

FRAMEWORK 33
APPENDIX I

Draft Final Rule

The draft final rule is submitted under separate cover.

FRAMEWORK 33
APPENDIX II

Summary of
1999 Updated Assessments of
11 Groundfish Stocks

New England Fishery Management Council

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Chairman
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MEMORANDUM

Date: August 9, 1999

TO: Council members
FROM: Paul Howard
SUBJECT: Updated Assessment Summary

The table on the following page provides a summary of the information contained in the "Assessment of 11 Northeast Groundfish Stocks through 1999". The following summarizes the status of the biomass relative to the SFA biomass targets:

<u>At B_{msv}</u>	<u>Control Rule Rebuilding Schedule (Yrs.)</u>
• witch flounder	Rebuilt
<u>Above $1/2 B_{msy}$</u>	
• Georges Bank yellowtail flounder	10
• Cape Cod yellowtail flounder	10
• American plaice	10
• Southern New England winter flounder	10
<u>At or above $1/4 B_{msv}$</u>	
• Georges Bank cod	5
• Georges Bank haddock (below min. threshold)	Unspecified
• Gulf of Maine cod	5
• Georges Bank winter flounder	5
• white hake (at $1/4 B_{msy}$)	5
<u>Below $1/4 B_{msv}$</u>	
• Southern New England yellowtail flounder	5

The SFA control rules specify rebuilding periods for stocks below the biomass target. Under these rules, the following actions should be considered by the Council with respect to setting fishing mortality targets in Amendment 13. For some stocks, favorable conditions could allow greater latitude in setting fishing mortality targets in 2000.

Fishing mortality can remain constant or may be increased

- Georges Bank yellowtail flounder
- Southern New England winter flounder
- witch flounder

Fishing mortality should be reduced (%) but may be above zero (based on status quo F or catch from 1998 to 1999)

- Georges Bank cod (32%)
- Cape Cod yellowtail flounder (90%)
- Gulf of Maine cod (50%)
- American plaice (94%)

Fishing mortality should be reduced to zero

- Georges Bank haddock
- Southern New England yellowtail flounder
- Georges Bank winter flounder
- white hake

In addressing these management standards in Amendment 13 or in developing upcoming framework adjustments, the Council will have to consider the difficult problem of how to manage stocks in very different conditions (relative to the SFA objectives) that are caught simultaneously or occupy the same areas. Applying the control rules according to Amendment 9 will achieve the rebuilding objectives of SFA. In some cases, stock status may allow a higher level of fishing than the control rule prescribes.

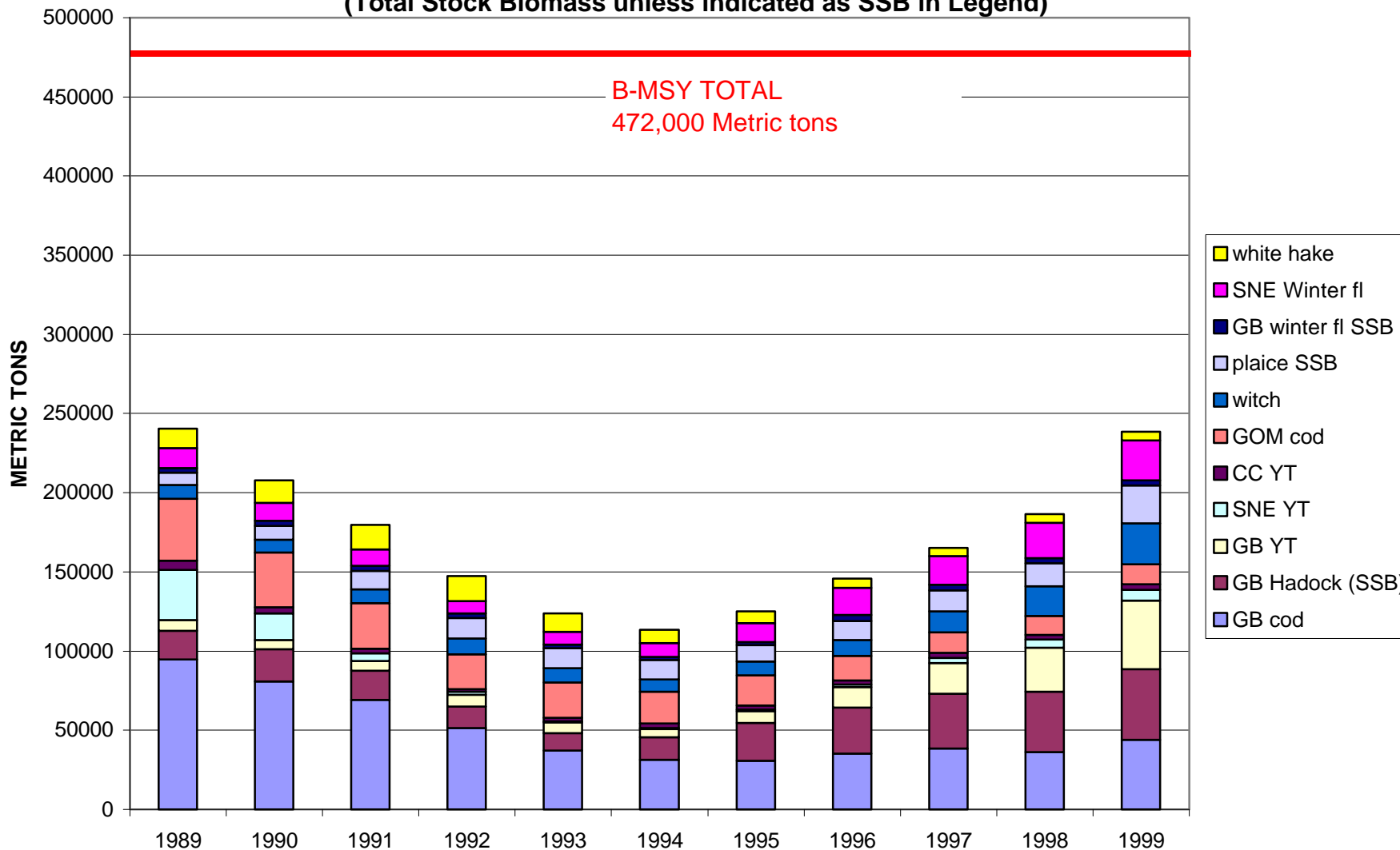
The Updated Assessment Report contains several cautionary statements about the information in the report, including:

- for many stocks, there is uncertainty in the assessment of current stock status due to variability in estimation of landings at age (resulting from inadequate port sampling)
- assumptions about the stock-recruitment relationships in the projections are imprecise and may bias the results; estimated rebuilding times are highly dependent on recruitment assumptions
- density-dependent changes in weight-at-age and maturation rates are not included in the projections; smaller weights-at-age and slower maturation rates associated with stocks at high biomass sizes implies that rebuilding projections may be optimistic

STOCK	BIOMASS STATUS B_{99}/B_{MSY} (Biomass target, metric tons)	FISHING MORTALITY		PERCENT CHANGE TO ACHIEVE TARGET F	YEARS TO BIOMASS REBUILDING UNDER TARGET F (50% probability)	COMMENTS
		TARGET (F on biomass)	1999 ESTIMATE (status quo F or catch from 1998)			
GB cod	41% (108,000)	0.13	0.19	-32%	7	<ul style="list-style-type: none"> F in 1998 lowest in times series (since 1978) SSB increased every year since 1995
GB Haddock	43% (105,000 SSB)	0.00	0.15 (fully recruited F)	-100%	3	<ul style="list-style-type: none"> SSB increased 4 times since 1993 1998 year class appears to be biggest since 1979 and 3rd largest since 1964
GB yellowtail flounder	93% (46,850)	0.27	0.08	+260%	3	<ul style="list-style-type: none"> F since 1996 lowest observed (since 1973) and declining 1997 year class largest since 1973 1998 biomass highest since 1973
SNE yellowtail flounder	11% (62,870)	0.00	0.09	-100%	8	<ul style="list-style-type: none"> F since 1997 lowest in time series (since 1973) Biomass increased 10 times 1994-1998 but still below 1/4 B_{MSY}
CC yellowtail flounder	58% (6,100)	0.04	0.41	-90%	2	<ul style="list-style-type: none"> F in 1998 lowest in time series (since 1985) Biomass doubled since 1992
GOM cod	38% (33,000)	0.15	0.30	-50%	8	<ul style="list-style-type: none"> F in 1998 lowest since 1982 Biomass continued to decline to record low level in 1998 due to record low recruits and survival of pre-recruits, but is expected to stabilize and could increase with reduced catches in 1999
witch flounder	103% (25,000)	0.09	0.09	0%	Rebuilt	<ul style="list-style-type: none"> Biomass highest since 1984, increased 3 fold since 1994 Every year class entering the fishery since 1995 has been larger than any during 1982-1995 1997 year class is largest in time series
American plaice	60% (24,200 SSB)	0.02	0.32 (fully recruited F)	-94%	4	<ul style="list-style-type: none"> F has declined from record high level in 1995 to record (since 1981) low in 1998 and 1999 Biomass has stabilized due to several years of poor recruitment 1997 year class may be one of the 6 largest observed since 1980
GB winter flounder	38% (11,400)	0.00	0.42 (fully recruited F)	-100%	5	<ul style="list-style-type: none"> F has been reduced by 60% since 1993 SSB almost doubled 1994-1996 but has declined slightly due to below average recruitment 1996 year class is lowest on record
SNE winter flounder	92% (27,800)	0.24	0.20	+20%	2	<ul style="list-style-type: none"> F declined from near-record levels in 1990 to record low level in 1994 and has remained low since Biomass has nearly tripled since 1994
white hake	25% (22,000)	0.00	0.40	-100%	5	<ul style="list-style-type: none"> F remains high Biomass remains near record-low

Biomass of 11 Multispecies stocks 1989 -1999

(Total Stock Biomass unless indicated as SSB in Legend)



FRAMEWORK 33
APPENDIX III

Multispecies Monitoring Committee Report
November, 1999

Copies of the 1999 MSMC Report have been widely distributed and are not included here. Copies are available from the Council office on request, and it may be downloaded in full from the Council website: www.nefmc.org

FRAMEWORK 33
APPENDIX IV

Recreational Fishery Background Information

Background Information on Recreational Multispecies Fisheries

Council staff and the Groundfish Plan Development Team (PDT) reviewed recreational fishing data from both the Marine Recreational Fisheries Statistics Survey (MRFSS) and recreational multispecies party/charter logbooks (VTR). Estimates of recreational catch by weight are less reliable than the estimates of catch by numbers of fish for several reasons:

- MRFSS intercept observations of individual species are relatively low, resulting in larger proportional standard errors (PSEs) and confidence intervals.
- MRFSS data is recorded in numbers of fish and then converted into weights based on the average reported weight of fish per two-month wave; this adds another layer of uncertainty to the MRFSS weight estimates.
- VTR data is also reported in numbers of fish and converted to weight estimates based on the MRFSS average reported weight of fish per two-month wave; this adds another layer of uncertainty to the VTR weight estimates.
- The recreational size limit for cod increased from 19” to 21” between 1995 and 1997. Trends in the recreational fishery could be mischaracterized, especially if landed weight increases even though numbers of fish caught are decreasing.

Therefore, trends in recreational fisheries should be evaluated on the basis of numbers of fish rather than weight of fish.

Recreational Landings of Multispecies

Table 1 reports total recreational landings, in thousands of fish, estimated from the Marine Recreational Fisheries Statistics Survey from 1990-1998. These landings reflect all modes of recreational fishing, including shore-based fishing, party/charter trips, and private rental trips. According to Table 1, recreational groundfish landings have declined since 1990, despite some fluctuations within certain species and an increase in recreational pollock landings. 1998 landings of Atlantic cod were about 23% of the 1990 landings. Total red hake recreational landings in 1998 were 6.1% of the 1990 level. Recreational catch and landings of Atlantic cod are examined in more detail in the following tables.

SPECIES	1990	1991	1992	1993	1994	1995	1996	1997	1998
Atlantic Cod	249.9	394.4	220.3	370	281.8	469.4	167.6	165.4	57.9
Pollock	37.8	45.1	30.2	84.8	265.1	165.3	142.4	74	72
Red Hake	659.9	489.6	103.6	34.2	208.9	93.8	31.8	53	40.2
Winter Flounder	2,143.8	1,637.6	584	1,543	974.7	835.8	1,259.7	797.1	467.4
Other Cods and Hakes	47.1	130.4	25.9	30	38.2	161.2	13	21.6	32.5
Other Flounders	62.9	160.4	34.5	33.1	13.6	8	26	41	16.4

Table 1 Recreational Multispecies Landings, 1990-1998, in Thousands of Fish

“Other Cods and Hakes” includes, but is not limited to, silver hake, haddock, white hake, spotted hake, southern hake, and cusk.

“Other Flounders” includes, but is not limited to, windowpane flounder, witch flounder, yellowtail flounder, summer flounder, and American plaice.

Party/Charter Catch of Multispecies

Table 2, A-F, reports landings (in numbers of fish), discards (in numbers of fish), and numbers of anglers for recreational trips catching groundfish according to Multispecies Party/Charter Vessel Trip Reports (VTRs, logbooks). The data are presented for individual groundfish species, including cod, winter flounder, haddock, pollock, redfish, and white hake. Recreational catches of other groundfish species (American plaice and windowpane flounder, for example) are very small and are not presented in Table 2, A-F. It is also important to note that 1994 is considered an incomplete year in terms of logbook reporting and should not be used when evaluating trends in recreational catches as reported in logbooks.

A - COD

Fishing Year	Species	No. Discarded	No. Kept	Total No. Anglers
1994*	COD	80,020	99,611	37,869
1995	COD	161,069	277,779	91,295
1996	COD	129,559	295,659	95,374
1997	COD	113,545	217,914	87,015
1998	COD	97,547	167,343	72,749

B – WINTER FLOUNDER

Fishing Year	Species	No. Discarded	No. Kept	Total No. Anglers
1994*	Winter Flounder	579	5,959	4,658
1995	Winter Flounder	6,539	15,488	12,724
1996	Winter Flounder	3,837	18,200	9,641
1997	Winter Flounder	5,345	37,053	11,498
1998	Winter Flounder	2,522	9,879	6,645

C - HADDOCK

Fishing Year	Species	No. Discarded	No. Kept	Total No. Anglers
1994*	Haddock	1,124	2,893	9,756
1995	Haddock	8,572	20,629	32,812
1996	Haddock	5,345	11,240	25,675
1997	Haddock	12,170	26,460	28,965
1998	Haddock	12,469	28,522	27,495

D - POLLOCK

Fishing Year	Species	No. Discarded	No. Kept	Total No. Anglers
1994*	Pollock	36,920	19,999	21,366
1995	Pollock	32,731	37,015	39,854
1996	Pollock	24,233	37,601	39,861
1997	Pollock	36,431	32,127	44,516
1998	Pollock	31,222	29,686	34,276

E - REDFISH

Fishing Year	Species	No. Discarded	No. Kept	Total No. Anglers
1994*	Redfish	1,966	3,556	9,507
1995	Redfish	2,010	6,665	13,487
1996	Redfish	1,929	3,598	10,795
1997	Redfish	3,140	3,863	12,954
1998	Redfish	102,362	3,395	12,041

F – WHITE HAKE

Fishing Year	Species	No. Discarded	No. Kept	Total No. Anglers
1994*	White Hake	242	1,899	2,602
1995	White Hake	84	3,739	2,973
1996	White Hake	266	2,388	3,730
1997	White Hake	354	2,471	3,035
1998	White Hake	306	885	2,811

Table 2 A-F: Party/Charter Catch in Numbers of Fish and Total Number of Recreational Party/Charter Anglers on Trips Catching the Species (from VTR Data)

Atlantic Cod and Gulf of Maine Cod Recreational Harvest

Tables 3, 4, and 5 examine trends in the recreational harvest of both Atlantic cod and Gulf of Maine cod in greater detail. Table 3 illustrates trends in MRFSS Type A harvest (landings only),

MRFSS Type A + B1 harvest (landings plus unidentifiable fish, including some component of discards), MRFSS Private Rental A + B1 harvest, and VTR information for multispecies party/charter vessels. All four datasets in Table 3 exhibit similar downward trends. Table 4 compares MRFSS A + B1 catch estimated for Gulf of Maine cod with party/charter VTR catch estimated for Gulf of Maine cod. Again, both datasets exhibit downward trends, although declines in the MRFSS estimates are more pronounced than those in the VTR database. Table 5 illustrates the downward trends in the number of trips and the number of anglers catching Gulf of Maine cod.

Tables 6 and 7 present comparisons of recreational and commercial reductions in catch and/or landings. Both tables compare recent catches and landings to a baseline level. Comparisons of commercial landings with MRFSS data (Table 6) shows that the estimates of A + B1 catch have decreased in proportions similar to the commercial landings. Type A catch estimates (recreational landings) have decreased more than commercial landings, by as much as 82% from the 1991-1993 baseline. According to Table 7, party/charter VTR reductions since 1995 have also been consistent with reductions in commercial landings since 1995.

Conclusion

The data from MRFSS and the VTRs *do not* support the perception that effort from the recreational sector of the fishery has not decreased since the implementation of Amendment 7. The Groundfish PDT reviewed the data and concluded that both the commercial and recreational landings data exhibit a downward trend over time, reflecting the decrease in Gulf of Maine cod stock size and the effect of management measures. Generally, commercial landings have declined more gradually than recreational landings. The time series for the Party/Charter VTR data (1995-partial 1999) is not long enough to estimate the magnitude of the reduction that has occurred in that sector of the fishery. However, in terms of numbers of (cod) fish, recreational reductions in landings appear to be relatively consistent with commercial reductions in landings to date.

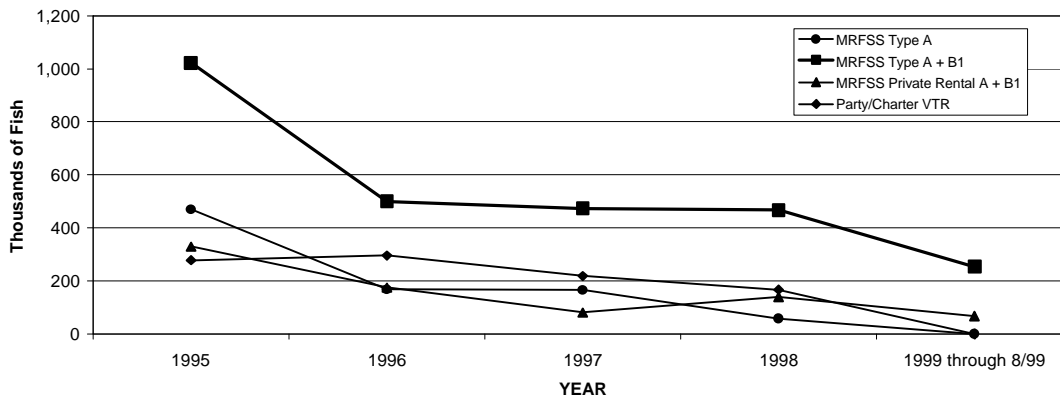
ATLANTIC COD (GULF OF MAINE AND GEORGES BANK)

TABLE 3: RECREATIONAL HARVEST (THOUSANDS OF FISH)

	1995	1996	1997	1998	1999 through 8/99
MRFSS Type A	469	168	165	58	N/A
MRFSS Type A + B1	1,022	500	474	467	254
MRFSS Private Rental A + B1	329	175	81	140	67
Party/Charter VTR	278	296	218	167	N/A

**Type A refers to Observed Harvest (Landings)

**Type B1 refers to fish that are used for bait, released dead, or filleted - they are killed, but identified by individual anglers and not the interviewer.



GULF OF MAINE COD

TABLE 4: RECREATIONAL HARVEST (THOUSANDS OF FISH)

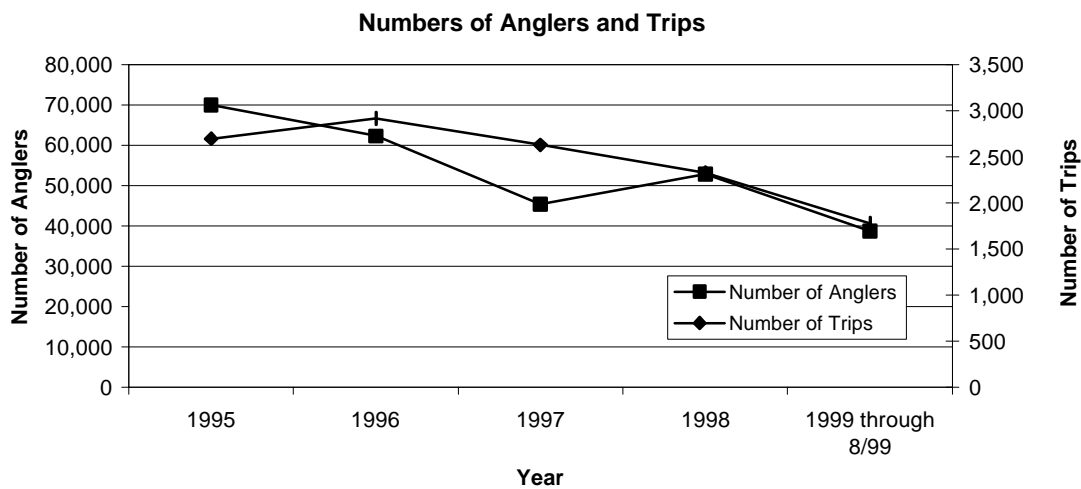
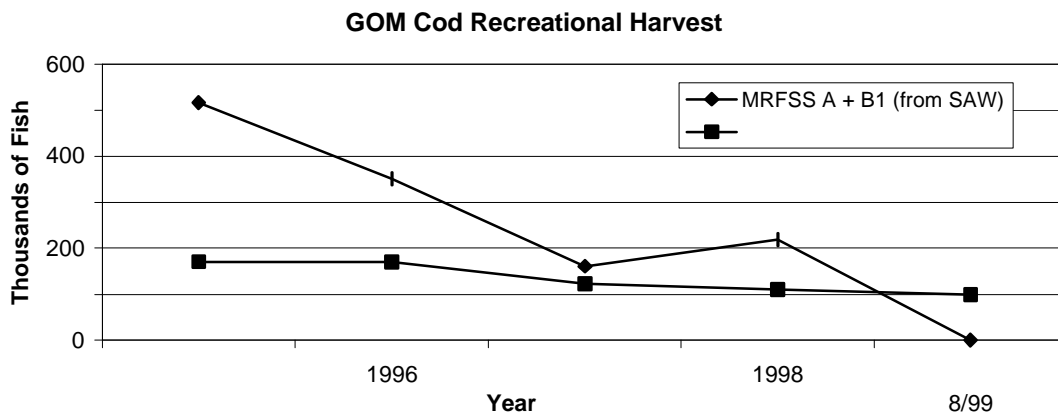
	1995	1996	1997	1998	1999 through 8/99
MRFSS A + B1 (from SAW)	517	351	161	219	N/A
Party/Charter VTR	171	170	123	110	99

TABLE 5: PARTY/CHARTER VTR DATA

	1995	1996	1997	1998	1999 through 8/99
Number of Trips	2,697	2,919	2,628	2,330	1,776
Number of Anglers	69,966	62,329	45,461	52,915	38,800

**Type A refers to Observed Harvest (Landings)

**Type B1 refers to fish that are used for bait, released dead, or filleted - they are killed, but identified by individual anglers and not the interviewer.



ATLANTIC COD (GULF OF MAINE AND GEORGES BANK)

TABLE 6: Comparison of Recreational and Commercial Reductions from 1991-1993 Baseline

Year	MRFSS A (thousands)	MRFSS A + B1 (thousands)	Commercial Landings (MT)**	MRFSS A Reduction from Base	MRFSS A + B1 Reduction from Base	Commercial Reduction from Base
	328.2		31,015			
1994	281.8	818.9	17,790	-14.10%	-35.4%	-42.6%
1995	469.4	1,022.0	13,658	up 43%	-19.4%	-56.0%
1996	167.6	500.0	14,267	-48.9%	-60.6%	-54.0%
1997	165.4	473.6	13,030	-49.6%	-62.7%	-58.0%
1998	57.9	465.7	11,119	-82.4%	-63.3%	-64.1%

***1991-1993 Three-Year Average**

**Commercial Landings Reported by the National Marine Fisheries Service website

***Type A refers to Observed Harvest (Landings)

****Type B1 refers to fish that are used for bait, released dead, or filleted - they are killed, but identified by individual anglers and not the interviewer.

GULF OF MAINE COD

TABLE 7: Comparison Commercial and Party/Charter (P/C) Reductions

Year	MRFSS A + B1 (thousands)*	MRFSS Reduction from 1995	P/C Landings (thousands)**	P/C Reduction From 1995	Commercial Landings (MT)***	Commercial Reduction From 1995
1995	517		170.8		6,798	
1996	351	-32.1%	169.6	-0.7%	7,194	up 5.8%
1997	161	-68.9%	123.2	-27.9%	5,421	-20.3%
1998	219	-57.6%	110.2	-35.5%	4,156	-38.9%

*MRFSS Catch estimated by Stock Assessment Working Group

**Party/Charter Landings from VTR "kept fish" category

***Commercial Landings reported by Northern Demersal Working Group, July 1999