Demographics	2000	1990
> 65	5799	5835
Race		
White	26819	25954
Black or African American	7813	7500
American Indian and Alaska Native	231	215
Asian	564	577
Native Hawaiian and Other Pacific Islander	28	6
Other	962	126
Household		
Total	14819	14053
Family households	9039	9127
Nonfamily households	5780	4926
Households with individuals Under 18 years	4570	
Households with individuals 65 years and over	4035	
Average household size	2.3	2.38
Average family size	2.92	
Housing Occupancy		
Total housing units	16548	15928
Vacant housing units	1729	1875
Housing Tenure		
Owner-occupied housing units	8565	8193
Renter-occupied housing units	6254	5860

Table 3.92 Number of Business Establishments, Panama City, FL

Industry Code Description	2000
Total number of establishments	3324
Forestry, fishing, hunting, and agriculture	17
Construction	319
Manufacturing	110
Wholesale Trade	155
Retail Trade	648
Transportation & Utilities	144
Finance, Insurance, Real Estate, Rental, & Leasing	366
Services	1563

3.7 International Trade and Fish Processing

Several regional fishery management organizations (RFMOs) including ICCAT have taken steps to improve collection of international trade data to further international conservation policy for 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 ICCAT management measures. United States participation in HMS related international trade programs, as well as a review of trade activity, is discussed in this section. This section also includes a review of the available information on the processing industry for Atlantic HMS species.

3.7.1 Overview of International Trade for Atlantic HMS

3.7.1.1 Trade Monitoring

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, such as sharks, are grouped together, which can limit the value of these data for fisheries management when species specific information is needed. These data are further limited since the ocean area of origin for each product is not distinguished. For example, the HTS code for Atlantic, Pacific, and even Indian Ocean bigeye tuna is the same.

Trade data for Atlantic HMS are of more use as a conservation tool when they indicate 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 information while monitoring international trade of bluefin tuna and import of swordfish. NMFS trade monitoring programs will expand in 2005 to include import and export of southern bluefin tuna and frozen bigeye tuna, and swordfish exports. These 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. Copies of all trade monitoring documents associated with these programs may be found on the NMFS HMS Management Division webpage at www.nmfs.noaa.gov/sfa/hms/. These and several other trade monitoring programs established by NMFS for HMS are described in further detail below.

3.7.1.2 Bluefin Tuna Statistical Document

The trade of bluefin tuna is tracked internationally as a result of the ICCAT recommendation to implement the Bluefin Statistical Document (BSD) program (Recommendation 92-01). Japan's support for the program, as a major importer of bluefin tuna, is partially responsible for the success of this program. In the United States, each bluefin tuna is tagged when documented, and for all nations, the BSD travels with each shipment until the final point of destination. This document is used to track both imports and exports of bluefin tuna by ICCAT and other participating nations. If bluefin tuna are exported from, or imported to, the United States, the document is submitted to NMFS as part of the monitoring program. Since 1997, NMFS has also received CBP data (derived from Entry Form 7501) on imports of fresh and frozen bluefin tuna and swordfish on a monthly basis. Comparison of these data with BSD data allow NMFS to identify shipments without BSDs in order to obtain missing data and

enforce dealer reporting requirements. In 2003, ICCAT updated the BSD program to include the collection of farming related information on the BSD. In 2005, NMFS will add a re-export certificate to the program and expand it to include southern bluefin tuna as well. Data collected under the BSD program are discussed in Sections 3.7.2 and 3.7.3 addressing U.S. exports and imports of HMS.

3.7.1.3 Swordfish Certificate of Eligibility and Statistical Document

The U.S. Swordfish Certificate of Eligibility (COE) has tracked U.S. imports of swordfish since it was implemented in 1999. In 2005, this program will be replaced by a swordfish statistical document (SD) program similar to the BSD program described above. The swordfish SD program is based on a 2001 ICCAT recommendation (01-22), and will incorporate all of the prior functions of the COE, including the following: ensuring that all imported swordfish are greater than the minimum size of 14.9 kg (33 lb) dw, identifying the flag of the harvesting vessel, and indicating ocean area of origin. Similar to the BSD program, CBP data on swordfish imports is also used to obtain missing data and identify dealers that are not following the required reporting procedures. Once the swordfish SD program is implemented, the swordfish COE will no longer be in effect.

3.7.1.4 Bigeye Tuna Statistical Document

Like the two previous trade monitoring programs, the bigeye tuna SD program will be 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 (01-21). The initial program will be implemented in 2005 along with the swordfish SD, and will apply 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 bigeye SD programs.

3.7.1.5 Yellowfin Tuna Form 370

Since the late 1970's, NOAA Form 370 has been used to document imports of 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 yellowfin tuna into the United States. The form is *not* required for fresh tuna, animal food, or canned petfood made from tuna.

3.7.1.6 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; it is not necessary to use the form available from NMFS or to submit the form to NMFS upon final disposition of the billfish.

3.7.2 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.

3.7.2.1 Atlantic and Pacific Bluefin Tuna Exports

As discussed in the previous section, NMFS collects detailed export data on Atlantic and Pacific bluefin tuna through the BSD program. Table 3.93 gives bluefin tuna export data for exports from the United States. Recent decreases in Atlantic BFT exports since 1999 could in part be a result of the growing U.S. market for high-quality fresh bluefin tuna meat. In 2003, exports also could have been impacted by a reduction in U.S. landings.

Table 3.93 **United States exports of Atlantic and Pacific bluefin tuna, 1999 – 2003**. Source: NMFS BSD Program, NERO, and Census Bureau.

Year	Commercial Landings (NERO, MT)	Atlantic BFT Exports (BSD, MT)	Pacific BFT Exports (BSD, MT)	Total U.S. Exports (BSD, MT)	Total U.S. Exports (Census Bureau, MT)	Value of U.S. Exports (Census Bureau, $ million)
1999	876.0	735.6	95.7	831.3	1,183.3	9.37
2000	903.9	758.0	76.0	834.0	1,044.9	11.20
2001	987.0	812.3	67.0	879.0	1,020.0	10.70
2002	964.0	730.4	0.1	730.5	922.5	10.74
2003	756.9	572.2	2.1	574.3	998.2	11.36

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

3.7.2.2 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. Behind bluefin tuna, albacore tuna accounts for the next most valuable tuna export from the United States (Table 3.94). Comparing the last five years, the amount and value of exported albacore was greatest for the year 2003. In general, the amount and value of albacore exports appears to

be on the rise. During the time period covered by this table, the annual amount and value of frozen exports exceeded fresh exports for every year.

Table 3.94 Amount and value of United States exports of albacore tuna, 1999 – 2003 (Census Bureau data) and U.S. landings of North Atlantic albacore tuna (*2004 U.S. National Report to ICCAT*).

Year	Atlantic Landings (mt ww)	U.S. Exports					
		Fresh		Frozen		Total for all Exports	
		MT	US$ (million)	MT	US$ (million)	MT	US$ (million)
1999	317	517	1.01	2,743	5.52	3,260	6.54
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	893	1.86	9,731	18.85	10,624	20.71

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 3.95 and Table 3.96 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 3.97). Export of fresh yellowfin product exceeded the value of frozen yellowfin product for all years except 2001. Fresh product exports were highest in 2002 and 2003. The amount and value of exported fresh and frozen skipjack tuna has varied over the five year period covered in Table 3.96, without any discernable trends. Exports and landings of skipjack in 1999 far exceeded values for the following four years.

Table 3.95 Amount and value of United States exports of yellowfin tuna, 1999 - 2003 (Census Bureau data) and U.S. landings of Atlantic yellowfin tuna (*2004 U.S. National Report to ICCAT).*

Year	Atlantic Landings (mt ww)	U.S. Exports					
		Fresh		Frozen		Total for all Exports	
		MT	US$ (million)	MT	US$ (million)	MT	US$ (million)
1999	7569	947	2.09	390	.84	1,337	2.93
2000	7051	412	1.12	406	.76	819	1.89
2001	6703	290	.71	834	1.45	1,124	2.17
2002	5653	1,612	2.37	420	.81	2,033	3.19
2003	7701	1,792	2.93	176	.68	1,968	3.62

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 3.96 Amount and value of United States exports of skipjack tuna, 1999 - 2003 (Census Bureau data) and U.S. landings of West Atlantic skipjack tuna (*2004 U.S. National Report to ICCAT)*.

Year	Atlantic Landings (mt ww)	U.S. Exports					
		Fresh		Frozen		Total for all Exports	
		MT	US$ (million)	MT	US$ (million)	MT	US$ (million)
1999	152	88	.20	1,092	.89	1,181	1.10
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

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 3.97. 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, and increased from 2002 to 2003.

Table 3.97 Amount and value of United States exports of bigeye tuna, 1999 - 2003 (Census Bureau data) and U.S. landings of Atlantic bigeye tuna (*2004 U.S. National Report to ICCAT)*.

Year	Atlantic Landings (mt ww)	U.S. Exports					
		Fresh		Frozen		Total for all Exports	
		MT	US$ (million)	MT	US$ (million)	MT	US$ (million)
2002	600	95	.22	8	.01	104	.24
2003	483	255	.47	40	.08	295	.56

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.

3.7.2.3 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 3.98 indicates the magnitude and value of shark exports by the United States from 1999-2003. The reduction in shark fin exports from 2001 to 2002 and 2003 is of particular note, as is the increase in the unit value of shark fins during this time period. Decreases in shark fin

trade are expected to be the result of the Shark Finning Prohibition Act, which was enacted in December of 2000 and implemented by final rule in February 2002.

Table 3.98 Amount and value of U.S. shark product exports from 1999-2003. 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)
1999	106	.91	8.54	270	.48	1.80	155	.46	2.97	532	1.86
2000	365	3.51	9.62	430	.78	1.82	345	.81	2.35	1140	5.10
2001	335	3.16	9.44	332	.54	1.64	634	2.34	3.69	1301	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

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

3.7.2.4 Re-exports of Atlantic HMS

Re-exports are products that have been imported into the United States and then exported to another country, with or without further processing in the United States. For most HMS species, re-export activity is a small fraction of export activity, and well below reference points of 1000 mt and/or one million dollars annually. Exceptions to this include fresh yellowfin tuna re-exports which were valued at $1.5 million in 2003 and fresh and frozen yellowfin valued at $1.1 million in 2002 (Census Bureau data). In 2003, dried shark fin re-exports reached a five year maximum value of $1.6 million (34 mt).

Bluefin tuna re-exports also reached a five year maximum in 2003 at 1,184 mt valued at $18.94 million (Census Bureau data), which exceeded the amount of bluefin exports for the year, for the first time in the history of the BSD program (K. Goldsmith, pers. com.). To date, the BSD program has tracked considerably fewer 2003 BFT re-exports (Table 3.99) than indicated by Census Bureau data; however, the trend of re-exports exceeding exports remains. In 2002, Census Bureau data identified bluefin re-exports of 167 mt dw valued at a value of $2.39 million. Further investigation into BSD program data found that the recent increases in bluefin re-exports reflects the growth of the Mexican farming/mariculture industry which exports product to the U.S. for re-export to Japan.

3.7.2.5 Summary of Atlantic HMS Exports

Nationally, the value of HMS exports is dominated by bluefin tuna, albacore tuna, and shark products (from all ocean areas combined). In 2003, fresh and frozen products of these three species accounted for 12,674 mt dw or 0.6 percent of the 1,814,370 mt dw of fresh and frozen seafood products imported into the United States, as indicated in *Fisheries of the United*

States, 2003. The value of these HMS products accounted for $38.77 million, out of a national total of $9.8 billion. Swordfish are not exported from the United States.

National trade data are of limited value for describing trade of Atlantic HMS. For example, Atlantic landings of albacore tuna (commercial and recreational) for 2003 were reported in the *2004 U.S. National Report to ICCAT* as 448 mt (Table 3.94). National trade data show that over 10,000 mt of albacore were exported, which indicates that the majority of albacore exports were Pacific Ocean product. Trade tracking programs such as the BSD program, swordfish certificate of eligibility, and bigeye tuna statistical document programs are much more useful for describing the international disposition of Atlantic HMS.

3.7.3 U.S. Imports 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 the BSD program and swordfish certificate of eligibility program. U.S. Census Bureau import data are used by NMFS as well.

3.7.3.1 Bluefin Tuna Imports

United States imports and re-exports of bluefin tuna for 1999 through 2003, as reported through both CBP and BSD program data, are shown in Table 3.99. The difference in import numbers between the CBP and BSD data may be explained by a lack of knowledge and compliance with the BSD program by importers, especially those on the Pacific coast.

The recent rise in the popularity of sashimi in the United States has generated increased imports of bluefin tuna, and dealers are reporting an expanded domestic market for both locally-caught and imported raw tuna. As discussed previously, the large amount of re-exports in 2003 resulted from the increase in importation of farmed bluefin from Mexico and re-exportation to Japan.

Table 3.99 Imports of Atlantic and Pacific bluefin tuna into the United States. Source: NMFS BSD program and CBP data.

YEAR	NMFS BSD Program		U.S. CBP Data	
	Imports (MT)	Re-exports (MT)	Imports (MT)	VALUE (US$ million)
1999	411.9	16.6	558.6	3.02
2000	361.9	99.3	453.4	7.67
2001	512.9	7.0	532.3	8.21

YEAR	NMFS BSD Program		U.S. CBP Data	
	Imports (MT)	Re-exports (MT)	Imports (MT)	VALUE (US$ million)
2002	529.3	94.1	605.0	9.75
2003	649.9	691.0	780.3	11.67

NOTE: most imports of BFT were in dressed form, and some were round and gilled/gutted fish, fillets or belly meat (dw); data are preliminary and subject to change.

3.7.3.2 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 included under general tuna imports. Amount and value of bigeye tuna imports have been gradually increasing over the last three years, as shown in Table 3.100.

Table 3.100 Imports of bigeye tuna into the United States from all ocean areas combined: 2001-2003. 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

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 3.101. 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 of yellowfin imports has increased gradually from 1999-2003. The total annual amount of product imported has remained fairly consistent, with a slight dip in 2000.

Table 3.101 Imports of yellowfin tuna into the United States from all ocean areas combined: 1999-2003. Source: Census Bureau data.

Year	Fresh		Frozen		Total for all Imports	
	MT	US$ (million)	MT	US$ (million)	MT	US$ (million)
1999	11,756	63.04	9,411	24.90	21,168	87.94
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

Year	Fresh		Frozen		Total for all Imports	
	MT	US$ (million)	MT	US$ (million)	MT	US$ (million)
2003	13,157	83.39	5,579	39.67	20,878	133.71

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

Imports of fresh albacore product from all ocean areas have decreased somewhat since 1999 while imports of frozen product have decreased dramatically over the last five years, with the greatest reduction occurring between 2002 and 2003 (Table 3.102). In 1999, albacore imports were valued at $144 million while in 2003 the value dropped to approximately $30 million. Products in airtight containers are not included in these data.

Table 3.102 Imports of albacore tuna into the United States from all ocean areas combined: 1999-2003. Source: Census Bureau data.

Year	Fresh		Frozen		Total for all Imports	
	MT	US$ (million)	MT	US$ (million)	MT	US$ (million)
1999	1,776	5.39	63,284	139.50	65,060	144.89
2001	1,843	6.42	51,001	127.33	52,845	133.76
2002	1,107	3.85	40,428	105.58	41,536	109.43
2003	1,296	4.81	11,903	24.49	13,200	29.31
2004	1,062	4.12	12,569	25.90	13,632	30.02

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 3.103). Like albacore tuna, the amount and value of skipjack imports have also decreased dramatically since 1999. The amount of product imported fell from over 8,000 mt dw in 1999 to 224 mt dw in 2003. Likewise, the value of these products during this time period fell from $6.3 million to $0.43 million.

Table 3.103 Imports of skipjack tuna from all ocean areas combined into the United States: 1999-2003. 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

Year	Fresh		Frozen		Total for all Imports	
	MT	US$ (million)	MT	US$ (million)	MT	US$ (million)
2003	0	0	224	0.43	224	0.43

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

3.7.3.3 Swordfish Imports

Table 3.104 summarizes swordfish import data collected by NMFS' Swordfish Import Monitoring Program for the 2003 calendar year. According to these data, most swordfish imports were Pacific Ocean product. For Atlantic product, the most imports came from Brazil (62 percent), followed by Uruguay (15 percent). 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 certificates of eligibility that have not been submitted, and enforce dealer reporting requirements.

Table 3.104 Swordfish import data for the 2003 calendar year collected under the NMFS Swordfish Import Monitoring Program.

Flag of Harvesting Vessel	Ocean of Origin				Total* (mt dw)
	Atlantic (mt dw)	Pacific (mt dw)	Indian (mt dw)	Not Provided (mt dw)	
Not Provided	0.3	0.7	16.5	0.0	17.5
Australia	0.0	2.4	0.0	0.0	2.4
Barbados	2.4	0.0	0.0	0.0	2.4
Brazil	698.6	0.0	0.0	0.0	698.6
Canada	62.2	0.0	0.0	0.0	62.2
Chile	0.0	664.6	0.0	0.0	664.6
Costa Rica	1.7	161.4	0.0	0.6	163.7
Ecuador	0.0	233.8	0.0	0.0	233.8
El Salvador	0.0	10.1	0.0	0.0	10.1
Fiji Island	0.0	53.6	0.0	0.0	53.6
Grenada	17.0	0.0	0.0	0.0	17.0
Indonesia	0.0	0.0	12.7	0.0	12.7
Malaysia	0.0	44.7	13.3	36.0	93.9
Mexico	0.0	249.4	0.0	0.0	249.4
Namibia	23.0	0.0	0.0	1.7	24.7
New Zealand	0.0	143.5	0.0	0.0	143.5
Nicaragua	0.0	0.3	0.0	0.0	0.3
Panama	0.0	1,065.9	0.0	0.0	1,065.9
Philippines	0.0	13.4	0.0	0.0	13.4
R.S.A.	0.0	0.0	79.3	0.0	79.3
Seychelles	0.0	0.0	0.1	1.1	1.2
Singapore	0.0	72.6	64.2	0.0	136.7
South Africa	94.1	0.0	251.3	0.0	345.4
Sri Lanka	0.0	0.0	0.0	8.8	8.8

Flag of Harvesting Vessel	Ocean of Origin				Total* (mt dw)
	Atlantic (mt dw)	Pacific (mt dw)	Indian (mt dw)	Not Provided (mt dw)	
Taiwan	0.9	407.6	1,198.8	0.0	1,607.3
Tonga	0.0	3.1	0.0	0.1	3.3
Trinidad & Tobago	31.1	0.0	0.0	0.0	31.1
Uruguay	170.0	0.0	0.0	0.0	170.0
Venezuela	20.5	0.0	0.0	0.0	20.5
Vietnam	0.0	23.4	0.0	0.0	23.4
Total Reported by COES	1,121.7	3,150.7	1,636.1	48.3	5,956.8
Total Imports Reported to CBP					13,855.0
Total Not Reported by COEs					7,898.2

* COE Data as of 7/11/04

Table 3.105 indicates the amount and value of swordfish product imports by the United States from 1999-2003, as recorded by the U.S. Census Bureau, for all ocean areas combined. The amount of each product imported per year and annual totals for product and value were fairly consistent for the time period covered.

Table 3.105 Imported swordfish products by year: 1999-2003. Source: Census Bureau data.

Year	Fresh (MT)		Frozen (MT)			Total for all Imports	
	Steaks	Other	Fillets	Steaks	Other	MT	US$ (million)
1999	81	8,595	4,377	401	386	13,842	71.70
2000	161	8,626	4,833	524	167	14,314	85.57
2001	71	8,982	3,814	710	119	13,697	81.89
2002	195	9,726	4,156	956	677	15,711	88.26
2003	147	8,079	3,929	433	560	13,150	75.62

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

3.7.3.4 Shark Imports

Similar to tuna imports other than bluefin tuna, NMFS does not require 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, steaks, or loins. 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 transshipment 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, then imported back into the United States for consumption by urban-dwelling Asian Americans (Rose, 1996).

Table 3.106 summarizes Census Bureau data on shark imports for 1999 through 2003. Imports of fresh shark products have decreased by approximately 50 percent since 1999 while imports of shark fins have decreased by over 80 percent since 1999. The 2004 ICCAT recommendation addressing the practice of shark finning may reduce imports even further in the near future. Over the last 5 years, the overall annual amount and value of shark imports decreased fairly consistently year after year to equal approximately half the 1999 amount and value in 2003.

Table 3.106 **U.S. imports of shark products from all ocean areas combined: 1999-2003.** 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	.11	515	.72	100	.99	626	1.82

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

3.7.3.5 Summary of U.S. Imports of Atlantic HMS

The import data in this section show that many HMS species are part of a valuable import market. As discussed previously regarding exports, most data documenting imports include products harvested from many ocean areas, not just the Atlantic Ocean. However, the BSD program and Swordfish Import Monitoring Program provide information specifically about product harvested from the Atlantic Ocean and imported into the United States.

In 2003, the U.S. domestic market for swordfish supported a domestic fishery of 4,281 mt dw worth $18.18 million and an active import market of 13,150 mt dw valued at $75.62 million. Despite recent increases in the U.S. quota of North Atlantic swordfish (in compliance with ICCAT rebuilding programs), swordfish from the Pacific and Indian Oceans are expected to continue to supply the lucrative U.S. swordfish market during the near future.

3.7.4 The Use of Trade Data for Conservation Purposes

Trade data has been used in a number of ways to support 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 rates (F) of these species, which improves scientific stock assessments. In addition, these data can 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 numerous 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 BSD 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 3.107). 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, the trade sanction has been lifted by ICCAT.

As indicated in

Table 3.107, approximately 80 percent of the trade sanctions recommended by ICCAT since 1996 have been lifted. In fact, only trade sanctions for Bolivia and Georgia remain in effect. Thus, the imposition of trade sanctions seems to be an effective measure for ensuring that countries involved in international trade operate in a manner consistent with ICCAT recommended conservation programs. As illustrated above, the data obtained by monitoring international trade in HMS is instrumental in the development of ICCAT trade restrictions. In 2004, the European Union submitted an ICCAT working paper discussing the expanding role of statistical document programs in conservation and enforcement efforts. An intersessional meeting is scheduled for mid-2005 to further address this issue and consider any necessary program modifications in light of the new uses for these programs.

Table 3.107 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	In effect
	Bigeye	2000	2002	2004	In effect
Cambodia	Bigeye	2000	2002	2004	In effect
St. Vincent & the Grenadines	Bigeye	2000	2002	2002	2004
Bolivia	Bigeye	2002	2004	In effect	In effect
Sierra Leone	Bluefin	2002	2004	2004	In effect
	Bigeye	2002	2004	2004	In effect
	Swordfish	2002	2004	2004	In effect
Georgia	Bigeye	2003	2004	In effect	In effect

3.7.5 Overview of the Processing Industry for Atlantic HMS

Understanding the harvesting and processing sectors is essential when analyzing world trade in highly migratory fish species. The processing related entities that depend on Atlantic HMS are as diverse as the species and products themselves. Processing techniques range from the simple dressing and icing of swordfish at sea, to elaborate grading and processing schemes for bluefin tuna, to processing shark fins. Like all other seafood, HMS are perishable and may pose health hazards if not handled properly. Products range from those having a long shelf-life, such as swordfish, to highly perishable species like yellowfin tuna. Improperly handled yellowfin tuna can produce histamine, swordfish and sharks may contain high levels of mercury, and shark meat requires careful handling due to the high concentrations of urea in the body of the shark. Processing companies are aware of these characteristics and their costs of doing business vary accordingly to protect consumers. The Food and Drug Administration (FDA) works closely with NOAA Office of Law Enforcement to monitor incoming shipments of seafood, including highly migratory species.

FDA's Seafood Hazard Analysis Critical Control Point (HACCP) program implemented regulations that require processors of fish and fishery products to operate preventive control systems to ensure human food safety. Among other things, processors must effectively maintain the safety of their products, systematically monitor the operation of critical control points to ensure that they are working as they should, and keep records of the results of that monitoring. Processors must also develop written HACCP plans that describe the details and operation of their HACCP systems. Each processor may tailor its HACCP system to meet its own circumstances. The best way for FDA to determine whether a processor is effectively operating a HACCP system is by inspecting the processor. Federal review of monitoring and other records generated by the HACCP system is a critical component of an inspection because it allows the

inspector to match records against the practices and conditions being observed in the plant and it discourages fraud. NMFS works closely with the FDA, in support of the HACCP program.

Just as HACCP plans vary between processors, transportation of the seafood to market also varies widely from the direct domestic sale of some shark or swordfish meat by a fisherman to a restaurant (carried by truck) to the quick, and sometimes complicated, export of bluefin tuna from fisherman to dealer to broker to the Japanese auction (carried by a commercial airline carrier). Frozen swordfish and tunas are often brought to the United States by overseas shipping companies and sharks and other products may be exported from the United States, processed overseas, and imported in a final product form.

It is unknown how many U.S. companies depend on HMS fisheries, other than the registered dealers who buy fish directly from U.S. fishermen and/or who import bluefin tuna or swordfish. The proportion of those companies that depend solely on Atlantic HMS versus those that handle other seafood and/or products is also unknown. This section provides a summary of the most recent trade data that NMFS has analyzed, as well as a brief description of the processing and trade industries employed in transitioning Atlantic HMS from the ocean to the plate.

3.7.5.1 Processing and Wholesale Sectors

NMFS has limited quantitative information on the processing sector, including the amount of HMS products sold in processed forms. In addition, knowledge regarding the utilization of Atlantic HMS is largely limited to the major or most valuable product forms, such as export quality bluefin tuna.

Much of the processing of export-quality Atlantic bluefin tuna occurs onboard the vessel harvesting the fish, which serves to maximize fish quality. Bluefin are gutted and bled, and protected from the heat and sunlight by immersion in ice or an icy brine. Upon landing, bluefin are immediately graded and prepared for export to Japan's fresh fish market. The fish are either refrigerated or exported immediately in insulated crates or "coffins" filled with ice or icepacks.

Other Atlantic tunas, especially bigeye tuna, are frequently shipped fresh to Japan in dressed form. Swordfish are sold fresh and frozen in dressed form and as processed products (*e.g.*, steaks and fillets). The utilization of sharks is also not well known since trade statistics frequently do not indicate product forms such as skins and leather, jaws, fishmeal and fertilizer, liver oil, and cartilage (Rose, 1996). Domestically-landed sandbar and blacktip shark meat may be sold to supermarkets and processors of frozen fish products. NMFS continues to work with industry to collect information specific to U.S. and foreign processing of Atlantic HMS to better track markets, conserve stocks, and manage sustainable fisheries.

The U.S. processing and wholesale sectors are dependent upon both U.S. and international HMS fisheries. Individuals involved in these businesses buy the seafood, cut it into pieces that transform it into a consumer product, and then sell it to restaurants or retail outlets. Employment varies widely among processing firms. Often employment is seasonal unless the firms also process imported seafood or a wide range of domestic seafood. The majority of firms handle other types of seafood and are not solely dependent on HMS. Other participants in the

commercial trade sector include brokers, freight forwarders, and carriers (primarily commercial airlines, trucking, and shipping companies). Swordfish, tunas, and sharks are important commodities on world markets, generating significant amounts in export earnings in recent years.

NMFS has recently observed that many seafood dealers that buy and sell highly migratory species and other seafood products have expanded their operations into internet-powered trading platforms specifically designed to meet the needs of other seafood professionals. Through these platforms, interested parties can conduct very detailed negotiations with many trading partners simultaneously. Buyers and sellers can bargain over all relevant elements of a market transaction (not just price) and can specify the product needed to buy or sell in detail, using seafood-specific terminology. The platforms are purportedly very easy to use because they mimic the pattern of traditional negotiations in the seafood industry. NMFS expects that the use of the internet will continue to change the way HMS trade occurs in the future.

3.8 Bycatch, Incidental Catch, and Protected Species

The Magnuson-Stevens Act defines bycatch as fish which are harvested in a fishery, but which are not sold or kept for personal use, and includes economic and regulatory discards. Fish is defined as finfish, mollusks, crustaceans, and all other forms of marine animal and plant life other than marine mammals and birds. As a result, other species such as seabirds, sea turtles, and marine mammals are considered "incidental catch." This chapter provides an overview of the actions NMFS has taken to reduce bycatch and incidental catch and any results of those actions. Additional species and fishery specific data have already been presented in Section 3.4.

3.8.1 Bycatch Reduction Strategy

The NMFS HMS bycatch reduction program includes an evaluation of current data collection programs, implementation of bycatch reduction measures such as gear modifications and time/area closures, and continued support of data collection and research relating to bycatch. Additional details on bycatch and bycatch reduction measures can be found in Section 3.5 of the Fishery Management Plan for Atlantic Tunas, Swordfish and Sharks (NMFS, 1999), in Regulatory Amendment 1 to the 1999 FMP (NMFS, 2000), in Regulatory Adjustment 2 to the 1999 FMP (NMFS, 2002), and in Amendment 1 to the 1999 FMP (NMFS, 2003a). In addition, an HMS Bycatch Reduction Implementation Plan was developed in late 2003 which identifies priority issues to be addressed in the following areas: 1) monitoring, 2) research, 3) management, and 4) education/outreach. Individual activities in each of these areas were identified and new activities may be added or removed as they are addressed or identified.

3.8.1.1 Bycatch Reporting Methodology

NMFS utilizes self-reported data (HMS logbook program and the supplemental discard report form in the reef fish, snapper-grouper, king and Spanish mackerel, and shark logbook programs), at-sea observer data, and survey data (recreational fishery dockside and telephone surveys) to produce bycatch estimates. These data are collected with respect to fishing gear type and have been presented by gear type in this report in prior sections. The number and location of