5.0 ECONOMIC STATUS OF HMS FISHERIES

The review of each rule, and of Atlantic HMS fisheries as a whole, is facilitated when there is an economic baseline against which the rule or fishery may be evaluated. In this analysis, NMFS used the past nine years of data to facilitate the analysis of economic trends. It also should be noted that all dollar figures are reported in nominal dollars (*i.e.*, current dollars). If analysis of real dollar (*i.e.*, constant dollar) trends controlled for inflation is desired, price indexes for 2001 to 2009 are provided in Table 5.1. To determine the real price in base year dollars, divide the base year price index by the current year price index, and then multiply the result by the price that is being adjusted for inflation. From 2001 to 2009, the Consumer Price Index (CPI-U) indicates that prices have risen by 21.1 percent, the Gross Domestic Product (GDP) Implicit Price Deflator indicates that prices have risen 21.0 percent, and the Producer Price Index (PPI) for unprocessed finfish indicates a 74.3 percent rise in prices. From 2007 to 2008, the CPI, GDP Deflator, and the PPI for unprocessed finfish indicate prices changed by 3.9 percent, 2.2 percent, and -5.2 percent, respectively. From 2008 to 2009, the CPI, GDP Deflator, and the PPI for unprocessed finfish indicate prices changed by -0.4 percent, 0.9 percent, and 1.8 percent respectively.

Table 5.1 **Inflation Price Indexes. The CPI-U is the standard Consumer Price Index for all urban consumers (1982-1984=100) produced by U.S. Department of Labor Bureau of Labor Statistics.** The source of the Producer Price Index (PPI) for unprocessed finfish (1982=100) is also the Bureau of Labor Statistics. The Gross Domestic Product Implicit Price Deflator (2005=100) is produced by the U.S. Department of Commerce Bureau of Economic Analysis and obtained from the Federal Reserve Bank of St. Louis (http://www.stlouisfed.org/).

Year	CPI-U	GDP Deflator	PPI Unprocessed Finfish
2001	177.1	90.6	176.1
2002	179.9	92.1	201.5
2003	184.0	94.1	195.8
2004	188.9	96.8	224.1
2005	195.3	100.0	253.1
2006	201.6	103.3	334.6
2007	207.3	106.3	318.1
2008	215.3	108.6	301.6
2009	214.5	109.6	306.9

5.1 Commercial Fisheries[2]

In 2009, 7.9 billion pounds valued at $3.9 billion were landed for all fish species by U.S. fisherman at U.S. ports. In 2008, 8.3 billion pounds valued at $4.4 billion were landed for all fish species by U.S. fisherman at U.S. ports. The overall value of landings between 2008 and 2009 decreased by 11 percent. The total value of commercial HMS landings in 2009 was $41.7 million (Table 5.3). The 2009 ex-vessel price index indicated that 7 of the 32 finfish species

[2] All the information and data presented in this section were obtained from NMFS 2010b.

groups tracked exhibited increasing ex-vessel prices, 24 species groups had decreasing ex-vessel prices, and one species group remained unchanged since 2008. The total edible finfish ex-vessel price index for 2009 was down 43 percent from 2008. The yellowfin tuna price index had the largest decrease (74 percent) of the Atlantic HMS species included in the index.

The estimated value of the 2009 domestic production of all fishery products was $8.1 billion. This is $855.5 million less than the estimated value in 2008. The total import value of fishery products was $21.8 billion in 2009. This is a decrease of $6.6 billion from 2008. The total export value of fishery products was $19.6 billion in 2009. This is a decrease of $3.7 billion from 2008. In comparison, the total export value in 1996 was only $8.7 billion.

5.1.1 Ex-Vessel Prices

The average ex-vessel prices per pound dressed weight (dw) for 2002 to 2009 by species and area are summarized in Table 5.2. Prices are reported in nominal dollars. The ex-vessel price depends on a number of factors including the quality of the fish (*e.g.*, freshness, fat content, method of storage), the weight of the fish, the supply of fish, and consumer demand.

Table 5.2 and Table 5.3 indicate that the average ex-vessel prices for bigeye tuna have generally increased since 2003. Prices, however, did decline modestly from 2008 to 2009 across all regions.

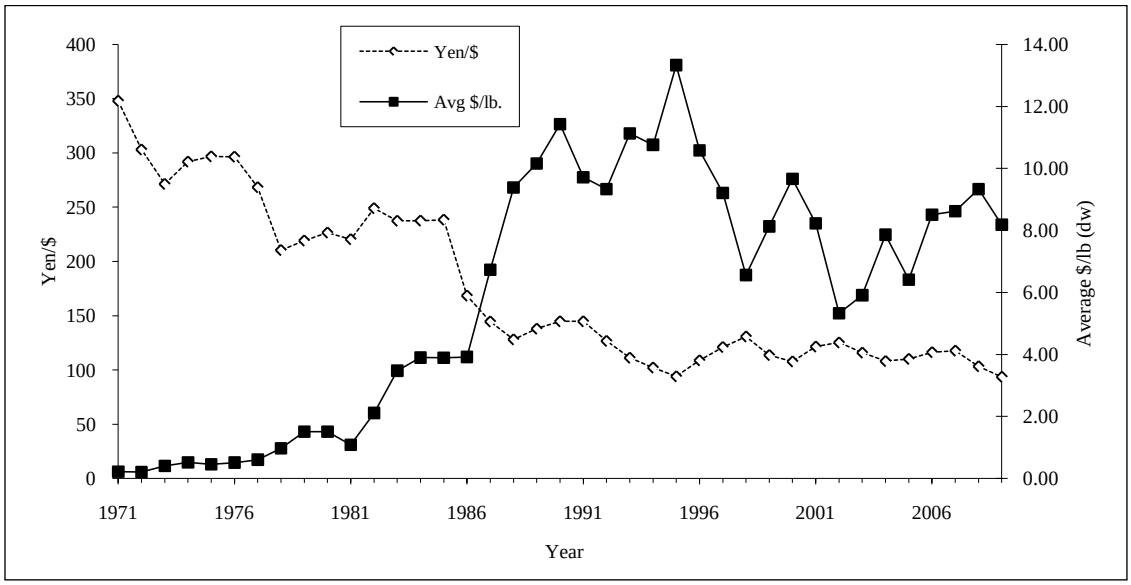

Figure 5.1 Average Annual Yen/$ Exchange Rate and Average U.S. BFT Ex-vessel $/lb (dw) for All Gears: 1971-2008. Source: Federal Reserve Bank (**www.stls.frb.org**) and Northeast Regional Office.

Average ex-vessel prices for bluefin tuna have risen 54 percent since 2002. The ex-vessel prices for bluefin tuna can be influenced by many factors, including market supply and the

Japanese Yen/U.S. Dollar (¥/$) exchange rate. Figure 5.1 shows the average ¥/$ exchange rate, plotted with average ex-vessel bluefin tuna prices, from 1971 to 2009.

The average ex-vessel prices for yellowfin tuna have decreased in 2009 in all regions (Table 5.2). From 2002 to 2009, the average ex-vessel price of yellowfin tuna increased 18 percent (Table 5.3).

In this year's SAFE Report, NMFS has broken out albacore and skipjack tunas, which were previously reported together as other tunas. The average ex-vessel price for albacore tuna increased in all regions in 2009, except for the North Atlantic region (Table 5.2). From 2002 to 2009, the average ex-vessel price of albacore tuna increased 70 percent (Table 5.3). The average price of skipjack tuna remained constant in the South Atlantic from 2008 to 2009 (Table 5.2). From 2002 to 2009, the average ex-vessel price of skipjack tuna decreased 41 percent (Table 5.3).

The average ex-vessel price for large coastal sharks (LCS) increased in the Gulf of Mexico, but decreased in the South Atlantic and Mid-Atlantic in 2009 (Table 5.2). The average ex-vessel prices for pelagic sharks increased in the Gulf of Mexico and North Atlantic regions in 2009 (Table 5.2). The average ex-vessel prices for small coastal sharks (SCS) increased from 2008 to 2009 in the Mid-Atlantic and Gulf of Mexico regions, but decreased in the South-Atlantic region (Table 5.2). Shark fin prices increased in all regions except the Mid-Atlantic in 2009 (Table 5.2).

Table 5.2 **Average Ex-vessel Prices per lb for Atlantic HMS by Area.** Source: Dealer weighout slips from the Southeast Fisheries Science Center, Northeast Fisheries Science Center, and bluefin tuna dealer reports from the Northeast Regional Office. Gulf of Mexico includes: TX, LA, MS, AL, and the west coast of FL. S. Atlantic includes: east coast of FL. GA, SC, and NC dealers reporting to Southeast Fisheries Science Center. Mid-Atlantic includes: NC dealers reporting to Northeast Fisheries Science Center, VA, MD, DE, NJ, NY, and CT. N. Atlantic includes: RI, MA, NH, and ME. For bluefin tuna, all NC landings are included in the Mid-Atlantic.

Species	Area	2002	2003	2004	2005	2006	2007	2008	2009
Bigeye tuna	Gulf of Mexico	$4.24	$4.90	$5.42	$5.75	$5.73	$5.66	$6.12	$5.80
	S. Atlantic	$6.03	$3.21	$3.10	$3.61	$3.94	$4.34	$4.34	$4.11
	Mid-Atlantic	$3.98	$3.85	$4.22	$5.16	$4.95	$5.78	$5.70	$5.41
	N. Atlantic	$3.74	$3.68	$4.60	$4.65	$4.54	$5.31	$5.60	$5.18
Bluefin tuna	Gulf of Mexico	$5.56	$6.32	$4.64	$4.67	$4.39	$5.87	$4.83	$4.65
	S. Atlantic	$3.77	$4.11	$4.91	$4.60	$6.36	$7.07	$6.00	$14.43
	Mid-Atlantic	$4.70	$7.38	$9.62	$10.30	$9.81	$10.05	$12.56	$9.40
	N. Atlantic	$7.31	$5.71	$7.42	$5.57	$7.92	$8.31	$8.33	$7.09
Yellowfin tuna	Gulf of Mexico	$2.65	$2.79	$3.21	$3.32	$2.89	$3.02	$3.51	$3.04
	S. Atlantic	$2.44	$2.20	$2.51	$2.60	$2.32	$2.69	$2.99	$2.90
	Mid-Atlantic	$2.03	$1.74	$1.98	$2.74	$2.44	$2.99	$3.30	$2.49
	N. Atlantic	$2.67	$2.27	$2.69	$3.15	$2.63	$3.17	$3.82	$3.69

Species	Area	2002	2003	2004	2005	2006	2007	2008	2009
Albacore tuna	Gulf of Mexico	$0.66	$0.55	$0.68	$0.61	$0.53	$0.49	$0.55	$1.42
	S. Atlantic	$1.04	$0.86	$0.76	$0.94	$0.93	$1.24	$1.21	$1.29
	Mid-Atlantic	$0.67	$0.92	$0.54	$0.76	$0.82	$0.86	$0.97	$1.46
	N. Atlantic	$0.94	$0.93	$0.74	$0.91	$0.97	$1.37	$2.00	$1.26
Skipjack tuna	Gulf of Mexico	-	-	-	-	-	-	-	$0.50
	S. Atlantic	$0.57	$0.47	$1.11	$0.70	$0.74	$0.73	$0.95	$0.95
	Mid-Atlantic	$1.57	$1.20	$0.84	$1.13	$0.79	$2.22	$4.50	-
	N. Atlantic	$3.31	$4.17	$2.65	-	-	-	-	-
Swordfish	Gulf of Mexico	$2.71	$2.85	$3.42	$3.20	$2.90	$3.07	$2.93	$2.69
	S. Atlantic	$3.44	$3.37	$3.88	$4.00	$3.86	$4.24	$4.11	$4.12
	Mid-Atlantic	$3.08	$3.04	$3.38	$3.52	$3.52	$4.07	$3.49	$3.40
	N. Atlantic	$3.07	$3.08	$3.96	$3.69	$3.64	$4.11	$4.20	$3.49
Large coastal sharks	Gulf of Mexico	$1.24	$1.01	$0.73	$0.86	$0.75	$0.42	$0.40	$0.66
	S. Atlantic	$0.47	$0.44	$0.46	$0.50	$0.47	$0.40	$0.72	$0.55
	Mid-Atlantic	$0.37	$0.25	$0.36	$0.29	$0.27	$0.55	$0.66	$0.57
	N. Atlantic	-	-	$0.66	-	-	-	-	-
Pelagic sharks	Gulf of Mexico	$1.01	$1.05	$1.15	$1.19	$1.21	$1.29	$1.18	$1.25
	S. Atlantic	$1.37	$1.24	$1.26	$1.26	$1.26	$1.36	$1.36	$1.34
	Mid-Atlantic	$0.87	$0.70	$0.89	$1.21	$1.15	$1.10	$1.20	$1.15
	N. Atlantic	$1.06	$1.29	$1.08	$0.92	$0.73	$0.85	$0.93	$1.23
Small coastal sharks	Gulf of Mexico	$0.34	$0.35	$0.35	$0.47	$0.51	$0.58	$0.62	$0.69
	S. Atlantic	$0.53	$0.54	$0.67	$0.71	$0.68	$0.80	$0.78	$0.71
	Mid-Atlantic	$0.40	$0.38	$0.44	$0.39	$0.44	$0.43	$0.48	$0.57
	N. Atlantic	-	-	-	-	-	-	-	-
Shark fins	Gulf of Mexico	$14.37	$14.70	$15.76	$16.22	$16.40	$13.22	$14.94	$15.09
	S. Atlantic	$13.92	$13.83	$12.55	$13.93	$13.24	$11.44	$12.73	$13.15
	Mid-Atlantic	$10.86	$10.09	$7.72	$10.55	$9.72	$6.12	$3.74	$3.60
	N. Atlantic	$3.06	$2.30	$1.39	$4.55	$6.23	$3.24	$3.00	$3.67

5.1.2 Revenues

Table 5.3 summarizes the average annual revenues of the Atlantic HMS fisheries based on average ex-vessel prices and the weight reported landed as per the U.S. National Report (NMFS, 2010a), the information used in the shark stock assessments, information given to the International Commission for the Conservation of Atlantic Tunas (ICCAT) (Cortés pers. comm., 2010), as well as price and weight reported to the NMFS Northeast Regional Office by Atlantic bluefin tuna dealers. These values indicate that the estimated total annual revenue of Atlantic HMS fisheries has increased in 2009 to $41.7 million from $34.3 million in 2008. From 2008 to 2009, the Atlantic tuna fishery's total revenue increased by $7.1 million. A majority of that increase can be attributed to the increased commercial landings of bluefin tuna. From 2008 to 2009, the annual revenues from shark decreased by 8.6 percent. This is a continuation of the trend from the previous year, where revenues declined by 25 percent. There were some large regulatory changes in the shark fishery in 2008. The fishery was closed for half of the year and when it opened the trip limit went from 4,000 pounds to a 33 fish limit with no sandbar retention

allowed. It is also worth noting that 2007 saw a large decrease in revenues because of large overharvests in 2006, which dramatically reduced the fishing season in 2007. Given these changes, the decreases in large coastal shark revenues from 2007 to 2009 were expected. A similar decline in revenues did not occur in the pelagic or small coastal shark fisheries. Finally, the annual revenues from swordfish increased by 5 percent from 2008 to 2009. This was due to an increase in landings of 10 percent from 2008 to 2009.

Table 5.3 Estimates of the Total Ex-vessel Annual Revenues of Atlantic HMS Fisheries. Sources: CFDBS, QMS, and NMFS 2010a.

Species		2002	2003	2004	2005	2006	2007	2008	2009
Bigeye tuna	Ex-vessel $/lb dw	$4.24	$3.74	$4.19	$5.37	$4.92	$5.71	$5.63	$5.35
	Weight lb dw	971,269	512,002	556,270	563,325	960,863	706,361	736,520	774,087
	Fishery Revenue	$4,118,181	$1,914,887	$2,330,771	$3,025,055	$4,727,446	$4,033,321	$4,146,608	$4,141,365
Bluefin tuna	Ex-vessel $/lb dw	$5.33	$5.91	$7.86	$6.41	$8.51	$8.62	$9.33	$8.19
	Weight lb dw	2,255,241	1,963,172	1,010,599	772,500	528,404	515,176	720,823	1,631,950
	Fishery Revenue	$12,020,435	$11,602,347	$7,943,308	$4,951,725	$4,496,718	$4,440,817	$6,725,279	$13,365,671
Yellowfin tuna	Ex-vessel $/lb dw	$2.27	$2.07	$4.62	$2.92	$2.47	$2.98	$3.31	$2.68
	Weight lb dw	4,977,156	4,172,204	4,999,908	3,379,951	3,849,095	4,521,240	2,423,498	3,159,665
	Fishery Revenue	$11,298,144	$8,636,462	$23,099,575	$9,869,457	$9,507,265	$13,473,295	$8,021,778	$8,467,902
Skipjack tuna	Ex-vessel $/lb dw	$1.65	$1.31	$0.93	$1.15	$0.80	$1.21	$1.36	$0.97
	Weight lb dw	320,288	230,163	307,942	26,103	21,693	26,455	32,628	30,688
	Fishery Revenue	$528,475	$301,514	$286,386	$30,018	$17,354	$32,011	$44,374	$29,767
Albacore tunas	Ex-vessel $/lb dw	$0.79	$0.88	$1.57	$0.81	$0.85	$0.96	$1.15	$1.34
	Weight lb dw	320,288	230,163	307,942	232,808	203,354	244,272	216,759	291,187
	Fishery Revenue	$253,028	$202,543	$483,469	$188,574	$172,851	$234,501	$249,273	$390,191
Total tuna	**Fishery Revenue**	$27,965,234	$22,455,210	$33,660,040	$17,876,256	$18,748,783	$21,979,444	$18,938,039	$26,004,706
Swordfish	Ex-vessel $/lb dw	$3.07	$3.11	$3.54	$3.62	$3.54	$4.02	$3.63	$3.45
	Weight lb dw	4,705,792	4,658,997	4,301,003	3,466,728	3,002,597	3,643,926	3,414,513	3,762,280
	Fishery Revenue	$14,446,781	$14,489,481	$15,225,551	$12,549,555	$10,629,193	$14,648,583	$12,394,682	$12,979,866
Large coastal sharks	Ex-vessel $/lb dw	$0.68	$0.58	$0.47	$1.18	$0.50	$0.76	$0.92	$0.59
	Weight lb dw	4,151,594	4,292,403	3,213,896	3,147,196	3,808,662	2,329,272	1,363,021	1,513,201
	Fishery Revenue	$2,823,084	$2,489,594	$1,510,531	$3,713,691	$1,904,331	$1,770,247	$1,253,979	$892,789
Pelagic sharks	Ex-vessel $/lb dw	$0.96	$0.92	$0.96	$1.19	$1.15	$1.13	$1.21	$1.17
	Weight lb dw	467,682	637,324	679,469	252,815	192,843	262,179	234,546	225,575
	Fishery Revenue	$448,975	$586,338	$652,290	$300,850	$221,769	$296,262	$283,801	$263,923
Small coastal sharks	Ex-vessel $/lb dw	$0.44	$0.44	$0.55	$0.54	$0.54	$0.58	$0.63	$0.64
	Weight lb dw	615,915	534,523	451,651	634,885	763,327	618,191	623,848	667,815
	Fishery Revenue	$271,003	$235,190	$248,408	$342,838	$412,197	$358,551	$393,024	$427,402
Shark fins (5% of all sharks landed)	Ex-vessel $/lb dw	$12.92	$12.92	$10.88	$12.76	$12.74	$9.61	$9.47	$9.49
	Weight lb dw	261,760	273,213	217,251	201,745	238,242	160,482	111,071	120,330
	Fishery Revenue	$3,381,933	$3,529,906	$2,363,689	$2,574,264	$3,035,198	$1,542,233	$1,051,840	$1,141,927
Total sharks	**Fishery Revenue**	$6,924,995	$6,841,027	$4,774,918	$6,931,643	$5,573,495	$3,967,293	$2,982,644	$2,726,040
Total HMS	Fishery Revenue	$49,337,010	$43,785,718	$53,660,509	$37,357,454	$34,951,471	$40,595,319	$34,315,365	$41,710,612

Note: Average ex-vessel prices may have some weighting errors, except for bluefin tuna which is based on a fleet-wide average.

5.1.3 Operating Costs

NMFS has collected operating cost information from commercial permit holders via logbook reporting. Each year, 20 percent of active Atlantic HMS commercial permit holders are selected to report economic information along with their Atlantic HMS logbook or Coast Fisheries logbook submissions. In addition, NMFS also receives voluntary submissions of the trip expense and payment section of the logbook form from non-selected vessels.

The primary expenses associated with operating an Atlantic HMS permitted commercial vessel include labor, fuel, bait, ice, groceries, other gear, and light sticks on swordfish trips. Unit costs are collected on some of the primary variable inputs associated with trips. The unit costs for fuel, bait, and light sticks are reported in Table 5.4. Fuel costs increased over 282 percent from 2004 to 2008 while the cost per pound for bait has remained fairly constant. This spike in fuel costs ended in 2009 when fuel costs decreased by 45 percent in one year. The unit cost per light sticks has actually declined from 2004 to 2009.

Table 5.4 Median Unit Costs for Fuel, Bait, and Light Sticks 2004 - 2009. Source: Atlantic HMS logbooks.

Input Unit Costs	2004	2005	2006	2007	2008	2009
Fuel	$1.27	$1.90	$2.20	$2.29	$3.59	$1.98
Bait	$0.80	$0.85	$0.85	$0.85	$0.85	$0.85
Light Sticks*	$0.52	$0.50	$0.50	$0.40	$0.37	$0.37

*Cost per light stick.

Table 5.5 provides the median total cost per trip for the major variable inputs associated with Atlantic HMS trips. Fuel costs are one of the largest variable expenses and the total costs of fuel decreased substantially per trip in 2009 in line with the decline in the unit cost of fuel.

Table 5.5 Median Input Costs for HMS Trips 2004 - 2009. Source: Atlantic HMS logbooks.

Input Costs	2004	2005	2006	2007	2008	2009
Fuel	$1,871	$2,341	$1,728	$2,144	$3,031	$2,303
Bait	$960	$920	$750	$858	$1,080	$1,320
Light Sticks	$650	$500	$500	$520	$444	$446
Ice Costs	$465	$480	$400	$540	$520	$600
Grocery Expenses	$675	$610	$470	$600	$600	$800
Other Trip Costs	$800	$1,250	$920	$1,236	$1,293	$1,500

Labor costs are also an important component of operating costs for HMS commercial vessels. Table 5.6 lists the amount of crew on a typical trip. The median number of crew members has been consistently three from 2004 to 2009. Most crew and captains are paid based on a lay system. According to Atlantic HMS logbook reports, owners are typically paid 50 percent of revenues. Captains receive a 20 percent share and crew in 2009 received 22.5 percent on average. These shares are typically paid out after costs are netted from gross revenues. Median total shared costs per trip have ranged from $4,493 to $5,000 from 2004 to 2009.

Table 5.6 Median Labor Inputs and Costs for HMS Trips 2004 - 2009. Source: Atlantic HMS logbooks.

Labor	2004	2005	2006	2007	2008	2009
Number of Crew	3	3	3	3	3	3
Owner Share	50%	50%	50%	50%	50%	50%
Captain Share	20%	20%	20%	20%	20%	20%
Crew Share	13%	11%	12%	15%	15%	22.5%
Total Shared Costs	$4,493	$4,550	$4,500	$4,500	$5,000	$4,689

In 2009, median reported total trip sales were $9,731. In 2008, median reported total trip sales were $10,970. In 2007, the median reported total trip sales were $12,064. After adjusting for operating costs, median net earnings per trip in 2008 was $3,214. Median net earnings per trip increased to $4,340 in 2009.

It should be noted that operating costs for the Atlantic HMS commercial fleet vary considerably from vessel to vessel. The factors that impact operating costs include unit input costs, vessel size, target species, and geographic location among other things.

5.2 Fish Processing and Wholesale Sectors

Consumers spent an estimated $75.5 billion for fishery products in 2009, including $50.3 billion at food service establishments, $23.8 billion in retail sales for home consumption, and $1.4 billion for industrial fish products. The commercial marine fishing industry contributed $38.4 billion (in value added) to the U.S. Gross National Product in 2009 (NMFS, 2010). For comparison, in 1996, consumers spent an estimated $41.2 billion, including $27.8 billion at food service establishments, $13.2 billion for home consumption, and $283.9 billion for industrial fish products. The commercial marine fishing industry contributed $21.0 billion to the U.S. Gross National Product in 1996.

5.2.1 Dealers

NMFS does not currently have information regarding the costs and revenues for Atlantic HMS dealers. In general, dealer costs include: purchasing fish; paying employees to process the fish; rent or mortgage on the appropriate building; and supplies to process the fish. Some dealers may provide loans to the vessel owner, money for vessel repairs, fuel, ice, bait, etc. In general, outlays and revenues of dealers are not as variable or unpredictable as those of a vessel owner; however, dealer costs may fluctuate depending upon supply of fish, labor costs, and equipment repair.

Although NMFS does not have specifics regarding HMS dealers, there is some information on the number of employees for processors and wholesalers in the United States provided in *Fisheries of the United States* (NMFS, 2009b) (http://www.st.nmfs.noaa.gov/st1/publications.html). Table 5.7 provides a summary of available information.

Table 5.7 Processors and Wholesalers: Plants, and Employment, 2008

Area and State	Processing (1)		Wholesale (2)		Total	
	Plants	Employment	Plants	Employment	Plants	Employment
	----------Number----------					
New England:						
Maine	33	732	173	914	206	1,646
New Hampshire	9	269	13	120	22	389
Massachusetts	55	2,640	173	2,125	228	4,765
Rhode Island	11	268	34	(3)	45	(3)
Connecticut	6	71	18	182	24	253
Total	**114**	**3,980**	**411**	**3,341**	**525**	**7,053**
Mid-Atlantic:						
New York	20	431	272	1,939	292	2,370
New Jersey	17	563	94	1,113	111	1,676
Pennsylvania	4	92	29	533	33	625
Delaware	1	(3)	5	20	6	20
District of Columbia	-	-	4	(3)	4	(3)
Maryland	20	713	50	504	70	1,217
Virginia	46	1,635	63	547	109	2,182
Total	**108**	**3,434**	**517**	**4,656**	**625**	**8,090**
South Atlantic:						
North Carolina	30	602	64	597	94	1,199
South Carolina	2	(3)	22	153	24	153
Georgia	5	(3)	31	480	36	480
Florida	30	1,511	283	2,681	313	4,192
Total	**67**	**2,113**	**400**	**3,911**	**467**	**6,024**
Gulf:						
Alabama	36	1,724	16	176	52	1,900
Mississippi	24	2,906	24	110	48	3,016
Louisiana	74	1,700	103	537	177	2,237
Texas	31	1,378	86	904	117	2,282
Total	**165**	**7,708**	**229**	**1,727**	**394**	**9,435**
Inland States or Other						
Areas: (4), Total	**57**	2,348	**228**	**2,841**	**285**	**5,189**

(1) Data are based on North American Industry Classification System (NAICS) 3117 as reported to the Bureau of Labor Statistics.
(2) Data are based on North American Industry Classification System (NAICS) 42446 as reported to the Bureau of Labor Statistics.
(3) Included with Inland States.

5.2.2 Processing Sector

NMFS does not collect wholesale price information from dealers. The Agency did collect annual report information from the Fulton Fish Market, however that data series was discontinued in 2004.

NMFS has information regarding the mark-up percentage paid by consumers. A mark-up or margin is the difference between the price paid for the product by the consumer and the wholesale or dockside value for an equivalent weight of the product. This information is

presented in Table 5.8. Primary wholesalers and processors on average received a 126 percent margin on sales in 2009, up from 90.3 percent in 2008.

Table 5.8 Summary of the Mark-Up and Consumer Expenditures for the Primary Wholesale and Processing of Domestic Commercial Marine Fishery Products. Source: NMFS 2009b.

	2008	2009
Purchase of fishery inputs	$7,390,725,000	$7,000,518,000
Percent mark-up of fishery inputs	90.3%	126.0%
Total mark-up	$6,675,397,000	$6,675,397,000
Value added as percent of total mark-up	60.3%	60.2%
Value added within sector	$4,024,922,000	$5,5311,542
Total value of sales within sector	**$14,066,121,000**	**$15,822,199**

5.3 International Trade

5.3.1 Overview of International Trade for Atlantic HMS

Several regional fishery management organizations (RFMOs), including ICCAT, have taken steps to improve the collection of international trade data to further international conservation policy for the management of HMS. While RFMOs cannot re-create information about stock production based on trade data, this information can be used provisionally to estimate landings related to these fisheries, and to identify potential compliance problems with certain RFMO management measures. This section describes United States participation in HMS related international trade programs, a review of U.S. HMS export activity, import activity, and data use.

The United States collects general trade monitoring data through the U.S. Bureau of Customs and Border Protection (CBP; imports) and the U.S. Bureau of the Census (Census Bureau; exports and imports). These programs collect data on the amount and value of imports and exports categorized under the Harmonized Tariff Schedule (HTS). Many HMS have distinct HTS codes, and some species are further subdivided by product (*e.g.*, fresh or frozen, fillets, steaks, etc.). NMFS provides Census Bureau trade data for marine fish products online for the public at http://www.st.nmfs.gov/st1/trade/index.html. Some species are combined into groups (*e.g.*, sharks), which can limit the value of these data for fisheries management when species-specific information is required. Often the utility of these data are further limited if the ocean area of origin for each product is not distinguished. For example, the HTS code for Atlantic, Pacific, and Indian Ocean bigeye tuna is the same.

Trade data for Atlantic HMS are more useful as a conservation tool when they include more detailed information, such as the flag of the harvesting vessel, the ocean of origin, and the species for each transaction. Under the authority of ATCA and the Magnuson-Stevens Act, NMFS collects this more detailed information through catch and statistical document programs while monitoring international trade of bluefin tuna, swordfish, southern bluefin tuna, and frozen bigeye tuna. These trade programs implement ICCAT recommendations and support rebuilding efforts by collecting data necessary to identify nations and individuals that may be fishing in a manner that diminishes the effectiveness of ICCAT fishery conservation and management

measures (Section 5.3.3). In support of these programs, NMFS implemented the HMS International Trade Permit in 2005 (69 FR 67268, November 17, 2004) to identify importers and exporters of HMS products that require trade monitoring documentation. Traders of shark fins must also be permitted. Copies of the ITP application and all trade monitoring documents associated with these programs are found on the NMFS HMS Management Division webpage at http://www.nmfs.noaa.gov/sfa/hms/. These and several other trade monitoring programs established by NMFS for HMS are described in greater detail below.

Table 5.9 Number of International Trade Permits (ITP) by state as of November 2010.

State	Number of ITPs
CA	73
CT	2
FL	53
GA	2
HI	13
IL	3
KS	1
LA	4
MA	32
MD	1
ME	9
MP	1
NC	2
NH	2
NJ	11
NY	25
OH	1
OR	1
PA	1
PR	1
RI	6
TX	3
VA	3
WA	10
TOTAL	**260**

5.3.1.1 Bluefin Tuna Catch Document

In 2007, ICCAT adopted a rigorous bluefin tuna catch document (BCD) program (Recommendation 07-10) which tracks bluefin from capture, through farming operations, landing, and trade. NMFS implemented the program in July 2008 (73 CFR 31380; June 2, 2008). Updates to the program were included in ICCAT recommendations 08-12 and 09-11. The intent of the program is to support the ICCAT rebuilding program by accounting for all bluefin tuna harvested and available in the marketplace, or held in cages. Previous to the BCD

program, the trade of bluefin tuna was tracked internationally under ICCAT's Bluefin Tuna Statistical Document (BSD) program (Recommendation 92-01).

All cooperating nations to ICCAT are required to generate a BCD at the harvest of a bluefin tuna, including live bluefin tuna bound for capture related aquaculture. In the United States, bluefin tuna are tagged when landed, and landing data associated with the tag number is transmitted to NMFS within 24 hours. The tag stays on the fish until it is cut up into portions to be consumed, and the associated landings data can be retrieved at any time by referencing the tag number. If a bluefin is exported, then a BCD document must accompany the export, and remains with the tagged fish until it is consumed abroad. All exporters must be permitted with a HMS International Trade permit as described above.

Bluefin tuna from abroad that are imported into the United States must also be accompanied by a BCD. Importers are first required to obtain an HMS International Trade Permit from NMFS, and must report any imports of bluefin tuna to NMFS. NMFS routinely consults import data generated by the Bureau of Customs and Border Protection (CBP) to check against BCD data and ensure that importers are abiding by BCD and other NMFS regulations implementing ICCAT requirements.

5.3.1.2 Swordfish Statistical Document

On March 17, 2005, the ICCAT swordfish statistical document (SD) program was implemented by the United States (69 FR 67268, November 17, 2004) to replace the previously used Certificate of Eligibility. The swordfish SD program is based on a 2001 ICCAT recommendation (01-22), and ensures that all imported swordfish are greater than the minimum size of 14.9 kg (33 lb) dw, and identifies the flag of the harvesting vessel and ocean area of origin. Similar to the BCD program, CBP data on swordfish imports is used to obtain missing data and identify dealers that are not following the required reporting procedures.

5.3.1.3 Bigeye Tuna Statistical Document

Like the two previous trade monitoring programs discussed above, the bigeye tuna SD program is used to track movement of internationally traded bigeye tuna to its final destination. ICCAT recommended the implementation of a bigeye tuna SD program in 2001 (Recommendation 01-21). The initial program was implemented in 2005 along with the swordfish SD, and applies only to frozen bigeye tuna. It may be expanded to cover fresh product in the future. Other RFMOs, including the Inter-American Tropical Tuna Commission and the Indian Ocean Tuna Commission, have also adopted frozen bigeye SD programs that have been implemented by the United States.

5.3.1.4 Dolphin-safe Tuna Imports

For every shipment of frozen or processed tuna imported into the United States, a completed Fisheries Certificate of Origin (NOAA Form 370) is required to be submitted at the time of importation. In some cases, an additional certification signed by a representative of a

nation participating in the International Dolphin Conservation Program or a Captain's Statement is required to accompany the NOAA Form 370. Since the late 1970s, NOAA Form 370 has been used to document imports of frozen or processed yellowfin tuna and other species of tuna for the purpose of protecting dolphins in the Eastern Tropical Pacific Ocean. Form 370 is filed with other documents necessary for entry of tuna into the United States. The form is *not* required for fresh tuna. Further information is available on the website http://dolphinsafe.gov/.

5.3.1.5 Billfish Certificate of Eligibility

The Billfish Certificate of Eligibility is used to ensure that any billfish being imported or sold in the United States (outside of the Pacific states) is not of Atlantic origin. In the Pacific states, billfish involved in trade are presumed to be of Pacific origin. Any statement that contains the specified information is sufficient to meet the certificate of eligibility documentation requirements, and it needs to be available upon request throughout the entire commerce stream, including at time of consumption at a restaurant. It is not necessary to use the form available from NMFS or to submit the form to NMFS upon final disposition of the billfish

5.3.1.6 Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)

CITES is an international agreement that regulates the global trade in wildlife. The goal of CITES is to protect and regulate species of animals and plants to ensure that commercial demand does not threaten their survival in the wild. Countries cooperate through a system of permits and certificates to confirm that trade is legal. Species listed on Appendix II are those that are vulnerable to overexploitation, but not at risk of extinction. In every case of an import or export of an Appendix II species, an export/import permit may only be issued if, the export/import will not be detrimental to the survival of the species, the specimen was legally acquired (in accordance with the national wildlife protection laws) and any live specimen will be shipped in a manner which will not cause it any damage. Currently there are three species of sharks listed on Appendix II, whale, basking and great white sharks. Species listed on Appendix I are considered to be at risk of extinction, and are prohibited from international commercial trade, except in special circumstances.

The United States proposed that six shark species be listed in Appendix II, for consideration at the fifteenth meeting of the Conference of the Parties to CITES (CoP15) held during March 2010 in Doha, Qatar. The proposed species were oceanic whitetip shark (*Carcharhinus longimanus*) and scalloped hammerhead (*Sphyrna lewini*); along with "look alike" species great hammerhead (*S. mokarran*); smooth hammerhead (*S. zygaena*); dusky shark (*C. plumbeus*); and sandbar shark (*C. obscurus*). The United States submitted these proposals due to concerns that over-exploitation to supply the international fin trade is negatively impacting the population status of these sharks, as the fins of these six shark species are among the most valuable in trade. The United States also supported the Principality of Monaco’s proposal that Atlantic bluefin tuna be included on Appendix I. All of these proposals were defeated at CoP15.

5.3.2 U.S. Exports of HMS

Exports" may include merchandise of both domestic and foreign origin. The Census Bureau defines exports of "domestic" merchandise to include commodities which are grown, produced, or manufactured in the United States (*e.g.*, fish caught by U.S. fishermen). For statistical purposes, domestic exports also include commodities of foreign origin which have been altered in the United States from the form in which they were imported, or which have been enhanced in value by further manufacture in the United States. The value of an export is the f.a.s. (free alongside ship) value defined as the value at the port of export based on a transaction price including inland freight, insurance, and other charges incurred in placing the merchandise alongside the carrier. It excludes the cost of loading the merchandise, freight, insurance, and other charges or transportation costs beyond the port of exportation.

5.3.2.1 Atlantic and Pacific Bluefin Tuna Exports

As discussed in the previous section, NMFS collects detailed export data on bluefin tuna (Atlantic and Pacific) through the BCD program. Table 5.10 gives bluefin tuna export data for exports from the United States since 2000. Figure 5.2 includes data from the NMFS BCD program, and Census Bureau data. Census Bureau data are consistently greater in value than data reported by the BCD program. This has been determined to be a result of NMFS' additional quality control measures that ensure data for other species (*e.g.*, Southern bluefin tuna) or other transaction types (*e.g.*, re-exports) are not erroneously included with bluefin export data. Bluefin tuna re-export data are listed separately (Table 5.18).

In the time series shown in Table 5.10 and depicted in Figure 5.2, U.S. exports of Atlantic bluefin tuna have roughly paralleled commercial landings. Most U.S. bluefin tuna exports are destined for the sushi markets in Japan. Decreases in Atlantic bluefin tuna exports since 1999 could the result of the development of a U.S. market for high-quality fresh bluefin tuna meat. As shown in Figure 5.3, the percentage of the commercial U.S. bluefin tuna catch that has been exported declined from 89% in 1996 to 51% in 2009. The greatest percentage of catch was retained in the United States in 2007, when only 46% of landed product was exported. This issue is discussed further in this chapter under the section "*Atlantic and Pacific Bluefin Tuna Imports.*"

Table 5.10 United States Exports of Atlantic and Pacific Bluefin Tuna (BFT), 1999-2009. Sources: NMFS BCD Program, NERO, and Census Bureau.

Year	Atlantic Commercial Landings (NERO, MT, DW)	Atlantic BFT Exports (BCD, MT, DW)	Pacific BFT Exports (BCD, MT, DW)	Total U.S. Exports (BCD, MT, DW)	Total U.S. Exports (Census Bureau, MT)	Value of U.S. Exports (Census Bureau, $ million)
2000	903.9	758.0	76.0	834.0	1,044	11.20
2001	987.0	812.3	67.0	879.0	1,020	10.70
2002	964.0	730.4	0.1	730.5	922	10.74

Year	Atlantic Commercial Landings (NERO, MT, DW)	Atlantic BFT Exports (BCD, MT, DW)	Pacific BFT Exports (BCD, MT, DW)	Total U.S. Exports (BCD, MT, DW)	Total U.S. Exports (Census Bureau, MT)	Value of U.S. Exports (Census Bureau, $ million)
2003	756.9	578.7	2.1	580.8	998	11.36
2004	428.6	247.3	0.0	247.3	370	4.50
2005	419.4	245.7	125.1	370.8	454	5.30
2006	204.6	93.1	0.0	93.1	281	3.60
2007	196.4	85.4	8.2	93.6	238	2.90
2008	266.4	146.5	0.0	146.5	177	2.49
2009	408.5	236.2	0.0	236.2	300	4.05

Note: most exports of Pacific bluefin tuna were in round (whole) form, although some exports were of dressed and gilled/gutted fish; Atlantic exports were almost entirely dressed, but also included whole and other product forms (dw); data are preliminary and subject to change.

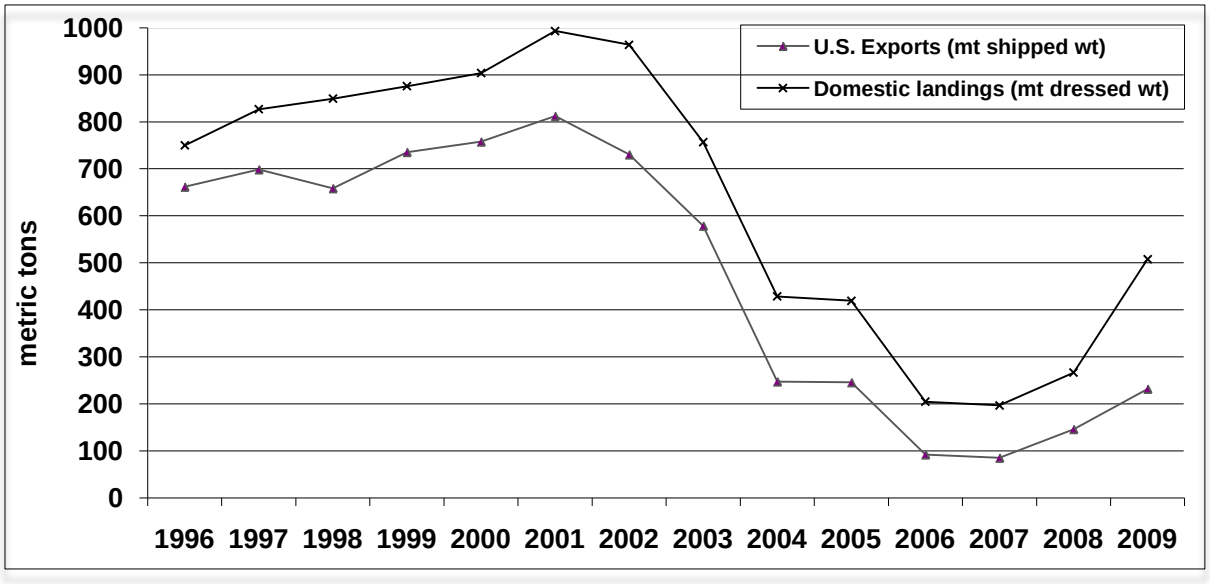

Figure 5.2 Total annual U.S. domestic landings (mt dressed weight) and U.S. exports (mt shipped weight) for Atlantic bluefin tuna.

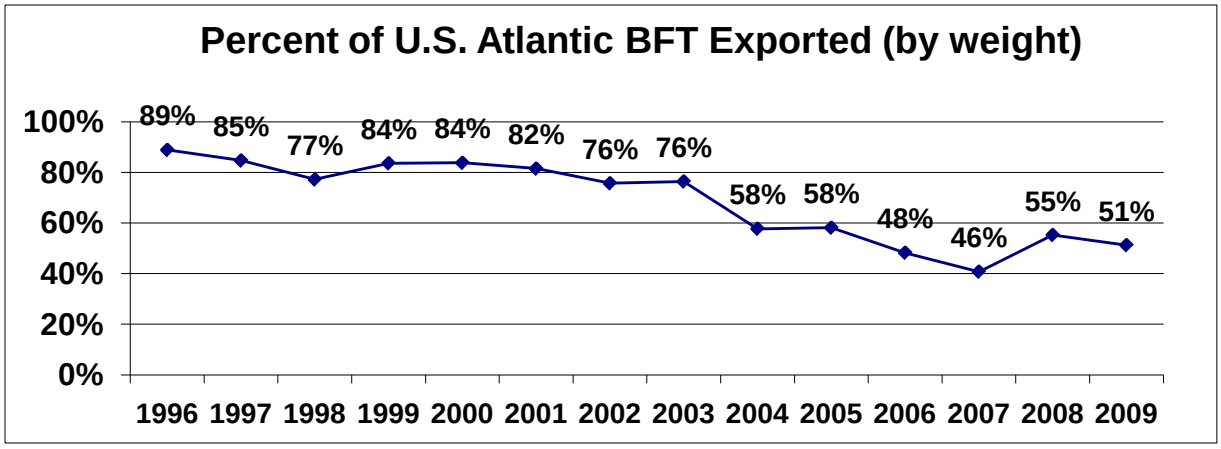

Figure 5.3 Annual percentage (by weight) of commercially landed U.S. Atlantic bluefin tuna that was exported.

5.3.2.2 Other Tuna Exports

Export data for other tunas is gathered by the Census Bureau, and includes trade data for albacore, yellowfin, bigeye, and skipjack tuna from all ocean areas of origin combined. In 2001, albacore tuna first replaced bluefin tuna as the most valuable tuna export from the United States (Table 5.11), according to Census Bureau information.

Albacore has remained a higher value export than bluefin tuna since 2003. The total value of albacore exports has remained over $20 million for six of the last seven years. Most albacore exports are Pacific in origin, as Atlantic landings have ranged between 188 mt and 640 mt during the time series in Table 5.11. Landings of Atlantic albacore have declined since 2007 to their lowest since 2000 (Table 5.11).

Table 5.11 Amount and Value of U.S. Exports of Albacore Tuna From All Ocean Areas, 1999-2009 (Census Bureau data) and U.S. Landings of North Atlantic Albacore Tuna (2010 U.S. National Report to ICCAT).

Year	Atlantic Landings (mt ww)	**U.S. Exports** (from all ocean areas)					
		Fresh		Frozen		Total for all Exports	
		MT	US$ (million)	MT	US$ (million)	MT	US$ (million)
2000	407	263	0.78	2,747	6.04	3,010	6.83
2001	324	1,542	3.62	4,609	9.83	6,151	13.45
2002	488	680	1.50	4,483	8.28	5,163	9.78
2003	448	894	1.86	9,731	18.85	10,624	20.71
2004	640	1,360	3.28	10,737	24.11	12,097	27.38
2005	486	549	1.61	7,402	16.99	7,951	18.60
2006	400	378	1.04	8,810	19.56	9,187	20.60
2007	532	275	0.84	11,731	25.52	12,006	26.35
2008	248	997	2.69	7,958	22.54	8,955	25.23
2009	188	417	1.02	9,903	22.58	9,510	23.60

Note: Landings may be calculated on a calendar or fishing year basis; exports may be in whole (ww) or product weight (dw); data are preliminary and subject to change.

Table 5.12 and Table 5.13 show U.S. Atlantic landings and U.S. exports from all ocean areas combined for yellowfin and skipjack tuna, respectively. Yellowfin exports were greater and more valuable than exports for skipjack or bigeye tuna (Table 5.14). Yellowfin tuna exports were unusually high in 2008 The amount of fresh yellowfin product exported usually exceeds the amount of frozen yellowfin product annually. However, export of frozen product was much higher in 2008 than any other year included in Table 5.12. In Table 5.13, the amount and value of exported fresh and frozen skipjack tuna has varied over the nine year period with no discernable trends. Exports of skipjack in 2009 greatly exceeded values for any of the previous years in the time series.

Table 5.12 Amount and Value of U.S. Exports of Yellowfin Tuna From All Ocean Areas, 1999-2009 (Census Bureau data) and U.S. Landings of Atlantic Yellowfin Tuna (*2010 U.S. National Report to ICCAT).*

Year	Atlantic Landings (mt ww)	**U.S. Exports** (from all ocean areas)					
		Fresh		**Frozen**		**Total for all Exports**	
		MT	**US$ (million)**	**MT**	**US$ (million)**	**MT**	**US$ (million)**
2000	7,051	412	1.12	406	.76	819	1.89
2001	6,703	290	.71	834	1.45	1,124	2.17
2002	5,646	1612	2.37	420	.81	2,033	3.19
2003	7,685	1792	2.93	176	.68	1,968	3.62
2004	6,437	306	1.54	242	.31	549	1.86
2005	5,562	158	1.70	291	.97	449	2.67
2006	7,090	183	1.96	108	.37	291	2.32
2007	5,559	148	1.75	138	.44	286	2.19
2008	2,407	198	2.09	4,140	9.06	4,338	11.16
2009	2,802	221	2.51	274	.66	495	3.17

Note: Landings may be calculated on a calendar or fishing year basis; exports may be in whole (ww) or product weight (dw); data are preliminary and subject to change.

Table 5.13 Amount and Value of U.S. Exports of Skipjack Tuna From All Ocean Areas, 1999-2009 (Census Bureau data) and U.S. Landings of West Atlantic Skipjack Tuna (*2010 U.S. National Report to ICCAT)*.

Year	Atlantic Landings (mt ww)	**U.S. Exports** (from all ocean areas)					
		Fresh		Frozen		Total for all Exports	
		MT	US$ (million)	MT	US$ (million)	MT	US$ (million)
2000	44	7	.01	83	.05	91	.06
2001	69	82	.15	34	.04	117	.20
2002	66	66	.17	11	.01	77	.18
2003	77	81	.22	0	0	81	.22
2004	102	55	.30	140	.18	196	.48
2005	30	35	.14	-	-	35	.14
2006	61	6	.02	23	.04	30	.06
2007	66	17	.06	77	.12	94	.18
2008	67	31	.15	350	.41	381	.56
2009	119	2.07	.54	530	.71	737	1.25

Note: Landings data may have been ported on either a fishing year or calendar year basis; exports may be in whole (ww) or product weight (dw); data are preliminary and subject to change.

Bigeye tuna exports and Atlantic landings are given in Table 5.14. No data were available for bigeye tuna exports in 2001, and prior to 2001 bigeye exports were included in the category of unspecified tuna. Annually, bigeye tuna exports include more fresh than frozen product, except in 2008 when export of frozen product increased dramatically.

Table 5.14 Amount and Value of U.S. Exports of Bigeye Tuna From All Ocean Areas, 2002-2009 (Census Bureau data) and U.S. Landings of Atlantic Bigeye Tuna (*2009 U.S. National Report to ICCAT)*.

Year	Atlantic Landings (mt ww)	**U.S. Exports** (from all ocean areas)					
		Fresh		Frozen		Total for all Exports	
		MT	US$ (million)	MT	US$ (million)	MT	US$ (million)
2002	600	95	.22	8	.01	104	.24
2003	480	255	.47	40	.08	295	.56
2004	419	361	1.40	48	.10	410	1.51
2005	484	431	1.95	50	.12	481	2.07
2006	991	223	1.69	76	.20	299	1.89
2007	523	128	1.38	65	.14	193	1.52
2008	489	145	1.72	318	.96	462	2.68
2009	516	121	1.53	78	.19	199	1.72

NOTE: Landings data may have been reported on either a fishing year or calendar year basis; exports may be in whole (ww) or product weight (dw); data are preliminary and subject to change.

5.3.2.3 Shark Exports

Export data for sharks is gathered by the Census Bureau, and includes trade data for sharks from any ocean area of origin. Shark exports are not categorized down to the species level, with the exception of dogfish, and are not identified by specific product code other than fresh or frozen meat and fins. Due to the popular trade in shark fins and their high relative value compared to shark meat, a specific HTS code was assigned to shark fins in 1998. It should be noted that there is no tracking of other shark products besides meat and fins. Therefore, NMFS cannot track trade in shark leather, oil, or shark cartilage products.

Table 5.15 indicates the magnitude and value of shark exports by the United States from 2000 – 2009. The reduction in shark fin exports from 2002 to 2009 is of particular note, as is the increase in the unit value of shark fins during this time period (except for 2008). Decreases in shark fin trade were expected as the result of the Shark Finning Prohibition Act, which was enacted in December of 2000 and implemented by final rule (67 FR 6194, February 11, 2002). Exports of shark fins were back up to 56 mt in 2009, from 11 mt in 2008). Also of note is the dramatic increase in export of frozen shark products in 2008.

Table 5.15 Amount and Value of U.S. Shark Product Exports From 2000-2009. Source: Census Bureau.

Yr	Shark Fins Dried			Non-specified Fresh Shark			Non-specified Frozen Shark			Total for all Exports	
	MT	US$ (million)	$/KG	MT	US$ (million)	$/KG	MT	US$ (million)	$/KG	MT	US$ (million)
2000	365	3.51	9.62	430	.78	1.82	345	.81	2.35	1,140	5.10
2001	335	3.16	9.44	332	.54	1.64	634	2.34	3.69	1,301	6.04
2002	123	3.46	28.00	968	1.47	1.52	982	2.34	2.38	2,075	7.28
2003	45	4.03	87.79	837	1.31	1.57	592	1.34	2.28	1,476	6.70
2004	63	3.02	47.53	536	1.18	2.21	472	.98	2.09	1,071	5.18
2005	31	2.37	76.93	377	1.03	2.73	494	1.06	2.15	902	4.46
2006	34	3.17	94.66	816	1.62	1.99	747	1.38	1.85	1,597	6.17
2007	19	1.78	93.68	502	1.05	2.09	695	1.35	1.94	1,216	4.18
2008	11	0.69	63.00	559	1.21	2.16	4122	7.21	1.75	4,692	9.11
2009	56	2.82	50.36	254	.72	2.83	320	1.33	4.16	630	4.87

Note: Exports may be in whole (ww) or product weight (dw); data are preliminary and subject to change.

5.3.2.4 Swordfish Exports

U.S. Census data only reports swordfish exports for the years 2007 through 2009 (Table 5.16). The low cost and year round availability of swordfish imports into the United States is believed to have reduced the marketability of U.S. domestic swordfish, and created an export market for U.S. product in recent years.

Table 5.16 Amount and Value of U.S. Swordfish Product Export from 2007-2009.
Source: Census Bureau

Yr	Swordfish Fillet Fresh		Swordfish Fillet Frozen		Swordfish Fresh		Swordfish Frozen		Swordfish Meat Frozen		Total	
	MT	US$ (mill.)	MT	US$ (mill.)	MT	US$ (mill.)	MT	US$ (mill.)	MT	US$ (mill.)	MT	US$ (mill.)
2007	38	.33	11	.08	135	.91	11	.04	216	.69	412	2.1
2008	24	.25	48	.34	121	.89	1.2	.01	154	.88	349	2.4
2009	43	.38	19	.23	133	.81	12.1	.04	24	.13	231	1.6

5.3.2.5 Re-exports of Atlantic HMS

For purposes of international trade tracking of HMS, the term "re-export" refers to a product that has been entered for consumption into the United States and then exported to another country, with or without further processing in the United States (from 50 CFR Part 300, Subpart M, International Trade Documentation and Tracking Programs for HMS). For most HMS species for most years, re-export activity is a small fraction of export activity and well below relative reference points of 1000 mt and/or one million dollars annually. Annual re-export figures in excess of these relative reference points are given in Table 5.17.

In previous editions of SAFE reports, bluefin tuna re-exports for 2003-2005 reflected a great deal of transshipment from Mexico through the United States to Japan. Implementation of the HMS International Trade Permit regulations in 2005 (69 FR 67268, November 17, 2004) changed the way re-exports and transshipments were distinguished, and probably resulted in the decrease in re-exports since 2005. Table 5.17 has been updated to reflect these changes for previous years.

Table 5.17 Re-exports for HMS (see Table 5.10 for bluefin tuna) over the reference points of 1000 mt and/or one million U.S. dollars, annually from 1999-2009.
(Census Bureau data).

Year	Product	Amount (MT)	Value ($ mill.)
2004	Shark fins, dried	29	1.84
2005	Yellowfin tuna, fresh	123	2.30
2005	Shark fins, dried	34	1.53
2006	Yellowfin tuna, fresh	208	2.62
2007	Yellowfin tuna, fresh	208	2.91
2007	Yellowfin tuna, frozen	506	1.80
2008	Yellowfin tuna, fresh	224	3.40
2008	Shark fins, dried	26	1.37
2009	Yellowfin tuna, fresh	162	2.18
2009	Yellowfin tuna, frozen	381	0.92

5.3.2.6 Summary of Atlantic HMS Exports

As indicated in the previous section, the value of HMS exports (from all ocean areas combined) is nationally dominated by tuna products. In 2009, fresh and frozen tuna products accounted for 18,994 mt dw or 1.9 percent of the 1,019,833 mt dw of fresh and frozen seafood products exported from the United States, as indicated in *Fisheries of the United States, 2009.* The value of these HMS products accounted for $60.9 million, out of a national total of $3.3 billion.

Data reflecting international trade of HMS species harvested from all ocean areas are of limited value for describing trade of HMS harvested from the Atlantic Ocean. For example, Atlantic landings of albacore tuna (commercial and recreational) for 2009 were reported in the 2010 U.S. National Report to ICCAT as 188 mt (Table 5.11). National trade data show that over 9,510 mt of albacore were exported in 2009 (Table 5.11), indicating the majority of albacore exports were Pacific Ocean product. Trade tracking programs such as the bluefin tuna, swordfish, and bigeye tuna consignment document programs are more accurate for tracking the international disposition of Atlantic HMS.

All import shipments must be reported to the U.S. Bureau of Customs and Border Protection. “General” imports are reported when a commodity enters the country, and "consumption" imports consist of entries into the United States for immediate consumption combined with withdrawals from CBP bonded warehouses. “Consumption” import data reflect the actual entry of commodities originating outside the United States into U.S. channels of consumption. As discussed previously, CBP data for certain products are provided to NMFS for use in implementing consignment document programs. U.S. Census Bureau import data are used by NMFS as well.

5.3.2.7 Atlantic and Pacific Bluefin Tuna Imports

United States imports and re-exports of bluefin tuna for 2000 through 2009, as reported through both CBP and BCD program data, are shown in Table 5.18. The difference in import numbers between the CBP and BCD data may be explained by imports of other species (e.g., Southern bluefin tuna) erroneously included under the bluefin tuna HTS code, or, a lack of knowledge and compliance with the BCD program by importers.

Table 5.18 Imports of Atlantic and Pacific Bluefin Tuna into the United States: 1999-2009. Sources: NMFS BSD program and CBP data.

YEAR	NMFS BCD Program		U.S. CBP Data	
	Imports (MT)	Re-exports (MT)	Imports (MT)	VALUE (US$ mill.)
2000	431.5	29.7	453.4	7.67
2001	512.9	7.0	532.3	8.21
2002	529.8	9.9	605.0	9.75
2003	649.9	38.4	780.3	11.67

YEAR	NMFS BCD Program		U.S. CBP Data	
	Imports (MT)	Re-exports (MT)	Imports (MT)	VALUE (US$ mill.)
2004	823.4	17.1	886.1	15.25
2005	966.1	10.4	1,064.0	19.96
2006	791.5	18.5	865.2	17.05
2007	584.6	17.7	697.1	13.97
2008	412.7	16.8	487.1	11.91
2009	407.7	33.6	476.8	10.29

Note: Most imports of bluefin tuna were in dressed form, and some were round and gilled/gutted fish, fillets or belly meat (dw); data are preliminary and subject to change. Southern bluefin tuna trade was included in figures for Atlantic and Pacific bluefin tuna trade prior to 2002.

The rise in popularity of sashimi in the United States has generated increased imports of bluefin tuna, and dealers reported an expanded domestic market for both locally-caught and imported raw tuna during the early part of the current decade. U.S. consumption of bluefin tuna (landings + imports – exports – re-exports) generally increased from 1996 through 2005, and then declined through 2008 (Figure 5.4). Since 2004, the United States has imported more bluefin tuna than it has exported. This trade gap was greatest in 2006, but appears to be narrowing in the last several years.

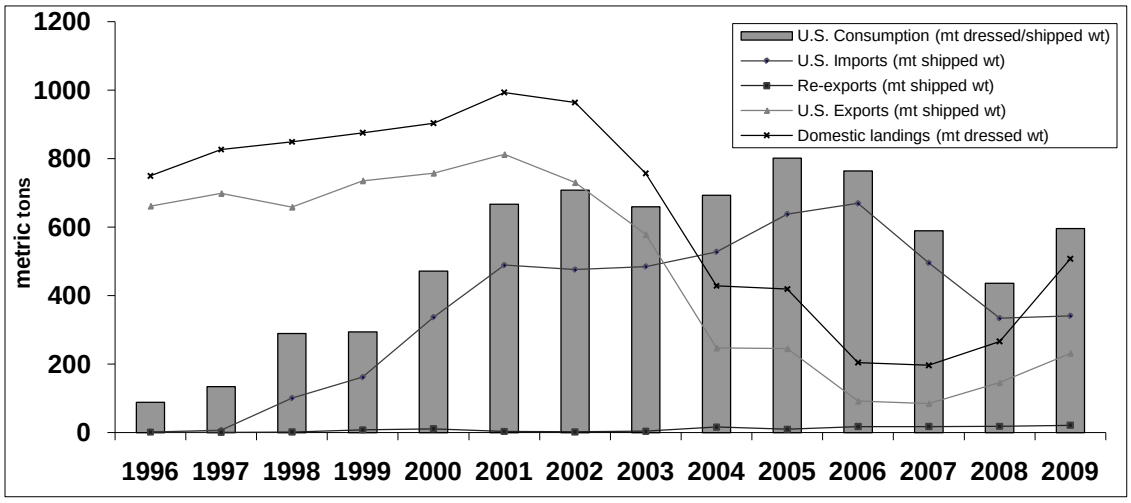

Figure 5.4 United States annual consumption of bluefin tuna from 1996 through 2009. Annual U.S. imports, re-exports, exports (mt shipped wt) and landings (mt dressed weight) are also depicted. Consumption equals landings + imports – exports – re-exports.

Western Atlantic bluefin tuna imports into the United States originate primarily from Canada with much less from Mexico (U.S. BCD program). Eastern imports vary by year. For 2008 - 2009, import volume was greatest from France, Tunisia, Libya, and Italy. In 2007,

volume was greatest from Spain, Croatia, Italy, and Morocco, and in 2006, Spain, Croatia, Malta, and Tunisia.

5.3.2.8 Other Tuna Imports

Since January 2001, CBP has been collecting species-specific import information for bigeye tuna (grouped to include all ocean areas). Previously, bigeye tuna had been grouped with other tuna under general tuna imports. The total amount of bigeye tuna imports has ranged between 4,800 and 8,059 mt over the last eight years, as shown in Table 5.19. Since 2000, imports of frozen bigeye tuna were greatest in 2008.

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Table 5.19 Imports of Bigeye Tuna Into the United States From All Ocean Areas Combined: 2001-2009 Source: Census Bureau data.

Year	Fresh		Frozen		Total for all Imports	
	MT	US$ (million)	MT	US$ (million)	MT	US$ (million)
2001	4,684	25.70	135	.32	4,820	26.02
2002	6,312	39.84	319	.70	6,632	40.55
2003	7,312	51.01	560	1.48	7,872	52.49
2004	6,752	49.10	1,175	2.62	7,928	51.73
2005	5,040	38.18	1,539	3.33	6,579	41.51
2006	4,920	36.55	1,523	3.15	6,442	39.70
2007	5,617	42.30	1,512	3.19	7,129	45.49
2008	5,462	41.43	2,597	5.31	8,059	46.74
2009	5,459	41.72	1,125	2.36	6,584	44.08

Note: Imports may be whole weight (ww) or product weight (dw); data are preliminary and subject to change.

Annual yellowfin tuna imports into the United States for all ocean areas combined are given in Table 5.20. As indicated by the data in this section, yellowfin tuna are imported in the greatest quantity of all fresh and frozen tuna products. The annual value and total amount of yellowfin imports had been generally, gradually increased since 2000, but fell for the last two years. Most imported yellowfin products are fresh. The least amount of frozen product during this time series was imported in 2009.

Table 5.20 Imports of Yellowfin Tuna Into the United States From All Ocean Areas Combined: 1999-2009. Source: Census Bureau data.

Year	Fresh		Frozen		Total for all Imports	
	MT	US$ (million)	MT	US$ (million)	MT	US$ (million)
2000	13,153	70.27	3,290	18.73	16,443	89.00
2001	15,563	85.50	3,967	23.45	19,530	108.95
2002	15,966	95.22	4,619	29.31	20,585	124.53
2003	15,299	94.03	5,579	39.67	20,878	133.71
2004	15,624	99.41	5,833	35.35	21,457	134.96
2005	17,064	116.58	6,002	46.89	23,066	163.47
2006	17,792	126.47	5,442	42.78	23,234	169.25
2007	17,985	137.42	5,506	44.26	23,492	181.69
2008	15,904	129.59	3,847	27.97	19,751	157.56
2009	14,199	112.34	2868	24.73	17,067	137.07

NOTE: Imports may be whole weight (ww) or product weight (dw); data are preliminary and subject to change.

The amount of albacore imports from all ocean areas has generally declined since 2000 (Table 5.21) with a slight increase in 2009. In 2000, albacore imports were valued at $133 million while in 2005 the value dropped to approximately $5 million, and have remained fairly low. Import amounts and value have been fairly stable over the last several years. (Products in airtight containers (e.g., cans or foil pouches) are not included in these data.)

Table 5.21 Imports of Albacore Tuna into the United States From All Ocean Areas Combined: 1999-2009. Source: Census Bureau data.

Year	Fresh		Frozen		Total for all Imports	
	MT	US$ (million)	MT	US$ (million)	MT	US$ (million)
2000	1,843	6.42	51,001	127.33	52,845	133.76
2001	1,107	3.85	40,428	105.58	41,536	109.43
2002	1,296	4.81	11,903	24.49	13,200	29.31
2003	1,062	4.11	12,569	25.90	13,632	30.02
2004	1,004	3.12	4,943	11.67	5,947	14.80
2005	706	2.38	1,016	2.96	1,722	5.34
2006	876	3.54	667	1.71	1,543	5.25
2007	945	3.86	718	1.98	1,664	5.86
2008	703	2.95	1,632	4.73	2,335	7.68
2009	718	3.07	1,493	3.46	2,211	6.53

Note: Imports may be whole weight (ww) or product weight (dw); data are preliminary and subject to change.

Skipjack tuna imports into the United States are comprised mainly of frozen product (Table 5.22). The amount and value of skipjack imports decreased dramatically in 2000, and have been variable but low since. (Products in airtight containers (e.g., cans or foil pouches) are not included in these data.)

Table 5.22 Imports of Skipjack Tuna From All Ocean Areas Combined Into the United States: 1999-2009. Source: U.S. Census Bureau data.

Year	Fresh		Frozen		Total for all Imports	
	MT	US$ (million)	MT	US$ (million)	MT	US$ (million)
1999	0	0	8,238	6.30	8,238	6.30
2000	0	0	904	2.75	904	2.75
2001	<1	<0.01	377	0.61	378	0.62
2002	<1	0.01	824	0.83	825	0.84
2003	0	0	224	0.43	224	0.43

Year	Fresh		Frozen		Total for all Imports	
	MT	US$ (million)	MT	US$ (million)	MT	US$ (million)
2004	<1	<0.01	110	0.26	112	0.27
2005	0	0	652	0.67	652	0.67
2006	140	0.14	883	0.84	1,023	0.98
2007	31	0.06	835	0.73	866	0.79
2008	14	0.02	685	0.77	699	0.79
2009	20	.04	498	0.63	519	0.67

Note: Imports may be whole weight (ww) or product weight (dw); data are preliminary and subject to change.

5.3.2.9 Swordfish Imports

Table 5.23 summarizes swordfish import data collected by NMFS' Swordfish Statistical Document Program for the 2009 calendar year. According to these data, most swordfish imports were Pacific Ocean product. For Atlantic product, most imports came from Canada, followed by Brazil. CBP data located at the bottom of the table reflect a larger amount of imports than reported by the import monitoring program, and may be used by NMFS staff to follow up with importers, collect statistical documents that have not been submitted, and enforce dealer reporting requirements.

Table 5.23 Swordfish Import Data for the 2009 Calendar Year Collected Under the NMFS Swordfish Statistical Document Program. (np=not provided)

Flag of Harvesting Vessel	Ocean Area of Origin								Total (mt dw)
	Atlantic (mt dw)	North Atlantic (mt dw)	South Atlantic (mt dw)	Med. (mt dw)	Pacific (mt dw)	Western Pacific (mt dw)	Indian (mt dw)	Not Provided (mt dw)	
Australia						65.0		0.5	65.5
Brazil	5.2		348.0		0.2			6.8	360.2
Canada		821.7						4.4	826.1
Chile					373.1				373.1
China					6.1				6.1
Costa Rica					406.3			3.8	410.1
Ecuador			0.2	90.4	652.7		2.2	3.8	749.3
Fiji Islands					7.9	28.0		2.7	38.6
Indonesia							211.4		211.4
Japan					2.3				2.3
Malaysia							14.1		14.1
Mexico					248.5			1.3	249.8
Micronesia					4.1				4.1

Flag of Harvesting Vessel	Ocean Area of Origin								Total (mt dw)
	Atlantic (mt dw)	North Atlantic (mt dw)	South Atlantic (mt dw)	Med. (mt dw)	Pacific (mt dw)	Western Pacific (mt dw)	Indian (mt dw)	Not Provided (mt dw)	
New Zealand					0.6	131.7		2.6	134.9
Nicaragua					9.3				9.3
Panama					1103.9				1103.9
South Africa			94.7				85.0	2.4	182.1
Tonga					0.1				0.1
Trinidad & Tobago		14.9						2.2	17.1
Uruguay		7.3	83.5					6.1	96.9
Venezuela		0.6							0.6
Vietnam					133.1			0.1	133.2
np		0.1	10.7	20.0	493.5			0.9	525.2
Total Imports Reported by SDs	5.2	844.6	537.1	110.4	3441.7	224.7	312.7	37.6	5514.0
Total Imports Reported by U.S. Customs & Border Protection									7703.7
Total Imports Not Reported by SDs									2189.7

Table 5.24 indicates the amount and value of swordfish products imported by the United States from 2000 – 2009, as recorded by the U.S. Census Bureau, for all ocean areas combined. New import product categories were added in 2007. The amount of each product imported per year and annual totals for product and value were fairly consistent over the past several years. Total imports have fallen over the last five years.

Table 5.24 Imported Swordfish Products by Year: 2000-2009. Source: Census Bureau data.

Year	Fresh (MT)		Frozen (MT)			Total for all Imports	
	Steaks	Other	Fillets	Steaks	Other	MT	US$ (million)
2000	161	8626	4833	524	167	14,314	85.57
2001	71	8982	3814	710	119	13,697	81.89
2002	195	9726	4156	956	677	15,711	88.26
2003	147	8079	3929	433	560	13,150	75.62
2004	157	6568	3261	387	351	10,726	70.95

Year	Fresh (MT)			Frozen (MT)					Total for all Imports	
	Steaks		Other	Fillets	Steaks	Other			MT	US$ (million)
2005	172		6388	2957	367	304			10,187	77.17
2006	77		6830	2875	351	201			10,334	75.63
*New Categories in 2007	*Fillets	Steaks	Other	Fillets	Steaks	*Meat >6.8 kg	*Meat <=6.8 kg	Other		
2007	174	84	5412	2520	171	118	737	205	9,422	70.85
2008	96	13	5658	2673	170	55	207	88	8,962	68.98
2009	53	10	5312	1632	112	96	23	33	7272	55.85

NOTE: Imports may be whole weight (ww) or product weight (dw); data are preliminary and subject to change.

5.3.2.10 Shark Imports

Similar to tuna imports other than bluefin tuna and frozen bigeye tuna, NMFS does not require shark importers to collect and submit information regarding the ocean area of catch. Shark imports are also not categorized by species, and lack specific product information on imported shark meat such as the proportion of fillets and steaks. The condition of shark fin imports; e.g., wet, dried, or further processed products such as canned shark fin soup, is also not collected. There is no longer a separate tariff code for shark leather, so its trade is not tracked by CBP or Census Bureau data.

The United States may be an important trans-shipment port for shark fins, which may be imported wet, processed, and then exported dried. It is also probable that U.S.-caught shark fins are exported to Hong Kong or Singapore for processing, and then imported back into the United States for consumption by urban-dwelling Asian Americans (Rose, 1996).

Table 5.25 summarizes Census Bureau data on shark imports for 2000 through 2009. Imports of fresh shark products and shark fins have decreased significantly since 2000. As of July 2, 2008, shark fin importers, exporters, and re-exporters are required to be permitted under NMFS' HMS International Trade Permit regulations (73 FR 31380). Permitting of shark fin traders was implemented to assist in enforcement and monitoring trade of this valuable commodity.

From 2000 to 2009, the overall annual amount and value of shark imports has fluctuated with no discernable trends outside of a decrease in shark fins since 2002 and a general idecrease in fresh shark imports during the time series. Imports of dried shark fins has been increasing gradually since 2003.

Table 5.25 U.S. Imports of Shark Products From All Ocean Areas Combined: 2000-2009 Source: Census Bureau data.

Year	Shark Fins Dried		Non-specified Fresh Shark		Non-specified Frozen Shark		Total For All Imports	
	MT	US$ (million)	MT	US$ (million)	MT	US$ (million)	MT	US$ (million)
1999	59	2.10	1,095	2.03	105	.62	1,260	4.76
2000	66	2.35	1,066	1.85	90	.57	1,222	4.79
2001	50	1.08	913	1.38	123	1.78	1,087	4.25
2002	39	1.02	797	1.24	91	1.09	928	3.35
2003	11	0.01	515	0.72	100	0.99	626	1.82
2004	14	0.34	650	1.00	156	2.35	821	3.70
2005	27	0.75	537	1.02	147	2.27	711	4.04
2006	28	1.38	338	0.68	93	1.35	459	3.41
2007	29	1.68	548	1.03	174	1.04	751	3.75
2008	29	1.74	348	0.72	189	1.88	566	4.34
2009	21	0.97	180	0.37	125	1.50	326	2.83

NOTE: Imports may be whole weight (ww) or product weight (dw); data are preliminary and subject to change.

5.3.3 The Use of Trade Data for Management Purposes

Trade data has been used in a number of ways to support the international management of HMS. When appropriate, the SCRS uses trade data on bluefin tuna, swordfish, bigeye tuna, and yellowfin tuna that are submitted to ICCAT as an indication of landings trends. These data can then be used to augment estimates of fishing mortality of these species, which improves scientific stock assessments. For example, in 2009, the SCRS used bluefin catch document data to more precisely estimate bluefin tuna catch levels in the Mediterranean Sea and eastern Atlantic (SCRS, 2009). Previously, the SCRS had determined that reported catches of the eastern stock of bluefin had been significantly under-reported for ten years, beginning in the mid 1990s.

Trade data can also be used to assist in assessing compliance with ICCAT recommendations and identify those countries whose fishing practices diminish the effectiveness of ICCAT conservation and management measures. On several occasions, ICCAT has adopted recommendations to address the lack of compliance with management programs for the bluefin tuna, bigeye tuna, and North and South Atlantic swordfish fisheries by ICCAT members. Penalties for non-compliance or fishing in a manner that diminishes the effectiveness of ICCAT conservation measures may include catch limit reductions and, if necessary, trade restrictive measures.

For example, an analysis of vessel sighting and Japanese bluefin statistical document data led to the 1996 determination that fishing vessels from the countries of Panama, Honduras, and

Belize were fishing in a manner that diminished the effectiveness of the bluefin tuna rebuilding program, and resulted in a 1996 ICCAT recommendation for sanctions against the import of bluefin tuna from these countries (Table 5.26). In 1999, ICCAT recommended this trade restriction on Panama be lifted as a result of the Government of Panama's efforts to substantially reduce fishing vessel activities deemed inconsistent with ICCAT measures. In 2001, Honduras became a member of ICCAT, and based on this change in status and Honduras' significant efforts to control its fleet and address ICCAT concerns, ICCAT recommended lifting trade sanctions for bluefin tuna. The bluefin sanction for Belize was lifted by ICCAT in 2002.

In another example, import data from 1997–1999 revealed significant Atlantic bluefin tuna exports from Equatorial Guinea despite the fact that a zero catch limit was in effect for that country. The government of Equatorial Guinea had not responded to ICCAT inquiries and had reported no bluefin tuna catch data to ICCAT, and as a result ICCAT recommended trade restrictions as a penalty for non-compliance. Based on information regarding improved compliance presented by Equatorial Guinea at the 2004 ICCAT meeting, specifically, that Equatorial Guinea had canceled licenses and flags of large-scale longline vessels previously participating in IUU tuna fishing in the Convention area and guaranteed compliance with ICCAT conservation and management measures, the trade sanction was lifted by ICCAT. As indicated in Table 5.26 most of the trade sanctions recommended by ICCAT since 1996 have been lifted. In fact, only trade sanctions for Bolivia and Georgia remain in effect, and no new sanctions have been recommended since 2003.

Table 5.26 Summary and Current Status of ICCAT Recommended Trade Sanctions for Bluefin Tuna, Swordfish, and Bigeye Tuna Implemented by the United States.

Country	Species	ICCAT Recommended Sanction	U.S. Sanction Implemented	ICCAT Sanction Lifted	U.S. Sanction Lifted
Panama	Bluefin	1996	1997	1999	2000
Honduras	Bluefin	1996	1997	2001	2004
	Bigeye	2000	2002	2002	2004
	Swordfish	1999	2000	2001	2004
Belize	Bluefin	1996	1997	2002	2004
	Swordfish	1999	2000	2002	2004
	Bigeye	2000	2002	2002	2004
Equatorial Guinea	Bluefin	1999	2000	2004	2005
	Bigeye	2000	2002	2004	2005
Cambodia	Bigeye	2000	2002	2004	2005
St. Vincent & the Grenadines	Bigeye	2000	2002	2002	2004
Bolivia	Bigeye	2002	2004	In effect	In effect
Sierra Leone	Bluefin	2002	2004	2004	2005
	Bigeye	2002	2004	2004	2005
	Swordfish	2002	2004	2004	2005
Georgia	Bigeye	2003	2004	In effect	In effect

5.4 Recreational Fisheries

While a comprehensive understanding of the economic impacts of HMS recreational fishing is not currently available, existing studies indicate that HMS recreational fishing provides significant positive economic impacts to coastal communities. These positive economic impacts derive from individual angler expenditures, recreational charters, tournaments, and the shoreside businesses that support those activities. The net economic and social benefits of HMS recreational fishing in the United States are likely positive and some of the ecological impacts are mitigated by the strong catch-and-release ethic in this fishery.

The Deepwater Horizon/BP Oil Spill in the Gulf of Mexico affected recreational fisheries in the Gulf of Mexico due to a series of fishery closures of various sizes that began in May 2010 and continue to be in place through publication of this report. The impacts of the oil spill and related fishery closures continue to be investigated.

5.4.1 Recreational Angling

An economic survey completed by the U.S. Fish and Wildlife Service (USFWS) in 2006 found that for the entire United States, 7.7 million saltwater anglers (including anglers in state waters) went on approximately 67 million fishing trips and spent approximately $8.9 billion (USFWS, 2006). These participation rates are down from the 2001 survey which found 9.1 million saltwater anglers (including anglers in state waters) went on approximately 72 million fishing trips and spent approximately $8.4 billion (USFWS, 2001). The 2006 survey found saltwater anglers spent $5.3 billion on trip-related costs and $3.6 billion on equipment (USFWS, 2006). Expenditure on trip-related costs increased 17 percent from 2001, but equipment expenditures have declined seven percent. These expenditures included lodging, transportation to and from the coastal community, vessel fees, equipment rental, bait, auxiliary purchases (e.g., binoculars, cameras, film, foul weather clothing, etc.), and fishing licenses. Approximately 79 percent of the saltwater anglers surveyed fished in their home state in 2006, compared to 76 percent in 2001 (USFWS, 2001).

Specific information regarding angler expenditures for trips targeting HMS species was extracted from the recreational fishing expenditure survey add-on (1998 in the Northeast, 1999 – 2000 in the Southeast) to the NMFS' Marine Recreational Fisheries Statistics Survey (MRFSS). These angler expenditure data were analyzed on a per person per trip-day level and reported in 2003 dollars. The expenditure data includes the costs of tackle, food, lodging, bait, ice, boat fuel, processing, transportation, party/charter fees, access/boat launching, and equipment rental. The overall average expenditure on HMS related trips is estimated to be $122 per person per day. Specifically, expenditures are estimated to be $686 per person per day on billfish directed trips (based on a low sample size), $85 on pelagic shark directed trips, $95 on LCS directed trips, $81 on SCS directed trips, and $106 on tuna directed trips.

The American Sportfishing Association (ASA) also has a report listing the 2006 economic impact of sportfishing on specific states. This report states that all sportfishing (in both federal and state waters) has an overall economic importance of $125 billion dollars. ASA estimates 8,528,000 anglers participate in saltwater fishing. These saltwater anglers spent $11 billion in retail sales, resulting in 263,000 jobs, and $9 billion in salaries, wages, and business

earnings in 2006. Saltwater fishing contributed $30 billion of the overall economic impact estimated. Florida, Texas, South Carolina, and North Carolina are among the top ten states in terms of overall economic expenditures for both saltwater and freshwater fishing. Florida is also one of the top states in terms of economic impact of saltwater fishing with $3.0 billion in angler expenditures, $5.1 billion in overall economic impact, $1.6 billion in salaries and wages related to fishing, and 51,588 fishing related jobs (ASA, 2008).

In 2003, Ditton and Stoll published a paper that surveyed the literature regarding what is currently known about the social and economic aspects of recreational billfish fisheries. It was estimated that 230,000 anglers in the United States spent 2,136,899 days fishing for billfish in 1991. This is approximately 3.6 percent of all saltwater anglers over age 16. The states with the highest number of billfish anglers are Florida, California, North Carolina, Hawaii, and Texas, in descending order. Billfish anglers studied in the U.S. Atlantic, Puerto Rico, and Costa Rica fished between 39 and 43 days per year.

Billfish recreational anglers tend to spend a great deal of money on trips. Ditton and Stoll (2003) report that a 1990 study of U.S. total trip costs for a typical billfish angler estimated a mean expenditure of $2,105 per trip for the Atlantic and $1,052 per trip for Puerto Rico. The aggregate economic impact of billfish fishing trips in the U.S. Atlantic is conservatively estimated to be $22.7 million annually.

In addition to the economic impact of recreational billfish angling, Ditton and Stoll (2003), using a contingent valuation method, estimated consumer's surplus or net economic benefit to maintain current billfish populations in the U.S. Atlantic to be $497 per billfish angler per year in the U.S. Atlantic and $480 in Puerto Rico. They also estimate that the number of annual billfish anglers in the U.S. Atlantic to be 7,915 and 1,627 in Puerto Rico. The aggregate willingness-to-pay for maintaining current billfish populations is $3.93 million in the U.S. Atlantic and 0.78 million in Puerto Rico. The aggregate direct impact of billfish expenditures is estimated to be $15.13 million for the U.S. Atlantic and $32.40 million for Puerto Rico. Thus, the total aggregate economic value of billfish angler fishing is $19.06 million per year for the U.S. Atlantic and $33.18 million per year for Puerto Rico.

5.4.2 Atlantic HMS Tournaments

Generally, HMS tournaments last from three to seven days, but lengths can range from one day to an entire fishing season. Similarly, average entry fees can range from approximately $0 to $5,000 per boat (average approximately $500/boat – $1,000/boat), depending largely upon the magnitude of the prize money that is being awarded. The entry fee would pay for a maximum of two to six anglers per team during the course of the tournament. Additional anglers can, in some tournaments, join the team at a reduced rate of between $50 and $450. The team entry fee did not appear to be directly proportional to the number of anglers per team, but rather with the amount of money available for prizes and, possibly, the species being targeted. Prizes may include citations, T-shirts, trophies, fishing tackle, automobiles, boats, or other similar items, but most often consists of cash awards. In general, it appears that billfish and tuna

tournaments charge higher entry fees and award more prize money than shark and swordfish tournaments, although all species have a wide range.

Cash awards distributed in HMS tournaments can be quite substantial. Several of the largest tournaments, some of which are described below, are part of the World Billfish Series Tournament Trail whereby regional winners are invited to compete in the World Billfish Series Grand Championship for a new automobile and a bronze sculpture. Other tournament series include the International Game Fish Association (IGFA) Rolex Tournament of Champions, and the South Carolina Governor's Cup. White marlin is a top billfish species from Cape Hatteras, North Carolina to the eastern tip of Georges Bank from June through October each year. The White Marlin Open in Ocean City, Maryland, which is billed as the "world's largest fishing tournament," awarded $856,507.00 in 2010 to the vessel catching the largest white marlin and $423,040.00 to the vessel catching the largest blue marlin. The 27th Annual Pirate's Cove Billfish Tournament in North Carolina awarded over $600 thousand in prizes in 2010, with the top boat garnering over $326,317 for winning in five categories. Total prize money awarded in the Big Rock Tournament in North Carolina has exceeded $1 million since 1998. The 2010 winner of the Big Rock Blue Marlin Tournament won $999,453 from a total tournament purse of $1.66 million.

Blue marlin, sailfish, and tunas are often targeted in fishing tournaments, including those discussed above. In 2009, blue marlin was the HMS most frequently identified as a prize category in registered HMS tournaments. The 34th Annual Pensacola (Florida) International Billfish Tournament indicated that it would award over $325,000 in cash and prizes in 2004. The World Sailfish Championship in Key West, Florida had a $100,000 guaranteed first prize for 2009. In South Carolina, the Megadock Billfishing Tournament awarded a $ 105,184 prize for the first place winner of this three-day tournament that involved 62 boats competing for $1 million in total prize money. The 2010 Florida Billfish Masters Tournament in Miami, Florida awarded over $78,000 in prize money, with the top boat receiving over $25,000. The Mid-Atlantic Tuna Tournament sponsored by the South Jersey Marina in Cape May, New Jersey, had 34 vessels competing for a share of over $161,000 in total prize money.

Several tournaments target sharks. Many shark tournaments occur in New England, New York, and New Jersey, although other regions hold shark tournaments as well. In 2010, the 30th Annual South Jersey Shark Tournament hosted 144 boats and awarded over $288,410 in prize money, with an entry fee of $525 per boat. The "Mako Fever" tournament, sponsored by the Jersey Coast Shark Anglers, in 2009 awarded over $55,000 in prizes, with an entry fee of $350 per boat per day. In 2010, the 24th Annual Oak Bluffs Monster Shark Tournament in Martha's Vineyard featured over 500 anglers and an entry fee of $1,475 per boat.

While fishing tournaments are an important component of Atlantic HMS recreational fisheries and provide socioeconomic benefits to associated communities, there are some organizations that oppose these tournaments. For the past several years, for example, the Humane Society of the United States has petitioned NMFS to halt all shark tournaments.

Swordfish tournaments have gained increased popularity in recent years, especially on the east coast of Florida, as the swordfish population has recovered. Events include the

Islamorada Swordfish Tournament that began in 2004, and the Miami Swordfish Tournament that began in 2003, which make up the Florida Swordfish Series. The winner of this tournament series in 2009 will receive a $10,000 prize and a $5,000 prize will go to the boat catching the largest fish of the series. The registration fee was $1,250 per boat for these tournaments in 2010.

In addition to official prize money, many fishing tournaments may also conduct a "calcutta" whereby anglers pay from $200 to $5,000 to win more money than the advertised tournament prizes for a particular fish. Tournament participants do not have to enter calcuttas. Tournaments with calcuttas generally offer different levels depending upon the amount of money an angler is willing to put down. Calcutta prize money is distributed based on the percentage of the total amount entered into that Calcutta. Therefore, first place winner of a low level Calcutta (entry fee ~$200) could win less than a last place winner in a high level calcutta (entry fee ~$1000). On the tournament websites, it was not always clear if the total amount of prizes distributed by the tournament included prize money from the calcuttas or the estimated price of any equipment. As such, the range of prizes discussed above could be a combination of fish prize money, calcutta prize money, and equipment/trophies.

Fishing tournaments can sometimes generate a substantial amount of money for surrounding communities and local businesses. Ditton *et al*., (2000) estimated that the total expenditure (direct economic impact) associated with the 1999 Pirates Cove Billfish Tournament, not including registration fees, was approximately $2,072,518. The total expenditure (direct economic impact) associated with the 2000 Virginia Beach Red, White, and Blue Tournament was estimated at approximately $450,359 (Thailing *et al*., 2001). These estimated direct expenditures do not include economic effects that may ripple through the local economy leading to a total impact exceeding that of the original purchases by anglers (i.e., the multiplier effect). Less direct, but equally important, fishing tournaments may serve to generally promote the local tourist industry in coastal communities. In a survey of participants in the 1999 Pirates Cove Billfish Tournament, Ditton *et al*., (2000) found that almost 80 percent of tournament anglers were from outside of the tournament's county. For this reason, tourism bureaus, chambers of commerce, resorts, and state and local governments often sponsor fishing tournaments.

5.4.3 Atlantic HMS Charter and Party Boat Operations

At the end of 2004, NMFS collected market information regarding advertised charterboat rates. The analysis of this data focused on observations of advertised rates on the internet for full day charters. Full day charters vary from 6 to 14 hours long with a typical trip being 10 hours. Most vessels can accommodate six passengers, but this also varies from two to 12 passengers. The average price for a full day boat charter was $1,053 in 2004. Sutton *et al.,* (1999) surveyed charterboats throughout Alabama, Mississippi, Louisiana, and Texas in 1998 and found the average charterboat base fee to be $762 for a full day trip. Holland *et al.* (1999) conducted a similar study on charterboats in Florida, Georgia, South Carolina, and North Carolina and found the average fee for full day trips to be $554, $562, $661, and $701, respectively. Comparing these two studies conducted in the late 1990s to the average advertised daily HMS charterboat rate in 2004, it is apparent that there has been a significant gain in charterboat rates.

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