

**SPINY LOBSTER: FLORIDA'S COMMERCIAL FISHERY,
MARKETS, AND GLOBAL LANDINGS AND TRADE
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Overview

U.S. imports, exports, and Florida ex-vessel prices for spiny lobster all fell sharply in 2009 in the context of weak global market demand, following a decade of low Florida landings. Economic conditions for the fishery would have been worse without long-term reductions in fishing effort and consequent increases in vessel and trip productivity. Florida ex-vessel prices increased from \$1.25 / lb in 1950 to a peak of \$7.88 in 2007, and then declined sharply to \$3.43 in 2009 (Figure 1, Table 1; all prices in 2008\$ / lb, whole weight (ww)). Florida landings of Caribbean spiny lobster (*Panulirus argus*) began to increase in the 1950s to approximately 4-7 million pounds (mp) ww in the 1970s-1990s, and then declined to 3.5-5.0 mp in 2001 onward (Figure 1, Table 1). These totals exclude landings from the Bahamian grounds, an estimated 1.0-5.7 mp in 1964-1975. Florida landings occur predominantly in Monroe County (the Florida Keys; Table 2). U.S. imports of spiny lobster (mostly shell-on, frozen tails) have been at least an order of magnitude larger than Florida landings (Table 3). U.S. exports (mostly live or whole) have accounted for a significant part of Florida landings.

In the past twenty years, U.S. imports of spiny lobster have been less than imports during the late 1960s. The Caribbean and nearby countries of Bermuda through Brazil have accounted for most of the U.S. imports. The increase in imports of warm-water lobster from these countries has only partly offset the drop in imports for cold-water lobster. Overall, landings of Caribbean spiny lobster have exhibited a relatively flat trend since the mid-1980s (FAO, Fishstat Plus, 12Jul10). In the 2000s, landings declined for the major producer-exporters (Cuba, Bahamas, Honduras, and Nicaragua) and for Florida. Looking to the future, these factors, along with recognized industry marketing and distribution capability, suggest that Florida ex-vessel prices will return to the levels of recent years, depending mostly on the timing and strength of demand in the U.S. and other importing/consuming countries.

Methods and Data: Estimating U.S. Foreign Trade

Holmyard and Franz (2006) describe the major lobster species in terms of worldwide landings and trade, buyer preferences, and the critical aspects of preparing, packaging, handling and shipping live, fresh and frozen lobster products to assure that they reach buyers in prime condition (also, see Williams and Dore, 1988; Dore, 1989; and Smith, 1995). Globally, imports and exports of live, fresh and frozen lobster for 1989 onward fall under heading 0306 of the internationally harmonized protocols for foreign trade. There is one set of codes for “clawed lobster” (*Homarus* species lobster) and another set for “rock lobster and other sea crawfish (*Palinurus* species, *Panulirus* species and *Jasus* species),” each with its own unique codes for frozen and not-frozen lobster (Appendix B, this report). Prepared-preserved products fall under heading 1605 wherein they must contain at least 20% by weight of lobster. They lack species designations, and include (1) lobster meat, (2) other prepared lobster items, and (3) meals containing lobster and fish.

Imports of American lobster (*Homarus americanus*) are separated from imports of other “clawed lobster” (*Homarus* species lobster) by selecting data for two countries of origin, Canada

and Saint Pierre-Miquelon, following long-standing NMFS practice.¹ The converse procedure is used to estimate imports of spiny lobster when species is not designated in the United States International Trade Commission (USITC) code (1950-1988), and is used in this report to extend two time series for purposes of illustration (Table 4, details in footnotes; Appendix A, this report). Although the data used to extend the two series through 1989-2009 fall under USITC codes for “*Homarus* species lobster,” examination of the data by country of origin suggests otherwise (Table 6, esp. data for Table 4, col 2). That is, *Homarus* species lobster are landed exclusively in Canada, the United States, St. Pierre-Miquelon, and Europe (e.g., United Kingdom, Ireland and France), and the United States would not be expected to import them from countries that are producer-exporters of spiny lobster.

The larger of the two extended time series exhibited a drop to 0.788 mp in 2009 from 2.1 mp in 2008 for what arguably could have been imports of frozen spiny lobster tails (Table 4, col 2). Compared with 1990-2009 (0.009 mp to 2.2 mp), they were much higher in 1960-88 (3.9-14.9 mp).

Imports in the smaller of the two extended time series were sporadic in 1960-2009, 0 to 0.712 mp, and much higher in the 1950s (Table 4, col 3). Imports of lobster meat are not included in Table 4 (for 1989 onward they are counted as prepared-processed products under USITC 1605, without species designation).² Lobster meat is a notable processing plant product for American lobster, especially in Canada, but not for spiny lobster in the United States.

Taken together, these two extended time series boost annual totals for spiny lobster imports, adding less in 2000-08 than in 1960-88, but they contain time series discontinuities attributable to changes in USITC protocols in 1959-60 and 1988-89 (Table 4, col 2-4; Appendices A and B, this report). Therefore, import components and totals are shown in this report for purposes of completeness, while imports of frozen spiny lobster only are used to illustrate trends and to compute market supplies (Figures 2-5, Table 3, Table 4, col 1).

U.S. Imports

Estimated U.S. imports of spiny lobster peaked at 49.2 mp (product weight) in 1976, and have been in the range of 22-32 mp during 2000-2009 (Table 4, col 8). Most of the 2009 drop is for the leading product, frozen spiny lobster, which declined to 22.1 mp in 2009 from 30.6 mp in 2008 (Figure 2, Table 4, col 1). The imports of not-frozen spiny lobster were 0.130 mp in 2009, sharply lower than a year earlier and the lowest since 1982-83 (Table 4, col 7 provides a consistent time series for 1960-2009). As noted above, other imports are shown in Table 4 for completeness, but imports of frozen spiny lobster are used to illustrate trends and to compute market supplies in this report.

¹The underlying foreign data are purchased and maintained by NMFS, Fisheries Statistics Division (F/ST1), or available in hard-copy reports (NMFS, Fisheries Statistics of the United States, 1965-71). American lobster, *Homarus Americanus* are reportedly landed exclusively in Canada and Saint Pierre-Miquelon. The Territorial Collectivity of Saint Pierre and Miquelon is a group of small French islands in the North Atlantic Ocean, the main islands being Saint Pierre and Miquelon, south of the Canadian province of Newfoundland and Labrador (Wikipedia).

²Under USITC 1605, there were imports of lobster meat of 0-0.407 mp (product wt) and imports of other prepared-preserved products (excluding meals) were 0.007-1.011 mp in 1989-2009. Separable parts of these amounts are “in ATC” and “not in ATC” (author’s grouping of USITC items, Appendix B, this report).

Traditionally, U.S. imports of frozen, shell-on spiny lobster tails have been divided into two broad market categories, warm-water and cold-water, based on perceptions about the country of origin, species, shell color, user preferences in preparation and presentation, and other factors. Cold-water spiny lobster tails tend to be higher in price, and the United States now imports much smaller amounts than in the 1970s, based in part on the relative strength in demand in other importing countries (Figure 3, Table 5).³ U.S. imports of cold-water lobster tails once accounted for most of the supplying-country landings (Figure 4, landings converted to tail wt, FAO, Fishstat Plus, as of 12Jul10). Taken together supplying-country landings are now well below their peak in the mid-1960s and appear to have been on a downward trend since the 1980s. In 2008\$ per pound and compared with their most recent high, imports of cold-water tails were 32% lower in 2009 than in 2002, and imports of warm-water tails were 46% lower (Table 5). Florida ex-vessel prices were 56% lower in 2009 than in 2007 (most recent high; Figure 1 and Table 1).

Among U.S. import-supplying countries for warm-water spiny lobster tails, the leaders include Brazil, Bahamas, Nicaragua, and Honduras (Table 7). U.S. imports of tails from Caribbean and nearby countries, Bermuda through Brazil, have accounted for a large proportion of the region's landings of Caribbean spiny lobster and an increased proportion of U.S. imports of lobster tails (Figure 5).⁴ Among the region's top producer-exporters, landings in 2008 were below what they were in respective peak years (Figure 7, Table 8, FAO, Fishstat Plus, 12Jul10). Among these countries, Munoz-Nunoz (2009) assesses stock, economic and social conditions of the Cuban fishery and efforts to achieve a sustainable fishery. In total, Caribbean spiny lobster achieved a high-water mark of approximately 42,000 metric tons (mt), ww, with recent lows of 32,000–34,000 mt (Figure 6; Table 8).

Two items were added in 2009 for U.S. imports of frozen "rock lobster and other sea crawfish (*Palinurus* species, *Panulirus* species and *Jasus* species)," one for Caribbean spiny lobster (*Panulirus argus*), and one for "other" spiny lobster. This change is based on investigative work by NOAA, Office of Law Enforcement (St. Petersburg) that led eventually to Spiny Lobster FMP Amendments (08Oct08).⁵ Thus, imports of Caribbean spiny lobster must now have their shells attached to determine the species and whether any are undersized. Larger lobsters may be checked for evidence that they were egg-bearing females. Violators may receive civil penalties. Law enforcement under the Lacey Act involves proving in criminal court that shipments were not in accord with federal, state or originating-country law.

³In this report, U.S. imports of frozen, cold-water, shell-on spiny lobster tails are estimated as being those from Australia, New Zealand, St. Helena, South Africa, and Namibia.

⁴FAO-reported landings of Caribbean spiny lobster in Figure 5 exclude landings of the United States, Puerto Rico, U.S. Virgin Islands, and Cuba.

⁵This paragraph is based partly on personal communication, Paul Raymond, July 2010 (NOAA, SE Enforcement Div, St. Petersburg). Frozen lobster tails are packed in 10-lb boxes, each having its own size; e.g., 5 oz, 6 oz, 7 oz, 8-10 oz, or other sizes. U.S. Customs entry documents and industry documents are usually specific (Spiny lobster fishery FMP Amendments, 08Oct08, p. 4).

Worldwide, landings of all species of spiny lobster have been relatively flat since the mid-1980s, with a peak of 86,379 mt in 2004 (Figure 7; Table 9). Among other lobsters, American lobster (*Homarus americanus*) increased after the mid-1970s, peaking at 94,168 mt in 2008 (reportedly higher in 2009). Landings of the similar European lobster (*Homarus gammarus*) have been approximately 2,000-4,800 mt since 1950; they were 4,411 mt in 2008. Europe's "common lobster," Norway lobster (*Nephrops norvegicus*), is a much smaller clawed lobster than *Homarus* species lobster. Landings increased in the late 2000s after a period of stability, and they were 72,548 mt in 2008 (Figure 7; Table 9). Landings of squat (flat or slipper) lobster were 2,561 mt in 2008; "other" lobster came to 3,316 mt (Table 9).

U.S. Exports

The United States exports a significant part of its landings of spiny lobster to Canada, France, Japan, China, and many other countries in Asia, Europe, and the Western Hemisphere (Figure 8; Tables 10-11). In contrast with the United States market, buyers in other countries prefer relatively more whole spiny lobster. Markets in France, Spain, Italy, and elsewhere in southern Europe and Asia require relatively more spiny lobster than clawed lobster when compared with northern Europe. In northern Europe, long-standing own-country traditions translate into relatively more imports of American lobster (*Homarus americanus*) than spiny lobster, mostly to use in place of the similar, but far less plentiful European lobster (*Homarus gammarus*), depending on price and availability.

For spiny lobster, Japan was Asia's leading importer in the late 1980s and early 1990s (Figures 9-10; Table 12). Japan's imports of frozen spiny lobster (mostly whole lobster) were 12,224 mt (or 24.5 mp) in 1991 and declined gradually to 2,175 mt in 2009.⁶ Imports of live and fresh (mostly whole) spiny lobster were 2,998 mt in 1994 and 665 mt in 2009.

⁶Source: Japan, Ministry of Finance, Trade Statistics, for 1988-2009 (in English, <http://www.customs.go.jp/toukei/srch/indexe.htm>). Data from the same agency for earlier years were compiled by the author from NMFS, Fishery Market News, Southwest Region, counterparts to the currently published Japanese Fishery Imports (contact Sunee C. Sonu, Ph.D.).

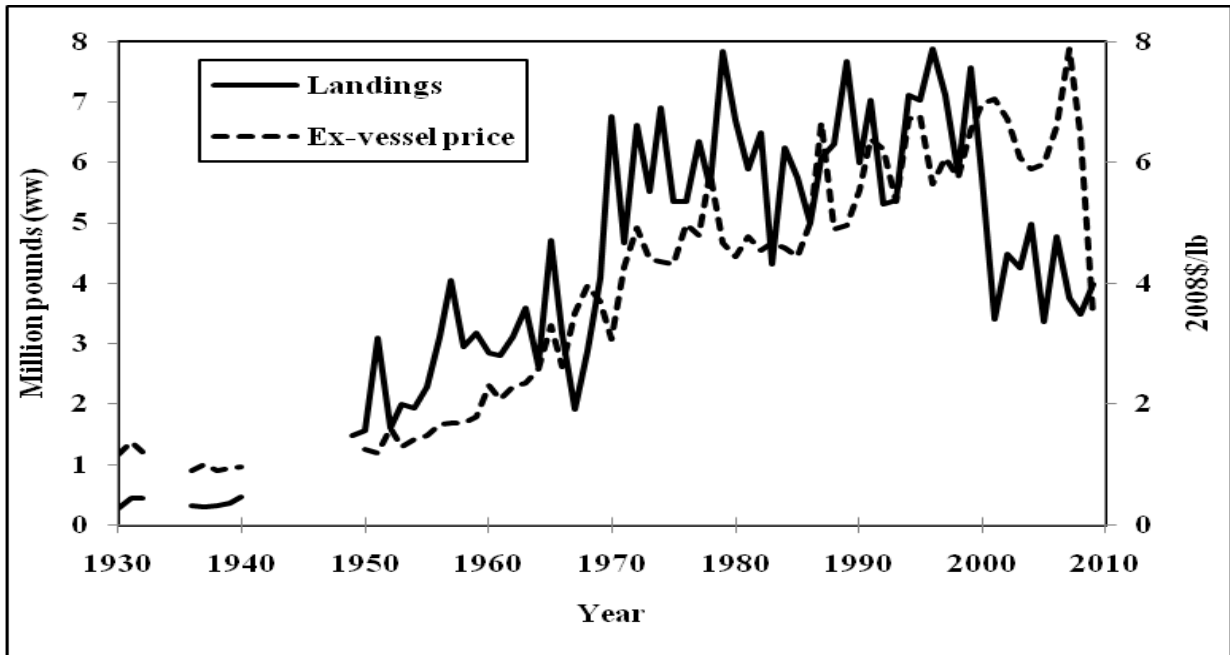


Figure 1. Florida landings and ex-vessel prices of Caribbean spiny lobster (Table 1). Excludes estimated landings from the Bahamian grounds in 1964-1975.

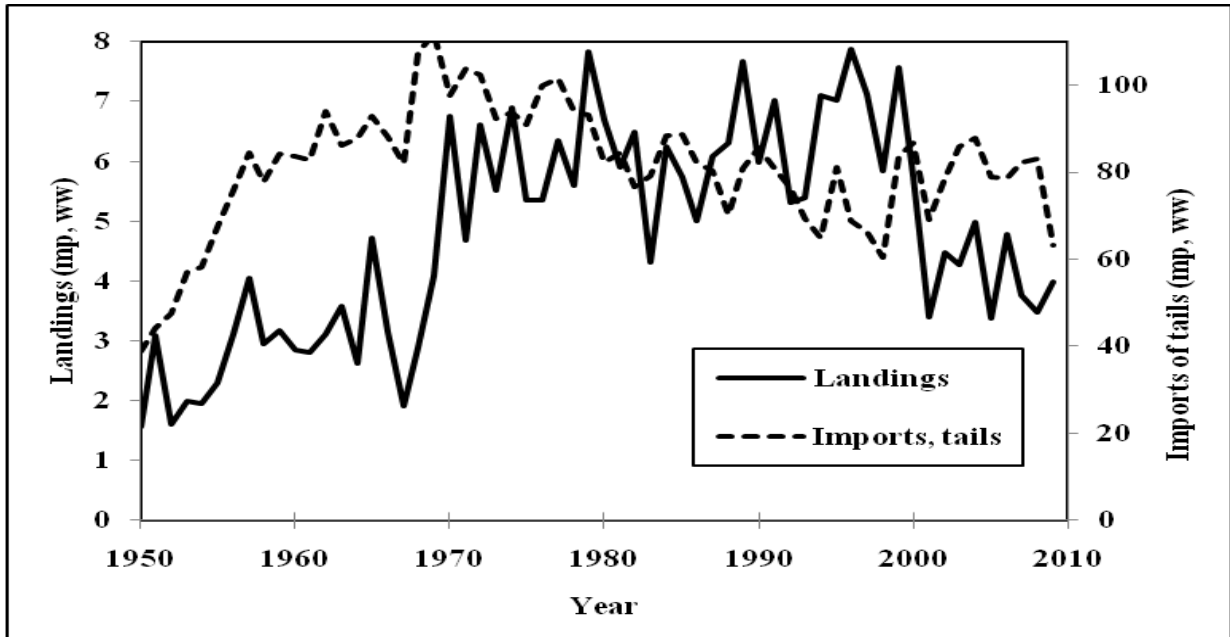


Figure 2. Florida landings of spiny lobster and U.S. imports of tails (Tables 1 and 4). Excludes estimated landings from the Bahamian grounds in 1964-1975.

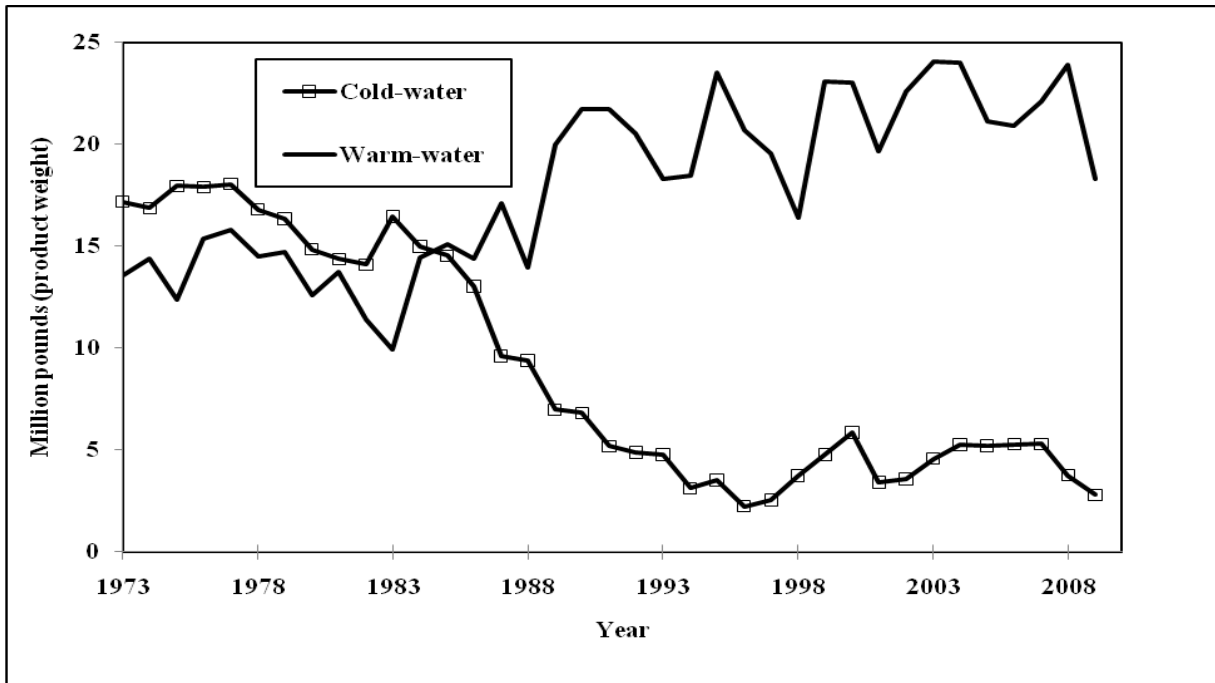


Figure 3. Estimated U.S. imports of spiny lobster tails, cold-water and warm-water (Table 5).

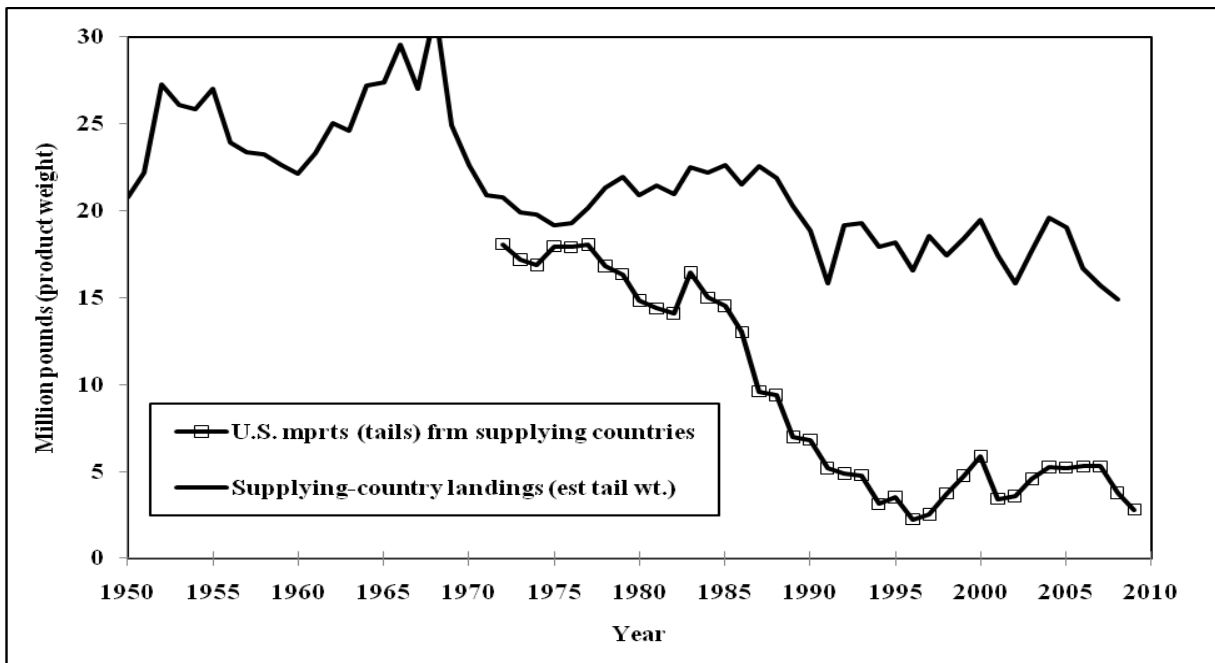


Figure 4. U.S. imports of cold-water spiny lobster and supplying-country landings. (Countries: Australia, New Zealand, Saint Helena, South Africa, and Namibia)

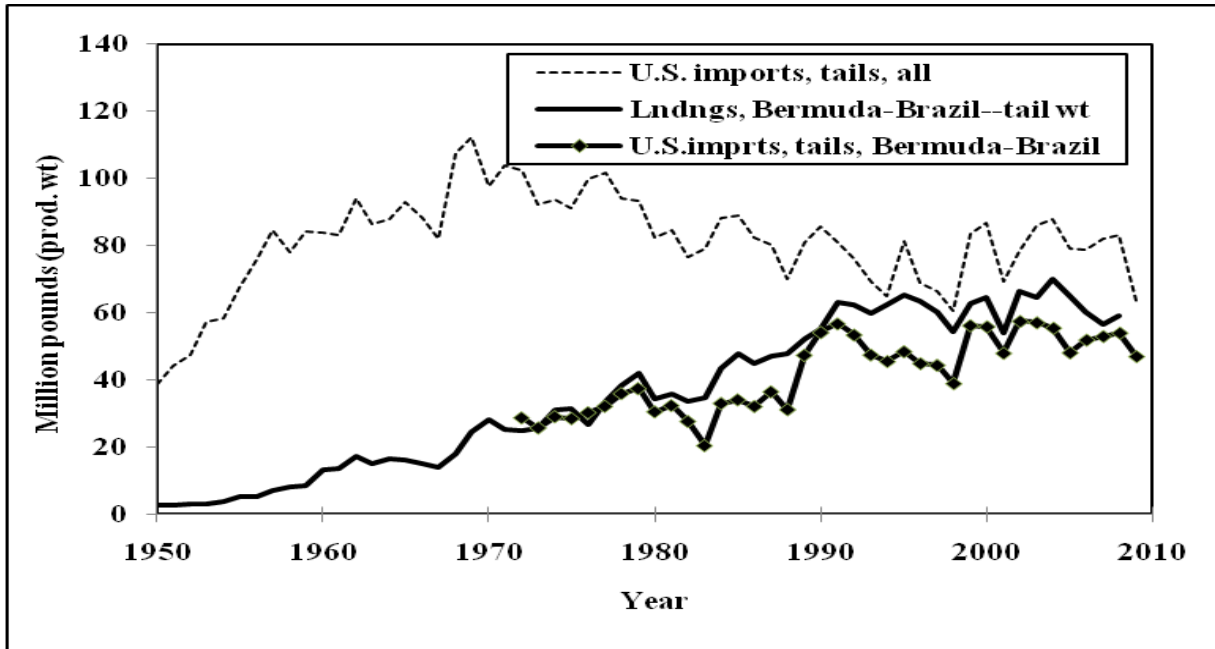


Figure 5. U.S. imports of all lobster tails; imports and landings, Bermuda-Brazil (tail wt).

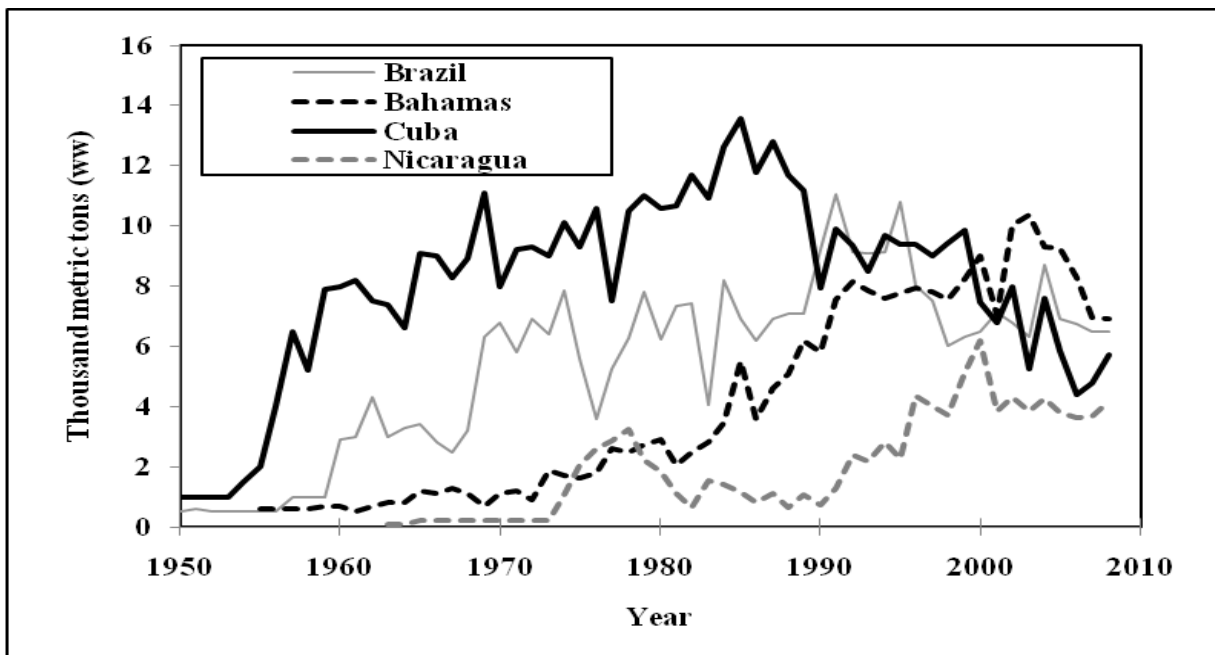


Figure 6. Landings of Caribbean spiny lobster, Brazil, Bahamas, Cuba, and Nicaragua.

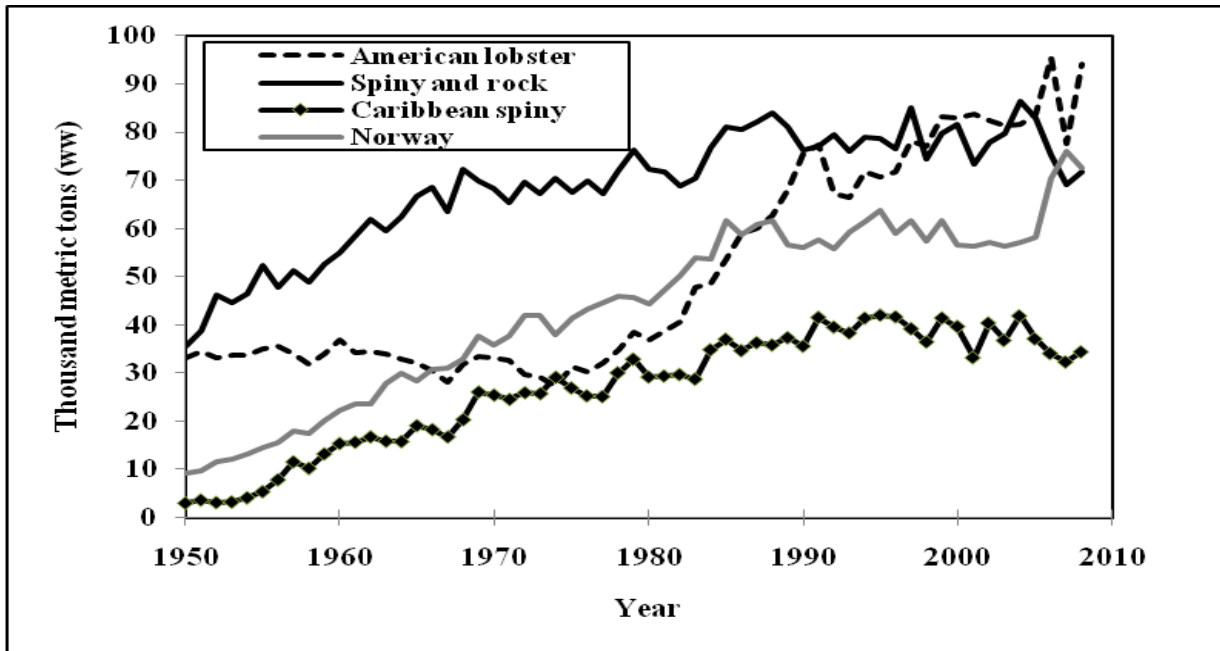


Figure 7. World-wide landings of major lobster species or species groups.

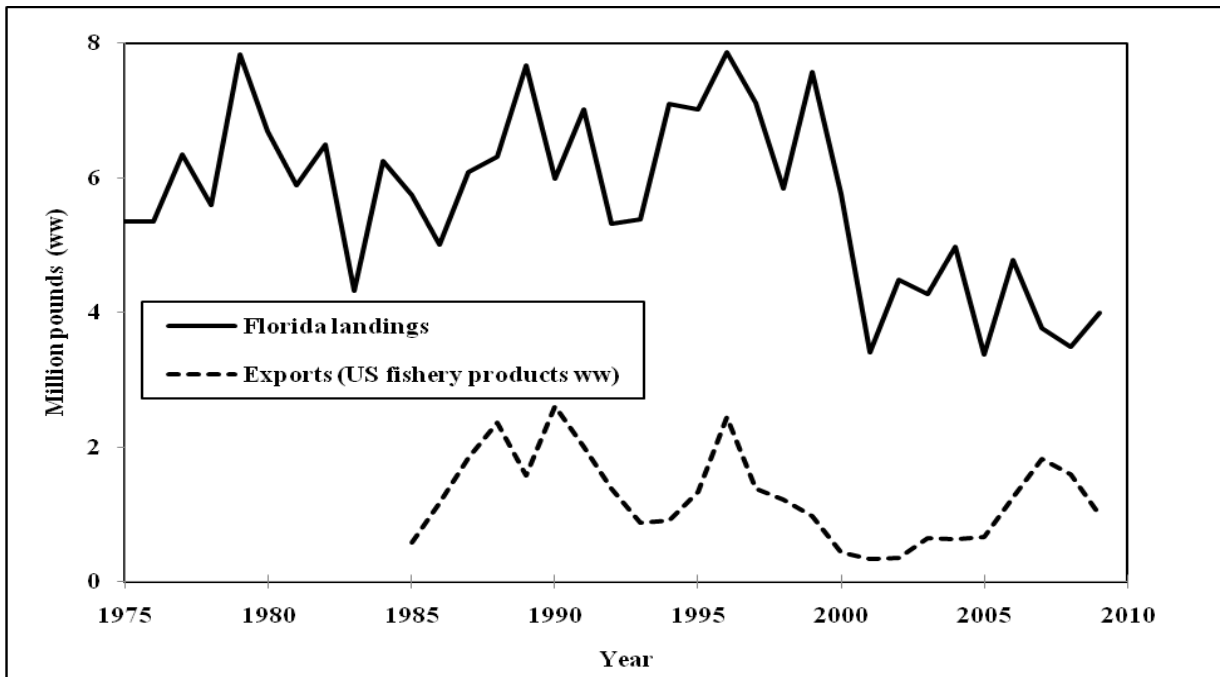


Figure 8. Spiny lobster, Florida landings and U.S. exports (U.S. fishery products only-Table 10).

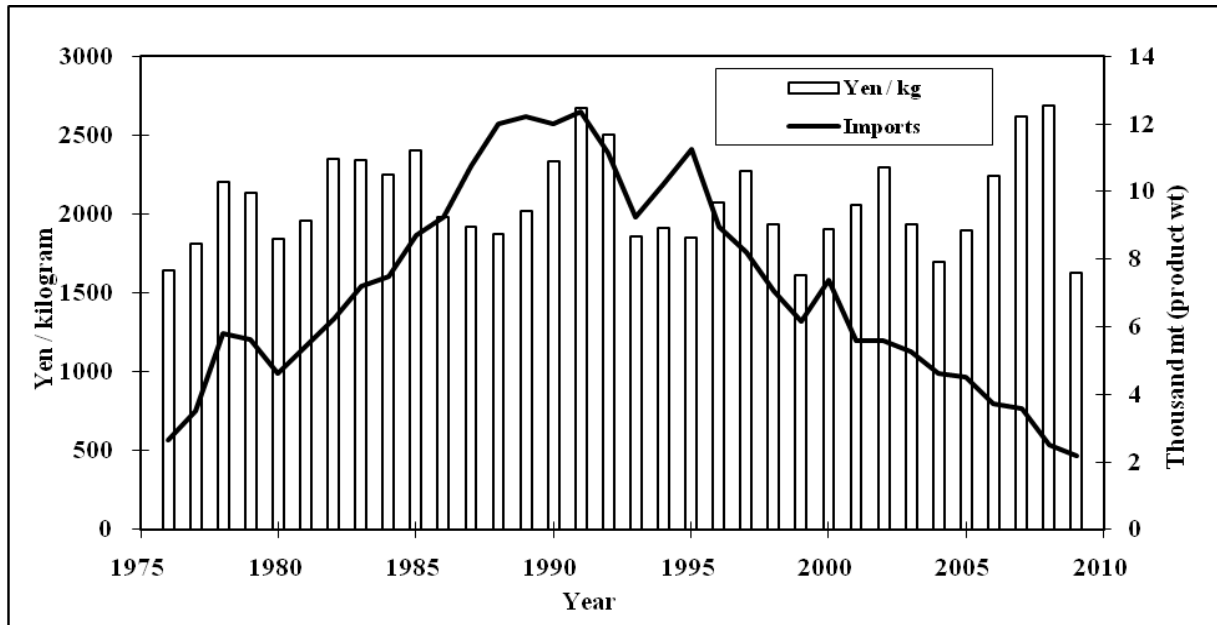


Figure 9. Japan imports, frozen spiny lobster and average unit values (yen/kg).

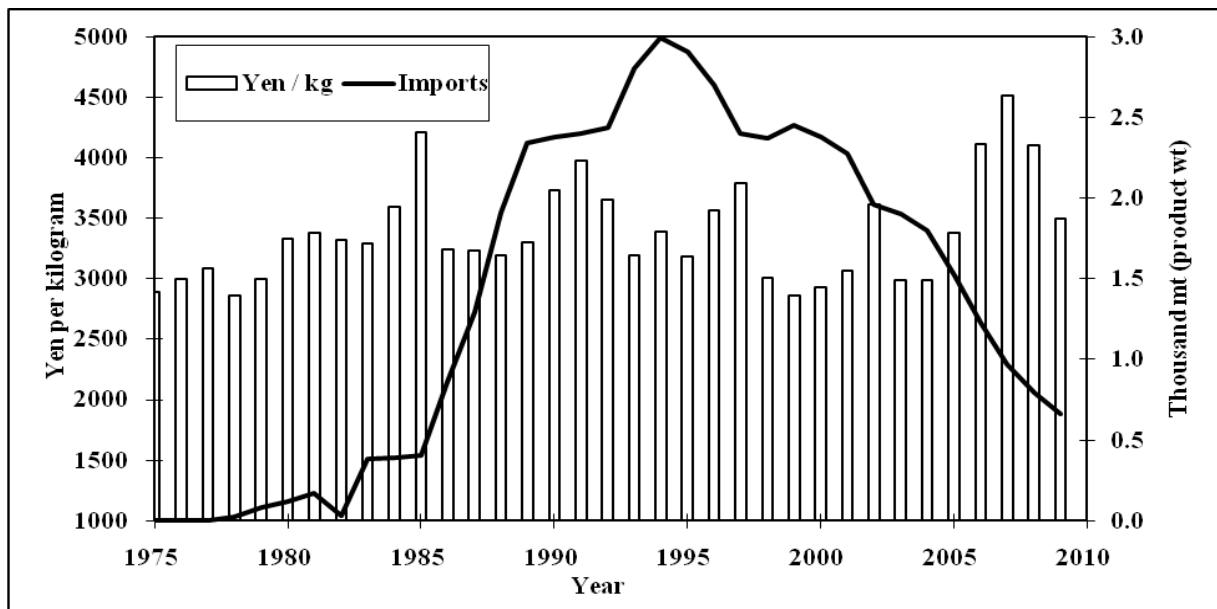


Figure 10. Japan imports, live and fresh spiny lobster and average unit values (yen/kg).

Table 1. Florida landings of Caribbean spiny lobster (*Panulirus argus*) (ww).

Year	Florida east coast		Florida west coast		Total			Bermuda grounds
	Pounds	Value	Pounds	Value	Pounds	2008\$	2008\$/lb	
1930	108,309	12,331	180,000	14,400	288,309	340,147	1.18	
1931	303,800	30,882	152,107	10,648	455,907	624,928	1.37	
1932	347,207	26,177	98,340	5,901	445,547	543,035	1.22	
1934	182,800	10,426	168,500	6,740	351,300	285,498	0.81	
1936	210,600	14,290	116,000	5,800	326,600	295,276	0.90	
1937	224,700	17,844	67,800	3,777	292,500	294,917	1.01	
1938	265,200	20,217	63,200	3,160	328,400	297,468	0.91	
1939	234,100	16,377	125,100	8,005	359,200	342,432	0.95	
1940	256,000	19,051	207,500	12,450	463,500	449,067	0.97	
1945	572,100	116,427	205,000	41,000	777,100	1,640,009	2.11	
1949			1,481,800	188,704	1,481,800			
1950	931,500	167,670	628,200	113,070	1,559,700	1,949,755	1.25	
1951	2,020,200	383,838	1,077,200	204,668	3,097,400	3,670,419	1.19	
1952	655,700	163,975	956,700	239,175	1,612,400	2,582,339	1.60	
1953	1,121,200	224,240	874,200	174,852	1,995,400	2,591,364	1.30	
1954	1,223,300	269,126	724,000	159,280	1,947,300	2,772,211	1.42	
1955	1,079,400	248,262	1,216,000	279,680	2,295,400	3,416,307	1.49	
1956	798,800	227,818	2,314,200	597,238	3,113,000	5,162,727	1.66	
1957	651,300	200,112	3,388,500	923,433	4,039,800	6,827,697	1.69	
1958	622,800	183,726	2,331,500	652,820	2,954,300	5,019,276	1.70	
1959	543,000	176,476	2,636,600	777,798	3,179,600	5,707,582	1.80	
1960	719,400	280,566	2,129,100	819,703	2,848,500	6,580,789	2.31	
1961	702,000	248,507	2,101,400	720,780	2,803,400	5,815,722	2.07	
1962	672,400	259,546	2,434,600	927,581	3,107,000	7,100,293	2.29	
1963	814,600	327,469	2,770,600	1,080,534	3,585,200	8,448,018	2.36	
1964	785,700	350,587	2,845,400	1,211,576	3,631,100	9,372,978	2.58	999
1965	1,329,000	751,851	4,385,100	2,467,390	5,714,100	18,896,845	3.31	994
1966	1,686,100	809,852	3,664,100	1,659,117	5,350,200	14,057,553	2.63	2,199
1967	1,676,600	1,058,290	2,737,000	1,674,724	4,413,600	15,514,355	3.52	2,498
1968	2,234,100	1,580,386	3,920,800	2,828,183	6,154,900	24,440,488	3.97	3,274
1969	2,928,600	1,932,852	4,652,600	3,324,689	7,581,200	28,000,836	3.69	3,495
1970	3,017,800	1,830,199	6,851,700	4,088,280	9,869,500	30,410,396	3.08	3,117
1971	3,417,900	2,932,268	4,788,100	4,124,268	8,206,000	35,115,990	4.28	3,537
1972	6,267,500	6,254,188	5,149,300	5,517,237	11,416,800	56,076,939	4.91	4,804
1973	5,621,600	5,747,531	5,550,100	5,913,610	11,171,700	49,132,274	4.40	5,659
1974	4,147,200	5,067,670	6,735,400	8,325,016	10,882,600	47,462,678	4.36	3,979
1975	2,319,300	3,025,700	5,089,100	6,837,287	7,408,400	32,020,930	4.32	2,056

In a 1992 report, the author attributed these estimates to Williams and Prochaska (1976, p. 12, for 1964-71); unpublished NMFS, SEFSC data; and NMFS, Fishery Statistics of the United States, 1964-77. See other notes at end of table.

Table 1. Florida landings of Caribbean spiny lobster (*Panulirus argus*) (ww), continued.

Year	Florida east coast		Florida west coast		Total			Bermuda grounds
	Pounds	Value	Pounds	Value	Pounds	2008\$	2008\$/lb	
1976	987,300	1,733,896	4,358,300	6,852,416	5,345,600	26,644,268	4.98	
1977	1,500,741	2,526,014	4,843,375	7,899,434	6,344,116	30,457,087	4.80	
1978	890,519	1,691,421	4,711,384	10,335,509	5,601,903	32,622,402	5.82	
1979	840,386	1,782,980	6,987,883	13,409,360	7,828,269	36,600,606	4.68	
1980	998,516	2,237,644	5,696,326	11,844,951	6,694,842	29,733,408	4.44	
1981	879,537	2,211,162	5,014,468	12,319,004	5,894,005	28,111,423	4.77	
1982	857,171	2,209,249	5,639,633	13,356,933	6,496,804	29,513,481	4.54	
1983	653,746	1,654,123	3,663,254	9,092,678	4,317,000	20,114,447	4.66	
1984	205,264	539,513	6,046,653	15,142,835	6,251,917	28,672,837	4.59	
1985	294,883	776,188	5,444,510	13,126,754	5,739,393	25,542,614	4.45	
1986	621,350	1,715,614	4,385,354	11,517,496	5,006,704	25,039,897	5.00	
1987	569,386	2,064,575	5,513,053	19,888,886	6,082,439	40,490,041	6.66	
1988	514,070	1,646,245	5,794,360	15,754,757	6,308,430	30,862,769	4.89	
1989	516,266	2,267,193	7,156,893	20,247,108	7,673,159	38,045,557	4.96	
1990	562,975	2,016,998	5,423,195	18,294,296	5,986,170	33,112,823	5.53	
1991	967,625	3,320,143	6,055,184	24,226,535	7,022,809	44,831,332	6.38	
1992	579,217	2,149,395	4,732,947	18,259,736	5,312,164	33,016,819	6.22	
1993	884,021	3,211,328	4,498,064	14,819,899	5,382,085	28,752,907	5.34	
1994	809,572	3,487,700	6,294,632	26,854,980	7,104,204	47,742,507	6.72	
1995	695,627	3,056,693	6,328,311	28,250,349	7,023,938	47,562,622	6.77	
1996	672,472	2,645,742	7,196,075	27,202,666	7,868,547	44,316,822	5.63	
1997	616,797	2,500,477	6,495,680	26,611,253	7,112,477	43,256,928	6.08	
1998	537,642	2,054,466	5,294,455	19,896,523	5,832,097	33,455,848	5.74	
1999	708,371	3,060,935	6,868,914	29,723,589	7,577,285	49,529,448	6.54	
2000	588,838	2,816,471	5,177,215	25,339,714	5,766,053	40,229,184	6.98	
2001	448,580	2,185,633	2,958,510	14,812,996	3,407,090	24,015,947	7.05	
2002	413,225	1,937,688	4,072,111	18,900,455	4,485,336	30,136,628	6.72	
2003	393,503	1,773,716	3,870,861	17,071,310	4,264,364	25,872,679	6.07	
2004	452,385	2,141,642	4,524,773	20,539,845	4,977,158	29,314,314	5.89	
2005	313,237	1,624,220	3,054,554	15,057,270	3,367,791	20,094,095	5.97	
2006	406,485	2,462,058	4,367,510	24,867,190	4,773,995	31,441,902	6.59	
2007	360,260	2,484,745	3,401,629	24,527,305	3,761,889	29,655,383	7.88	
2008	505,439	3,315,103	2,975,273	19,142,002	3,480,712	22,457,105	6.45	
2009	290,367	1,058,589	3,700,381	11,413,256	3,990,748	13,676,471	3.43	
2010								

Sources: NMFS (and predecessor agencies), Fishery industries of the United States, 1930-38, Fishery statistics of the United States, 1939-61, and NMFS, SEFSC, ALS; Bureau of Labor Statistics, Producer Price Index for all commodities.

Table 2. Florida landings of spiny lobster, by coastal state, county, and year.

Florida east coast	Thousands of pounds (whole weight)							
County	1980	1990	2000	2005	2006	2007	2008	2009
Brevard	6	22	29	12	25	14	9	13
Broward	3	103	54	21	17	42	46	13
Miami-Dade	909	378	328	198	277	247	388	215
Duval	.	0	29	10	7	11	7	2
Indian River	0	2	3	1	0	1	2	3
Martin	.	1	12	5	8	6	5	2
Other	.	.	0	0	0	0	.	.
Palm Beach	76	49	116	52	61	26	34	31
St Johns	.	1	.	5	6	6	9	4
St Lucie	4	2	7	2	2	2	3	5
Volusia	0	6	10	7	4	5	2	3
Total	999	563	589	313	406	360	505	290
Florida west coast	Thousands of pounds (whole weight)							
County	1980	1990	2000	2005	2006	2007	2008	2009
Collier	49	14	57	19	38	21	19	41
Hillsborough	.	1	.	0	0	.	.	.
Lee	40	5	1	0	0	0	.	.
Monroe	5606	5403	5117	3031	4328	3380	2956	3659
Other	0	0	1	2	1	0	0	0
Pinellas	1	1	1	3	0	1	0	0
Total	5696	5423	5177	3055	4368	3402	2975	3700

Source: ALS, 1977-1992 as of 30Jul09, and 1993-2010 as of 29Apr10. Landings are identified by county if the all-year sum for pounds is greater than 10,000 pounds.

Table 3. Estimated U.S. supply of spiny lobster, thousand pounds (ww).

Year	Jan 1 stocks (tails)	Landings (ww)		Imports (tails only, ww)	Dec 31 stocks (tails)	Exports (ww)	Total supply (ww)
		Florida	United States				
1950	1,676	1,560	2,493	38,782	2,795		41,275
1951	2,795	3,097	3,922	44,275	2,580		48,197
1952	2,580	1,612	2,419	47,440	2,472		49,859
1953	2,472	1,995	2,746	57,124	2,854		59,870
1954	2,854	1,947	2,849	58,160	2,710		61,008
1955	2,710	2,295	3,155	67,438	3,632		70,592
1956	3,632	3,113	3,849	75,774	4,846		79,623
1957	4,846	4,040	4,687	84,543	6,303		89,230
1958	6,303	2,954	3,588	77,814	4,189		81,401
1959	4,189	3,180	3,686	84,276	3,733		87,962
1960	3,733	2,849	3,200	83,685	4,241		86,884
1961	4,241	2,803	3,222	82,944	5,123		86,166
1962	5,123	3,107	3,656	93,986	6,665		97,643
1963	6,665	3,585	4,169	86,255	5,071		90,424
1964	5,071	3,630	4,078	87,907	2,711		91,985
1965	2,711	5,713	6,229	92,770	5,483		99,000
1966	5,483	5,348	5,839	88,010	6,811		93,849
1967	6,811	4,411	4,864	81,901	3,760		86,765
1968	3,760	6,152	7,472	107,401	5,210		114,873
1969	5,210	7,578	8,773	112,010	7,544		120,783
1970	7,544	9,866	10,341	97,578	4,267		107,919
1971	4,267	8,202	8,937	103,716	4,109		112,652
1972	4,109	11,412	12,210	102,330	7,461		114,540
1973	7,461	11,166	11,427	92,268	5,044		103,696
1974	5,044	10,879	11,074	93,730	6,485		104,804
1975	6,485	7,406	7,610	91,030	2,719		98,640
1976	2,719	5,346	5,638	99,806	6,246		105,444
1977	6,246	6,344	6,596	101,589	4,968		108,185
1978	4,968	5,602	6,163	94,009	5,872		100,172
1979	5,872	7,828	8,247	93,201	5,668		101,448
1980	5,668	6,695	7,109	82,340	4,517		89,449
1981	4,517	5,894	7,154	84,384	3,864		91,538
1982	3,864	6,497	7,142	76,516	3,330		83,658
1983	3,330	4,317	5,051	79,237	2,913		84,288
1984	2,913	6,252	7,337	88,265	3,019		95,602

See notes at end of table.

Table 3. Estimated U.S. supply of spiny lobster, thousand pounds (ww), continued.

Year	Jan 1 stocks (tails)	Landings (ww)		Imports (tails only, ww)	Dec 31 stocks (tails)	Exports (ww)	Total supply (ww)
		Florida	United States				
1985	3,019	5,739	7,384	88,809	3,187	797	95,396
1986	3,187	5,007	6,642	82,213	2,229	1,244	87,611
1987	2,229	6,082	7,061	80,169	3,197	2,093	85,138
1988	3,197	6,308	8,105	70,133	2,899	2,689	75,550
1989	2,899	7,673	9,682	80,977	1,643	1,697	88,962
1990	1,643	5,986	7,487	85,708	1,034	3,875	89,319
1991	1,034	7,023	7,820	80,719	2,343	3,381	85,158
1992	2,343	5,312	5,396	76,285	2,404	1,687	79,993
1993	2,404	5,382	5,943	69,290	3,061	1,213	74,021
1994	3,061	7,104	7,689	64,768	3,455	1,184	71,273
1995	3,455	7,024	7,685	81,142	3,237	1,748	87,080
1996	3,237	7,869	8,739	68,782	2,731	3,032	74,488
1997	2,731	7,112	8,223	66,341	4,295	2,286	72,278
1998		5,832	6,697	60,378		1,512	65,563
1999		7,577	8,215	83,514		1,436	90,292
2000		5,766	6,483	86,667		879	92,271
2001		3,407	4,112	69,217		675	72,655
2002		4,485	5,198	78,514		810	82,901
2003		4,264	5,011	85,937		1,192	89,756
2004		4,977	5,871	87,751		977	92,645
2005		3,368	4,139	78,989		955	82,173
2006		4,774	5,667	78,653		1,685	82,634
2007		3,762	4,432	82,159		2,341	84,250
2008		3,481	4,231	83,066		1,928	85,369
2009		3,991		63,247		1,320	
2010							

Inventories (product weight) are shown, but not used in computations. Inventories for January 1 are for the preceding day, December 31. Total supply = U.S. landings + imports of tails – exports. Imports are from Table 4, col 1 (frozen spiny lobster) multiplied by 3 to obtain whole weight. Exports are from Table 10, last col (exports of U.S. and foreign fishery products), assumed to be approximately whole weight. U.S. landings are for Caribbean, California and banded spiny lobster, referring to what is “landed and sold in the 50 states by U.S. fishermen,” [but not] “landings made in U.S. territories or by foreign fishermen” (NMFS, Fisheries Stat Div, Silver Spring, MD). Note that assumptions about data selection and product forms, hence conversion factors, differ from those for the market supply tables for spiny lobster published in NMFS, Fisheries of the United States.

Table 4. Estimated U.S. imports of spiny lobster, thousand pounds.

Year	Spiny lobster, frozen	Lobster, frozen			Spiny lobster, not frozen	Total, product wt	Total, ww
		Not in ATC	In ATC	Sub-total			
Col -->	1	2	3	4	5	8	9
1950	12,927		2,610	2,610		15,538	46,613
1951	14,758		1,966	1,966		16,724	50,173
1952	15,813		2,621	2,621		18,434	55,303
1953	19,041		2,978	2,978		22,019	66,058
1954	19,387		1,172	1,172		20,558	61,675
1955	22,479		1,661	1,661		24,141	72,422
1956	25,258		1,285	1,285		26,543	79,629
1957	28,181		1,067	1,067		29,248	87,743
1958	25,938		378	378		26,316	78,948
1959	28,092		2,105	2,105		30,197	90,590
1960	27,895	3,866	533	4,399	593	32,887	85,875
1961	27,648	4,321	56	4,378	692	32,718	83,806
1962	31,329	5,562	198	5,760	611	37,700	95,192
1963	28,752	4,561	281	4,842	735	34,329	87,833
1964	29,302	5,405	193	5,598	396	35,297	88,882
1965	30,923	6,300	129	6,428	591	37,943	93,747
1966	29,337	7,265	157	7,422	322	37,081	88,803
1967	27,300	7,738	149	7,887	301	35,489	82,649
1968	35,800	7,002	213	7,215	259	43,274	108,298
1969	37,337	7,346	301	7,648	309	45,293	113,223
1970	32,526	5,064	102	5,165	151	37,842	98,034
1971	34,572	6,876	105	6,981	348	41,901	104,379
1972	34,110	8,529	95	8,624	370	43,104	102,985
1973	30,756	7,029	134	7,164	373	38,293	93,044
1974	31,243	8,759	95	8,854	327	40,424	94,342
1975	30,343	11,721	112	11,833	265	42,441	91,630
1976	33,269	14,874	719	15,593	352	49,213	102,314
1977	33,863	10,867	337	11,204	297	45,364	102,898
1978	31,336	11,414	125	11,539	285	43,160	94,669
1979	31,067	13,110	134	13,244	241	44,552	93,844

Labels in Table 4 are based on USITC protocols for 1989 onward.

Column 1: "not canned" lobster in 1950-59 (excluding imports from Canada and Saint Pierre-Miquelon), rock lobster tails in 1960-August 1963, rock lobster tails not in ATC in September 1963-1988, and frozen spiny lobster in 1989 onward (Appendices A and B).

Column 2: other fresh or frozen lobster in 1960-August 1963 and lobster, other, not in ATC in September 1963-1988, and author's combination of codes for 1989 onward (Appendices A and B). Data for 1960-2009 exclude imports from Canada and Saint Pierre-Miquelon.

Column 3: "canned" lobster in 1950-August 1963, lobster in ATC in September 1963-1988, and author's combination of codes for 1989 onward (Appendices A and B). Data for 1950-2009 exclude imports from Canada and Saint Pierre-Miquelon.

Column 5: live lobster for 1960-1988 (excluding imports from Canada and Saint Pierre-Miquelon), and not frozen spiny lobster for 1989 onward.

Table 4. Estimated U.S. imports of spiny lobster, thousands of pounds (product wt), continued.

Year	Spiny lobster, frozen	Lobster, frozen			Lobster, not frozen			Total, product wt	Total, ww
		Not in ATC	In ATC	Sub-total	Spiny lobster	Lobster	Sub-total		
Col -->	1	2	3	4	5	6	7	8	9
1980	27,447	8,587	88	8,675	123		123	36,244	108,488
1981	28,128	9,548	217	9,765	294		294	38,187	113,973
1982	25,505	9,804	50	9,854	43		43	35,402	106,121
1983	26,412	11,900	131	12,031	99		99	38,542	115,429
1984	29,422	13,469	18	13,487	133		133	43,042	128,859
1985	29,603	13,618	56	13,675	275		275	43,552	130,108
1986	27,404	14,346	37	14,383	159		159	41,946	125,520
1987	26,723	14,835	136	14,971	351		351	42,046	125,435
1988	23,378	14,112	52	14,164	316		316	37,858	112,942
1989	26,992	5,176	166	5,342	725	26	751	33,086	97,754
1990	28,569	198	0	198	849	39	888	29,655	87,190
1991	26,906	65	0	65	246	7	253	27,224	81,166
1992	25,428	67	0	67	527		527	26,022	77,013
1993	23,097	768	0	768	268	10	278	24,143	71,871
1994	21,589	843	74	917	1,015	11	1,027	23,533	68,545
1995	27,047	337	0	337	1,739		1,739	29,123	83,892
1996	22,927	444	0	444	2,154	0.507	2,155	25,526	72,268
1997	22,114	14	0	14	2,560	1	2,561	24,689	68,945
1998	20,126	9	21	30	1,122	10	1,132	21,287	61,599
1999	27,838	105	44	149	704	43	747	28,734	84,708
2000	28,889	1,506	57	1,563	1,517	327	1,844	32,296	93,200
2001	23,072	1,071	17	1,088	1,154	178	1,332	25,492	73,814
2002	26,171	1,700	61	1,761	739	82	821	28,754	84,619
2003	28,646	2,143	43	2,186	595	74	670	31,501	93,164
2004	29,250	2,208	152	2,360	415	71	486	32,096	95,316
2005	26,330	2,088	582	2,671	193	84	277	29,277	87,278
2006	26,218	1,852	159	2,011	147	91	238	28,467	84,925
2007	27,386	1,775	207	1,982	78	207	285	29,653	88,389
2008	27,689	2,060	133	2,193	412	255	668	30,550	90,313
2009	21,082	788	148	936	37	93	130	22,148	66,186

See other footnotes in the preceding part of this table. To obtain the total in column 9 (ww), not-frozen products are assumed to be live or fresh, whole (product wt. * 1.0 = whole wt.), and frozen products are assumed to be spiny lobster tails (product wt. * 3.0 = whole wt.). Note that totals in column 9 differ from the totals in market supply tables in Fisheries of the United States; for 1950-88, underlying conversion factors differ (apparently, 4.35 for col 3, and 4.5 for col 4); for 1989-2009, items included and conversion factors differ. Sources of data: NMFS, Fishery Statistics Div, data base for foreign trade, and Fishery Statistics of the United States, 1965-1971.

Table 5. Estimated U.S. imports of cold-water and warm-water frozen spiny lobster.

Year	Thousand pounds, product weight				Thousand 2008\$			2008\$/lb	
	cold-water	warm-water	Total	Warm-water, Caribbean	cold-water	warm-water	Total	cold-water	warm-water
1972	18,072	16,038	34,110	9,560	324,447	197,627	522,074	17.95	12.32
1973	17,182	13,575	30,756	8,558	282,846	153,706	436,552	16.46	11.32
1974	16,872	14,372	31,243	9,680	280,944	163,747	444,691	16.65	11.39
1975	17,963	12,380	30,343	9,484	266,988	141,968	408,956	14.86	11.47
1976	17,910	15,359	33,269	10,084	304,341	196,273	500,614	16.99	12.78
1977	18,048	15,815	33,863	10,710	332,306	202,182	534,488	18.41	12.78
1978	16,808	14,528	31,336	11,981	296,713	197,295	494,007	17.65	13.58
1979	16,340	14,727	31,067	12,479	277,034	210,652	487,686	16.95	14.30
1980	14,841	12,606	27,447	10,163	247,900	158,774	406,674	16.70	12.60
1981	14,380	13,748	28,128	10,786	226,720	175,741	402,461	15.77	12.78
1982	14,098	11,407	25,505	9,203	241,347	151,289	392,636	17.12	13.26
1983	16,448	9,964	26,412	6,786	264,687	127,657	392,344	16.09	12.81
1984	15,001	14,420	29,422	11,002	262,072	181,438	443,510	17.47	12.58
1985	14,529	15,074	29,603	11,360	292,562	187,228	479,791	20.14	12.42
1986	13,025	14,379	27,404	10,694	247,585	192,235	439,820	19.01	13.37
1987	9,607	17,116	26,723	12,159	234,898	294,431	529,329	24.45	17.20
1988	9,397	13,980	23,378	10,380	229,996	229,780	459,776	24.47	16.44
1989	6,986	20,006	26,992	15,805	155,363	242,260	397,622	22.24	12.11
1990	6,816	21,754	28,569	18,067	151,832	280,268	432,100	22.28	12.88
1991	5,185	21,721	26,906	18,932	125,237	317,512	442,748	24.15	14.62
1992	4,890	20,539	25,428	17,822	128,410	311,511	439,921	26.26	15.17
1993	4,777	18,320	23,097	15,832	99,053	242,358	341,412	20.74	13.23
1994	3,122	18,467	21,589	15,173	88,413	274,533	362,946	28.32	14.87
1995	3,527	23,520	27,047	16,162	86,739	321,512	408,251	24.59	13.67
1996	2,240	20,687	22,927	14,971	49,587	259,553	309,139	22.14	12.55
1997	2,538	19,575	22,114	14,796	70,984	260,770	331,753	27.97	13.32
1998	3,738	16,388	20,126	12,970	92,328	247,073	339,401	24.70	15.08
1999	4,772	23,066	27,838	18,756	102,716	334,255	436,971	21.52	14.49
2000	5,861	23,028	28,889	18,640	120,344	370,791	491,135	20.53	16.10
2001	3,429	19,643	23,072	15,993	80,715	326,567	407,282	23.54	16.62
2002	3,583	22,589	26,171	19,173	91,021	400,905	491,926	25.41	17.75
2003	4,575	24,071	28,646	19,040	115,524	376,684	492,209	25.25	15.65
2004	5,264	23,987	29,250	18,508	113,696	360,091	473,787	21.60	15.01
2005	5,213	21,117	26,330	16,044	114,369	308,661	423,031	21.94	14.62
2006	5,290	20,928	26,218	17,316	103,234	297,735	400,969	19.52	14.23
2007	5,293	22,093	27,386	17,674	114,323	293,528	407,851	21.60	13.29
2008	3,770	23,919	27,689	18,012	80,571	241,457	322,028	21.37	10.09
2009	2,803	18,280	21,082	15,668	48,675	174,348	223,023	17.37	9.54

Cold-water: imports from Australia, New Zealand, St. Helena, South Africa and Namibia.

Warm-water: imports from other countries.

Caribbean: imports from Bermuda through Brazil.

Source: NMFS, Fishery Statistics Div, foreign trade data base.

Table 6. Estimated U.S. imports of spiny lobster, by product and country, thousand pounds (product wt), selected products.

Spiny lobster, frozen (Table 4, column 1)						
Country	1972-79	1980-89	1990-99	2000-04	2005-08	2009
Mexico	579	697	768	601	206	25
Belize	238	488	384	519	432	307
Honduras	826	1,354	3,108	2,619	2,849	2,717
Nicaragua	1,450	748	2,113	3,111	2,913	3,104
Costa Rica	168	216	218	62	22	1
Panama	108	451	271	268	350	533
Bahamas	774	1,112	3,328	3,914	2,867	3,979
Jamaica	9	113	327	361	158	6
Turks & Caicos Is.	218	213	220	61	148	68
Cayman Is.	28	686	617	.	.	.
Haiti	155	210	143	139	.	.
Dominican Republic	85	117	149	19	326	226
Colombia	68	192	317	716	559	222
Ecuador	179	222	103	162	50	16
Chile	143	201	704	362	192	440
Brazil	5,597	4,544	4,422	5,831	6,410	4,480
Iceland	301	607	74	29	20	.
United Kingdom	136	115	110	3	0	1
United Arab Emirates	.	92	293	896	1,055	333
Oman	15	479	335	634	213	68
India	773	396	95	130	19	.
Thailand	149	85	417	386	303	359
Singapore	404	180	283	.	.	.
China	4	16	1,146	1,046	2,311	1,038
China - Hong Kong	158	53	130	.	.	39
China - Taipei	332	107	146	367	162	.
Japan	745	136	16	.	11	40
Australia	9,124	8,538	3,097	3,141	3,171	1,395
Papua New Guinea	65	129	99	65	35	.
New Zealand	2,788	2,452	513	262	249	28
St. Helena	249	15	.	181	134	317
South Africa	5,167	2,449	602	907	1,312	1,053
Namibia	392	252	19	50	26	10
Other or combined	1,053	976	388	375	530	279
Total	32,479	28,641	24,952	27,219	27,032	21,082

Source: NMFS, Fishery Statistics Div, foreign trade data base.

Table 6. Estimated U.S. imports of spiny lobster, by product and country, thousand pounds (product wt), selected products.

Lobster, frozen, not in air tight containers (Table 4, column 2)						
Country	1972-79	1980-89	1990-99	2000-04	2005-08	2009
Mexico	1,504	1,354	1	22	49	.
Belize	30	80	.	27	69	5
Honduras	491	2,310	101	262	246	70
Nicaragua	218	49	6	101	105	43
Costa Rica	24	72	0	4	1	.
Panama	18	161	2	14	12	.
Bahamas	195	989	9	19	7	.
Jamaica	20	28	6	32	.	.
Turks & Caicos Is.	61	33	.	144	80	29
Cayman Is.	19	66	.	.	.	.
Haiti	52	115	.	5	.	.
Dominican Republic	13	57	.	4	13	5
Colombia	45	76	.	31	33	.
Ecuador	29	54	1	22	63	67
Chile	2,546	350	98	28	37	19
Brazil	349	753	68	11	107	104
Iceland	676	114	238	115	113	9
United Kingdom	288	267	58	.	7	3
United Arab Emirates	.	18	.	133	196	.
Oman	.	168	.	201	11	.
India	188	352	16	65	14	.
Thailand	456	701	.	118	280	87
Singapore	198	138	.	.	12	.
China	11	42	.	68	98	223
China - Hong Kong	233	297	.	0	.	.
China – Taipei	1,087	1,043	20	223	129	44
Japan	507	275	.	10	18	1
Australia	536	557	29	81	288	51
Papua New Guinea	45	28	.	4	1	.
New Zealand	246	446	6	41	87	7
St. Helena	.	.	.	.	13	.
South Africa	26	108	.	105	95	21
Namibia	23	.	.	.	.	.
Other or combined	756	677	7	75	22	0
Total	10,889	11,779	668	1,965	2,208	788

Source: NMFS, Fishery Statistics Div, foreign trade data base.

Table 6. Estimated U.S. imports of spiny lobster, by product and country, thousand pounds (product wt), selected products.

Spiny lobster, not frozen (Table 4, column 5)						
Country	1972-79	1980-89	1990-99	2000-04	2005-08	2009
Mexico	32	10	809	658	41	5
Belize	4	.	31	.	.	.
Honduras	3	19	85	.	7	.
Nicaragua	.	1	29	10	16	13
Costa Rica	2	6	13	17	3	.
Panama	5	24	66	6	1	.
Bahamas	57	35	43	12	.	.
Jamaica	.	4	8	81	3	.
Turks & Caicos	4	3	10	26	.	.
Cayman Is.	.	33	0	.	.	.
Haiti	3	12	12	6	.	.
Dominican Republic	3	1	3	.	.	.
Colombia	.	1	28	.	.	.
Ecuador	.	7	4	.	16	1
Chile	13	2	3	.	1	1
Brazil	3	21	14	.	362	13
Iceland	2	1	1	.	.	.
United Kingdom	.	1	0	6	12	.
Oman	.	.	37	.	.	.
India	4	0	25	.	.	.
Thailand	3	2	0	.	.	.
Singapore	21	8	.	.	.	.
China	.	6	1	44	61	.
China - Hong K	1	19	.	.	.	.
China - Taipei	4	11	.	21	.	.
Japan	7	9	1	2	.	.
Australia	14	19	15	58	19	.
New Zealand	6	10	7	9	6	2
St. Helena	.	9	.	.	.	.
South Africa	8	200	0	20	1	.
Namibia	.	1	.	.	.	.
Other or combined	214	108	20	73	13	3
Total	413	581	1,265	1,048	561	37

Source: NMFS, Fishery Statistics Div, foreign trade data base.

Table 7. U.S. imports of frozen spiny lobster tails from the Caribbean and nearby countries of Bermuda through Brazil, pounds (product weight).

Spiny lobster, frozen (column 1, Table 4)						
Country	1972-79	1980-89	1990-99	2000-04	2005-08	2009
Mexico	578,748	697,302	767,645	600,674	205,658	25,148
Guatemala	8,919	76,491	21,746	21,376	9,236	.
Belize	238,487	488,130	384,436	518,985	432,367	307,040
Honduras	826,043	1,354,030	3,108,461	2,618,900	2,848,708	2,717,200
Nicaragua	1,450,239	747,665	2,113,167	3,110,939	2,913,237	3,104,334
Costa Rica	167,553	215,590	218,376	61,961	21,829	1,239
Panama	108,226	450,557	270,856	268,439	350,492	532,879
Bermuda	.	.	2,476	.	.	.
Bahamas	774,050	1,112,414	3,328,056	3,914,482	2,867,002	3,978,819
Jamaica	219,823	112,943	326,530	360,722	157,771	5,648
Turks & Caicos Is.	217,543	213,480	219,612	61,196	148,084	67,706
Cayman Is.	28,231	686,304	616,702	.	.	.
Haiti	155,301	210,337	142,583	139,270	.	.
Dominican Republic	84,947	117,152	149,040	19,298	325,501	225,903
Leeward-Windward Is.	8,064	24,688	.	.	.	.
British Virgin Is.	.	.	14,502	.	.	.
Antigua & Barbuda	.	.	870	.	.	.
St. Lucia	.	.	1,543	.	.	.
St. Vincent-Grenadine	.	.	57,156	27,065	6,049	.
Grenada	.	.	8,384	5,546	19,732	.
Barbados	6,535	1,100	.	.	.	.
Trinidad & Tobago	26,379	1,150	28,631	814	.	.
Neth. Antilles-Aruba	.	2,249	.	.	.	.
Netherlands Antilles	.	9,892	41,726	.	.	.
Aruba	.	.	33,689	.	.	.
French West Indies	5,551	2,082	.	.	.	.
Guadeloupe	.	.	1,900	.	.	.
Martinique	.	.	.	3,016	.	.
Colombia	68,409	192,157	316,622	715,777	559,336	222,352
Venezuela	10,479	11,090	13,192	23,370	4,950	.
Brazil	5,596,977	4,543,774	4,421,844	5,831,037	6,410,222	4,480,219
Total	10,580,504	11,270,575	16,609,745	18,302,867	17,280,174	15,668,487

Source: NMFS, Fishery Statistics Div, foreign trade data base.

Table 8. Landings of Caribbean Spiny lobster (*Panulirus argus*), by country, metric tons (ww).

Country	1950	1960	1970	1980	1990	1995	2000	2005	2006	2007	2008
Anguilla				90	109	40	60	60	60	60	232
Antigua & Barbuda			100	64	97	149	275	309	318	318	165
Bahamas		700	1100	2894	5808	7750	9023	9278	8294	6977	6896
Belize	200	500	600	369	383	608	503	439	573	630	642
Bermuda	150	150	200	23	10	10	29	30	32	31	34
Brazil	500	2900	6800	6218	9223	10817	6469	6927	6724	6479	6480
British Virgin Is.				35	75	32	3	50	50	45	40
Colombia	100	100	300	126	356	97	516	289	425	560	560
Costa Rica		500	100	25	300	93	271	34	45	59	59
Cuba	1000	8000	8000	10567	7957	9405	7478	5834	4401	4778	5725
Dominican Republic			100	166	750	619	1286	958	886	1076	1272
Grenada				2	2	57	47	23	15	11	10
Guatemala									1		
Haiti		100	100	200	800	900	360	950	1000	1000	1000
Honduras		600	2400	2198	4002	3771	2469	3321	2877	2763	3039
Jamaica					200	350	517	738	300	300	300
Martinique	100	200		104	100	110	200	150	190	190	190
Mexico			300	689	658	896	747	767	800	611	531
Nicaragua			200	1848	717	2260	6180	3787	3625	3654	4186
Puerto Rico							212	157	148	123	142
Saint Kitts & Nevis						12	26	40	40	40	40
Trinidad & Tobago							5	6	3	7	13
Turks & Caicos Is.		200	400	330	210	376	187	388	427	436	380
United States	707	1292	4600	2959	2606	2934	2571	1534	2165	1638	1569
U.S. Virgin Is.				49	60	80	100	106	124	106	121
Venezuela	200	100	100	209	1126	629	105	900	530	380	740
Total	2957	15342	25400	29165	35549	41995	39639	37075	34053	32272	34366
Selected*	1250	6050	12800	15590	24926	29576	29278	29444	27215	25627	26809

*Selected = Total less Cuba, USA, Puerto Rico and US Virgin Islands. FAO, Fishstat Plus, landings for 1950-2008, 12Jul10.

Table 9. Worldwide landings of lobster by species, selected years, metric tons (ww).

Common name	Scientific name	1950	1960	1970	1980	1990	2000	2005	2007	2008
American	<i>Homarus americanus</i>	33122	36838	33100	36851	75534	83062	83750	77595	94168
European	<i>Homarus gammarus</i>	3000	3300	2172	1844	2823	2600	2372	4231	4411
Norway	<i>Nephrops norvegicus</i>	9300	22200	35716	44271	56162	56628	58158	76005	72548
Andaman	<i>M. andamanicus</i>					1				
New Zealand	<i>M. challengerii</i>					627	1034	849	886	609
Mozambique	<i>M. mozambicus</i>				286	489	180	149	153	100
Metanephrops nei	<i>M. spp</i>						39	71	51	39
Total Nephrops & Metanephrops		9300	22200	35716	44557	57279	57881	59227	77095	73296
Caribbean spiny	<i>Panulirus argus</i>	2957	15342	25400	29165	35549	39639	37075	32272	34366
Australian spiny	<i>Panulirus cygnus</i>	6000	7700	6900	10738	11943	14605	12304	8668	8961
Tropical spiny s nei	<i>Panulirus spp</i>	523	2159	6200	9539	11535	13327	18505	13359	14841
Spiny s nei	Palinuridae			300	250	468	228	1	43	5
Natal spiny	<i>Palinurus delagoae</i>			100	156	24	8	4	2	3
Common spiny	<i>Palinurus elephas</i>	300	600	808	733	897	235	411	382	346
Southern spiny	<i>Palinurus gilchristi</i>				193	1042	305	843	734	425
Pink spiny	<i>Palinurus mauritanicus</i>				2	67	9	3	6	6
Palinurid spiny s nei	<i>Palinurus spp</i>	2000	4700	1780	1943	1314	434	353	521	557
Green spiny	<i>Panulirus gracilis</i>			200	280	208	687	307	100	153
Scalloped spiny	<i>Panulirus homarus</i>	300	300	600	764	692	168	238	112	98
Longlegged spiny	<i>Panulirus longipes</i>	1000	1300	1661	1147	1301	1716	2059	2041	1962
Red rock	<i>Jasus edwardsii</i>	2700	3800	6600	4575	3120	2789	2573	2451	2749
Juan Fernandez rock	<i>Jasus frontalis</i>		100	100	17	19	17	54	50	57
Cape rock	<i>Jasus lalandii</i>	19200	13100	11800	7992	4306	2058	3185	3059	2141
Southern rock	<i>Jasus novaehollandiae</i>		5000	4600	3580	3025	4756	4426	4302	4109
St.Paul rock	<i>Jasus paulensis</i>	200	500	600	543	298	192	183	392	390
Tristan da Cunha rock	<i>Jasus tristani</i>	400	500	600	433	451	316	373	351	406
Green rock	<i>Jasus verreauxi</i>			100	148	89	152	118	139	154
Total, spiny & rock		35580	55101	68349	72198	76348	81641	83015	68984	71729
Slipper s nei	Scyllaridae			300	423	612	137	294	180	264
Mediterranean slipper	<i>Scyllarides latus</i>						2	1	1	1
Flathead	<i>Thenus orientalis</i>			1500	973	1411	2327	2429	1922	2296
Southern lobsterette	<i>Thymops birsteini</i>								11	
Total, slipper & flathead				1800	1396	2023	2466	2724	2114	2561
Arabian whip	<i>Puerulus sewelli</i>					114				
Japanese fan	<i>Ibacus ciliatus</i>					310	1600	1553	1513	1467
Lobsters nei	Reptantia			1	1	1	678	1898	1983	1849
Total, other				1	1	425	2278	3451	3496	3316

Source: FAO, Fishstat Plus, landings for 1950-2008, 12Jul10.

Table 10. Estimated U.S. exports of spiny lobster, thousand pounds, product wt (assumed to approximate whole wt in this report).

Year	Domestic (U.S.) fishery products			Foreign fishery products			Total		
	Frozen	Not frozen	Total	Frozen	Not frozen	Total	Frozen	Not frozen	Total
1985	574		574	223		223	797		797
1986	1,164		1,164	80		80	1,244		1,244
1987	1,840		1,840	253		253	2,093		2,093
1988	2,367		2,367	321		321	2,689		2,689
1989	1,335	235	1,569	123	5	128	1,457	240	1,697
1990	2,256	346	2,601	1,258	16	1,274	3,514	361	3,875
1991	1,635	369	2,004	1,370	7	1,377	3,005	376	3,381
1992	925	452	1,377	310		310	1,235	452	1,687
1993	683	195	878	335		335	1,018	195	1,213
1994	669	247	915	267	1	268	936	248	1,184
1995	1,067	273	1,340	392	16	407	1,459	289	1,748
1996	1,912	523	2,435	435	163	597	2,346	686	3,032
1997	931	448	1,379	263	644	908	1,194	1,092	2,286
1998	710	506	1,217	124	171	295	834	678	1,512
1999	587	385	972	390	74	465	977	459	1,436
2000	249	180	428	434	16	450	683	196	879
2001	254	79	333	311	31	342	564	110	675
2002	257	95	352	437	22	458	694	117	810
2003	445	197	642	520	30	550	965	227	1,192
2004	576	56	632	261	84	345	837	140	977
2005	654	14	668	232	55	287	886	69	955
2006	1,190	53	1,242	443		443	1,633	53	1,685
2007	1,809	18	1,827	511	3	514	2,320	22	2,341
2008	1,467	125	1,592	335	1	336	1,802	126	1,928
2009	656	339	995	325	0	325	981	340	1,320

Source: NMFS, Fishery Statistics Div, foreign trade data base.

Table 11. Estimated U.S. exports of spiny lobster, domestic and foreign fishery products, by country of destination, thousand pounds, product wt. (assumed to approximate whole wt in this report).

Country	1985-1989	1990-1999	2000-2004	2005-2008	2009
Canada	302	638	308	293	301
Mexico	40	30	51	73	4
Honduras	2	13	.	6	59
Bermuda	30	5	2	1	0
Dominican Republic	11	42	.	0	.
Netherlands Antilles	6	21	22	43	24
Aruba	.	15	2	8	8
Guadeloupe	.	8	.	28	14
Chile	2	2	27	41	2
Brazil	.	40	16	40	7
Norway	52	32	.	1	.
Denmark	28	61	1	4	.
United Kingdom	29	42	4	3	0
Netherlands	19	79	6	26	45
Belgium	25	66	2	157	8
France	154	264	144	361	103
Germany	80	32	1	2	.
Spain	31	87	16	217	4
Portugal	.	12	26	0	36
Italy	14	13	45	39	4
Greece	5	6	11	44	9
Kuwait	.	2	46	.	.
United Arab Emirates	.	27	4	59	68
India	.	.	82	11	.
Thailand	1	27	6	10	.
Singapore	9	96	5	58	8
China	.	104	115	97	71
South Korea	14	33	34	47	35
China - Hong Kong	51	59	18	50	284
China - Taipei	559	181	24	32	4
Japan	434	398	126	147	34
Australia	3	54	36	40	130
New Zealand	3	31	.	3	2
Other or combined	98	85	36	71	58
All countries	2003	2605	1221	2012	1320

Exports are identified by receiving country only if the 1985-2009 sum for all spiny lobster exports to the country is greater than \$750,000 (2008\$). Source: NMFS, Fishery Statistics Div, foreign trade data base.

Table 12. Lobster product imports, selected countries and years, metric tons, product wt.

Country	Product	1990	1995	2000	2003	2004	2005	2006	2007
China	Prep-prsrvd		6						165
China	Hom., frzn		3329	4414	225	51	125	633	1137
China	Hom., not frzn			3	18	28	16	40	45
China	Spiny, not frzn		143	343	1179	1633	1462	636	837
China, HK	Prep-prsrvd		51	160	106	115	52	202	46
China, HK	Hom., frzn		178	115	243	183	612	1076	1761
China, HK	Hom., not frzn	24	1256	3119	1674	2208	1905	2381	2476
China, HK	Spiny, not frzn	1129	6124	5768	6323	6258	5275	6037	5736
Japan	Prep-prsrvd	94	120	285	133	118	49	77	58
Japan	Hom., frzn	1331	1797	1446	861	1215	713	849	903
Japan	Hom., not frzn	1361	1872	1525	1446	1423	1336	1300	1086
Japan	Spiny, not frzn	2376	2903	2380	1901	1797	1518	1230	969
Korea, S.	Prep-prsrvd			25	8	6		3	3
Korea, S.	Hom., frzn	11	39	133	101	139	83	146	108
Korea, S.	Hom., not frzn	15	339	470	1540	1281	979	937	864
Korea, S.	Spiny, frzn	4	50	171	121	118	186	144	102
Korea, S.	Spiny, not frzn	3	23	6	11	7	5	4	5
China, Taiwan	Prep-prsrvd	1	4	25	38	27	15	12	46
China, Taiwan	Hom., frzn		127	38	140	138	230	64	40
China, Taiwan	Hom., not frzn	15	1		5	25	5		
China, Taiwan	Hom., frzn	2459	2042	3006	1079	677	492	461	762
China, Taiwan	Spiny, not frzn	480	3304	2944	2325	2104	2283	1711	1100
Total		9303	23708	26376	19477	19551	17341	17943	18249
Prepared-preserved		95	181	495	285	266	116	294	318
Homarus, frozen		3801	7512	9152	2649	2403	2255	3229	4711
Homarus, not frozen		1415	3468	5117	4683	4965	4241	4658	4471
Spiny, not frozen		3988	12497	11441	11739	11799	10543	9618	8647
Spiny, frozen		4	50	171	121	118	186	144	102

Source: FAO, Fishstat Plus, trade data for 1976-2007, 12Jul10.

Selected Reference

- CFMC, SAFMC and GMFMC. 2008. Final amendment 4 to the fishery management plan for the spiny lobster fishery of Puerto Rico and the U.S. Virgin Islands and amendment 8 to the joint spiny lobster fishery management plan of the Gulf of Mexico and South Atlantic (including the final environmental impact statement, regulatory impact review, and initial regulatory flexibility analysis), October 8, 2008.
- Dore, Ian. 1989. The new frozen seafood handbook (a complete reference for the seafood business), Osprey Books, 6 West 18th St, Huntington Station, NY 11746, 360 p.
- Holmyard, Nicki and Nicole Franz. 2006. Lobster markets (FAO Globefish Research Program, volume 47). Food and Agriculture Organization of the United Nations, Globefish, Fishery Industries Division, Viale delle Terme di Caracalla, 00153 Rome, Italy, 92 p.
- Labisky, Ronald F., Douglas R. Gregory and Joseph A. Conti. 1980. Florida's spiny lobster fishery: an historical perspective. In Gary E. Davis, organizer and coordinator, Spiny lobster series, Fisheries 5(4):28-37. American Fisheries Society, 5410 Grosvenor Lane, Bethesda, MD 20014.
- Lobster Market Report, February 2008. Food and Agriculture Organization of the United Nations, Globefish, Fishery Industries Division, Viale delle Terme di Caracalla, 00153 Rome, Italy, 4 p.
- Munoz-Nunez, Daylin. 2009. The Caribbean spiny lobster fishery in Cuba: An approach to sustainable fishery management. Masters project submitted in partial fulfillment of the requirements for the Master of Environmental Management degree in the Nicholas School of the Environment of Duke University [Dr. Larry Crowder, Advisor, with the author 's thank you for help also going to Dr. Mike Orback], May, 2009, 94 p.
- Prochaska, Fred J. and Joel S. Williams. 1976. Economic analysis of cost and returns in the spiny lobster fishery by boat and vessel size. Florida Cooperative Extension Service Marine Advisory Bulletin, SUSF-SG-76-004. University of Florida, Gainesville, FL 32611, 18 p.
- Sabatini, Paola and Greg Hart. 2008. Lobster: commodity update. Food and Agriculture Organization of the United Nations, Globefish, Fishery Industries Division, Viale delle Terme di Caracalla, 00153 Rome, Italy, 38 p.
- Smith, Gary G. 1995. The world market for lobster (FAO Globefish Research Program, volume 36). Food and Agriculture Organization of the United Nations, Globefish, Fishery Industries Division, Viale delle Terme di Caracalla, 00153 Rome, Italy, 91 p.
- Williams, Austin. 1986. Lobsters--identification, world distribution, and U.S. trade. Marine Fisheries Review 48(2):1-36.
- Williams, Austin B (additional materials by Ian Dore). 1988. Lobsters of the world—an illustrated guide (lobsters of the world in U.S. trade), Osprey Books, PO Box 965, Huntington, NY 11743, 186 p.

Appendix A: Lobster Import Categories, 1950-1988, and Conversion Factors

Lobster imports, 1950-1959.

For 1950-59, lobster imports were divided into “canned” and “not canned,” as shown in NMFS (BCF), Fisheries Statistics of United States, 1965, appendix table on imports of lobster by country for 1947-1965.

Lobster imports, 1960 through August 1963.

USITC Schedule A categories were used:

0083200 = lobster live.

0083250 = rock lobster tails

0032290 = other fresh or frozen lobster

0084000 = canned lobster.

Lobster imports, September 1963-1988:

Subpart E. - Shellfish: "Shellfish, fresh, chilled, frozen, prepared or preserved" (including pastes and sauces, USITC, TSUSA, 1981):

0001144515 = Lobsters, in atc. In “air tight containers” replaced “canned” in September 1963.

0001144520 = Lobsters, live.

0001144525 = Rock lobster tails, not in atc.

0001144530 = Lobsters, other, not in atc.

0001142110 = Lobster exports, fresh.

0001143550 = Lobster exports, frozen.

Conversion factors.

(Source: NMFS, Fisheries of the United States, 2008, p. 69).

Imports are converted to round (live) weight by using the following conversion factors: 1.00, whole; 3.00, tails; 4.35, other; and 4.50, canned.

Domestic exports are converted to round (live) weight by using: 1.00, whole; 3.00, tails; 4.00, other; and 4.50, canned.

Foreign exports are converted to round (live) using the import factors.

Appendix B: Lobster Import and Export Product Categories, 1989 to date

Heading 306, 1989 onward, frozen lobster.

Heading 306 (USITC, HTUSUA, 2007): "Crustaceans, whether in shell or not, live, fresh, chilled, frozen, dried, salted or in brine. Crustaceans, in shell, cooked by steaming or by boiling in water, whether or not chilled, frozen, dried, salted or in brine. Flours, meals and pellets of crustaceans, fit for human consumption. Spiny lobster: ... rock lobster and other sea crawfish (*Palinurus* species, *Panulirus* species and *Jasus* species):"

0306110000 = Spiny lobster, frozen.

0306110010 = Caribbean spiny lobster (*P. argus*) frozen. USITC added in 2009.

0306110020 = Spiny lobster, except Caribbean, frozen. USITC added in 2009.

0306120000 = Homarus, frozen.

0306120010 = Homarus, frozen in atc, in brine.

0306120020 = Homarus, frozen in atc.

0306120030 = Homarus frozen in atc, not in brine.

0306120075 = Lobster, frozen, in atc. Author added in SAS program

0306120040 = Homarus, frozen.

0306120050 = Homarus, frozen in brine, not in atc.

0306120070 = Homarus, frozen, not in brine or atc.

0306120025 = Lobster, frozen, not in atc. Author added in SAS program

Not frozen lobster, 1989 onward (see heading 306, above).

0306210000 = Spiny lobster, live, or fresh, chilled.

0306220000 = Homarus, fresh.

0306220005 = Lobster, other, not frozen. Author added in SAS program.

0306220010 = Homarus, live.

0306220090 = Homarus, fresh.

Prepared and preserved products, 1989 onward, heading 1605.

"Crustaceans, molluscs and other aquatic invertebrates, prepared or preserved, containing at least 20% by weight of lobster" (heading 1605, USITC, HTSUSA, 2007).

1605300500 = Meals, w/lobster & fish, in atc.

1605300510 = Meals, w/lobster & fish, in atc.

1605300520 = Meals, w/lobster & fish, not in atc.

1605300590 = Meals, w/lobster & fish, not in atc.

1605301000 = Lobster meat, prepared (1605). Author added in SAS program

1605301010 = Lobster meat, cooked, frozen.

1605301030 = Lobster meat, cooked, chilled.

1605301050 = Lobster, prepared, in atc.

1605301090 = Lobster, prepared, not in atc.

1605301020 = Lobster, meat, cooked, in atc.

1605301040 = Lobster, other, prepared (1605). Author added in SAS program