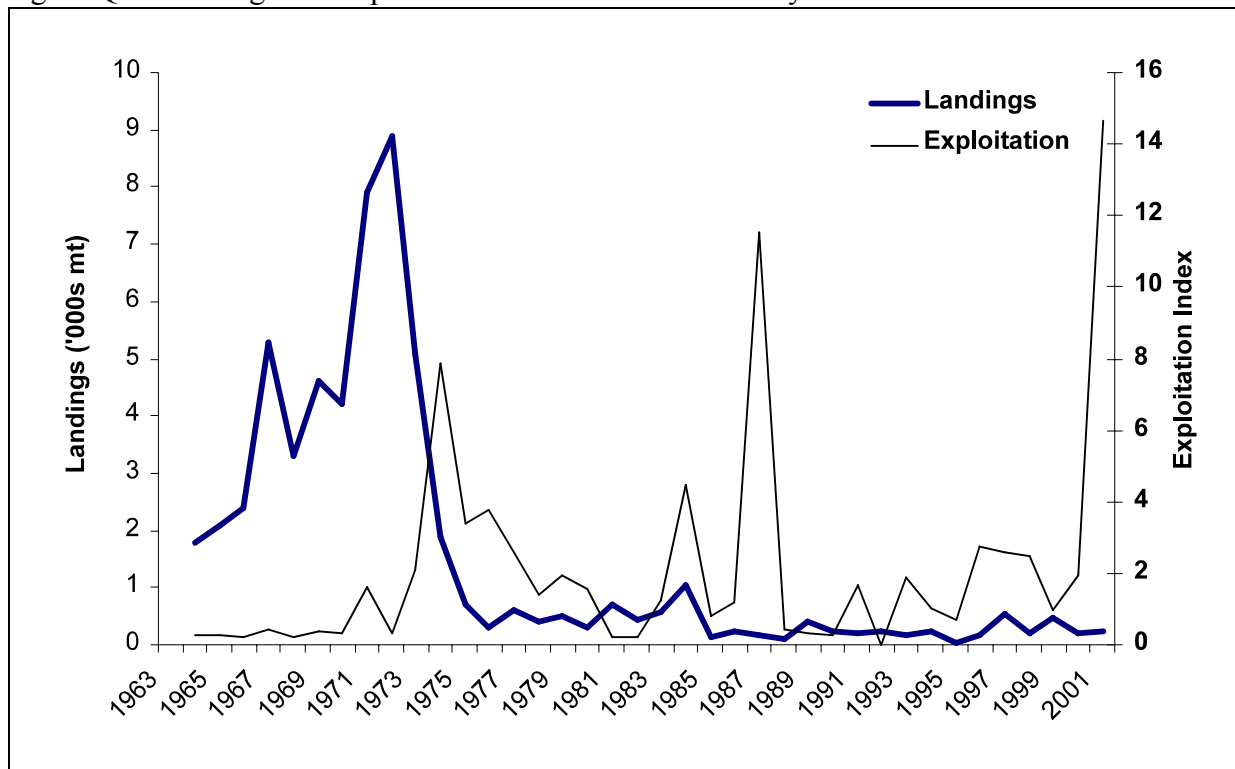

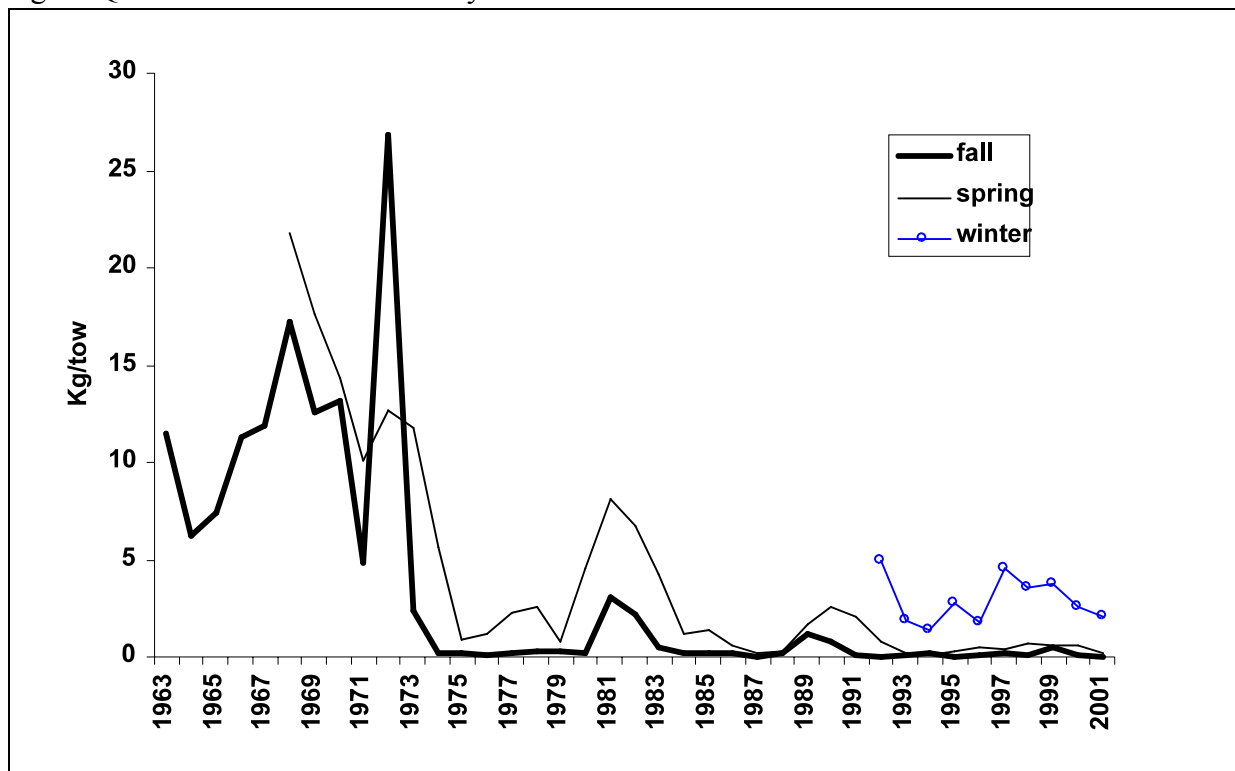Figure Q2. Indices of Mid Atlantic yellowtail flounder biomass.

Figure Q3. Sensitivity of results to increasing NEFSC indices since 2000 by 10%, 25% and 100% (with 80% confidence intervals). Results accepted by the working group ("WG") are shown for comparison.