

The Hawaii-based Longline Logbook Summary Report January–March 2011¹

Pacific Islands Fisheries Science Center
Fisheries Monitoring Branch

This report summarizes data on fish catch and fishing effort by Hawaii-based longline vessels during the first quarter of 2011 (Q1-2011). Results are based on the date gear was hauled, as reported by vessel operators to the National Marine Fisheries Service in federal logbooks of daily fishing activity. The report covers longline operations for fishing trips completed in the first quarter of 2011 and most, but not all, Q1-2011 data from trips that began late in the first quarter and continued into the second quarter of 2011. Therefore, the Q1-2011 summary statistics reported here are preliminary.

During Q1-2011, 123 vessels were active in the Hawaii-based fleet, 3 more vessels than in Q1-2010 (Table 1, Fig. 1). They made 408 longline trips (15 more than in Q1-2010), including 368 using deep-set gear to target tuna (34 more than in Q1-2010) and 40 using shallow-set gear to target swordfish (19 less than in Q1-2010; Fig. 2). During Q1-2011, the fleet deployed 10.6 million hooks, 1.0 million more than in Q1-2010 (Fig. 3). They fished mainly on the high seas outside the U.S. Exclusive Economic Zone (EEZ) (56% of the total hooks set), followed by the EEZ of the Northwestern Hawaiian Islands (NWHI) (21%), the main Hawaiian Islands (MHI) EEZ (20%) and the EEZ of the U.S. Pacific Remote Island Areas (PRIA, consisting of U.S. possessions Wake Island, Jarvis Island, Howland Island, Baker Island, Kingman Reef, Palmyra Atoll, and Johnston Atoll) (3%).

In Q1-2011, the Hawaii longline fleet caught a first-quarter record 47,853 bigeye tuna (Fig. 4); 62% were caught in waters outside the U.S. EEZ. The bigeye tuna catch-per-unit-of-effort (CPUE) on tuna-targeted trips was 4.8 fish per 1000 hooks, 30% higher compared to Q1-2010 (Fig. 5). The albacore catch and CPUE on tuna-targeted trips in Q1-2011 were 16,328 fish and 1.5 fish per 1000 hooks, respectively (Figs. 6-7). The yellowfin tuna catch and CPUE on tuna-targeted trips in Q1-2011 were 13,181 fish and 1.3 fish per 1000 hooks, respectively (Figs. 8-9).

The Q1-2011 swordfish catch was 9,917 fish, 5% higher than the swordfish catch in Q1-2010 (Fig. 10). In Q1-2011, swordfish CPUE on shallow-set swordfish-targeted trips was 13.0 fish per 1000 hooks, 25% higher than in Q1-2010 (Fig. 11).

The striped marlin catch in Q1-2011 was a first-quarter record 7,518 fish and the CPUE on tuna-targeted trips was 0.75 fish per 1000 hooks; these represent a 9-fold increase in catch and an 8-fold increase in CPUE over Q1-2010 (Figs. 12-13). The blue marlin catch in Q1-2011 was 1,151 fish with a CPUE of 0.12 fish per 1000 hooks on tuna-targeted trips (Figs. 14-15).

¹ PIFSC Data Report DR-11-007.
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The fleet caught 18,845 sharks in Q1-2011, of which 419 (2%) were kept. Blue shark comprised 80% of the total shark catch (15,084 fish) (Fig. 16). Blue shark CPUE on shallow-set swordfish-targeted trips in Q1-2011 was 6.0 fish per 1000 hooks, 53% lower than in Q1-2010 (Fig. 17).

In Q1-2011, the Hawaii longline catch of other key pelagic species included 27,834 mahimahi (Fig. 18) with a CPUE of 2.7 fish per 1000 hooks on tuna-targeted trips (Fig. 19); 1,834 moonfish (Fig. 20) with a CPUE of 0.18 fish per 1000 hooks on tuna-targeted trips (Fig. 21); 7,952 pomfret (Fig. 22) with a CPUE of 0.80 fish per 1000 hooks on tuna-targeted trips (Fig. 23); and 2,883 wahoo (Fig. 24) with a CPUE of 0.29 fish per 1000 hooks on tuna-targeted trips (Fig. 25). A high percentage of the catch of these species was kept.

The summary statistics in Table 1 are based on logbook records from all fishing areas combined and all types of longline trips—those targeting swordfish and those aimed at catching tuna. Hence, the CPUE figures in Table 1 differ from those reported above, which were calculated using data exclusively from tuna-targeted trips or swordfish-targeted trips, depending on the species of interest.

The longline logbook statistics reported above refer to all fishing areas combined. Q1-2011 summary catch and effort were also compiled by several geographical sub-areas including: the MHI EEZ; the NWHI EEZ; the PRIA EEZ; the combined EEZ of MHI, NWHI and PRIA; and waters outside the U.S. EEZ. These statistics are presented in Tables 2-6. Q1-2011 summary statistics for the entire fishing area are also presented for each distinct trip type: swordfish-targeted trips using shallow-set gear (Table 7) and tuna-targeted trips deploying deep-set gear (Table 8).

This report is available in PDF format on the PIFSC Web site at <http://www.pifsc.noaa.gov/fmsd/reports.php>. The Web site also provides quarterly and yearly charts and an archive of quarterly and annual summary tables of fish catch and fishing effort from 1991 to the present. The statistics in the online graphs and archived tables are updated periodically as new records are added to the database and corrections are made.

Table 1. Quarterly summary report of fishing effort and catch statistics for U.S. longline vessels landing in Hawaii as derived from NMFS Western Pacific Daily Longline Fishing Log records. [PIFSC Information Management System, Longline Logbook Data, 5/23/2011 2:24:45PM].

Report Coverage					Number of vessels active	123
Time Period	1st Quarter 2011				Number of trips	408
Fishing Area	All Areas				Number of sets	4,913
Trip Types	All Trip Types				Number of hooks set	10,564,126

Pelagic Management Unit Species (PMUS)	Number Caught	Number Kept	Number Released	CPUE - Number Caught per 1000 hooks
Billfishes				
Blue marlin	1,151	1,133	18	0.11
Striped marlin	7,518	7,376	142	0.71
Shortbill spearfish	8,007	7,860	147	0.76
Swordfish	9,917	9,014	903	0.94
Other billfishes	252	250	2	0.02
Total	26,845	25,633	1,212	2.54
Sharks				
Blue shark	15,084	57	15,027	1.43
Mako sharks	1,194	271	923	0.11
Thresher sharks	1,933	67	1,866	0.18
Oceanic whitetip shark	340	9	331	0.03
Silky shark	126	2	124	0.01
Other sharks	168	13	155	0.02
Total	18,845	419	18,426	1.78
Tunas				
Albacore	16,328	15,807	521	1.55
Bigeye tuna	47,853	46,762	1,091	4.53
Yellowfin tuna	13,181	12,712	469	1.25
Bluefin tuna	0	0	0	0.00
Skipjack tuna	12,283	11,698	585	1.16
Other tunas	12	2	10	0.00
Total	89,657	86,981	2,676	8.49
Other PMUS				
Mahimahi	27,834	27,063	771	2.63
Moonfish	1,834	1,797	37	0.17
Wahoo	2,883	2,871	12	0.27
Oilfish	12,623	12,180	443	1.19
Pomfret	7,952	7,862	90	0.75
Total	53,126	51,773	1,353	5.03
Total PMUS	188,473	164,806	23,667	17.84
Total Non-PMUS	1,529	325	1,204	0.14
Total All Species	190,002	165,131	24,871	17.99

Table 2. Quarterly summary report of fishing effort and catch statistics for U.S. longline vessels landing in Hawaii as derived from NMFS Western Pacific Daily Longline Fishing Log records. [PIFSC Information Management System, Longline Logbook Data, 5/23/2011 2:24:45PM].

Report Coverage		Number of vessels active		90
Time Period	1st Quarter 2011	Number of trips		165
Fishing Area	Main Hawaiian Islands EEZ	Number of sets		910
Trip Types	All Trip Types	Number of hooks set		2,114,407

Pelagic Management Unit Species (PMUS)	Number Caught	Number Kept	Number Released	CPUE - Number Caught per 1000 hooks
Billfishes				
Blue marlin	196	195	1	0.09
Striped marlin	1,394	1,377	17	0.66
Shortbill spearfish	1,727	1,705	22	0.82
Swordfish	98	90	8	0.05
Other billfishes	71	71	0	0.03
Total	3,486	3,438	48	1.65
Sharks				
Blue shark	1,950	4	1,946	0.92
Mako sharks	229	96	133	0.11
Thresher sharks	213	14	199	0.10
Oceanic whitetip shark	22	1	21	0.01
Silky shark	1	0	1	0.00
Other sharks	43	10	33	0.02
Total	2,458	125	2,333	1.16
Tunas				
Albacore	1,831	1,823	8	0.87
Bigeye tuna	7,704	7,341	363	3.64
Yellowfin tuna	2,421	2,220	201	1.15
Bluefin tuna	0	0	0	0.00
Skipjack tuna	1,718	1,681	37	0.81
Other tunas	0	0	0	0.00
Total	13,674	13,065	609	6.47
Other PMUS				
Mahimahi	4,662	4,507	155	2.20
Moonfish	381	380	1	0.18
Wahoo	159	157	2	0.08
Oilfish	2,334	2,289	45	1.10
Pomfret	1,115	1,089	26	0.53
Total	8,651	8,422	229	4.09
Total PMUS	28,269	25,050	3,219	13.37
Total Non-PMUS	284	86	198	0.13
Total All Species	28,553	25,136	3,417	13.50

Table 3. Quarterly summary report of fishing effort and catch statistics for U.S. longline vessels landing in Hawaii as derived from NMFS Western Pacific Daily Longline Fishing Log records. [PIFSC Information Management System, Longline Logbook Data, 5/23/2011 2:24:45PM].

Report Coverage		Number of vessels active		79
Time Period	1st Quarter 2011	Number of trips		128
Fishing Area	Northwestern Hawaiian Islands EEZ	Number of sets		956
Trip Types	All Trip Types	Number of hooks set		2,199,246

Pelagic Management Unit Species (PMUS)	Number Caught	Number Kept	Number Released	CPUE - Number Caught per 1000 hooks
Billfishes				
Blue marlin	194	187	7	0.09
Striped marlin	1,915	1,876	39	0.87
Shortbill spearfish	1,946	1,902	44	0.88
Swordfish	145	128	17	0.07
Other billfishes	68	68	0	0.03
Total	4,268	4,161	107	1.94
Sharks				
Blue shark	2,889	0	2,889	1.31
Mako sharks	174	68	106	0.08
Thresher sharks	105	19	86	0.05
Oceanic whitetip shark	27	2	25	0.01
Silky shark	1	0	1	0.00
Other sharks	19	0	19	0.01
Total	3,215	89	3,126	1.46
Tunas				
Albacore	5,044	5,030	14	2.29
Bigeye tuna	8,707	8,497	210	3.96
Yellowfin tuna	2,520	2,463	57	1.15
Bluefin tuna	0	0	0	0.00
Skipjack tuna	3,318	3,086	232	1.51
Other tunas	0	0	0	0.00
Total	19,589	19,076	513	8.91
Other PMUS				
Mahimahi	3,470	3,361	109	1.58
Moonfish	474	474	0	0.22
Wahoo	163	163	0	0.07
Oilfish	2,774	2,712	62	1.26
Pomfret	868	863	5	0.39
Total	7,749	7,573	176	3.52
Total PMUS	34,821	30,899	3,922	15.83
Total Non-PMUS	180	48	132	0.08
Total All Species	35,001	30,947	4,054	15.91

Table 4. Quarterly summary report of fishing effort and catch statistics for U.S. longline vessels landing in Hawaii as derived from NMFS Western Pacific Daily Longline Fishing Log records. [PIFSC Information Management System, Longline Logbook Data, 5/23/2011 2:24:45PM].

Report Coverage		Number of vessels active		19
Time Period	1st Quarter 2011	Number of trips		21
Fishing Area	Pacific Remote Island Areas (PRIA) EEZ	Number of sets		126
Trip Types	All Trip Types	Number of hooks set		339,019

Pelagic Management Unit Species (PMUS)	Number Caught	Number Kept	Number Released	CPUE - Number Caught per 1000 hooks
Billfishes				
Blue marlin	43	43	0	0.13
Striped marlin	211	208	3	0.62
Shortbill spearfish	115	113	2	0.34
Swordfish	30	28	2	0.09
Other billfishes	11	10	1	0.03
Total	410	402	8	1.21
Sharks				
Blue shark	451	13	438	1.33
Mako sharks	13	3	10	0.04
Thresher sharks	54	0	54	0.16
Oceanic whitetip shark	162	1	161	0.48
Silky shark	100	0	100	0.29
Other sharks	15	2	13	0.04
Total	795	19	776	2.35
Tunas				
Albacore	215	215	0	0.63
Bigeye tuna	1,593	1,577	16	4.70
Yellowfin tuna	1,534	1,528	6	4.52
Bluefin tuna	0	0	0	0.00
Skipjack tuna	456	416	40	1.35
Other tunas	0	0	0	0.00
Total	3,798	3,736	62	11.20
Other PMUS				
Mahimahi	362	358	4	1.07
Moonfish	27	26	1	0.08
Wahoo	251	251	0	0.74
Oilfish	371	368	3	1.09
Pomfret	303	303	0	0.89
Total	1,314	1,306	8	3.88
Total PMUS	6,317	5,463	854	18.63
Total Non-PMUS	94	12	82	0.28
Total All Species	6,411	5,475	936	18.91

Table 5. Quarterly summary report of fishing effort and catch statistics for U.S. longline vessels landing in Hawaii as derived from NMFS Western Pacific Daily Longline Fishing Log records. [PIFSC Information Management System, Longline Logbook Data, 5/23/2011 2:24:45PM].

Report Coverage		Number of vessels active	
Time Period	1st Quarter 2011		105
Fishing Area	Hawaiian Islands EEZ + PRIA EEZ	Number of trips	246
Trip Types	All Trip Types	Number of sets	1,992
		Number of hooks set	4,652,672

Pelagic Management Unit Species (PMUS)	Number Caught	Number Kept	Number Released	CPUE - Number Caught per 1000 hooks
Billfishes				
Blue marlin	433	425	8	0.09
Striped marlin	3,520	3,461	59	0.76
Shortbill spearfish	3,788	3,720	68	0.81
Swordfish	273	246	27	0.06
Other billfishes	150	149	1	0.03
Total	8,164	8,001	163	1.75
Sharks				
Blue shark	5,290	17	5,273	1.14
Mako sharks	416	167	249	0.09
Thresher sharks	372	33	339	0.08
Oceanic whitetip shark	211	4	207	0.05
Silky shark	102	0	102	0.02
Other sharks	77	12	65	0.02
Total	6,468	233	6,235	1.39
Tunas				
Albacore	7,090	7,068	22	1.52
Bigeye tuna	18,004	17,415	589	3.87
Yellowfin tuna	6,475	6,211	264	1.39
Bluefin tuna	0	0	0	0.00
Skipjack tuna	5,492	5,183	309	1.18
Other tunas	0	0	0	0.00
Total	37,061	35,877	1,184	7.97
Other PMUS				
Mahimahi	8,494	8,226	268	1.83
Moonfish	882	880	2	0.19
Wahoo	573	571	2	0.12
Oilfish	5,479	5,369	110	1.18
Pomfret	2,286	2,255	31	0.49
Total	17,714	17,301	413	3.81
Total PMUS	69,407	61,412	7,995	14.92
Total Non-PMUS	558	146	412	0.12
Total All Species	69,965	61,558	8,407	15.04

Table 6. Quarterly summary report of fishing effort and catch statistics for U.S. longline vessels landing in Hawaii as derived from NMFS Western Pacific Daily Longline Fishing Log records. [PIFSC Information Management System, Longline Logbook Data, 5/23/2011 2:24:45PM].

Report Coverage		Number of vessels active		119	
Time Period	1st Quarter 2011	Number of trips		316	
Fishing Area	Outside U.S. EEZ	Number of sets		2,921	
Trip Types	All Trip Types	Number of hooks set		5,911,454	

Pelagic Management Unit Species (PMUS)	Number Caught	Number Kept	Number Released	CPUE - Number Caught per 1000 hooks
Billfishes				
Blue marlin	718	708	10	0.12
Striped marlin	3,998	3,915	83	0.68
Shortbill spearfish	4,219	4,140	79	0.71
Swordfish	9,644	8,768	876	1.63
Other billfishes	102	101	1	0.02
Total	18,681	17,632	1,049	3.16
Sharks				
Blue shark	9,794	40	9,754	1.66
Mako sharks	778	104	674	0.13
Thresher sharks	1,561	34	1,527	0.26
Oceanic whitetip shark	129	5	124	0.02
Silky shark	24	2	22	0.00
Other sharks	91	1	90	0.02
Total	12,377	186	12,191	2.09
Tunas				
Albacore	9,238	8,739	499	1.56
Bigeye tuna	29,849	29,347	502	5.05
Yellowfin tuna	6,706	6,501	205	1.13
Bluefin tuna	0	0	0	0.00
Skipjack tuna	6,791	6,515	276	1.15
Other tunas	12	2	10	0.00
Total	52,596	51,104	1,492	8.90
Other PMUS				
Mahimahi	19,340	18,837	503	3.27
Moonfish	952	917	35	0.16
Wahoo	2,310	2,300	10	0.39
Oilfish	7,144	6,811	333	1.21
Pomfret	5,666	5,607	59	0.96
Total	35,412	34,472	940	5.99
Total PMUS	119,066	103,394	15,672	20.14
Total Non-PMUS	971	179	792	0.16
Total All Species	120,037	103,573	16,464	20.31

Table 7. Quarterly summary report of fishing effort and catch statistics for U.S. longline vessels landing in Hawaii as derived from NMFS Western Pacific Daily Longline Fishing Log records. [PIFSC Information Management System, Longline Logbook Data, 5/23/2011 2:24:45PM].

Report Coverage		Number of vessels active		18
Time Period	1st Quarter 2011	Number of trips		40
Fishing Area	All Areas	Number of sets		729
Trip Types	Swordfish Targeted Trips	Number of hooks set		722,651

Pelagic Management Unit Species (PMUS)	Number Caught	Number Kept	Number Released	CPUE - Number Caught per 1000 hooks
Billfishes				
Blue marlin	8	5	3	0.01
Striped marlin	136	112	24	0.19
Shortbill spearfish	60	43	17	0.08
Swordfish	9,367	8,509	858	12.96
Other billfishes	4	3	1	0.01
Total	9,575	8,672	903	13.25
Sharks				
Blue shark	4,334	12	4,322	6.00
Mako sharks	513	18	495	0.71
Thresher sharks	58	0	58	0.08
Oceanic whitetip shark	2	0	2	0.00
Silky shark	0	0	0	0.00
Other sharks	24	0	24	0.03
Total	4,931	30	4,901	6.82
Tunas				
Albacore	1,763	1,368	395	2.44
Bigeye tuna	654	590	64	0.91
Yellowfin tuna	143	132	11	0.20
Bluefin tuna	0	0	0	0.00
Skipjack tuna	26	22	4	0.04
Other tunas	10	0	10	0.01
Total	2,596	2,112	484	3.59
Other PMUS				
Mahimahi	1,670	1,416	254	2.31
Moonfish	94	59	35	0.13
Wahoo	9	7	2	0.01
Oilfish	956	651	305	1.32
Pomfret	70	59	11	0.10
Total	2,799	2,192	607	3.87
Total PMUS	19,901	13,006	6,895	27.54
Total Non-PMUS	98	8	90	0.14
Total All Species	19,999	13,014	6,985	27.67

Table 8. Quarterly summary report of fishing effort and catch statistics for U.S. longline vessels landing in Hawaii as derived from NMFS Western Pacific Daily Longline Fishing Log records. [PIFSC Information Management System, Longline Logbook Data, 5/23/2011 2:24:45PM].

Report Coverage		Number of vessels active		110
Time Period	1st Quarter 2011	Number of trips		368
Fishing Area	All Areas	Number of sets		4,184
Trip Types	Tuna Targeted Trips	Number of hooks set		9,841,475

Pelagic Management Unit Species (PMUS)	Number Caught	Number Kept	Number Released	CPUE - Number Caught per 1000 hooks
Billfishes				
Blue marlin	1,143	1,128	15	0.12
Striped marlin	7,382	7,264	118	0.75
Shortbill spearfish	7,947	7,817	130	0.81
Swordfish	550	505	45	0.06
Other billfishes	248	247	1	0.03
Total	17,270	16,961	309	1.75
Sharks				
Blue shark	10,750	45	10,705	1.09
Mako sharks	681	253	428	0.07
Thresher sharks	1,875	67	1,808	0.19
Oceanic whitetip shark	338	9	329	0.03
Silky shark	126	2	124	0.01
Other sharks	144	13	131	0.01
Total	13,914	389	13,525	1.41
Tunas				
Albacore	14,565	14,439	126	1.48
Bigeye tuna	47,199	46,172	1,027	4.80
Yellowfin tuna	13,038	12,580	458	1.32
Bluefin tuna	0	0	0	0.00
Skipjack tuna	12,257	11,676	581	1.25
Other tunas	2	2	0	0.00
Total	87,061	84,869	2,192	8.85
Other PMUS				
Mahimahi	26,164	25,647	517	2.66
Moonfish	1,740	1,738	2	0.18
Wahoo	2,874	2,864	10	0.29
Oilfish	11,667	11,529	138	1.19
Pomfret	7,882	7,803	79	0.80
Total	50,327	49,581	746	5.11
Total PMUS	168,572	151,800	16,772	17.13
Total Non-PMUS	1,431	317	1,114	0.15
Total All Species	170,003	152,117	17,886	17.27

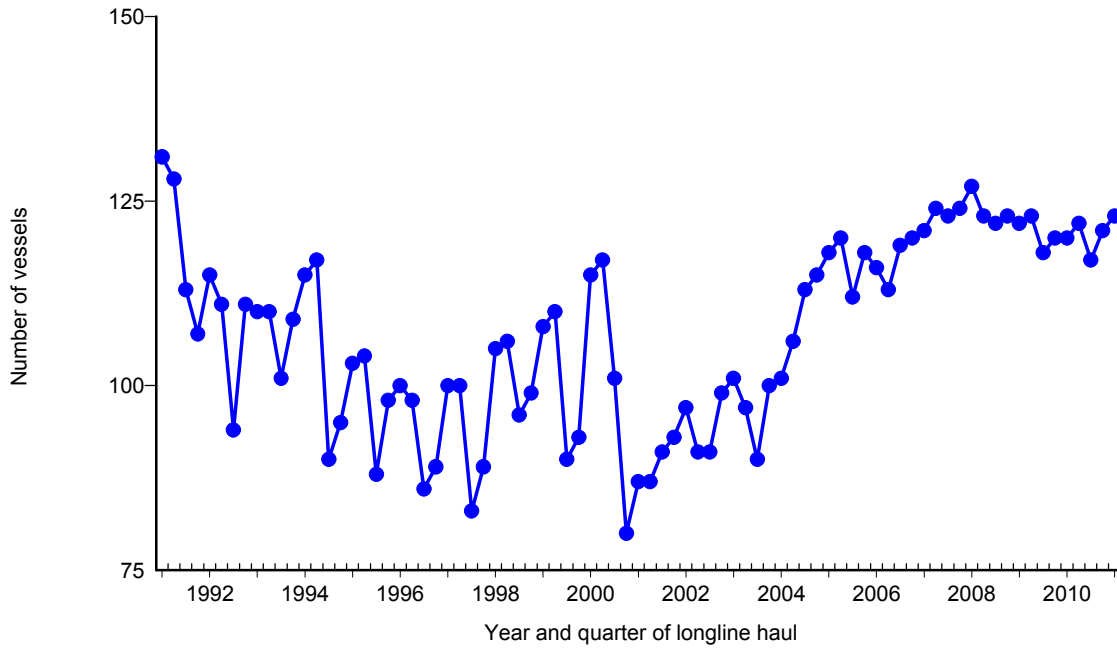


Figure 1. Number of active longline vessels based and landing in Hawaii, by quarter, 1991-2011. [PIFSC IMS, Longline Logbook Data, 5/25/2011 9:14:07AM]

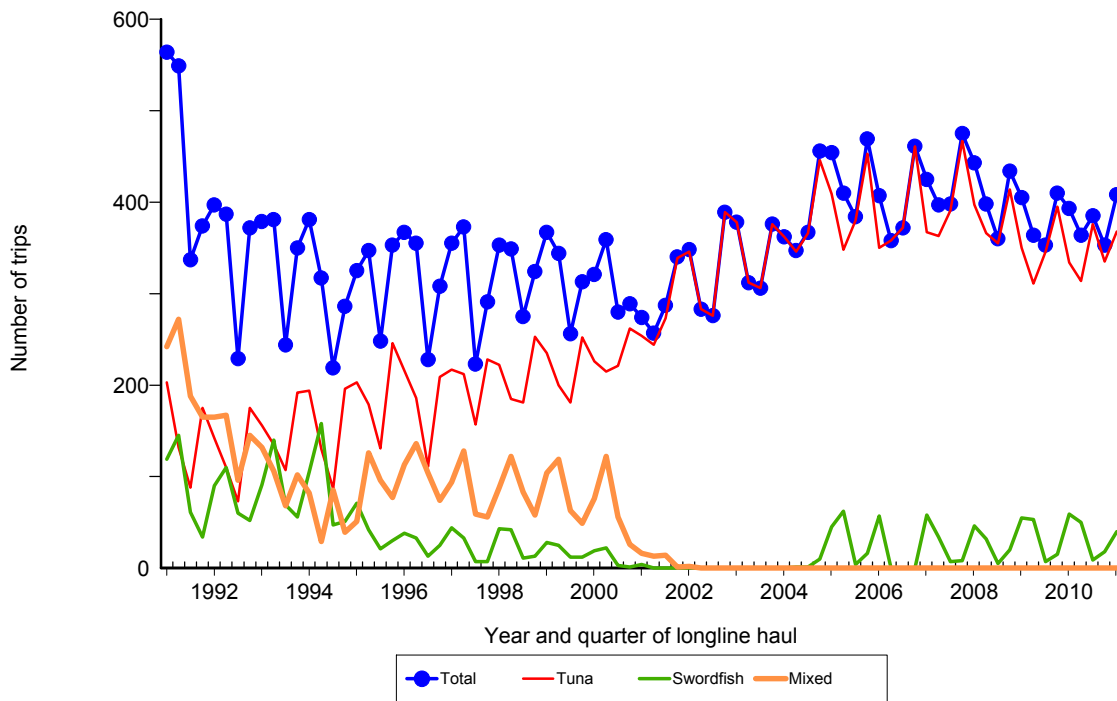


Figure 2. Number of fishing trips by longline vessels based and landing in Hawaii, by quarter and trip type, 1991-2011. [PIFSC IMS, Longline Logbook Data, 5/25/2011 9:14:07AM]

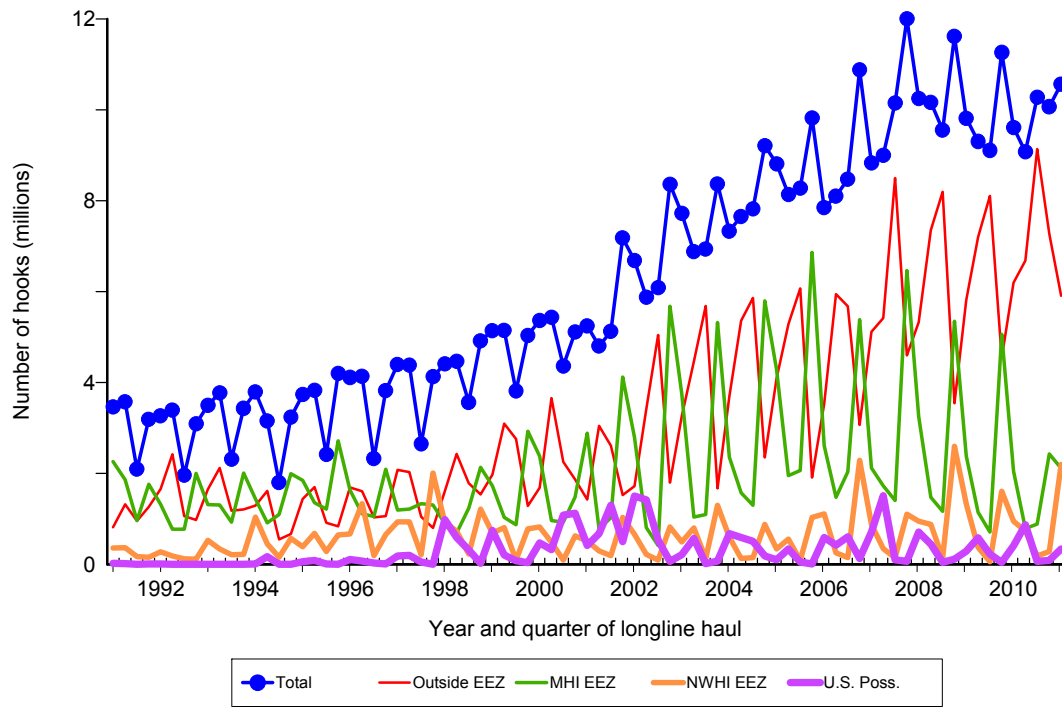


Figure 3. Number of hooks set by longline vessels based and landing in Hawaii, by quarter and fishing area, 1991-2011. [PIFSC IMS, Longline Logbook Data, 5/25/2011 9:14:48AM]

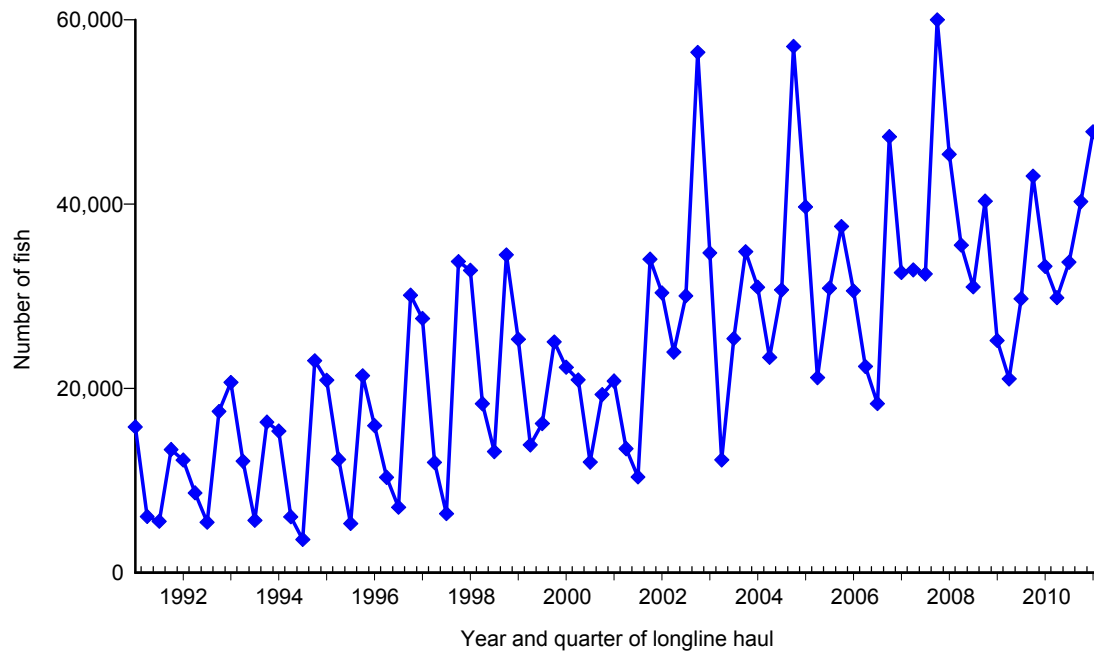


Figure 4. Quarterly catch of bigeye tuna by longline vessels based and landing in Hawaii, 1991-2011. [PIFSC IMS, Longline Logbook Data, 5/25/2011 9:15:09AM]

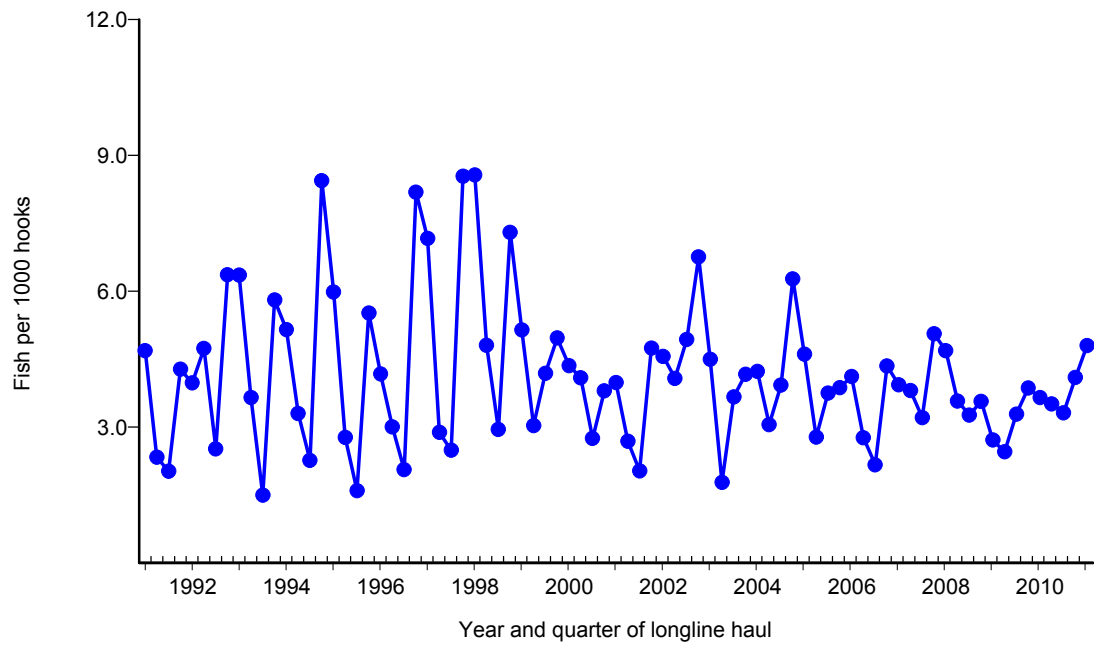


Figure 5. Quarterly CPUE of bigeye tuna (fish per 1000 hooks) on tuna trips by longline vessels based and landing in Hawaii, 1991-2011. [PIFSC IMS, Longline Logbook Data, 5/25/2011 9:15:09AM]

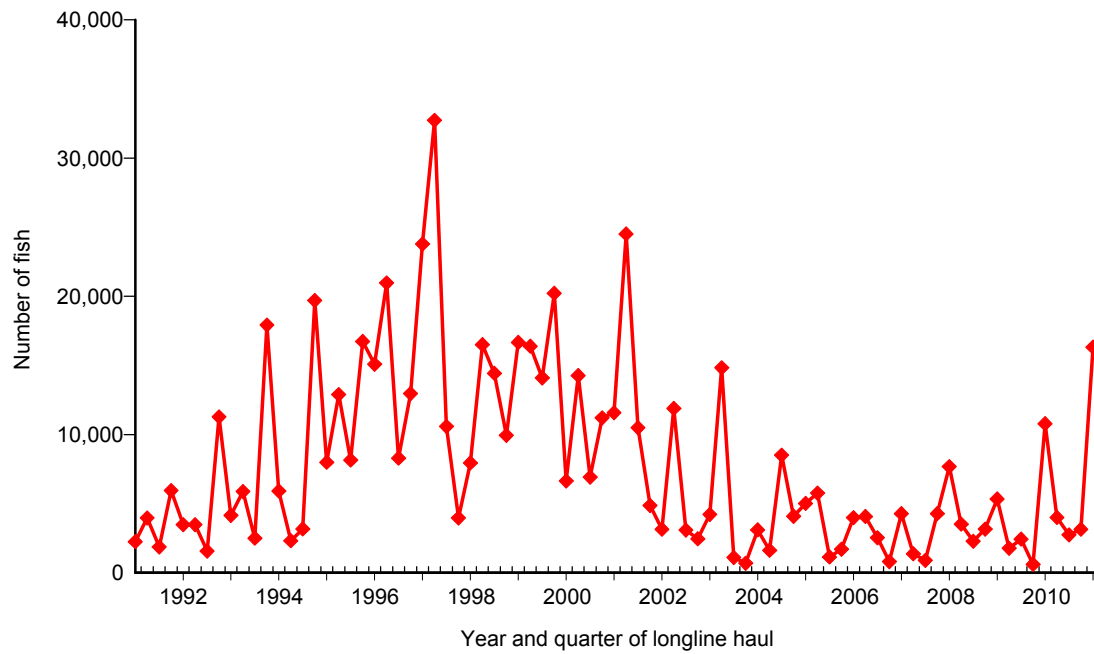


Figure 6. Quarterly catch of albacore by longline vessels based and landing in Hawaii, 1991-2011. [PIFSC IMS, Longline Logbook Data, 5/25/2011 9:15:34AM]

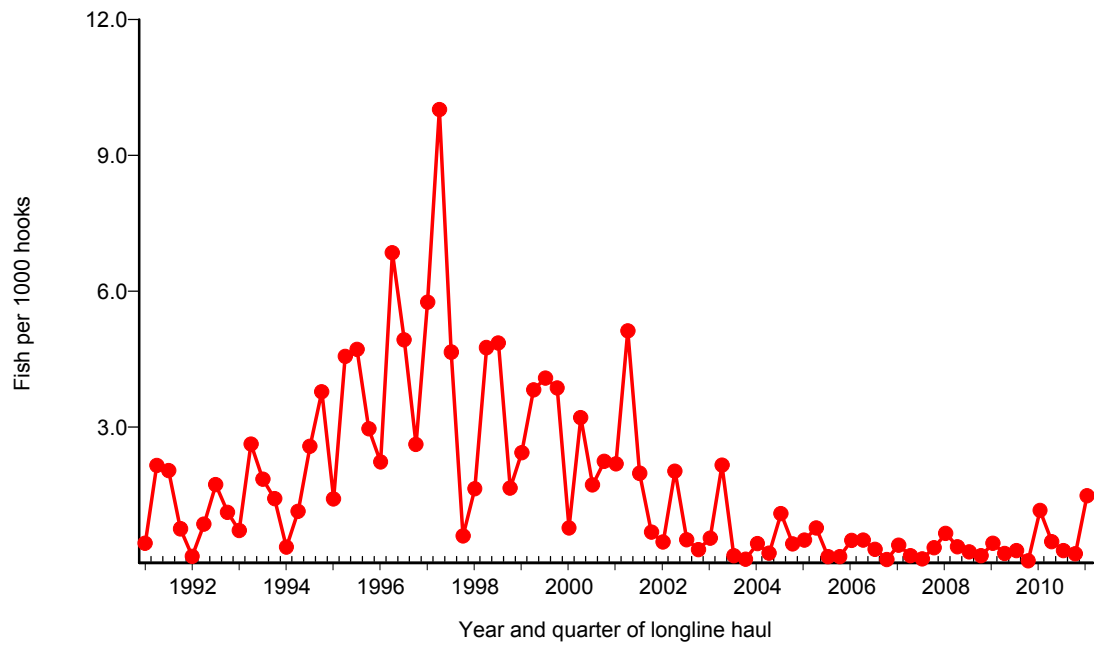


Figure 7. Quarterly CPUE of albacore (fish per 1000 hooks) on tuna trips by longline vessels based and landing in Hawaii, 1991-2011. [PIFSC IMS, Longline Logbook Data, 5/25/2011 9:15:34AM]

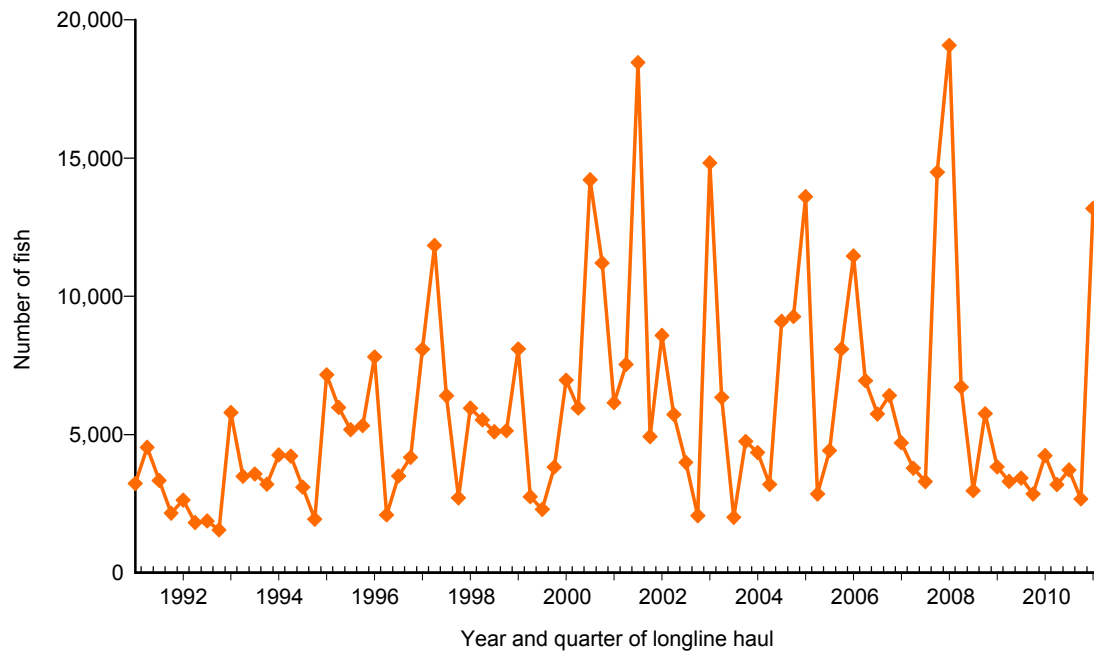


Figure 8. Quarterly catch of yellowfin tuna by longline vessels based and landing in Hawaii, 1991-2011. [PIFSC IMS, Longline Logbook Data, 5/25/2011 9:15:59AM]

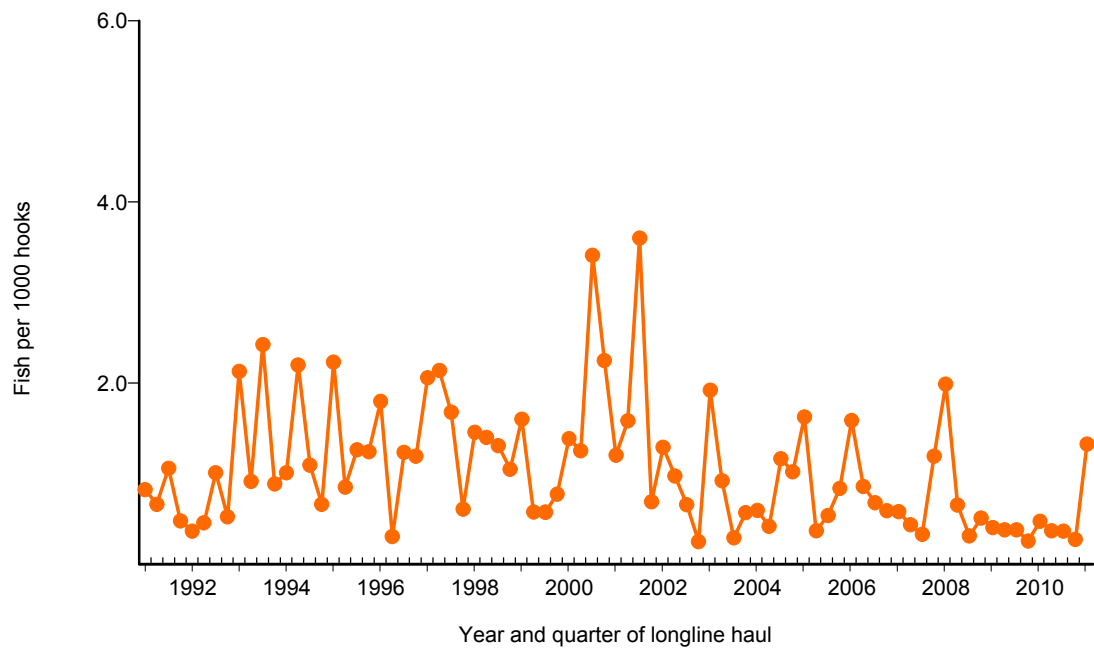


Figure 9. Quarterly CPUE of yellowfin tuna (fish per 1000 hooks) on tuna trips by longline vessels based and landing in Hawaii, 1991-2011. [PIFSC IMS, Longline Logbook Data, 5/25/2011 9:15:59AM]

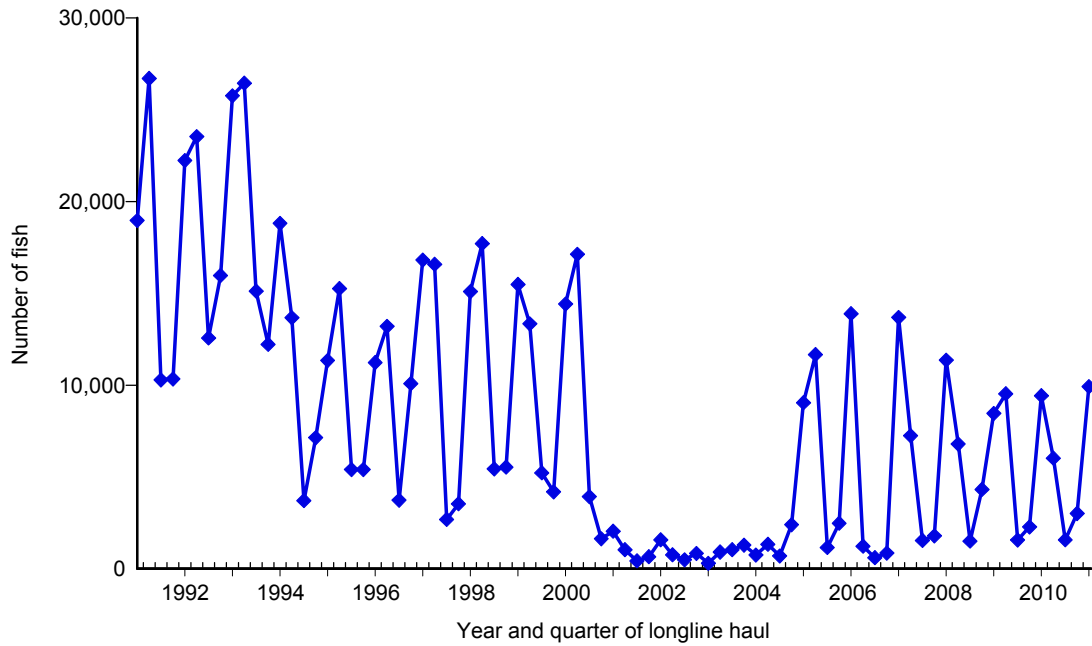


Figure 10. Quarterly catch of swordfish by longline vessels based and landing in Hawaii, 1991-2011. [PIFSC IMS, Longline Logbook Data, 5/25/2011 9:16:25AM]

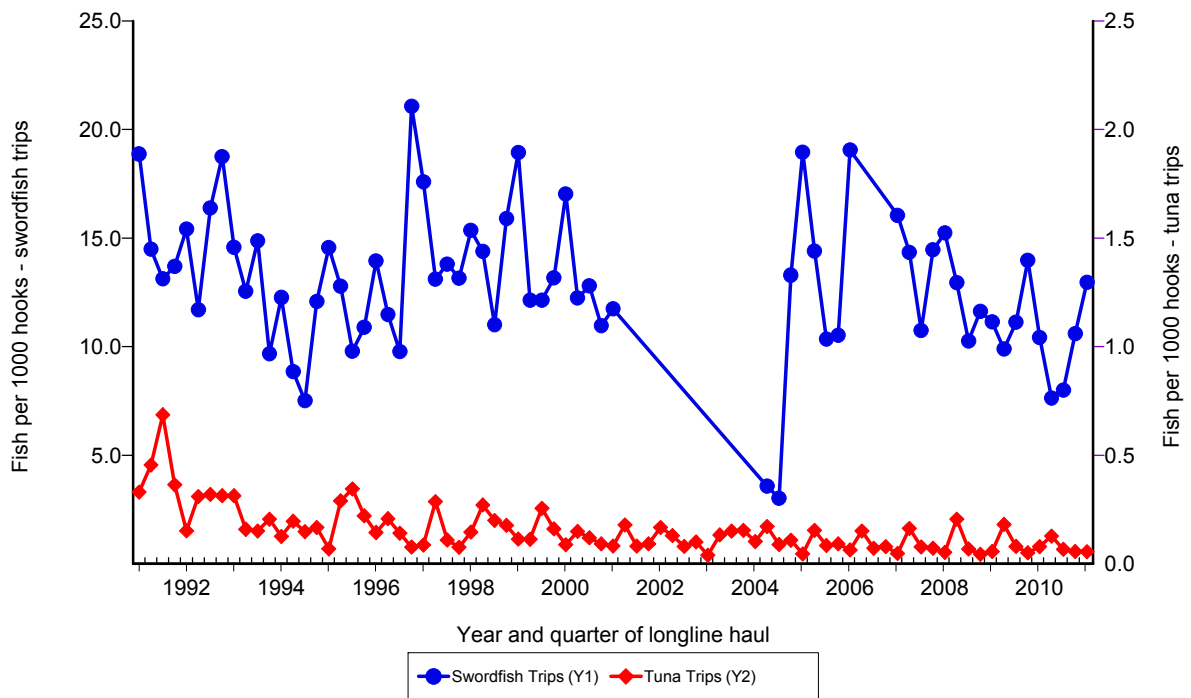


Figure 11. Quarterly CPUE of swordfish (fish per 1000 hooks) on swordfish trips and tuna trips by longline vessels based and landing in Hawaii, 1991-2011. [PIFSC IMS, Longline Logbook Data, 5/25/2011 9:16:25AM]

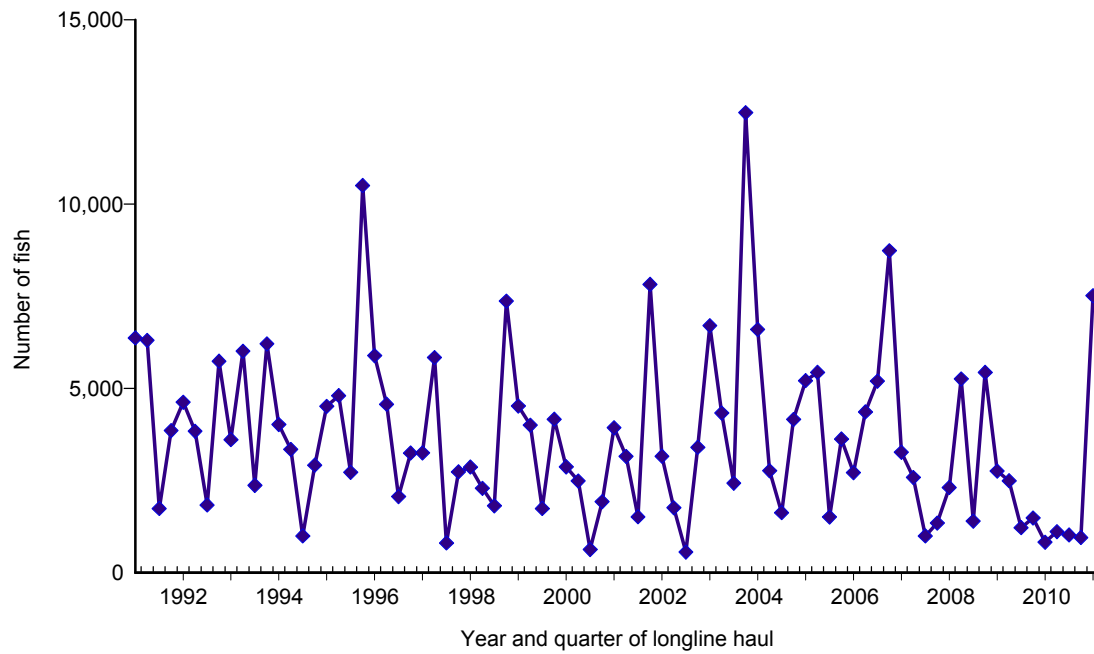


Figure 12. Quarterly catch of striped marlin by longline vessels based and landing in Hawaii, 1991-2011. [PIFSC IMS, Longline Logbook Data, 5/25/2011 9:16:51AM]

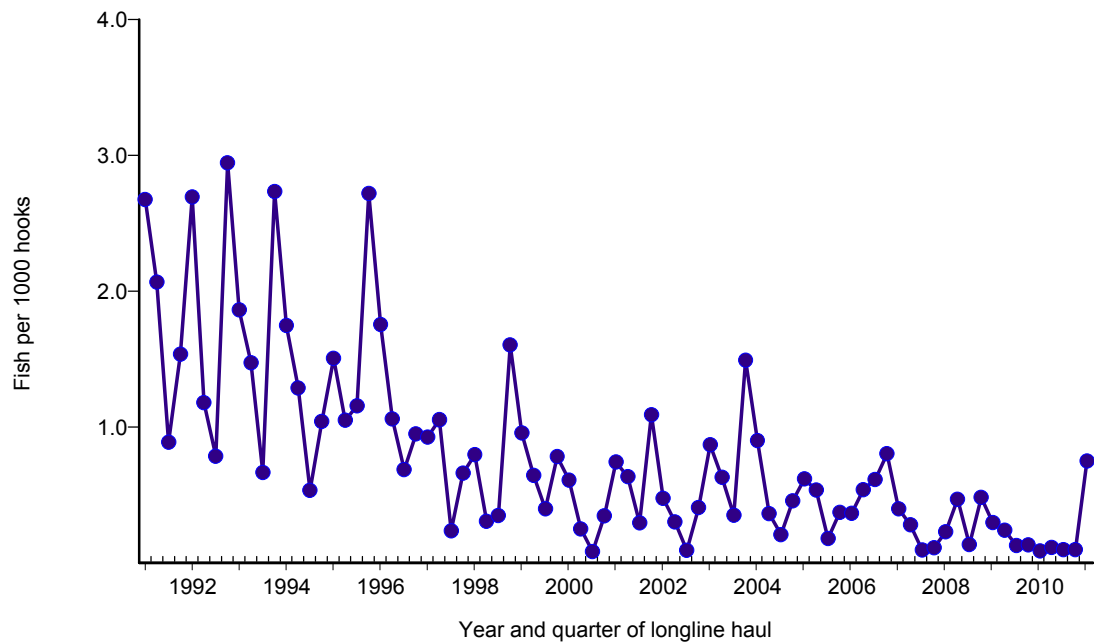


Figure 13. Quarterly CPUE of striped marlin (fish per 1000 hooks) on tuna trips by longline vessels based and landing in Hawaii, 1991-2011. [PIFSC IMS, Longline Logbook Data, 5/25/2011 9:16:51AM]

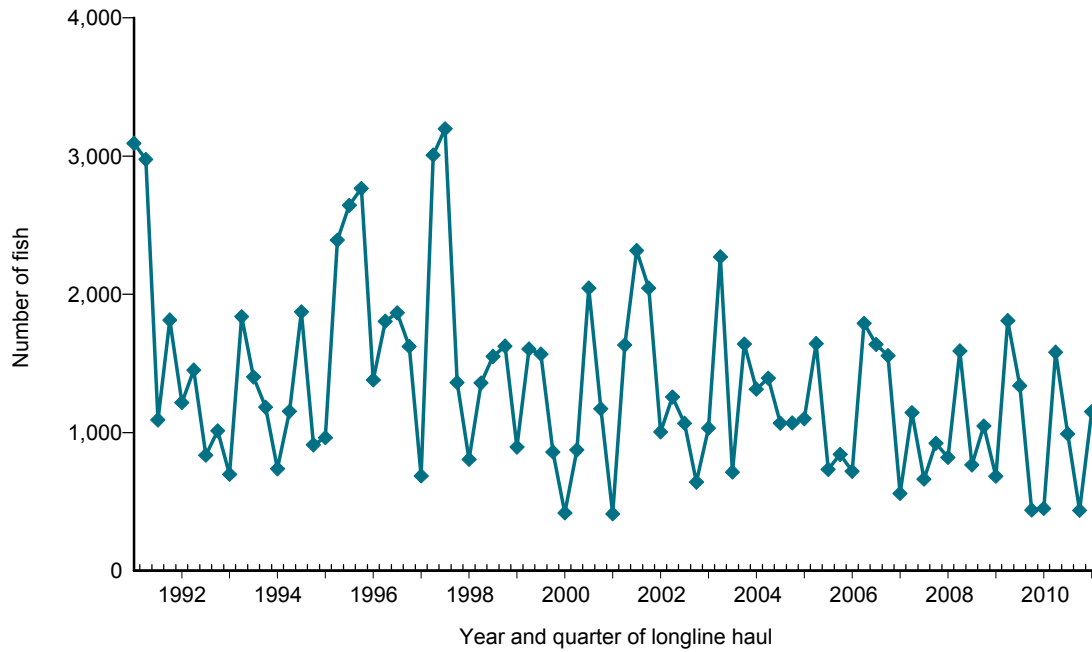


Figure 14. Quarterly catch of blue marlin by longline vessels based and landing in Hawaii, 1991-2011. [PIFSC IMS, Longline Logbook Data, 5/25/2011 9:17:17AM]

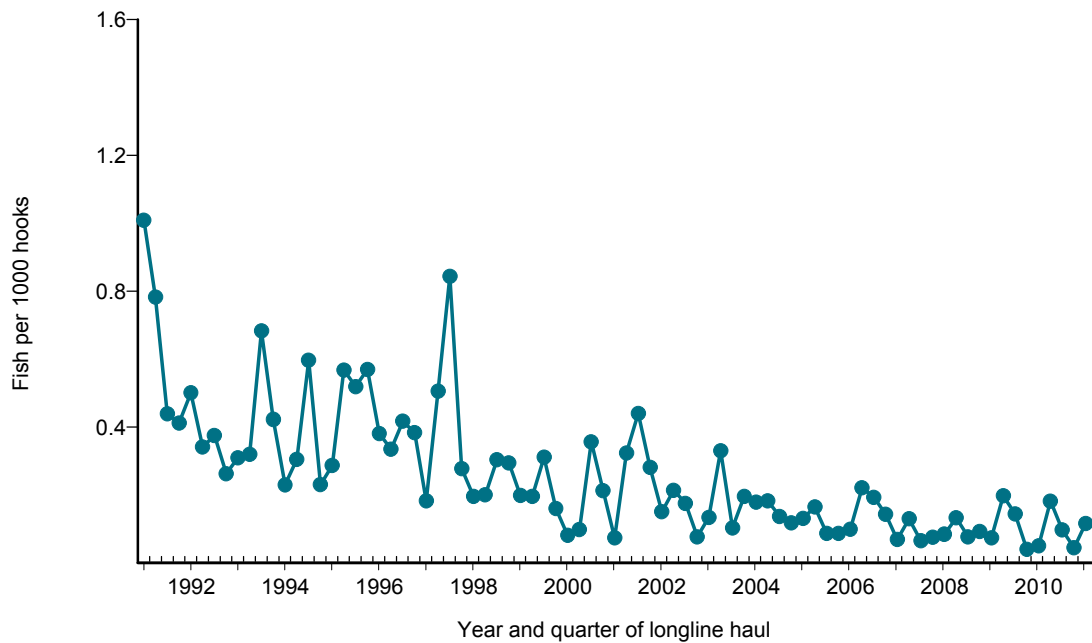


Figure 15. Quarterly CPUE of blue marlin (fish per 1000 hooks) on tuna trips by longline vessels based and landing in Hawaii, 1991-2011. [PIFSC IMS, Longline Logbook Data, 5/25/2011 9:17:17AM]

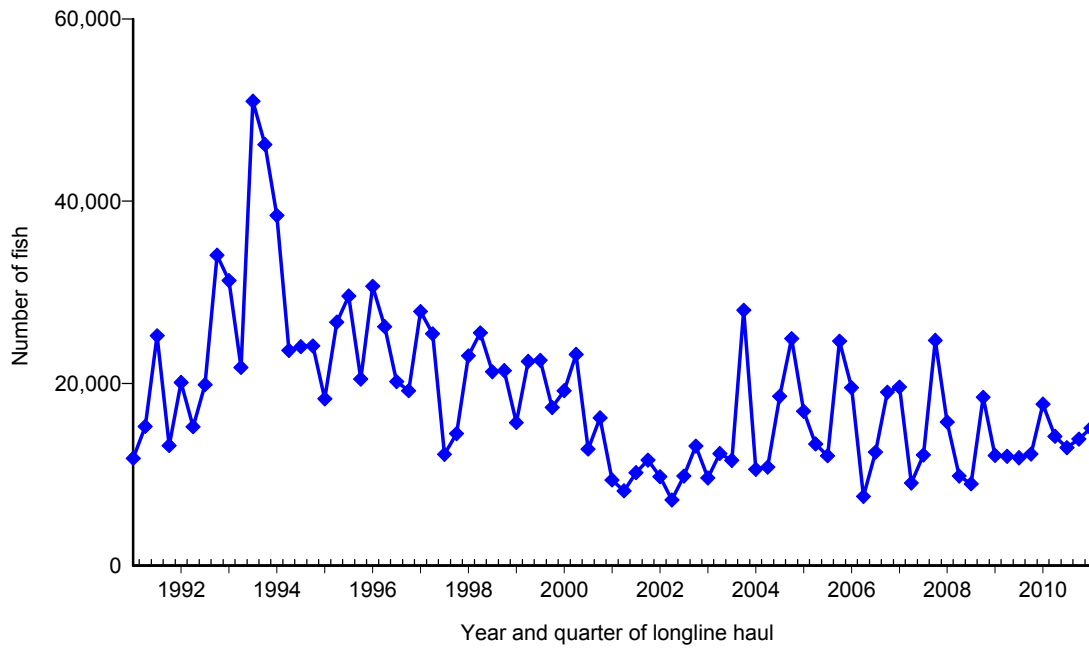


Figure 16. Quarterly catch of blue shark by longline vessels based and landing in Hawaii, 1991-2011. [PIFSC IMS, Longline Logbook Data, 5/25/2011 9:17:43AM]

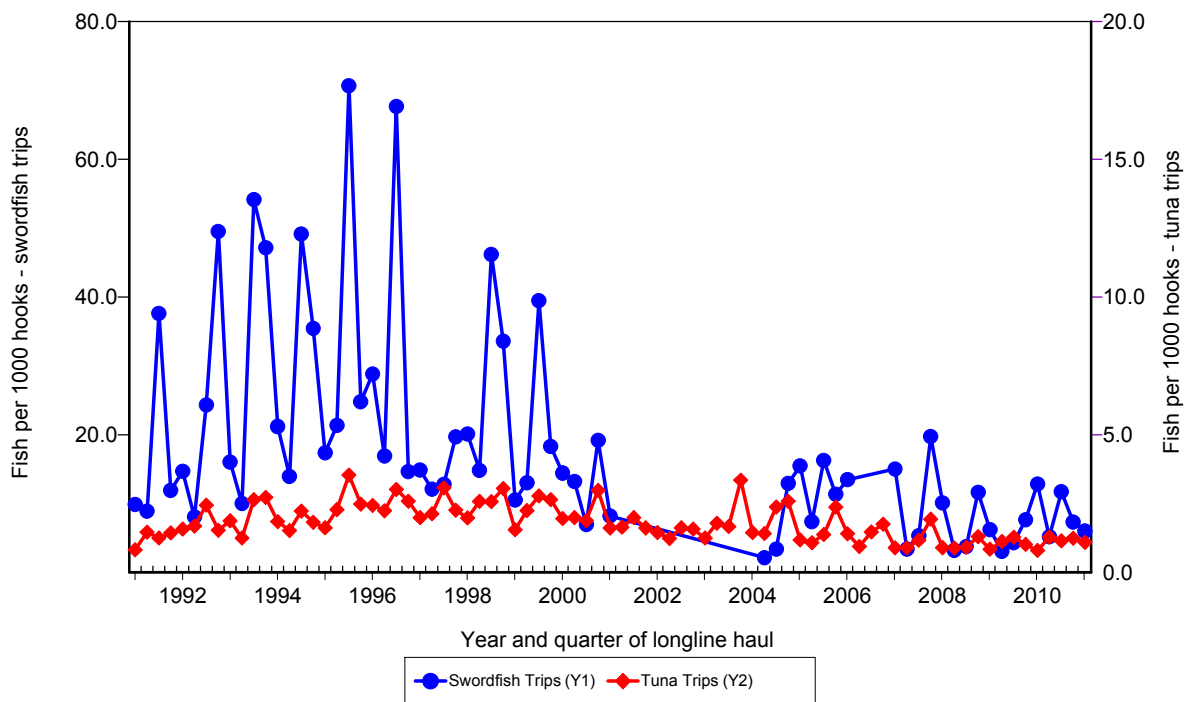


Figure 17. Quarterly CPUE of blue shark (fish per 1000 hooks) on swordfish trips and tuna trips by longline vessels based and landing in Hawaii, 1991-2011. [PIFSC IMS, Longline Logbook Data, 5/25/2011 9:17:43AM]

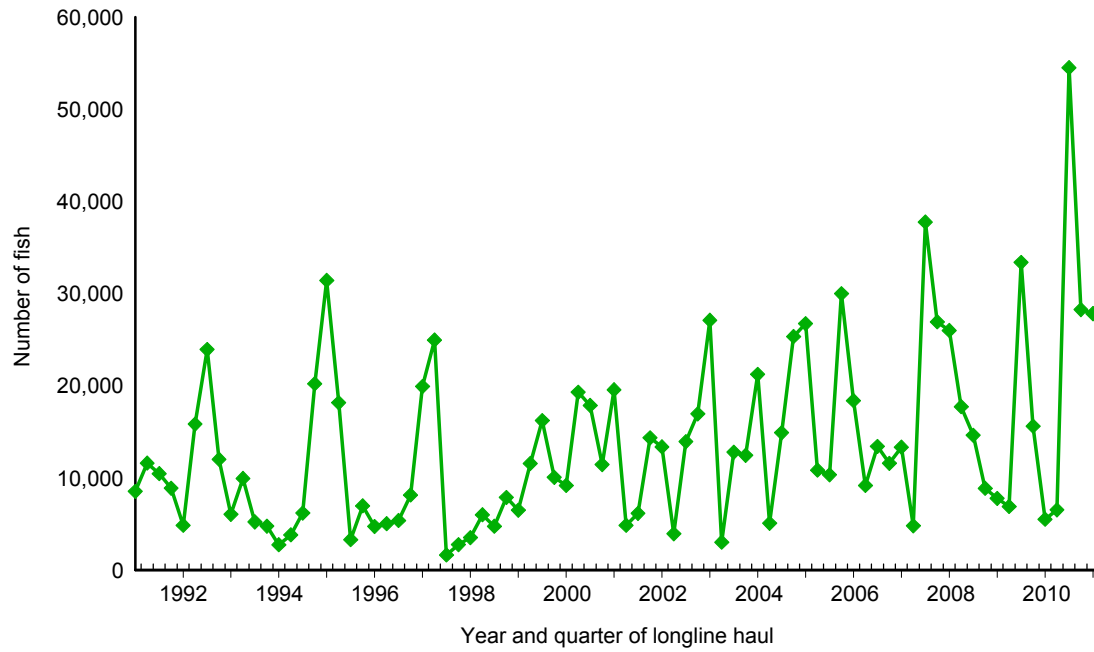


Figure 18. Quarterly catch of mahimahi by longline vessels based and landing in Hawaii, 1991-2011. [PIFSC IMS, Longline Logbook Data, 5/25/2011 9:18:09AM]

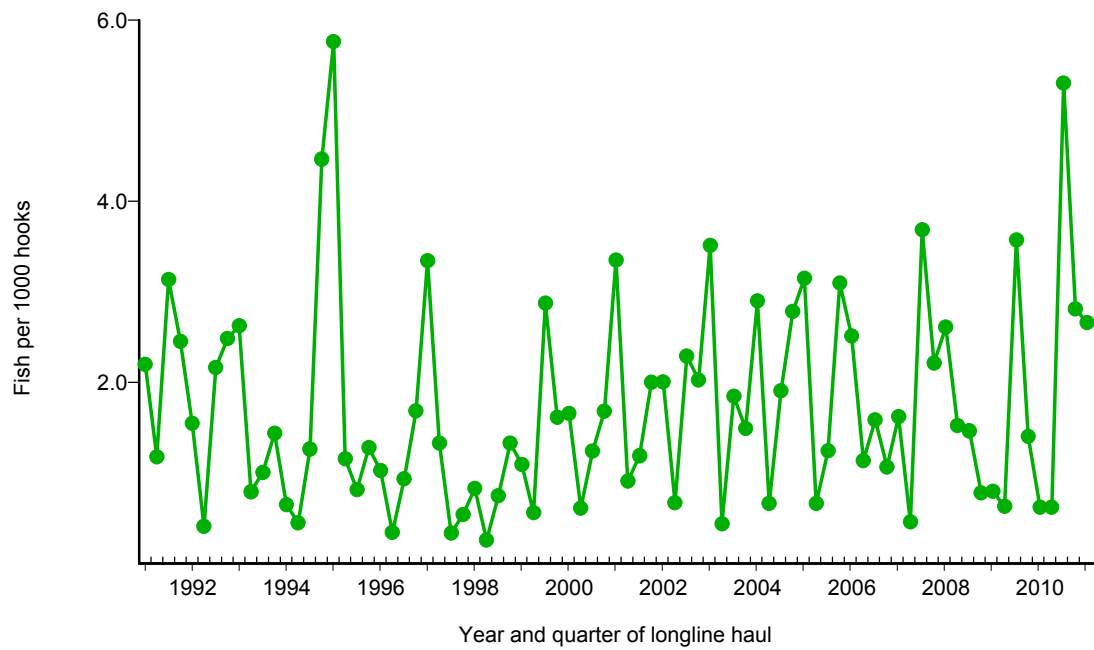


Figure 19. Quarterly CPUE of mahimahi (fish per 1000 hooks) on tuna trips by longline vessels based and landing in Hawaii, 1991-2011. [PIFSC IMS, Longline Logbook Data, 5/25/2011 9:18:09AM]

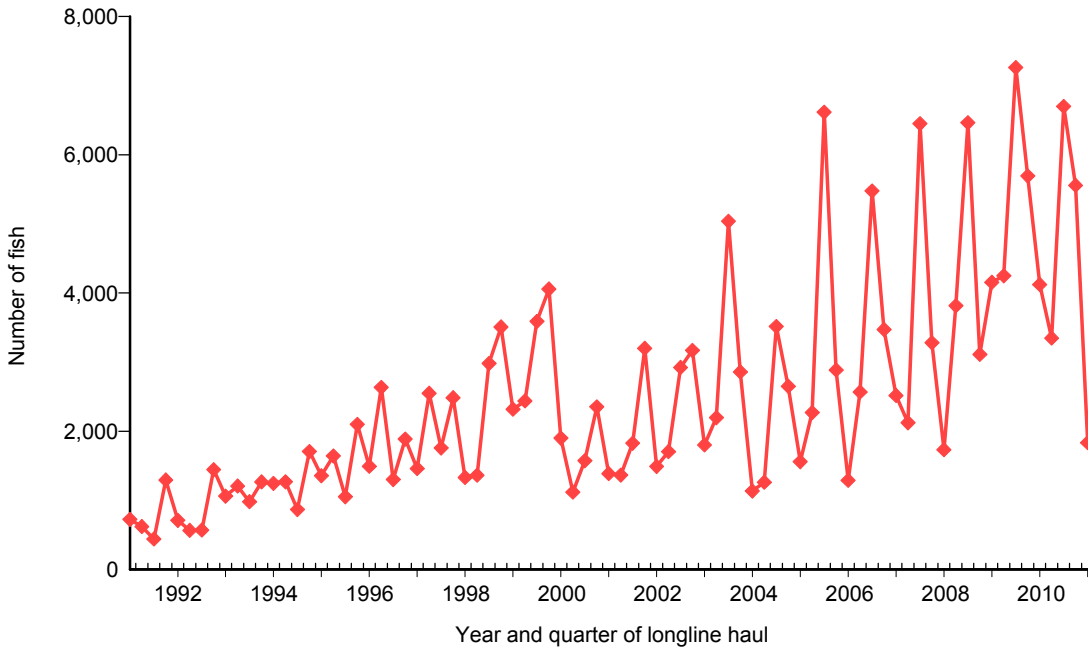


Figure 20. Quarterly catch of moonfish by longline vessels based and landing in Hawaii, 1991-2011. [PIFSC IMS, Longline Logbook Data, 5/25/2011 9:18:35AM]

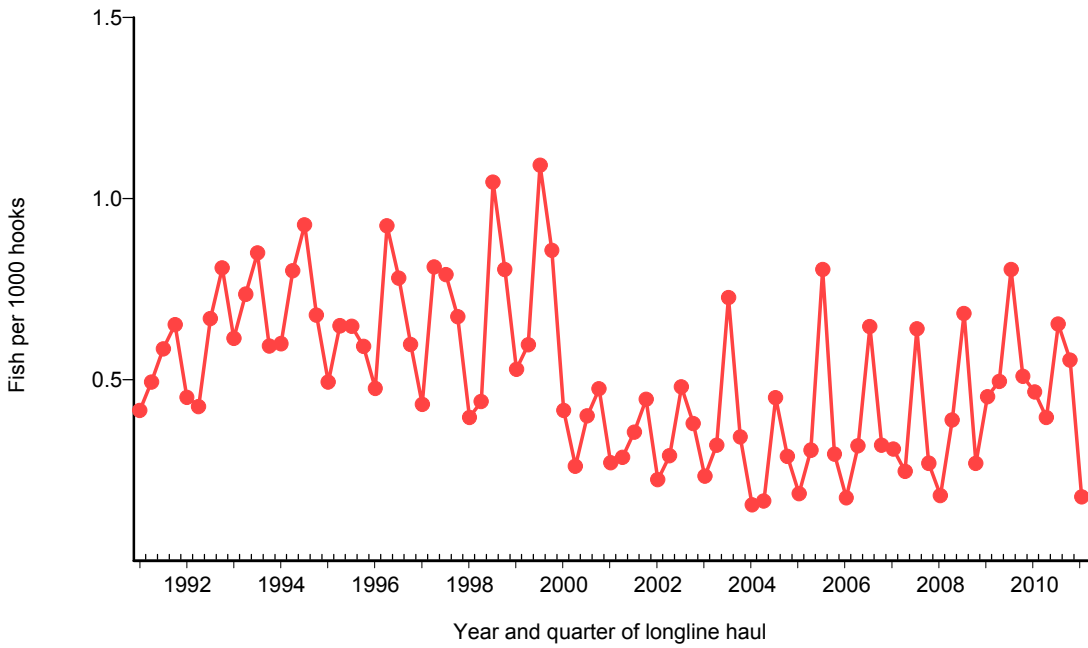


Figure 21. Quarterly CPUE of moonfish (fish per 1000 hooks) on tuna trips by longline vessels based and landing in Hawaii, 1991-2011. [PIFSC IMS, Longline Logbook Data, 5/25/2011 9:18:35AM]

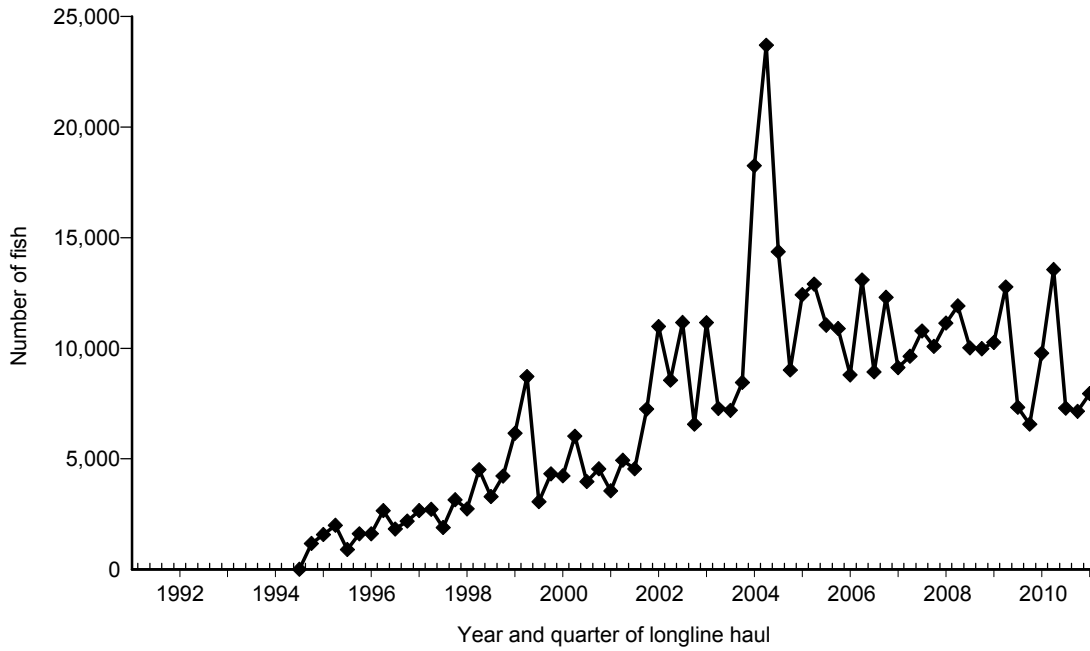


Figure 22. Quarterly catch of pomfret by longline vessels based and landing in Hawaii, 1991-2011. [PIFSC IMS, Longline Logbook Data, 5/25/2011 9:19:01AM]

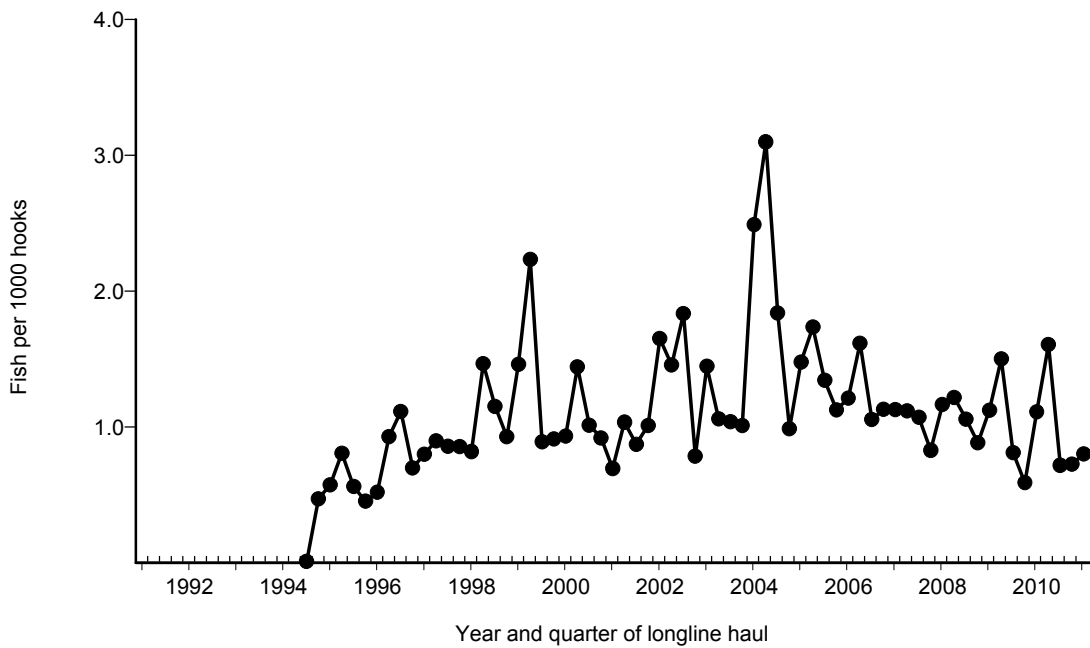


Figure 23. Quarterly CPUE of pomfret (fish per 1000 hooks) on tuna trips by longline vessels based and landing in Hawaii, 1991-2011. [PIFSC IMS, Longline Logbook Data, 5/25/2011 9:19:01AM]

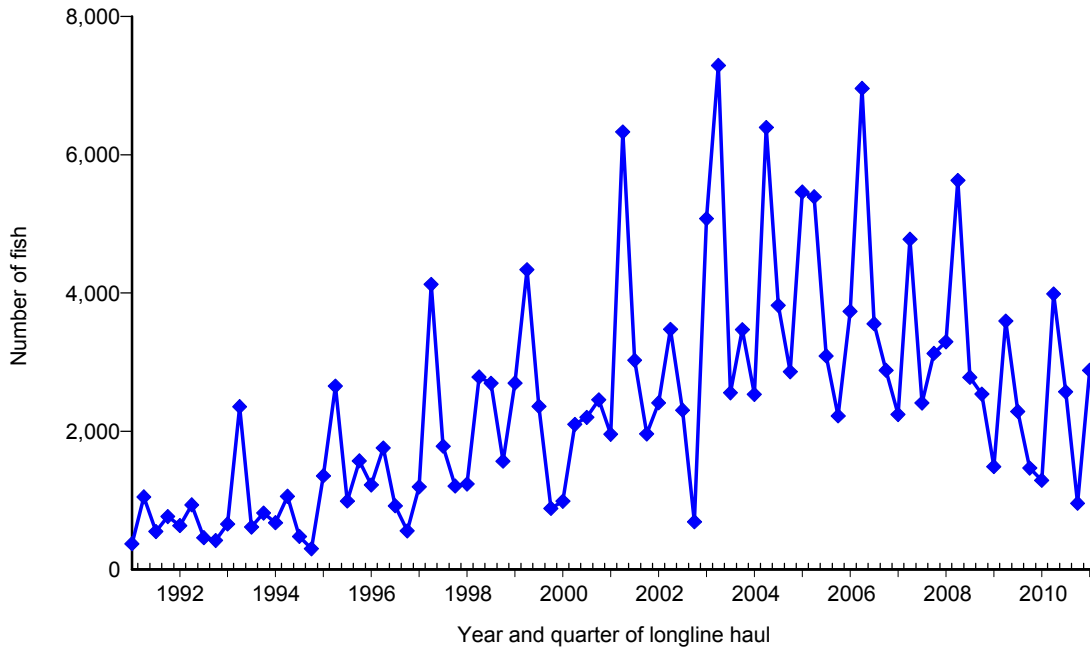


Figure 24. Quarterly catch of wahoo by longline vessels based and landing in Hawaii, 1991-2011. [PIFSC IMS, Longline Logbook Data, 5/25/2011 9:19:28AM]

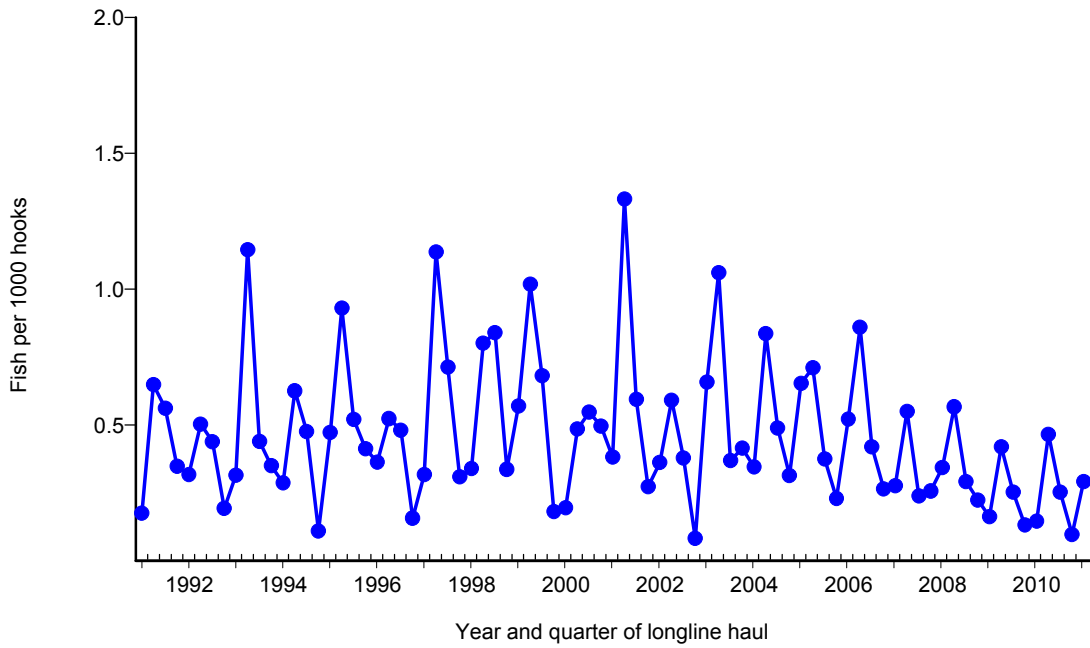


Figure 25. Quarterly CPUE of wahoo (fish per 1000 hooks) on tuna trips by longline vessels based and landing in Hawaii, 1991-2011. [PIFSC IMS, Longline Logbook Data, 5/25/2011 9:19:28AM]