

GUAM 2008 FISHERY STATISTICS

Compiled by
Guam Division of Aquatic and Wildlife Resources
and the
Western Pacific Fishery Information Network

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GUAM 2008 FISHERY STATISTICS

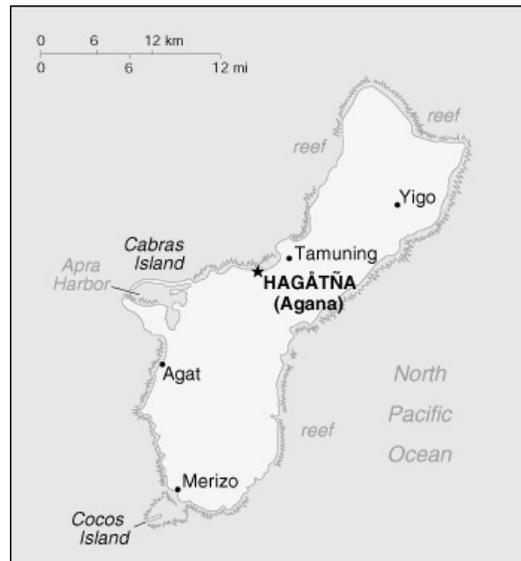
INTRODUCTION

The Territory of Guam is the southernmost, largest, and most populous island in the Mariana Archipelago.

Location: 13.4°N latitude, 144.4°E longitude

Population: about 178,430 (*The World Factbook*, July 2009 est.)

Economy: U.S. military and tourism



Guam:

Source: <https://www.cia.gov/library/publications/the-world-factbook/maps/gq-map.gif>;
The World Factbook

Fishing activities on Guam are divided into two basic categories: offshore and inshore fishing. Offshore fishing typically involves small boats (12 to 48 feet) going on 1- to 2-day trolling and bottomfishing trips. They usually originate from one of the three principal harbors located on the west coast and southern tip of the island. Inshore fishing is usually conducted without the use of a boat and consists mostly of nearshore casting, netting, and spearfishing.

There are three sources of fish in Guam's commercial market: (1) full-time commercial fishers; (2) part-time commercial fishers; and (3) subsistence or recreational "expense" fishers who frequently sell portions of their catch to help defray costs. Licenses are not required to sell fish in Guam, nor are there any reporting requirements for those selling fish.

DATA COLLECTING

In 1982, WPacFIN began working with staff of the Guam Division of Aquatic and Wildlife Resources (DAWR) and with local fish dealers to obtain information on commercial landings through voluntary use of trip ticket invoices provided by WPacFIN. The tables and graphs in this section are based on data that are summarized from receipts submitted by all participating dealers on Guam and then adjusted to create the estimated total commercial landings based on an estimated annual percent coverage factor.

C.2

In July 1979, the Guam Fishermen's Cooperative was established in Agana through government funding. It subsequently became the central distribution center for fresh local fish. Prior to 1979 there was no central place to sell fish, and fishers had to develop their own markets and peddle fish after each trip.

In 1982, WPacFIN began working with the co-op to improve their invoicing system and to obtain data on all fish purchases. A system was established whereby the co-op would use forms and coding schemes designed by WPacFIN and supply copies of all invoices to WPacFIN for computer data entry. In return, WPacFIN would provide the co-op with document quality control and computer-generated summary statistics. All purchase data back to July 1979 were also coded and computerized. Over time, other fish markets began to operate, and DAWR and WPacFIN staff worked with them to obtain data through the voluntary receipt book program.

Data collected on commercial receipt forms include

- Date
- Number of Fishermen
- Area Fished
- Number of Pieces Caught
- Price per Pound
- Fisherman Code
- Hours Fished
- Species Caught
- Pounds Caught

Although a proposed law has been introduced several times that would require reporting by dealers and possibly commercial fishers, it has never made it very far through the legislative process, and the commercial landings data collection system remains voluntary.

DATA PROCESSING

At first, the data were processed at the central WPacFIN office in Honolulu. Beginning in 1994, however, DAWR staff took over this task using a computer and software provided by WPacFIN. The processing system for the commercial landings data collected from the fish dealers is fairly straightforward. Dealers complete a purchase form every time they purchase fish from a fisherman. On this form, catches are divided into categories for weighing by species or species group (where possible, number of pieces is also recorded).

DATA REPORTING

After completing all editing, adjusting, and quality control activities for the commercial landings data, monthly and annual summary reports by species are generated. Numerous standard reports are available, but only the monthly and annual landings by species are provided in this document.

Each table contains information on the pounds, value, and the average price per pound for each species or species group. Each monthly report contains a subtotal for the sum of all species combined for that month. Annual reports contain the estimated total landings for each species and the estimated total recorded landings for all species for the calendar year. Graphs

of some of the important statistics are included with the estimated commercial landings summary reports.

Please note that the commercial landings data have been adjusted to reflect total coverage and are referenced as “Estimated Commercial Landings” in the charts and tables. Also, some of the charts in this volume are new or modified from earlier volumes. To access the most up-to-date data and charts, please visit the WPacFIN website, <http://www.pifsc.noaa.gov/wpacfin>.

SPECIES CATEGORIES

The species and species groups that are used in the tables and graphs of Guam’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)

Mahimahi	Spearfish
Marlins	Swordfish
Sailfish	Wahoo
Sharks	

II. Bottomfish Management Unit Species (BMUS)

Alfonsin	Kalikali (pink snapper)
Amberjack	Lehi (silverjaw)
Black jack	Mafute (emperor)
Ehu (red snapper)	Onaga (red snapper)
Gindai (flower snapper)	Opakapaka (pink snapper)
Groupers	Snappers
Jacks	Uku (gray snapper)

III. Billfishes

Marlins	Spearfish
Sailfish	Swordfish

IV. Tunas

Dogtooth tuna	Tunas (unknown)
Kawakawa	Yellowfin tuna
Skipjack tuna	

V. Other Tunas

Dogtooth tuna
Kawakawa

Tunas (unknown)

VI. Fisheries Categories

A. *Pelagic Fishes*

Barracudas
Dogtooth tuna
Kawakawa
Mahimahi
Marlins
Monchong
Pelagic fishes (unknown)
Rainbow runner

Sailfish
Sharks
Skipjack tuna
Spearfish
Swordfish
Tunas (unknown)
Wahoo
Yellowfin tuna

B. *Bottomfishes*

Alfonsin
Amberjack
Black jack
Bottomfishes (unknown)
Deep bottomfishes
Ehu (red snapper)
Gindai (flower snapper)
Groupers

Jacks
Kalikali (pink snapper)
Lehi (silverjaw)
Mafute (emperor)
Onaga (red snapper)
Opakapaka (pink snapper)
Tagafi (red snapper)
Uku (gray snapper)

C. *Reef Fishes*

Goatfishes
Humphead parrotfish
Napoleon wrasse
Parrotfishes
Rabbitfishes
Reef fishes (unknown)
Rudderfish (guilli)

Snappers
Squirrelfishes
Surgeonfishes
Sweetlips
Unicornfishes
Wrasses

D. *Other Fishes*

Bigeye scad (atulai)
Coconut crab
Crabs
Eels (freshwater)
Invertebrates
Kona crab
Lemu
Lobsters
Milkfish

Miscellaneous
Mulletts
Octopus
Seaweeds
Shrimp (freshwater)
Shrimp (saltwater)
Squid
Turtles

Table C-1
Guam Annual 2008 Estimated Commercial Landings

Species	Pounds	Value (\$)	Price/Lb (\$)
Miscellaneous	368	974	2.64
Bigeye scad (atulai)	4,292	13,177	3.07
Black jack	223	558	2.50
Jacks	2,100	5,456	2.60
Napoleon wrasse	1,260	3,502	2.78
Humphead parrotfish	20	50	2.50
Bottomfishes (unknown)	23	69	3.00
Ehu (red snapper)	638	2,496	3.91
Gindai (flower snapper)	714	2,855	4.00
Groupers	839	2,222	2.65
Kalikali (pink snapper)	1,156	4,079	3.53
Lehi (silverjaw)	892	3,323	3.72
Onaga (red snapper)	2,158	10,740	4.98
Opakapaka (pink snapper)	511	2,043	4.00
Uku (gray snapper)	406	1,115	2.75
Tagafi (red snapper)	18	37	2.00
Amberjack	154	416	2.71
Reef fishes (unknown)	89,541	268,723	3.00
Rabbitfishes	427	1,281	3.00
Rudderfish (guilli)	314	942	3.00
Mafute (emperor)	1,434	4,050	2.82
Squirrelfishes	1,415	3,663	2.59
Parrotfishes	11,718	38,046	3.25
Snappers	258	720	2.80
Surgeonfishes	5,319	13,748	2.58
Unicornfishes	17,672	49,859	2.82
Goatfishes	5	16	3.00
Sweetlips	111	265	2.40
Barracudas	1,388	2,753	1.98
Mahimahi	50,872	95,380	1.87
Swordfish	33	99	3.00
Marlins	26,203	37,343	1.43
Sailfish	368	605	1.64
Rainbow runner	2,423	5,263	2.17
Monchong	211	535	2.54
Wahoo	20,520	41,011	2.00
Skipjack tuna	26,407	41,300	1.56
Dogtooth tuna	1,580	2,419	1.53
Yellowfin tuna	9,592	20,040	2.09
Kawakawa	10	20	2.00
Crabs	50	129	2.58
Lobsters	1,168	4,329	3.71

Table C-1 (continued)
Guam Annual 2008 Estimated Commercial Landings

Species	Pounds	Value (\$)	Price/Lb (\$)
Octopus	2,400	7,157	2.98
TOTAL	287,213	692,809	2.41

Table C-2
Guam January 2008 Estimated Commercial Landings

Species	Pounds	Value (\$)	Price/Lb (\$)
Jacks	45	109	2.41
Napoleon wrasse	90	248	2.75
Ehu (red snapper)	6	25	4.00
Gindai (flower snapper)	17	68	4.00
Groupers	20	55	2.75
Kalikali (pink snapper)	19	58	3.00
Lehi (silverjaw)	97	339	3.50
Onaga (red snapper)	134	669	5.00
Amberjack	7	21	3.00
Reef fishes (unknown)	10,789	32,367	3.00
Squirrelfishes	105	263	2.50
Surgeonfishes	205	512	2.50
Unicornfishes	474	1,185	2.50
Barracudas	55	111	2.00
Mahimahi	6,798	13,408	1.97
Marlins	201	365	1.82
Rainbow runner	35	67	1.88
Monchong	54	135	2.50
Wahoo	422	978	2.32
Skipjack tuna	938	1,412	1.50
Dogtooth tuna	76	114	1.50
Yellowfin tuna	1,248	2,567	2.06
Lobsters	13	50	3.75
Octopus	248	722	2.91
TOTAL	22,098	55,847	2.53

Table C-3
Guam February 2008 Estimated Commercial Landings

Species	Pounds	Value (\$)	Price/Lb (\$)
Black jack	30	68	2.25
Jacks	181	441	2.44
Napoleon wrasse	105	288	2.75
Ehu (red snapper)	6	25	4.00
Gindai (flower snapper)	28	114	4.00
Groupers	28	85	3.00
Kalikali (pink snapper)	16	65	4.00
Lehi (silverjaw)	152	569	3.74
Onaga (red snapper)	85	423	5.00
Opakapaka (pink snapper)	9	37	4.00
Uku (gray snapper)	11	24	2.25
Tagafi (red snapper)	18	37	2.00
Reef fishes (unknown)	10,696	32,089	3.00
Squirrelfishes	223	590	2.65
Surgeonfishes	120	360	3.00
Unicornfishes	901	2,702	3.00
Barracudas	73	146	2.00
Mahimahi	9,198	18,094	1.97
Marlins	218	310	1.42
Sailfish	55	89	1.60
Rainbow runner	309	595	1.92
Wahoo	2,315	4,718	2.04
Skipjack tuna	1,755	2,685	1.53
Dogtooth tuna	115	187	1.62
Yellowfin tuna	408	854	2.09
Crabs	6	15	2.50
Lobsters	314	1,179	3.75
Octopus	248	745	3.00
TOTAL	27,628	67,532	2.44

Table C-4
Guam March 2008 Estimated Commercial Landings

Species	Pounds	Value (\$)	Price/Lb (\$)
Miscellaneous	39	116	2.96
Black jack	63	151	2.39
Jacks	148	356	2.41
Napoleon wrasse	237	652	2.75
Gindai (flower snapper)	5	22	4.00
Groupers	82	241	2.93
Kalikali (pink snapper)	12	35	3.00
Lehi (silverjaw)	58	202	3.50
Onaga (red snapper)	129	646	5.00
Uku (gray snapper)	102	286	2.80
Amberjack	32	81	2.50
Reef fishes (unknown)	6,222	18,666	3.00
Mafute (emperor)	287	779	2.72
Squirrelfishes	25	74	3.00
Snappers	21	57	2.72
Surgeonfishes	512	1,455	2.84
Unicornfishes	2,428	6,850	2.82
Sweetlips	12	31	2.50
Barracudas	391	775	1.98
Mahimahi	19,990	34,687	1.74
Swordfish	33	99	3.00
Marlins	378	527	1.39
Sailfish	31	46	1.50
Rainbow runner	242	485	2.00
Monchong	28	74	2.62
Wahoo	8,077	15,403	1.91
Skipjack tuna	2,372	3,519	1.48
Dogtooth tuna	450	663	1.47
Yellowfin tuna	698	1,390	1.99
Lobsters	127	447	3.51
Octopus	188	563	3.00
TOTAL	43,420	89,376	2.06

Table C-5
Guam April 2008 Estimated Commercial Landings

Species	Pounds	Value (\$)	Price/Lb (\$)
Jacks	388	864	2.22
Napoleon wrasse	292	804	2.75
Ehu (red snapper)	65	262	4.00
Gindai (flower snapper)	42	169	4.00
Kalikali (pink snapper)	56	197	3.50
Lehi (silverjaw)	13	46	3.50
Opakapaka (pink snapper)	14	55	4.00
Uku (gray snapper)	7	19	2.75
Reef fishes (unknown)	7,623	22,866	3.00
Mafute (emperor)	33	58	1.75
Squirrelfishes	88	230	2.60
Snappers	24	72	3.00
Surgeonfishes	418	1,057	2.53
Unicornfishes	1,599	4,236	2.65
Barracudas	186	372	2.00
Mahimahi	5,315	10,607	2.00
Marlins	154	231	1.50
Rainbow runner	113	214	1.89
Wahoo	1,233	2,203	1.79
Skipjack tuna	4,197	6,141	1.46
Dogtooth tuna	77	115	1.50
Yellowfin tuna	484	974	2.01
Crabs	33	86	2.60
Lobsters	268	1,006	3.75
Octopus	51	152	3.00
TOTAL	22,776	53,036	2.33

Table C-6
Guam May 2008 Estimated Commercial Landings

Species	Pounds	Value (\$)	Price/Lb (\$)
Miscellaneous	44	132	3.00
Black jack	25	68	2.75
Jacks	15	37	2.50
Napoleon wrasse	232	639	2.75
Gindai (flower snapper)	67	268	4.00
Groupers	219	530	2.42
Kalikali (pink snapper)	169	592	3.50
Lehi (silverjaw)	19	77	4.00
Opakapaka (pink snapper)	29	117	4.00
Uku (gray snapper)	26	78	3.00
Amberjack	48	133	2.75
Reef fishes (unknown)	9,845	29,534	3.00
Rabbitfishes	20	60	3.00
Mafute (emperor)	245	667	2.73
Squirrelfishes	89	223	2.50
Snappers	13	33	2.50
Surgeonfishes	88	221	2.50
Unicornfishes	316	805	2.55
Goatfishes	5	16	3.00
Barracudas	61	122	2.00
Mahimahi	366	732	2.00
Marlins	1,458	2,047	1.40
Rainbow runner	252	499	1.98
Wahoo	283	637	2.25
Skipjack tuna	6,265	9,088	1.45
Dogtooth tuna	49	74	1.50
Yellowfin tuna	684	1,394	2.04
Lobsters	241	903	3.75
Octopus	97	291	3.00
TOTAL	21,272	50,016	2.35

Table C-7
Guam June 2008 Estimated Commercial Landings

Species	Pounds	Value (\$)	Price/Lb (\$)
Black jack	45	122	2.69
Jacks	175	439	2.50
Ehu (red snapper)	45	178	4.00
Gindai (flower snapper)	65	258	4.00
Groupers	55	164	3.00
Kalikali (pink snapper)	13	46	3.50
Lehi (silverjaw)	46	185	4.00
Onaga (red snapper)	258	1,241	4.81
Opakapaka (pink snapper)	80	320	4.00
Uku (gray snapper)	72	203	2.83
Reef fishes (unknown)	8,157	24,485	3.00
Rabbitfishes	181	542	3.00
Rudderfish (guilli)	52	155	3.00
Mafute (emperor)	235	701	2.98
Squirrelfishes	56	140	2.50
Snappers	62	179	2.87
Surgeonfishes	165	413	2.50
Unicornfishes	1,830	5,139	2.81
Barracudas	94	170	1.82
Mahimahi	65	131	2.00
Marlins	5,793	8,431	1.46
Sailfish	68	102	1.50
Rainbow runner	582	1,272	2.18
Monchong	16	40	2.50
Wahoo	446	912	2.04
Skipjack tuna	4,434	6,620	1.49
Dogtooth tuna	162	237	1.46
Yellowfin tuna	2,238	4,701	2.10
Lobsters	63	237	3.75
Octopus	270	804	2.98
TOTAL	25,823	58,566	2.27

Table C-8
Guam July 2008 Estimated Commercial Landings

Species	Pounds	Value (\$)	Price/Lb (\$)
Miscellaneous	220	550	2.50
Bigeye scad (atulai)	32	113	3.50
Black jack	5	12	2.50
Jacks	238	596	2.50
Ehu (red snapper)	161	643	4.00
Gindai (flower snapper)	52	206	4.00
Groupers	47	141	3.00
Kalikali (pink snapper)	73	256	3.50
Lehi (silverjaw)	90	349	3.88
Onaga (red snapper)	214	1,069	5.00
Uku (gray snapper)	86	233	2.70
Reef fishes (unknown)	7,371	22,102	3.00
Rudderfish (guilli)	138	415	3.00
Mafute (emperor)	348	1,021	2.94
Squirrelfishes	363	913	2.51
Snappers	8	25	3.00
Surgeonfishes	873	2,215	2.54
Unicornfishes	3,286	8,535	2.60
Sweetlips	27	67	2.50
Barracudas	125	249	2.00
Mahimahi	28	57	2.00
Marlins	2,822	4,057	1.44
Rainbow runner	142	283	2.00
Monchong	55	123	2.25
Wahoo	176	396	2.25
Skipjack tuna	2,497	4,156	1.66
Dogtooth tuna	221	349	1.58
Yellowfin tuna	1,246	2,602	2.09
Crabs	10	25	2.50
Lobsters	24	89	3.75
Octopus	240	712	2.97
TOTAL	21,217	52,561	2.48

Table C-9
Guam August 2008 Estimated Commercial Landings

Species	Pounds	Value (\$)	Price/Lb (\$)
Miscellaneous	41	122	3.00
Bigeye scad (atulai)	520	1,560	3.00
Jacks	101	308	3.06
Ehu (red snapper)	90	346	3.85
Gindai (flower snapper)	121	483	4.00
Groupers	44	132	3.00
Kalikali (pink snapper)	334	1,193	3.57
Lehi (silverjaw)	91	363	4.00
Onaga (red snapper)	250	1,250	5.00
Opakapaka (pink snapper)	82	326	4.00
Uku (gray snapper)	75	200	2.68
Amberjack	13	39	3.00
Reef fishes (unknown)	7,228	21,680	3.00
Rabbitfishes	128	383	3.00
Mafute (emperor)	156	461	2.95
Squirrelfishes	145	372	2.57
Surgeonfishes	649	1,671	2.57
Unicornfishes	2,495	7,387	2.96
Sweetlips	25	63	2.50
Barracudas	106	212	2.00
Mahimahi	321	608	1.90
Marlins	4,358	5,740	1.32
Sailfish	82	122	1.50
Rainbow runner	25	49	2.00
Monchong	36	108	3.00
Wahoo	342	770	2.25
Skipjack tuna	2,508	4,824	1.92
Dogtooth tuna	9	14	1.50
Yellowfin tuna	411	893	2.17
Crabs	1	2	3.00
Octopus	464	1,392	3.00
TOTAL	21,248	53,076	2.50

Table C-10
Guam September 2008 Estimated Commercial Landings

Species	Pounds	Value (\$)	Price/Lb (\$)
Bigeye scad (atulai)	1,147	3,731	3.25
Black jack	44	110	2.50
Jacks	238	758	3.18
Napoleon wrasse	90	253	2.81
Ehu (red snapper)	91	337	3.71
Gindai (flower snapper)	194	775	4.00
Groupers	316	793	2.51
Kalikali (pink snapper)	280	976	3.48
Lehi (silverjaw)	235	865	3.67
Onaga (red snapper)	658	3,288	5.00
Opakapaka (pink snapper)	98	391	4.00
Uku (gray snapper)	14	35	2.50
Amberjack	32	90	2.79
Reef fishes (unknown)	7,159	21,580	3.01
Mafute (emperor)	73	197	2.70
Squirrelfishes	76	200	2.63
Parrotfishes	1,977	6,425	3.25
Snappers	11	27	2.50
Surgeonfishes	555	1,420	2.56
Unicornfishes	1,865	5,588	3.00
Barracudas	8	17	2.00
Mahimahi	25	49	2.00
Marlins	2,955	4,208	1.42
Rainbow runner	515	1,389	2.70
Wahoo	235	528	2.25
Skipjack tuna	661	1,322	2.00
Dogtooth tuna	128	192	1.50
Yellowfin tuna	964	1,952	2.03
Lobsters	12	46	3.75
Octopus	61	182	3.00
TOTAL	20,715	57,724	2.79

Table C-11
Guam October 2008 Estimated Commercial Landings

Species	Pounds	Value (\$)	Price/Lb (\$)
Miscellaneous	25	54	2.19
Bigeye scad (atulai)	2,065	6,187	3.00
Jacks	373	1,044	2.80
Napoleon wrasse	195	569	2.91
Ehu (red snapper)	152	592	3.89
Gindai (flower snapper)	37	148	4.00
Groupers	11	32	3.00
Kalikali (pink snapper)	66	255	3.85
Lehi (silverjaw)	2	6	4.00
Onaga (red snapper)	264	1,319	5.00
Opakapaka (pink snapper)	112	449	4.00
Uku (gray snapper)	14	38	2.75
Reef fishes (unknown)	4,663	13,989	3.00
Rabbitfishes	98	295	3.00
Mafute (emperor)	30	90	3.00
Squirrelfishes	58	144	2.50
Parrotfishes	3,115	10,123	3.25
Snappers	38	94	2.50
Surgeonfishes	1,246	3,137	2.52
Unicornfishes	1,702	5,103	3.00
Sweetlips	46	104	2.25
Barracudas	141	282	2.00
Mahimahi	866	1,660	1.92
Marlins	3,460	5,014	1.45
Rainbow runner	78	155	2.00
Monchong	22	54	2.50
Wahoo	538	1,208	2.25
Skipjack tuna	432	847	1.96
Dogtooth tuna	262	416	1.59
Yellowfin tuna	667	1,481	2.22
Lobsters	85	301	3.52
Octopus	197	591	3.00
TOTAL	21,059	55,781	2.65

Table C-12
Guam November 2008 Estimated Commercial Landings

Species	Pounds	Value (\$)	Price/Lb (\$)
Bigeye scad (atulai)	432	1,295	3.00
Black jack	12	29	2.50
Jacks	131	334	2.55
Napoleon wrasse	18	51	2.75
Ehu (red snapper)	9	37	4.00
Gindai (flower snapper)	82	326	4.00
Groupers	17	49	2.92
Kalikali (pink snapper)	112	392	3.49
Lehi (silverjaw)	89	323	3.62
Onaga (red snapper)	112	553	4.96
Opakapaka (pink snapper)	87	348	4.00
Amberjack	21	52	2.50
Reef fishes (unknown)	4,377	13,131	3.00
Mafute (emperor)	14	35	2.50
Squirrelfishes	36	93	2.57
Parrotfishes	3,079	9,971	3.24
Snappers	16	40	2.50
Surgeonfishes	314	798	2.54
Unicornfishes	371	1,112	3.00
Barracudas	84	168	2.00
Mahimahi	3,491	6,779	1.94
Marlins	3,501	5,063	1.45
Rainbow runner	61	117	1.92
Wahoo	3,829	7,789	2.03
Skipjack tuna	168	346	2.05
Yellowfin tuna	314	699	2.23
Kawakawa	10	20	2.00
Lobsters	12	43	3.75
Octopus	322	960	2.98
TOTAL	21,119	50,950	2.41

Table C-13
Guam December 2008 Estimated Commercial Landings

Species	Pounds	Value (\$)	Price/Lb (\$)
Bigeye scad (atulai)	97	291	3.00
Jacks	66	170	2.56
Humphead parrotfish	20	50	2.50
Bottomfishes (unknown)	23	69	3.00
Ehu (red snapper)	13	52	4.00
Gindai (flower snapper)	5	18	4.00
Kalikali (pink snapper)	5	16	3.00
Onaga (red snapper)	56	281	5.00
Reef fishes (unknown)	5,412	16,235	3.00
Rudderfish (guilli)	124	372	3.00
Mafute (emperor)	14	41	2.99
Squirrelfishes	150	419	2.79
Parrotfishes	3,547	11,528	3.25
Snappers	65	194	3.00
Surgeonfishes	172	488	2.83
Unicornfishes	405	1,216	3.00
Barracudas	65	129	2.00
Mahimahi	4,407	8,568	1.94
Marlins	905	1,351	1.49
Sailfish	133	246	1.85
Rainbow runner	69	138	2.00
Wahoo	2,624	5,470	2.08
Skipjack tuna	178	341	1.91
Dogtooth tuna	30	59	1.96
Yellowfin tuna	230	533	2.32
Lobsters	7	28	3.75
Octopus	14	42	3.00
TOTAL	18,837	48,345	2.57

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

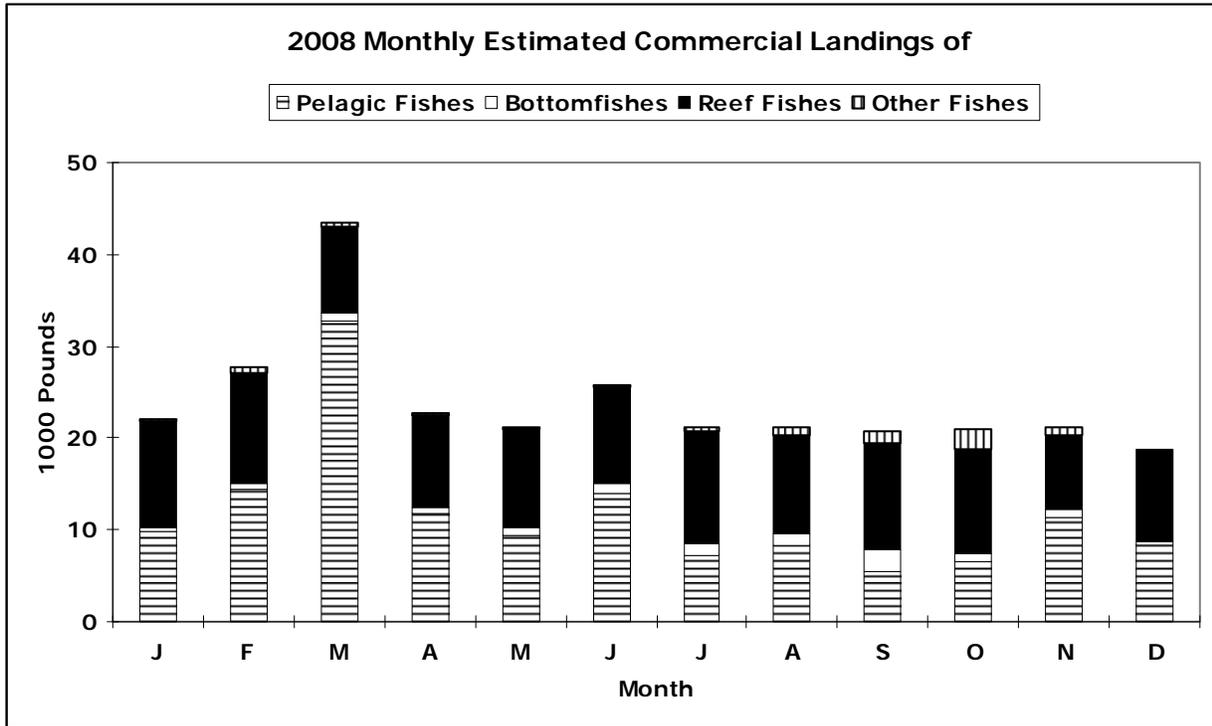


Figure C-1-1

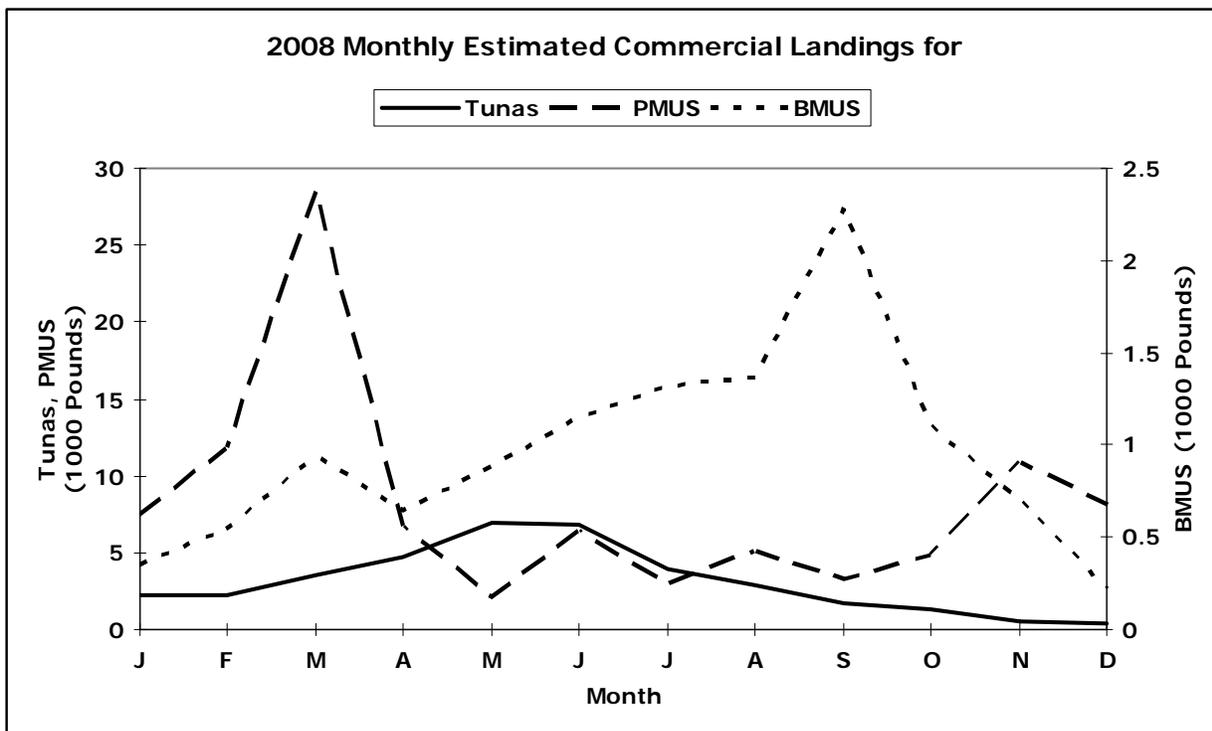


Figure C-1-2

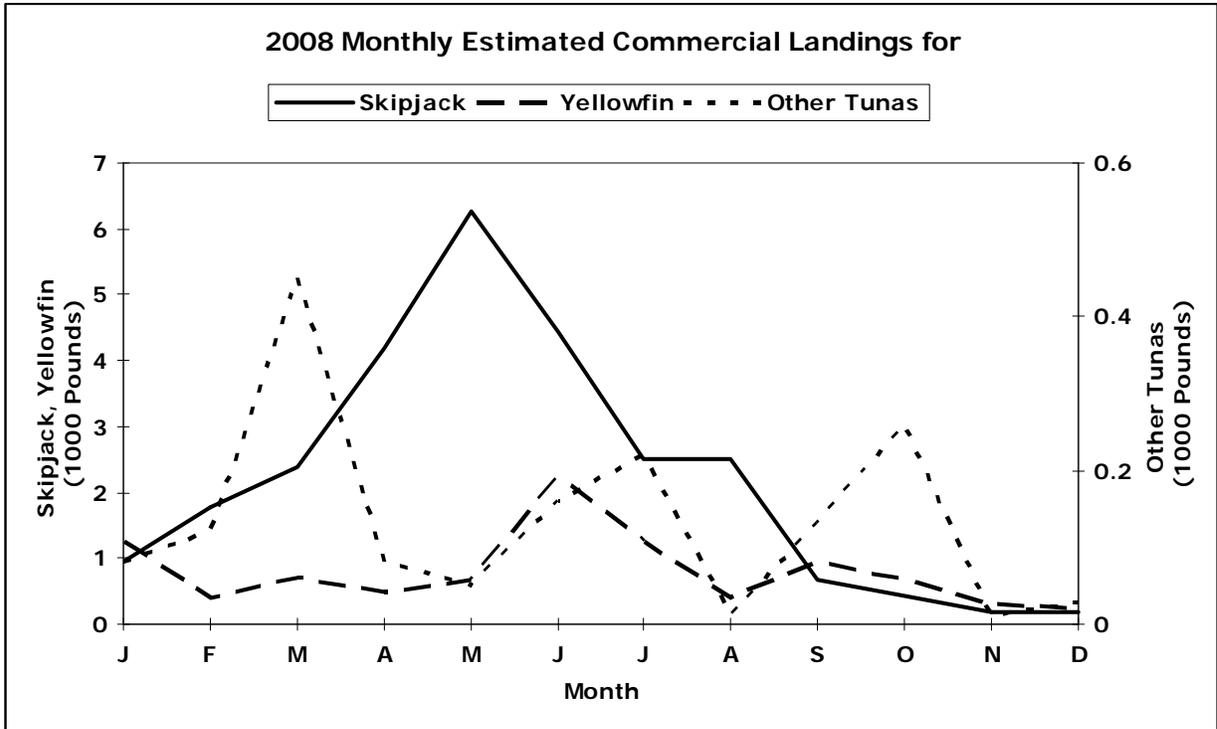


Figure C-1-3

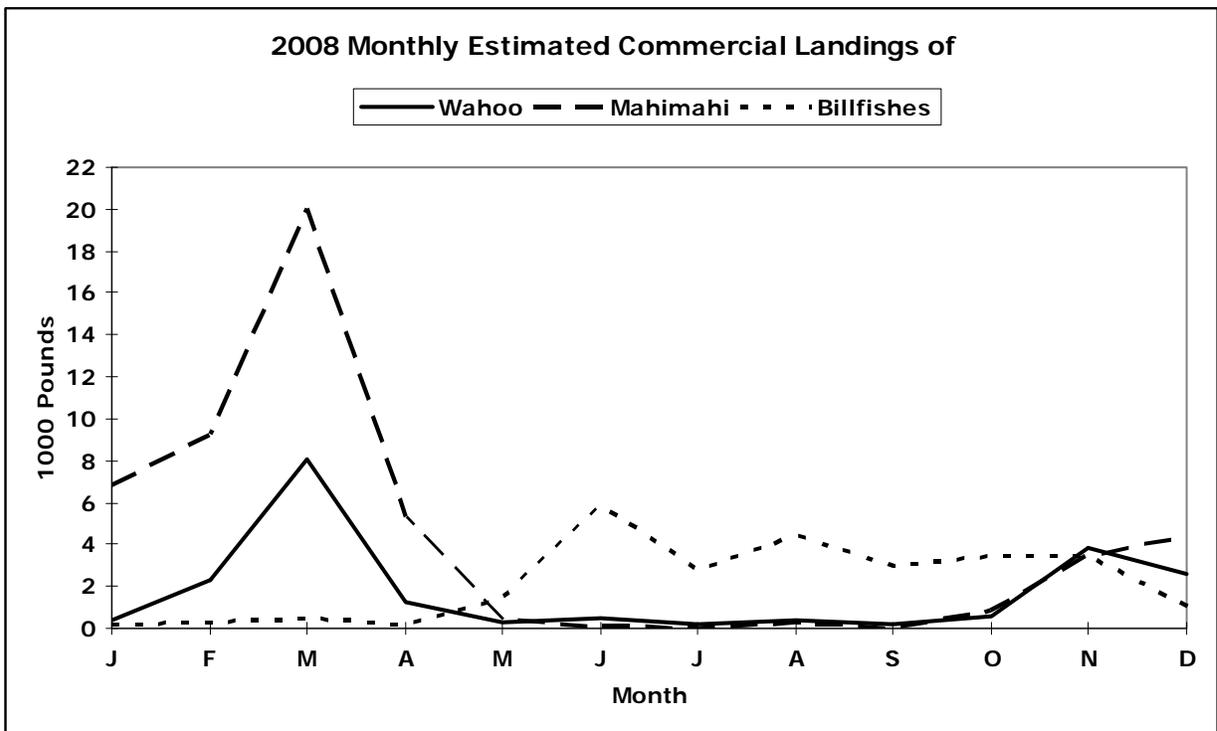


Figure C-1-4

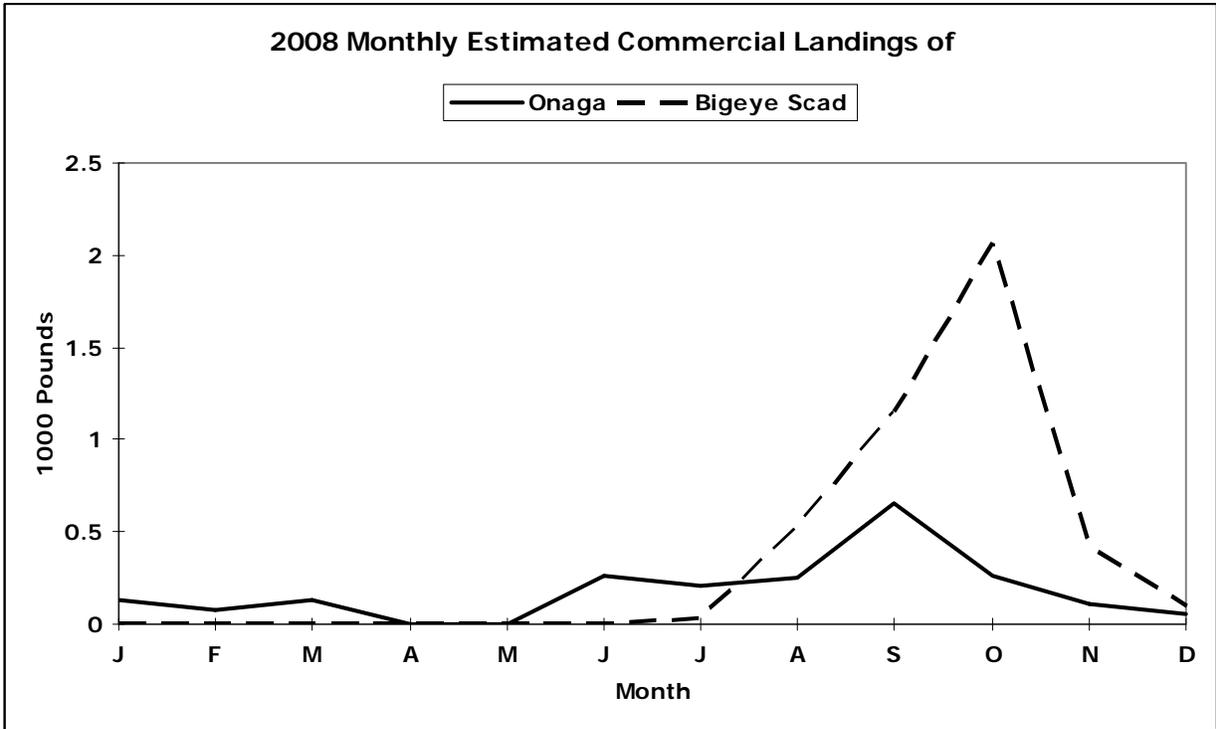


Figure C-1-5

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

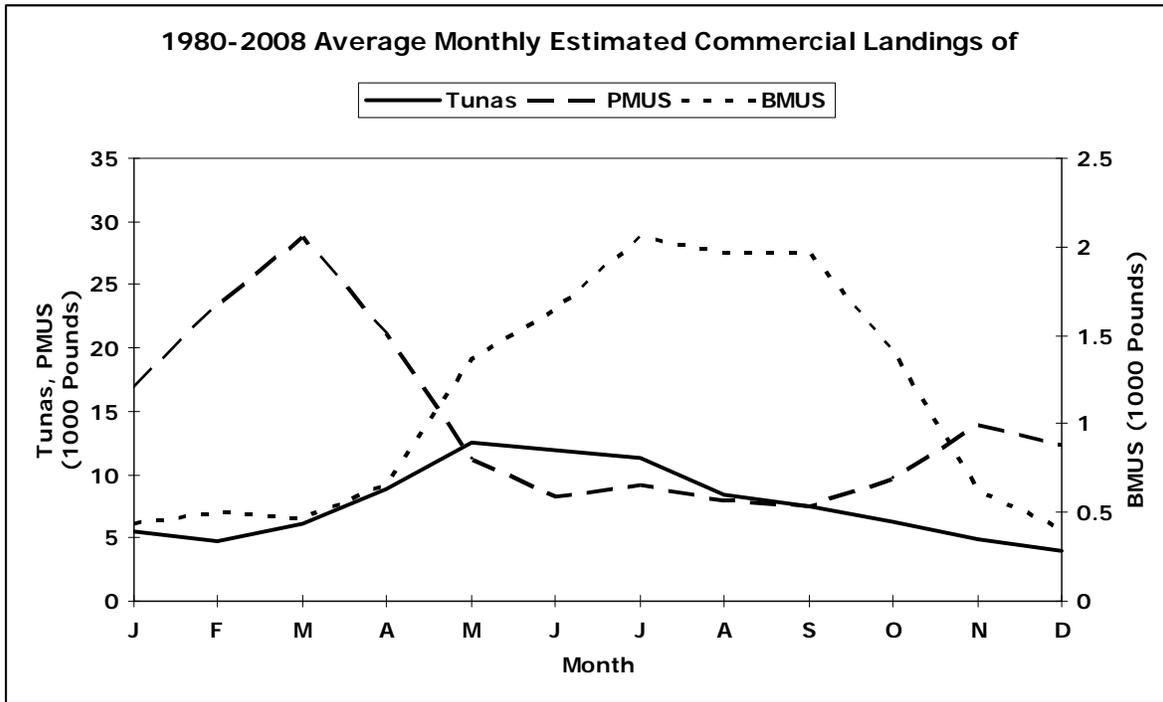


Figure C-2-1

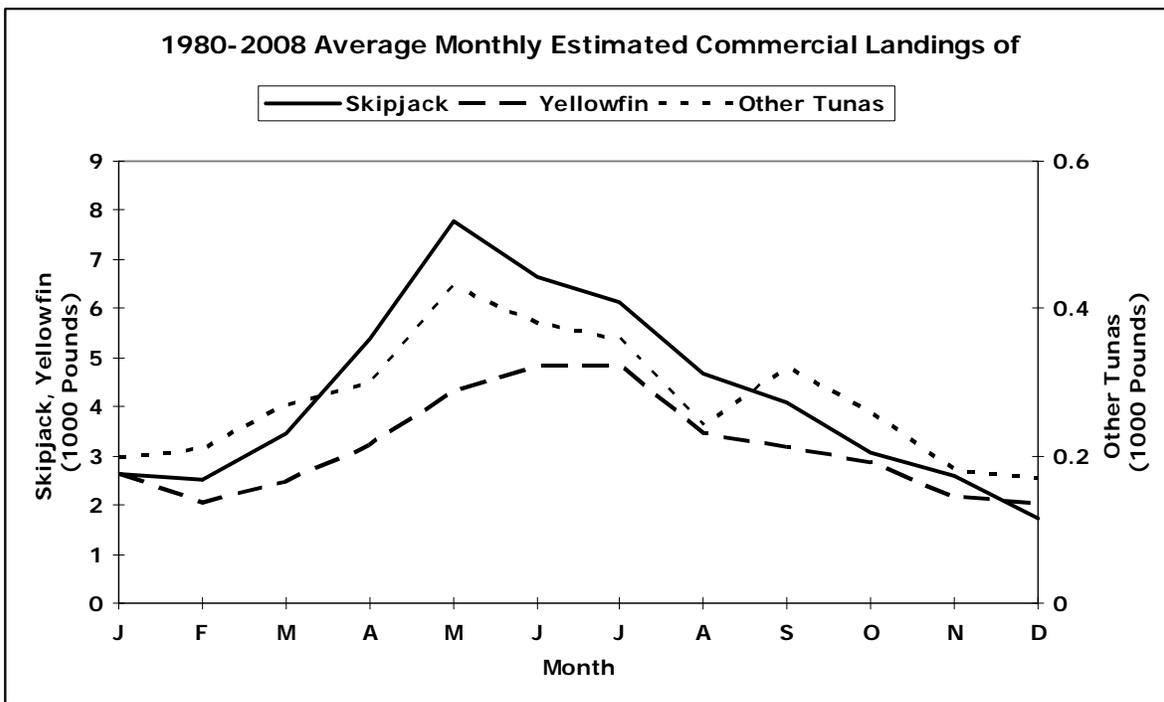


Figure C-2-2

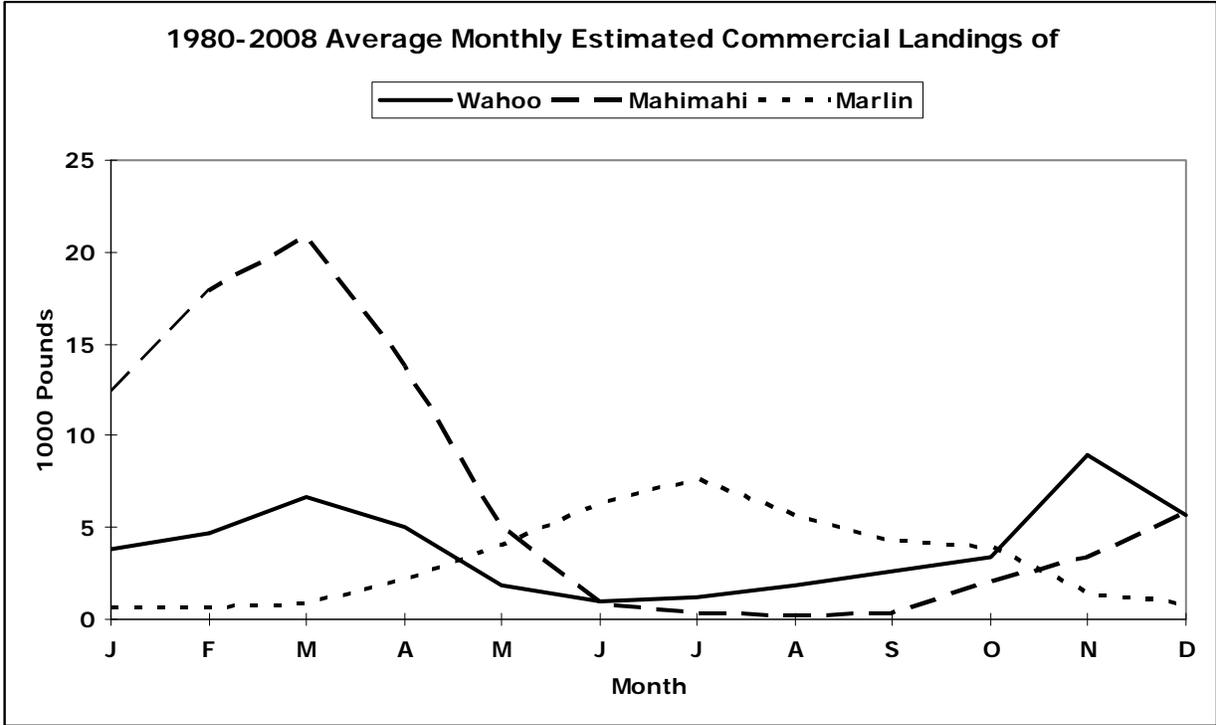


Figure C-2-3

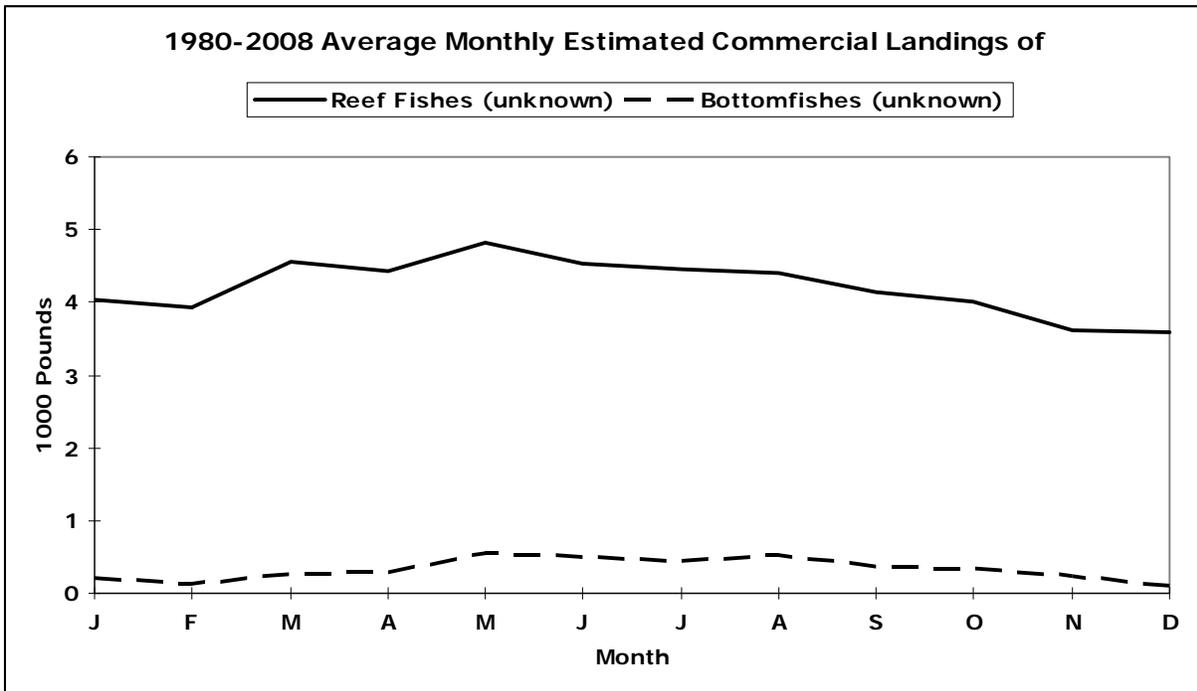


Figure C-2-4

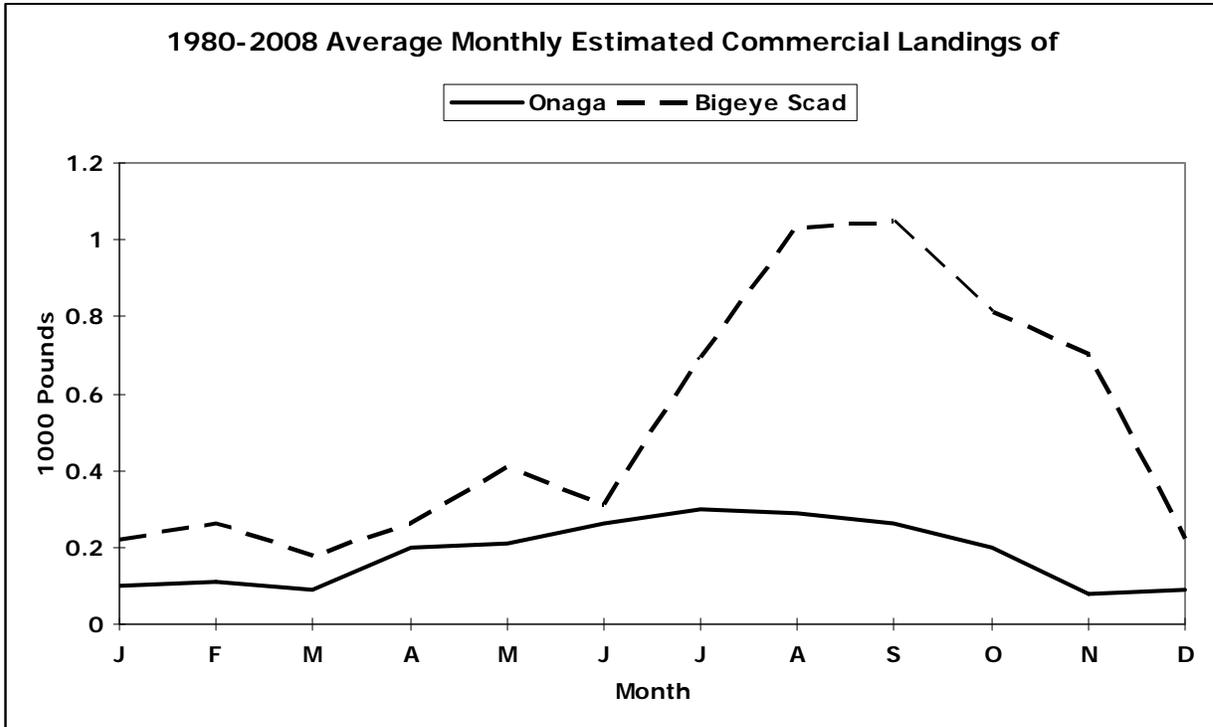


Figure C-2-5

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

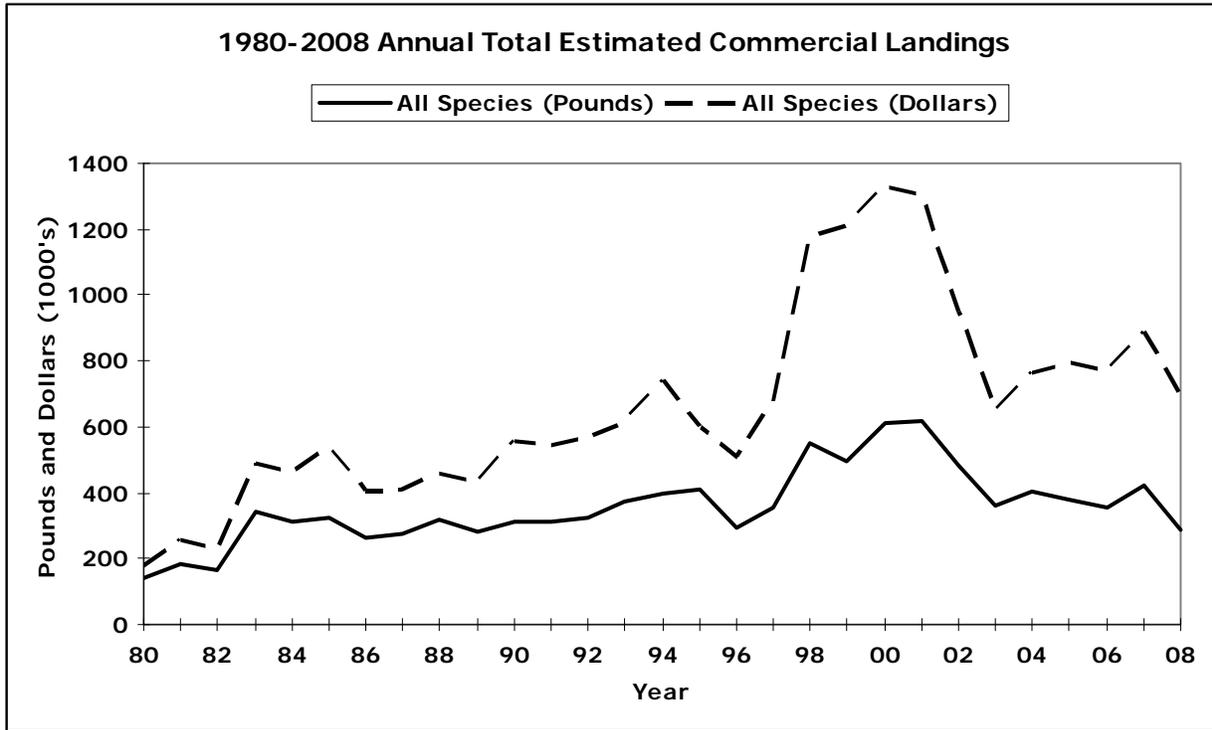


Figure C-3-1

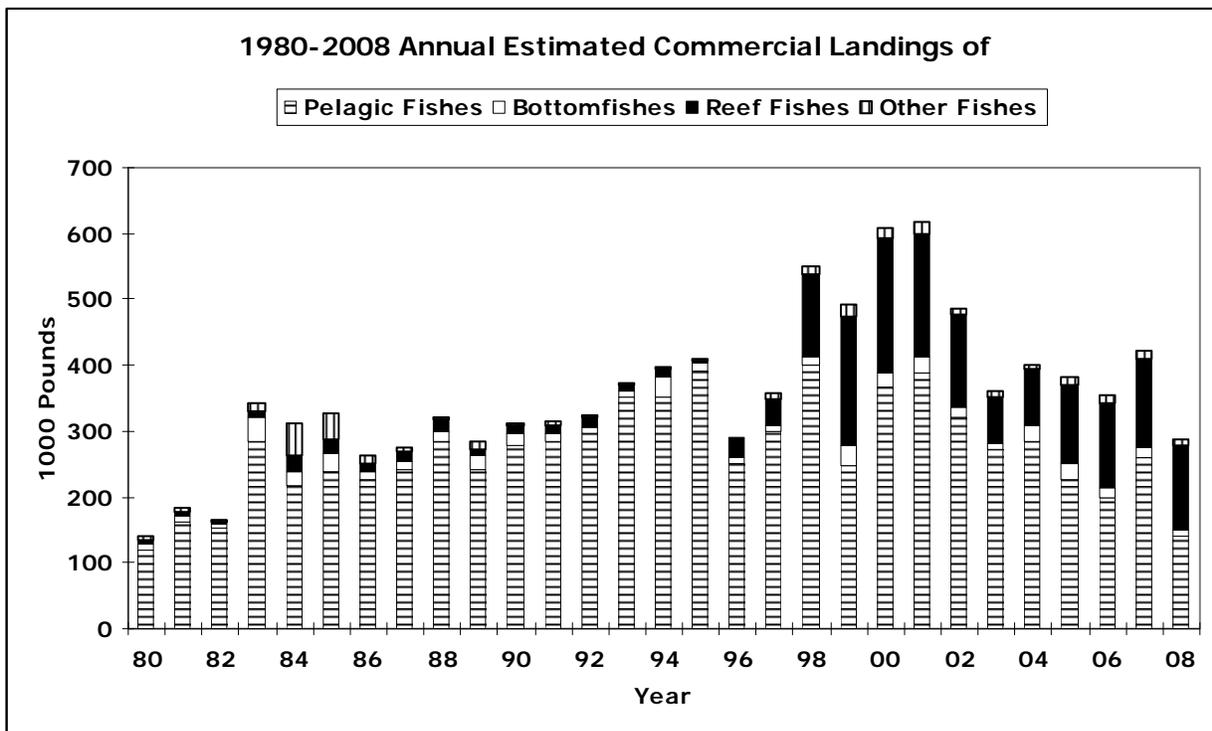


Figure C-3-2

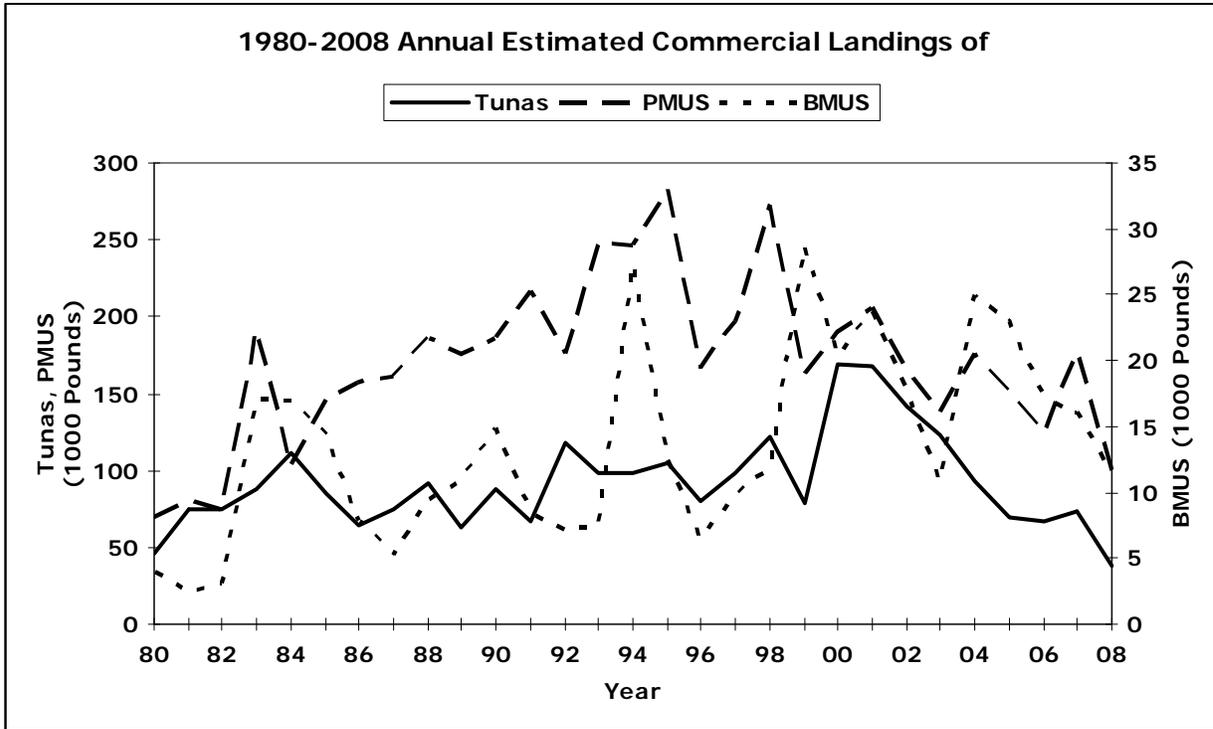


Figure C-3-3

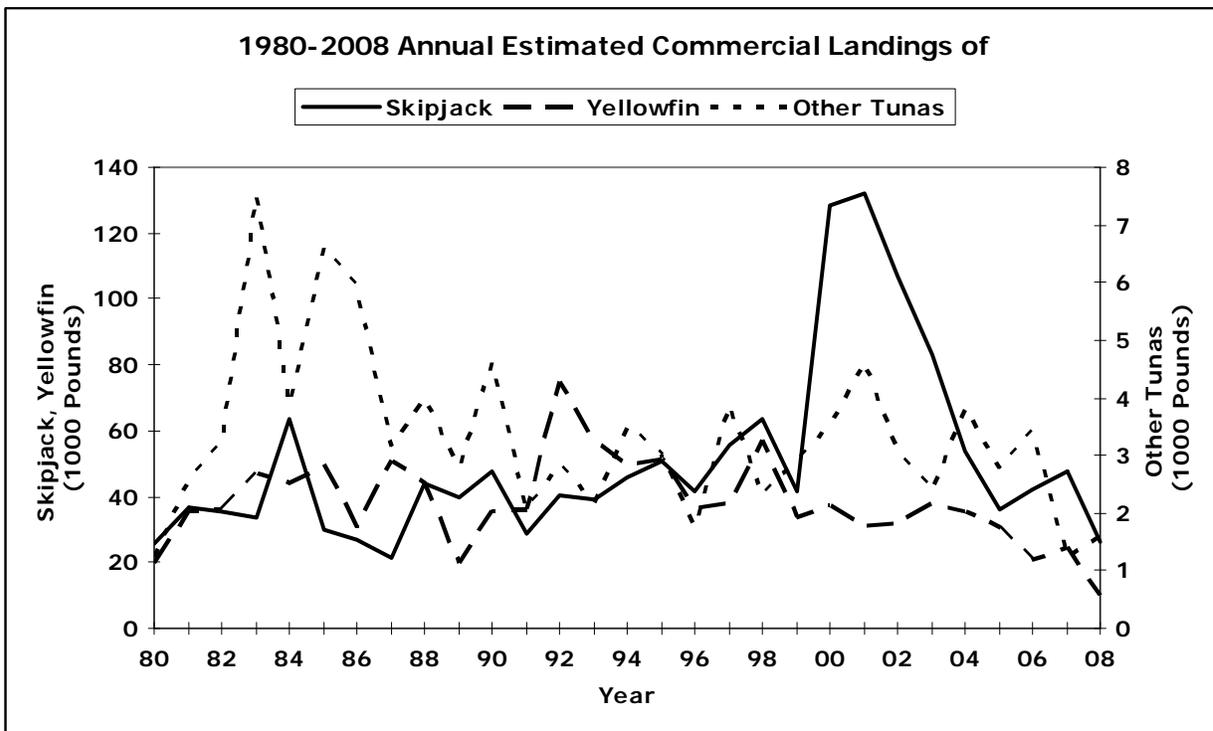


Figure C-3-4

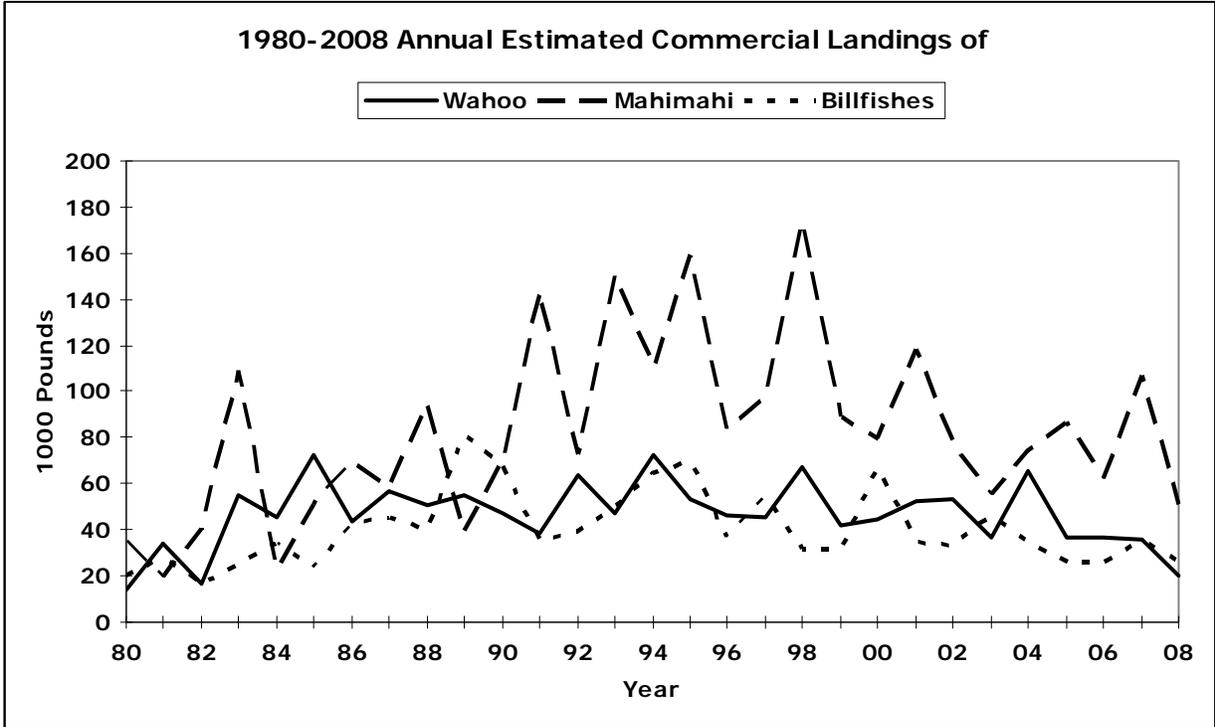


Figure C-3-5

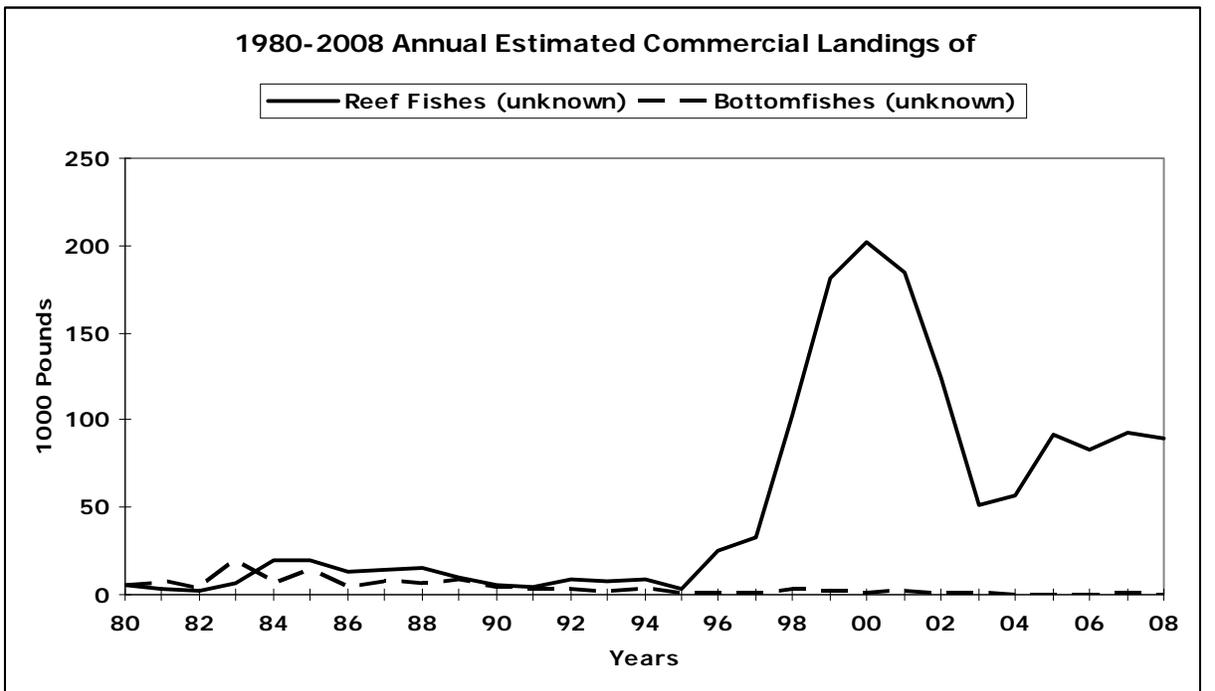


Figure C-3-6

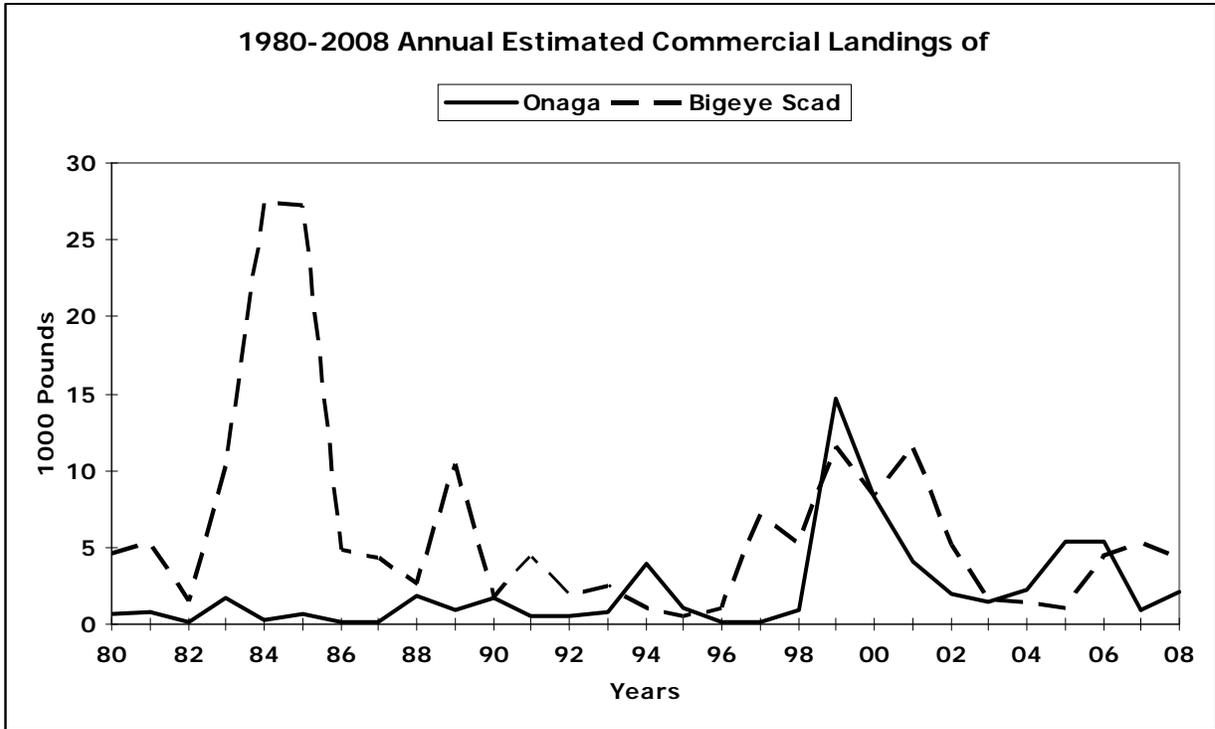


Figure C-3-7

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

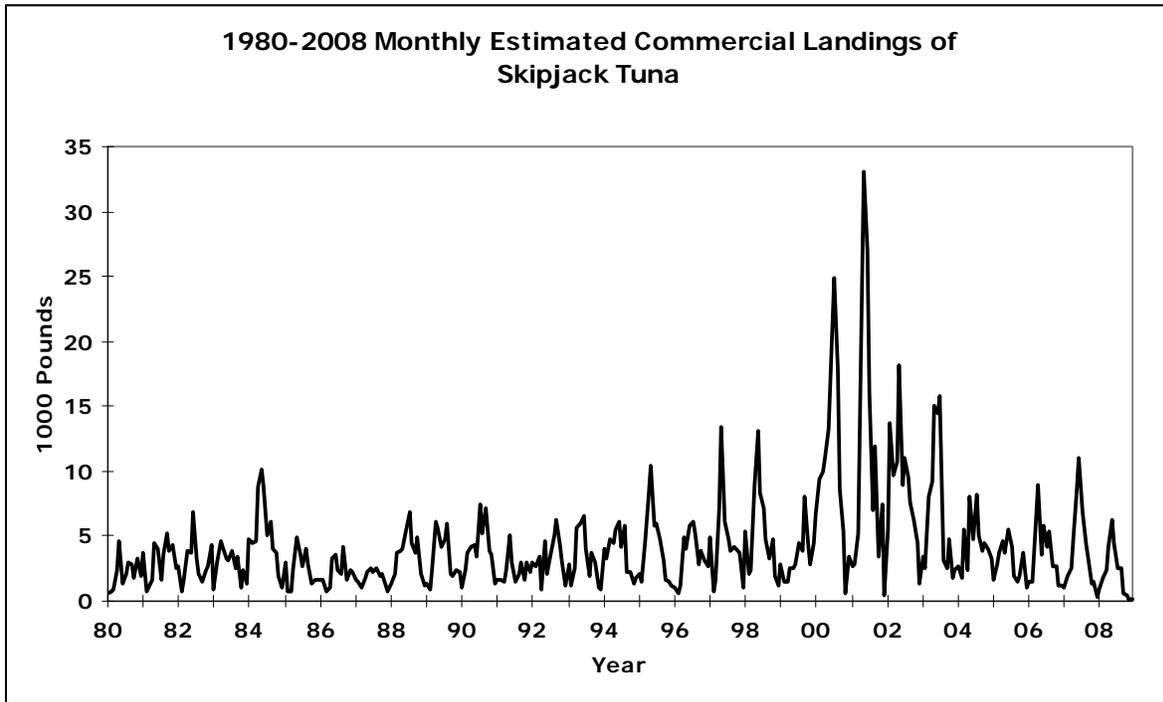


Figure C-4-1

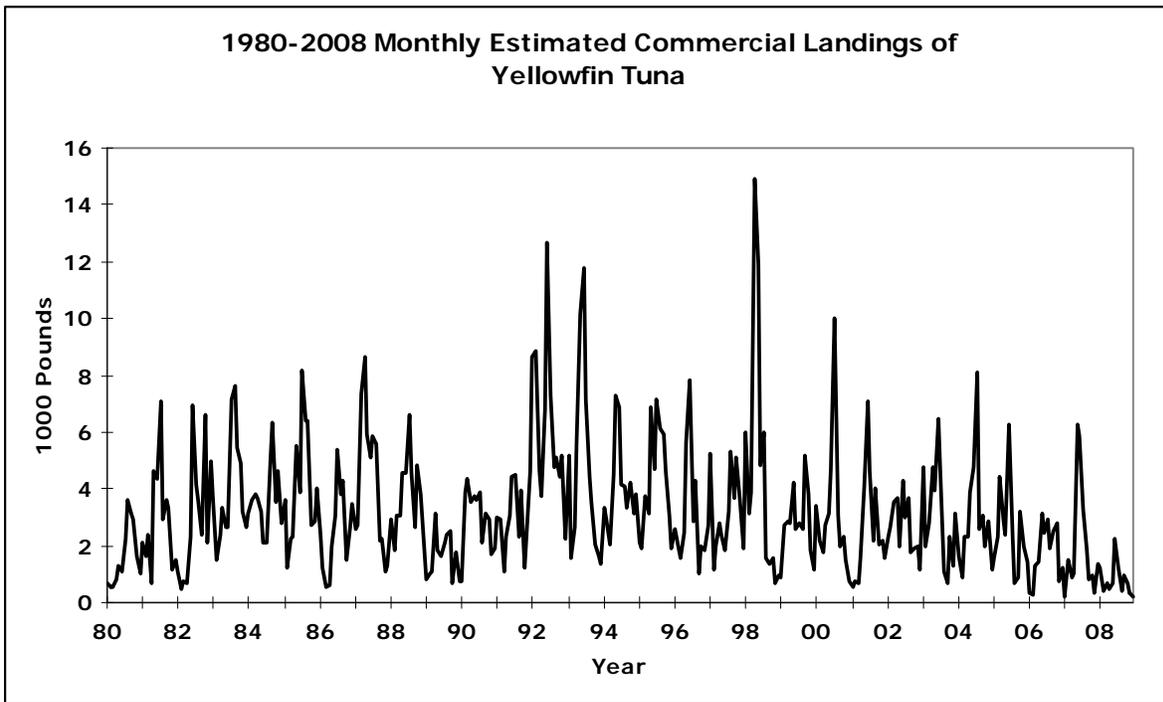


Figure C-4-2

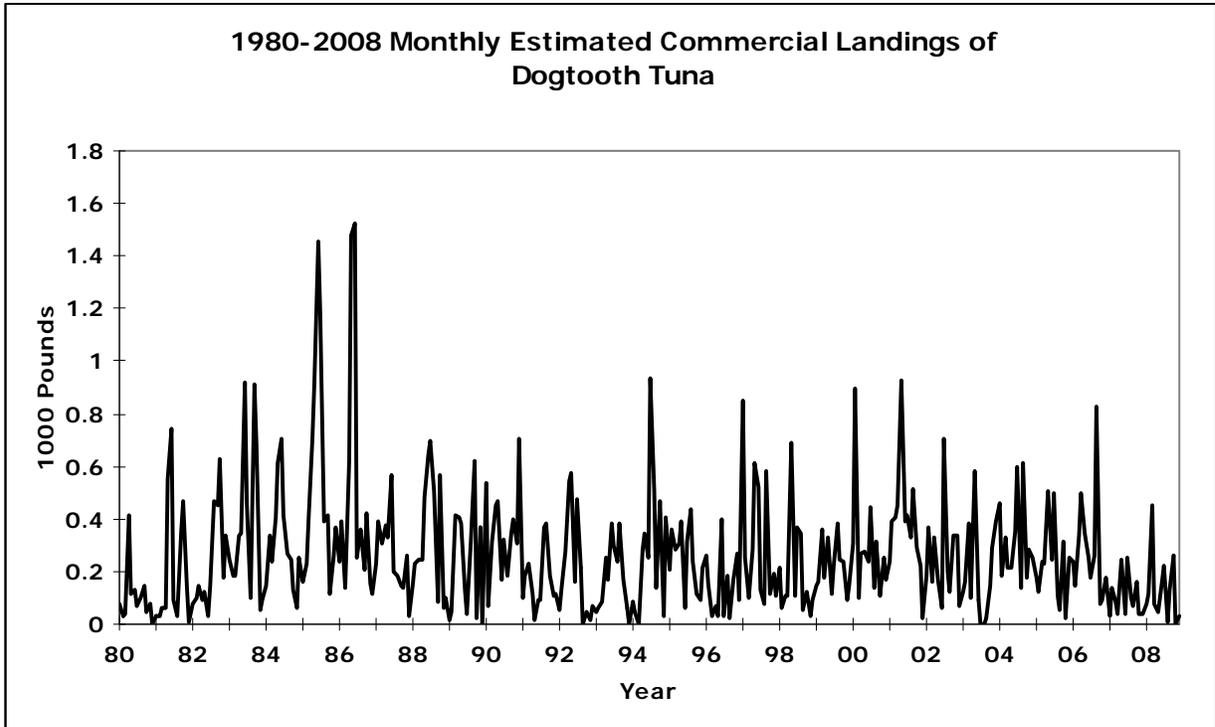


Figure C-4-3

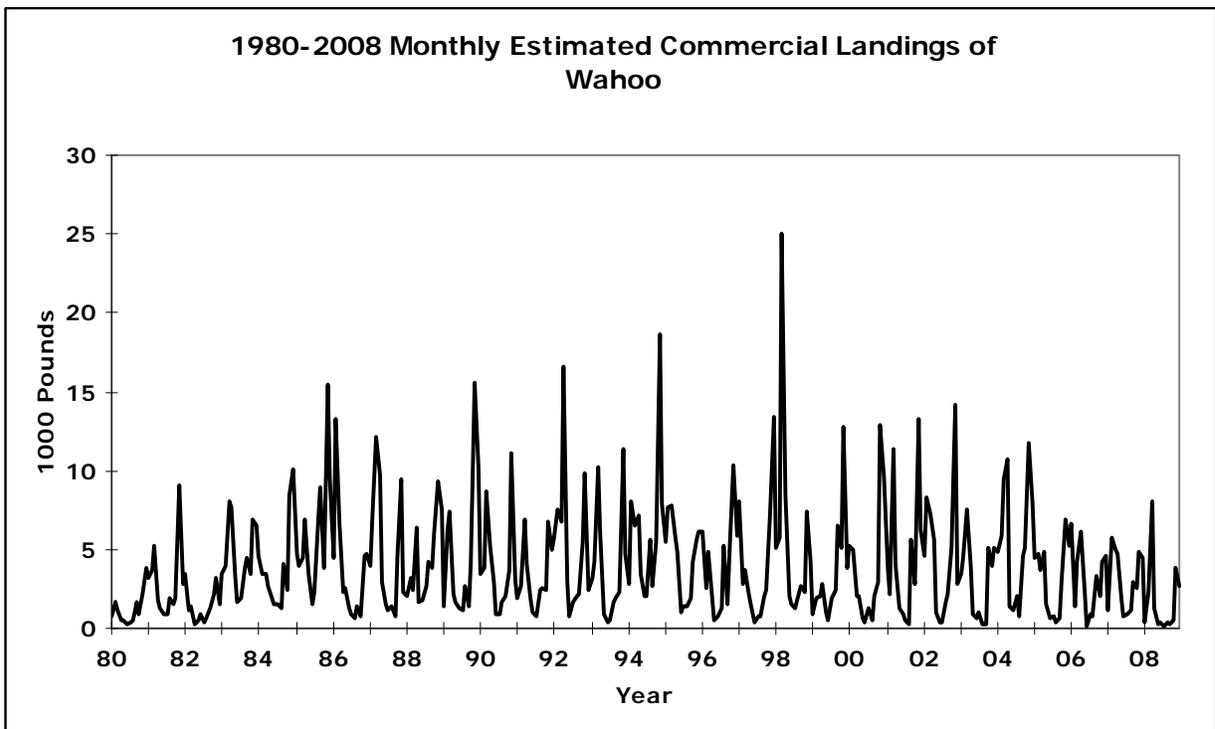


Figure C-4-4

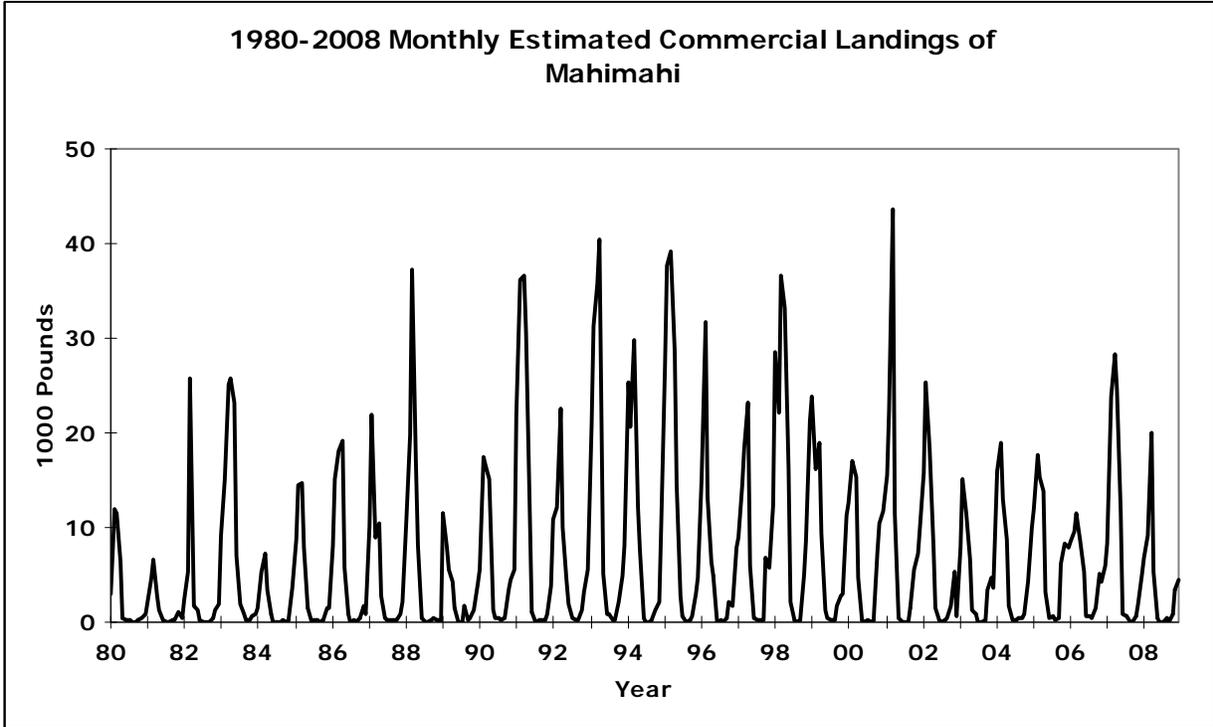


Figure C-4-5

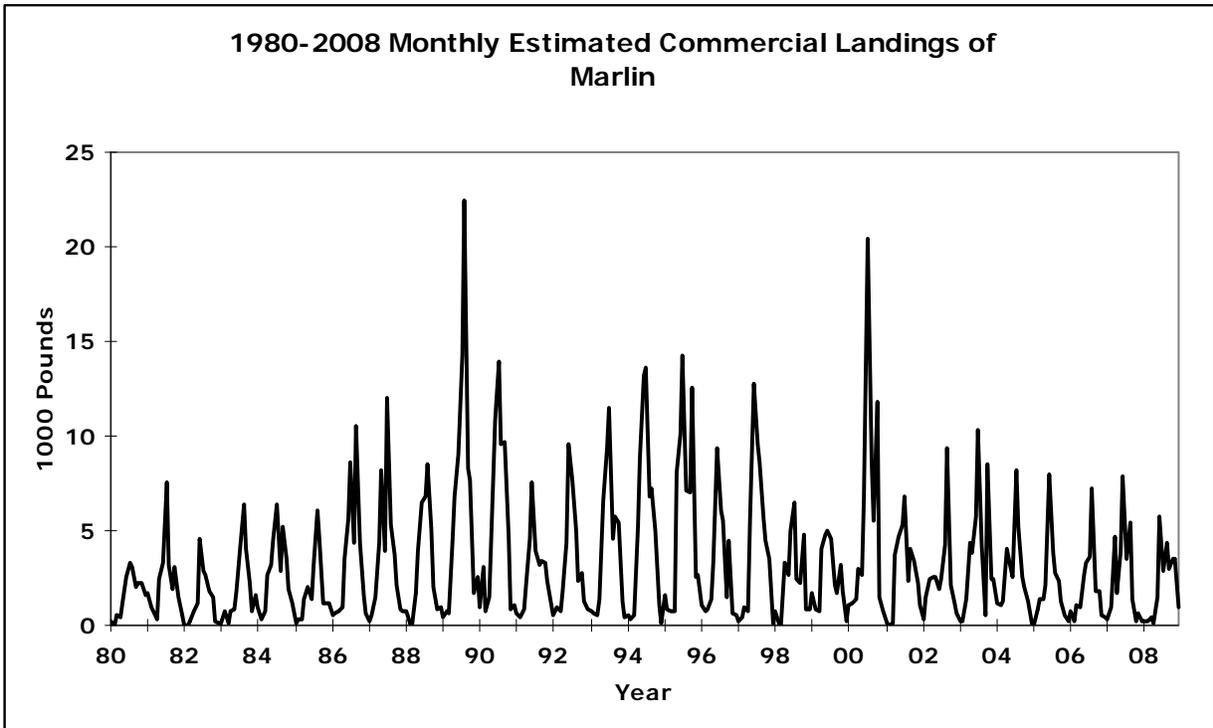


Figure C-4-6

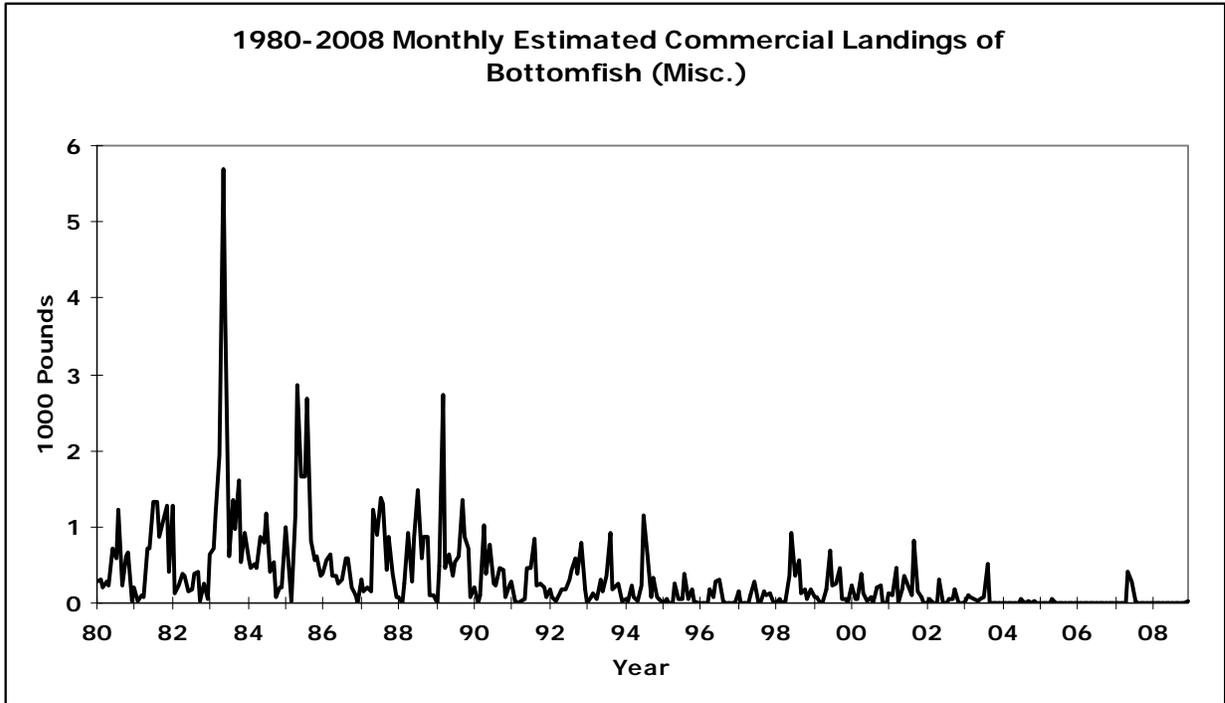


Figure C-4-7

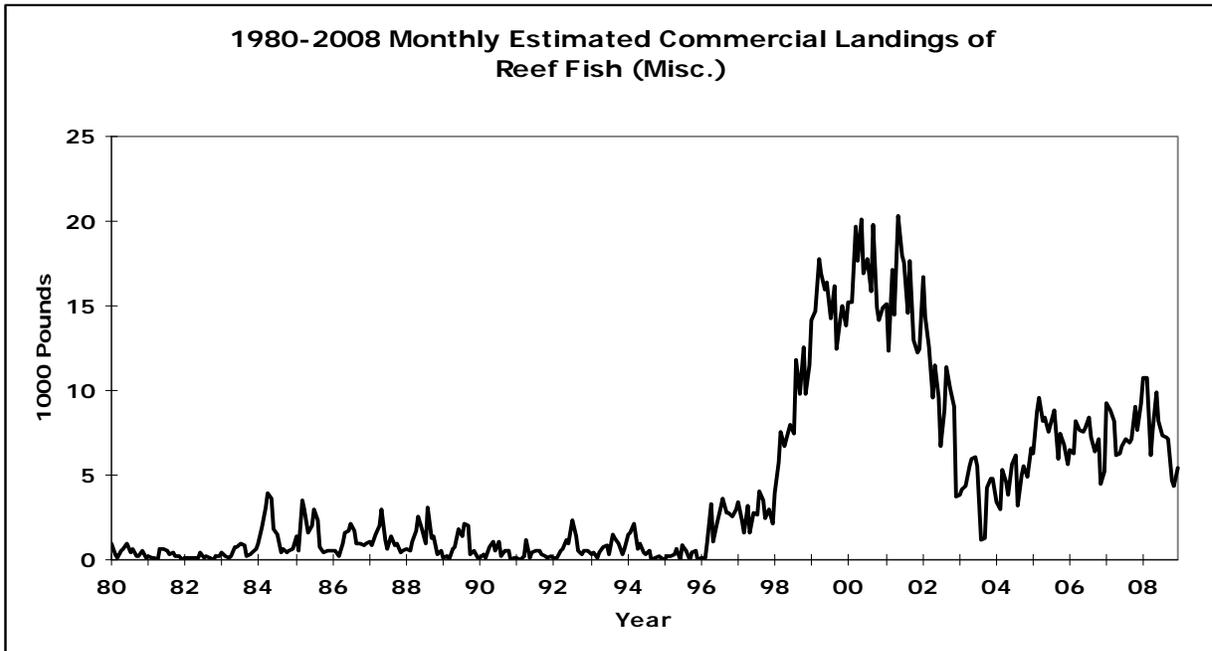


Figure C-4-8

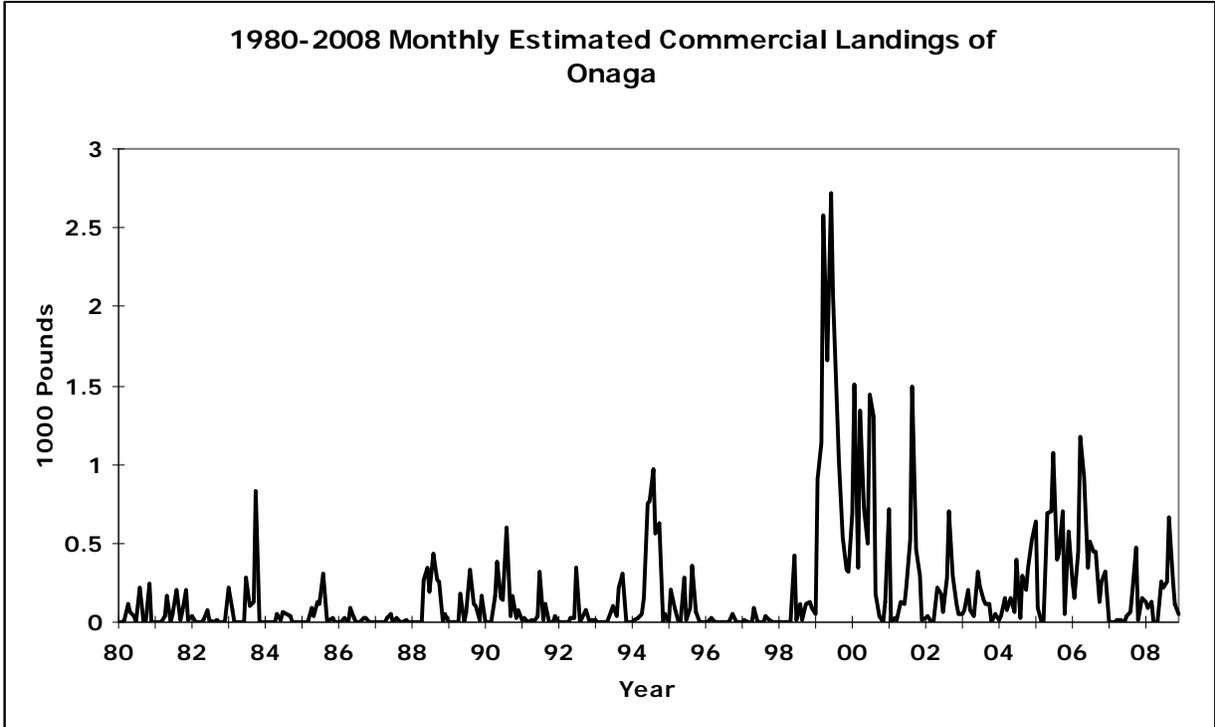


Figure C-4-9

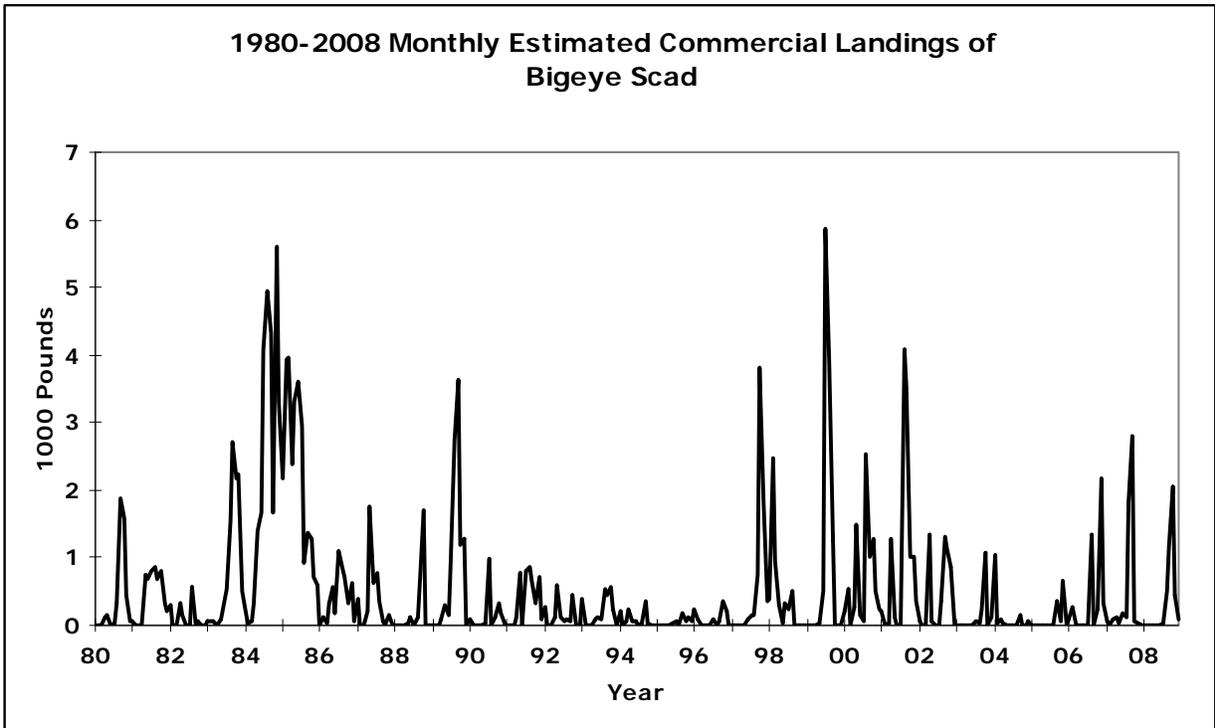


Figure C-4-10