

**AMERICAN SAMOA 2010 FISHERIES STATISTICS**

Compiled by

American Samoa

Department of Marine and Wildlife Resources

and the

Western Pacific Fisheries Information Network

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# AMERICAN SAMOA 2010 FISHERIES STATISTICS

## INTRODUCTION

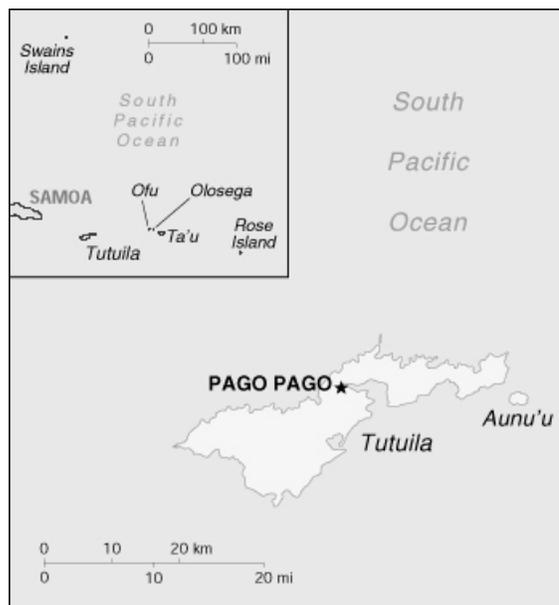
*Location:* 14°S latitude, 170°W longitude

*Islands:* Tutuila, Aunu'u, the Manu'a Islands (Ofu, Olosega, Ta'u), Rose Atoll (uninhabited), and Swains Island (sparsely populated)

*Population:* about 68,061 (the majority of the population lives on Tutuila); (*The World Factbook*, July 2012 est.)

*Economy:* tuna fishing and tuna processing plants, with canned tuna the primary export

The American Samoa Department of Marine and Wildlife Resources (DMWR; formerly the Office of Marine Resources) is located near Pago Pago on Tutuila and has been collecting commercial fisheries data from the Tutuila fleet since the early 1970s. In 1983 it extended its coverage to the Manu'a Islands, and in 1985 DMWR modified its data collection programs to include recreational and subsistence fisheries data.



American Samoa  
Source: <http://www.cia.gov/cia/publications/factbook/aq.html>;  
*The World Factbook*

American Samoa's domestic fisheries have typically been small-boat, 1-day fisheries using primarily 28 to 32-foot long, outboard-engine-powered catamarans called *alias* (pronounced *ah-lee-ahs*). Traditionally, trolling and bottomfishing were the major methods of fishing, and a little spearfishing, netting, and vertical longlining were done occasionally. Beginning in about mid-1995 some of the traditional *alias* began converting to horizontal longlining. During 1996 horizontal longlining became the largest fishery in American Samoa based on total landed weight of the catch, even though only about one-third of the fleet had converted to this method. Over the next few years the fleet grew rapidly with the addition of new *alias* up to about 38 feet in length and, more significantly, with the addition of other larger monohull vessels that fished much longer trips. The primary target species is albacore tuna, but the fishery has also resulted in significant increases in landings of yellowfin tuna, wahoo, blue marlin, mahimahi and some other incidentally caught species.

During 2010 the various fisheries monitoring programs in American Samoa identified 49 active vessels - 46 homeported on Tutuila and 3 in the Manu'a Islands. Many of these vessels participated in more than one fishery, and 27 of the Tutuila boats (including 25 vessels which were over 50 feet in length) did at least some longlining. Of the 49 total boats, 22 participated in the troll and bottomfish fisheries and 6 were used in other forms of fishing activities. On average, the *alia* fleet on Tutuila consisted of 5-man crews, fished 10 hours, and caught about

211 pounds of fish; the Manu`a-based fleet typically had 3-man crews, fished about 6 hours and landed 46 pounds of fish. Essentially all of the longlining was based out of Tutuila, where the majority of the catch was offloaded to the canneries.

### **SEPTEMBER 2009 TSUNAMI**

On September 29, 2009 American Samoa experienced a severe tsunami that damaged Leone village, Pago Pago harbor and the boat docks along the Pago Pago harbor. According to American Samoa, Department of Marine and Wildlife Resources (DMWR) staff, the tsunami took a huge toll on the boat-based fishery—of 17 local alia boats that were actively fishing, only 3 survived the tsunami. The rest sustained damage either to the boats, outboard engines and/or lost fishing gear. By the fourth quarter of 2010, only 5 - 6 alia boats had resumed fishing and a few were making short trips to test their boat performance. One alia continues longlining, and the rest are either trolling, bottomfishing, and/or spearfishing.

Most DMWR vehicles were severely damaged by the tsunami. The surveys for the boat-based program were reduced to 2 or 3 days per week and only collected data during the day time. Because of coastal damage, debris, and pollution, little or no shore-based fishing occurred prior to the second quarter of 2010. The shore-based survey program likewise did not resume until the second quarter of 2010 as a result of reduced fishing activity and lack of vehicles to conduct the surveys. One cannery also closed after the tsunami because of damage to its facility and equipment.

The tsunami did not greatly impact fishing activity of the large longline fleet; however, several of the large longline vessels that were in port but had not been fishing for in a while were destroyed. According to longline logbook data, compared to the fourth quarter of 2009, reported longline activity showed an increase in both catch and effort—the number of vessels turning in logs increased nearly 14%, the overall catch per unit of effort (catch per 1000 hooks) increased by nearly 15% and the estimated commercial catch increased 22% in the fourth quarter of 2010.

### **DATA REVISIONS**

Significant changes in the fisheries occurred in the mid-1990s with the development of the longline fishery and a nighttime, boat-based scuba spearfishing fishery. Because of the nature of these fisheries, biases began creeping into the effort-counting and interviewing processes of the DMWR surveys. By 1997 WPacFIN staff discovered the problems, and modifications to survey techniques were implemented by DMWR staff. It became clear by early 1998 that the algorithms used to expand the survey data and estimate for the total fishery also needed to be changed. The new data processing programs that better handle the more complex nature of today's fisheries in American Samoa have been completed and were used to reprocess the historical time series. This volume includes the results of this new improved algorithm, but additional data quality control procedures and algorithm enhancements are still being made that may cause small changes in subsequent reports.

## DATA COLLECTING

The data collecting programs used by DMWR to monitor the changing fisheries of American Samoa have evolved considerably over the past 20 years. One common factor of all the programs has been that they relied heavily on personal contacts with fishers and on a significant amount of dockside monitoring and interviewing. From 1982 to 1985, DMWR obtained catch statistics by interviewing commercial fishermen at the end of their trips and kept records of as much commercial fishing activity as possible; this was referred to as the “Commercial Catch Monitoring System”. This data collection method was accurate for trips where interviews were conducted. However, it was very labor intensive, did not cover all trips, and did not include the small but growing recreational and subsistence fisheries.

There are several major programs in place today. Data from these programs are used to develop the best available data for the complex, rapidly changing fisheries of American Samoa. These are

1. Vessel Classification Program – a vessel history and tracking system for all American Samoa vessels.
2. Boat-based Creel Survey Program (formerly the Offshore Creel Survey System) – access-point creel surveys on Tutuila and the Manu`a Islands, which are the mainstay of the monitoring program.
3. Commercial Purchase Program – a mandatory purchase receipt trip ticket system for fish businesses on Tutuila.
4. Federal Longline Logbook Program and Daily Effort Census Program for detailed tracking of the longline fishery.
5. Cannery Landings Program to document all landings at the two canneries made by domestic and foreign vessels.
6. Size frequency sampling program at the canneries.

**Vessel Classification Program** – Beginning in the early 1980s, this program was established to collect information on all vessels participating in any domestic fisheries. It provides the following information on American Samoa vessels:

- |                       |                      |
|-----------------------|----------------------|
| • Boat Name           | • Depth              |
| • Registration Number | • Engine Type        |
| • Propulsion          | • Fuel Type          |
| • Length              | • Material           |
| • Beam                | • Horsepower         |
| • Number of Engines   | • Port               |
| • Type of Use         | • Methods of Fishing |
| • Trailered           | • Federal Permit     |
| • Number of Crew      |                      |

**Boat-based Creel Survey Program** – In October 1985, a new creel survey sampling program was implemented on Tutuila to provide better coverage and statistics on all boat-based fisheries, including noncommercial information. Soon afterwards, similar monitoring programs were established in the Manu`a Islands, where the fishing fleets are centrally located and small enough for statistics to be collected for nearly every trip. The surveyors in the Manu`a Islands send their monitoring forms to DMWR in Tutuila for processing.

The details of the Tutuila boat-based fishery sampling program have changed over the years to accommodate changes in the fisheries; but it is still a systematic, random sampling program that stratifies sampling by type of day (either weekday or weekend/holiday) and by fishing method. For logistical and cultural reasons, Sundays are no longer sampled as effort is extremely low and not similar to other weekend/holiday-type days.

DMWR staff normally sample 2 weekdays and 1 weekend/holiday per week. During survey days, counts of total participation are collected, and as many returning vessels as possible are interviewed for catch, effort, and biological samples. Tutuila is divided into six sample areas, five of which are sampled. It is assumed that the nonsampled area is similar to the sampled areas in fishing activity and success rate. Furthermore, it is assumed that the fishers interviewed are representative of the entire fishing population and that they give accurate information.

Unless contrary information is available from dockside questioning of knowledgeable persons, a boat is assumed to be “out fishing” if its trailer is at a boat ramp or the boat is missing from its normal berthing area during the 18-hour survey day. The following participation information is recorded for all boats determined to be “out fishing.”

It is expanded to estimate the total number of fishing trips in Tutuila:

- Sample Date
- Boat Name
- 3 Observation Times
- Type of Day
- Fishing Method
- Sample Area

The remaining data items listed below are collected on each boat for which an interview is successfully completed:

- Interview Time \*
- Area Fished
- Home Island
- Total Hours Fished (trip length) \*
- Number of Fishermen
- Number of Gear Used
- Total Trip Weight in Pounds \*
- Species Caught \*
- Number of Pieces for Each Species
- Disposition of Species \*
- Weight in Pounds for Each Species \*
- Condition of Species if Not Whole
- Length of Fish (converted to weight)
- Price per Pound for Each Species

It is not always possible to obtain information on all the items listed. However, the ones marked with an asterisk ( \* ) are considered essential for data expansion purposes. Also, identification and weight of each species are often not obtainable; in this case a code for species groupings (e.g., miscellaneous bottomfish) is used. The interview data is later expanded to estimate the total catch per fishing trips and other catch-per-unit-of-effort (CPUE) measures in Tutuila. The catch-per-trip estimate is multiplied by the number of trips estimated for each stratum to obtain an estimate of the total catch for Tutuila. The Manus statistics are added to the expanded estimated data for Tutuila to arrive at a total estimate for American Samoa.

**Commercial Purchase Program** – For several decades the two canneries provided monthly summary statistics about their purchases of fish from all vessels, foreign and domestic. Then in September 1990, a Commercial Purchase Program was instituted in which all other businesses in Samoa that buy fish directly from fishermen were required by local law to submit a copy of their purchase receipts to DMWR. Receipt books are issued by DMWR to all fish markets, stores, hotels, and restaurants that resell fish, either whole or prepared. The following information is collected via these receipts:

- Invoice Date
- Invoice Number
- Buyer's Name
- Boat Name, Owner
- Area Fished
- Fishing Method
- Species Bought
- Number of Pieces for Each Species
- Weight in Pounds for Each Species \*
- Price per Pound for Each Species

**Federal Longline Logbook System and Daily Effort Census** – In January 1996, in response to the developing longline fishery, a mandatory federal longline logbook system was implemented by NMFS. All longline fishermen are required to obtain a federal permit and to submit logs containing detailed data on each of their sets and the resulting catch. From 1996 to 1999, the logbooks submitted by the local longliners were edited by the NMFS fisheries monitoring agent in Samoa for any missing data and were then sent to PIFSC (formerly the Honolulu Laboratory) for further editing and data processing.

In July 1999, to improve monitoring of the fast-growing longline fishery, DMWR implemented a Daily Effort Census (DEC) for all federally permitted longline vessels. Six days a week, DMWR staffs make two visits a day to ports where longline vessels move. The staff document whether each vessel on the list is “in port” or “out fishing.” The DEC data are used to track the activity of each vessel and to help ensure all fishing log sheets are submitted by fishers.

To further improve the quality and timeliness of the data, beginning in January 2000, logbook data collecting, editing, and processing have been conducted by DMWR in Samoa and downloaded to NMFS periodically. The following information is recorded for each “set” these longline fishermen make:

## A.6

- Set Date
- Vessel
- Date of Departure
- Port of Departure
- Date of Arrival
- Port of Arrival
- Observer on Board
- Target Species
- Bait Used
- Mainline Length
- No. of Hooks
- No. of Hooks/Float
- No. of Lightsticks Used
- Bird Catch Mitigation Measures
- Wind Detection
- Wave Height
- Sea Surface Temperature
- Wind Speed
- Begin Set Time
- Begin Set Latitude and Longitude
- End Set Time
- End Set Latitude and Longitude
- Haul Date
- Begin Haul Date
- Begin Haul Latitude and Longitude
- End Haul Time
- End Haul Latitude and Longitude
- No. of Pelagic Species Kept
- No. of Pelagic Species Released
- No. of Sharks Finned
- No. of Sharks Kept
- No. of Sharks Released
- No. of Protected Species Released Alive
- No. of Protected Species Released Injured
- No. of Protected Species Released Dead

In addition, on a monthly basis, logbook data are compared with cannery unloading data for Samoa-based boats, to identify boats that unloaded at the canneries but did not turn in any or just a part of the required longline logs.

The longline logbooks do not provide information about the number of pounds caught or the disposition of fish caught by longline vessels, neither of which is covered by the boat-based creel survey either. Beginning in April 2001, to provide better estimates of the pounds per fish caught by the longline vessels, length data from South Pacific Regional Longline Port Sampling Forms were collected for Samoa-based longliners and converted to pounds. Disposition data were also entered in the comments section of these forms to provide sampled disposition data on the fish caught.

## **DATA PROCESSING**

As the data collecting programs used by DMWR to monitor the fisheries in American Samoa have changed over the years, so have the data processing systems. Numerous versions of database and utility software and microcomputer systems have been used over the years to meet the growing demand for processing the collected data. Generally speaking, these changes, with significant emphasis on improving data quality and cross validation among systems, have made the data processing systems more robust, complex, and complete.

The following important principles have remained constant over time:

1. Keep data processing close to the source of data collecting.
2. Provide all of the needed software tools to ensure the quality of data.
3. Make systems user-friendly and functional for the local staff.
4. Maintain as many standards as possible throughout the time series of data collected.

Typically, when upgrades (such as changes in expansion and reporting algorithms for the creel survey data and commercial landings data) have been made to data processing systems, the entire time series of data would be reprocessed using the same algorithms so that trends in the fisheries would remain as intact as possible. To help the reader understand the origin of the data included in this report, a general description of these processes follows. Please note that it does not include the details on many minor changes that have occurred throughout the evolutionary history of these systems.

The data from 1982 to 1985 have been imported directly from the original Commercial Catch Monitoring System used prior to the implementation of the boat-based creel survey. Since 1986, the boat-based creel survey data expansion system has been the central system for estimating total commercial landings in American Samoa. In short, the survey data expansion process involves multiplying the average daily participation by the average catch per trip for each stratum. For the years 1986 to 1990, commercial sales portions of the expanded creel survey data from Tutuila and the Manu`a Islands were combined to produce estimated total commercial landings. Since 1990, with the implementation of the mandatory fish dealer receipt book system on Tutuila (Commercial Purchase Program), further adjustments have been made to these combined creel data by using receipt book data. These adjustments made significant improvements in overall totals as they helped adjust for sales not monitored through the boat-based survey (e.g., inshore and strictly nighttime commercial fishing). Species totals modified with these types of adjustments are flagged in reports with an asterisk. Finally, in the late 1990s when larger longline vessels began landing their catches directly at the canneries and thus out of the monitoring capabilities of the standard creel surveys, the longline logbook system and cannery size frequency sampling data entered the algorithm to fill the gap for this portion of the fishery. This data added the landings of these vessels to create a more complete picture of the estimated total commercial landings for the Territory.

One of the most significant recent improvements made in the data processing systems for DMWR has been in the area of cross-system data validation and quality control. By collecting similar data from several sources using different monitoring and reporting tools, the quality of reported data can be cross-referenced between systems to provide insight into the validity and completeness of each data set.

The charts that make up the rest of the report are for groups of species as well as for some of the dominant individual species. To access the most up-to-date data and charts, please visit the WPacFIN website, <http://www.pifsc.noaa.gov/wpacfin>. The top 10 commercial species for the year are emphasized, and they can change from year to year.

## DATA REPORTING

After all editing, quality control, and data interpretation activities are completed, monthly and annual commercial landings data tables by species are generated. Each of the commercial landings data tables contain the common name, weight in pounds, value in dollars, the average price per pound of each species or species group, and whether the data was modified by Commercial Purchase System data (denoted by asterisks). The monthly data tables are based on monthly expansions of the Tutuila boat-based creel survey data with enhancements by monthly Longline Logbook, Commercial Purchase System, and Manu`a data as explained previously. Annual data tables are based on combined annual expansions of the creel data for the entire calendar year with similar annual enhancements from Longline Logbook, Commercial Purchase System, and Manu`a data. Since the monthly and annual data tables are based on separate monthly and annual expansion of the creel data, the annual data tables are not the exact sum of the 12 monthly data tables, but they fall within the standard error (Tables A-1 to A-13).

## SPECIES CATEGORIES

The species and species groups that are used in the tables and graphs of American Samoa's data are defined in this section. Many of the species included in this report have been recategorized over the years. For example, the Magnuson Fishery Conservation and Management Act of 1976 was amended in 1992 to include tunas in the Pelagic Management Unit Species (PMUS) category. However, this report maintains the original species categorizations from previous FSWP reports for comparative purposes. As such, tunas are kept in a separate category.

### I. Pelagic Management Unit Species (PMUS)

Sharks (misc)	Spearfish
Mahimahi	Swordfish
Blue marlin	Wahoo
Black marlin	Pomfret
Striped marlin	Moonfish
Sailfish	

### II. Bottomfish Management Unit Species (BMUS)

Black jack	Silverjaw jobfish (lehi)
Blue-lined snapper	Longtail snapper (onaga)
Gray jobfish	Ruby snapper (ehu)
Pink snapper (opakapaka)	Ambon emperor
Flower snapper (gindai)	Redgill emperor
Goldflag jobfish	

## III. Billfishes

Swordfish	Striped marlin
Blue marlin	Sailfish
Black marlin	Spearfish

## IV. Tunas

Skipjack tuna	Yellowfin tuna
Dogtooth tuna	Bigeye tuna
Albacore tuna	Kawakawa

## V. Other Tunas

Dogtooth tuna	Kawakawa
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## VI. Fisheries Categories

A. *Pelagic Fishes*

Albacore tuna	Pomfret
Barracudas (misc)	Rainbow runner
Bigeye tuna	Sailfish
Black marlin	Sharks (misc)
Blue marlin	Skipjack tuna
Dogtooth tuna	Spearfish
Kawakawa	Striped marlin
Mackerel	Swordfish
Mahimahi	Wahoo
Moonfish	Yellowfin tuna

B. *Bottomfishes*

Ambon emperor	Jacks
Bigeye bream	Longnose emperor
Bigeye trevally	Longspine grouper
Black jack	Longtail snapper (onaga)
Black snapper	Onespot snapper
Blue-lined snapper	Peacock grouper
Bluefin trevally	Pink snapper (opakapaka)
Brown jobfish	Redgill emperor
Emperors	Ruby snapper (ehu)
Flower snapper (gindai)	Silverjaw jobfish (lehi)
Goldflag jobfish	Stone's snapper
Gray jobfish	Trevallys
Greater amberjack	Twinspot/red snapper
Groupers	White-edged lyretail
Humpback snapper	

C. *Reef Fishes*

Flagtails	Soldierfish (misc)
Goatfishes	Squirrelfishes
Inshore groupers	Surgeonfishes/tangs
Paeony bulleye	Terapon perch
Parrotfishes	Triggerfishes
Rabbitfishes	Unicornfishes
Rudderfishes	Wrasses (misc)

D. *Other Fishes*

Crabs	Octopus
Eels	Spiny lobster
Filefishes	Spiny pufferfish

## **INTERPRETATION OF STATISTICS**

When interpreting the data in the tables and graphs, keep in mind the caveats described earlier in this section. Remember also that the commercial landings summaries are not based on a census of all fishing activities, but on samples of those activities and on integration of data from several different data programs. One of the major factors in expanding the creel survey data into monthly and annual estimates is the use of proportionality constants to adjust for percent coverage of the surveys. The flexibility of the survey design allows for refinement of these constants as additional information is gained on fishing activities. If the constants are improved, the basic survey data can be expanded again to create better overall estimates. However, the variability and species composition would not be expected to change because these statistics are based on the actual survey information collected from fishers. The estimates of total landings are considered to be conservative because the catch from subsistence inshore fisheries are currently not included in this document.

**Table A-1**  
**American Samoa Annual 2010 Estimated Commercial Landings**

<b>Species</b>	<b>Pounds</b>	<b>Value (\$)</b>	<b>Price/Lb (\$)</b>
Greater amberjack	337	861	2.55
Barracudas	425	1,122	2.64
Bigeye bream	261	576	2.21
Paeony bulleye	20	49	2.49
Crabs	23	59	2.60
Eels	192	577	3.00
Ambon emperor	360	947	2.63
Longnose emperor	806	2,066	2.56
Redgill emperor	1,599	4,157	2.60
Emperors	836	2,178	2.61
Filefishes	139	367	2.63
Flagtails	32	97	2.99
Goatfishes	12	31	2.57
Longspine grouper	105	289	2.75
Peacock grouper	224	590	2.63
Groupers	631	1,735	2.75
Inshore groupers	485	1,312	2.71
Black jack	728	1,837	2.52
Jacks	15	38	2.50
Brown jobfish	21	56	2.70
Goldflag jobfish	235	620	2.64
Gray jobfish	1,123	2,909	2.59
Silverjaw jobfish (lehi)	1,088	2,992	2.75
Spiny lobster	3,905	15,149	3.88
White-edged lyretail	302	795	2.63
Mackerel	10	25	2.51
Mahimahi	13,580	33,949	2.50
Black marlin	40	100	2.50
Blue marlin	75,550	132,211	1.75
Striped marlin	3,038	3,314	1.09
Octopus	158	404	2.56
Moonfish	194	484	2.50
Parrotfishes	9,243	26,605	2.88
Terapon perch	69	181	2.62
Pomfret	467	1,052	2.25
Spiny pufferfish	64	96	1.50
Rabbitfishes	12	30	2.57
Rainbow runner	172	474	2.75

**Table A-1 (continued)**  
**American Samoa Annual 2010 Estimated Commercial Landings**

<b>Species</b>	<b>Pounds</b>	<b>Value (\$)</b>	<b>Price/Lb (\$)</b>
Humpback snapper	2,570	7,068	2.75
Longtail snapper (onaga)	846	2,348	2.78
Onespot snapper	82	216	2.64
Ruby snapper (ehu)	520	1,660	3.19
Stone's snapper	12	32	2.74
Twinspot/red snapper	101	252	2.50
Pink snapper (opakapaka)	343	890	2.60
Soldierfishes	75	195	2.60
Spearfish	2,244	2,581	1.15
Squirrelfishes	1,616	4,234	2.62
Surgeonfishes/tangs	8,666	23,063	2.66
Swordfish	17,564	30,887	1.76
Bigeye trevally	50	137	2.75
Bluefin trevally	30	105	3.50
Trevallys	56	150	2.70
Triggerfishes	11	28	2.50
Albacore tuna	8,653,117	8,653,117	1.00
Bigeye tuna	378,595	416,894	1.10
Dogtooth tuna	177	443	2.50
Kawakawa	323	485	1.50
Skipjack tuna	248,621	153,508	0.62
Yellowfin tuna	971,667	882,488	0.91
Unicornfishes	5,816	15,887	2.73
Wahoo	281,139	171,494	0.61
Wrasses	152	356	2.35
<b>TOTAL</b>	<b>10,698,381</b>	<b>10,624,857</b>	<b>0.99</b>

\* Data replaced or modified by Actual Commercial Landings Data

**Table A-2**  
**American Samoa January 2010 Estimated Commercial Landings**

<b>Species</b>	<b>Pounds</b>	<b>Value (\$)</b>	<b>Price/Lb (\$)</b>	
Barracudas	14	37	2.70	
Longnose emperor	58	156	2.68	
Redgill emperor	121	319	2.64	
Emperors	119	326	2.74	
Filefishes	23	60	2.65	
Longspine grouper	20	56	2.75	
Peacock grouper	32	84	2.66	
Inshore groupers	63	168	2.67	*
Gray jobfish	27	70	2.55	
Silverjaw jobfish (lehi)	39	107	2.78	
Spiny lobster	218	813	3.74	
Mahimahi	925	2,313	2.50	
Blue marlin	6,383	11,170	1.75	
Striped marlin	459	505	1.10	
Moonfish	18	45	2.50	
Parrotfishes	218	569	2.61	
Pomfret	29	64	2.25	
Sailfish	62	156	2.52	
Black snapper	21	57	2.68	
Blue-lined snapper	205	791	3.86	*
Humpback snapper	346	952	2.75	
Longtail snapper (onaga)	67	188	2.79	
Ruby snapper (ehu)	35	123	3.50	*
Spearfish	140	161	1.15	
Squirrelfishes	54	147	2.75	
Surgeonfishes/tangs	541	1,405	2.60	*
Swordfish	1,442	2,164	1.50	
Bigeye trevally	11	30	2.75	
Triggerfishes	11	28	2.50	
Albacore tuna	434,001	434,001	1.00	
Bigeye tuna	10,992	12,103	1.10	
Skipjack tuna	15,262	9,157	0.60	
Yellowfin tuna	31,910	28,719	0.90	
Unicornfishes	170	450	2.64	
Wahoo	34,398	21,301	0.62	
<b>TOTAL</b>	<b>538,432</b>	<b>528,794</b>	<b>0.98</b>	

\* Data replaced or modified by Actual Commercial Landings Data

**Table A-3**  
**American Samoa February 2010 Estimated Commercial Landings**

<b>Species</b>	<b>Pounds</b>	<b>Value (\$)</b>	<b>Price/Lb (\$)</b>
Greater amberjack	15	38	2.50
Barracudas	12	31	2.52
Bigeye bream	152	330	2.17
Eels	54	163	3.00
Longnose emperor	79	198	2.50
Redgill emperor	152	381	2.50
Emperors	109	272	2.50
Groupers	75	206	2.75
Black jack	12	29	2.50
Silverjaw jobfish (lehi)	23	58	2.50
Spiny lobster	77	286	3.73
Mahimahi	506	1,265	2.50
Blue marlin	9,104	15,931	1.75
Striped marlin	1,109	1,219	1.10
Moonfish	14	35	2.51
Parrotfishes	326	898	2.75
Pomfret	29	64	2.25
Sailfish	745	1,876	2.52
Blue-lined snapper	193	668	3.47
Flower snapper (gindai)	14	34	2.50
Humpback snapper	131	360	2.75
Twinspot/red snapper	39	98	2.50
Spearfish	393	452	1.15
Squirrelfishes	114	285	2.50
Surgeonfishes/tangs	487	1,196	2.46
Swordfish	1,018	1,527	1.50
Albacore tuna	228,553	228,553	1.00
Bigeye tuna	5,888	6,484	1.10
Dogtooth tuna	20	50	2.50
Kawakawa	16	23	1.50
Skipjack tuna	10,520	6,546	0.62
Yellowfin tuna	28,340	25,810	0.91
Unicornfishes	345	926	2.69
Wahoo	17,717	10,708	0.60
<b>TOTAL</b>	<b>306,379</b>	<b>307,000</b>	<b>1.00</b>

\* Data replaced or modified by Actual Commercial Landings Data

**Table A-4**  
**American Samoa March 2010 Estimated Commercial Landings**

<b>Species</b>	<b>Pounds</b>	<b>Value (\$)</b>	<b>Price/Lb (\$)</b>	
Bigeye bream	14	36	2.53	
Crabs	15	38	2.61	
Redgill emperor	122	322	2.65	
Emperors	49	130	2.65	
Filefishes	31	82	2.60	
Peacock grouper	37	96	2.60	
Inshore groupers	120	332	2.78	*
Gray jobfish	23	62	2.66	
Spiny lobster	953	3,561	3.74	
White-edged lyretail	61	161	2.65	
Mackerel	10	25	2.51	
Mahimahi	157	393	2.50	
Blue marlin	5,232	9,156	1.75	
Octopus	16	50	3.11	
Moonfish	2	5	2.45	
Parrotfishes	1,775	5,237	2.95	
Terapon perch	12	31	2.60	
Pomfret	16	36	2.25	
Rudderfishes	28	70	2.52	
Sailfish	900	810	0.90	*
Blue-lined snapper	56	212	3.77	
Flower snapper (gindai)	10	26	2.65	
Humpback snapper	130	357	2.75	
Longtail snapper (onaga)	10	28	2.65	
Onespot snapper	26	66	2.60	
Ruby snapper (ehu)	23	63	2.75	*
Twinspot/red snapper	13	33	2.51	
Spearfish	309	355	1.15	
Squirrelfishes	133	381	2.87	
Surgeonfishes/tangs	2,001	5,507	2.75	
Swordfish	1,188	1,782	1.50	
Albacore tuna	55,718	55,718	1.00	
Bigeye tuna	11,171	12,301	1.10	
Skipjack tuna	1,299	780	0.60	
Yellowfin tuna	14,836	13,353	0.90	
Unicornfishes	651	1,826	2.80	
Wahoo	7,088	4,318	0.61	
Wrasses	31	77	2.50	
<b>TOTAL</b>	<b>104,265</b>	<b>117,814</b>	<b>1.13</b>	

\* Data replaced or modified by Actual Commercial Landings Data

**Table A-5**  
**American Samoa April 2010 Estimated Commercial Landings**

Species	Pounds	Value (\$)	Price/Lb (\$)
Bigeye bream	17	38	2.21
Ambon emperor	18	46	2.63
Redgill emperor	46	120	2.63
Emperors	12	32	2.66
Filefishes	26	69	2.64
Flagtails	32	97	2.99
Longspine grouper	12	33	2.75
Peacock grouper	20	52	2.64
Inshore groupers	60	166	2.75
Black jack	34	85	2.52
Gray jobfish	14	25	1.75
Silverjaw jobfish (lehi)	40	111	2.76
Spiny lobster	307	1,145	3.74
White-edged lyretail	28	74	2.64
Mahimahi	192	480	2.50
Blue marlin	6,069	10,621	1.75
Striped marlin	286	286	1.00
Moonfish	4	10	2.48
Parrotfishes	898	2,626	2.92
Pomfret	22	50	2.26
Rudderfishes	20	50	2.57
Sailfish	186	469	2.52
Blue-lined snapper	88	221	2.52
Flower snapper (gindai)	38	67	1.75
Humpback snapper	103	283	2.75
Ruby snapper (ehu)	130	340	2.62
Pink snapper (opakapaka)	53	137	2.57
Spearfish	253	290	1.15
Squirrelfishes	69	178	2.59
Surgeonfishes/tangs	683	1,769	2.59
Swordfish	933	1,400	1.50
Albacore tuna	374,696	374,696	1.00
Bigeye tuna	44,271	48,750	1.10
Skipjack tuna	7,686	4,611	0.60
Yellowfin tuna	65,767	59,191	0.90
Unicornfishes	507	1,391	2.74
Wahoo	11,710	7,129	0.61
<b>TOTAL</b>	<b>515,329</b>	<b>517,138</b>	<b>1.00</b>

\* Data replaced or modified by Actual Commercial Landings Data

**Table A-6**  
**American Samoa May 2010 Estimated Commercial Landings**

<b>Species</b>	<b>Pounds</b>	<b>Value (\$)</b>	<b>Price/Lb (\$)</b>	
Barracudas	6	16	2.63	
Eels	97	292	3.00	
Ambon emperor	17	43	2.63	
Redgill emperor	9	24	2.62	
Emperors	20	52	2.60	
Filefishes	59	155	2.63	
Groupers	38	104	2.75	*
Gray jobfish	12	32	2.59	
Spiny lobster	444	2,220	5.00	*
White-edged lyretail	19	50	2.63	
Mahimahi	628	1,571	2.50	
Blue marlin	8,894	15,565	1.75	
Striped marlin	115	126	1.10	
Octopus	100	250	2.50	*
Moonfish	10	25	2.49	
Parrotfishes	1,259	3,611	2.87	
Terapon perch	26	69	2.63	
Pomfret	35	79	2.25	
Rudderfishes	40	101	2.56	
Sailfish	310	782	2.52	
Blue-lined snapper	10	38	3.75	
Humpback snapper	27	73	2.75	
Spearfish	281	323	1.15	
Squirrelfishes	112	289	2.58	
Surgeonfishes/tangs	787	2,045	2.60	
Swordfish	1,696	4,376	2.58	*
Albacore tuna	1,171,631	1,171,631	1.00	
Bigeye tuna	47,696	52,521	1.10	
Skipjack tuna	15,935	9,561	0.60	
Yellowfin tuna	112,526	102,266	0.91	
Unicornfishes	1,054	2,883	2.74	
Wahoo	15,522	9,450	0.61	
Wrasses	12	28	2.24	
<b>TOTAL</b>	<b>1,379,427</b>	<b>1,380,648</b>	<b>1.00</b>	

\* Data replaced or modified by Actual Commercial Landings Data

**Table A-7**  
**American Samoa June 2010 Estimated Commercial Landings**

Species	Pounds	Value (\$)	Price/Lb (\$)
Greater amberjack	31	80	2.56
Barracudas	160	430	2.69
Ambon emperor	178	468	2.63
Redgill emperor	73	189	2.60
Emperors	132	340	2.57
Longspine grouper	11	29	2.75
Peacock grouper	14	38	2.63
Groupers	18	48	2.75
Inshore groupers	10	28	2.74
Black jack	64	162	2.53
Gray jobfish	130	337	2.60
Silverjaw jobfish (lehi)	105	290	2.75
Spiny lobster	171	639	3.74
White-edged lyretail	54	142	2.62
Mahimahi	1,571	3,927	2.50
Blue marlin	5,127	8,973	1.75
Striped marlin	38	42	1.10
Octopus	17	41	2.49
Moonfish	18	45	2.50
Parrotfishes	646	1,851	2.87
Pomfret	67	150	2.25
Sailfish	860	774	0.90
Blue-lined snapper	104	392	3.77
Humpback snapper	177	488	2.75
Pink snapper (opakapaka)	65	170	2.60
Soldierfishes	9	24	2.59
Spearfish	56	65	1.15
Squirrelfishes	68	175	2.59
Surgeonfishes/tangs	569	1,471	2.58
Swordfish	848	1,273	1.50
Bigeye trevally	19	52	2.75
Bluefin trevally	19	67	3.51
Albacore tuna	1,005,369	1,005,369	1.00
Bigeye tuna	44,013	48,465	1.10
Dogtooth tuna	17	44	2.50
Skipjack tuna	12,523	7,596	0.61
Yellowfin tuna	112,411	102,712	0.91
Unicornfishes	397	1,083	2.73
Wahoo	21,645	13,178	0.61
Wrasses	28	70	2.50
<b>TOTAL</b>	<b>1,207,832</b>	<b>1,201,714</b>	<b>0.99</b>

\* Data replaced or modified by Actual Commercial Landings Data

**Table A-8**  
**American Samoa July 2010 Estimated Commercial Landings**

<b>Species</b>	<b>Pounds</b>	<b>Value (\$)</b>	<b>Price/Lb (\$)</b>
Greater amberjack	55	142	2.56
Barracudas	5	14	2.60
Ambon emperor	92	243	2.63
Redgill emperor	34	89	2.60
Emperors	64	167	2.60
Goatfishes	12	31	2.57
Peacock grouper	57	151	2.64
Inshore groupers	132	344	2.60
Black jack	21	54	2.53
Jacks	15	38	2.50
Gray jobfish	68	177	2.60
Silverjaw jobfish (lehi)	42	115	2.76
Spiny lobster	503	1,878	3.74
White-edged lyretail	23	60	2.63
Mahimahi	3,247	8,116	2.50
Blue marlin	3,244	5,677	1.75
Striped marlin	38	42	1.10
Moonfish	28	69	2.50
Parrotfishes	920	2,637	2.87
Terapon perch	31	81	2.63
Pomfret	35	79	2.25
Spiny pufferfish	29	44	1.50
Rabbitfishes	12	30	2.57
Rudderfishes	38	98	2.56
Sailfish	62	156	2.52
Blue-lined snapper	56	209	3.77
Humpback snapper	100	274	2.75
Ruby snapper (ehu)	24	96	4.00
Pink snapper (opakapaka)	11	27	2.61
Soldierfishes	66	171	2.60
Spearfish	84	97	1.15
Squirrelfishes	48	124	2.59
Surgeonfishes/tangs	910	2,359	2.59
Swordfish	1,697	2,545	1.50
Bluefin trevally	11	38	3.50
Albacore tuna	1,440,444	1,440,444	1.00
Bigeye tuna	41,741	45,964	1.10
Kawakawa	12	17	1.50
Skipjack tuna	52,418	31,624	0.60
Yellowfin tuna	136,253	123,932	0.91
Unicornfishes	895	2,431	2.72
Wahoo	20,401	12,420	0.61
<b>TOTAL</b>	<b>1,703,976</b>	<b>1,683,301</b>	<b>0.99</b>

\* Data replaced or modified by Actual Commercial Landings Data

**Table A-9**  
**American Samoa August 2010 Estimated Commercial Landings**

<b>Species</b>	<b>Pounds</b>	<b>Value (\$)</b>	<b>Price/Lb (\$)</b>	
Barracudas	2	5	2.65	
Bigeye bream	11	25	2.21	
Ambon emperor	56	147	2.63	
Longnose emperor	11	28	2.55	
Redgill emperor	20	52	2.61	
Groupers	12	34	2.75	*
Inshore groupers	27	75	2.75	*
Gray jobfish	17	47	2.70	*
Silverjaw jobfish (lehi)	80	219	2.75	
Spiny lobster	314	1,173	3.74	
White-edged lyretail	12	31	2.63	
Mahimahi	3,508	8,771	2.50	
Blue marlin	7,743	13,551	1.75	
Striped marlin	77	84	1.10	
Moonfish	49	124	2.50	
Parrotfishes	493	1,414	2.87	
Pomfret	51	114	2.25	
Spiny pufferfish	14	21	1.50	
Sailfish	248	625	2.52	
Blue-lined snapper	43	162	3.77	
Humpback snapper	72	199	2.75	
Longtail snapper (onaga)	277	771	2.78	
Pink snapper (opakapaka)	19	50	2.60	
Spearfish	477	548	1.15	
Squirrelfishes	80	208	2.61	
Surgeonfishes/tangs	574	1,585	2.76	*
Swordfish	2,121	3,182	1.50	
Albacore tuna	818,879	818,879	1.00	
Bigeye tuna	73,451	80,881	1.10	
Dogtooth tuna	70	175	2.50	
Skipjack tuna	17,890	10,734	0.60	
Yellowfin tuna	144,159	130,537	0.91	
Unicornfishes	278	748	2.69	
Wahoo	31,379	19,104	0.61	
Wrasses	60	134	2.25	
<b>TOTAL</b>	<b>1,102,575</b>	<b>1,094,435</b>	<b>0.99</b>	

\* Data replaced or modified by Actual Commercial Landings Data

**Table A-10**  
**American Samoa September 2010 Estimated Commercial Landings**

<b>Species</b>	<b>Pounds</b>	<b>Value (\$)</b>	<b>Price/Lb (\$)</b>	
Greater amberjack	17	43	2.55	
Barracudas	33	87	2.60	
Bigeye bream	23	51	2.21	
Crabs	8	20	2.60	
Longnose emperor	91	232	2.56	
Emperors	66	172	2.60	
Groupers	61	168	2.75	*
Black jack	39	99	2.52	
Goldflag jobfish	12	31	2.63	
Silverjaw jobfish (lehi)	22	60	2.76	
Spiny lobster	428	1,598	3.74	
Mahimahi	1,588	3,971	2.50	
Blue marlin	2,825	4,944	1.75	
Striped marlin	191	210	1.10	
Moonfish	10	25	2.49	
Parrotfishes	645	1,849	2.87	
Pomfret	35	79	2.25	
Spiny pufferfish	21	31	1.50	
Sailfish	417	417	1.00	*
Blue-lined snapper	115	432	3.77	
Flower snapper (gindai)	25	65	2.56	
Humpback snapper	190	523	2.75	
Longtail snapper (onaga)	412	1,143	2.78	
Ruby snapper (ehu)	87	288	3.31	*
Pink snapper (opakapaka)	50	130	2.60	
Spearfish	28	32	1.15	
Squirrelfishes	113	290	2.58	
Surgeonfishes/tangs	716	1,980	2.77	*
Swordfish	1,612	2,418	1.50	
Bigeye trevally	20	55	2.75	
Albacore tuna	965,653	965,653	1.00	
Bigeye tuna	46,307	50,992	1.10	
Kawakawa	13	19	1.50	
Skipjack tuna	16,430	9,980	0.61	
Yellowfin tuna	92,014	83,904	0.91	
Unicornfishes	521	1,414	2.72	
Wahoo	25,881	15,774	0.61	
<b>TOTAL</b>	<b>1,156,716</b>	<b>1,149,179</b>	<b>0.99</b>	

\* Data replaced or modified by Actual Commercial Landings Data

**Table A-11**  
**American Samoa October 2010 Estimated Commercial Landings**

Species	Pounds	Value (\$)	Price/Lb (\$)
Greater amberjack	11	28	2.55
Barracudas	83	215	2.60
Bigeye bream	13	29	2.21
Eels	29	86	3.00
Longnose emperor	77	198	2.56
Redgill emperor	290	754	2.60
Emperors	123	319	2.60
Groupers	143	393	2.75
Black jack	171	433	2.53
Gray jobfish	101	263	2.60
Silverjaw jobfish (lehi)	140	385	2.75
Spiny lobster	166	619	3.74
White-edged lyretail	57	150	2.63
Mahimahi	681	1,702	2.50
Black marlin	40	100	2.50
Blue marlin	3,453	6,043	1.75
Moonfish	22	54	2.50
Parrotfishes	753	2,160	2.87
Pomfret	41	93	2.25
Rainbow runner	18	50	2.76
Rudderfishes	23	60	2.56
Sailfish	900	900	1.00
Sharks (unknown)	0	1	1.67
Black snapper	97	259	2.68
Blue-lined snapper	230	866	3.77
Flower snapper (gindai)	19	53	2.74
Humpback snapper	363	999	2.75
Longtail snapper (onaga)	19	51	2.77
Onespot snapper	37	99	2.65
Ruby snapper (ehu)	106	348	3.27
Twinspot/red snapper	15	37	2.50
Spearfish	140	161	1.15
Squirrelfishes	297	779	2.63
Surgeonfishes/tangs	456	1,253	2.75
Swordfish	1,518	3,795	2.50
Trevallys	11	29	2.69
Albacore tuna	793,063	793,063	1.00
Bigeye tuna	24,731	27,233	1.10
Skipjack tuna	25,619	15,906	0.62
Yellowfin tuna	38,938	35,969	0.92
Unicornfishes	210	571	2.72
Wahoo	23,786	14,481	0.61
Wrasses	21	48	2.25
<b>TOTAL</b>	<b>917,009</b>	<b>911,032</b>	<b>0.99</b>

\* Data replaced or modified by Actual Commercial Landings Data

**Table A-12**  
**American Samoa November 2010 Estimated Commercial Landings**

<b>Species</b>	<b>Pounds</b>	<b>Value (\$)</b>	<b>Price/Lb (\$)</b>	
Barracudas	80	210	2.63	
Bigeye bream	30	67	2.21	
Paeony bulleye	20	49	2.49	
Eels	12	37	2.99	
Longnose emperor	138	353	2.56	
Redgill emperor	247	642	2.60	
Emperors	130	337	2.60	
Groupers	38	104	2.75	*
Inshore groupers	73	200	2.75	*
Black jack	227	572	2.53	
Brown jobfish	21	56	2.70	
Goldflag jobfish	15	41	2.64	
Gray jobfish	222	576	2.60	
Silverjaw jobfish (lehi)	123	339	2.75	
Spiny lobster	224	837	3.74	
White-edged lyretail	35	91	2.63	
Mahimahi	384	960	2.50	
Blue marlin	8,371	14,650	1.75	
Striped marlin	268	294	1.10	
Octopus	25	63	2.50	*
Moonfish	14	35	2.51	
Parrotfishes	961	2,756	2.87	
Pomfret	70	157	2.25	
Rainbow runner	29	81	2.75	
Rudderfishes	9	23	2.57	
Sailfish	124	313	2.52	
Black snapper	79	211	2.68	
Blue-lined snapper	201	759	3.77	
Humpback snapper	354	974	2.75	
Longtail snapper (onaga)	37	101	2.78	
Onespot snapper	19	50	2.65	
Ruby snapper (ehu)	115	402	3.50	*
Stone's snapper	12	32	2.74	
Twinspot/red snapper	34	85	2.50	
Pink snapper (opakapaka)	26	67	2.60	
Spearfish	28	32	1.15	
Squirrelfishes	201	527	2.62	
Surgeonfishes/tangs	633	1,654	2.61	
Swordfish	2,036	3,054	1.50	
Trevallys	11	31	2.71	
Albacore tuna	880,644	880,644	1.00	
Bigeye tuna	11,733	12,920	1.10	
Dogtooth tuna	13	32	2.49	
Kawakawa	25	37	1.50	

**Table A-12 (continued)**  
**American Samoa November 2010 Estimated Commercial Landings**

<b>Species</b>	<b>Pounds</b>	<b>Value (\$)</b>	<b>Price/Lb (\$)</b>
Skipjack tuna	43,730	26,768	0.61
Yellowfin tuna	121,231	110,083	0.91
Unicornfishes	600	1,647	2.75
Wahoo	36,340	22,140	0.61
<b>TOTAL</b>	<b>1,109,988</b>	<b>1,086,090</b>	<b>0.98</b>

\* Data replaced or modified by Actual Commercial Landings Data

**Table A-13**  
**American Samoa December 2010 Estimated Commercial Landings**

<b>Species</b>	<b>Pounds</b>	<b>Value (\$)</b>	<b>Price/Lb (\$)</b>
Greater amberjack	208	531	2.56
Barracudas	30	78	2.61
Longnose emperor	352	901	2.56
Redgill emperor	486	1,266	2.60
Emperors	12	31	2.61
Longspine grouper	62	170	2.75
Peacock grouper	64	170	2.64
Groupers	246	676	2.75
Black jack	160	404	2.53
Goldflag jobfish	208	548	2.64
Gray jobfish	508	1,321	2.60
Silverjaw jobfish (lehi)	476	1,309	2.75
Spiny lobster	102	380	3.74
White-edged lyretail	14	37	2.62
Mahimahi	192	480	2.50
Blue marlin	9,104	15,931	1.75
Striped marlin	459	505	1.10
Moonfish	6	15	2.51
Parrotfishes	348	998	2.87
Pomfret	38	86	2.25
Rainbow runner	125	344	2.75
Sailfish	496	1,251	2.52
Blue-lined snapper	399	1,503	3.77
Flower snapper (gindai)	21	54	2.55
Humpback snapper	577	1,587	2.75
Longtail snapper (onaga)	24	66	2.78
Pink snapper (opakapaka)	119	310	2.60
Spearfish	56	65	1.15
Squirrelfishes	330	851	2.58
Surgeonfishes/tangs	310	840	2.71
Swordfish	1,454	3,372	2.32
Trevallys	33	90	2.69
Albacore tuna	484,466	484,466	1.00
Bigeye tuna	16,600	18,279	1.10
Dogtooth tuna	57	142	2.50
Kawakawa	259	388	1.50
Skipjack tuna	29,310	20,246	0.69
Yellowfin tuna	73,281	66,013	0.90
Unicornfishes	189	518	2.74
Wahoo	35,275	21,493	0.61
<b>TOTAL</b>	<b>656,454</b>	<b>647,711</b>	<b>0.99</b>

\* Data replaced or modified by Actual Commercial Landings Data

The following are summary charts of the major species and species groups by month:

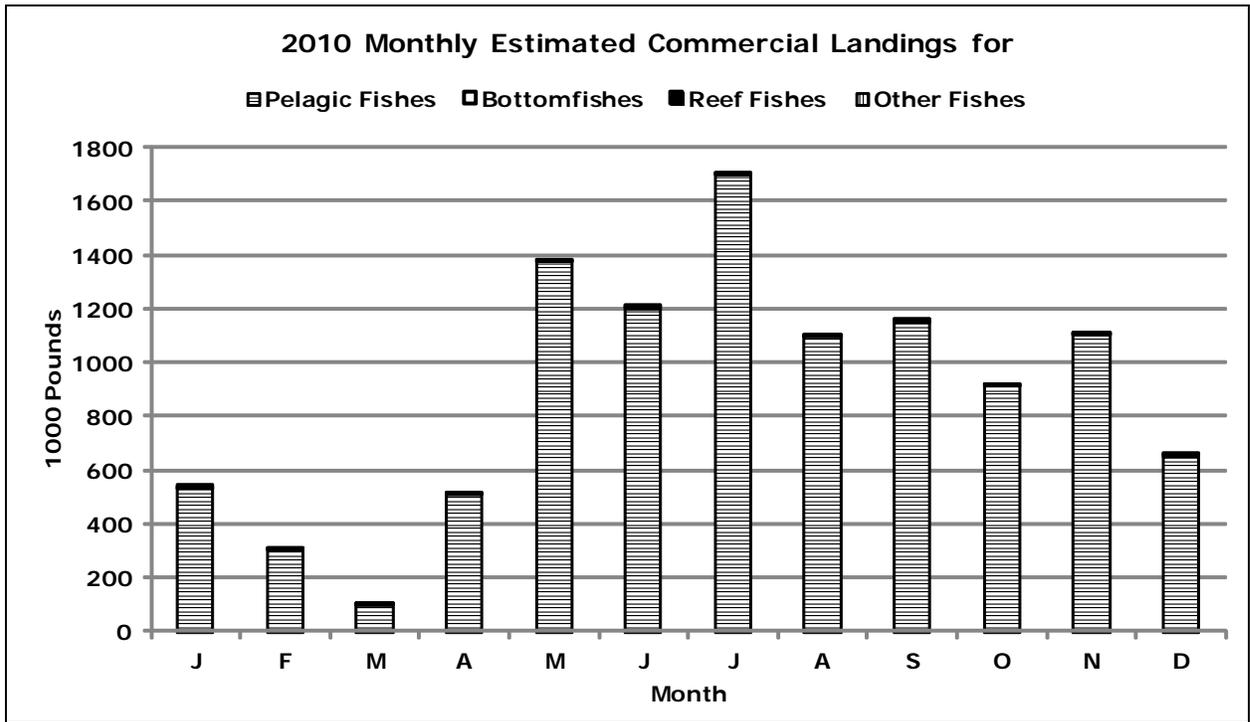


Figure A-1-1

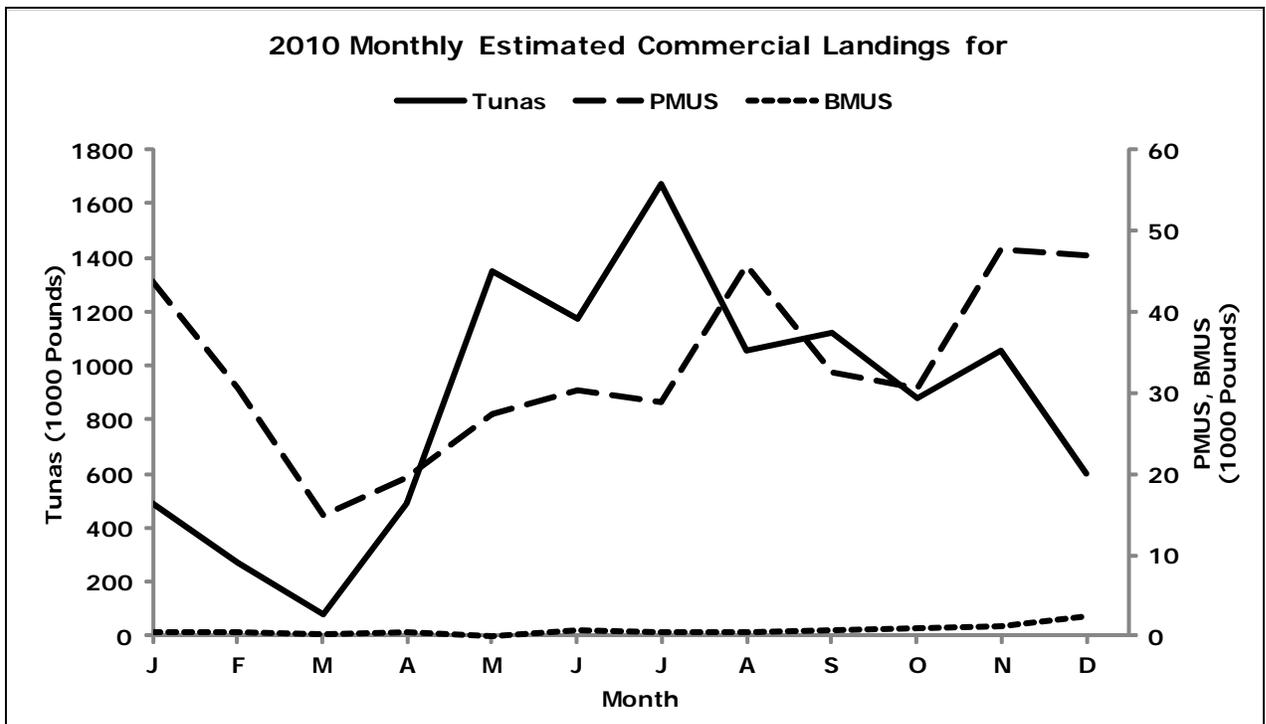


Figure A-1-2

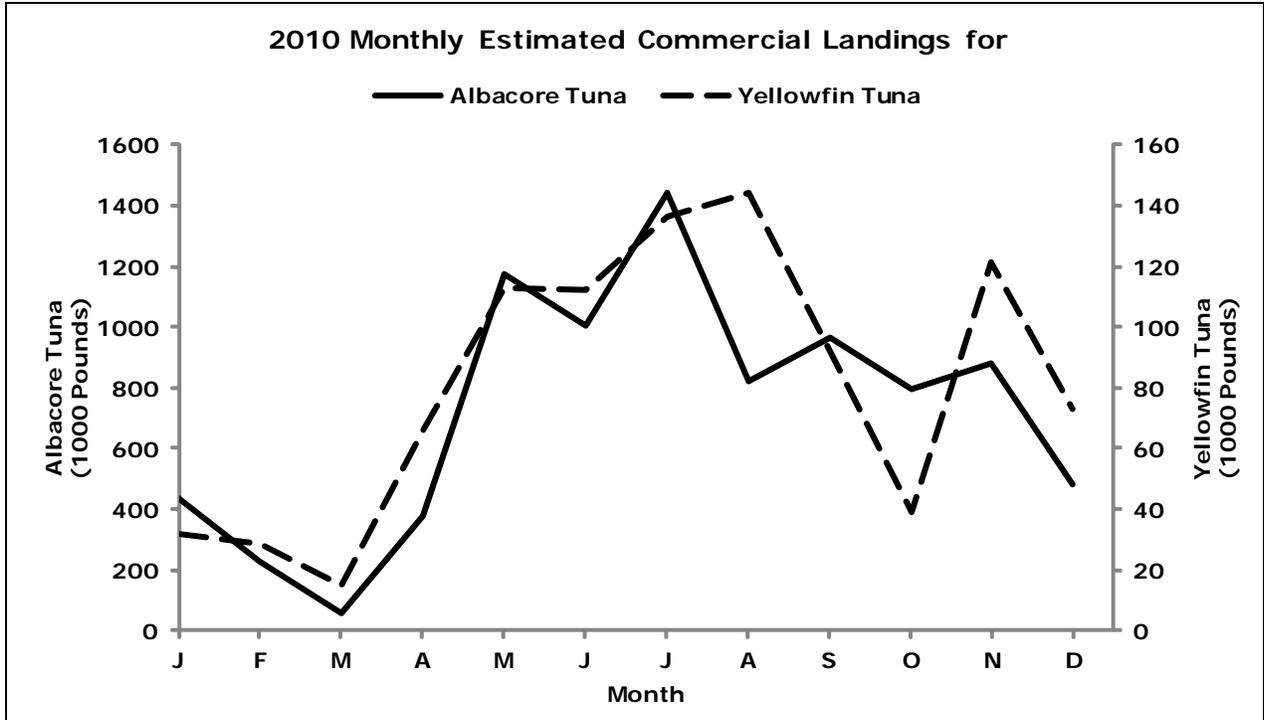


Figure A-1-3

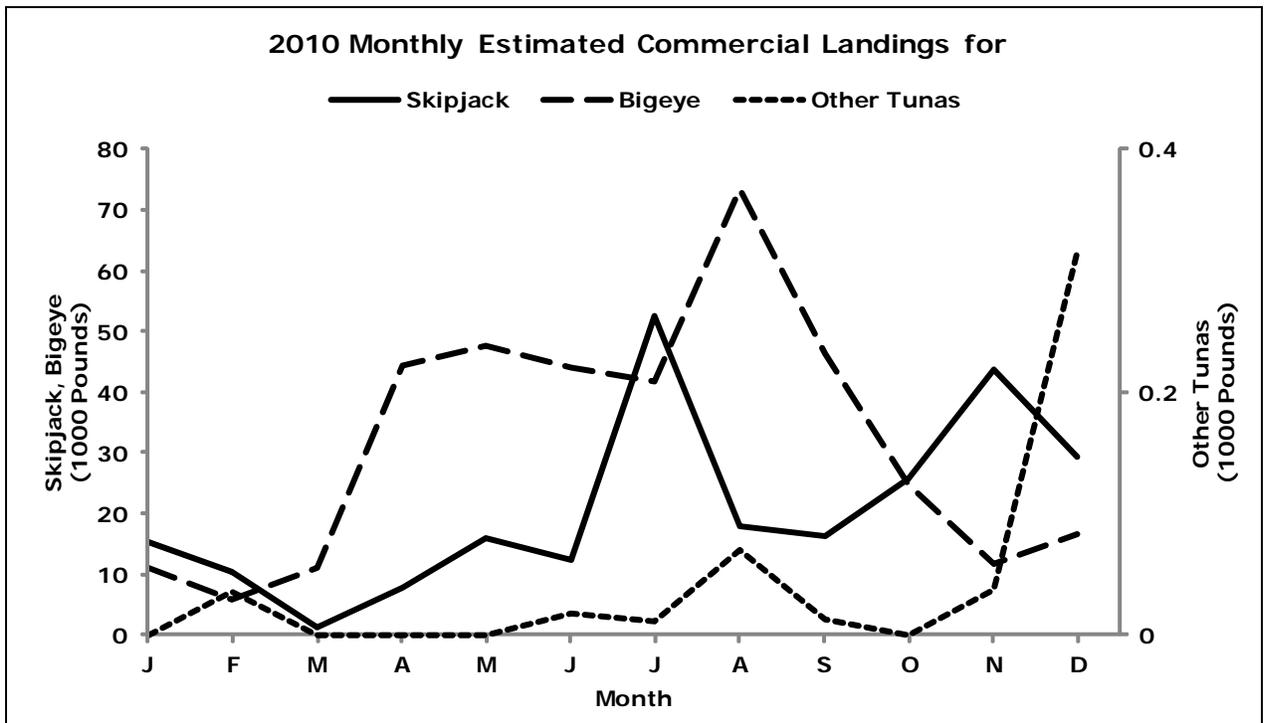


Figure A-1-4

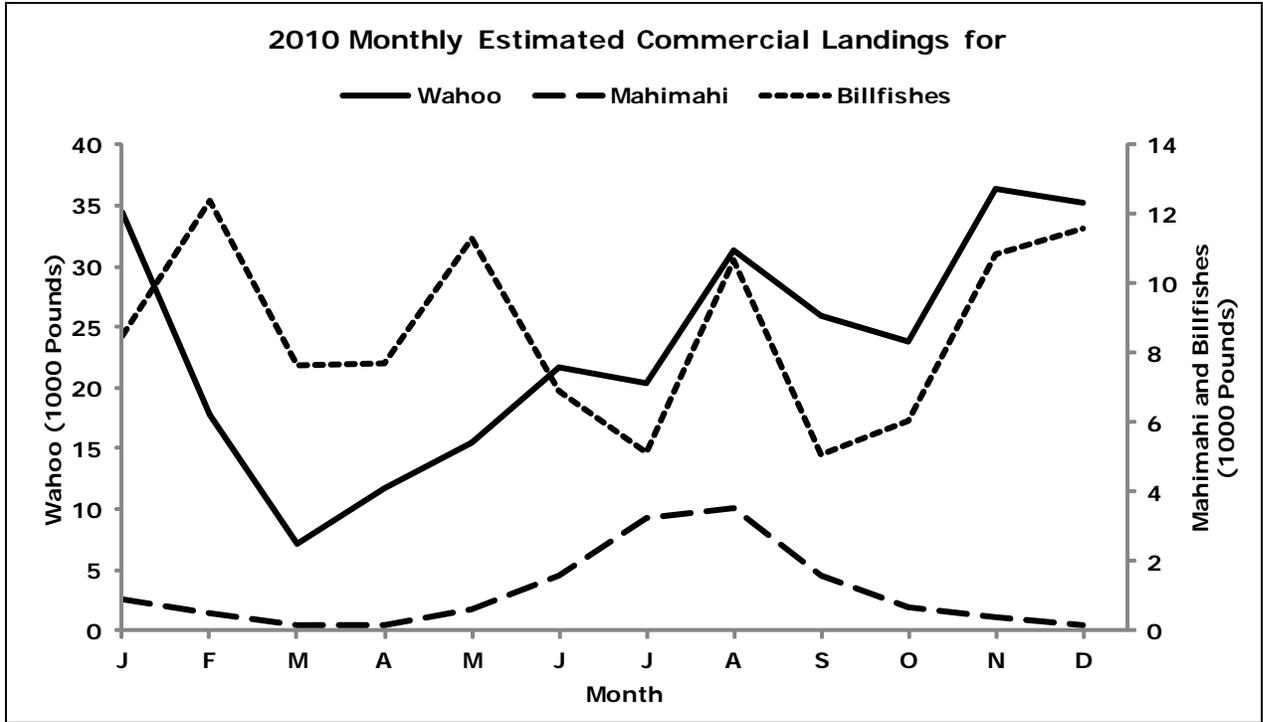


Figure A-1-5

The following are seasonality plots for the major species or species groups, showing the average weight landed during each month for all years combined:

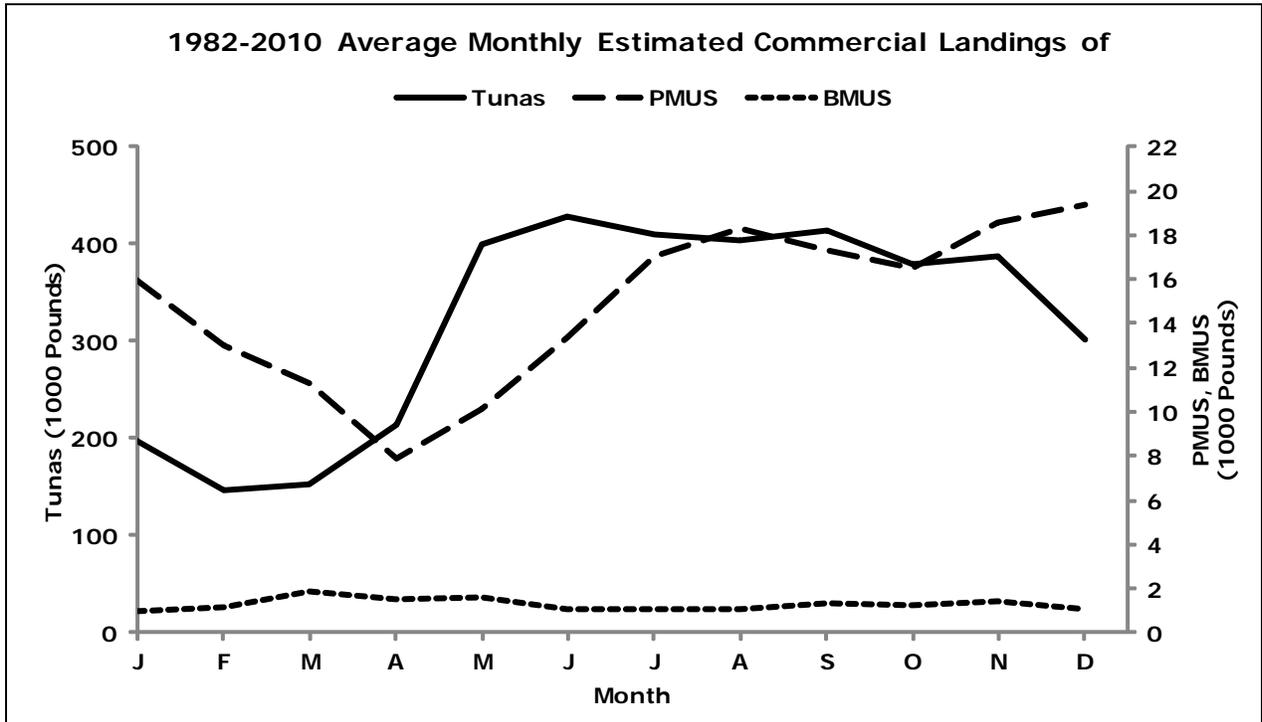


Figure A-2-1

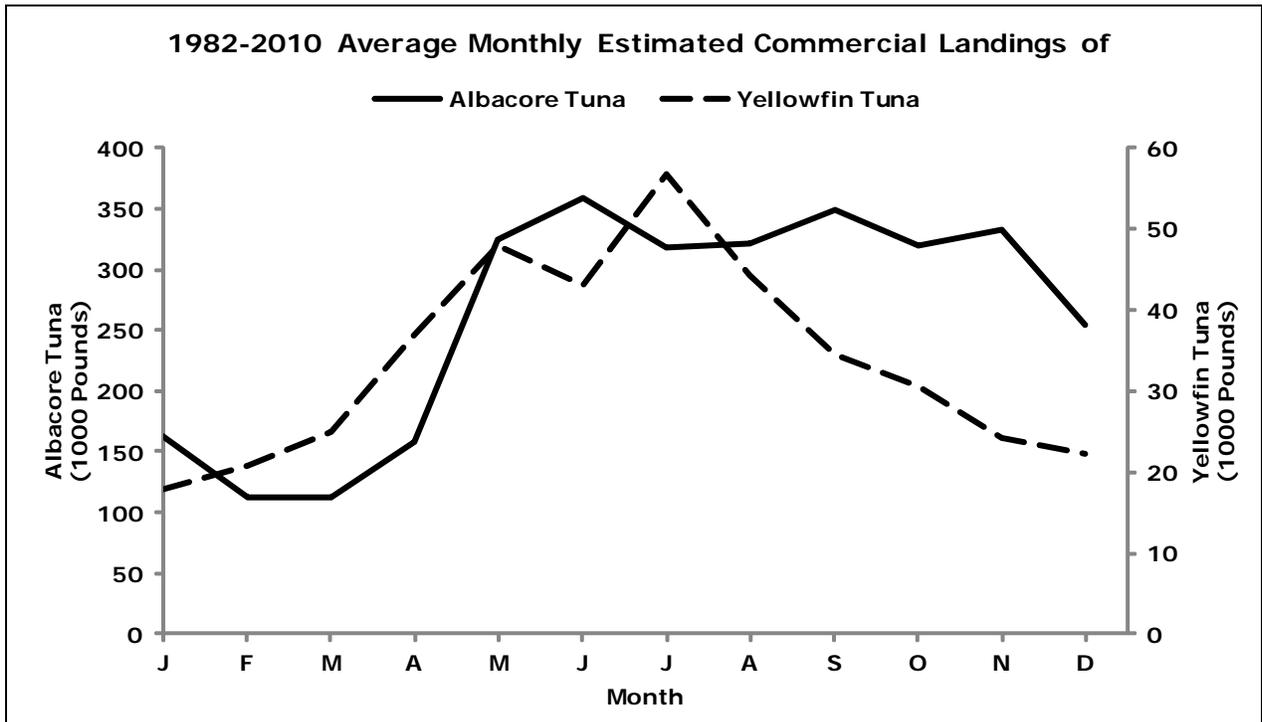


Figure A-2-2

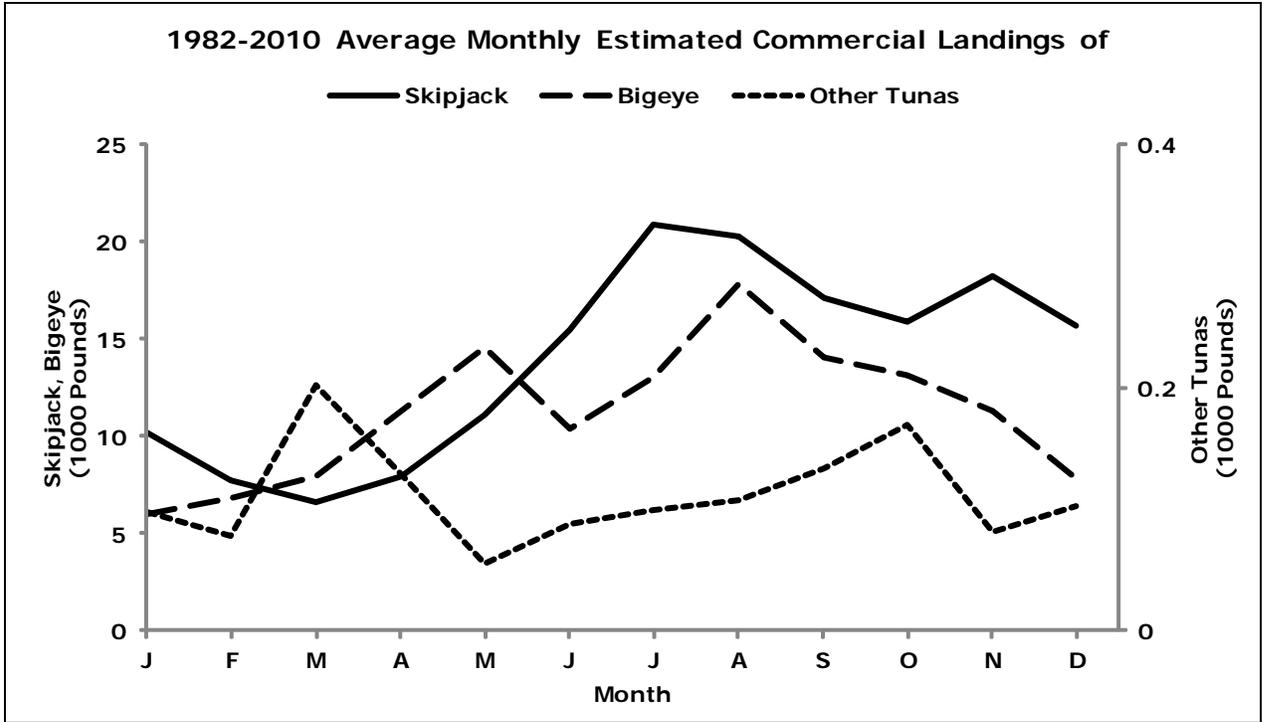


Figure A-2-3

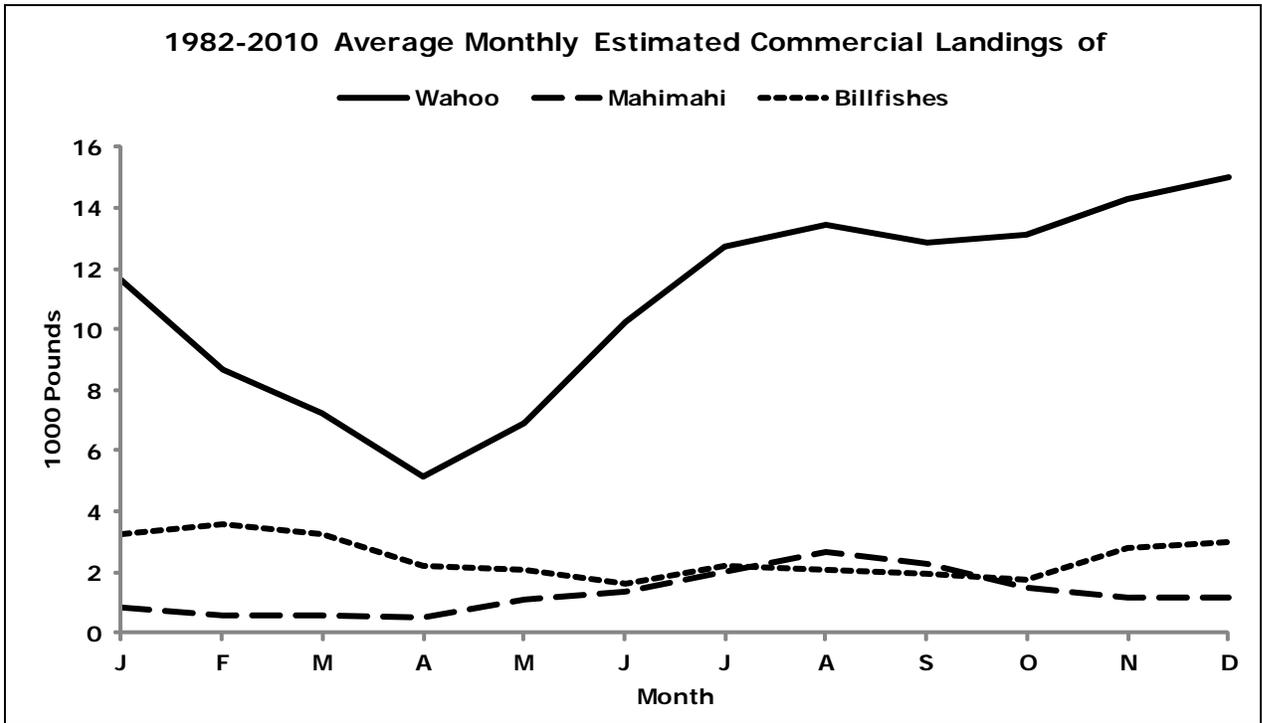


Figure A-2-4

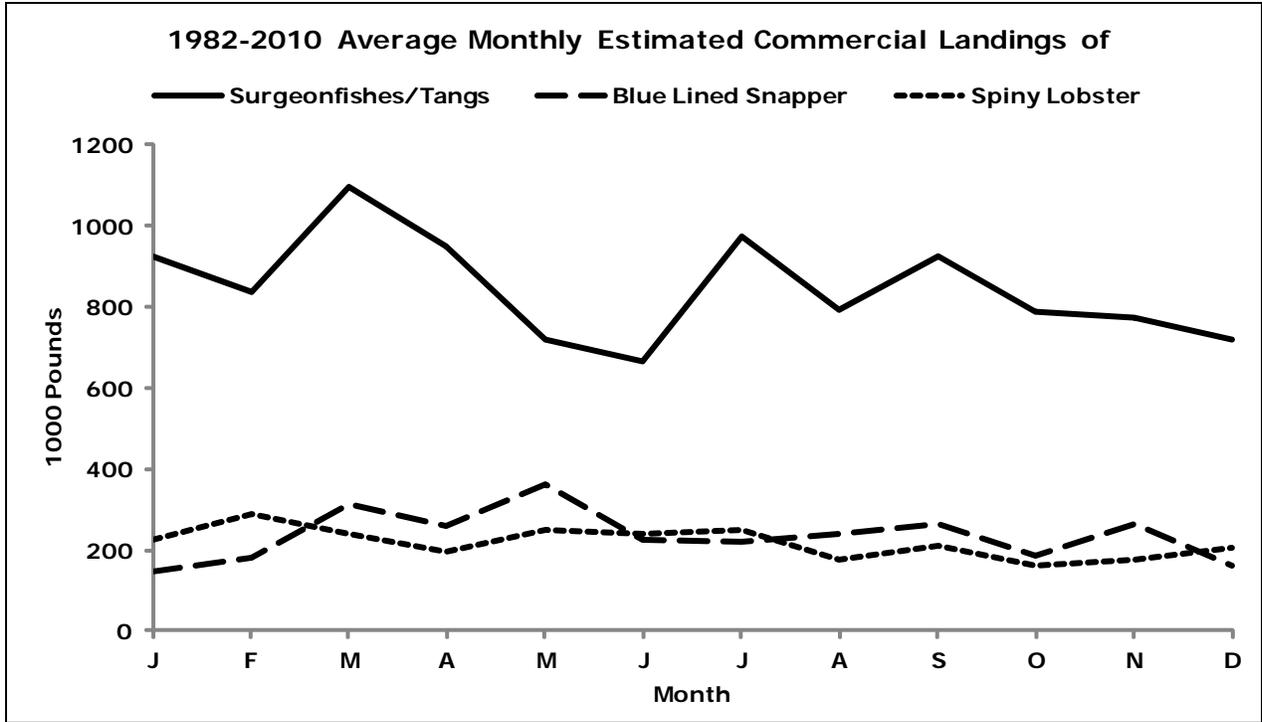


Figure A-2-5

The following graphs plot annual summary statistics to illustrate the variability among years:

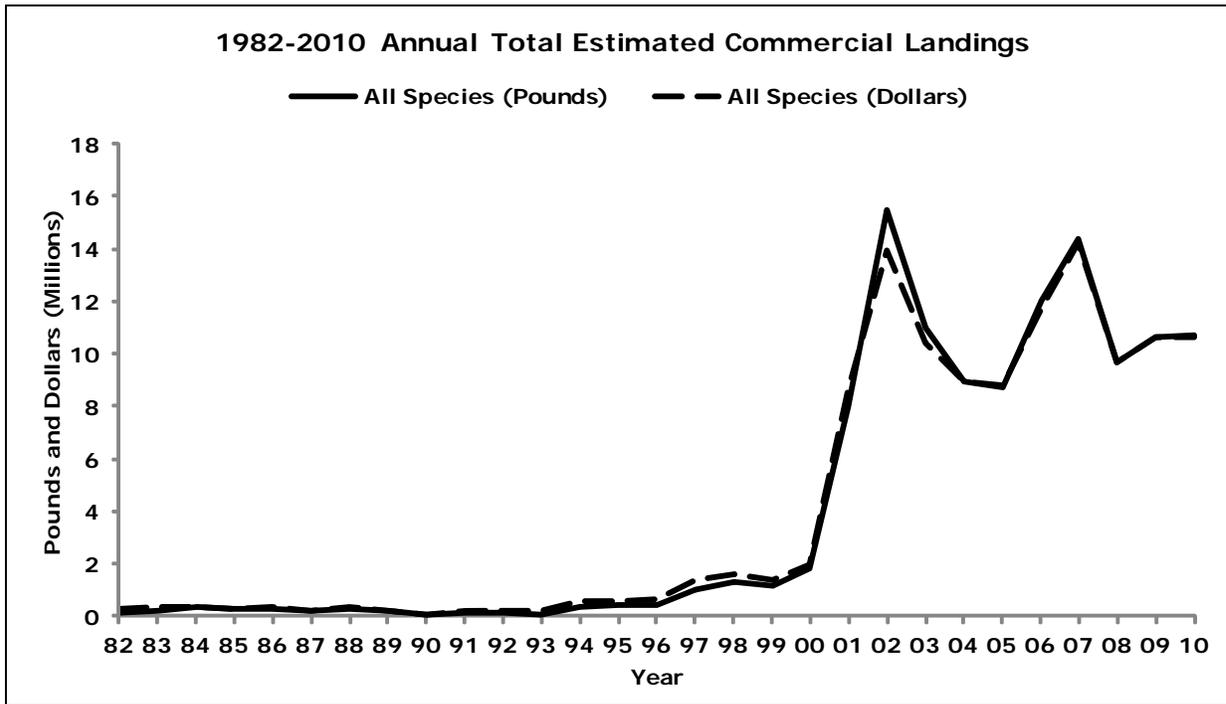


Figure A-3-1

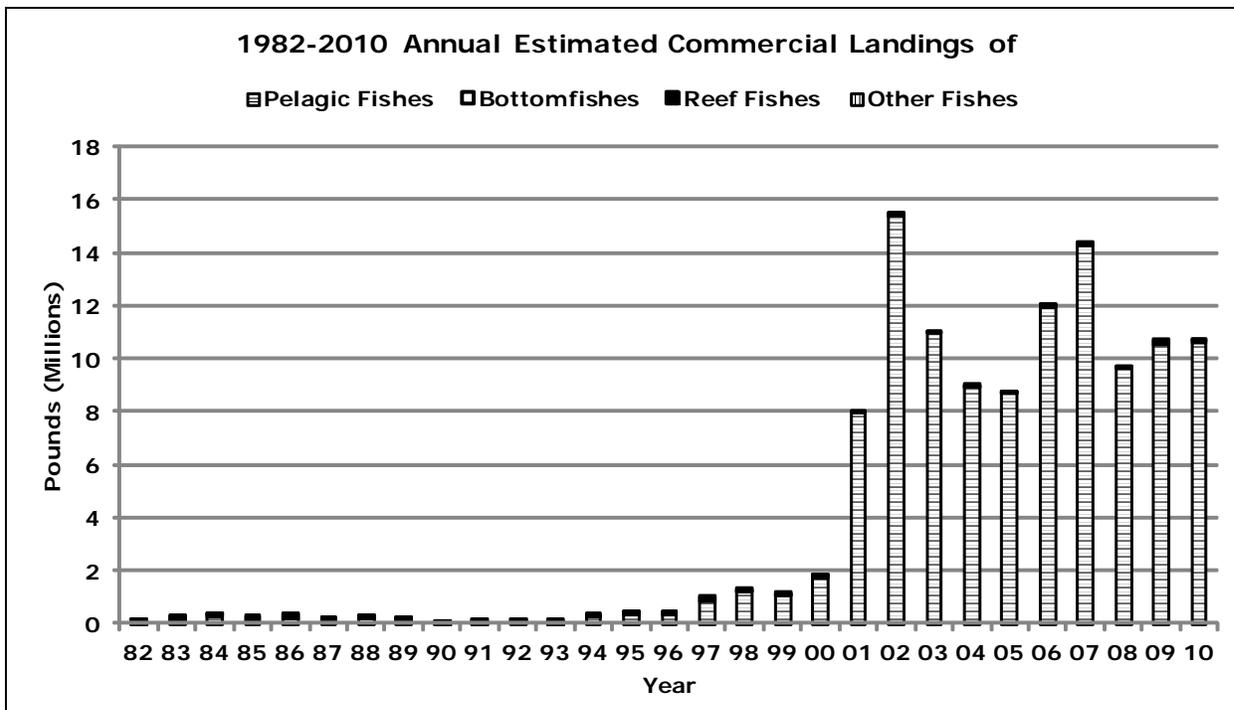


Figure A-3-2

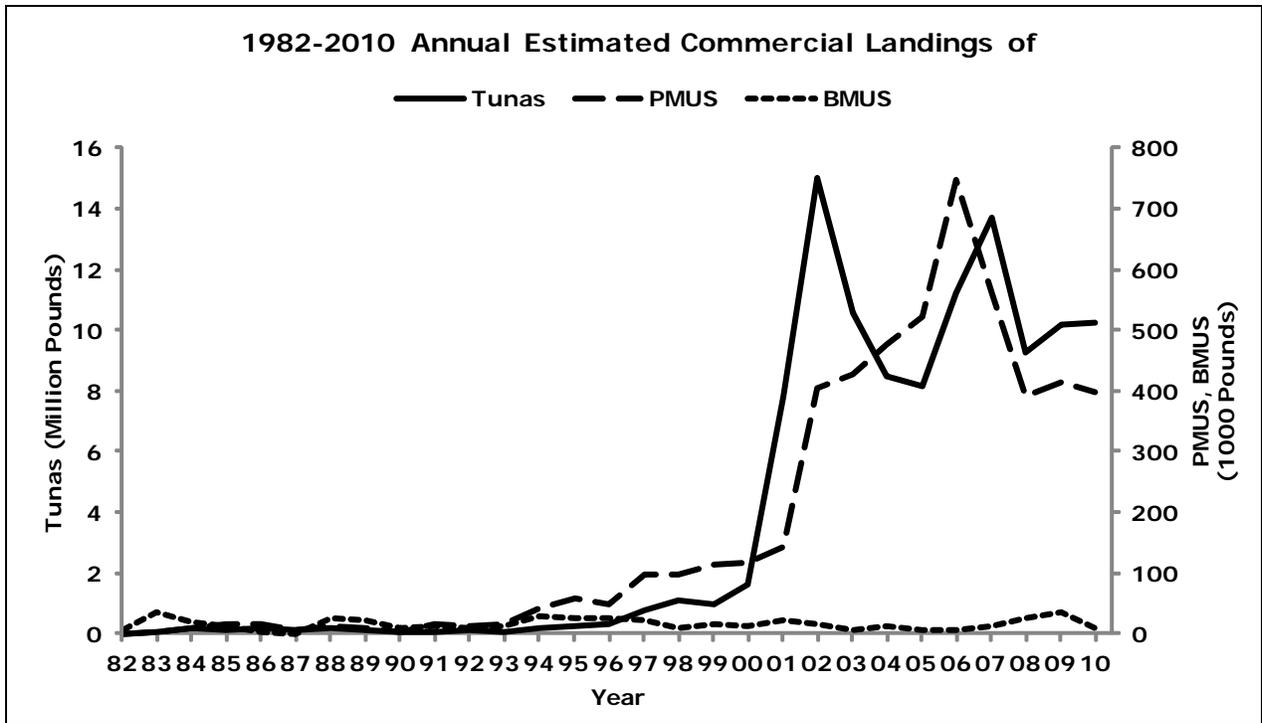


Figure A-3-3

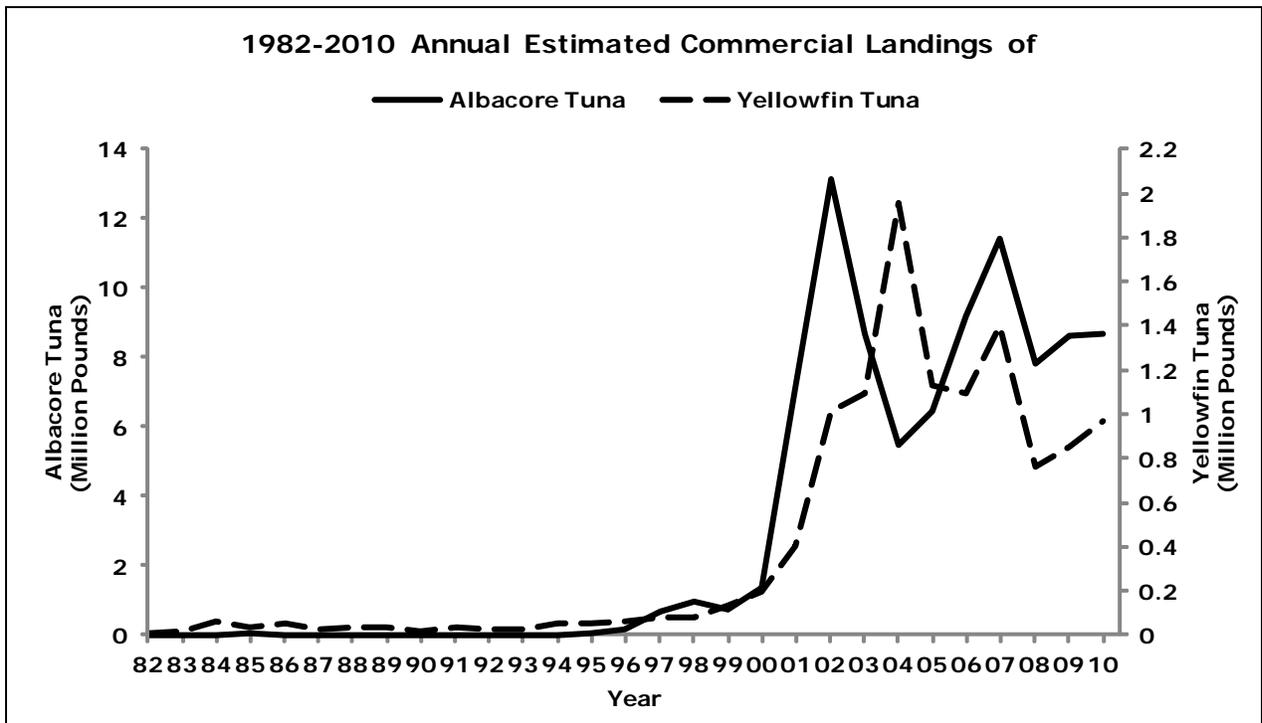


Figure A-3-4

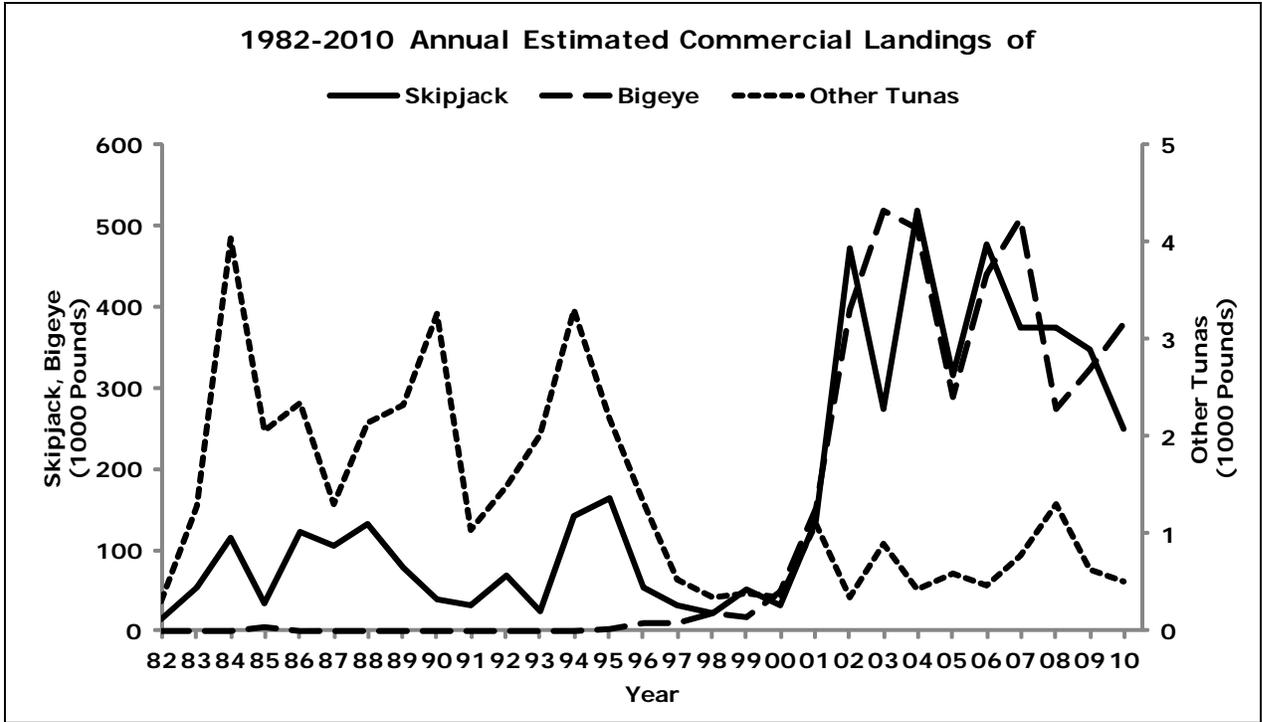


Figure A-3-5

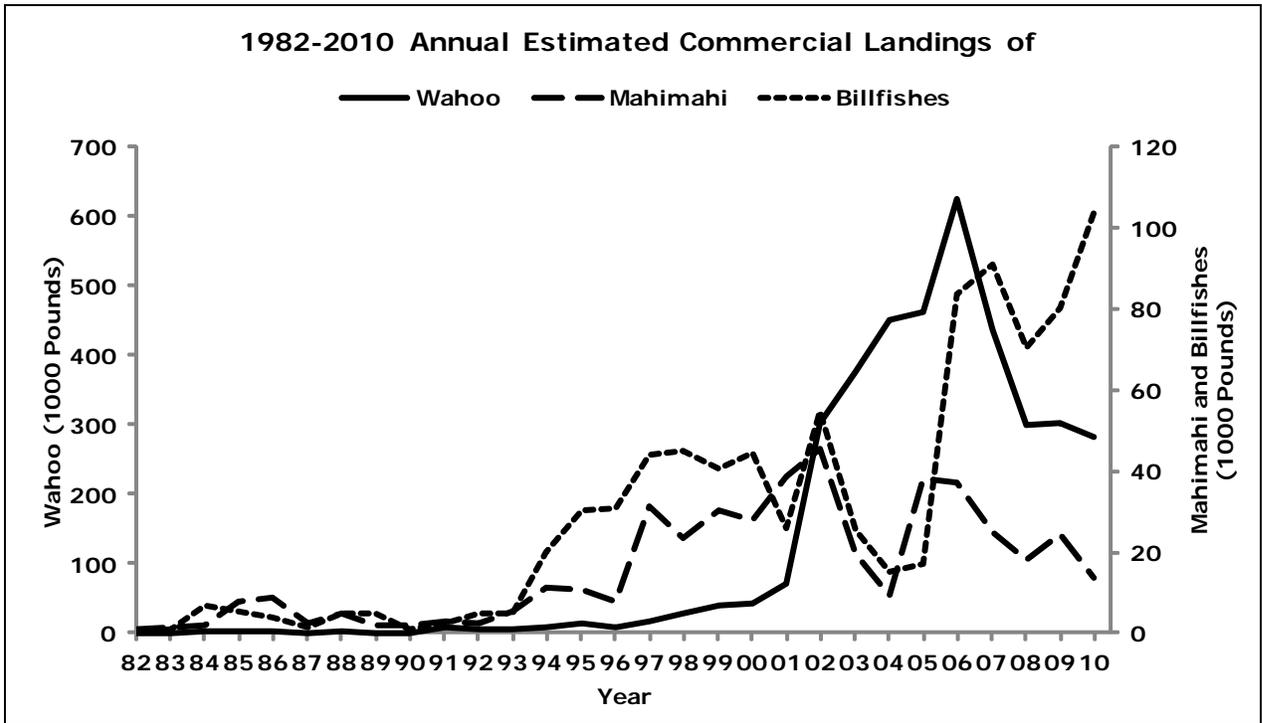


Figure A-3-6

The following graphs plot the monthly landings of some of the major commercially important species and document monthly fluctuations in landings over the time series:

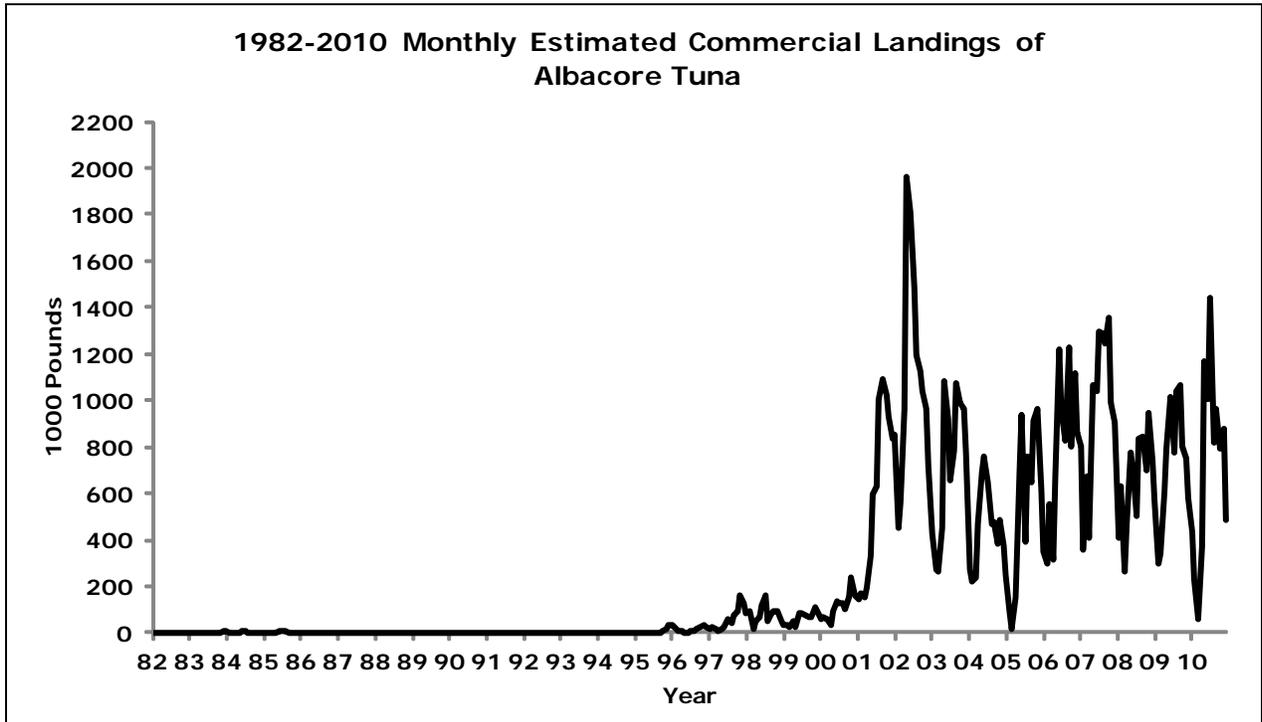


Figure A-4-1

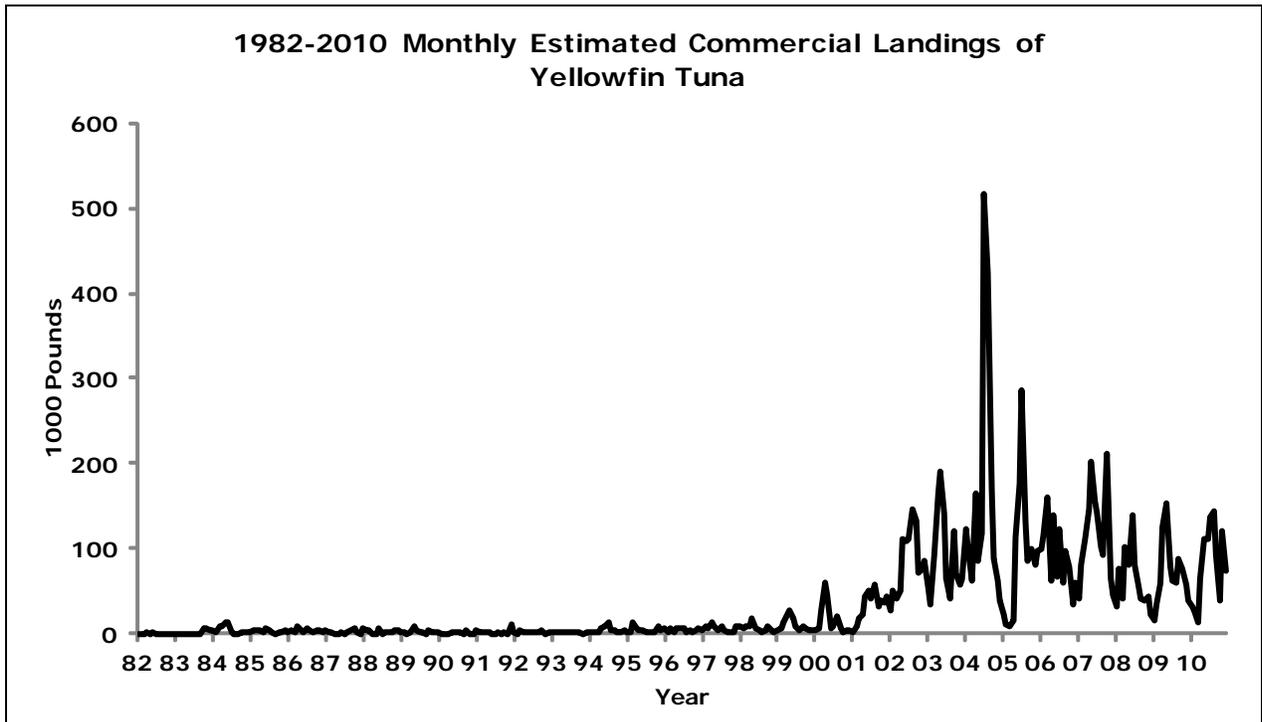


Figure A-4-2

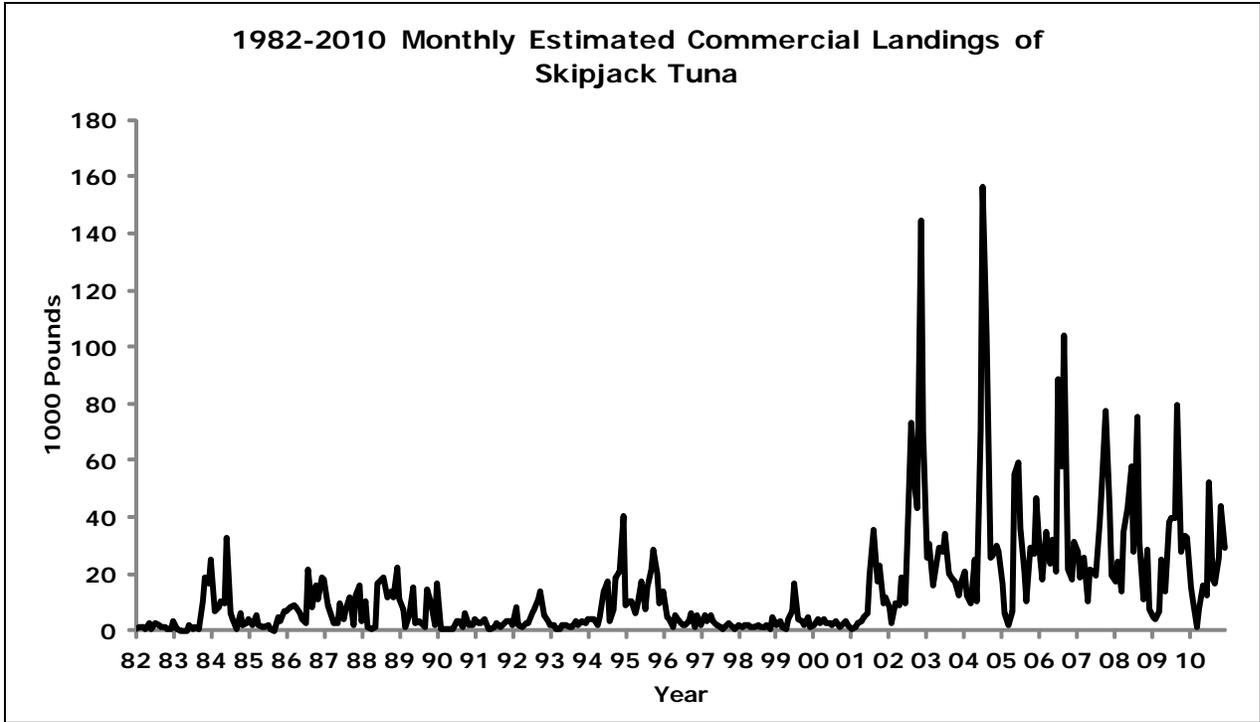


Figure A-4-3

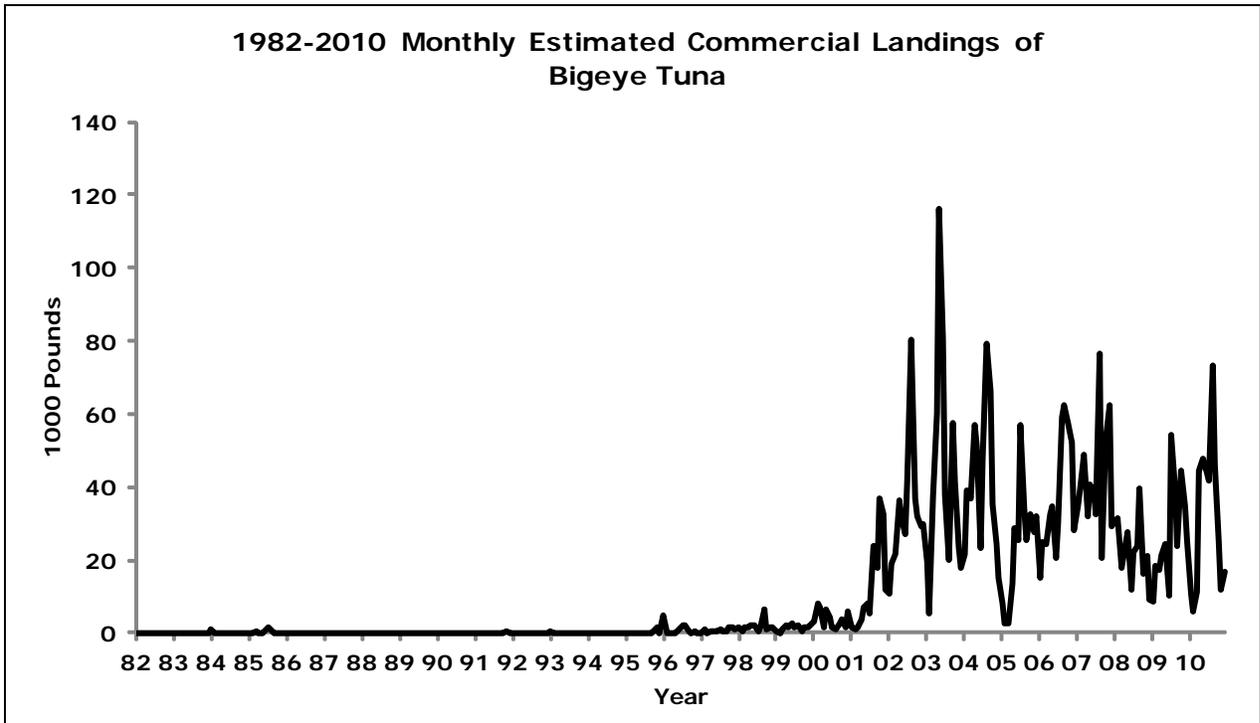


Figure A-4-4

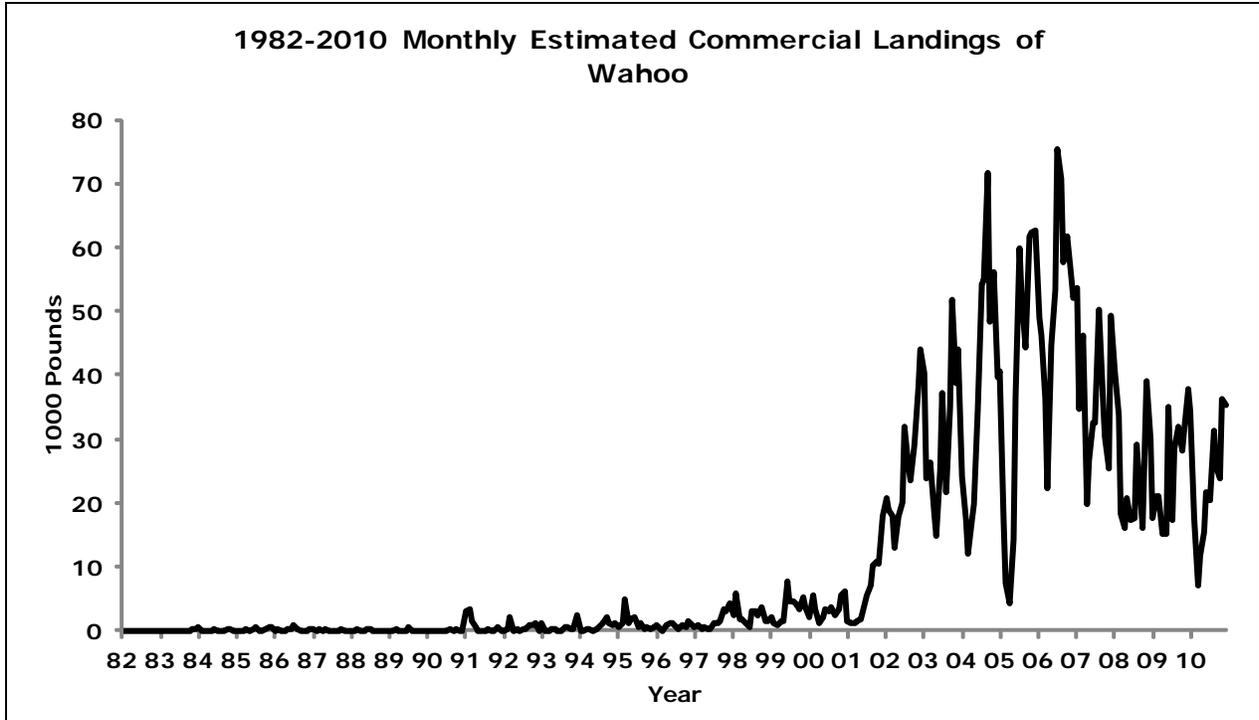


Figure A-4-5

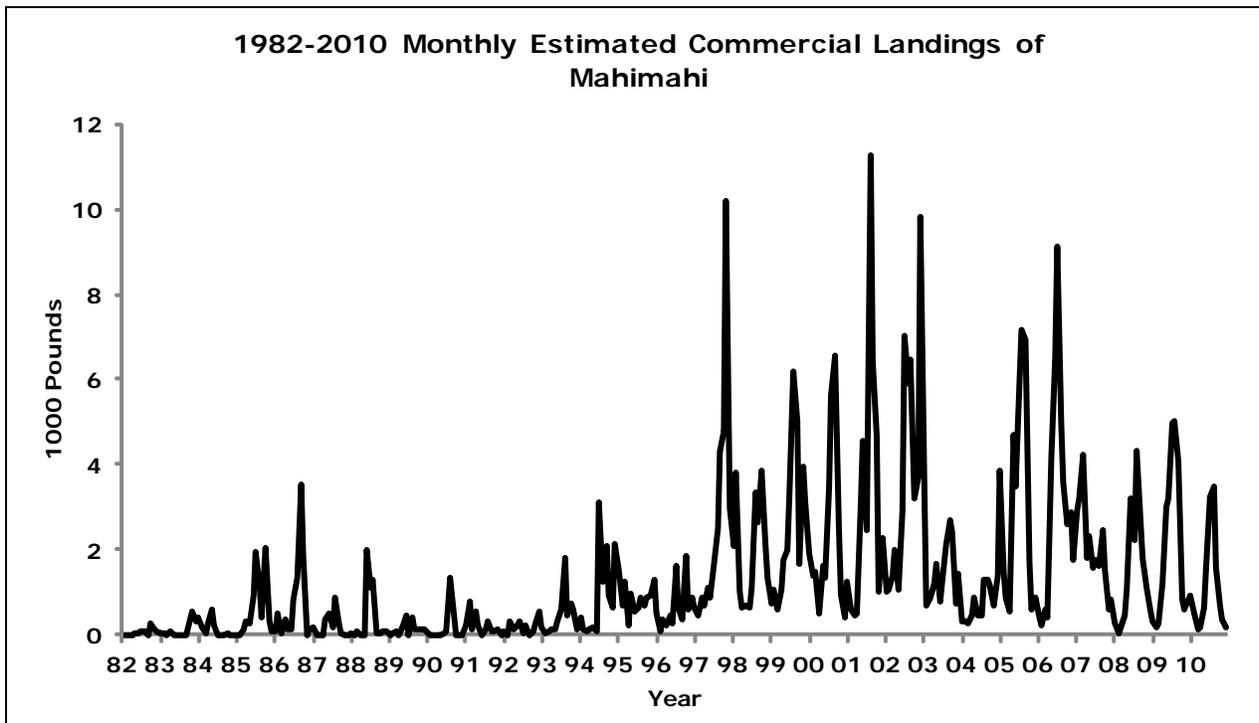


Figure A-4-6

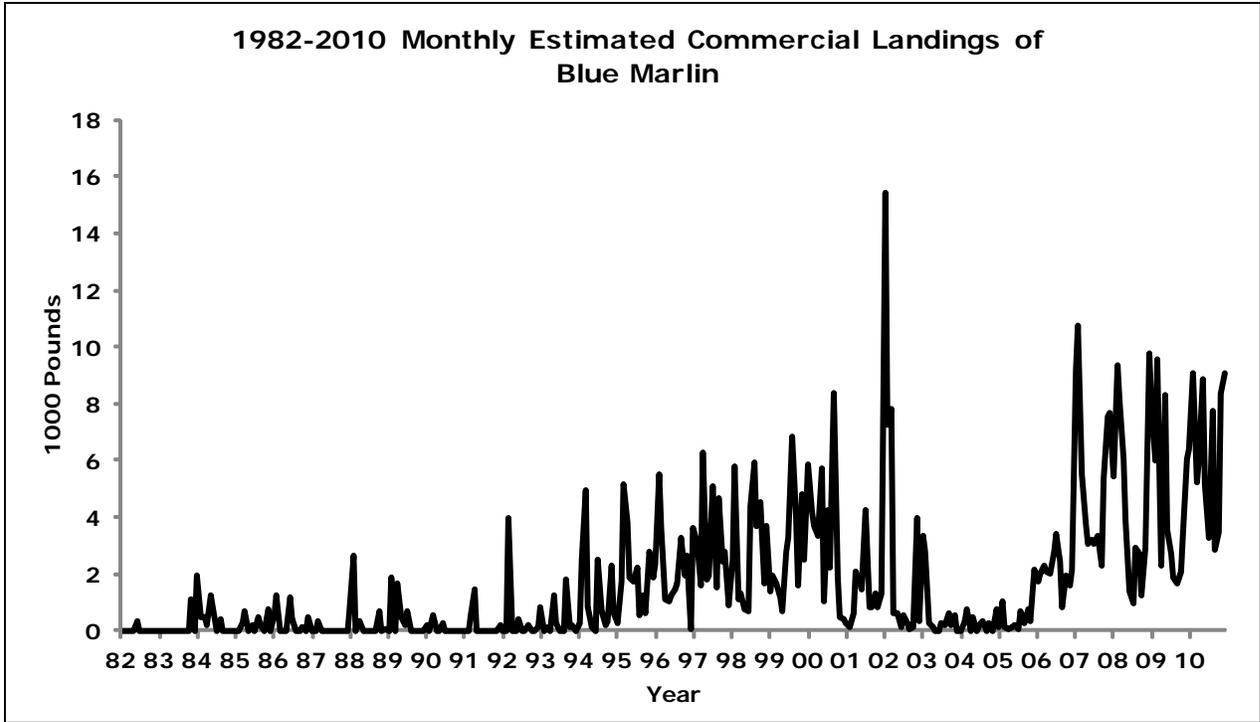


Figure A-4-7

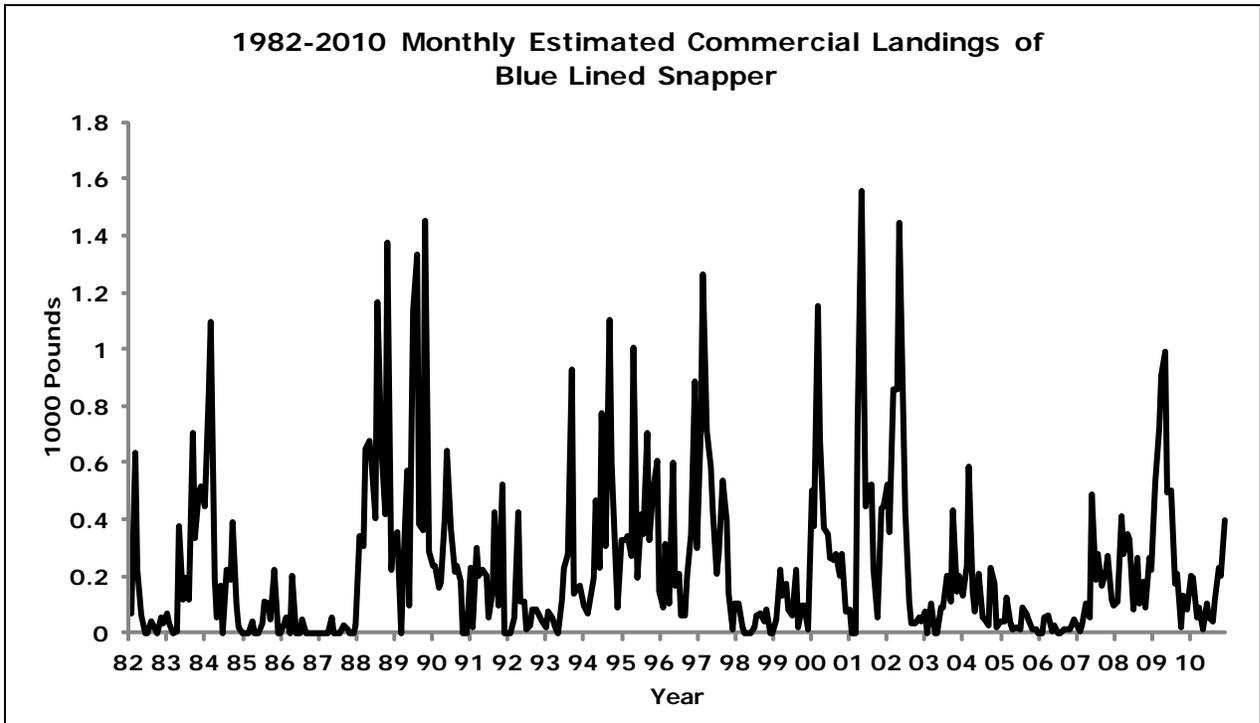


Figure A-4-8

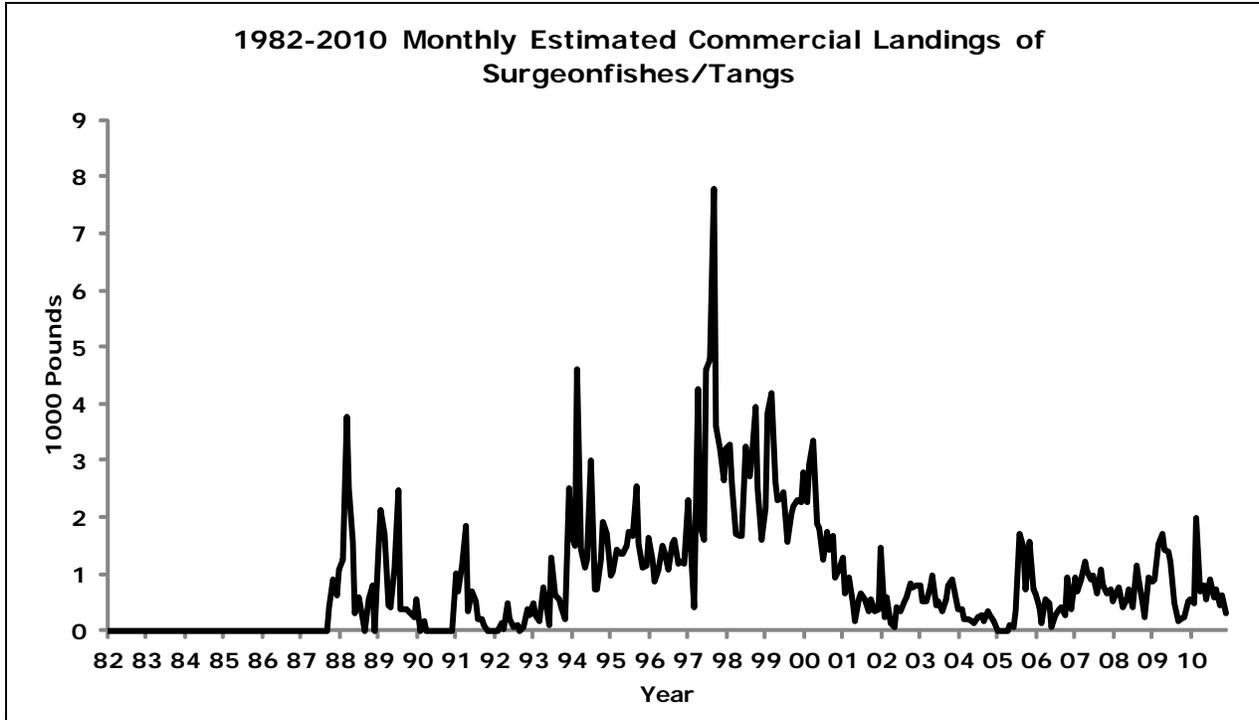


Figure A-4-9

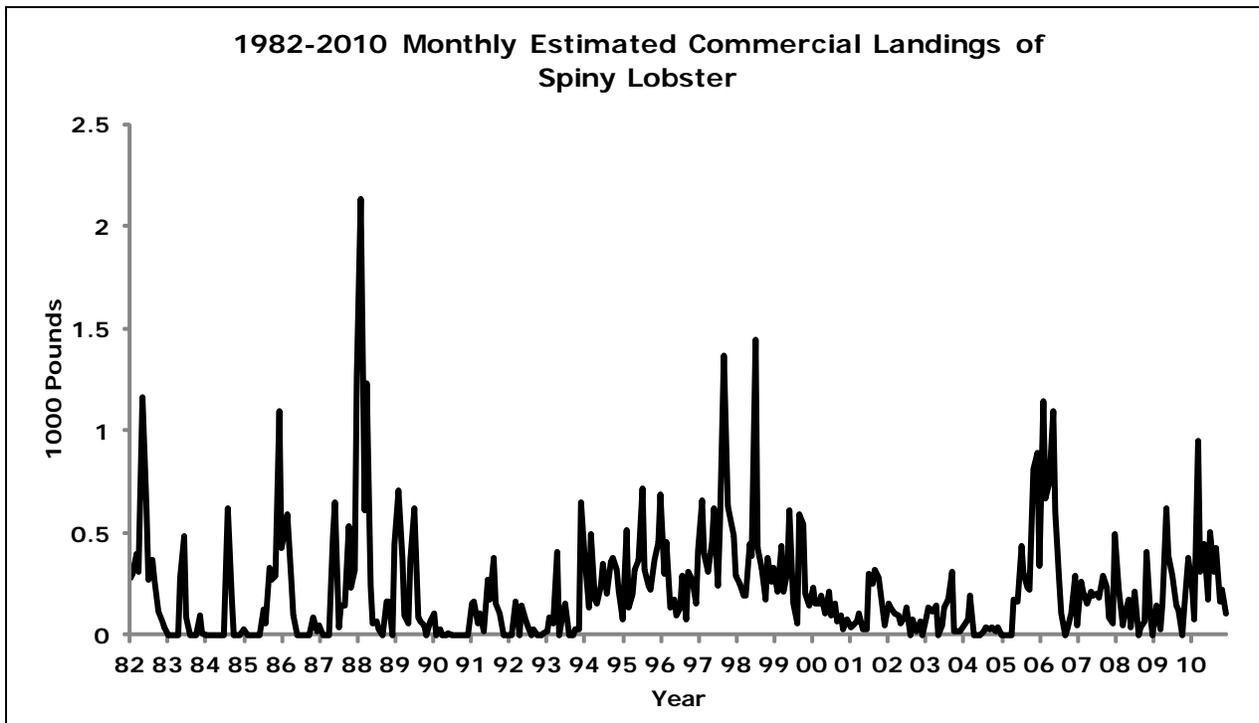


Figure A-4-10