

AMERICAN SAMOA 2011 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 2011 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)

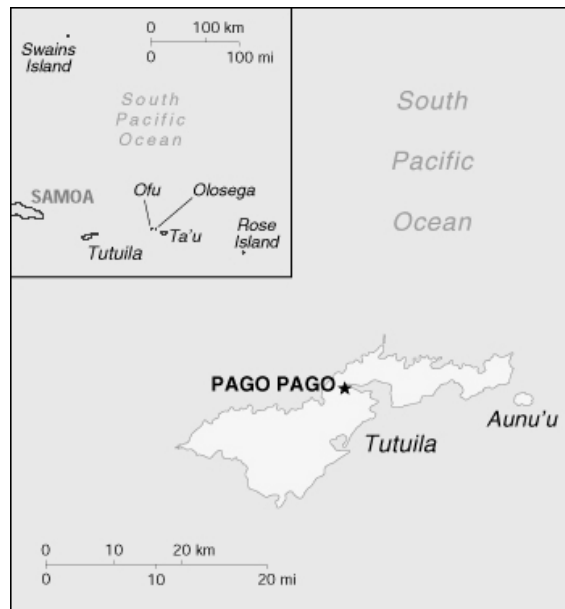
Population: about 54,719 (*The World Factbook*, July 2013 estimate), the majority (> 95%) living on Tutuila.

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

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

Until the mid-1990s, American Samoa's domestic fisheries had been dominated by small (28-to-32-foot) outboard-engine-powered catamarans called *alias* (pronounced *ah-lee-ahs*), fishing primarily single-day trips. Traditionally, trolling and bottomfishing were the major methods of fishing, with occasional small amounts of spearfishing, netting, and vertical longlining. About mid-1995, some of the traditional *alias* began converting to horizontal longline fishing. Over the course of 1996, horizontal longlining became the largest fishery in American Samoa, based on total weight of landings, although only about a third of the fleet had converted to this method. The fleet grew rapidly over the next few years, adding new and larger *alias* up to about 38 feet in length. More significantly, throughout the same period, increasingly larger monohull vessels (40-70 feet and over) also began to join the fleet. These boats could fish much longer trips, both in duration and distance. Between 1995 and 2002, vessels over 50 feet in length rapidly came to dominate the fleet, and have been responsible for over 90% of longline fishing effort annually (number of hooks set) since 2002. The primary target species for this fleet has always been albacore tuna, but the fishery also lands significant amounts of yellowfin and bigeye tuna, wahoo, oilfish, blue marlin, mahimahi and other incidental species.

During 2011, the various fisheries monitoring programs in American Samoa identified 40 active vessels, of which 36 were home-ported on Tutuila and 4 in the Manu'a Islands. Many of these vessels participated in more than one fishery, and 27 of the Tutuila boats (including 23 vessels > 50 feet long) did at least some longlining. Of the 40 total boats, 20 participated in the troll and bottomfish fisheries and 3 were used in other fishing activity, including spearfishing.



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

A.2

On average, the alia fleet on Tutuila was comprised of a four-man crew, fishing a 10-hour day, and catching about 178 pounds of fish per trip. Other factors influencing average crew size on Tutuila are described below. The Manu'a-based fleet typically had a three-man crew, fishing a five-hour day and landing about 36 pounds of fish per trip. Essentially all of the longlining was based out of Tutuila, where the majority of the catch was offloaded to the cannery.

LINGERING EFFECTS OF THE 2009 TSUNAMI ON LOCAL FISHERIES

On September 29, 2009 American Samoa experienced a severe tsunami that damaged Leone Village and low-lying docks, shores and villages within Pago Pago Harbor. The tsunami took a huge toll on the boat-based fishery. Of 17 actively fishing local alia boats, only 3 survived the tsunami. The rest sustained damage or loss to the vessel hull, outboard engine and/or fishing gear. By the fourth quarter of 2010, only 5 or 6 alia boats had resumed fishing and a few were making short trips to test seaworthiness. Throughout 2011, only one alia has continued longline fishing. The remaining serviceable vessels are now doing either trolling, bottomfishing, spearfishing, or some combination of these methods. The crew for these vessels is variable, and each member pays a rental fee to the boat owner. On some Tutuila trips, particularly for spearfishing, the number of fishermen can be as high as ten, since few have their own boat. By teaming up to rent a boat, fishermen are able to lower the rental fee per person and maximize use of the small number of vessels available.

Most DMWR vehicles were also severely damaged by the tsunami, affecting the ability of DMWR staff to conduct fishing surveys. As a result, surveys for the boat-based program were reduced to two to three days per week and data were only collected during the daytime. Because of coastal damage, debris, and pollution, little or no shore-based fishing occurred prior to the second quarter of 2010. Nor did DMWR's shore-based creel survey program resume until that time, due to a lack of serviceable vehicles. The slow recovery of both fishing and monitoring activity has continued throughout 2011. One cannery also closed just prior to the tsunami and moved to Ohio, by sheer luck avoided damage to its business. Although there was storm damage to the remaining ghost facility, it had already been abandoned.

Comparing the longline logbook data from the fourth quarter of 2009 to the fourth quarter of 2010, the tsunami did not appear to have greatly impacted fishing activity by the large longline fleet, although several large longline vessels that were in port but had not fished for a while were destroyed. However, a comparison of annual summaries for longline logbook data from 2010 to 2011 showed significant decreases in both effort and catch. The number of active vessels decreased by 8% (from 26 to 24). The overall catch per unit of effort (CPUE) decreased by 20%, from 25 fish/1000 hooks (all species) to 20 fish/1000 hooks. The estimated commercial catch decreased by 34% (all percentages rounded to the nearest whole percent). The 2011 longline fishery in American Samoa was definitely challenged, which may be related to impacts from the tsunami.

DATA COLLECTION PROGRAMS

The data collection programs used by the DMWR to monitor the changing fisheries of American Samoa have evolved considerably over the past 20 years. These data collection programs typically have relied heavily on personal contacts with fishers, as well as on a significant amount of dockside monitoring and interviews. From 1982 to 1985, DMWR obtained catch statistics by interviewing commercial fishermen at the end of their trip, 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 for which 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.

DMWR has several major data collection programs in place. Data from these programs are used to develop the best estimates of catch and effort for the complex, rapidly changing fisheries of American Samoa. These programs include the following:

1. Vessel Classification Program – a vessel history and tracking system for all American Samoa vessels, managed by the Department of Public Safety.
2. Boat-based Creel Survey Program (formerly the Offshore Creel Survey System) – access-point creel surveys at boat ramps on Tutuila and in the Manu'a Islands.
3. Shore-based Creel Survey Program – roving creel surveys along the shoreline of Tutuila and the Manu'a Islands.
4. Commercial Purchase Program – a mandatory purchase receipt system for fish businesses on Tutuila.
5. Federal Longline Logbook Program, in coordination with NOAA’s Pacific Islands Fisheries Science Center (PIFSC), for detailed tracking of the longline fishery.
6. Cannery Landings Program, in coordination with NOAA’s Pacific Islands Regional Office (PIRO), to document all landings at the cannery by domestic and foreign vessels.
7. Size frequency sampling program at the cannery, in coordination with NOAA’s Pacific Islands Regional Office (PIRO).

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 – Around 1985, a boat-based creel survey sampling program was implemented on Tutuila to provide statistics on all boat-based fisheries, including noncommercial information. Similar monitoring programs were established shortly thereafter in the Manu'a Islands, where the fishing fleets are centrally located and small enough for statistics to be collected for almost every trip. The surveyors in the Manu'a Islands send monitoring data 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 has remained a trip-based stratified random sampling program, by type of day (weekday vs. weekend/holiday) and fishing method. For cultural reasons, Sundays are not working days in American Samoa. As a result, no sampling occurs on Sundays and there is very little fishing activity.

DMWR staff normally samples two weekdays and one 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. Since 1985, it has been assumed that fishing activity and catch rates in the non-sampled area are similar to the sampled areas. These assumptions are under evaluation. Furthermore, it has been assumed that the fishers interviewed are representative of the entire fishing population and that they give accurate information.

Unless contrary information is available from knowledgeable persons interviewed along the docks or in the local community, 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 considered to be “out fishing.” and is expanded to estimate the total number of fishing trips on Tutuila:

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

The remaining data elements, listed below, are collected on each boat/trip for which an interview can be successfully completed:

- Interview Time *
- Area Fished
- Home Island
- Total Hours Fished (trip length) *
- Number of Fishermen
- Number of Gears Used
- Total Trip Weight in Pounds *
- Species Caught *
- Number of Pieces by Species
- Disposition of Species (sale vs. home or village consumption) *
- Weight in Pounds by Species *
- Condition by Species (if not whole)
- Length of Fish (converted to weight)
- Price per Pound by 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. Identification and weight of each species are often not obtainable. If that is the case, a code for species groupings (e.g., miscellaneous bottomfish) is used. The interview data are later expanded to estimate total catch, using the average catch per fishing trip by gear type and the number of fishing trips in each stratum. The sum of catch-per-trip estimates, multiplied by the estimated number of trips for each stratum is used to obtain an estimate of the total catch for Tutuila. The Manu'a statistics, considered to be a census and therefore not expanded, are added to the expanded estimates for Tutuila to arrive at a total estimate for American Samoa.

Shore-based Creel Survey Program – Around 1985, a shore-based creel survey sampling program was implemented on Tutuila to provide statistics on all shore-based fisheries, including noncommercial information. Similar monitoring programs were established shortly thereafter in the Manu'a Islands. The surveyors in the Manu'a Islands send monitoring data to DMWR in Tutuila for processing.

The details of the shore-based fishery sampling program have changed over the years to accommodate changes in the fisheries. But it has remained an hourly CPUE-based stratified random sampling program, by area, time of day (6-hour time periods on weekdays versus weekend/holidays) and fishing method. For cultural reasons, Sundays are not working days in American Samoa. As a result, no sampling occurs on Sundays and there is very little fishing activity.

In the shore-based creel survey, DMWR staff drives along a designated survey route and stops at designated areas to record visual observations of fishing activity by method/gear. Any activity that involves a motorized vessel is not counted, unless the vessel: 1) is used primarily for transporting such items as gill nets, surround nets, and drag nets and 2) was launched from a beach, not a boat ramp. The survey routes cover the most accessible shoreline areas along Tutuila and the Manu'a Islands shores.

DMWR staff on Tutuila sample a minimum of seven surveys per quarter: five weekdays per route per quarter, and two weekend/holidays per route per quarter. During survey days, counts of total participation are collected, and as many fisherman returning from fishing trips along the coastline (or while they are still fishing) are interviewed for catch and effort data, and biological samples are taken if possible.

Since 1985, it has been assumed that fishing activity and catch rates in the non-sampled area are similar to the sampled areas. These assumptions are under evaluation. Furthermore, it has been assumed that the fishers interviewed are representative of the entire fishing population and that they provide accurate information.

The following participation information is recorded and is expanded to estimate the total number of fishing trips on Tutuila:

A.6

- Survey Date
- Shift Start and End Time
- Location (Areas of Tutuila, Ofu, or Tau)
- Run Number and Time
- Village
- Number of people fishing
- Fishing Method and Number of Gears
- Weather

The remaining data elements, listed below, are collected during interviews:

- Interview Date
- Type of Day
- Interview Time
- Village
- Number of Fishermen
- Fishing Start and Stop Time
- Hours Not Fished
- Fishing Method and Number of Gears
- Location Fished
- Percent of Catch (Sold and Unsold)
- Species
- Length of Fish (converted to weight)
- Total Number of Pieces
- Total Weight of Fish
- Whether Interview was Complete (All Fish are measured), Incomplete, or Opportunistic
- Bycatch (Species, Weight, Number of Pieces, Live, Dead/Injured, Released)

It is not always possible to obtain information on all the items listed. It is not always possible to identify and weigh each species. If this is the case, a code for species groupings (e.g., miscellaneous bottomfish) is used and the weight is either measured or estimated for the lot. The interview data are later expanded to estimate total catch, using the average catch per hour by gear type and the number of fishing hours in each stratum. The sum of catch-per-stratum (area and time period) estimates, multiplied by the estimated number of strata in a year is used to obtain an estimate of the total catch for Tutuila. The Manu'a statistics, considered to be a census and therefore not expanded, are added to the expanded estimates for Tutuila to arrive at a total estimate for American Samoa.

Commercial Purchase Program – For several decades, the two canneries in Pago Pago Harbor provided monthly summary statistics of their purchases of fish from all vessels, foreign and domestic. In September 1990, a Commercial Purchase Program was instituted, whereby all other businesses in American Samoa that buy fish directly from fishermen were required by law to submit a copy of their purchase receipts to DMWR. Receipt books were 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 by Species
- Weight in Pounds by Species *
- Price per Pound by 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 the National Marine Fisheries Service (NMFS) for American Samoa. All longline fishermen are required to obtain a federal permit and to submit logs containing detailed data on each set, including location, effort and catch by species. From 1996 to 1999, the logbooks submitted by the local longliners were edited by the DMWR-WPacFIN fisheries data manager in American Samoa. PIRO observers assisted in finding longline captains and obtaining or clarifying any missing data on the logsheets. The data were then sent to PIFSC for further editing and data processing.

In July 1999, to improve monitoring of the quickly growing longline fishery, DMWR implemented a Daily Effort Census (DEC) for all federally permitted longline vessels. Six days a week, DMWR staff made two visits daily to the docks and mooring areas longline vessels frequent. The staff documents whether each vessel on the list is either “in port” or “out fishing.” The DEC data are used to track the activity of each vessel and help ensure that all log sheets are submitted in a timely manner.

To further improve the quality and timeliness of the data, beginning in January 2000, logbook collection, editing, and data processing has been conducted by DMWR in American Samoa and periodically downloaded to NMFS. The following information is recorded for each set made by the longline vessels:

- Begin and End of Set/Haul Date and Time
- Vessel Name
- Date of Departure/Arrival
- Port of Departure/Arrival
- Observer on Board
- Target Species
- Bait Used
- Mainline Length
- No. of Hooks
- No. of Hooks between Floats
- Begin and End of Set/Haul Latitude and Longitude
- No. Kept by Species (including sharks)
- No. Released by Species
- No. of Protected Species Released Alive, Injured or Dead
- Bird Catch Mitigation Measures
- Wind Speed & Direction
- Wave Height
- Sea Surface Temperature
- No. of Light Sticks Used

In addition, on a monthly basis, logbook data are compared with cannery unloading data for American Samoa-based boats, to identify vessels that may have unloaded at the cannery, but may not have turned in some or all of their log sheets.

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 data either. Beginning in April 2001, to provide better estimates of the weight of fish caught by the longline vessels, DMWR began collecting length data from the South Pacific Regional Longline Port Sampling Forms for American Samoa-based longliners, and PIFSC-WPacFIN provided programming support to convert average length by species data to

estimated weights. Catch disposition data (cannery versus local market sale or home consumption) were also entered in the comments section of these forms, providing a basis for estimating the disposition and sales value by weight of the fish caught.

DATA PROCESSING

Significant changes in American Samoa's fisheries have occurred since the mid-1990s, including the development of the longline fishery and a nighttime, boat-based spear fishery. These changes, along with differences in the ability of DMWR to conduct monitoring activities throughout the week, at all times of day and in all fishing areas, have affected bias in processes used to count effort and conduct creel interviews in the field. By 1997, WPacFIN and DMWR identified some problems and implemented modifications to creel survey field techniques. By early 1998, it was clear that the algorithms used to expand the survey data and estimate landings for the fishery as a whole needed to be changed. New data processing programs that better handled the more complex fisheries in American Samoa were implemented and used to reprocess the historical data time series. This volume includes some of the results of new data expansion algorithms, most of which are still being documented (Lowe et al., in progress).

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 data collected. Generally speaking, these changes have placed increasing emphasis on improving data quality and employing cross-validation measures across systems, which has made the data processing systems and data collections more robust and complete, albeit more complex.

The following important principles have remained constant over time:

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

Typically, when upgrades have been made to data processing systems (such as changes in expansion and reporting algorithms for the creel and commercial landings data), the entire time series of data would be reprocessed using the new algorithms, in an effort to ensure that trends in the fisheries would not solely result from changing methodology. To help the reader understand the origin of the data included in this report, a general description of these processes follows. Please note that although the summary does not include the details of minor changes that may have occurred throughout the evolutionary history of these systems, an effort has been made to include major changes.

The data from 1982 to 1985 were imported directly from the original Commercial Catch Monitoring System, used prior to implementation of the boat-based creel survey in American Samoa. Since 1986, the boat-based creel survey data expansion system has been the central system used to estimate total commercial landings in American Samoa. Briefly, the survey data

expansion process involves multiplying the average daily participation by the average catch per trip for each stratum and summing this across strata.

For the years from 1986 to 1990, the estimated commercial sales portion of expanded creel survey data from Tutuila and the Manu'a Islands were combined to produce estimated total commercial landings. Since 1990, with implementation of a mandatory fish dealer receipt book system on Tutuila (Commercial Purchase Program), further adjustments have been made to these combined creel data using receipt book data. These adjustments made significant improvements in overall totals, as they helped adjust for sales not detected through the boat-based survey (e.g., inshore and strictly nighttime commercial fishing). Species totals modified with these types of adjustments are flagged with an asterisk in data summaries.

Finally, in the late 1990s when larger longline vessels began landing their catches directly at the canneries (outside the monitoring capability of standard boat-based creel survey data), the longline logbook system and cannery size-frequency sampling data began to enter into algorithms used to estimate landings from this part of the fishery. Landings of those vessels were added, to create a more complete estimate of total commercial landings for American Samoa.

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 see 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, but these 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. These species tables are affected by differences in usage of local common names for various species, and are currently being updated for consistency across regions. For more detailed species information, during the interim, please visit the WPacFIN website, <http://www.pifsc.noaa.gov/wpacfin>.

I. Pelagic Management Unit Species (PMUS)

Sharks (unknown)	Sailfish
Mahimahi	Swordfish
Blue marlin	Wahoo
Black marlin	

II. Bottomfish Management Unit Species (BMUS)

Black jack	Goldflag jobfish
Yellow-edged lyretail	Silverjaw jobfish (lehi, rusty jobfish)
Blue-lined snapper	Longtail snapper (onaga)
Gray jobfish	Ruby snapper (ehu)
Pink snapper (opakapaka)	Redgill emperor
Flower snapper (gindai)	

III. Billfishes

Swordfish	Black marlin
Blue marlin	Sailfish

IV. Tunas

Tunas (unknown)	Yellowfin tuna
Skipjack tuna	Bigeye tuna
Dogtooth tuna	Kawakawa
Albacore tuna	

V. Other Tunas

Tunas (unknown)	Kawakawa
Dogtooth tuna	

VI. Fisheries Categories

A. *Pelagic Fishes*

Albacore tuna	Oilfish
Barracudas (misc)	Rainbow runner
Bigeye tuna	Sailfish
Black marlin	Sharks (unknown)
Blue marlin	Skipjack tuna
Dogtooth tuna	Swordfish
Kawakawa	Tunas (unknown)
Mackerel	Wahoo
Mahimahi	Yellowfin tuna

B. *Bottomfishes*

Bigeye bream	Longnose emperor
Bigeye scad	Longtail snapper (onaga)
Black jack	Onespot snapper
Black snapper	Orangespot emperor
Blue-lined snapper	Peacock grouper
Bottomfishes (unknown)	Pink snapper (opakapaka)
Deep water snappers	Redgill emperor
Emperors	Ruby snapper (ehu)
Flower snapper (gindai)	Silverjaw jobfish (lehi, rusty jobfish)
Goldflag jobfish	Stone's snapper
Gray jobfish	Trevallies
Greater amberjack	Twinspot/red snapper
Groupers	White-edged lyretail
Humpback snapper	Yellow-edged lyretail

C. *Reef Fishes*

Goatfishes	Squirrelfishes
Inshore groupers	Surgeonfishes/tangs
Mulletts	Terapon perch
Parrotfishes	Triggerfishes
Rudderfishes	Unicornfishes
Soldierfish (misc)	

D. *Other Fishes, Algae & Invertebrates*

Catfishes	Octopus
Eels	Spiny lobster
Gold banded fusilier	Spiny pufferfish

INTERPRETATION OF STATISTICS

When interpreting the data in the tables and graphs, please keep in mind the caveats described earlier in this section, along with the fact that these commercial landings summaries are not based on a census of all fishing activity, but on a subsample of those activities, as well as on integration of data from several different programs. One of the primary tools in expanding the creel survey data into an estimate of monthly and annual catch are the proportionality constants, used to adjust for the percentage of temporal and geographic coverage of the surveys. The data expansion methodology is designed to allow for refinement of these constants, as additional information is gained on the proportions of fishing activity taking place outside the survey times and areas. With constant improvement in the estimated values of these constants, the survey data expansion can be improved to create better overall estimates. Variation in species composition would not be expected to change significantly, unless gear types and fishing methods change as well. The current estimates of total landings are considered to be conservative, because the catch from inshore subsistence fisheries has not been included in these estimates.

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Table A-1**American Samoa Annual 2011 Estimated Commercial Landings**

Species	Pounds	Value (\$)	Price/Lb (\$)
Greater amberjack	564	1,571	2.78
Barracudas	1,994	5,093	2.55
Bottomfishes (unknown)	5,852	17,359	2.97
Bigeye bream	156	447	2.86
Catfishes	39	118	3.00
Eels	169	499	2.95
Longnose emperor	231	635	2.75
Orangespot emperor	172	506	2.95
Redgill emperor	3,881	11,055	2.85
Emperors	2,945	8,583	2.92
Gold banded fusilier	20	60	2.95
Goatfishes	38	111	2.95
Peacock grouper	6	17	2.95
Groupers	1,018	2,984	2.93
Inshore groupers	217	626	2.88
Black jack	285	728	2.55
Goldflag jobfish	431	1,198	2.78
Gray jobfish	1,929	5,388	2.79
Silverjaw jobfish (lehi)	1,467	4,309	2.94
Spiny lobster	2,242	9,125	4.07
Yellow-edged lyretail	17	51	2.95
White-edged lyretail	800	2,314	2.89
Mackerel	56	165	2.95
Mahimahi	20,610	51,525	2.50
Black marlin	2,468	2,717	1.10
Blue marlin	55,104	137,761	2.50
Mulletts	12	34	2.94
Octopus	435	1,301	2.99
Oilfish	283	707	2.50
Parrotfishes	5,769	16,853	2.92
Terapon perch	16	48	2.95
Spiny pufferfish	14	41	2.96
Rainbow runner	158	451	2.86
Rudderfishes	93	273	2.94
Sailfish	6,063	15,158	2.50
Bigeye scad	109	307	2.81
Sharks (unknown)	178	406	2.28
Black snapper	71	210	2.95
Blue-lined snapper	2,654	8,522	3.21
Flower snapper (gindai)	42	122	2.88
Humpback snapper	4,259	12,352	2.90
Longtail snapper (onaga)	3,829	10,820	2.83
Onespot snapper	72	205	2.86
Ruby snapper (ehu)	397	1,119	2.82

Table A-1 (continued)**American Samoa Annual 2011 Estimated Commercial Landings**

Species	Pounds	Value (\$)	Price/Lb (\$)
Stone's snapper	227	671	2.95
Twinspot/red snapper	355	1,046	2.95
Pink snapper (opakapaka)	483	1,414	2.93
Deep water snappers	199	587	2.95
Soldierfishes	50	139	2.76
Squirrelfishes	1,573	4,587	2.92
Surgeonfishes/tangs	13,283	38,657	2.91
Swordfish	23,407	58,272	2.49
Trevallies	49	141	2.87
Triggerfishes	48	135	2.81
Tunas (unknown)	1,210	3,024	2.50
Albacore tuna	5,098,823	5,943,777	1.17
Bigeye tuna	382,283	527,760	1.38
Dogtooth tuna	351	902	2.57
Kawakawa	308	613	1.99
Skipjack tuna	261,264	221,920	0.85
Yellowfin tuna	1,202,073	1,272,208	1.06
Unicornfishes	4,077	11,541	2.83
Wahoo	278,644	316,415	1.14
TOTAL	7,395,871	8,737,679	1.18

* Data replaced or modified by Actual Commercial Landings Data

Table A-2
American Samoa January 2011 Estimated Commercial Landings

Species	Pounds	Value (\$)	Price/Lb (\$)	
Greater amberjack	61	156	2.56	
Barracudas	295	763	2.59	
Bigeye bream	20	45	2.21	
Longnose emperor	99	253	2.56	
Redgill emperor	372	967	2.60	
Emperors	266	692	2.60	
Groupers	147	403	2.75	*
Inshore groupers	16	43	2.75	*
Black jack	75	189	2.53	
Goldflag jobfish	228	601	2.64	
Gray jobfish	285	740	2.60	
Silverjaw jobfish (lehi)	85	234	2.75	
Spiny lobster	60	225	3.74	
White-edged lyretail	90	237	2.63	
Mahimahi	182	456	2.50	
Blue marlin	4,585	11,462	2.50	
Octopus	65	172	2.65	*
Parrotfishes	127	339	2.67	*
Rainbow runner	71	194	2.75	
Sailfish	52	129	2.50	
Sharks (unknown)	63	122	1.95	
Blue-lined snapper	334	1,260	3.77	
Humpback snapper	1,028	2,826	2.75	
Longtail snapper (onaga)	2,705	7,511	2.78	
Onespot snapper	23	60	2.64	
Ruby snapper (ehu)	65	229	3.50	*
Pink snapper (opapakaka)	28	73	2.60	
Soldierfishes	12	32	2.61	
Squirrelfishes	49	135	2.75	*
Surgeonfishes/tangs	316	846	2.68	*
Swordfish	742	1,856	2.50	
Albacore tuna	201,374	236,051	1.17	
Bigeye tuna	9,044	12,486	1.38	
Dogtooth tuna	13	31	2.51	
Kawakawa	189	284	1.50	
Skipjack tuna	41,295	32,697	0.79	
Yellowfin tuna	67,250	70,046	1.04	
Unicornfishes	68	186	2.75	*
Wahoo	26,269	25,556	0.97	
TOTAL	358,046	410,588	1.15	

* Data replaced or modified by Actual Commercial Landings Data

Table A-3

American Samoa February 2011 Estimated Commercial Landings

Species	Pounds	Value (\$)	Price/Lb (\$)
Greater amberjack	175	448	2.56
Barracudas	154	400	2.59
Longnose emperor	33	88	2.70
Redgill emperor	760	1,977	2.60
Emperors	28	73	2.60
Groupers	130	384	2.95
Goldflag jobfish	42	122	2.93
Gray jobfish	573	1,489	2.60
Silverjaw jobfish (lehi)	135	397	2.94
Spiny lobster	32	153	4.73
White-edged lyretail	16	43	2.71
Mahimahi	446	1,115	2.50
Blue marlin	4,325	10,813	2.50
Parrotfishes	284	766	2.70
Sailfish	206	516	2.50
Sharks (unknown)	7	13	1.91
Blue-lined snapper	521	1,964	3.77
Humpback snapper	427	1,252	2.94
Longtail snapper (onaga)	62	174	2.82
Deep water snappers	199	587	2.95
Squirrelfishes	32	91	2.86
Surgeonfishes/tangs	988	2,660	2.69
Swordfish	1,061	2,651	2.50
Trevallies	17	46	2.70
Albacore tuna	121,499	142,422	1.17
Bigeye tuna	18,231	25,168	1.38
Dogtooth tuna	114	284	2.50
Kawakawa	15	24	1.60
Skipjack tuna	11,531	8,893	0.77
Yellowfin tuna	131,396	136,984	1.04
Unicornfishes	120	329	2.74
Wahoo	23,135	26,565	1.15
TOTAL	316,690	368,890	1.16

* Data replaced or modified by Actual Commercial Landings Data

Table A-4

American Samoa March 2011 Estimated Commercial Landings

Species	Pounds	Value (\$)	Price/Lb (\$)	
Greater amberjack	85	250	2.95	
Barracudas	65	168	2.57	
Bigeye bream	50	149	2.95	
Redgill emperor	502	1,480	2.95	
Emperors	854	2,520	2.95	
Peacock grouper	6	17	2.95	
Groupers	131	391	2.98	*
Inshore groupers	17	47	2.75	*
Goldflag jobfish	50	148	2.95	
Silverjaw jobfish (lehi)	376	1,108	2.95	
Spiny lobster	121	482	4.00	
White-edged lyretail	29	81	2.75	
Mahimahi	568	1,419	2.50	
Blue marlin	4,412	11,030	2.50	
Oilfish	39	98	2.50	
Parrotfishes	479	1,413	2.95	
Terapon perch	16	48	2.95	
Rudderfishes	11	31	2.96	
Sailfish	464	1,160	2.50	
Sharks (unknown)	108	270	2.50	
Black snapper	19	57	2.94	
Blue-lined snapper	403	1,190	2.95	
Humpback snapper	850	2,507	2.95	
Longtail snapper (onaga)	12	35	2.96	
Stone's snapper	66	195	2.95	
Twinspot/red snapper	49	146	2.95	
Pink snapper (opakapaka)	135	399	2.95	
Squirrelfishes	103	302	2.94	
Surgeonfishes/tangs	886	2,456	2.77	*
Swordfish	742	1,856	2.50	
Triggerfishes	33	90	2.75	
Albacore tuna	131,616	154,281	1.17	
Bigeye tuna	19,820	27,363	1.38	
Dogtooth tuna	19	57	2.95	
Skipjack tuna	13,630	11,465	0.84	
Yellowfin tuna	93,573	97,789	1.05	
Unicornfishes	323	872	2.70	
Wahoo	9,712	11,284	1.16	
TOTAL	280,376	334,653	1.19	

* Data replaced or modified by Actual Commercial Landings Data

Table A-5
American Samoa April 2011 Estimated Commercial Landings

Species	Pounds	Value (\$)	Price/Lb (\$)
Greater amberjack	14	40	2.95
Barracudas	150	382	2.55
Bottomfishes (unknown)	464	1,367	2.95
Eels	146	431	2.95
Redgill emperor	261	771	2.95
Emperors	104	308	2.95
Gold banded fusilier	20	60	2.95
Groupers	115	348	3.02
Inshore groupers	27	72	2.65
Black jack	62	156	2.52
Gray jobfish	207	609	2.95
Silverjaw jobfish (lehi)	197	580	2.95
Spiny lobster	618	2,440	3.95
Yellow-edged lyretail	17	51	2.95
White-edged lyretail	31	86	2.75
Mahimahi	568	1,419	2.50
Black marlin	70	140	2.00
Blue marlin	3,720	9,299	2.50
Oilfish	43	108	2.50
Parrotfishes	1,204	3,551	2.95
Rudderfishes	38	112	2.95
Sailfish	516	1,289	2.50
Blue-lined snapper	212	626	2.95
Humpback snapper	279	824	2.95
Stone's snapper	80	235	2.95
Twinspot/red snapper	40	119	2.95
Pink snapper (opakapaka)	172	509	2.95
Squirrelfishes	192	546	2.85
Surgeonfishes/tangs	1,061	3,131	2.95
Swordfish	607	1,273	2.10
Albacore tuna	117,822	138,112	1.17
Bigeye tuna	27,081	37,386	1.38
Skipjack tuna	6,222	5,152	0.83
Yellowfin tuna	53,971	57,045	1.06
Unicornfishes	1,137	3,078	2.71
Wahoo	8,385	9,916	1.18
TOTAL	225,851	281,566	1.25

* Data replaced or modified by Actual Commercial Landings Data

Table A-6

American Samoa May 2011 Estimated Commercial Landings

Species	Pounds	Value (\$)	Price/Lb (\$)	
Greater amberjack	13	38	2.95	
Barracudas	165	420	2.54	
Bottomfishes (unknown)	1,954	5,733	2.93	*
Catfishes	39	118	3.00	*
Eels	23	68	2.94	
Redgill emperor	161	475	2.95	
Inshore groupers	34	101	2.95	*
Goldflag jobfish	42	125	2.95	
Gray jobfish	77	228	2.95	
Spiny lobster	187	738	3.95	
White-edged lyretail	30	90	2.95	
Mahimahi	2,087	5,219	2.50	
Blue marlin	6,748	16,869	2.50	
Octopus	7	18	2.51	
Oilfish	101	253	2.50	
Parrotfishes	458	1,351	2.95	
Sailfish	722	1,805	2.50	
Blue-lined snapper	79	233	2.95	
Humpback snapper	150	442	2.95	
Longtail snapper (onaga)	79	234	2.95	
Ruby snapper (ehu)	30	120	4.00	*
Squirrelfishes	90	262	2.92	*
Surgeonfishes/tangs	1,092	3,231	2.96	*
Swordfish	1,909	4,772	2.50	
Tunas (unknown)	1,210	3,024	2.50	
Albacore tuna	509,552	597,299	1.17	
Bigeye tuna	38,422	53,043	1.38	
Skipjack tuna	28,508	24,538	0.86	
Yellowfin tuna	175,778	183,504	1.04	
Unicornfishes	443	1,290	2.91	
Wahoo	26,994	31,093	1.15	
TOTAL	797,184	936,730	1.18	

* Data replaced or modified by Actual Commercial Landings Data

Table A-7

American Samoa June 2011 Estimated Commercial Landings

Species	Pounds	Value (\$)	Price/Lb (\$)	
Barracudas	110	281	2.56	
Bottomfishes (unknown)	374	1,103	2.95	
Redgill emperor	161	475	2.95	
Emperors	179	527	2.95	
Groupers	58	170	2.94	*
Inshore groupers	18	53	2.97	*
Black jack	45	114	2.52	
Gray jobfish	102	300	2.95	
Spiny lobster	258	1,033	4.00	
White-edged lyretail	30	89	2.95	
Mahimahi	3,486	8,714	2.50	
Blue marlin	7,699	19,248	2.50	
Octopus	162	406	2.50	
Parrotfishes	772	2,279	2.95	
Spiny pufferfish	14	41	2.96	
Rudderfishes	13	39	2.94	
Sailfish	825	2,063	2.50	
Black snapper	10	30	2.95	
Blue-lined snapper	81	240	2.95	
Flower snapper (gindai)	28	81	2.95	
Humpback snapper	190	561	2.95	
Stone's snapper	49	143	2.95	
Pink snapper (opakapaka)	36	105	2.95	
Squirrelfishes	190	561	2.95	
Surgeonfishes/tangs	877	2,568	2.93	*
Swordfish	1,803	4,507	2.50	
Albacore tuna	685,114	803,093	1.17	
Bigeye tuna	52,572	72,578	1.38	
Kawakawa	40	117	2.95	
Skipjack tuna	39,048	33,266	0.85	
Yellowfin tuna	260,674	273,650	1.05	
Unicornfishes	524	1,511	2.88	
Wahoo	43,936	50,321	1.15	
TOTAL	1,099,477	1,280,266	1.16	

* Data replaced or modified by Actual Commercial Landings Data

Table A-8**American Samoa July 2011 Estimated Commercial Landings**

Species	Pounds	Value (\$)	Price/Lb (\$)	
Greater amberjack	11	32	2.94	
Barracudas	202	506	2.51	
Redgill emperor	181	533	2.95	
Emperors	370	1,090	2.95	
Inshore groupers	16	44	2.74	*
Black jack	23	58	2.60	
Silverjaw jobfish (lehi)	72	211	2.95	
Spiny lobster	103	414	4.00	
Mahimahi	3,017	7,541	2.50	
Black marlin	386	343	0.89	*
Blue marlin	3,374	8,434	2.50	
Octopus	81	203	2.50	
Parrotfishes	227	671	2.95	
Sailfish	700	1,749	2.50	
Black snapper	15	43	2.95	
Blue-lined snapper	104	307	2.95	
Humpback snapper	159	470	2.95	
Twinspot/red snapper	27	81	2.95	
Squirrelfishes	79	223	2.83	*
Surgeonfishes/tangs	1,058	3,100	2.93	*
Swordfish	2,121	5,302	2.50	
Albacore tuna	368,877	432,398	1.17	
Bigeye tuna	42,397	58,530	1.38	
Dogtooth tuna	34	99	2.93	
Kawakawa	24	71	2.95	
Skipjack tuna	31,318	27,804	0.89	
Yellowfin tuna	92,514	100,453	1.09	
Unicornfishes	186	505	2.72	
Wahoo	22,712	25,960	1.14	
TOTAL	570,385	677,176	1.19	

* Data replaced or modified by Actual Commercial Landings Data

Table A-9

American Samoa August 2011 Estimated Commercial Landings

Species	Pounds	Value (\$)	Price/Lb (\$)	
Greater amberjack	15	43	2.94	
Barracudas	119	304	2.56	
Bottomfishes (unknown)	221	657	2.97	*
Orangespot emperor	122	360	2.95	
Redgill emperor	118	349	2.95	
Groupers	73	215	2.95	*
Inshore groupers	12	34	2.94	*
Gray jobfish	43	127	2.95	
Silverjaw jobfish (lehi)	15	43	2.96	
Spiny lobster	100	412	4.11	*
White-edged lyretail	16	47	2.95	
Mahimahi	4,276	10,690	2.50	
Black marlin	219	361	1.65	*
Blue marlin	5,277	13,192	2.50	
Octopus	54	202	3.74	*
Parrotfishes	602	1,688	2.81	*
Rainbow runner	25	73	2.95	
Rudderfishes	20	59	2.91	
Sailfish	877	2,192	2.50	
Bigeye scad	68	205	3.00	*
Blue-lined snapper	42	115	2.75	*
Humpback snapper	137	403	2.95	
Longtail snapper (onaga)	25	75	2.94	
Squirrelfishes	165	491	2.97	*
Surgeonfishes/tangs	2,519	7,354	2.92	*
Swordfish	4,560	11,400	2.50	
Albacore tuna	716,337	839,692	1.17	
Bigeye tuna	70,272	97,014	1.38	
Skipjack tuna	37,050	31,840	0.86	
Yellowfin tuna	80,457	85,923	1.07	
Unicornfishes	387	1,137	2.94	*
Wahoo	29,656	34,097	1.15	
TOTAL	953,877	1,140,795	1.20	

* Data replaced or modified by Actual Commercial Landings Data

Table A-10

American Samoa September 2011 Estimated Commercial Landings

Species	Pounds	Value (\$)	Price/Lb (\$)	
Greater amberjack	25	72	2.95	
Barracudas	198	506	2.56	
Bottomfishes (unknown)	1,324	3,915	2.96	*
Bigeye bream	15	43	2.95	
Longnose emperor	32	94	2.95	
Redgill emperor	250	736	2.95	
Emperors	76	225	2.95	
Goatfishes	11	32	2.95	
Groupers	54	163	2.99	*
Black jack	34	88	2.60	
Gray jobfish	74	218	2.95	
Silverjaw jobfish (lehi)	134	394	2.95	
Spiny lobster	215	873	4.07	*
White-edged lyretail	61	179	2.95	
Mackerel	27	79	2.95	
Mahimahi	2,697	6,743	2.50	
Black marlin	805	1,006	1.25	*
Blue marlin	3,547	8,867	2.50	
Octopus	65	300	4.63	*
Oilfish	40	99	2.50	
Parrotfishes	390	1,169	3.00	*
Rainbow runner	22	66	2.95	
Sailfish	309	774	2.50	
Bigeye scad	19	49	2.51	
Blue-lined snapper	88	259	2.95	
Humpback snapper	184	542	2.95	
Longtail snapper (onaga)	369	1,088	2.95	
Onespot snapper	20	58	2.96	
Ruby snapper (ehu)	35	96	2.73	*
Twinspot/red snapper	142	419	2.95	
Pink snapper (opakapaka)	40	119	2.95	
Squirrelfishes	102	302	2.96	*
Surgeonfishes/tangs	1,022	3,056	2.99	*
Swordfish	2,015	5,037	2.50	
Albacore tuna	466,111	546,377	1.17	
Bigeye tuna	27,603	38,107	1.38	
Dogtooth tuna	19	48	2.50	
Kawakawa	30	87	2.95	
Skipjack tuna	10,114	10,896	1.08	
Yellowfin tuna	49,134	55,057	1.12	
Unicornfishes	169	507	3.00	*
Wahoo	23,104	26,886	1.16	
TOTAL	590,721	715,627	1.21	

* Data replaced or modified by Actual Commercial Landings Data

Table A-11

American Samoa October 2011 Estimated Commercial Landings

Species	Pounds	Value (\$)	Price/Lb (\$)	
Greater amberjack	37	108	2.95	
Barracudas	164	421	2.56	
Bottomfishes (unknown)	292	975	3.34	*
Bigeye bream	23	68	2.95	
Longnose emperor	15	45	2.94	
Redgill emperor	415	1,224	2.95	
Emperors	121	357	2.95	
Goatfishes	13	40	2.96	
Groupers	112	331	2.95	
Black jack	27	71	2.60	
Gray jobfish	91	269	2.95	
Silverjaw jobfish (lehi)	348	1,025	2.95	
Spiny lobster	192	770	4.00	
White-edged lyretail	85	252	2.95	
Mackerel	29	87	2.95	
Mahimahi	2,109	5,272	2.50	
Blue marlin	3,547	8,867	2.50	
Mullets	12	34	2.94	
Oilfish	60	149	2.50	
Parrotfishes	351	1,044	2.98	*
Rainbow runner	29	84	2.95	
Sailfish	1,135	2,837	2.50	
Bigeye scad	22	54	2.50	
Blue-lined snapper	193	569	2.95	
Flower snapper (gindai)	15	40	2.75	*
Humpback snapper	295	871	2.95	
Longtail snapper (onaga)	546	1,611	2.95	
Onespot snapper	29	87	2.95	
Ruby snapper (ehu)	266	674	2.53	*
Twinspot/red snapper	67	198	2.95	
Pink snapper (opakapaka)	59	175	2.95	
Squirrelfishes	112	308	2.75	*
Surgeonfishes/tangs	968	2,776	2.87	*
Swordfish	1,167	2,916	2.50	
Triggerfishes	15	45	2.95	
Albacore tuna	641,989	752,541	1.17	
Bigeye tuna	27,293	37,679	1.38	
Dogtooth tuna	86	214	2.50	
Kawakawa	10	30	2.94	
Skipjack tuna	26,241	20,711	0.79	
Yellowfin tuna	71,638	76,619	1.07	
Unicornfishes	182	537	2.95	
Wahoo	21,022	24,448	1.16	
TOTAL	801,420	947,431	1.18	

* Data replaced or modified by Actual Commercial Landings Data

Table A-12**American Samoa November 2011 Estimated Commercial Landings**

Species	Pounds	Value (\$)	Price/Lb (\$)	
Greater amberjack	130	384	2.95	
Barracudas	159	403	2.54	
Bottomfishes (unknown)	1,224	3,610	2.95	
Bigeye bream	48	141	2.95	
Longnose emperor	53	155	2.95	
Orangespot emperor	47	139	2.95	
Redgill emperor	371	1,093	2.95	
Emperors	270	798	2.95	
Goatfishes	13	40	2.96	
Groupers	112	329	2.93	*
Inshore groupers	59	175	2.98	*
Goldflag jobfish	69	203	2.95	
Gray jobfish	388	1,146	2.95	
Silverjaw jobfish (lehi)	45	133	2.95	
Spiny lobster	197	786	4.00	
White-edged lyretail	181	533	2.95	
Mahimahi	547	1,368	2.50	
Black marlin	488	366	0.75	*
Blue marlin	3,979	9,948	2.50	
Parrotfishes	319	942	2.95	
Rudderfishes	11	32	2.96	
Sailfish	103	258	2.50	
Blue-lined snapper	333	982	2.95	
Humpback snapper	436	1,286	2.95	
Longtail snapper (onaga)	32	93	2.95	
Stone's snapper	33	98	2.95	
Soldierfishes	10	28	2.75	
Squirrelfishes	260	766	2.95	
Surgeonfishes/tangs	887	2,652	2.99	*
Swordfish	4,666	11,665	2.50	
Trevallies	19	55	2.96	
Albacore tuna	736,128	862,891	1.17	
Bigeye tuna	25,703	35,484	1.38	
Dogtooth tuna	68	170	2.50	
Skipjack tuna	9,529	7,399	0.78	
Yellowfin tuna	67,951	72,302	1.06	
Unicornfishes	173	509	2.95	
Wahoo	19,663	22,678	1.15	
TOTAL	874,703	1,042,041	1.19	

* Data replaced or modified by Actual Commercial Landings Data

Table A-13

American Samoa December 2011 Estimated Commercial Landings

Species	Pounds	Value (\$)	Price/Lb (\$)	
Barracudas	214	539	2.52	
Orangespot emperor	2	7	3.00	
Redgill emperor	330	975	2.95	
Emperors	676	1,993	2.95	
Groupers	86	251	2.94	*
Inshore groupers	19	57	2.99	*
Black jack	20	52	2.60	
Gray jobfish	89	262	2.95	
Silverjaw jobfish (lehi)	62	184	2.95	
Spiny lobster	159	799	5.02	*
White-edged lyretail	230	678	2.95	
Mahimahi	628	1,571	2.50	
Black marlin	500	500	1.00	*
Blue marlin	3,893	9,732	2.50	
Parrotfishes	556	1,640	2.95	
Rainbow runner	12	34	2.95	
Sailfish	155	387	2.50	
Sharks (unknown)	0	0	3.00	
Black snapper	27	80	2.95	
Blue-lined snapper	263	777	2.95	
Humpback snapper	124	367	2.95	
Twinspot/red snapper	28	83	2.95	
Pink snapper (opakapaka)	12	35	2.95	
Soldierfishes	28	79	2.83	
Squirrelfishes	201	601	2.99	*
Surgeonfishes/tangs	1,611	4,828	3.00	*
Swordfish	2,015	5,037	2.50	
Trevallies	14	40	2.96	
Albacore tuna	402,404	438,621	1.09	
Bigeye tuna	23,847	32,921	1.38	
Skipjack tuna	6,778	7,259	1.07	
Yellowfin tuna	57,738	62,837	1.09	
Unicornfishes	366	1,080	2.95	
Wahoo	24,056	27,612	1.15	
TOTAL	527,142	601,918	1.14	

* Data replaced or modified by Actual Commercial Landings Data

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

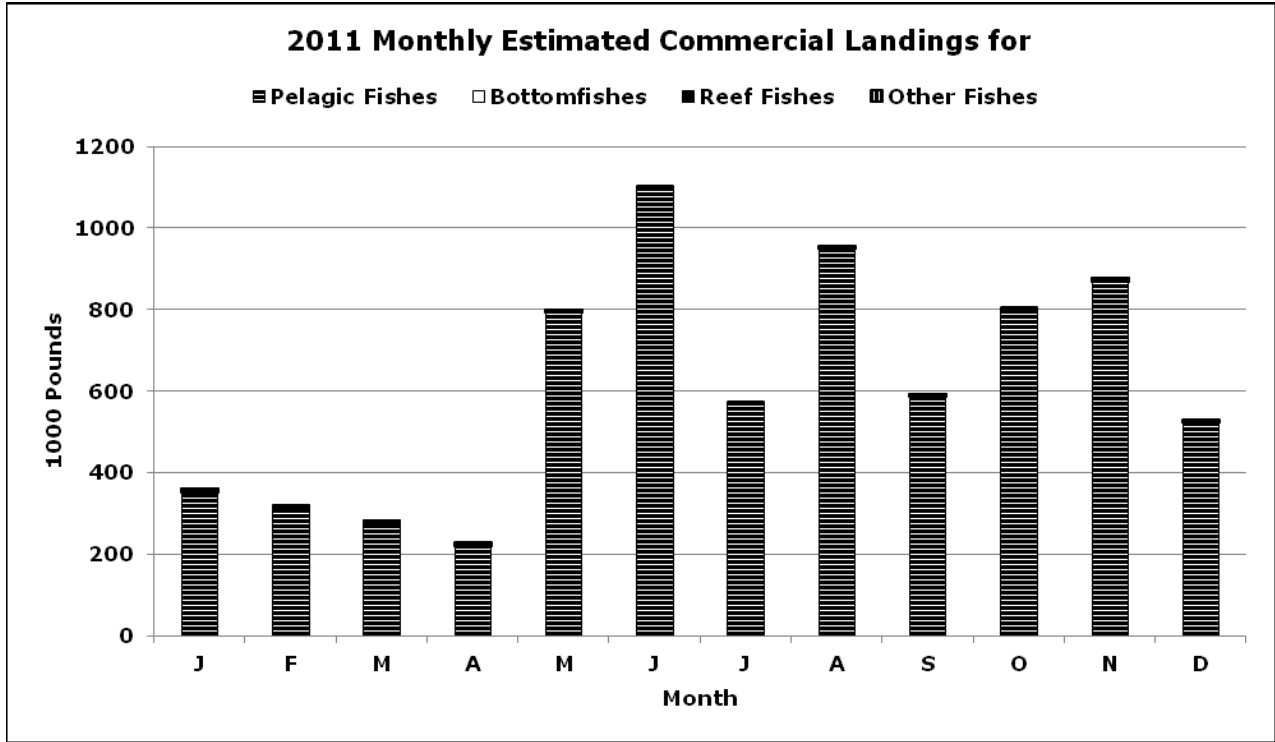


Figure A-1-1

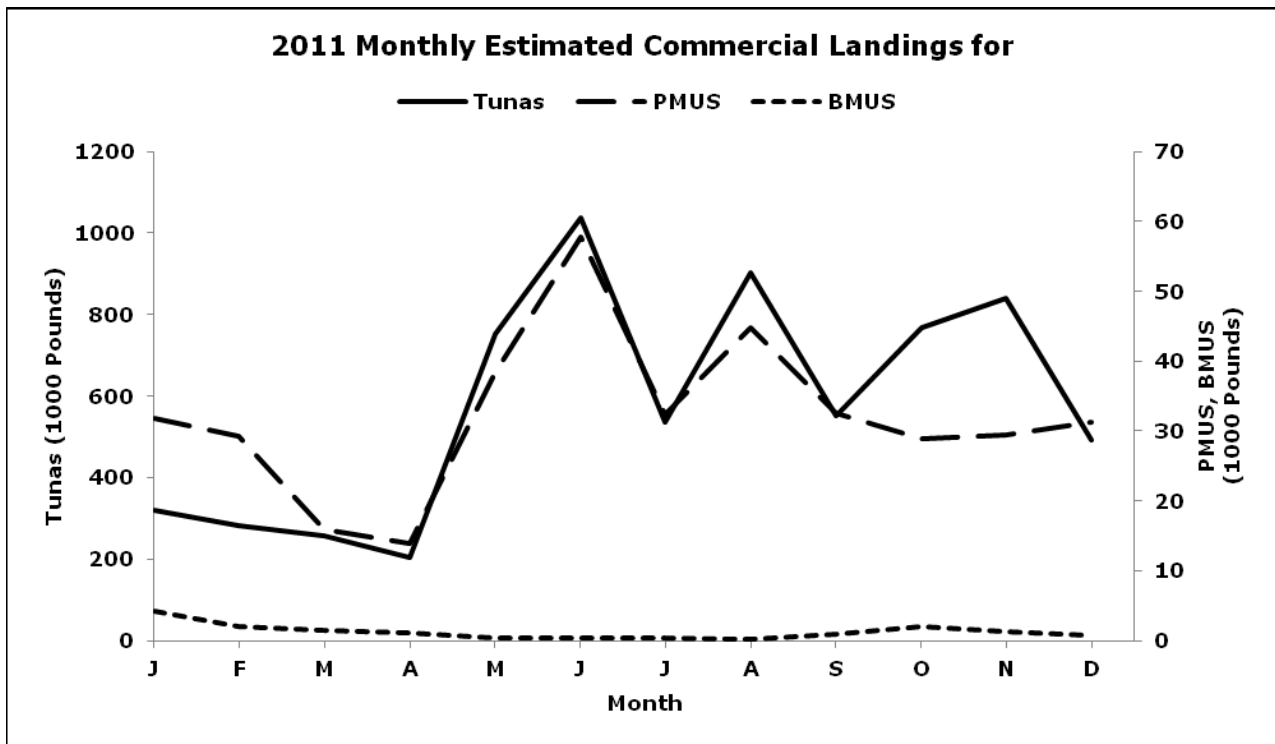


Figure A-1-2

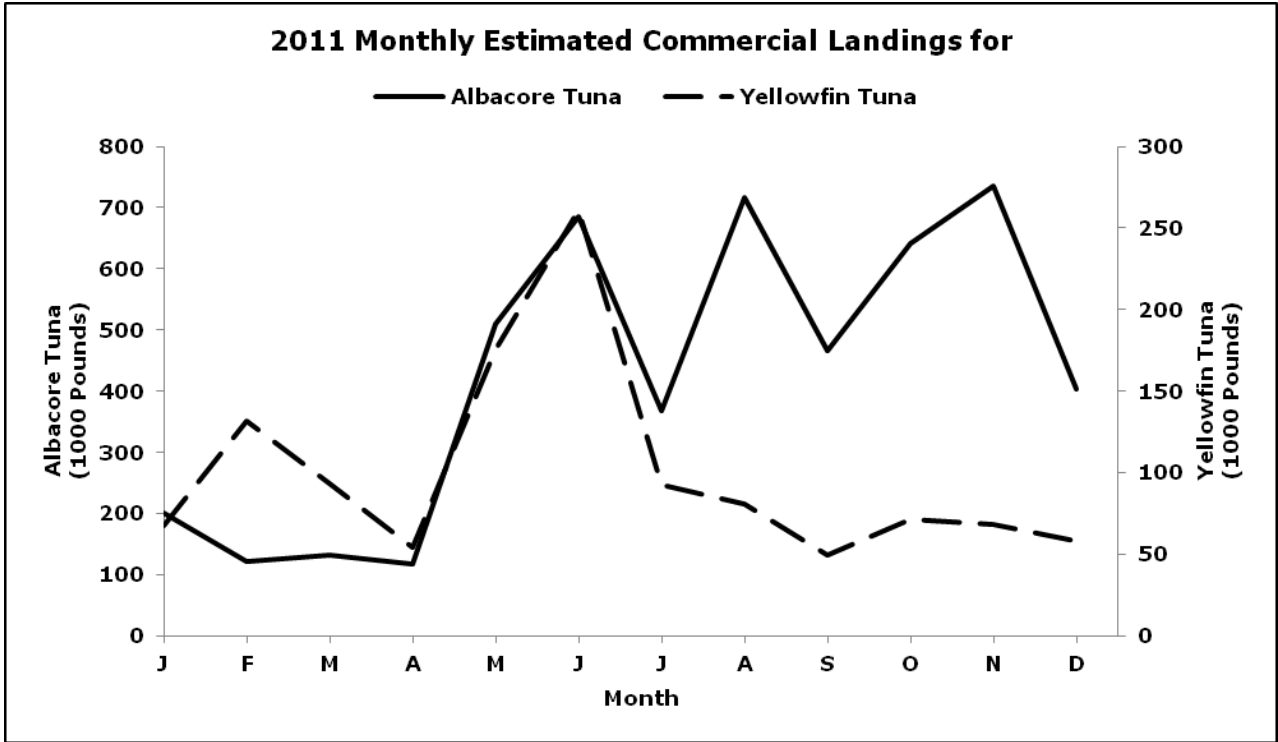


Figure A-1-3

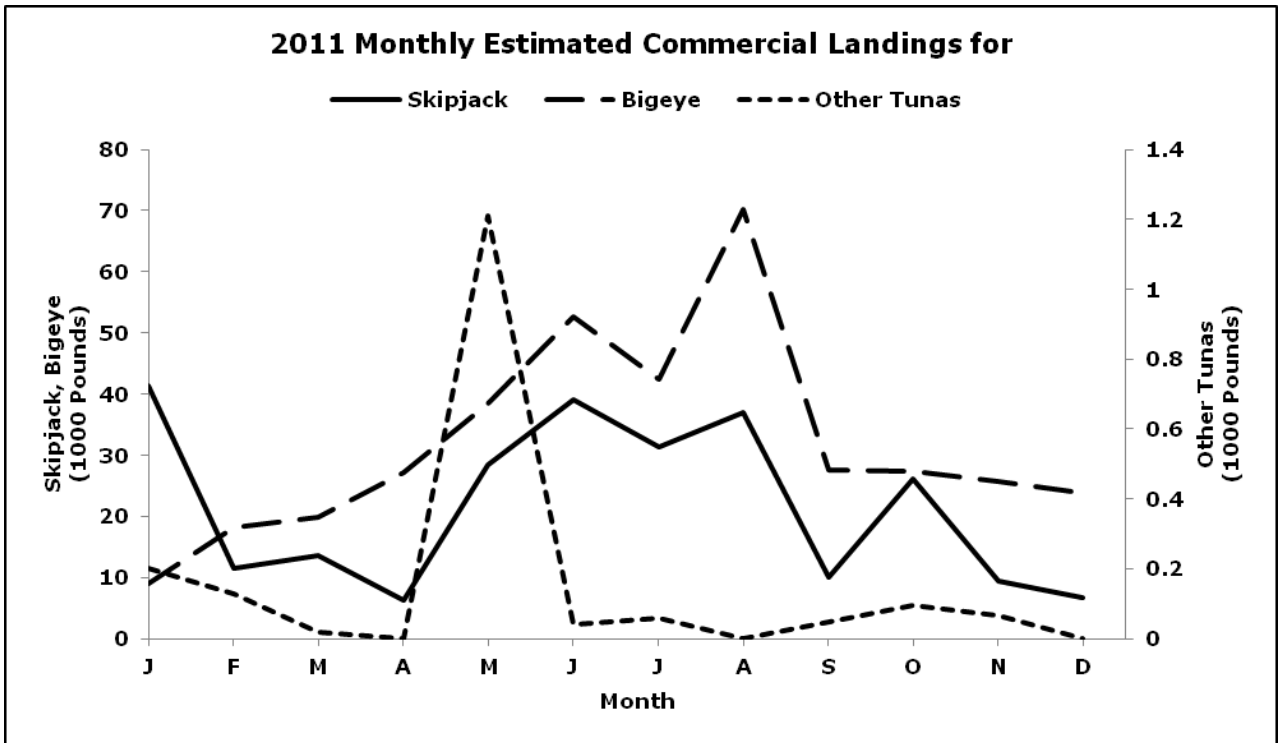


Figure A-1-4

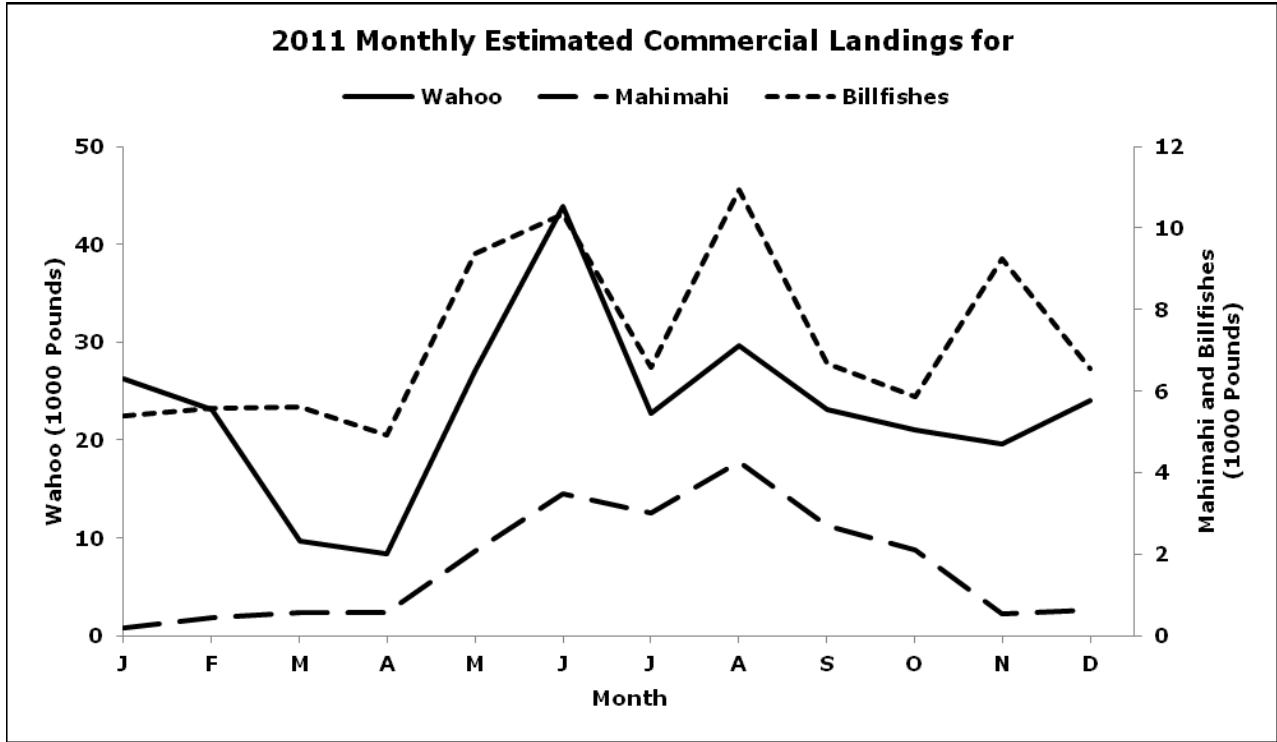


Figure A-1-5

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

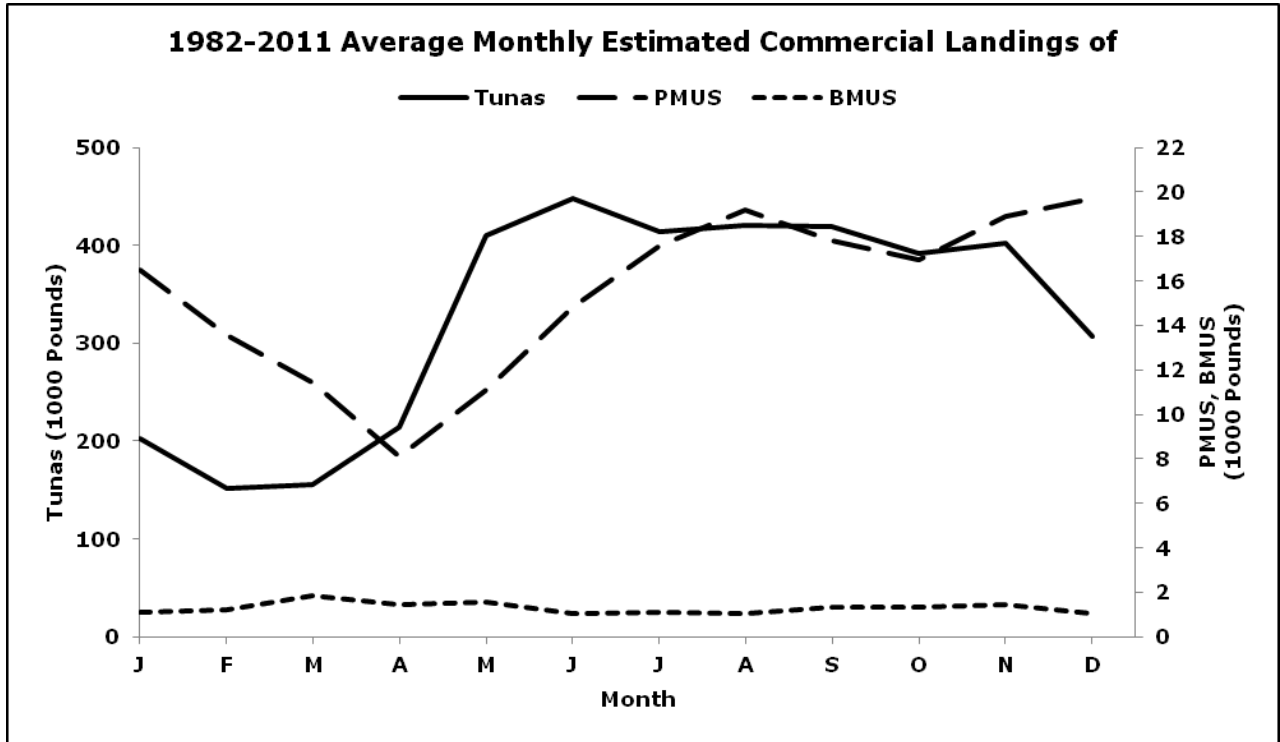


Figure A-2-1

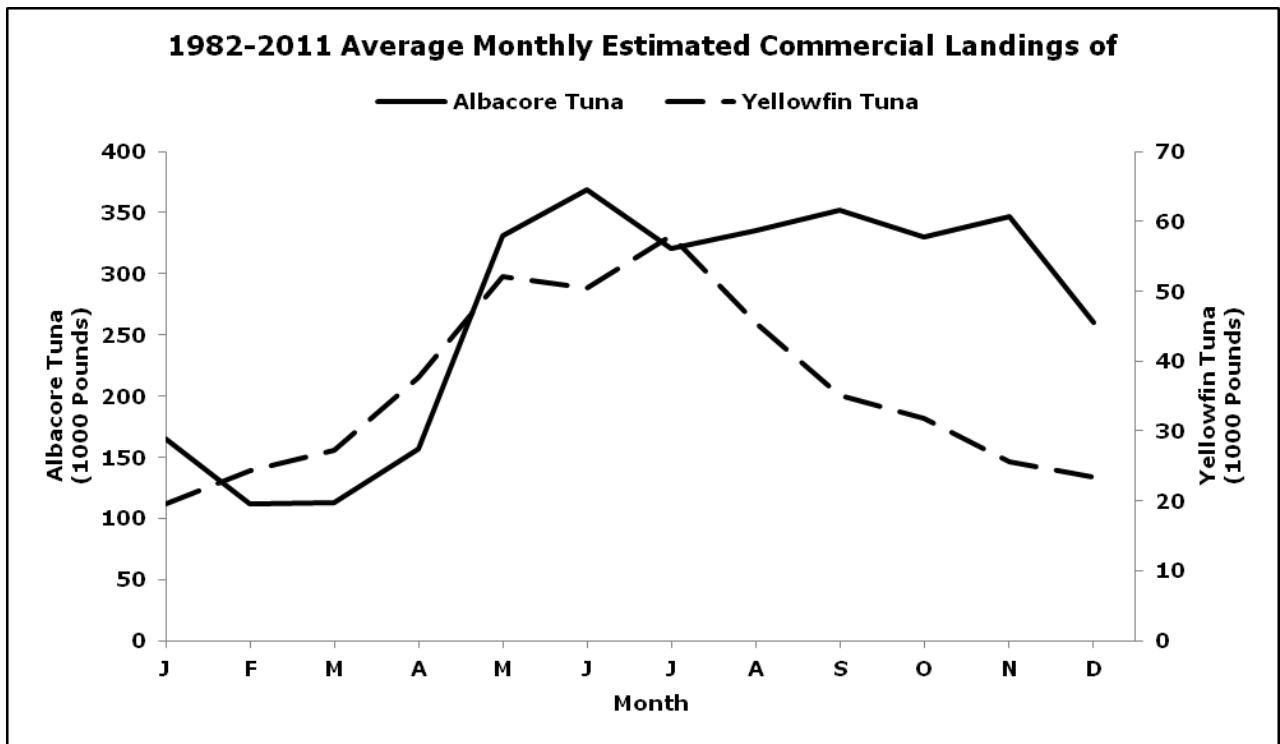


Figure A-2-2

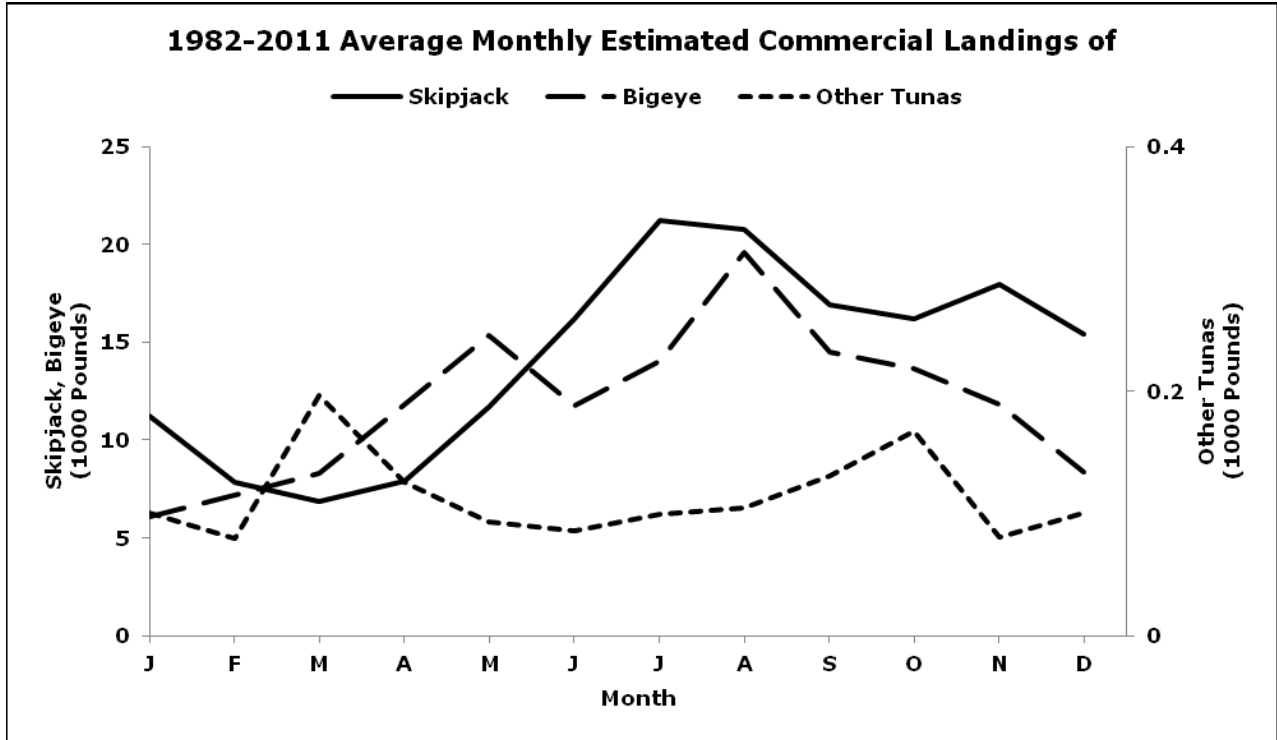


Figure A-2-3

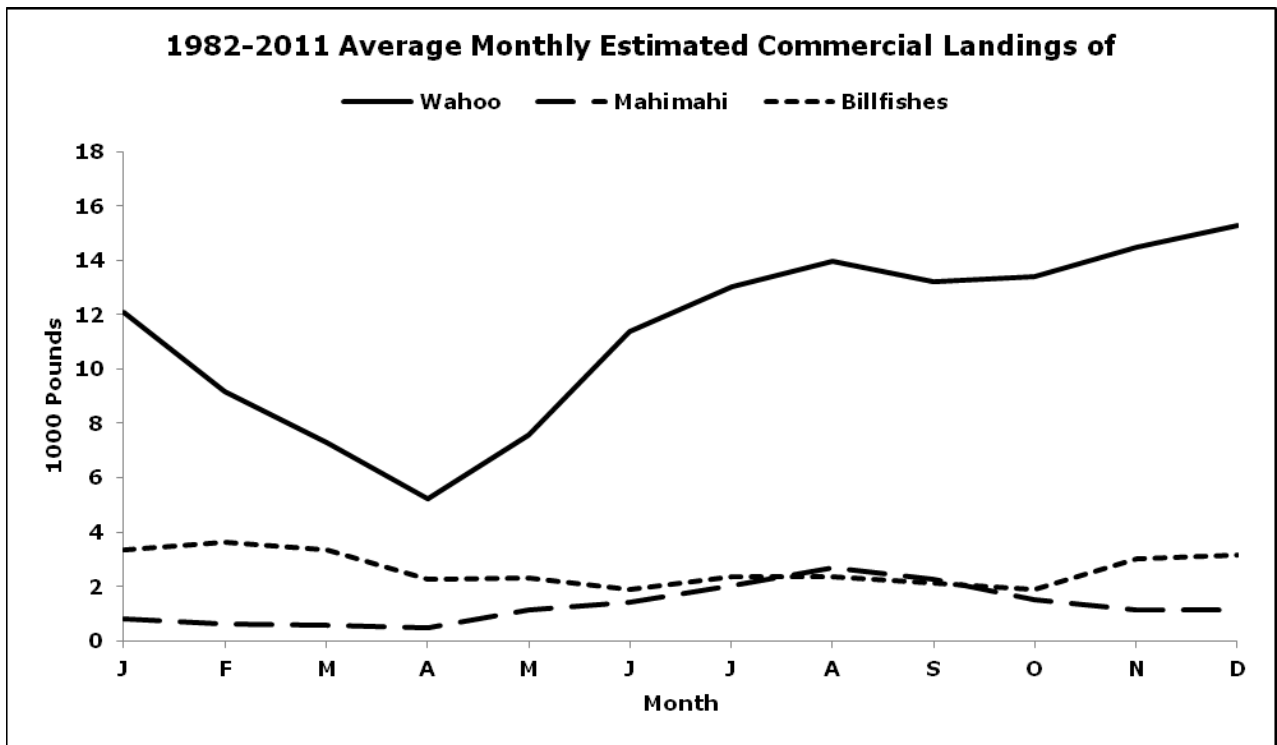


Figure A-2-4

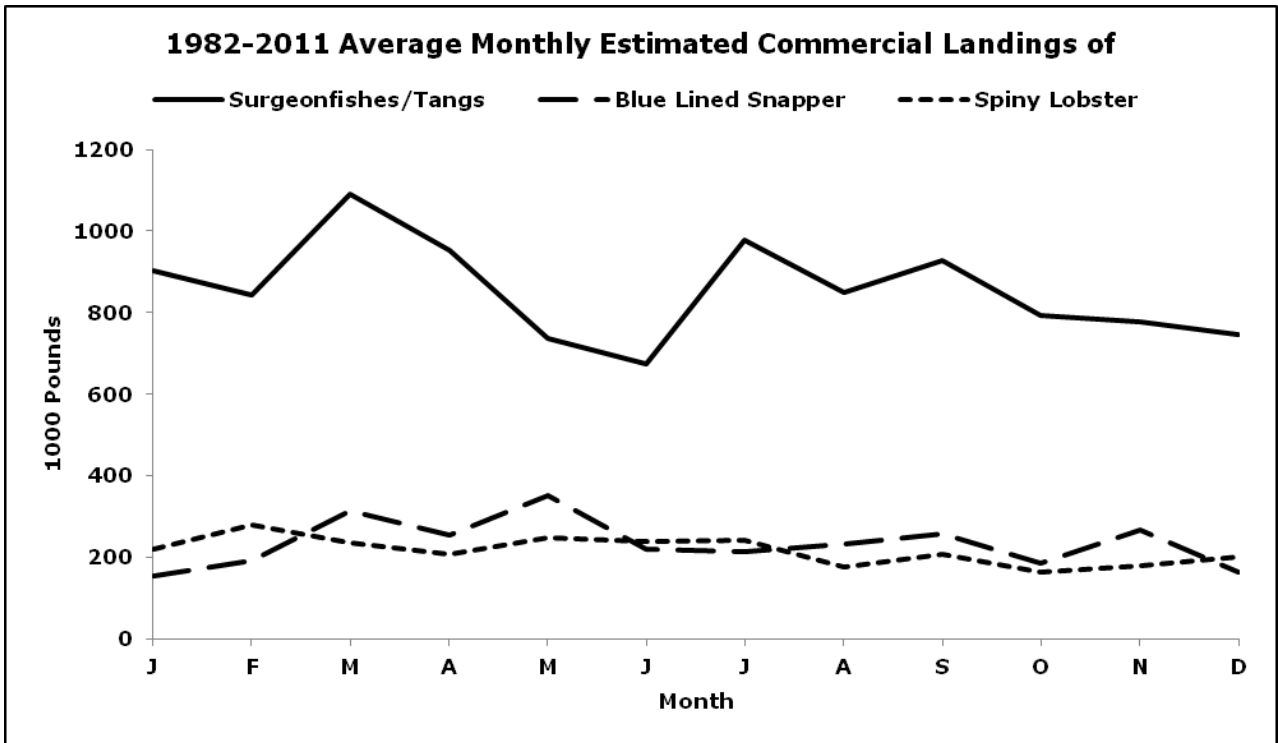


Figure A-2-5

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

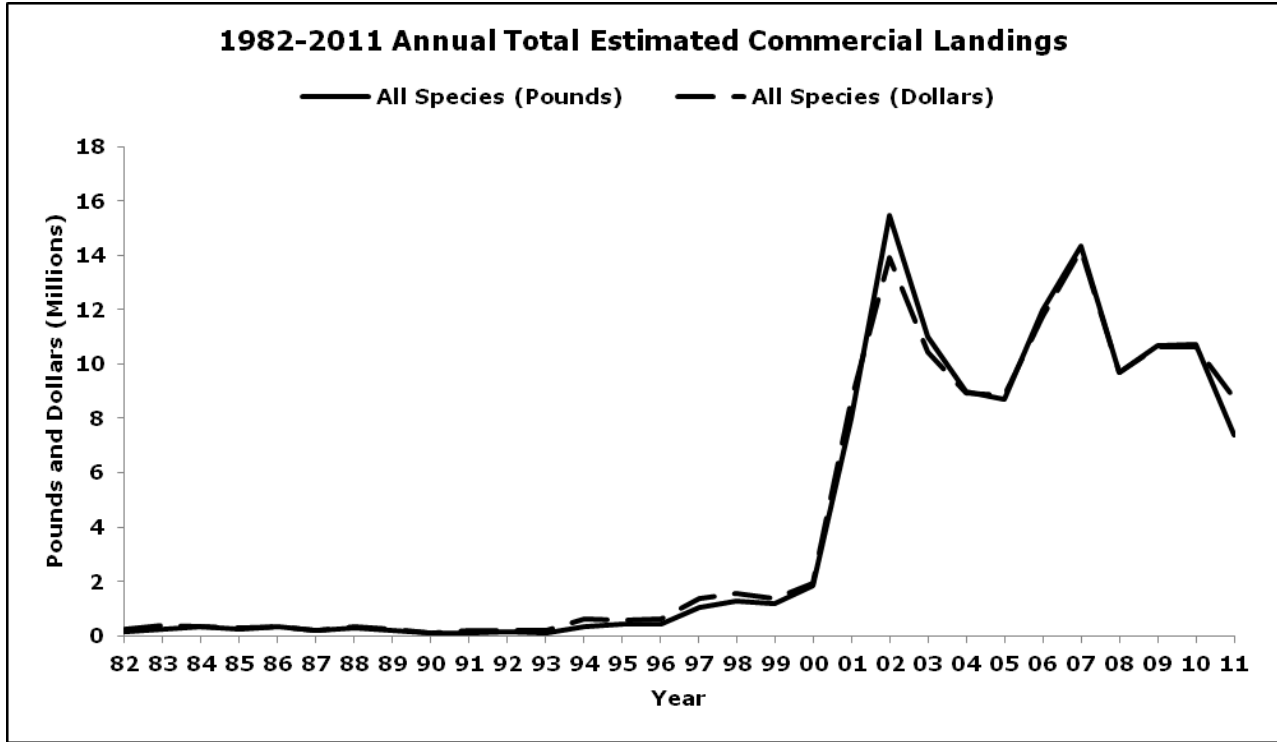


Figure A-3-1

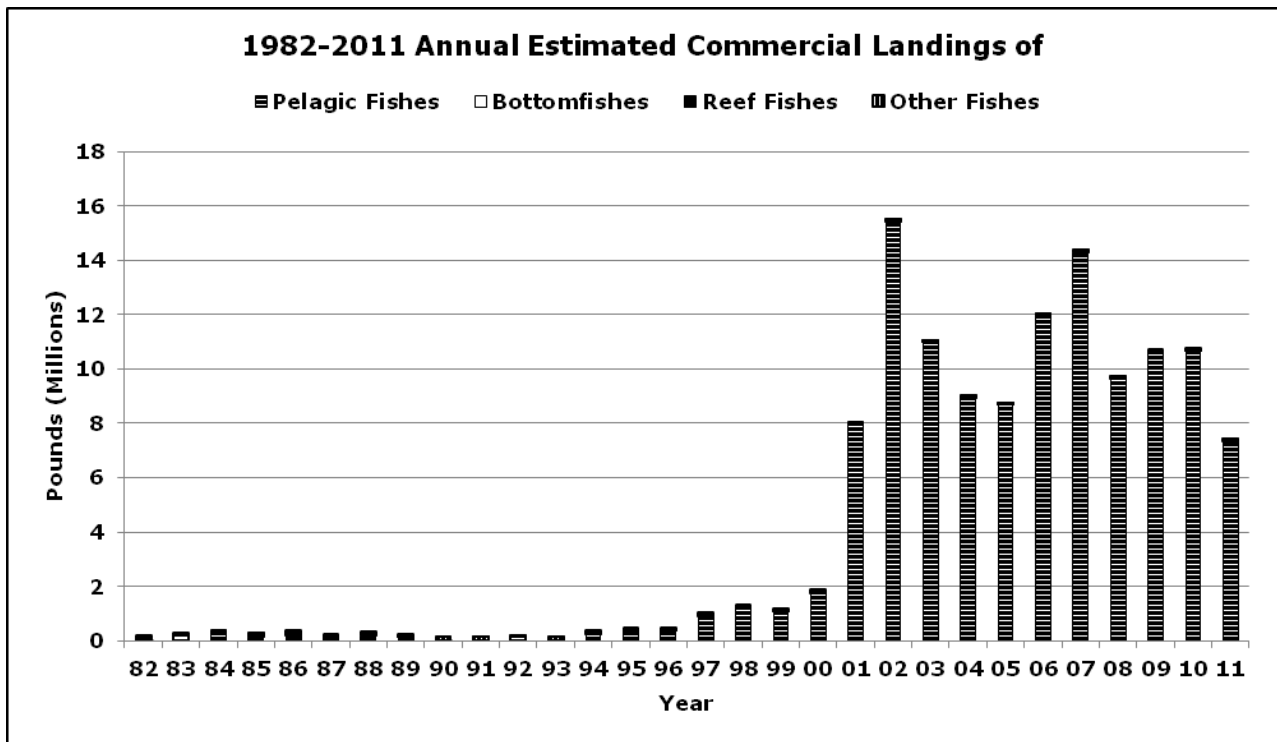


Figure A-3-2

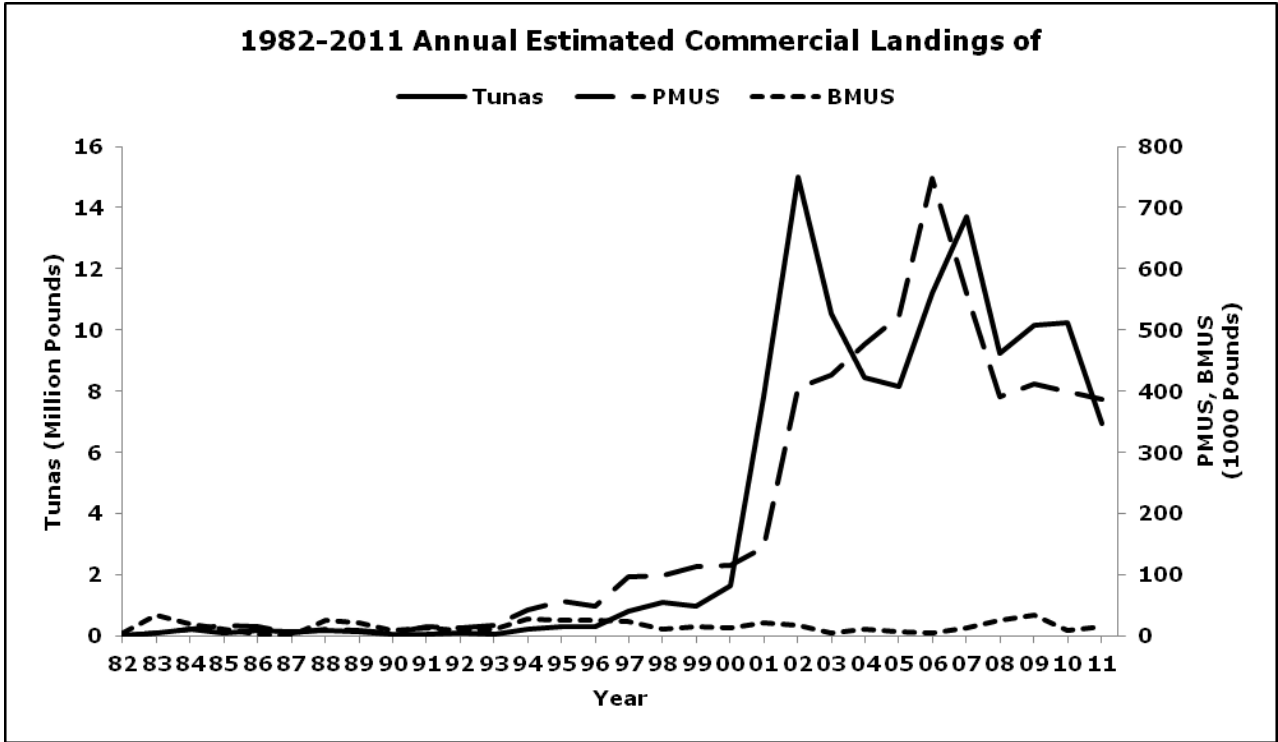


Figure A-3-3

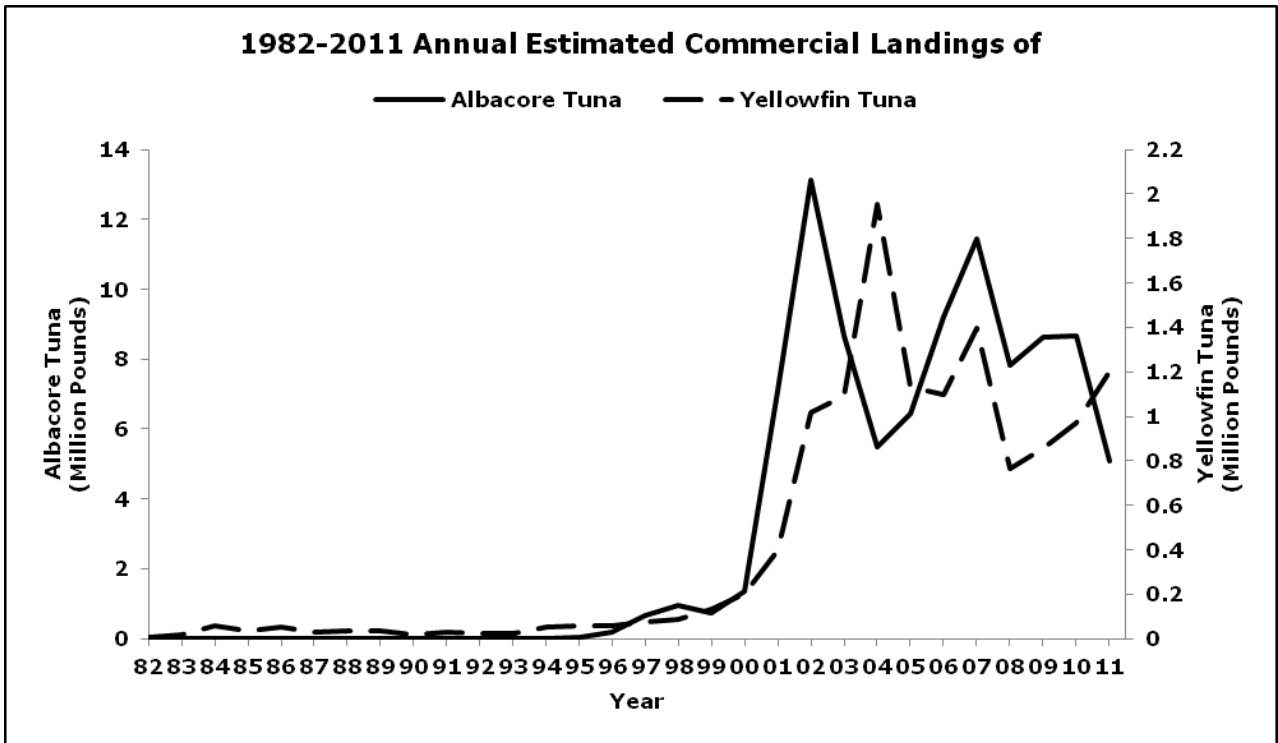


Figure A-3-4

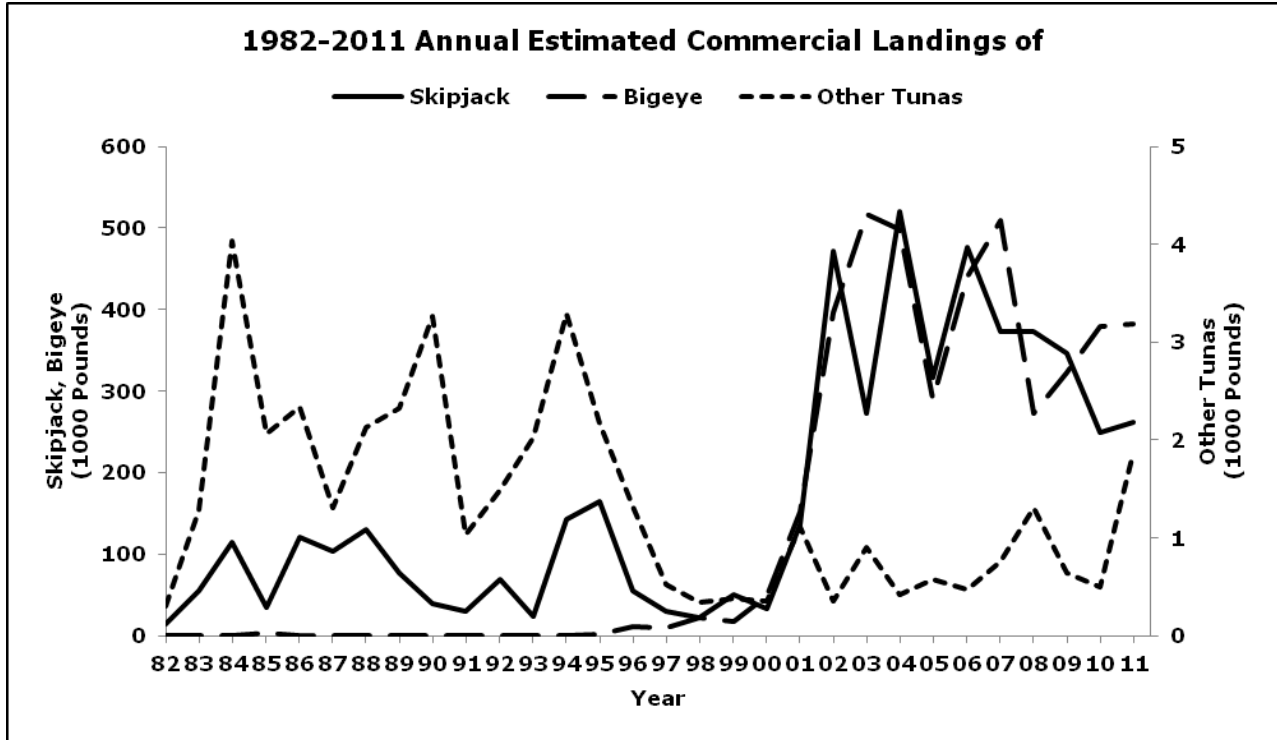


Figure A-3-5

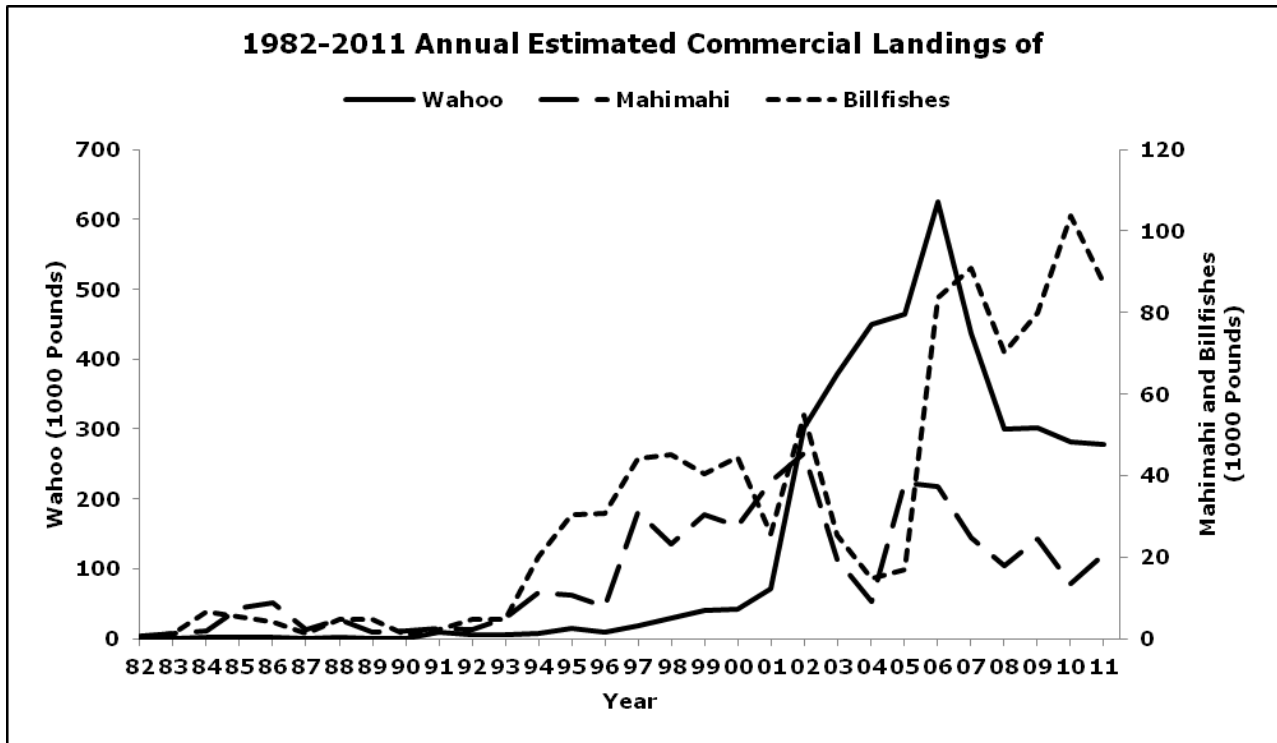


Figure A-3-6

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:

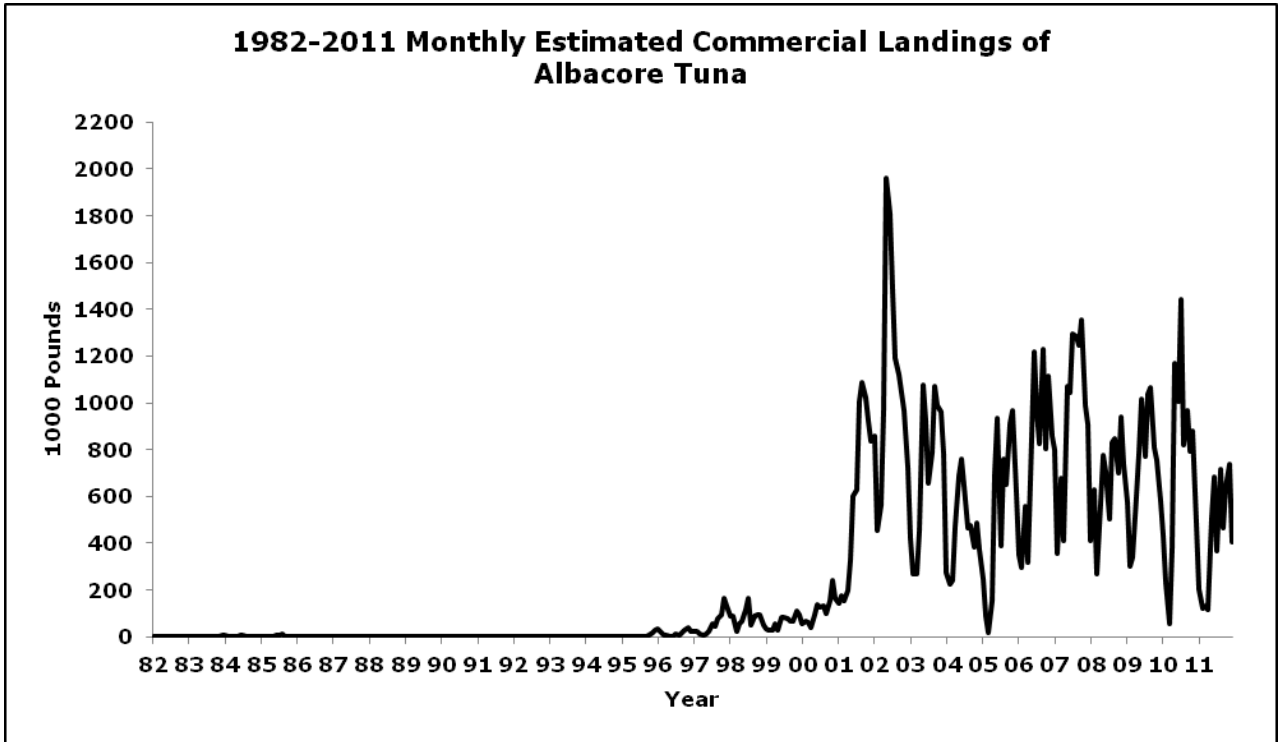


Figure A-4-1

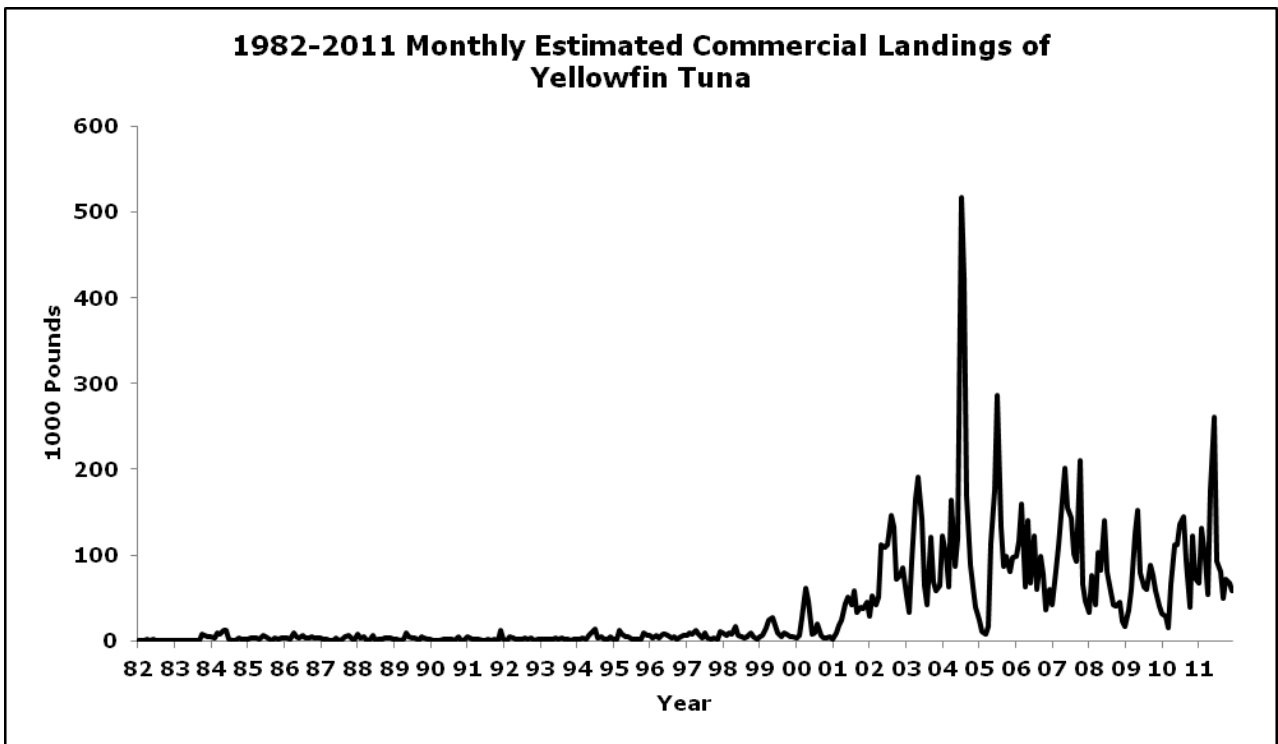


Figure A-4-2

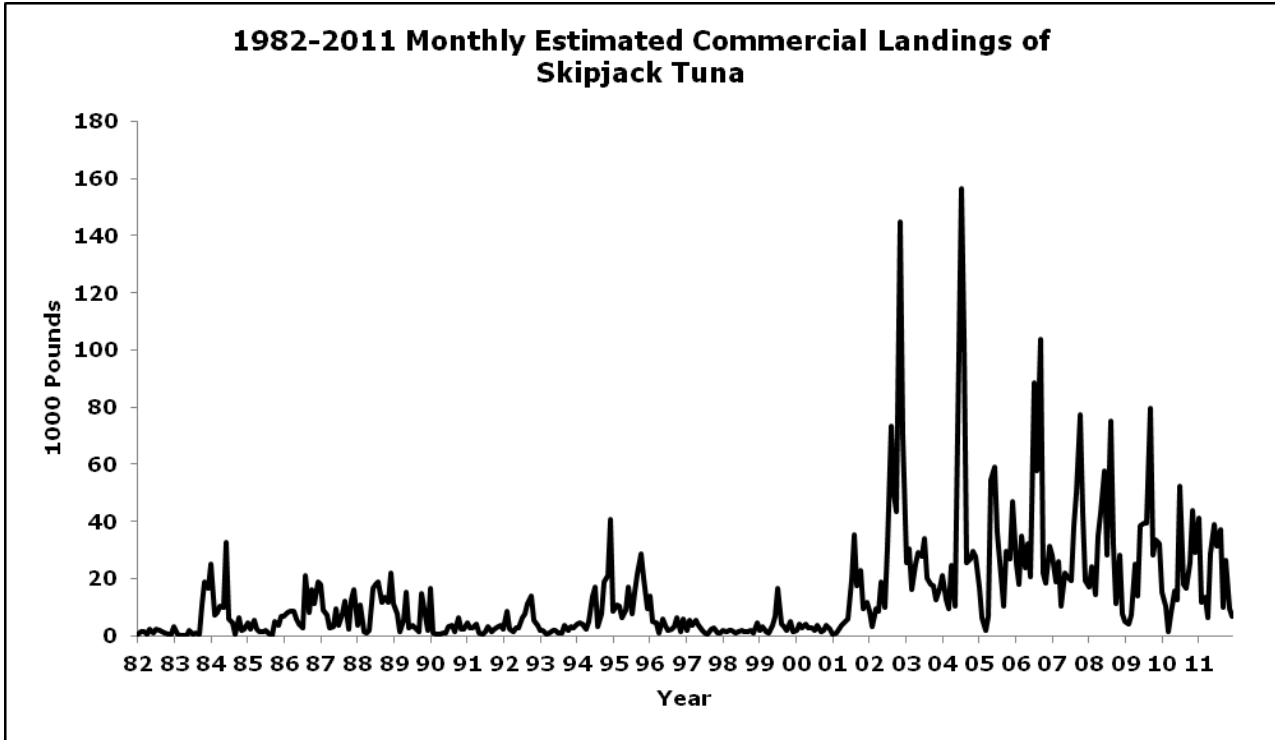


Figure A-4-3

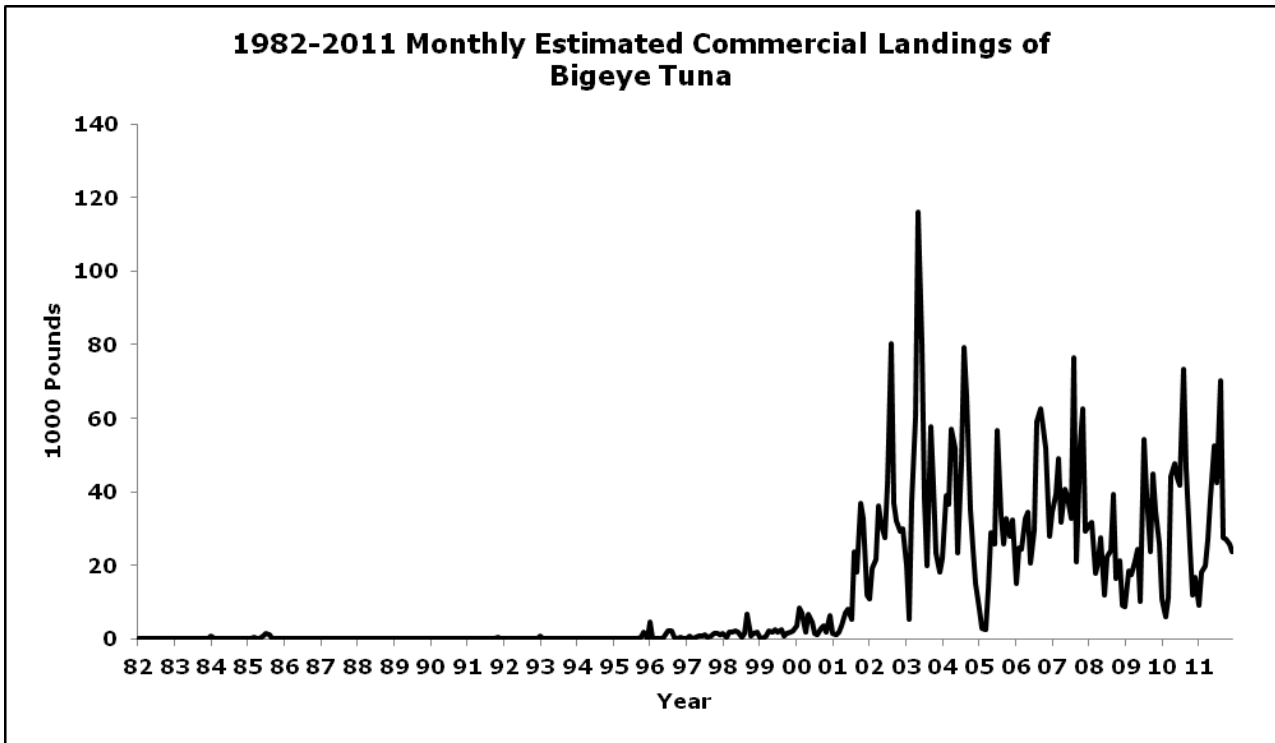


Figure A-4-4

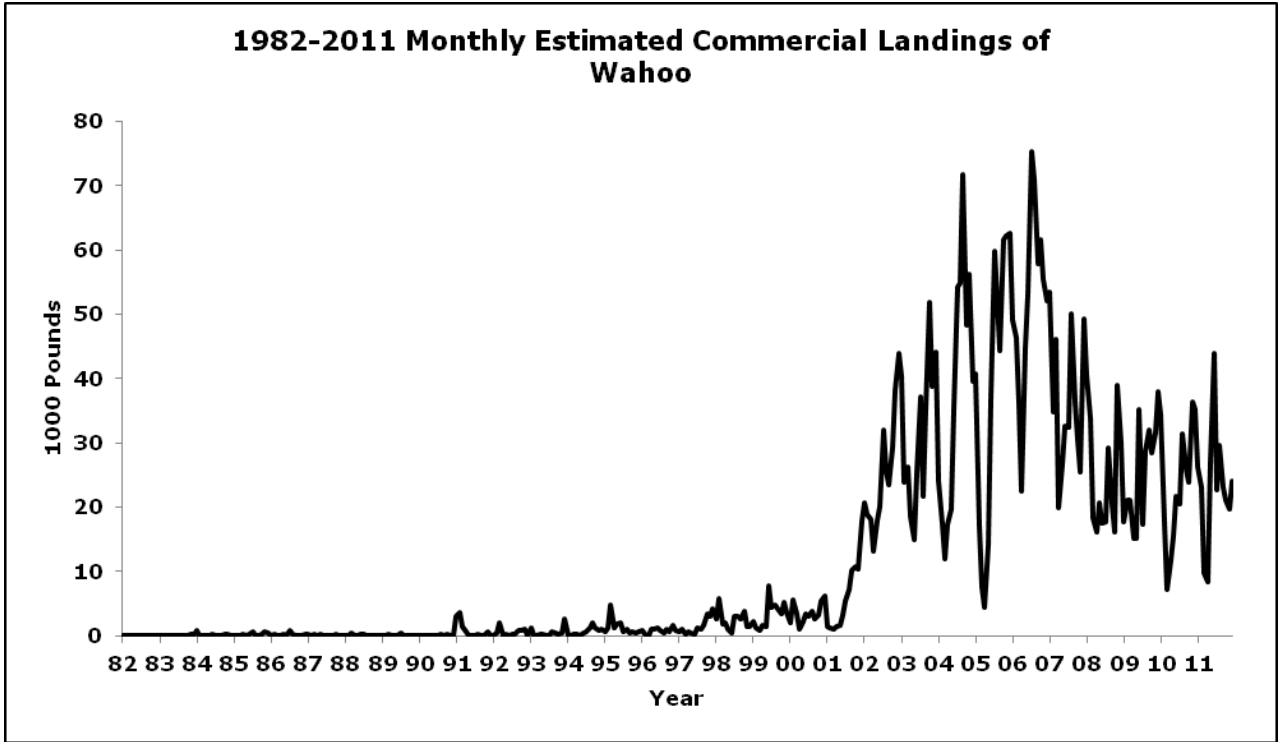


Figure A-4-5

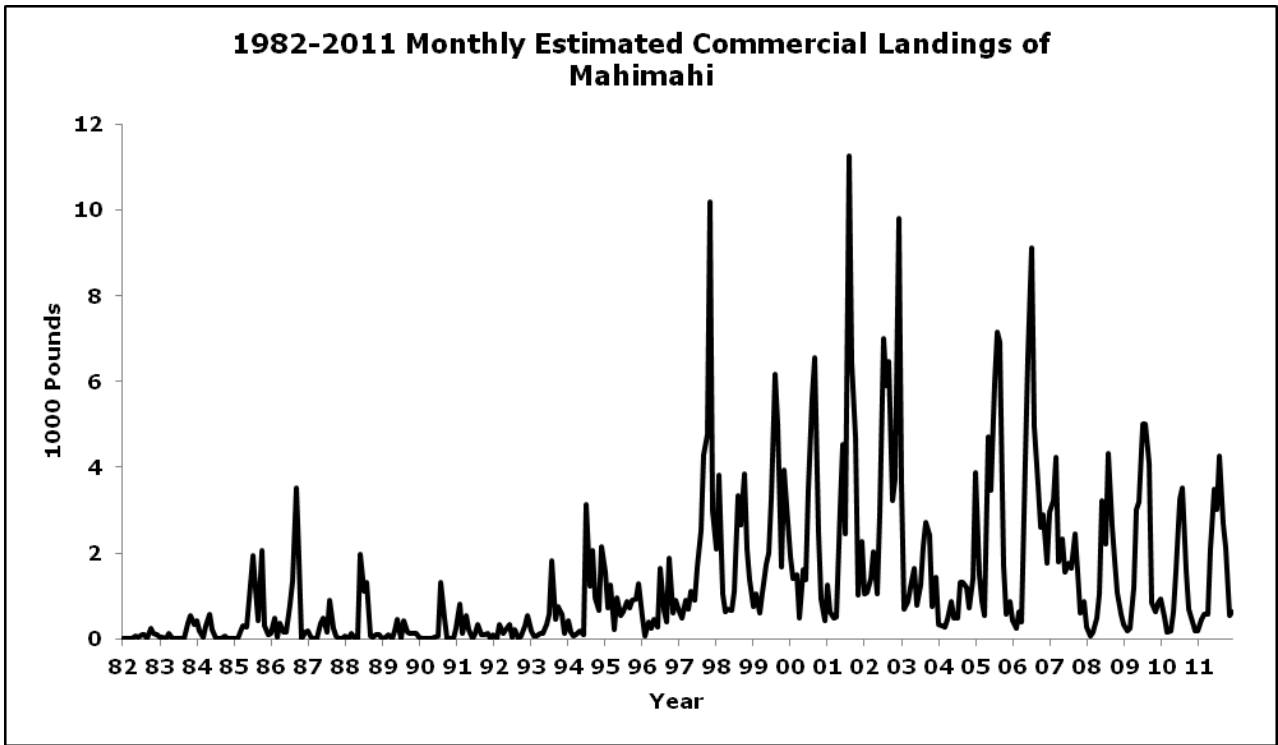


Figure A-4-6

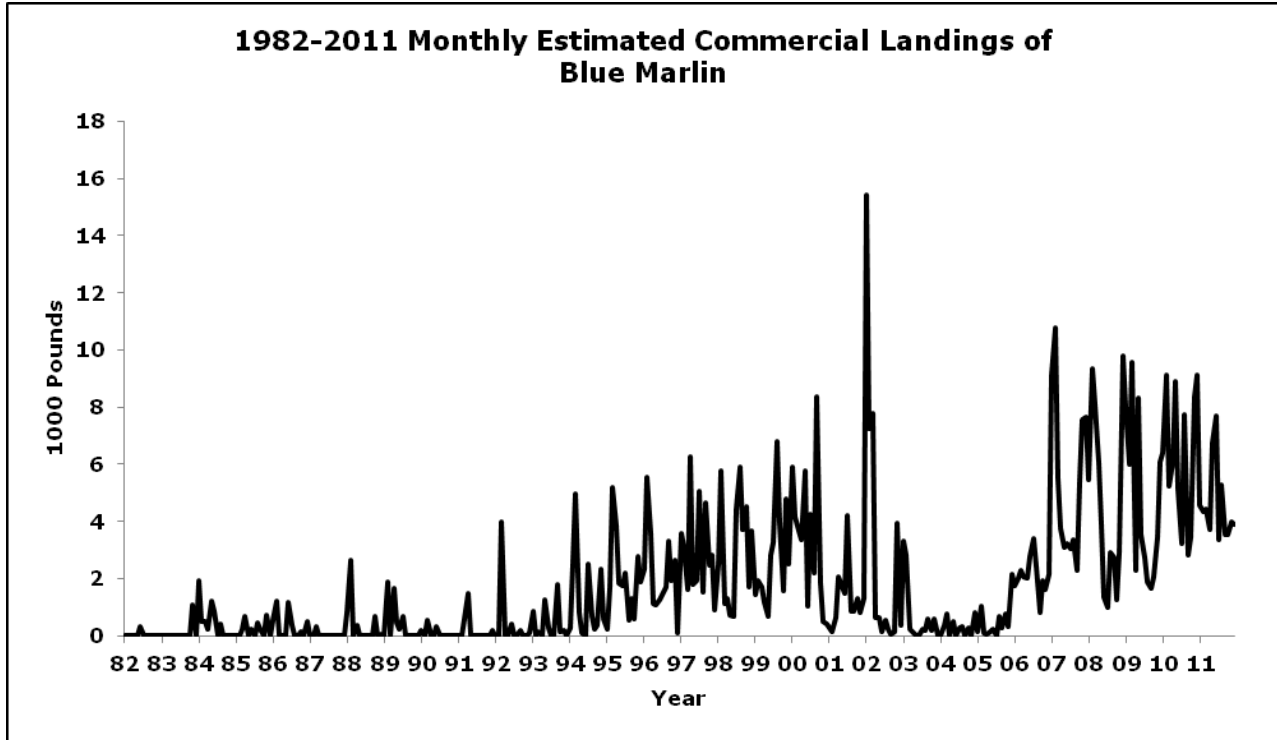


Figure A-4-7

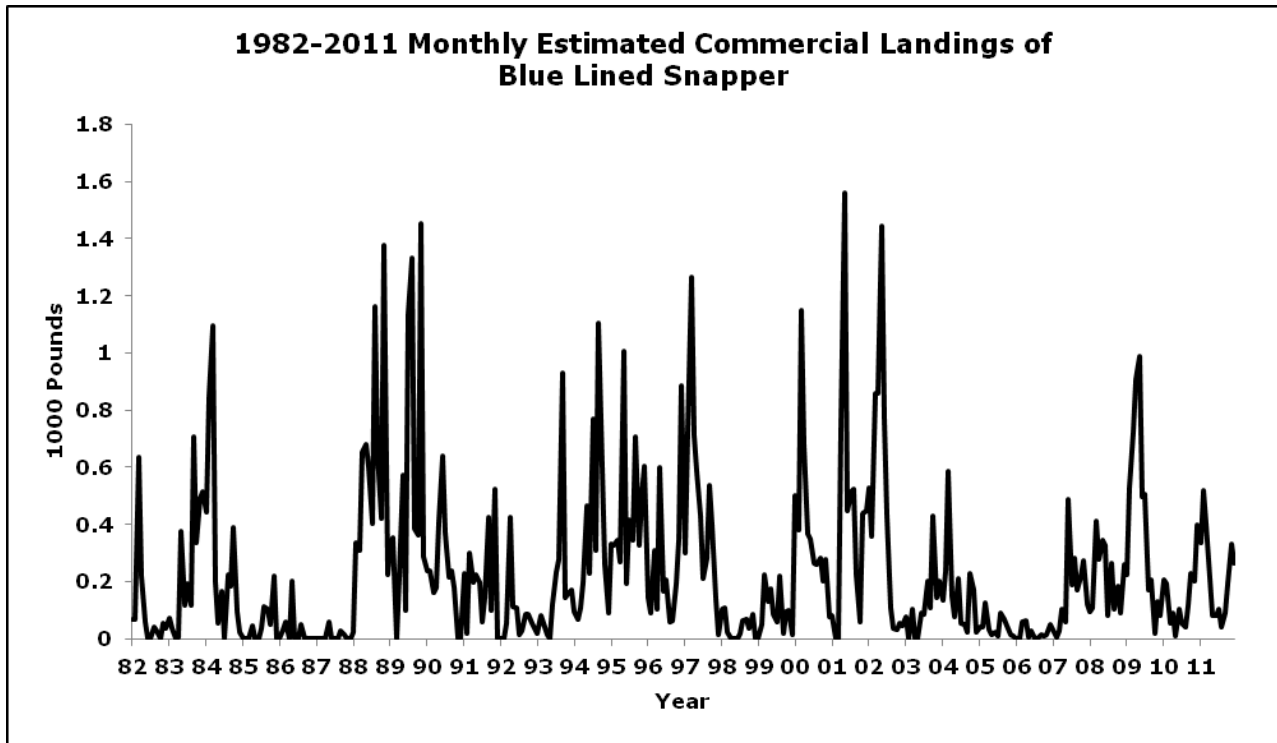


Figure A-4-8

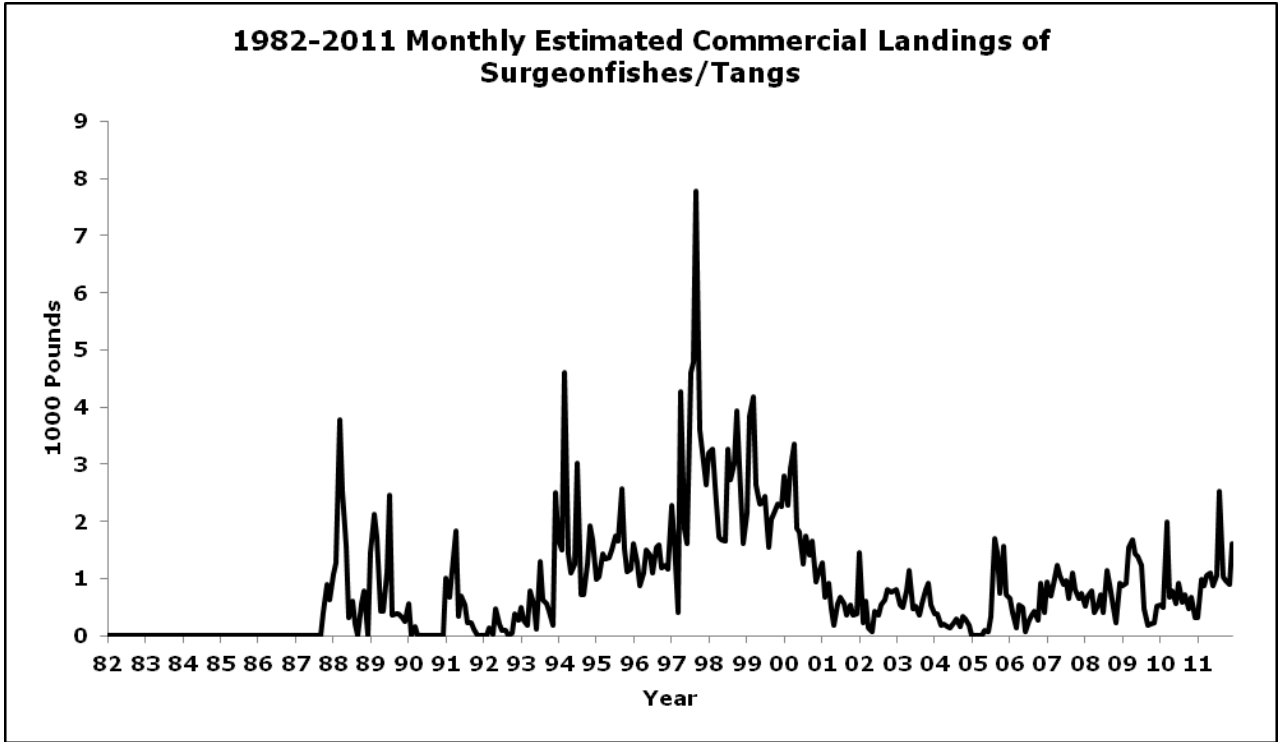


Figure A-4-9

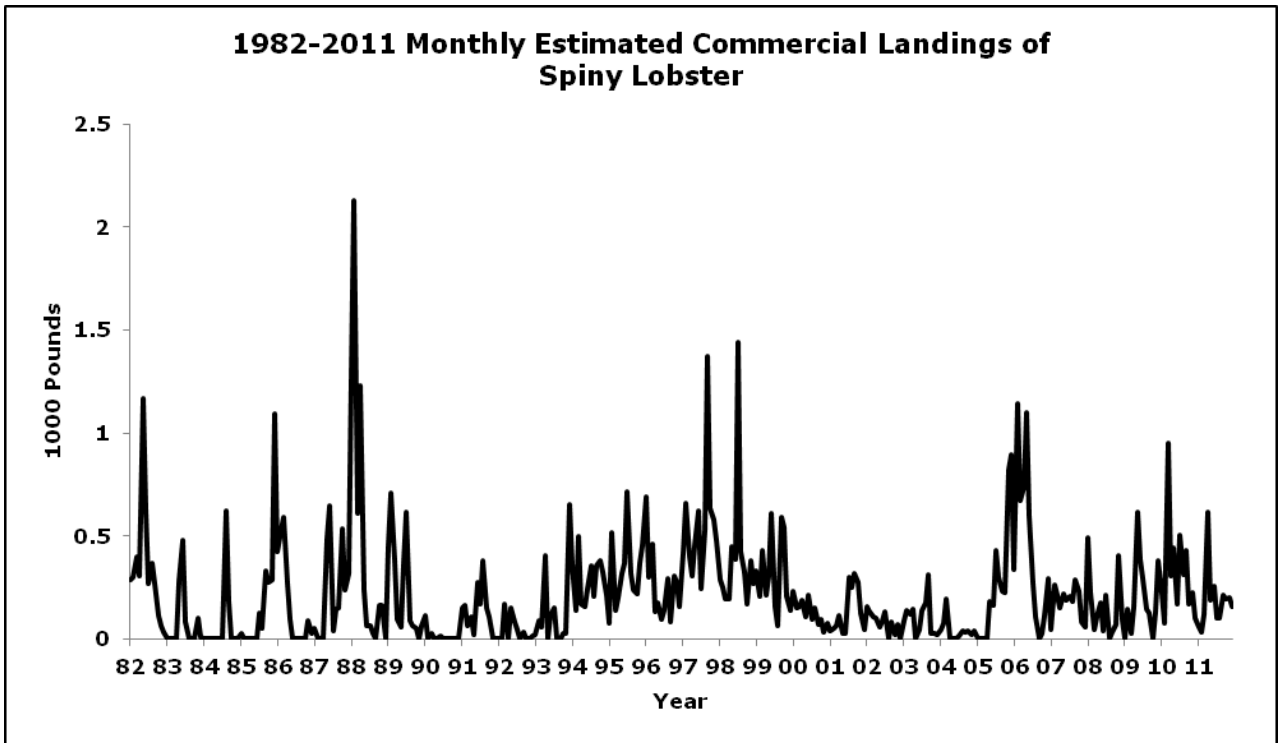


Figure A-4-10

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