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Management of the Northeast Multispecies Fishery

1977 – 2009

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This paper provides a brief overview of New England groundfish management from 1977 to the present and recent stock and fishery trends for multispecies stock assessment reviewers that may be unfamiliar with the history of management in this area. Details of specific measures can be provided upon request.

The modern period of groundfish management began with implementation of the Magnuson-Stevens Act (M-S Act) in 1977. Since that time, all fishing for groundfish stocks within the U.S. Exclusive Economic Zone has been by U.S. vessels – no foreign fishing has been allowed (see Figure 1 for a chart of the general area of the fishery). The management history can be broadly divided into four periods prior to 2010. Note that this discussion gives a broad overview. There were numerous other restrictions on gear, fishing practices, possession limits, etc. during all of these periods. Table 1 summarizes major elements of the groundfish management program since 1977.

1977 – 1981: The first management plan used hard quotas for cod, haddock, and yellowtail flounder. There were various trip limits for these species. Catches of other groundfish stocks were not directly controlled. The fishery was open access – there were no limits on the number of permits. Minimum mesh size and minimum fish size regulations were also adopted, and seasonal closures to protect spawning fish were used.

1982 – 1993: The quota system was abandoned in mid-1981 and replaced by a system that relied on technical measures (minimum mesh requirements, minimum legal sizes, etc.) and seasonal closures to protect spawning fish. There were complicated programs that allowed using mesh smaller than the minimum size to target other species. The fishery continued to be an open access fishery. Over time, the number of stocks subject to the plan increased. Mortality targets based on spawning potential were adopted.

1994 – 2003: In response to stock declines and widespread overfishing, the number of permits was limited and a system of limiting fishing opportunities in the form of days-at-sea (DAS) was phased in over several years (Amendments 5 and 7). The DAS allocations did not constrain all permits and DAS use actually increased until 2001 (see Figure 6). DAS allocations remained unchanged from 1997 through 2001, but were reduced by a court order in 2002. The effort control system became more complex and used trip limits, seasonal and year-round closures, mesh size changes, and gear requirements. Various “exempted fisheries” were developed to facilitate targeting non-groundfish stocks. “Target TACS” (TTACs) for five stocks were adopted as a metric to evaluate the effectiveness of management measures, but exceeding these targets did not result in closing the fishery. The system for reporting catches was also completely revised in 1994 with the adoption of Amendment 5.

2004 – 2009: Formal rebuilding programs were adopted that met requirements of the M-S Act. The DAS allocations were reduced in 2004, 2006, and 2009 (Amendment 13 and Framework 42). DAS were also categorized (identified as A, B, and C) with restrictions on each. Category A DAS could be used to target any stock; Category B BDAS could only be used in certain programs designed to target healthy stocks, and Category C DAS could not be used but indicated a potential for future access. Several programs called SAPs (Special Access Programs) allowed targeting healthy stocks (primarily GB haddock) and the use

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of Category B DAS. Leasing of DAS between permits was adopted, which facilitated the transfer of fishing opportunities between permits. “Hard” (as opposed to target) quotas were adopted for a few programs and a few management units (GB yellowtail flounder was the only stock with a hard quota for all fishing).

A fifth period is expected to begin in 2010 with the expansion of a catch share program that will result in most of the fishery subject to hard quotas. A key component is the formation of voluntary, self-selecting organizations identified as “sectors.”

Figure 2 summarizes fishing mortality for all groundfish stocks, as determined by the Groundfish Assessment Review Meeting (GARM III) in 2007. After peaking in the mid-1990’s, mortality has declined for all but one stock. While mortality has declined, in 2007 for many stocks it remained higher than overfishing levels, and many stocks were determined to be overfished (Figure 3). Generally, groundfish stock biomass declined during the 1980’s, with most stocks reaching their nadir in the mid-1990’s. There has been considerable growth in spawning stock biomass for the overall complex since then, but much of that growth can be attributed to GB haddock and redfish (Figure 4) and the improvements vary widely from stock to stock.

Since 1994, most groundfish (~96 percent) has been landed by vessels subject to the DAS program. Figure 5 summarizes the number of DAS permits issued and the number using DAS. Figure 6 summarizes the number of DAS allocated and the number of DAS charged. The DAS charged peaked in 2001 but has declined to roughly half that level. Note that since 2004 various programs charged DAS at different rates, and actual time at sea continued to decline even though DAS charged remained relatively stable. In recent years both the number of participants and the fishing effort are roughly half the recent peaks observed in 2001; this is primarily due to increasing regulatory restrictions. Landings declined from 116 million pounds to 55 million pounds between 2001 and 2006, but increased to 76 million pounds in 2008; nominal revenues in 2008 were 80 percent of the 2001 value (Figure 7).

Table 1 – Overview of groundfish regulations, 1977-2009

General Provisions			
Open Access			1977-1993
Limited Entry			1994 -
Days-at-sea Limits	1994-1996		Some groundfish vessels
	1996-2009		Almost all groundfish vessels
Quotas	2010-		Some groundfish vessels
	1977-1981		Cod, haddock, yellowtail only
	2004-2009		GB yellowtail flounder; portions of GB cod and haddock
Small-mesh fishery provisions	2010-		Sector vessels, most stocks
	1981-		Various programs
Mesh Size			
<i>Gear</i>	<i>Area</i>	<i>Years</i>	<i>Size</i>
Trawl	GOM/GB	1977-1981	4 ½" body/ 5 1/8" cod end
		1982	5 1/8"
		1983 – 1993	5 ½" throughout net
		1994-1997	6" (A5)
	SNE/MA	1999-2000	6 ½" square, 6" diamond codend (FW 27)
		2002-	6 ½" square or diamond codend
		1994-1998	6"
Sink Gillnet	GOM/GB/SNE/MA	1999-2001	6 ½" sq, 6" dia.
		2002-	6 ½" sq. or dia.
		1982-1985	5 ½"
		1986-1993	5 ½"
		1994-2001	6"
		2002-	6 ½"
Closures ⁽²⁾⁽³⁾			
CAI		1977-1994	Seasonal
		1995-	Year round
CAII		1977-1994	Seasonal
		1995-	Year round
SNE		1986-1993	Seasonal
NLCA		1994	Seasonal
		1995-	Year round
WGOM		1998-	Year round
Cashes Ledge		1998-2001	Seasonal
		2002--	Year round
GOM Rolling		1998-	Seasonal
GB May		2000-	Seasonal

Notes:

(1) This table provides only a broad overview and does not capture details of the management system.

(2) Area closure boundaries have changed over time.

(3) After 2002, access programs allowed limited fishing for scallops, haddock, and yellowtail flounder within CAI, CAII, and the NLCA.

Figure 1 – General area of the multispecies fishery, showing year round and habitat closed areas (as of 2004)

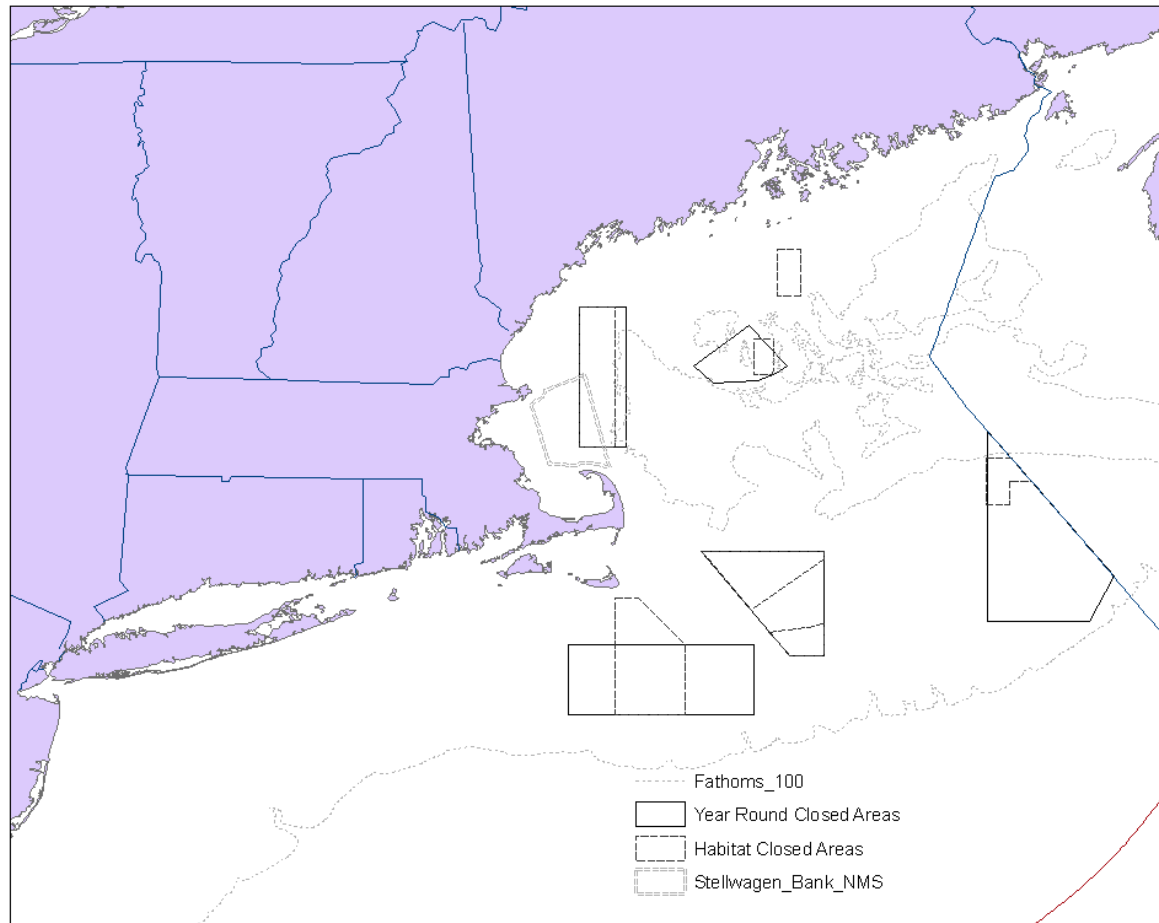


Figure 2 – Relative fishing mortality for multispecies stocks. Based on GARM III results.

	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01	02	03	04	05	06	07	D			
GOM GOM Cod F 5-7										●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	1.6	
GOM GOM Haddock F 6-8					○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	7.7
GOM CC/GOM YTF F 4-5													○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	1.4	
GOM Plaice F 6-9										○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	1.7	
GOM Pollock EI	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	2.3	
GOM Atlantic Halibut Relative F	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	2.2	
GOM White Hake F 6	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	1.4	
GOM Witch F 8-9										○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	1.9	
GOM GM/GB Windowpane EI					○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	5.5	
GB GB Cod F 5-8					○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	1.4	
GB GB Haddock F 5-7	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	1.6	
GB GB YTF F 4-5	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	1.6	
GB GB WFL F 4-6										○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	1.7	
SNE/MA SNE/MA YTF F 4-5	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	2.2	
SNE/MA SNE/MA WFL F 4-5										○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	1.1
SNE/MA SNE/MA Windowpane EI					○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	7.3
SNE/MA Ocean Pout EI	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	4.2

Legend



D = Measure of Dispersion: Range/Median

Figure 3 – Groundfish stock status, 2007, as determined by GARM III

2007 Groundfish Stock Status

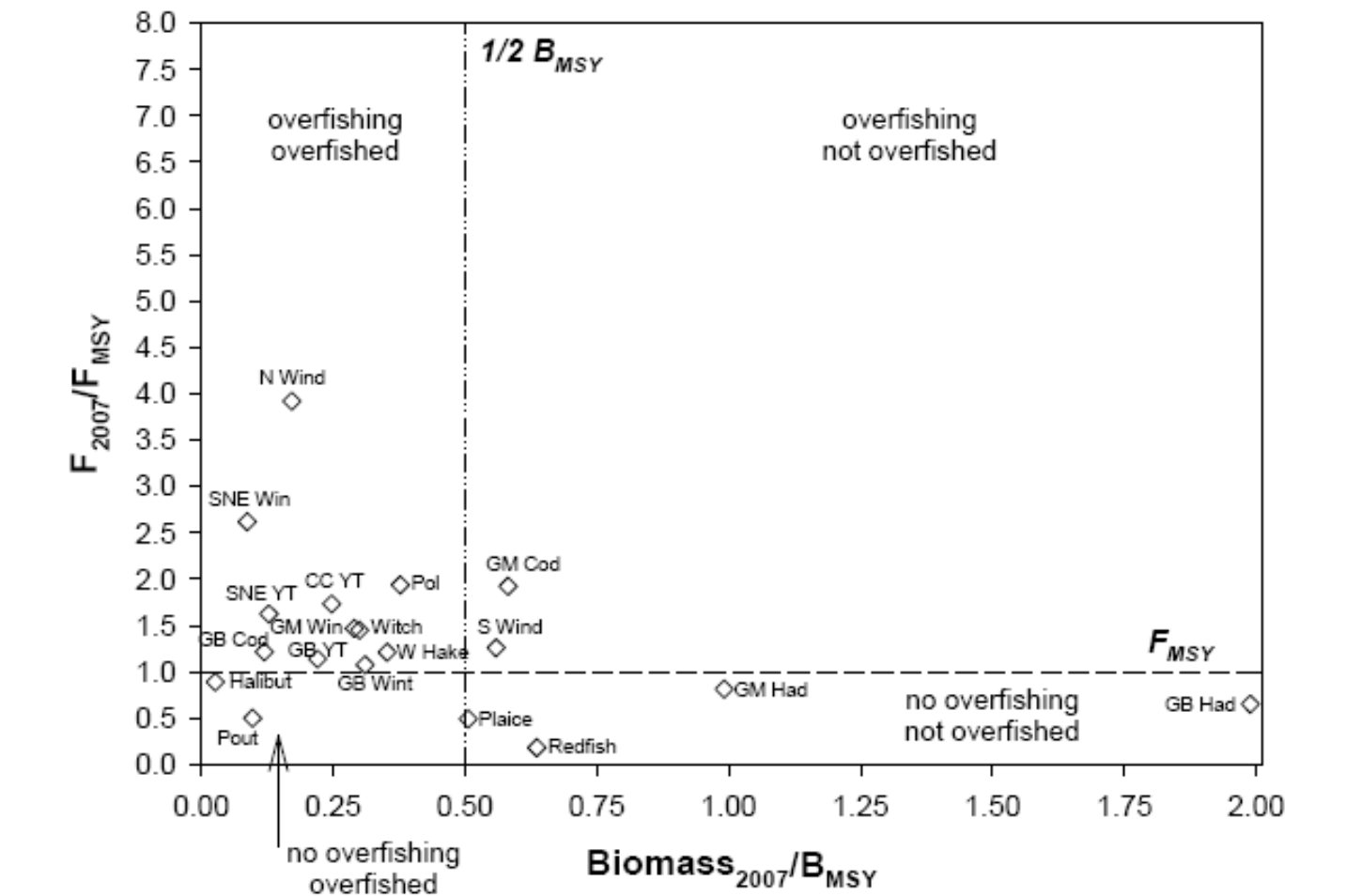


Figure 4 – Spawning stock biomass for fifteen groundfish stocks with analytic assessments, 1985-2007

Spawning Stock Biomass of 15 Groundfish Stocks, 1985-2007

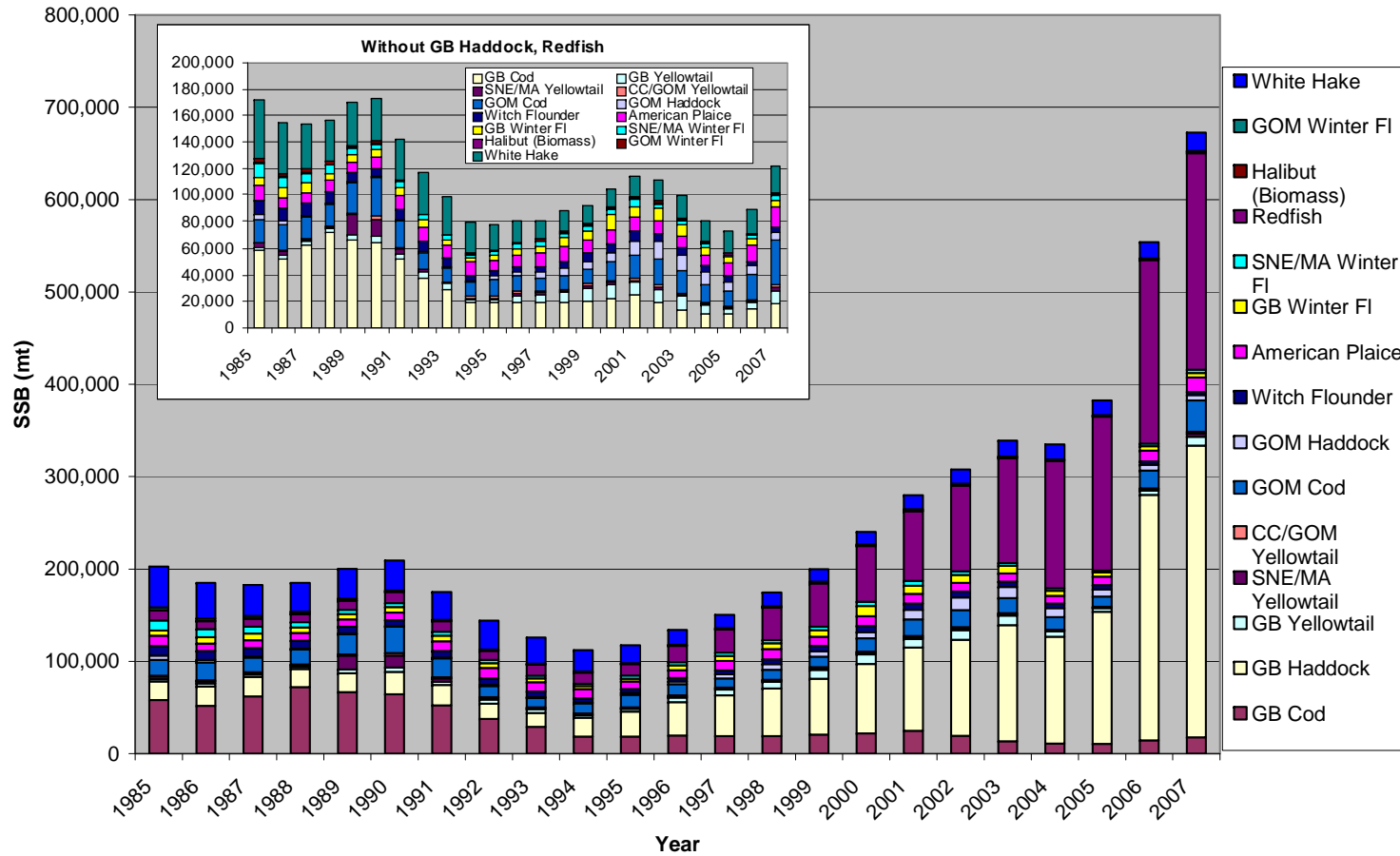


Figure 5 - Multispecies DAS permits issued and permits using DAS, 1996 - 2008

Multispecies DAS Permits

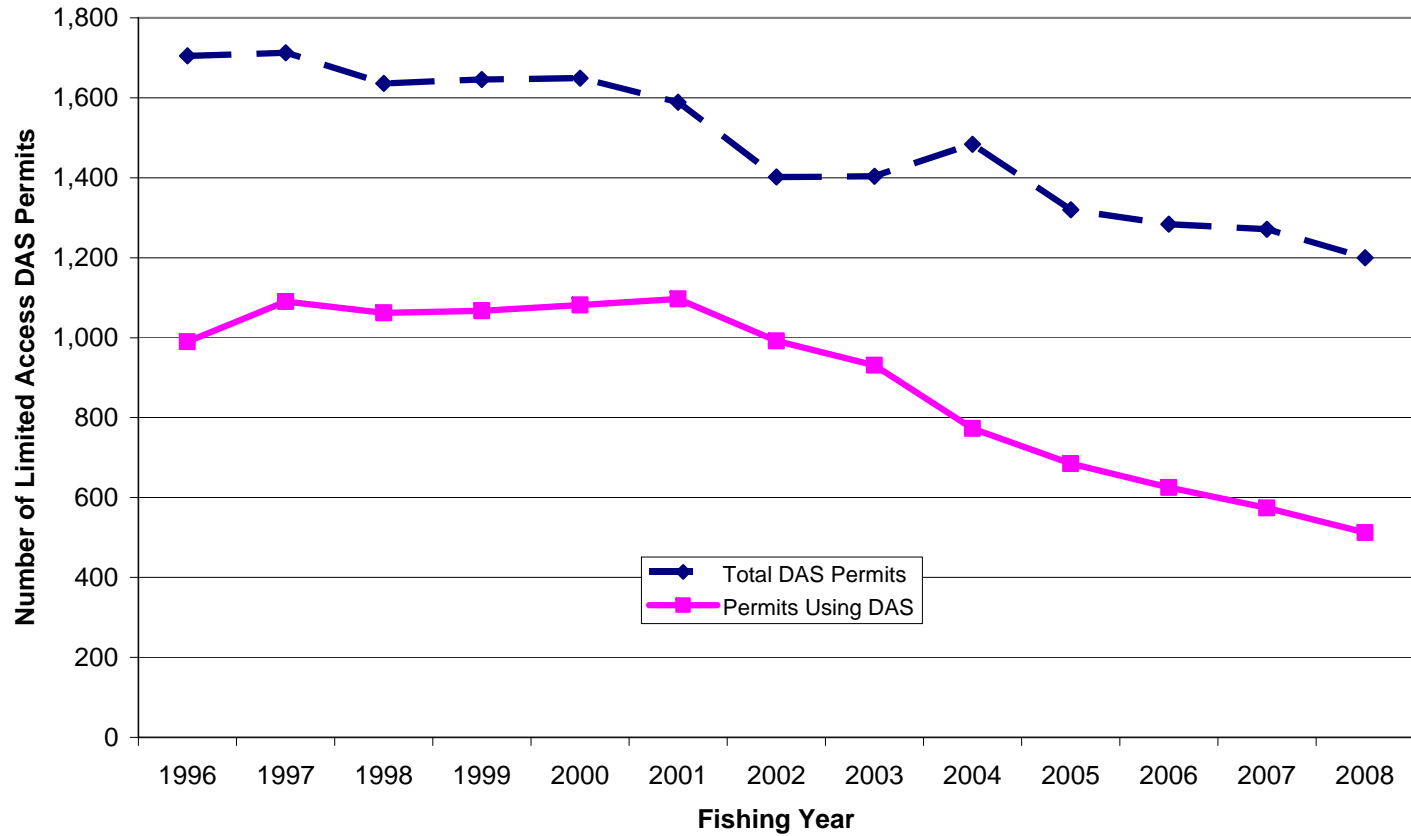


Figure 6 – Multispecies DAS allocated and used, 1996 - 2008

Multispecies DAS Trends

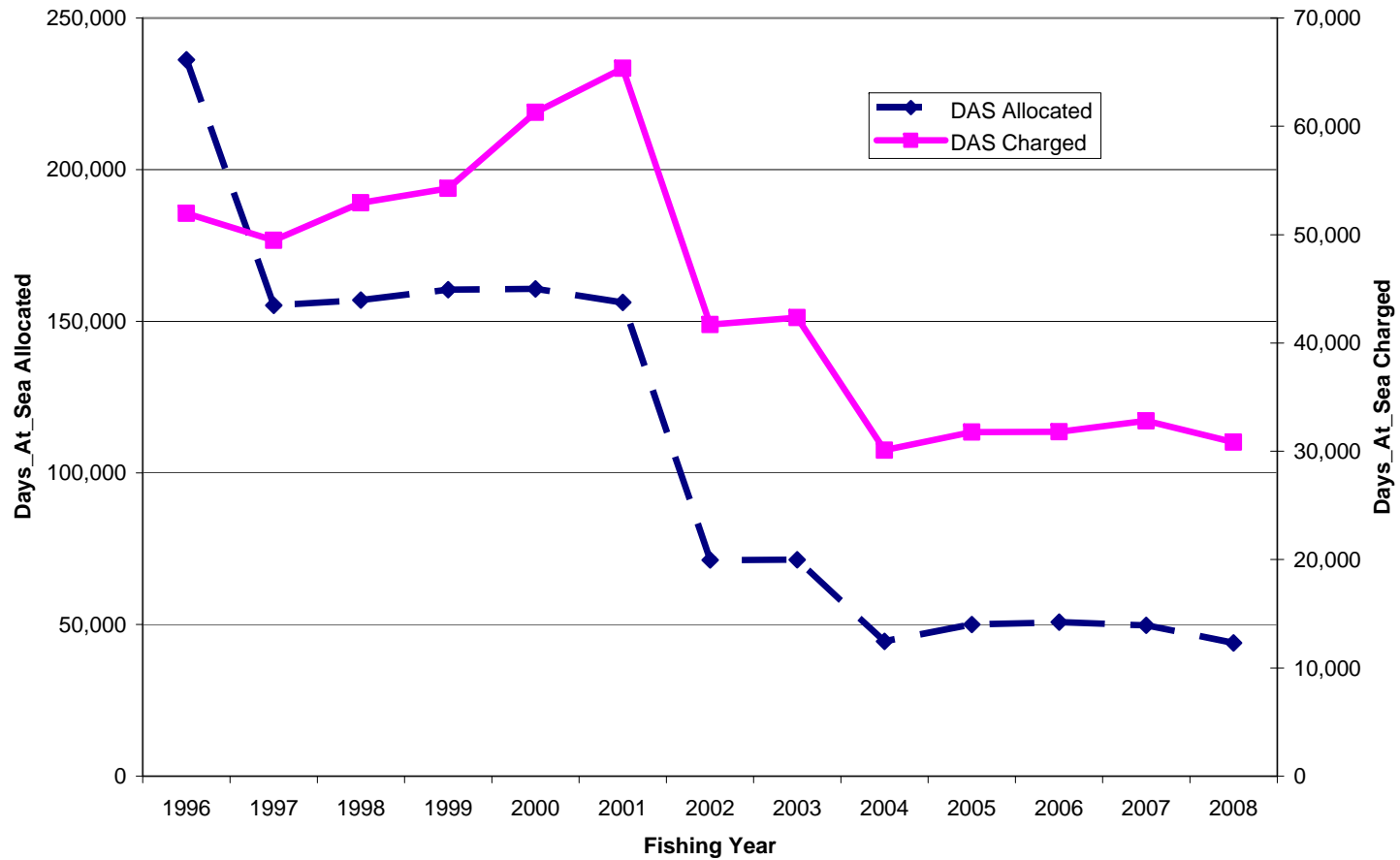


Figure 7 – Multispecies landings and revenues, 2001 - 2008

