

GUAM 2009 FISHERY STATISTICS

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

December 2011

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GUAM 2009 FISHERY STATISTICS

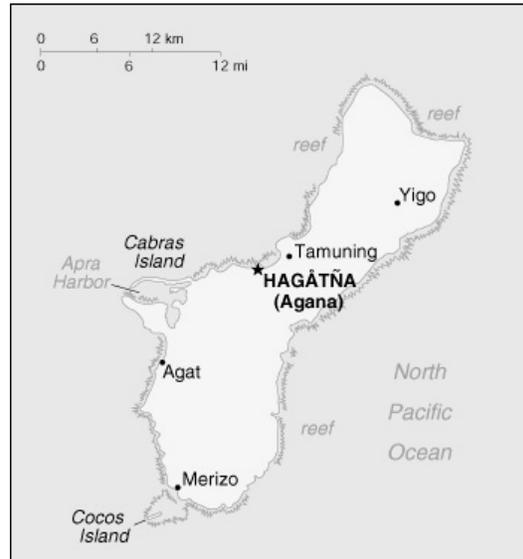
INTRODUCTION

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/gg-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 in length) 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.

Pelagic Management Unit Species (PMUS)

Mahimahi	Spearfish
Marlins	Swordfish
Sailfish	Wahoo
Sharks	

I. 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)

II. Billfishes

Marlins	Spearfish
Sailfish	Swordfish

III. Tunas

Dogtooth tuna	Tunas (unknown)
Kawakawa	Yellowfin tuna
Skipjack tuna	

IV. Other Tunas

Dogtooth tuna	Tunas (unknown)
Kawakawa	

V. Fisheries Categories

A. *Pelagic Fishes*

Barracudas	Sailfish
Dogtooth tuna	Sharks
Kawakawa	Skipjack tuna
Mahimahi	Spearfish
Marlins	Swordfish
Monchong	Tunas (unknown)
Pelagic fishes (unknown)	Wahoo
Rainbow runner	Yellowfin tuna

B. *Bottomfishes*

Alfonsin	Jacks
Amberjack	Kalikali (pink snapper)
Black jack	Lehi (silverjaw)
Bottomfishes (unknown)	Mafute (emperor)
Deep bottomfishes	Onaga (red snapper)
Ehu (red snapper)	Opakapaka (pink snapper)
Gindai (flower snapper)	Tagafi (red snapper)
Groupers	Uku (gray snapper)

C. *Reef Fishes*

Goatfishes	Snappers
Humphead parrotfish	Squirrelfishes
Napoleon wrasse	Surgeonfishes
Parrotfishes	Sweetlips
Rabbitfishes	Unicornfishes
Reef fishes (unknown)	Wrasses
Rudderfish (guilli)	

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

C.6

Table C-1
Guam Annual 2009 Estimated Commercial Landings

Species	Pounds	Value (\$)	Price/Lb (\$)
Miscellaneous	466	2,231	4.79
Bigeye scad (atulai)	4,166	11,185	2.68
Black jack	100	256	2.55
Jacks	1,365	4,214	3.09
Napoleon wrasse	3,162	8,919	2.82
Humphead parrotfish	83	187	2.25
Bottomfishes (unknown)	212	668	3.16
Deep bottomfishes	28	43	1.50
Ehu (red snapper)	505	1,929	3.82
Gindai (flower snapper)	615	2,461	4.00
Groupers	2,091	6,035	2.89
Kalikali (pink snapper)	2,168	6,955	3.21
Lehi (silverjaw)	1,202	4,533	3.77
Onaga (red snapper)	2,689	13,378	4.98
Opakapaka (pink snapper)	1,460	5,812	3.98
Uku (gray snapper)	350	956	2.73
Tagafi (red snapper)	21	42	2.00
Amberjack	273	720	2.63
Reef fishes (unknown)	49,205	147,876	3.01
Rabbitfishes	108	375	3.48
Rudderfish (guilli)	132	397	3.00
Mafute (emperor)	1,455	4,336	2.98
Squirrelfishes	495	1,474	2.98
Parrotfishes	45,465	147,748	3.25
Snappers	374	1,106	2.96
Surgeonfishes	5,424	14,595	2.69
Unicornfishes	19,843	58,480	2.95
Sweetlips	110	279	2.54
Barracudas	1,671	3,520	2.11
Mahimahi	31,746	69,966	2.20
Marlins	15,212	20,432	1.34
Spearfish	179	277	1.54
Sailfish	728	1,101	1.51
Rainbow runner	1,175	2,767	2.36
Monchong	252	620	2.46
Wahoo	31,304	70,132	2.24
Skipjack tuna	28,943	56,877	1.97
Dogtooth tuna	1,073	1,678	1.56
Yellowfin tuna	11,448	25,196	2.20
Kawakawa	2	5	2.00
Lobsters	1,144	4,232	3.70
Octopus	2,479	7,475	3.02
TOTAL	270,923	711,463	2.63

Table C-2
Guam January 2009 Estimated Commercial Landings

Species	Pounds	Value (\$)	Price/Lb (\$)
Miscellaneous	1	3	2.50
Bigeye scad (atulai)	117	351	3.00
Jacks	51	127	2.50
Bottomfishes (unknown)	62	203	3.26
Gindai (flower snapper)	71	283	4.00
Groupers	8	31	4.00
Kalikali (pink snapper)	9	28	3.00
Lehi (silverjaw)	281	1,123	4.00
Onaga (red snapper)	83	393	4.73
Opakapaka (pink snapper)	108	434	4.00
Uku (gray snapper)	13	36	2.75
Amberjack	96	248	2.58
Reef fishes (unknown)	5,123	15,369	3.00
Rudderfish (guilli)	95	286	3.00
Mafute (emperor)	62	187	3.00
Squirrelfishes	71	204	2.88
Parrotfishes	3,059	9,943	3.25
Snappers	12	35	3.00
Surgeonfishes	138	415	3.00
Unicornfishes	1,097	3,291	3.00
Barracudas	142	285	2.00
Mahimahi	4,805	10,243	2.13
Marlins	439	786	1.79
Rainbow runner	35	95	2.73
Wahoo	2,055	4,542	2.21
Skipjack tuna	637	1,274	2.00
Dogtooth tuna	15	31	2.00
Yellowfin tuna	645	1,358	2.11
Kawakawa	2	5	2.00
Lobsters	27	103	3.75
Octopus	72	215	3.00
TOTAL	19,432	51,922	2.67

Table C-3
Guam February 2009 Estimated Commercial Landings

Species	Pounds	Value (\$)	Price/Lb (\$)
Jacks	5	15	2.75
Napoleon wrasse	143	429	3.00
Ehu (red snapper)	3	12	4.00
Gindai (flower snapper)	7	28	4.00
Groupers	4	12	3.00
Kalikali (pink snapper)	28	114	4.00
Lehi (silverjaw)	9	37	4.00
Opakapaka (pink snapper)	3	12	4.00
Uku (gray snapper)	29	78	2.67
Reef fishes (unknown)	6,246	18,738	3.00
Mafute (emperor)	4	12	3.00
Parrotfishes	1,710	5,558	3.25
Snappers	5	14	3.00
Surgeonfishes	74	222	3.00
Unicornfishes	905	2,714	3.00
Sweetlips	24	60	2.50
Barracudas	117	234	2.00
Mahimahi	5,563	12,323	2.22
Sailfish	129	183	1.42
Rainbow runner	325	726	2.24
Wahoo	2,606	5,971	2.29
Skipjack tuna	413	826	2.00
Dogtooth tuna	78	121	1.55
Yellowfin tuna	278	590	2.12
TOTAL	18,708	49,027	2.62

Table C-4
Guam March 2009 Estimated Commercial Landings

Species	Pounds	Value (\$)	Price/Lb (\$)
Black jack	58	150	2.56
Jacks	28	71	2.50
Napoleon wrasse	35	106	3.00
Bottomfishes (unknown)	8	31	4.00
Deep bottomfishes	28	43	1.50
Ehu (red snapper)	3	12	4.00
Groupers	40	120	3.00
Kalikali (pink snapper)	55	194	3.50
Lehi (silverjaw)	450	1,595	3.55
Onaga (red snapper)	18	92	5.00
Opakapaka (pink snapper)	147	588	4.00
Uku (gray snapper)	42	111	2.67
Amberjack	23	66	2.87
Reef fishes (unknown)	4,988	14,965	3.00
Mafute (emperor)	324	972	3.00
Squirrelfishes	62	187	3.00
Parrotfishes	2,306	7,495	3.25
Snappers	8	19	2.50
Surgeonfishes	192	538	2.81
Unicornfishes	1,295	3,855	2.98
Sweetlips	21	62	3.00
Barracudas	185	369	2.00
Mahimahi	7,709	17,188	2.23
Marlins	1,413	1,469	1.04
Sailfish	165	248	1.50
Rainbow runner	61	122	2.00
Wahoo	3,048	6,886	2.26
Skipjack tuna	947	1,894	2.00
Dogtooth tuna	134	201	1.50
Yellowfin tuna	1,285	2,895	2.25
Lobsters	3	12	3.75
Octopus	77	231	3.00
TOTAL	25,161	62,786	2.50

Table C-5
Guam April 2009 Estimated Commercial Landings

Species	Pounds	Value (\$)	Price/Lb (\$)
Miscellaneous	312	1,769	5.68
Jacks	216	1,225	5.67
Napoleon wrasse	166	476	2.87
Ehu (red snapper)	57	199	3.50
Gindai (flower snapper)	6	25	4.00
Groupers	368	1,173	3.19
Lehi (silverjaw)	145	545	3.75
Onaga (red snapper)	77	385	5.00
Amberjack	66	165	2.50
Reef fishes (unknown)	2,828	8,485	3.00
Rudderfish (guilli)	18	55	3.00
Mafute (emperor)	184	546	2.97
Squirrelfishes	282	883	3.13
Parrotfishes	2,951	9,590	3.25
Snappers	4	12	3.00
Surgeonfishes	343	962	2.80
Unicornfishes	1,181	3,519	2.98
Barracudas	157	314	2.00
Mahimahi	6,534	14,732	2.25
Marlins	467	864	1.85
Spearfish	25	37	1.50
Sailfish	95	143	1.50
Rainbow runner	45	95	2.13
Wahoo	1,544	3,493	2.26
Skipjack tuna	748	1,497	2.00
Dogtooth tuna	112	175	1.57
Yellowfin tuna	1,001	2,303	2.30
Lobsters	25	92	3.75
Octopus	25	74	3.00
TOTAL	19,981	53,833	2.69

Table C-6
Guam May 2009 Estimated Commercial Landings

Species	Pounds	Value (\$)	Price/Lb (\$)
Black jack	33	83	2.50
Jacks	232	583	2.52
Napoleon wrasse	276	771	2.79
Ehu (red snapper)	46	184	4.00
Gindai (flower snapper)	26	105	4.00
Groupers	511	1,410	2.76
Kalikali (pink snapper)	219	767	3.50
Lehi (silverjaw)	8	31	4.00
Onaga (red snapper)	626	3,131	5.00
Opakapaka (pink snapper)	212	846	4.00
Uku (gray snapper)	74	200	2.70
Amberjack	5	16	3.00
Reef fishes (unknown)	4,177	12,617	3.02
Mafute (emperor)	115	346	3.00
Squirrelfishes	80	200	2.50
Parrotfishes	4,957	16,110	3.25
Snappers	18	46	2.50
Surgeonfishes	246	639	2.60
Unicornfishes	3,288	9,846	2.99
Barracudas	47	94	2.00
Mahimahi	1,253	2,677	2.14
Marlins	1,323	2,384	1.80
Sailfish	52	97	1.85
Rainbow runner	34	68	2.00
Wahoo	1,012	2,268	2.24
Skipjack tuna	2,192	4,370	1.99
Dogtooth tuna	91	136	1.50
Yellowfin tuna	864	1,874	2.17
Lobsters	161	603	3.75
Octopus	197	591	3.00
TOTAL	22,374	63,094	2.82

Table C-7
Guam June 2009 Estimated Commercial Landings

Species	Pounds	Value (\$)	Price/Lb (\$)
Jacks	51	134	2.62
Napoleon wrasse	795	2,277	2.87
Humphead parrotfish	83	187	2.25
Ehu (red snapper)	122	464	3.80
Gindai (flower snapper)	168	671	4.00
Groupers	260	731	2.81
Kalikali (pink snapper)	589	1,929	3.27
Lehi (silverjaw)	43	162	3.73
Onaga (red snapper)	171	809	4.74
Opakapaka (pink snapper)	202	793	3.92
Uku (gray snapper)	36	96	2.65
Reef fishes (unknown)	4,518	13,582	3.01
Rabbitfishes	20	140	7.00
Rudderfish (guilli)	18	55	3.00
Mafute (emperor)	61	182	3.00
Parrotfishes	5,633	18,308	3.25
Snappers	15	38	2.50
Surgeonfishes	875	2,325	2.66
Unicornfishes	2,588	7,330	2.83
Sweetlips	40	100	2.50
Barracudas	81	162	2.00
Mahimahi	443	834	1.88
Marlins	3,064	4,457	1.45
Rainbow runner	59	133	2.25
Monchong	8	19	2.50
Wahoo	312	688	2.21
Skipjack tuna	2,599	5,198	2.00
Dogtooth tuna	126	170	1.35
Yellowfin tuna	658	1,422	2.16
Lobsters	122	459	3.75
Octopus	506	1,543	3.05
TOTAL	24,268	65,399	2.69

Table C-8
Guam July 2009 Estimated Commercial Landings

Species	Pounds	Value (\$)	Price/Lb (\$)
Bigeye scad (atulai)	173	519	3.00
Jacks	225	603	2.67
Napoleon wrasse	656	1,804	2.75
Bottomfishes (unknown)	42	125	3.00
Ehu (red snapper)	98	355	3.61
Gindai (flower snapper)	174	695	4.00
Groupers	252	737	2.92
Kalikali (pink snapper)	796	2,437	3.06
Lehi (silverjaw)	45	168	3.77
Onaga (red snapper)	574	2,869	5.00
Opakapaka (pink snapper)	170	669	3.94
Uku (gray snapper)	125	343	2.75
Reef fishes (unknown)	3,627	10,877	3.00
Rabbitfishes	31	92	3.00
Mafute (emperor)	274	807	2.95
Parrotfishes	4,671	15,175	3.25
Snappers	45	129	2.84
Surgeonfishes	1,038	2,663	2.56
Unicornfishes	2,165	6,356	2.94
Barracudas	12	25	2.00
Mahimahi	32	73	2.25
Marlins	2,385	3,098	1.30
Rainbow runner	78	175	2.25
Wahoo	104	234	2.25
Skipjack tuna	4,690	9,212	1.96
Dogtooth tuna	22	27	1.25
Yellowfin tuna	431	880	2.04
Lobsters	218	762	3.49
Octopus	858	2,574	3.00
TOTAL	24,010	64,481	2.69

Table C-9
Guam August 2009 Estimated Commercial Landings

Species	Pounds	Value (\$)	Price/Lb (\$)
Miscellaneous	38	115	3.00
Bigeye scad (atulai)	1,448	3,573	2.47
Jacks	250	628	2.51
Napoleon wrasse	423	1,202	2.84
Bottomfishes (unknown)	9	37	4.00
Ehu (red snapper)	72	288	4.00
Gindai (flower snapper)	54	216	4.00
Groupers	18	57	3.09
Kalikali (pink snapper)	262	790	3.01
Lehi (silverjaw)	152	597	3.92
Onaga (red snapper)	585	2,927	5.00
Opakapaka (pink snapper)	341	1,363	4.00
Uku (gray snapper)	18	51	2.89
Amberjack	7	21	3.00
Reef fishes (unknown)	3,232	9,783	3.03
Rabbitfishes	57	142	2.50
Mafute (emperor)	228	683	3.00
Parrotfishes	3,759	12,218	3.25
Snappers	56	183	3.24
Surgeonfishes	734	1,937	2.64
Unicornfishes	2,750	8,138	2.96
Barracudas	145	326	2.24
Mahimahi	136	315	2.31
Marlins	5,238	5,906	1.13
Sailfish	74	111	1.50
Rainbow runner	10	23	2.25
Monchong	52	118	2.25
Wahoo	419	945	2.25
Skipjack tuna	7,201	14,089	1.96
Dogtooth tuna	93	186	2.00
Yellowfin tuna	1,744	3,671	2.11
Lobsters	83	309	3.73
Octopus	395	1,198	3.04
TOTAL	30,086	72,144	2.40

Table C-10
Guam September 2009 Estimated Commercial Landings

Species	Pounds	Value (\$)	Price/Lb (\$)
Bigeye scad (atulai)	1,179	3,388	2.87
Jacks	101	302	3.00
Napoleon wrasse	77	212	2.75
Ehu (red snapper)	69	275	4.00
Gindai (flower snapper)	84	337	4.00
Groupers	235	537	2.29
Kalikali (pink snapper)	188	638	3.39
Lehi (silverjaw)	3	12	4.00
Onaga (red snapper)	146	729	5.00
Opakapaka (pink snapper)	131	522	4.00
Uku (gray snapper)	14	42	3.00
Amberjack	32	92	2.91
Reef fishes (unknown)	2,603	7,810	3.00
Mafute (emperor)	97	291	3.00
Parrotfishes	3,595	11,707	3.26
Snappers	208	624	3.00
Surgeonfishes	784	2,139	2.73
Unicornfishes	2,221	6,416	2.89
Sweetlips	25	57	2.25
Barracudas	125	281	2.24
Mahimahi	452	947	2.09
Marlins	540	937	1.74
Rainbow runner	46	104	2.25
Monchong	56	140	2.50
Wahoo	548	1,224	2.24
Skipjack tuna	3,630	6,955	1.92
Dogtooth tuna	174	174	1.00
Yellowfin tuna	1,431	3,186	2.23
Lobsters	94	353	3.75
Octopus	42	127	3.00
TOTAL	18,930	50,558	2.67

Table C-11
Guam October 2009 Estimated Commercial Landings

Species	Pounds	Value (\$)	Price/Lb (\$)
Bigeye scad (atulai)	777	2,043	2.63
Jacks	34	87	2.57
Napoleon wrasse	218	601	2.75
Ehu (red snapper)	35	138	4.00
Gindai (flower snapper)	20	80	4.00
Groupers	235	741	3.16
Kalikali (pink snapper)	17	51	3.00
Onaga (red snapper)	228	1,138	5.00
Opakapaka (pink snapper)	38	151	4.00
Reef fishes (unknown)	2,855	8,539	2.99
Mafute (emperor)	36	106	2.93
Parrotfishes	4,014	13,045	3.25
Snappers	2	6	2.50
Surgeonfishes	531	1,487	2.80
Unicornfishes	1,238	3,666	2.96
Barracudas	206	461	2.24
Mahimahi	496	1,094	2.21
Marlins	65	113	1.75
Spearfish	124	186	1.50
Sailfish	25	38	1.50
Rainbow runner	34	76	2.25
Monchong	77	197	2.56
Wahoo	3,265	7,329	2.25
Skipjack tuna	2,238	4,411	1.97
Dogtooth tuna	73	146	2.00
Yellowfin tuna	912	2,005	2.20
Lobsters	97	365	3.75
Octopus	223	669	3.00
TOTAL	18,111	48,969	2.70

Table C-12
Guam November 2009 Estimated Commercial Landings

Species	Pounds	Value (\$)	Price/Lb (\$)
Miscellaneous	115	344	3.00
Bigeye scad (atulai)	384	1,090	2.84
Jacks	125	312	2.50
Napoleon wrasse	35	95	2.75
Bottomfishes (unknown)	91	272	3.00
Groupers	144	437	3.04
Onaga (red snapper)	181	904	5.00
Opakapaka (pink snapper)	2	9	4.00
Tagafi (red snapper)	21	42	2.00
Reef fishes (unknown)	3,408	10,250	3.01
Mafute (emperor)	25	69	2.73
Parrotfishes	2,794	9,080	3.25
Surgeonfishes	333	862	2.59
Unicornfishes	476	1,428	3.00
Barracudas	260	556	2.14
Mahimahi	1,419	3,076	2.17
Sailfish	33	50	1.50
Rainbow runner	158	355	2.24
Monchong	58	146	2.50
Wahoo	9,553	21,205	2.22
Skipjack tuna	1,637	3,253	1.99
Dogtooth tuna	31	62	2.00
Yellowfin tuna	672	1,461	2.17
Lobsters	80	300	3.75
Octopus	22	65	3.00
TOTAL	22,056	55,722	2.53

Table C-13
Guam December 2009 Estimated Commercial Landings

Species	Pounds	Value (\$)	Price/Lb (\$)
Bigeye scad (atulai)	88	221	2.50
Black jack	9	23	2.73
Jacks	46	127	2.75
Napoleon wrasse	338	946	2.80
Gindai (flower snapper)	6	23	4.00
Groupers	17	51	3.00
Kalikali (pink snapper)	2	7	3.00
Lehi (silverjaw)	65	262	4.00
Opakapaka (pink snapper)	106	425	4.00
Amberjack	44	112	2.54
Reef fishes (unknown)	5,598	16,858	3.01
Mafute (emperor)	45	136	3.00
Parrotfishes	6,016	19,521	3.24
Surgeonfishes	135	406	3.00
Unicornfishes	641	1,922	3.00
Barracudas	193	415	2.15
Mahimahi	2,903	6,464	2.23
Marlins	278	418	1.50
Spearfish	31	54	1.75
Sailfish	154	231	1.50
Rainbow runner	291	796	2.74
Wahoo	6,838	15,347	2.24
Skipjack tuna	2,012	3,900	1.94
Dogtooth tuna	125	250	2.00
Yellowfin tuna	1,527	3,552	2.33
Lobsters	233	874	3.75
Octopus	63	189	3.00
TOTAL	27,806	73,529	2.64

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

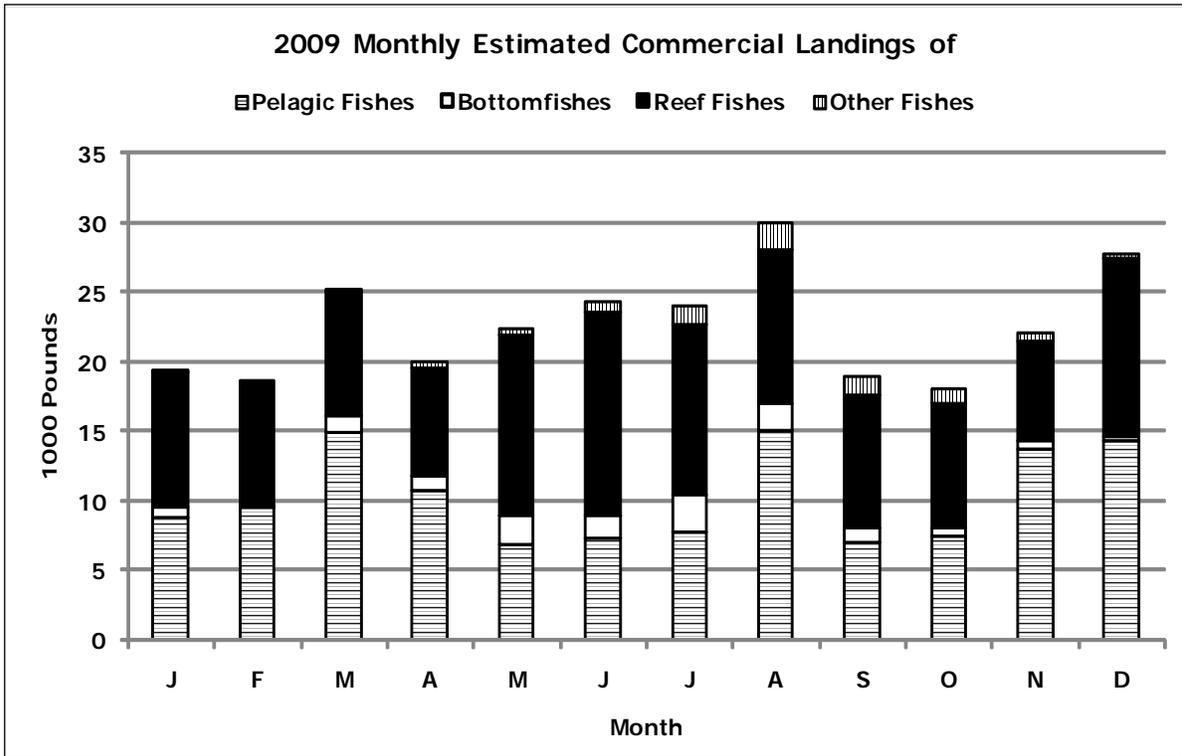


Figure C-1-1

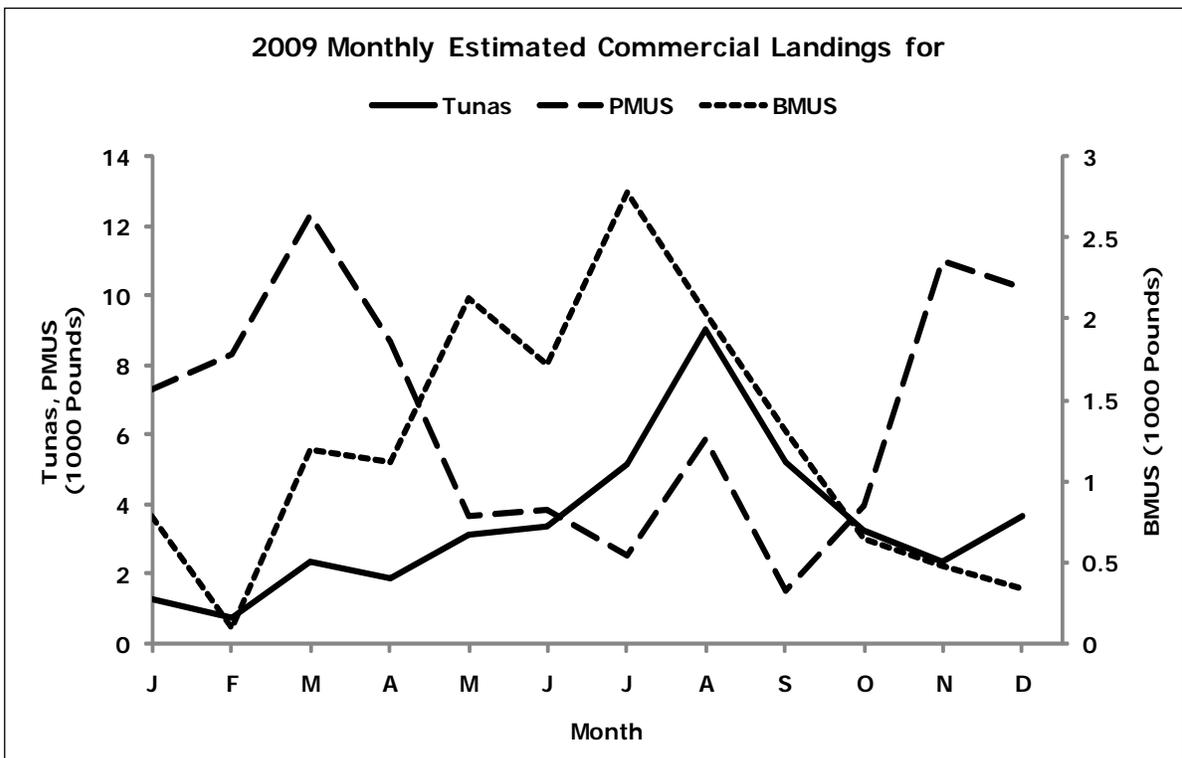


Figure C-1-2

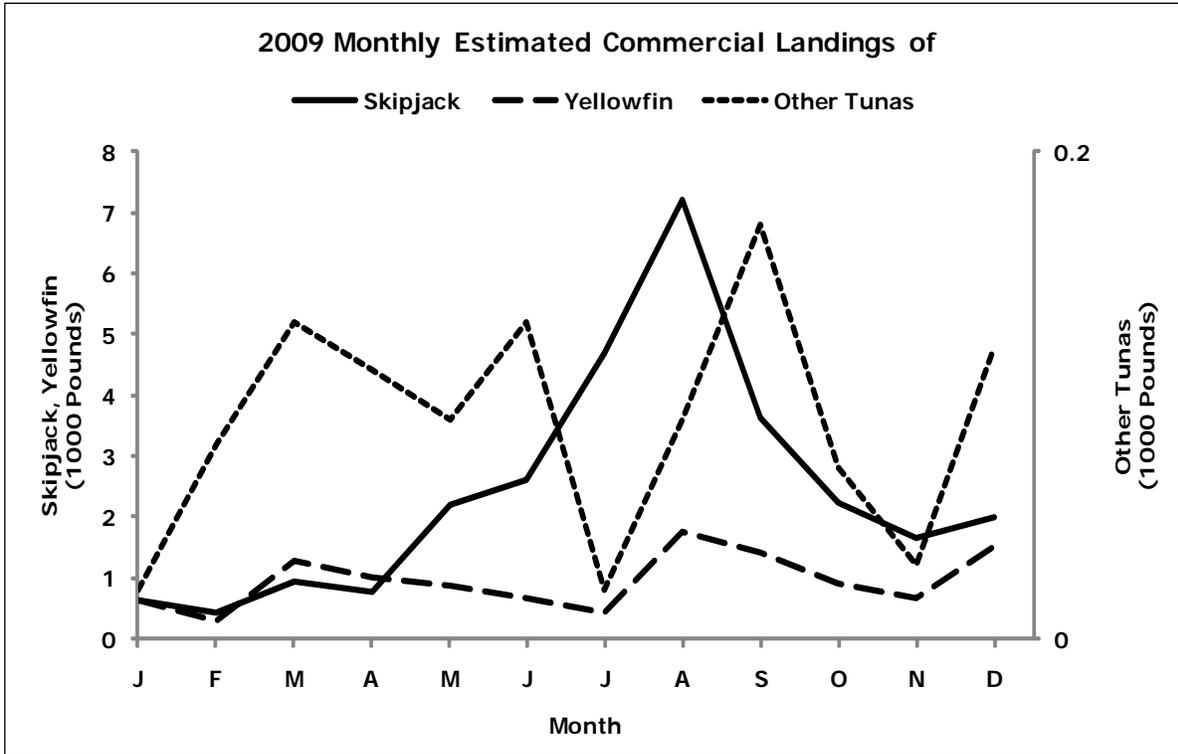


Figure C-1-3

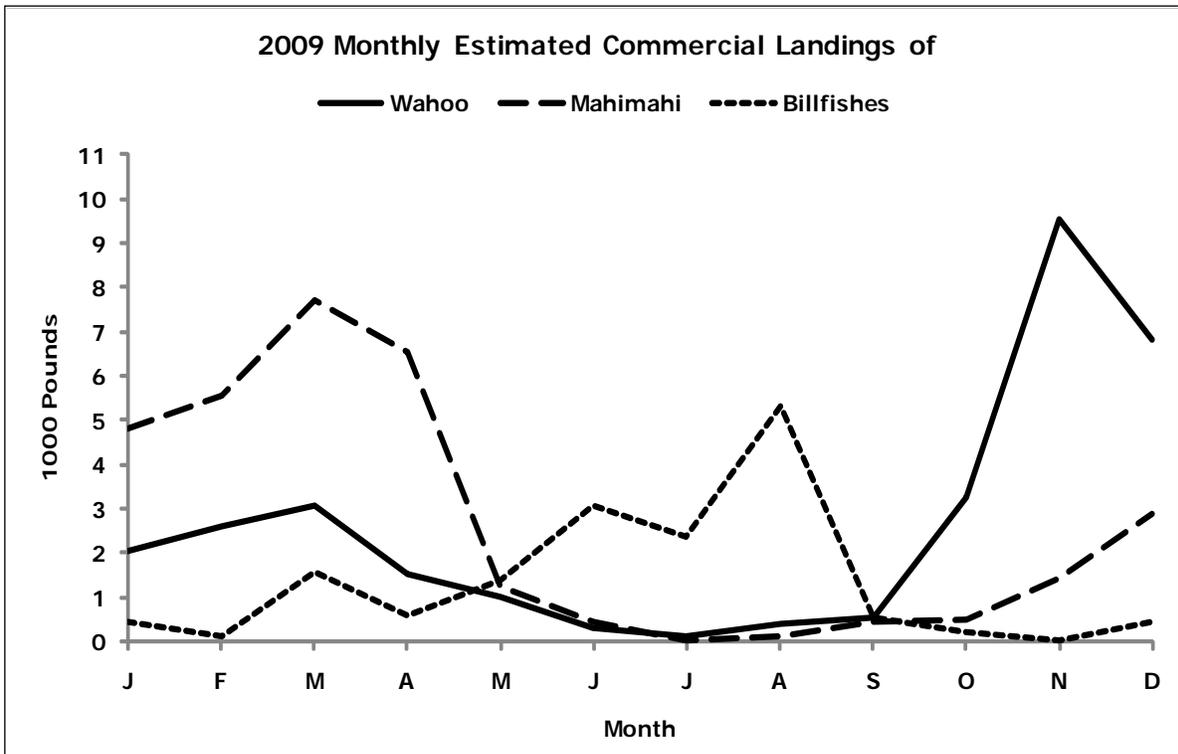


Figure C-1-4

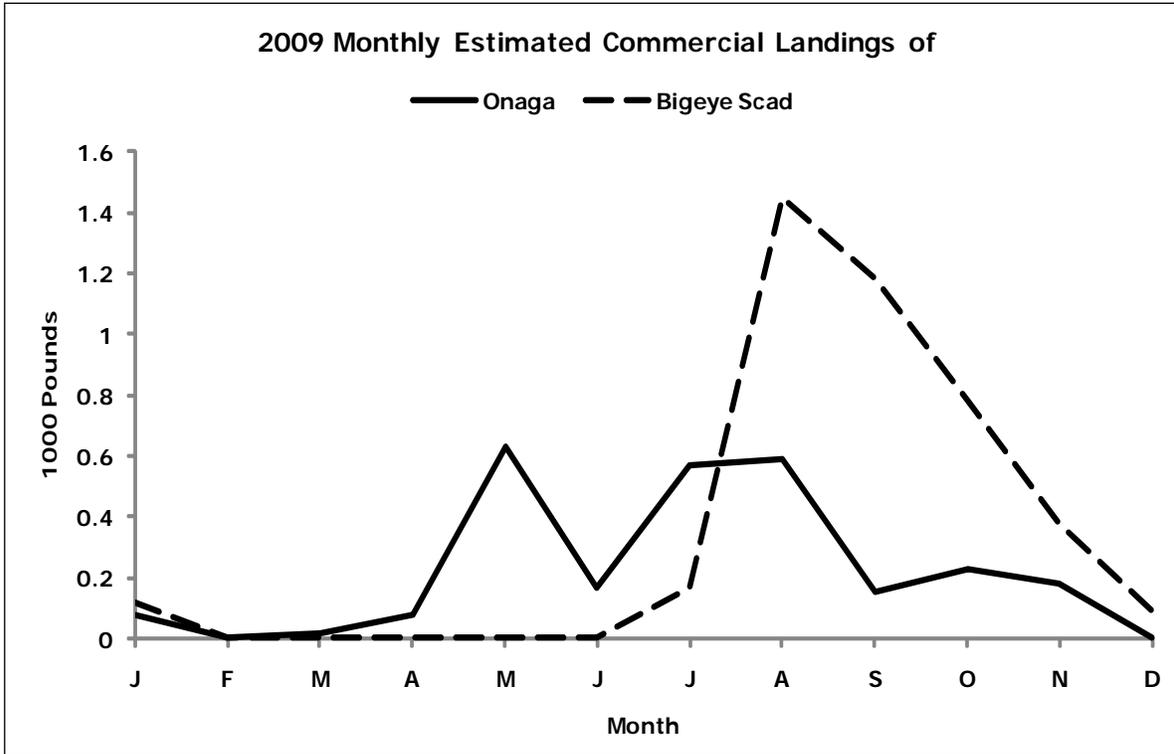


Figure C-1-5

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

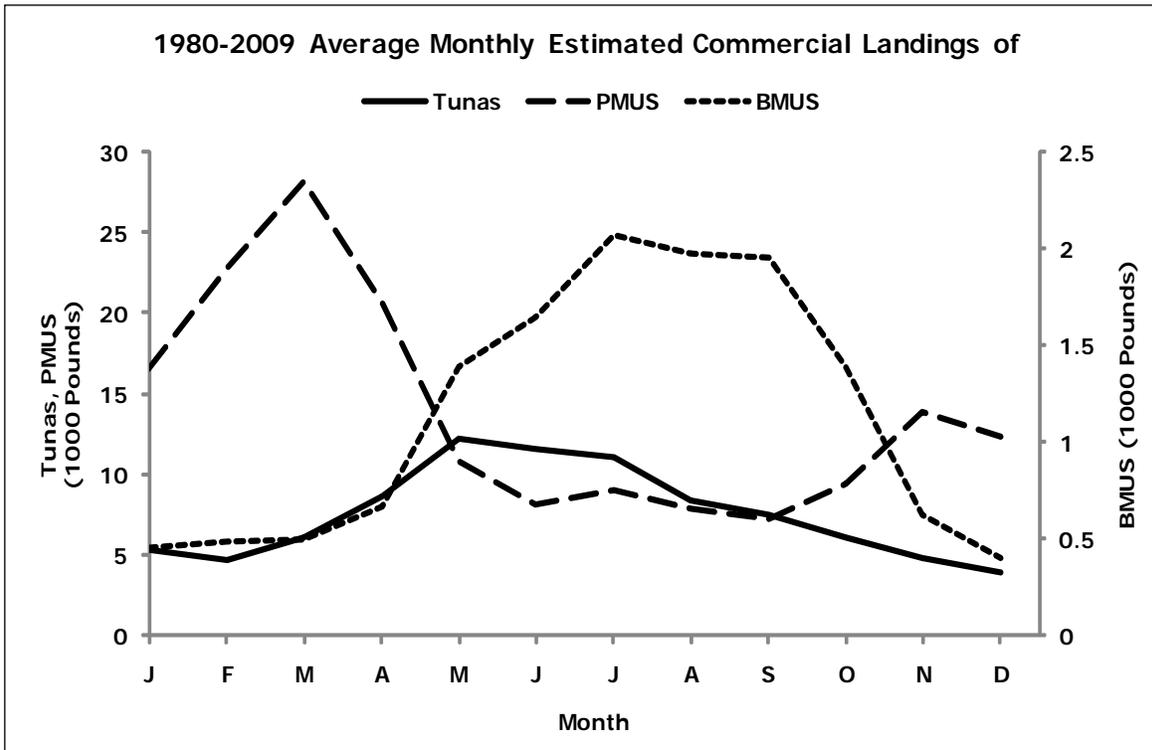


Figure C-2-1

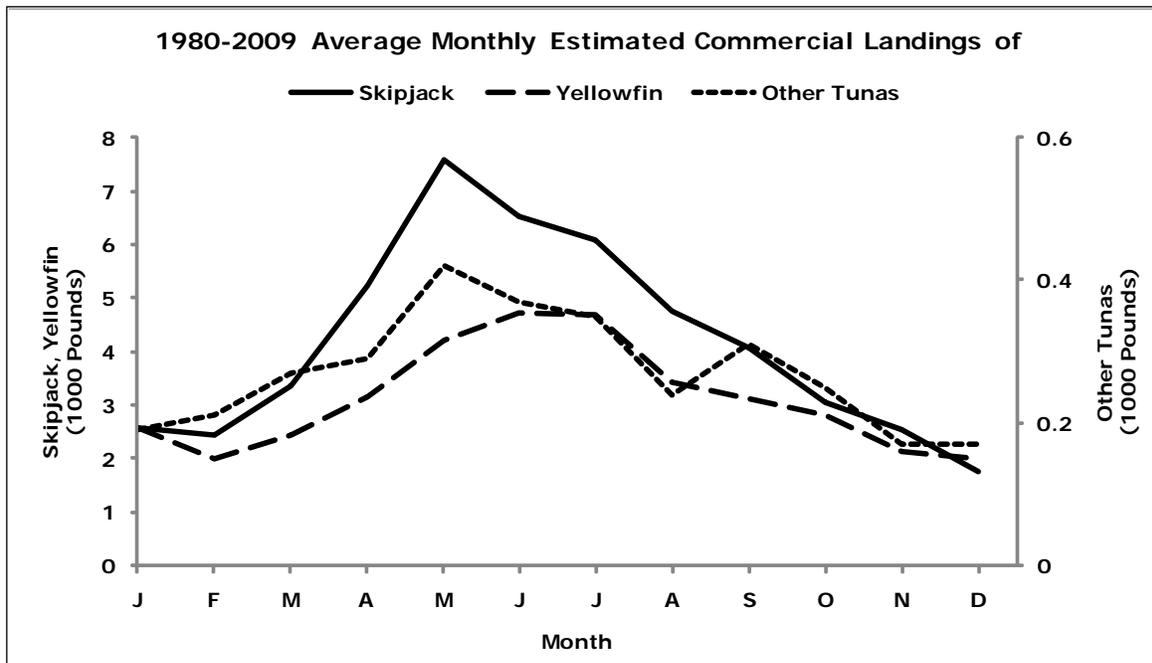


Figure C-2-2

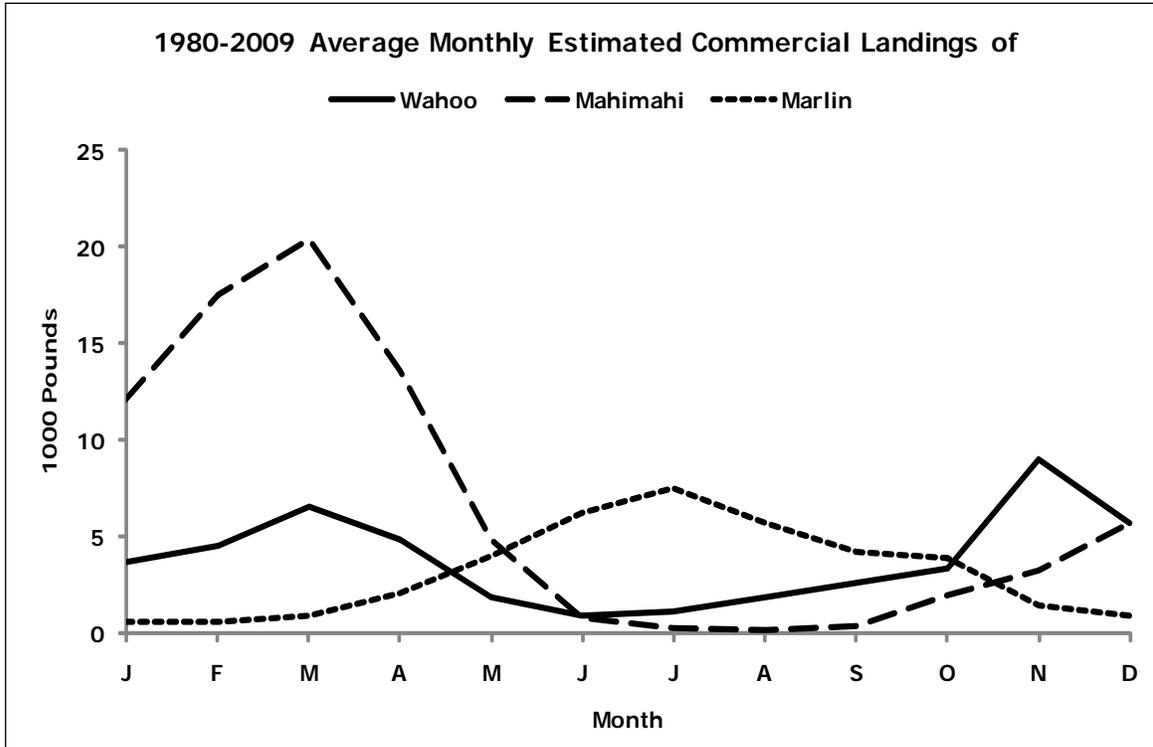


Figure C-2-3

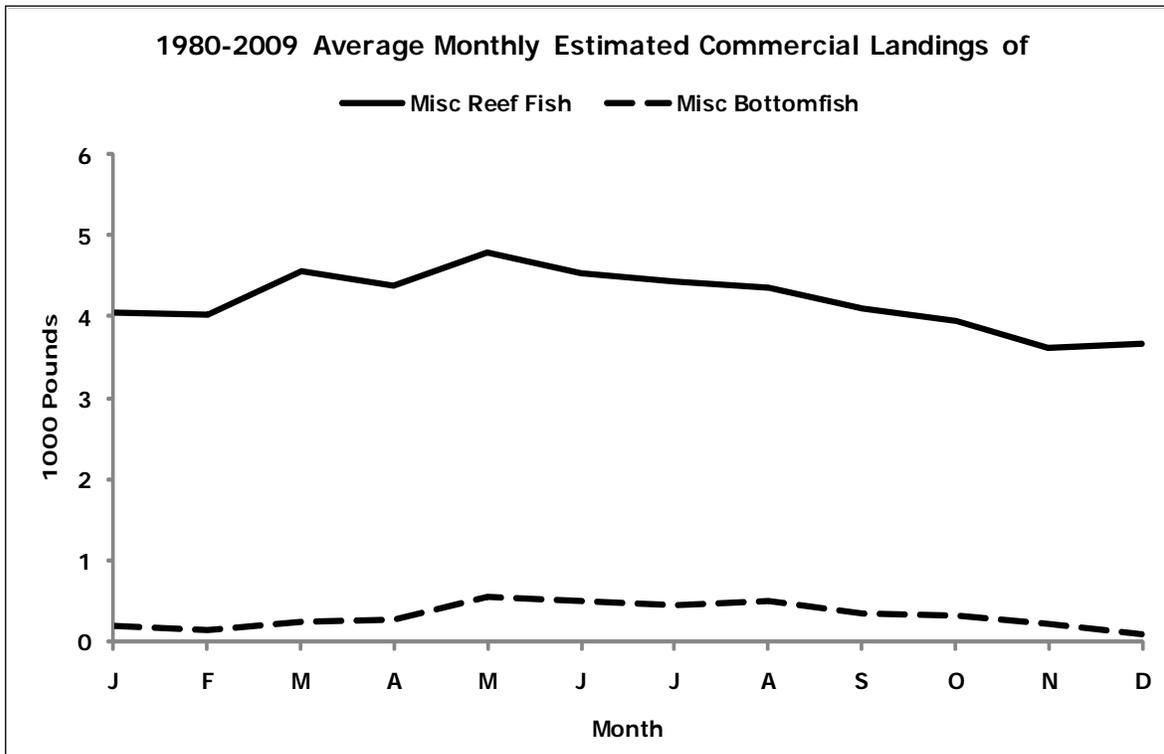


Figure C-2-4

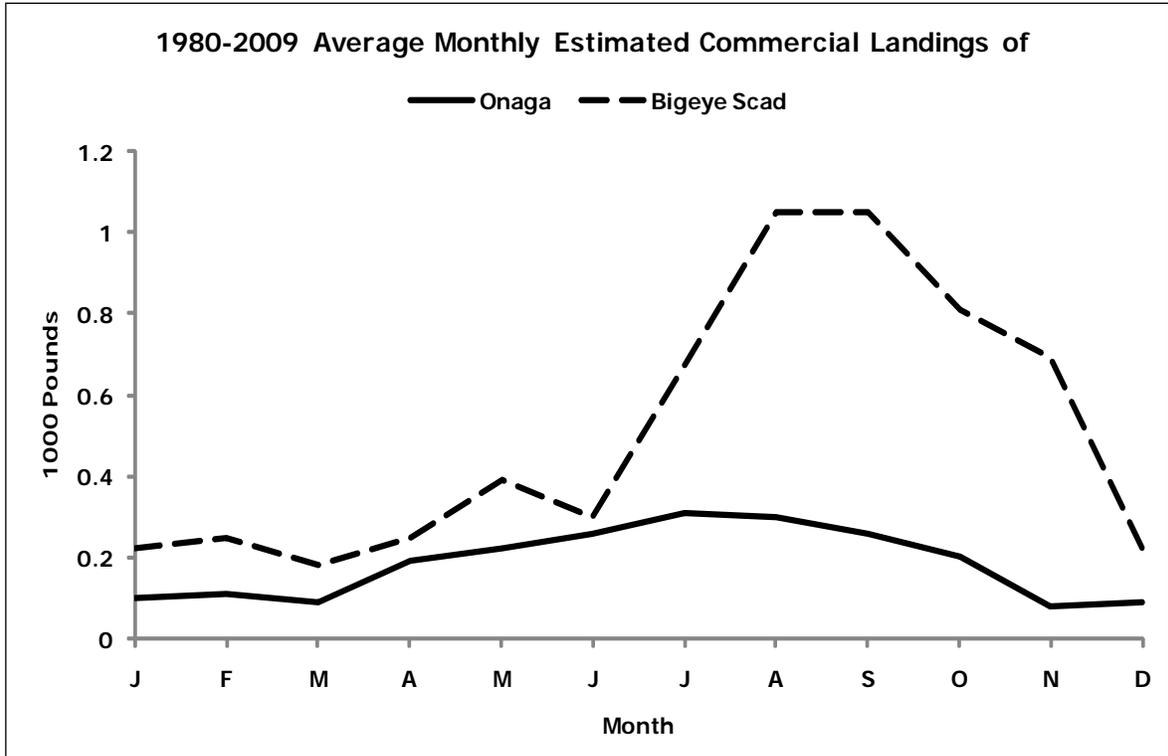


Figure C-2-5

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

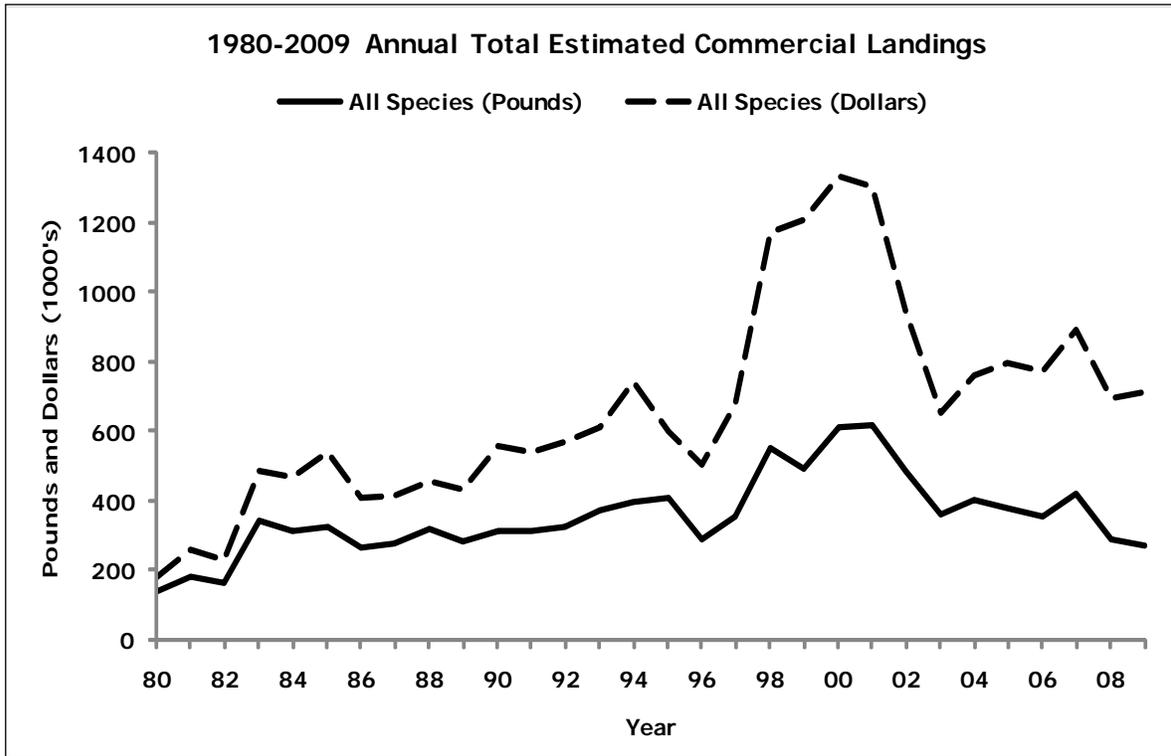


Figure C-3-1

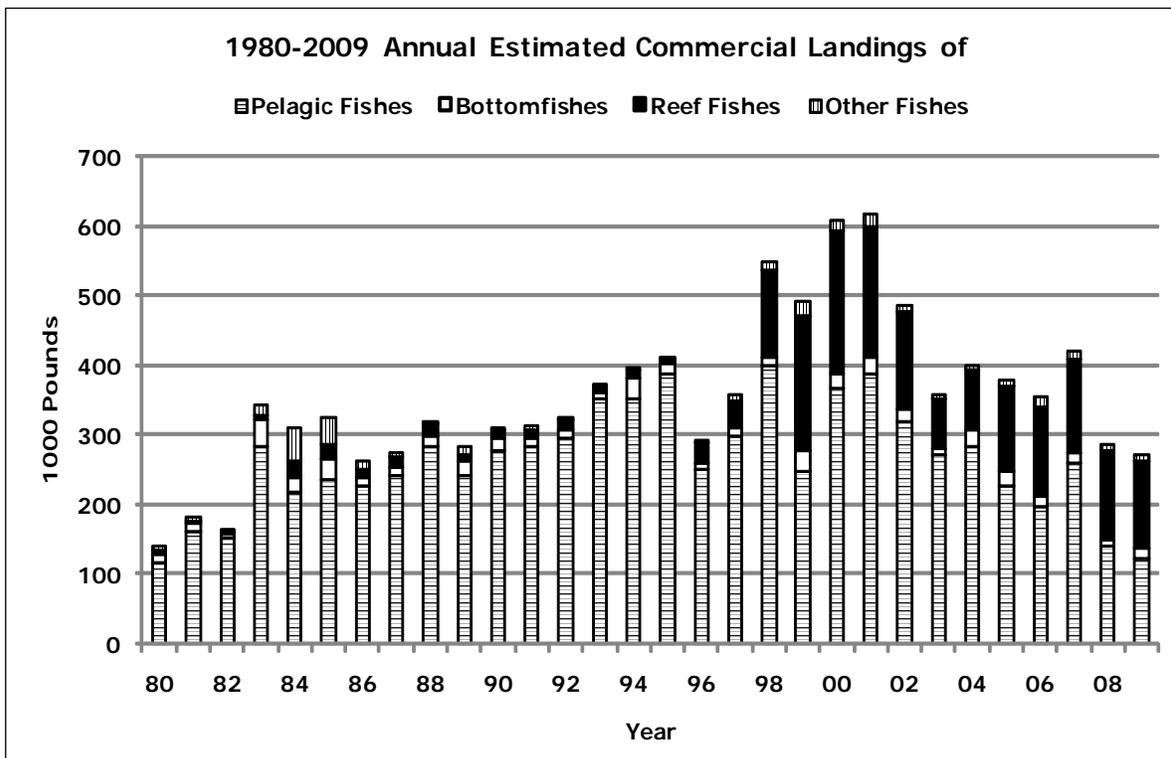


Figure C-3-2

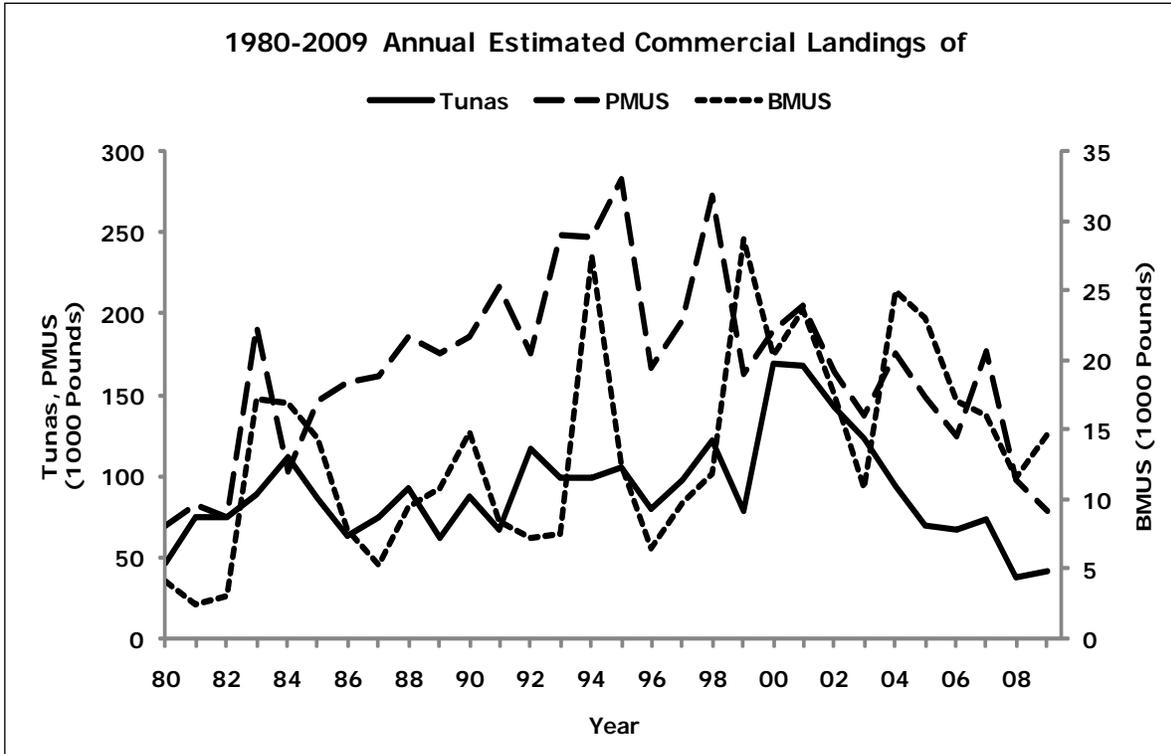


Figure C-3-3

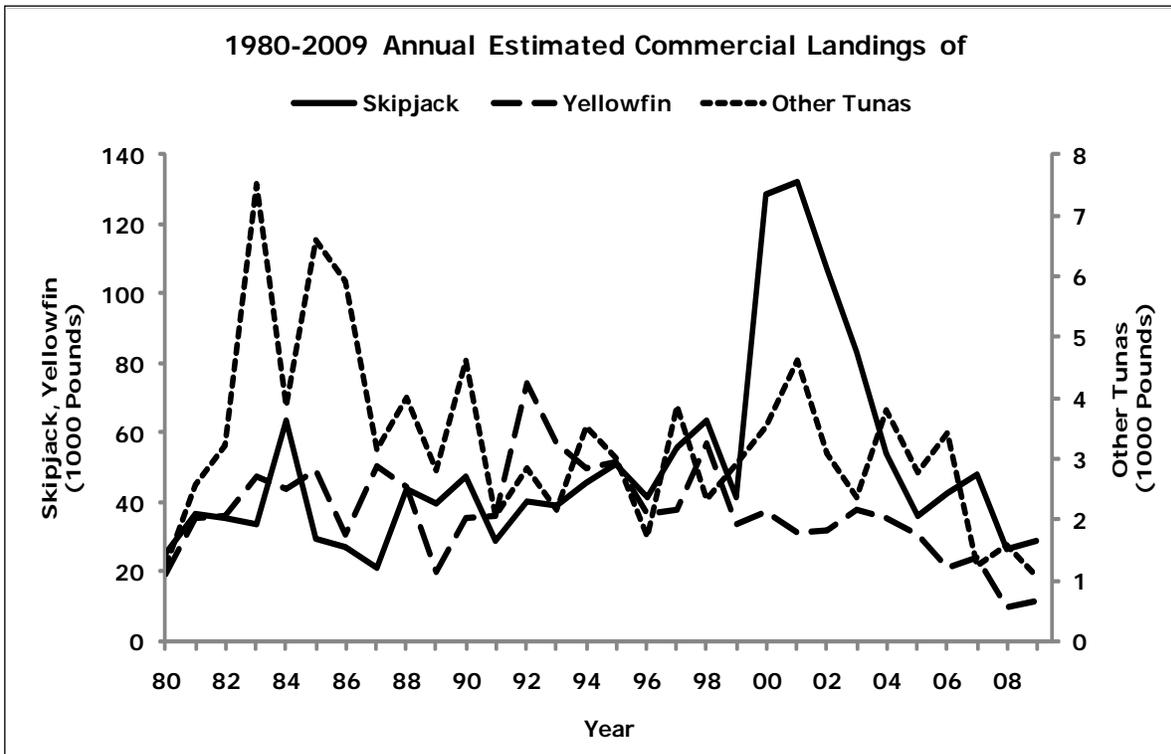


Figure C-3-4

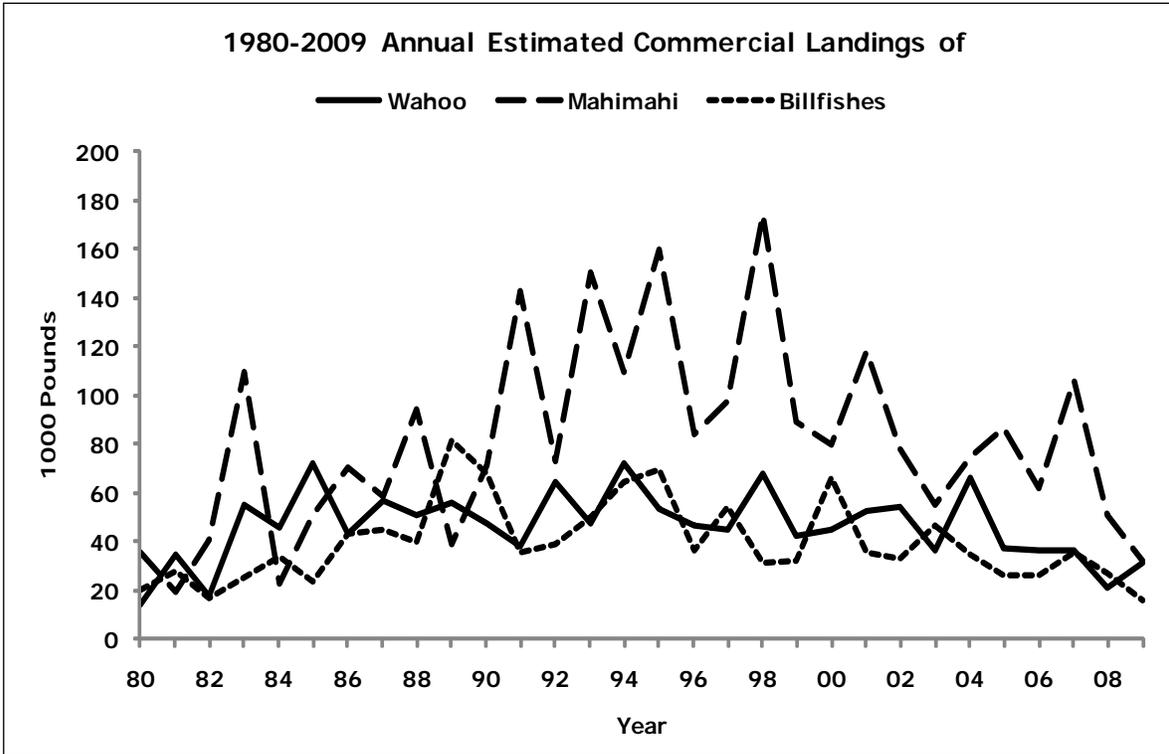


Figure C-3-5

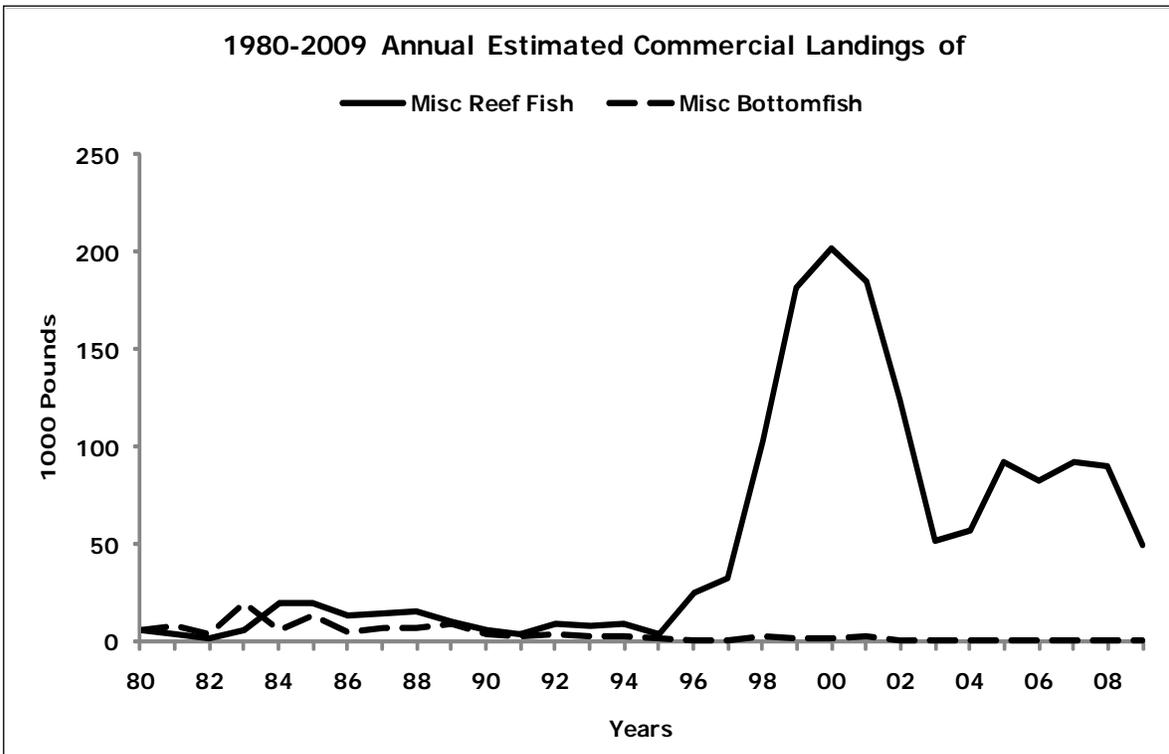


Figure C-3-6

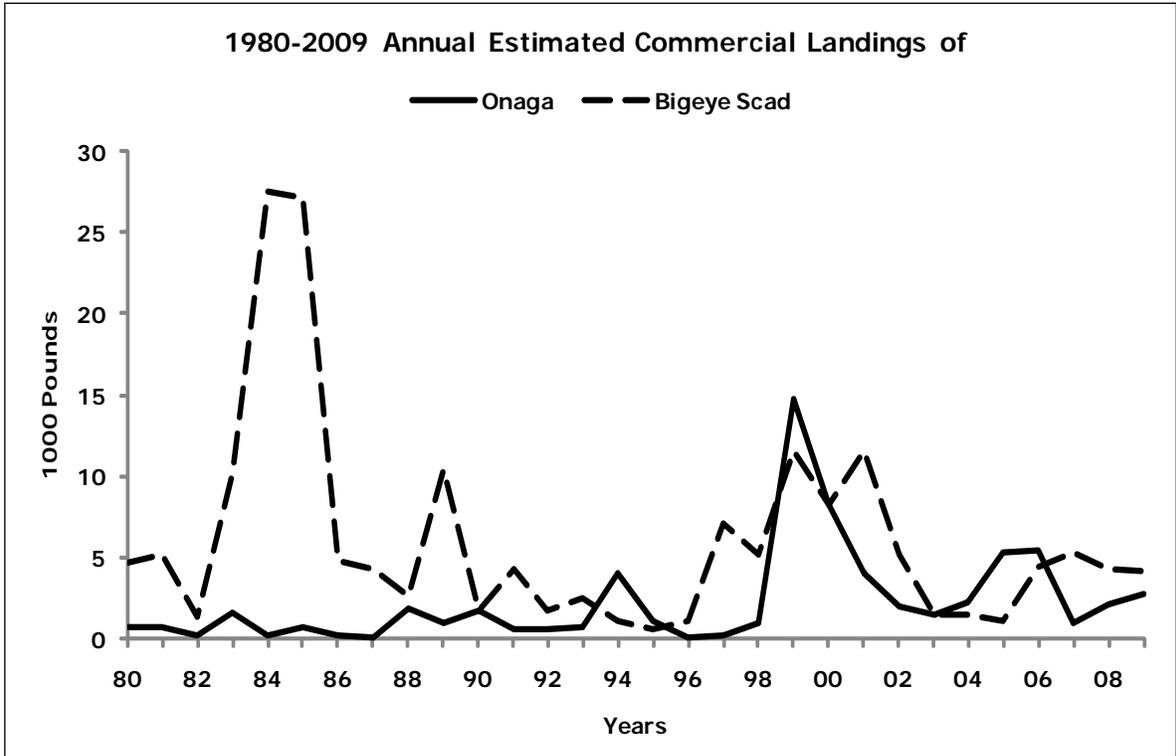


Figure C-3-7

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

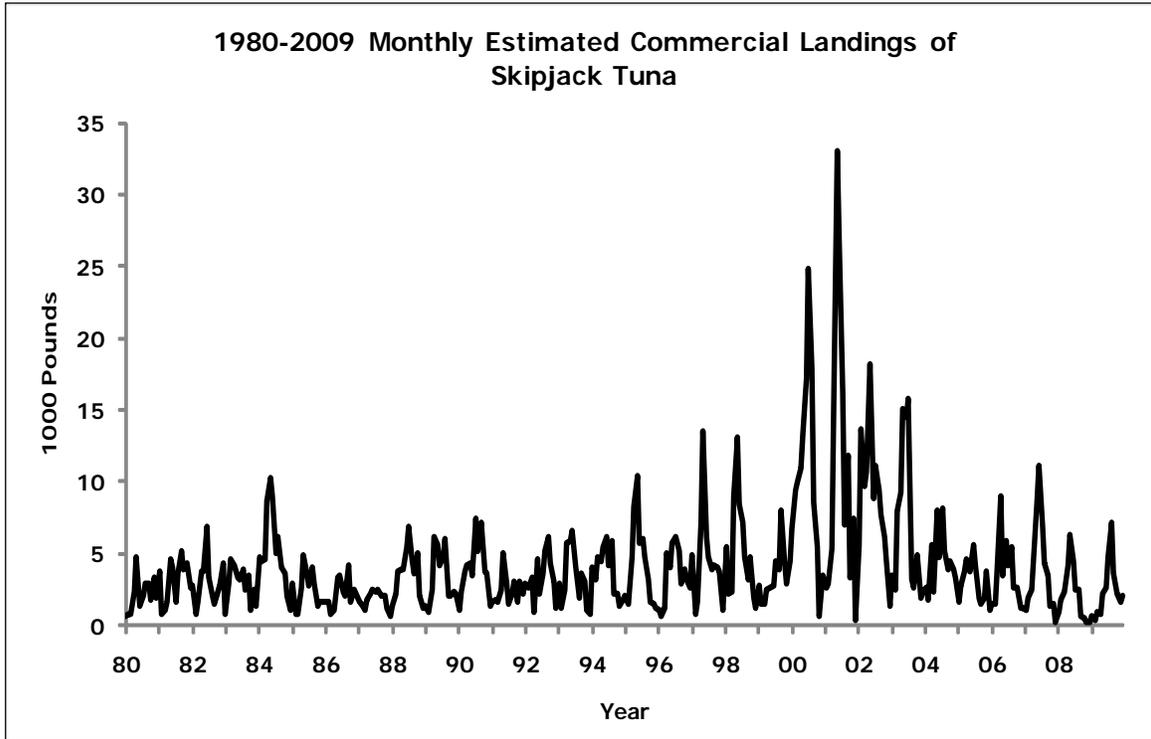


Figure C-4-1

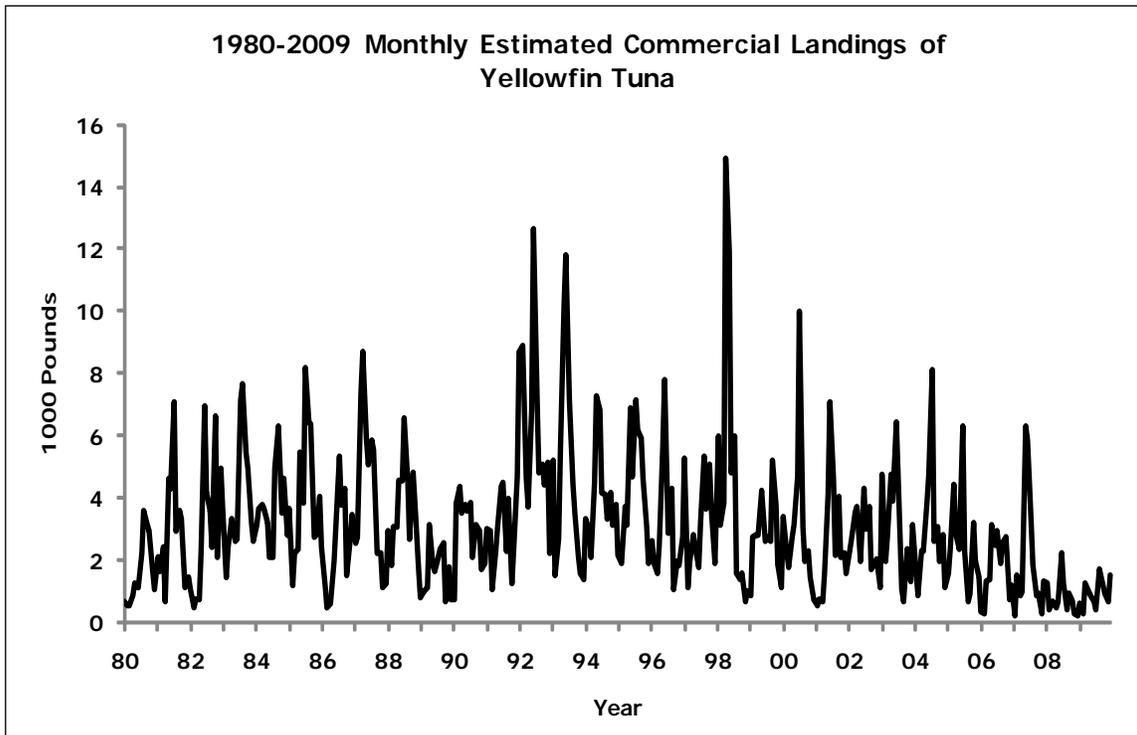


Figure C-4-2

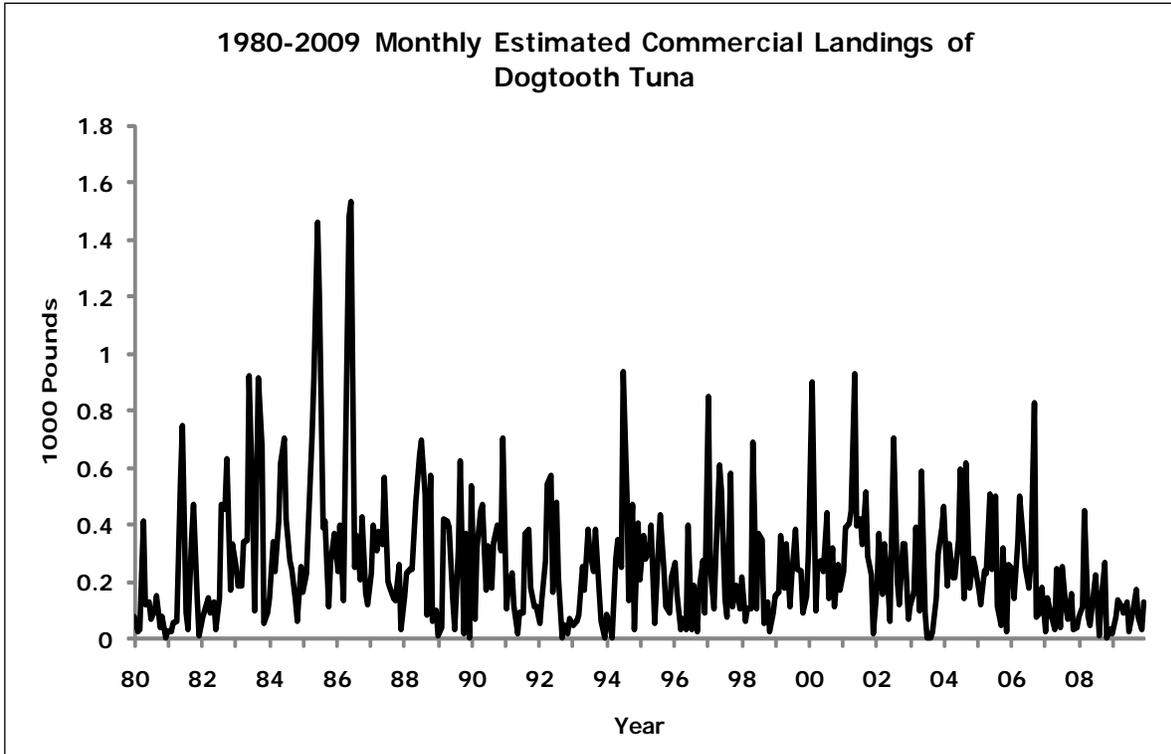


Figure C-4-3

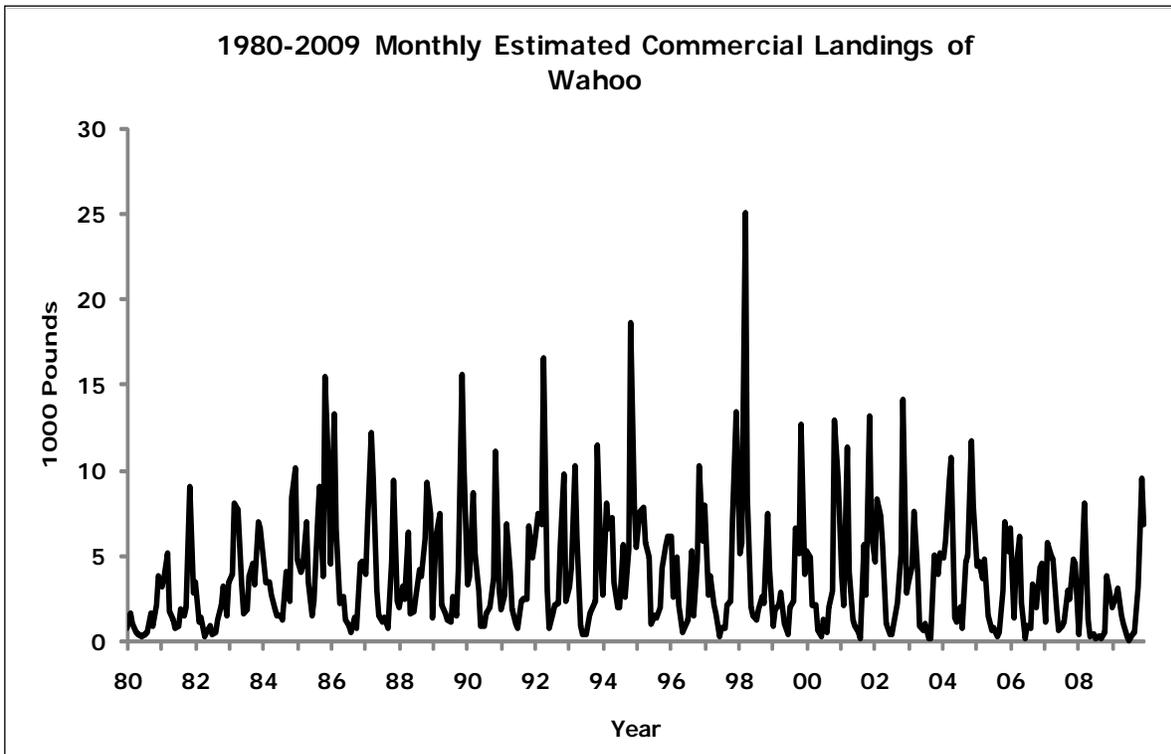


Figure C-4-4

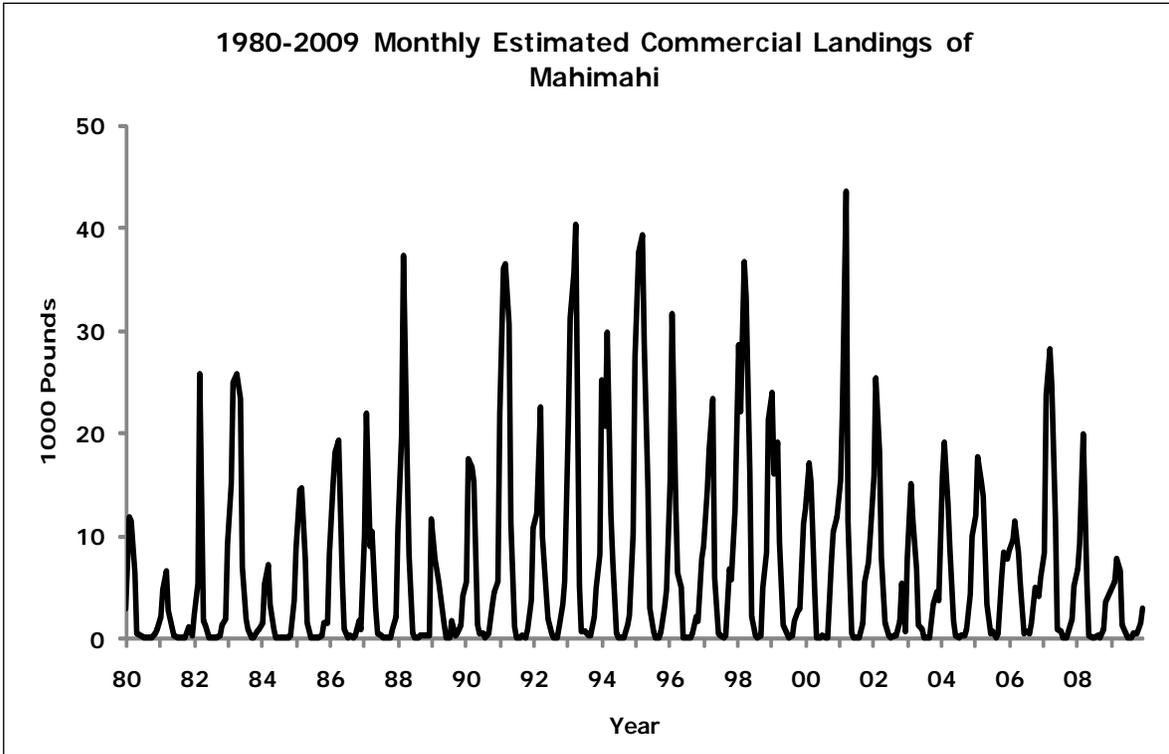


Figure C-4-5

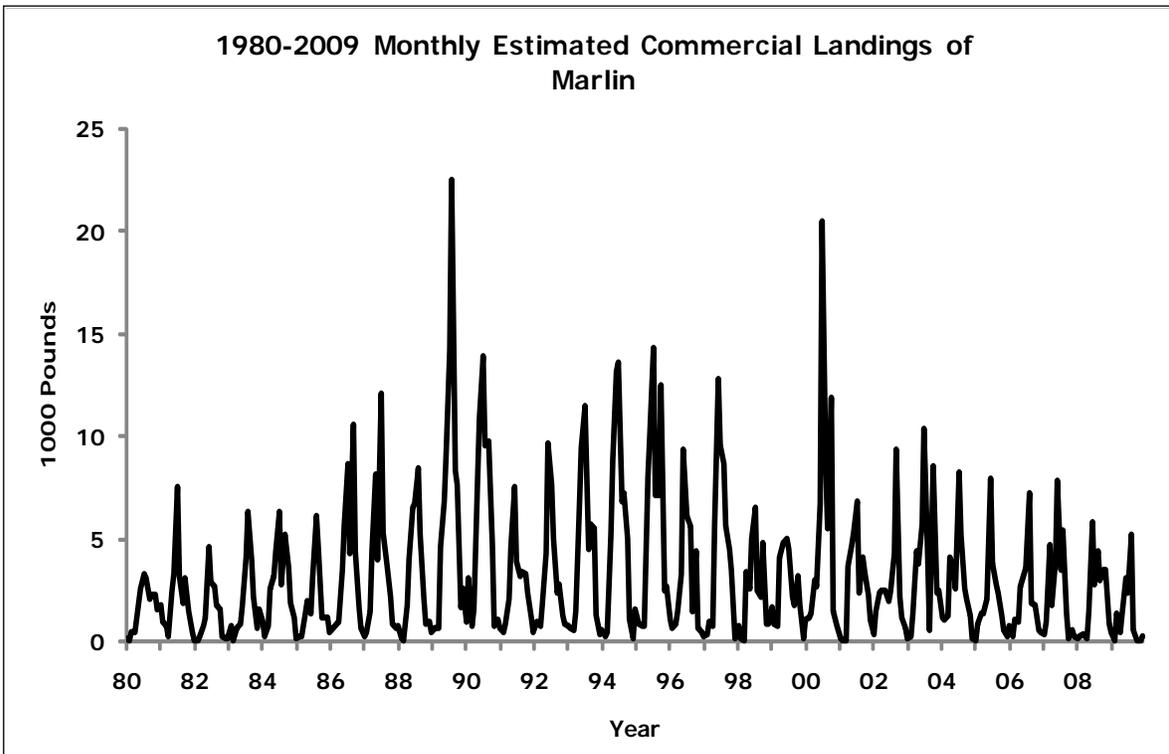


Figure C-4-6

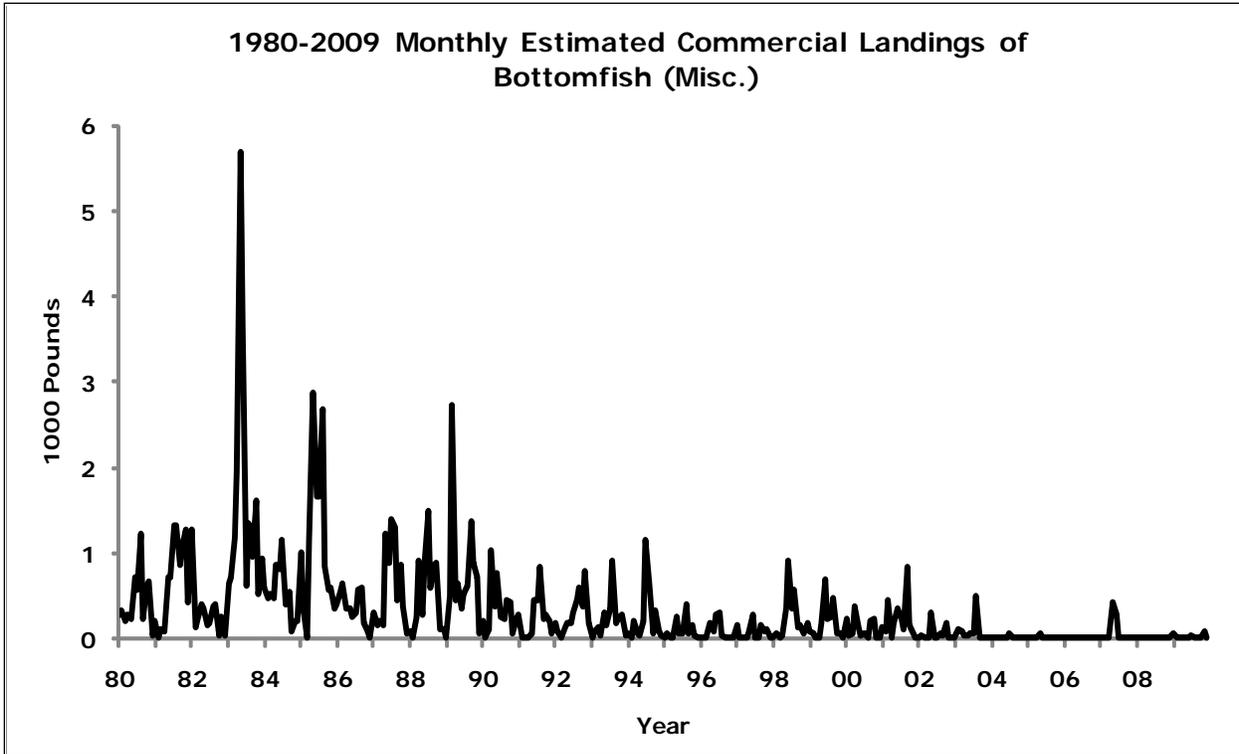


Figure C-4-7

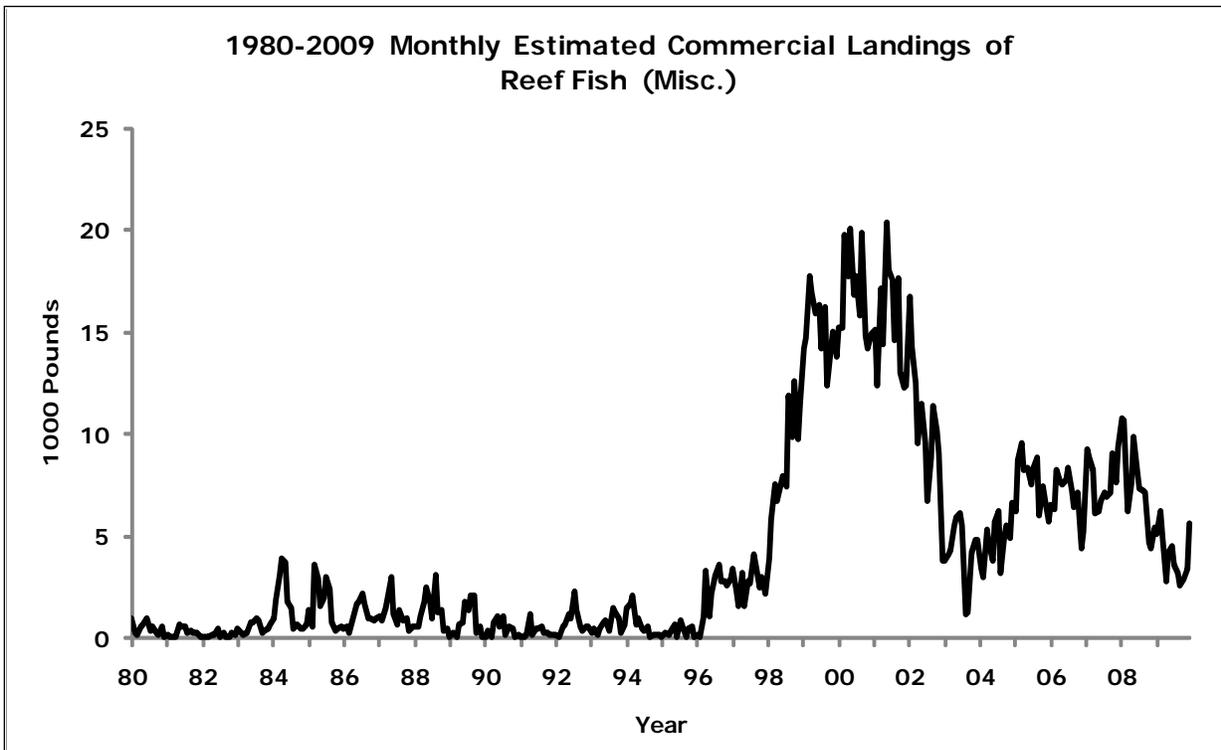


Figure C-4-8

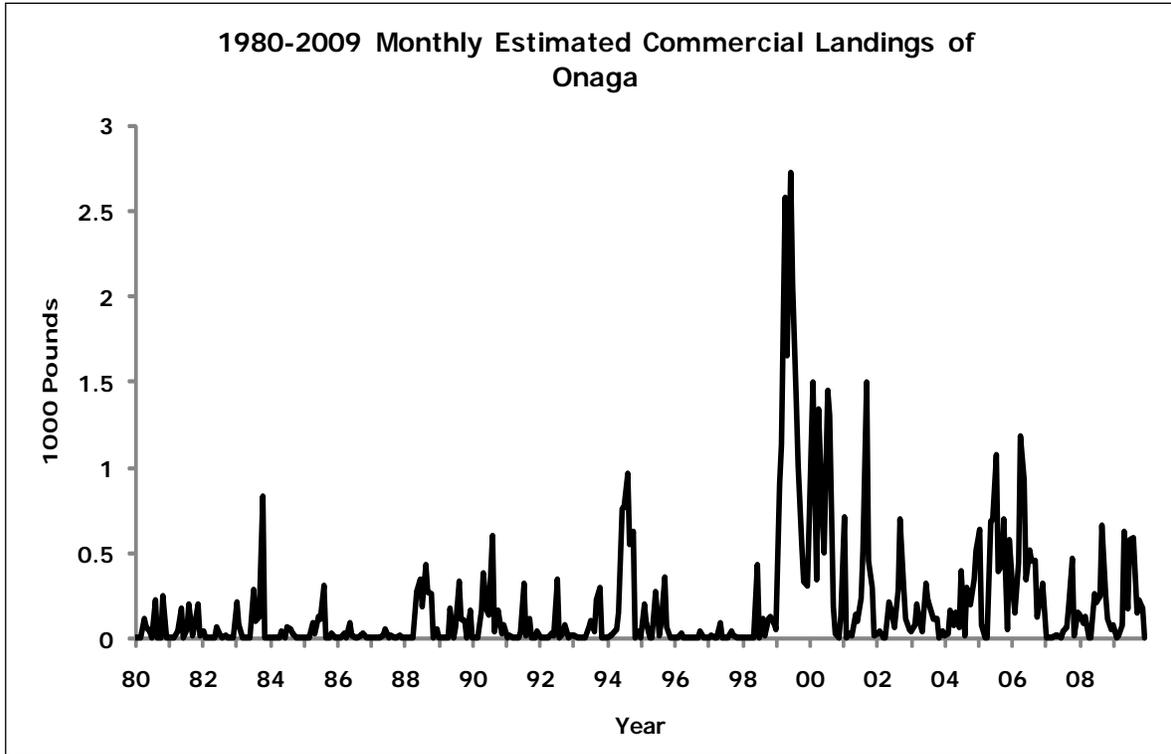


Figure C-4-9

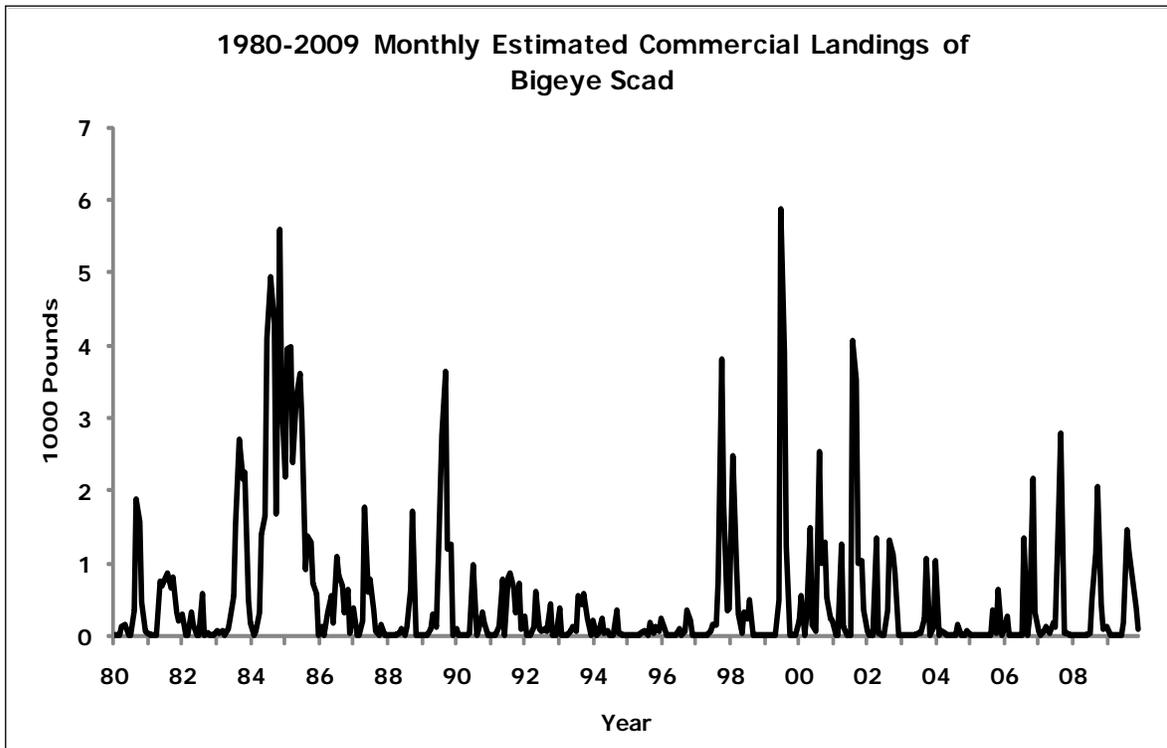


Figure C-4-10

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