

The Hawaii-based Longline Logbook Summary Report July-September 2012¹

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 third quarter of 2012 (Q3-2012). 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 third quarter of 2012 and most, but not all, Q3-2012 data from trips that began late in the third quarter and continued into the fourth quarter of 2012. Therefore, the Q3-2012 summary statistics reported here are preliminary.

During Q3-2012, 119 vessels were active in the Hawaii-based fleet, 3 more vessels than in Q3-2011 (Table 1, Fig. 1). They made 370 longline trips (19 more than in Q3-2011), including 366 using deep-set gear to target tuna (18 more than in Q3-2011) and 4 using shallow-set gear to target swordfish (1 more than in Q3-2011; Fig. 2). During Q3-2012, the fleet deployed a record 10.7 million hooks, about 800,000 more hooks than in Q3-2011 (Fig. 3). They fished mainly on the high seas outside the U.S. Exclusive Economic Zone (EEZ) (90% of the total hooks set), followed by the EEZ of the main Hawaiian Islands (MHI) (8%), the Northwestern Hawaiian Islands (NWHI) EEZ (1%), 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) (<1%).

In Q3-2012, the Hawaii longline fleet caught a record 37,160 bigeye tuna (Fig. 4); 94% were caught in waters outside the U.S. EEZ. The bigeye tuna catch-per-unit-of-effort (CPUE) on tuna-targeted trips was 3.5 fish per 1000 hooks, up 0.2 from Q3-2011 (Fig. 5). The albacore catch aggregated over all longline fishing trips, and the albacore CPUE on tuna-targeted trips in Q3-2012 were 4,607 fish and 0.43 fish per 1000 hooks, respectively (Figs. 6-7). The total yellowfin tuna catch and yellowfin CPUE on tuna-targeted trips in Q3-2012 were 2,312 fish and 0.22 fish per 1000 hooks, respectively (Figs. 8-9).

The Q3-2012 swordfish catch was 966 fish, 23% less than the swordfish catch in Q3-2011 (Fig. 10). In Q3-2012, swordfish CPUE on shallow-set swordfish-targeted trips was 7.2 fish per 1000 hooks, 30% lower compared to Q3-2011 (Fig. 11).

The total striped marlin catch in Q3-2012 was 846 fish, and the striped marlin CPUE on tuna-targeted trips was 0.08 fish per 1000 hooks (Figs. 12-13). The overall blue marlin catch in Q3-2012 was 575 fish and the blue marlin CPUE on tuna-targeted trips was 0.05 fish per 1000 hooks; both blue marlin statistics were record 3rd quarter lows (Figs. 14-15).

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The fleet caught 10,696 sharks in Q3-2012 of which 320 (3%) were kept. Blue shark comprised 90% of the total shark catch (9,636 fish) (Fig. 16). Blue shark CPUE on shallow-set swordfish-targeted trips in Q3-2012 was 25.4 fish per 1000 hooks, more than a four-fold increase compared to Q3-2011 (Fig. 17).

In Q3-2012, the Hawaii longline catch of other key pelagic species included 33,593 mahimahi (Fig. 18) with a CPUE of 3.11 fish per 1000 hooks on tuna-targeted trips (Fig. 19); 7,136 moonfish (Fig. 20) with a CPUE of 0.67 fish per 1000 hooks on tuna-targeted trips (Fig. 21); 8,516 pomfret (Fig. 22) with a CPUE of 0.80 fish per 1000 hooks on tuna-targeted trips (Fig. 23); and 1,365 wahoo (Fig. 24) with a CPUE of 0.13 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. Q3-2012 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. Q3-2012 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 both PDF and HTML formats on the PIFSC website at <http://www.pifsc.noaa.gov/fmb/reports.php>. The website 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, 11/12/2012 2:58:15PM].

Report Coverage					Number of vessels active	119
Time Period	3rd Quarter 2012				Number of trips	370
Fishing Area	All Areas				Number of sets	4,389
Trip Types	All Trip Types				Number of hooks set	10,663,957

Pelagic Management Unit Species (PMUS)	Number Caught	Number Kept	Number Released	CPUE - Number Caught per 1000 hooks
Billfishes				
Blue marlin	575	572	3	0.05
Striped marlin	846	843	3	0.08
Shortbill spearfish	1,472	1,465	7	0.14
Swordfish	966	899	67	0.09
Other billfishes	86	86	0	0.01
Total	3,945	3,865	80	0.37
Sharks				
Blue shark	9,636	141	9,495	0.90
Mako sharks	482	159	323	0.05
Thresher sharks	463	19	444	0.04
Oceanic whitetip shark	15	1	14	0.00
Silky shark	15	0	15	0.00
Other sharks	85	0	85	0.01
Total	10,696	320	10,376	1.00
Tunas				
Albacore	4,607	4,581	26	0.43
Bigeye tuna	37,160	36,631	529	3.48
Yellowfin tuna	2,312	2,302	10	0.22
Bluefin tuna	3	3	0	0.00
Skipjack tuna	1,907	1,698	209	0.18
Other tunas	1	1	0	0.00
Total	45,990	45,216	774	4.31
Other PMUS				
Mahimahi	33,593	33,314	279	3.15
Moonfish	7,136	7,120	16	0.67
Wahoo	1,365	1,363	2	0.13
Oilfish	6,665	6,575	90	0.63
Pomfret	8,516	8,487	29	0.80
Total	57,275	56,859	416	5.37
Total PMUS	117,906	106,260	11,646	11.06
Total Non-PMUS	1,074	276	798	0.10
Total All Species	118,980	106,536	12,444	11.16

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, 11/12/2012 2:58:15PM].

Report Coverage		Number of vessels active		55
Time Period	3rd Quarter 2012	Number of trips		91
Fishing Area	Main Hawaiian Islands EEZ	Number of sets		411
Trip Types	All Trip Types	Number of hooks set		814,891

Pelagic Management Unit Species (PMUS)	Number Caught	Number Kept	Number Released	CPUE - Number Caught per 1000 hooks
Billfishes				
Blue marlin	77	77	0	0.09
Striped marlin	54	54	0	0.07
Shortbill spearfish	100	100	0	0.12
Swordfish	85	71	14	0.10
Other billfishes	5	5	0	0.01
Total	321	307	14	0.39
Sharks				
Blue shark	1,277	70	1,207	1.57
Mako sharks	32	16	16	0.04
Thresher sharks	29	2	27	0.04
Oceanic whitetip shark	8	0	8	0.01
Silky shark	2	0	2	0.00
Other sharks	6	0	6	0.01
Total	1,354	88	1,266	1.66
Tunas				
Albacore	435	433	2	0.53
Bigeye tuna	1,972	1,952	20	2.42
Yellowfin tuna	1,146	1,144	2	1.41
Bluefin tuna	0	0	0	0.00
Skipjack tuna	322	321	1	0.40
Other tunas	0	0	0	0.00
Total	3,875	3,850	25	4.76
Other PMUS				
Mahimahi	872	855	17	1.07
Moonfish	229	229	0	0.28
Wahoo	241	241	0	0.30
Oilfish	233	197	36	0.29
Pomfret	1,120	1,119	1	1.37
Total	2,695	2,641	54	3.31
Total PMUS	8,245	6,886	1,359	10.12
Total Non-PMUS	238	235	3	0.29
Total All Species	8,483	7,121	1,362	10.41

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, 11/12/2012 2:58:15PM].

Report Coverage		Number of vessels active	
Time Period	3rd Quarter 2012		6
Fishing Area	Pacific Remote Island Areas (PRIA) EEZ	Number of trips	6
Trip Types	All Trip Types	Number of sets	22
		Number of hooks set	54,200

Pelagic Management Unit Species (PMUS)	Number Caught	Number Kept	Number Released	CPUE - Number Caught per 1000 hooks
Billfishes				
Blue marlin	22	22	0	0.41
Striped marlin	5	5	0	0.09
Shortbill spearfish	16	16	0	0.30
Swordfish	5	5	0	0.09
Other billfishes	1	1	0	0.02
Total	49	49	0	0.90
Sharks				
Blue shark	139	0	139	2.56
Mako sharks	2	1	1	0.04
Thresher sharks	14	0	14	0.26
Oceanic whitetip shark	0	0	0	0.00
Silky shark	10	0	10	0.18
Other sharks	7	0	7	0.13
Total	172	1	171	3.17
Tunas				
Albacore	327	326	1	6.03
Bigeye tuna	88	87	1	1.62
Yellowfin tuna	15	15	0	0.28
Bluefin tuna	0	0	0	0.00
Skipjack tuna	83	52	31	1.53
Other tunas	0	0	0	0.00
Total	513	480	33	9.46
Other PMUS				
Mahimahi	11	11	0	0.20
Moonfish	13	13	0	0.24
Wahoo	34	34	0	0.63
Oilfish	4	4	0	0.07
Pomfret	50	50	0	0.92
Total	112	112	0	2.07
Total PMUS	846	642	204	15.61
Total Non-PMUS	0	0	0	0.00
Total All Species	846	642	204	15.61

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, 11/12/2012 2:58:15PM].

Report Coverage		Number of vessels active	
Time Period	3rd Quarter 2012		63
Fishing Area	Hawaiian Islands EEZ + PRIA EEZ	Number of trips	107
Trip Types	All Trip Types	Number of sets	505
		Number of hooks set	1,028,659

Pelagic Management Unit Species (PMUS)	Number Caught	Number Kept	Number Released	CPUE - Number Caught per 1000 hooks
Billfishes				
Blue marlin	126	126	0	0.12
Striped marlin	87	87	0	0.08
Shortbill spearfish	136	136	0	0.13
Swordfish	202	168	34	0.20
Other billfishes	8	8	0	0.01
Total	559	525	34	0.54
Sharks				
Blue shark	1,728	70	1,658	1.68
Mako sharks	44	27	17	0.04
Thresher sharks	57	8	49	0.06
Oceanic whitetip shark	8	0	8	0.01
Silky shark	12	0	12	0.01
Other sharks	14	0	14	0.01
Total	1,863	105	1,758	1.81
Tunas				
Albacore	946	943	3	0.92
Bigeye tuna	2,223	2,201	22	2.16
Yellowfin tuna	1,312	1,310	2	1.28
Bluefin tuna	0	0	0	0.00
Skipjack tuna	447	415	32	0.43
Other tunas	0	0	0	0.00
Total	4,928	4,869	59	4.79
Other PMUS				
Mahimahi	1,009	992	17	0.98
Moonfish	316	316	0	0.31
Wahoo	314	314	0	0.31
Oilfish	321	285	36	0.31
Pomfret	1,282	1,281	1	1.25
Total	3,242	3,188	54	3.15
Total PMUS	10,592	8,687	1,905	10.30
Total Non-PMUS	250	245	5	0.24
Total All Species	10,842	8,932	1,910	10.54

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, 11/12/2012 2:58:15PM].

Report Coverage		Number of vessels active	
Time Period	3rd Quarter 2012		118
Fishing Area	Outside U.S. EEZ	Number of trips	336
Trip Types	All Trip Types	Number of sets	3,884
		Number of hooks set	9,635,298

Pelagic Management Unit Species (PMUS)	Number Caught	Number Kept	Number Released	CPUE - Number Caught per 1000 hooks
Billfishes				
Blue marlin	449	446	3	0.05
Striped marlin	759	756	3	0.08
Shortbill spearfish	1,336	1,329	7	0.14
Swordfish	764	731	33	0.08
Other billfishes	78	78	0	0.01
Total	3,386	3,340	46	0.35
Sharks				
Blue shark	7,908	71	7,837	0.82
Mako sharks	438	132	306	0.05
Thresher sharks	406	11	395	0.04
Oceanic whitetip shark	7	1	6	0.00
Silky shark	3	0	3	0.00
Other sharks	71	0	71	0.01
Total	8,833	215	8,618	0.92
Tunas				
Albacore	3,661	3,638	23	0.38
Bigeye tuna	34,937	34,430	507	3.63
Yellowfin tuna	1,000	992	8	0.10
Bluefin tuna	3	3	0	0.00
Skipjack tuna	1,460	1,283	177	0.15
Other tunas	1	1	0	0.00
Total	41,062	40,347	715	4.26
Other PMUS				
Mahimahi	32,584	32,322	262	3.38
Moonfish	6,820	6,804	16	0.71
Wahoo	1,051	1,049	2	0.11
Oilfish	6,344	6,290	54	0.66
Pomfret	7,234	7,206	28	0.75
Total	54,033	53,671	362	5.61
Total PMUS	107,314	97,573	9,741	11.14
Total Non-PMUS	824	31	793	0.09
Total All Species	108,138	97,604	10,534	11.22

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, 11/12/2012 2:58:15PM].

Report Coverage		Number of vessels active		3
Time Period	3rd Quarter 2012	Number of trips		4
Fishing Area	All Areas	Number of sets		32
Trip Types	Swordfish Targeted Trips	Number of hooks set		33,445

Pelagic Management Unit Species (PMUS)	Number Caught	Number Kept	Number Released	CPUE - Number Caught per 1000 hooks
Billfishes				
Blue marlin	16	16	0	0.48
Striped marlin	7	7	0	0.21
Shortbill spearfish	1	1	0	0.03
Swordfish	240	207	33	7.18
Other billfishes	0	0	0	0.00
Total	264	231	33	7.89
Sharks				
Blue shark	848	0	848	25.36
Mako sharks	20	10	10	0.60
Thresher sharks	1	0	1	0.03
Oceanic whitetip shark	0	0	0	0.00
Silky shark	0	0	0	0.00
Other sharks	0	0	0	0.00
Total	869	10	859	25.98
Tunas				
Albacore	15	15	0	0.45
Bigeye tuna	1	1	0	0.03
Yellowfin tuna	8	8	0	0.24
Bluefin tuna	0	0	0	0.00
Skipjack tuna	0	0	0	0.00
Other tunas	0	0	0	0.00
Total	24	24	0	0.72
Other PMUS				
Mahimahi	497	491	6	14.86
Moonfish	4	4	0	0.12
Wahoo	2	2	0	0.06
Oilfish	9	9	0	0.27
Pomfret	0	0	0	0.00
Total	512	506	6	15.31
Total PMUS	1,669	771	898	49.90
Total Non-PMUS	1	0	1	0.03
Total All Species	1,670	771	899	49.93

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, 11/12/2012 2:58:15PM].

Report Coverage		Number of vessels active		118
Time Period	3rd Quarter 2012	Number of trips		366
Fishing Area	All Areas	Number of sets		4,357
Trip Types	Tuna Targeted Trips	Number of hooks set		10,630,512

Pelagic Management Unit Species (PMUS)	Number Caught	Number Kept	Number Released	CPUE - Number Caught per 1000 hooks
Billfishes				
Blue marlin	559	556	3	0.05
Striped marlin	839	836	3	0.08
Shortbill spearfish	1,471	1,464	7	0.14
Swordfish	726	692	34	0.07
Other billfishes	86	86	0	0.01
Total	3,681	3,634	47	0.35
Sharks				
Blue shark	8,788	141	8,647	0.83
Mako sharks	462	149	313	0.04
Thresher sharks	462	19	443	0.04
Oceanic whitetip shark	15	1	14	0.00
Silky shark	15	0	15	0.00
Other sharks	85	0	85	0.01
Total	9,827	310	9,517	0.92
Tunas				
Albacore	4,592	4,566	26	0.43
Bigeye tuna	37,159	36,630	529	3.50
Yellowfin tuna	2,304	2,294	10	0.22
Bluefin tuna	3	3	0	0.00
Skipjack tuna	1,907	1,698	209	0.18
Other tunas	1	1	0	0.00
Total	45,966	45,192	774	4.32
Other PMUS				
Mahimahi	33,096	32,823	273	3.11
Moonfish	7,132	7,116	16	0.67
Wahoo	1,363	1,361	2	0.13
Oilfish	6,656	6,566	90	0.63
Pomfret	8,516	8,487	29	0.80
Total	56,763	56,353	410	5.34
Total PMUS	116,237	105,489	10,748	10.93
Total Non-PMUS	1,073	276	797	0.10
Total All Species	117,310	105,765	11,545	11.04

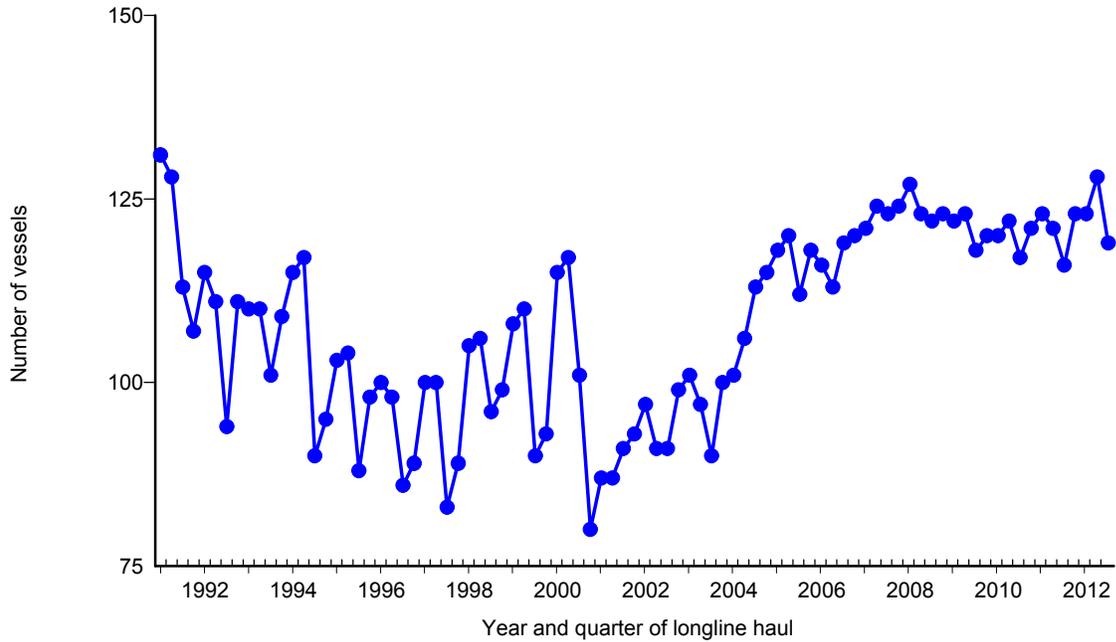


Figure 1. Number of active longline vessels based and landing in Hawaii, by quarter, 1991-2012. [PIFSC IMS, Longline Logbook Data, 11/12/2012 3:01:43PM]

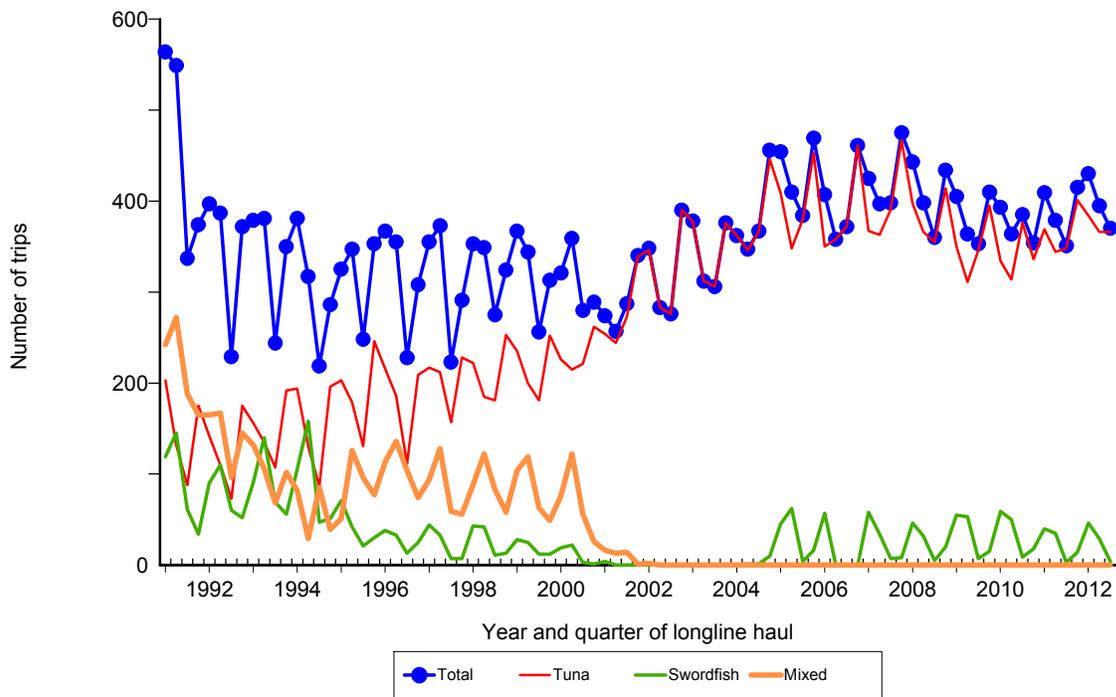


Figure 2. Number of fishing trips by longline vessels based and landing in Hawaii, by quarter and trip type, 1991-2012. [PIFSC IMS, Longline Logbook Data, 11/12/2012 3:01:43PM]

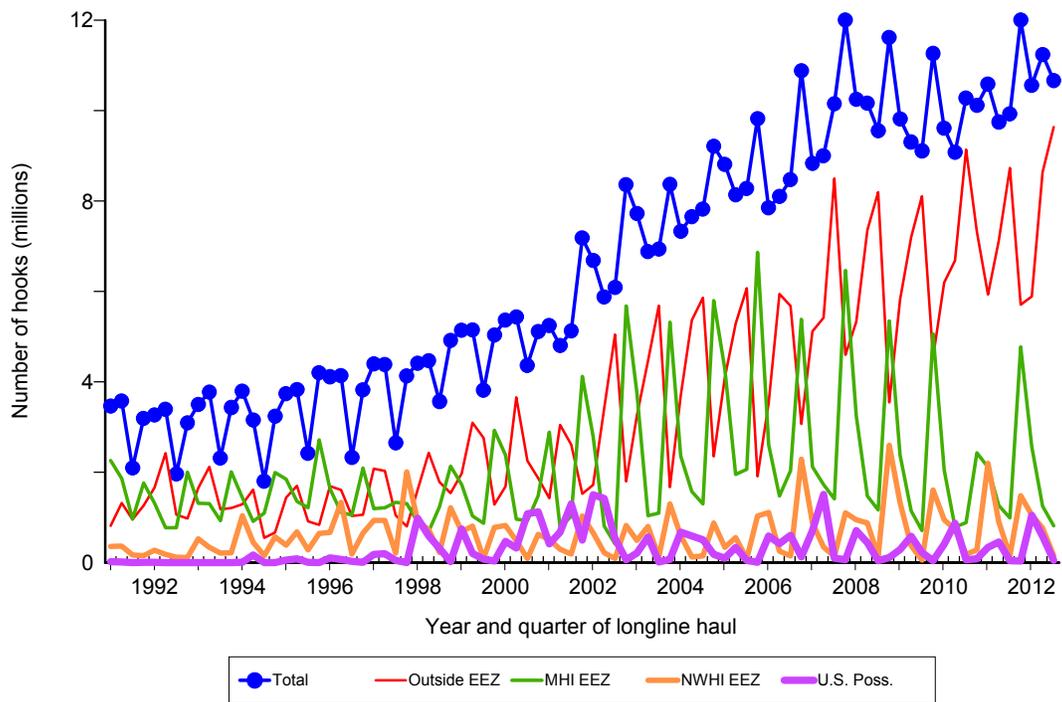


Figure 3. Number of hooks set by longline vessels based and landing in Hawaii, by quarter and fishing area, 1991-2012. [PIFSC IMS, Longline Logbook Data, 11/12/2012 3:01:52PM]

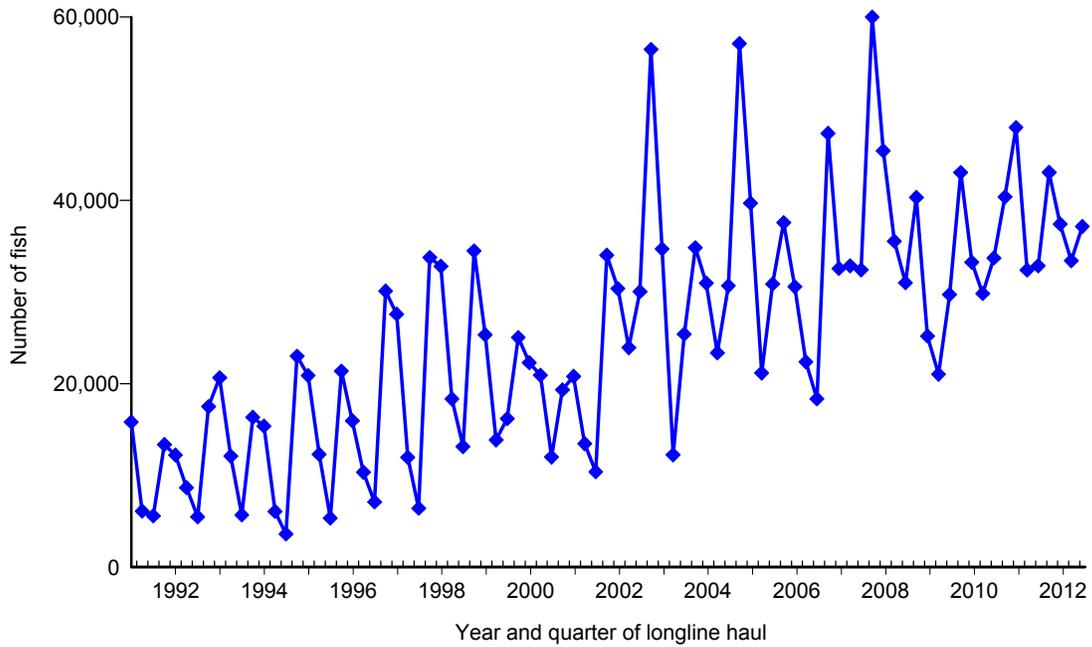


Figure 4. Quarterly catch of bigeye tuna by longline vessels based and landing in Hawaii, 1991-2012. [PIFSC IMS, Longline Logbook Data, 11/12/2012 3:03:23PM]

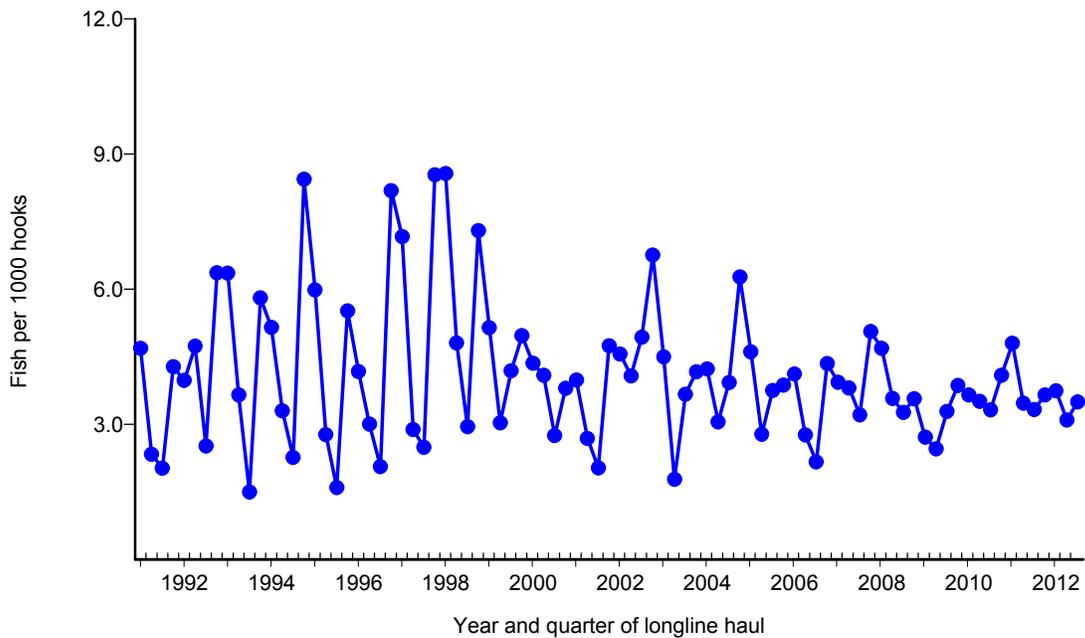


Figure 5. Quarterly CPUE of bigeye tuna (fish per 1000 hooks) on tuna trips by longline vessels based and landing in Hawaii, 1991-2012. [PIFSC IMS, Longline Logbook Data, 11/12/2012 3:03:23PM]

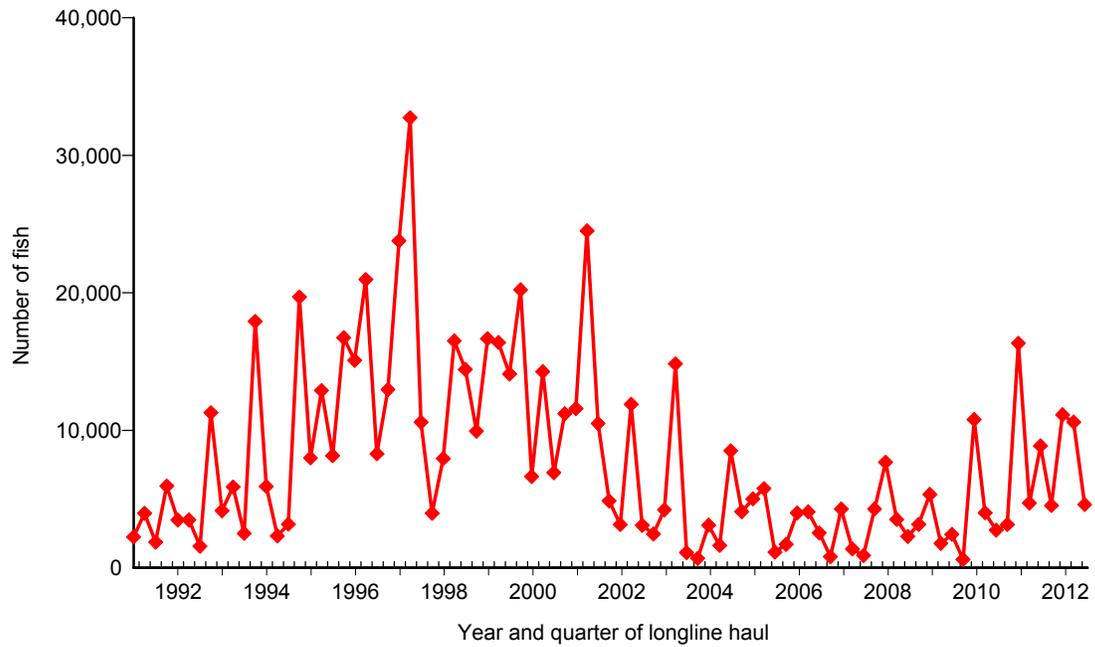


Figure 6. Quarterly catch of albacore by longline vessels based and landing in Hawaii, 1991-2012. [PIFSC IMS, Longline Logbook Data, 11/12/2012 3:03:49PM]

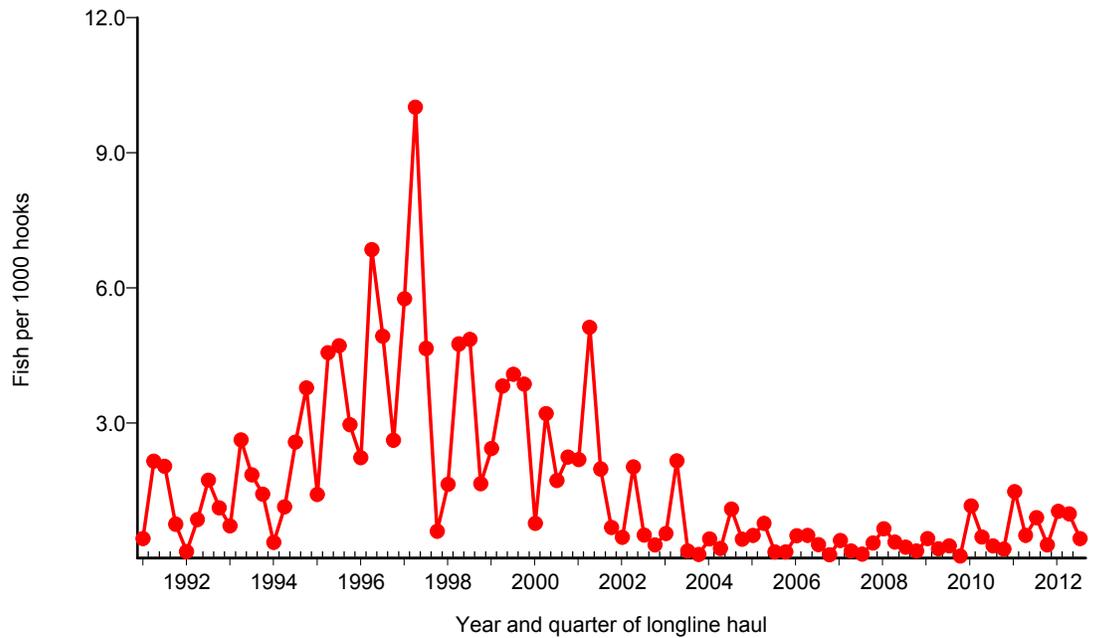


Figure 7. Quarterly CPUE of albacore (fish per 1000 hooks) on tuna trips by longline vessels based and landing in Hawaii, 1991-2012. [PIFSC IMS, Longline Logbook Data, 11/12/2012 3:03:49PM]

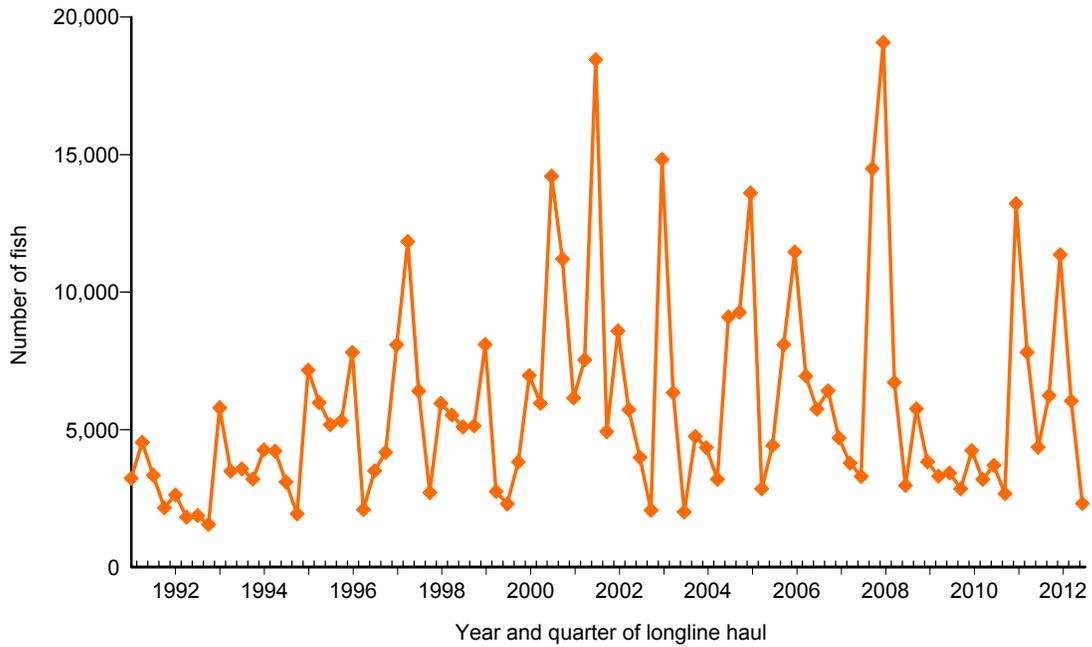


Figure 8. Quarterly catch of yellowfin tuna by longline vessels based and landing in Hawaii, 1991-2012. [PIFSC IMS, Longline Logbook Data, 11/12/2012 3:04:14PM]

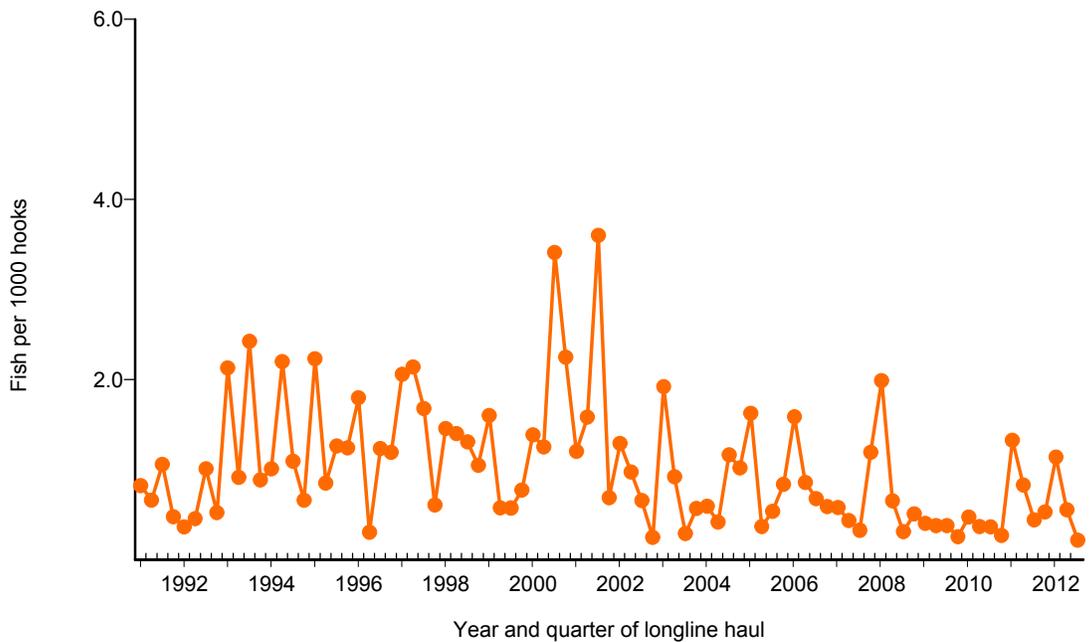


Figure 9. Quarterly CPUE of yellowfin tuna (fish per 1000 hooks) on tuna trips by longline vessels based and landing in Hawaii, 1991-2012. [PIFSC IMS, Longline Logbook Data, 11/12/2012 3:04:14PM]

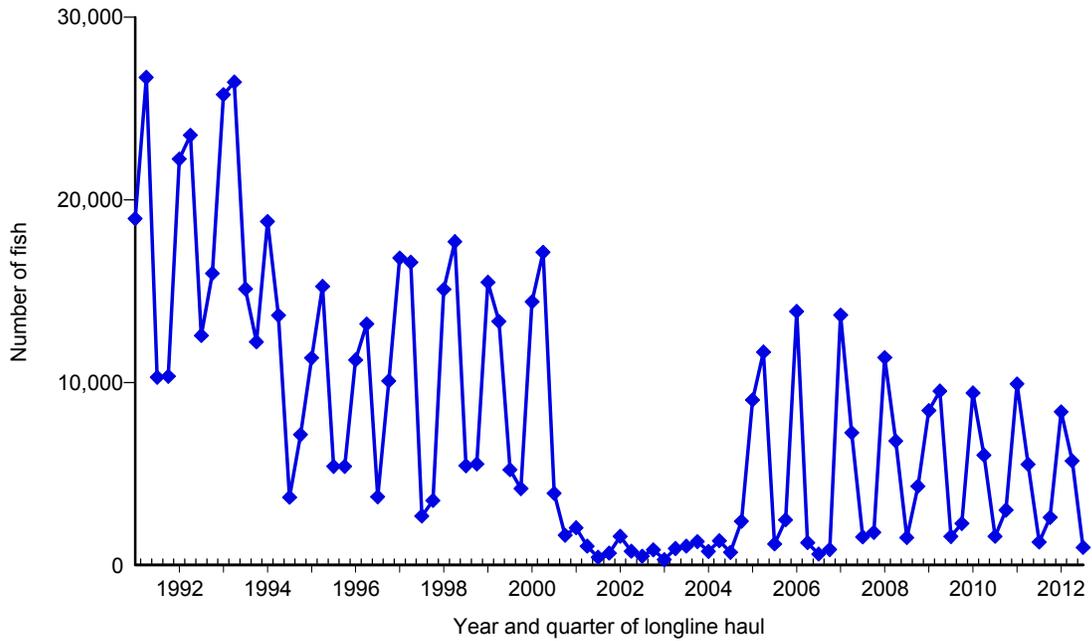


Figure 10. Quarterly catch of swordfish by longline vessels based and landing in Hawaii, 1991-2012. [PIFSC IMS, Longline Logbook Data, 11/12/2012 3:04:40PM]

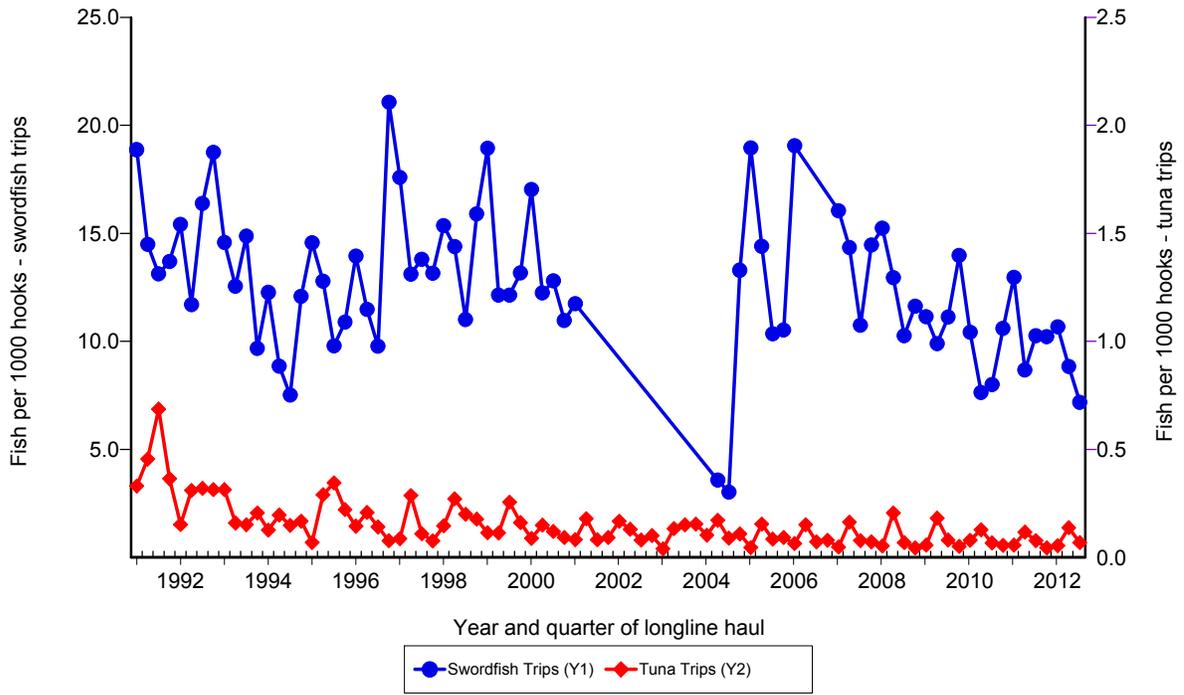


Figure 11. Quarterly CPUE of swordfish (fish per 1000 hooks) on swordfish trips and tuna trips by longline vessels based and landing in Hawaii, 1991-2012. [PIFSC IMS, Longline Logbook Data, 11/12/2012 3:04:40PM]

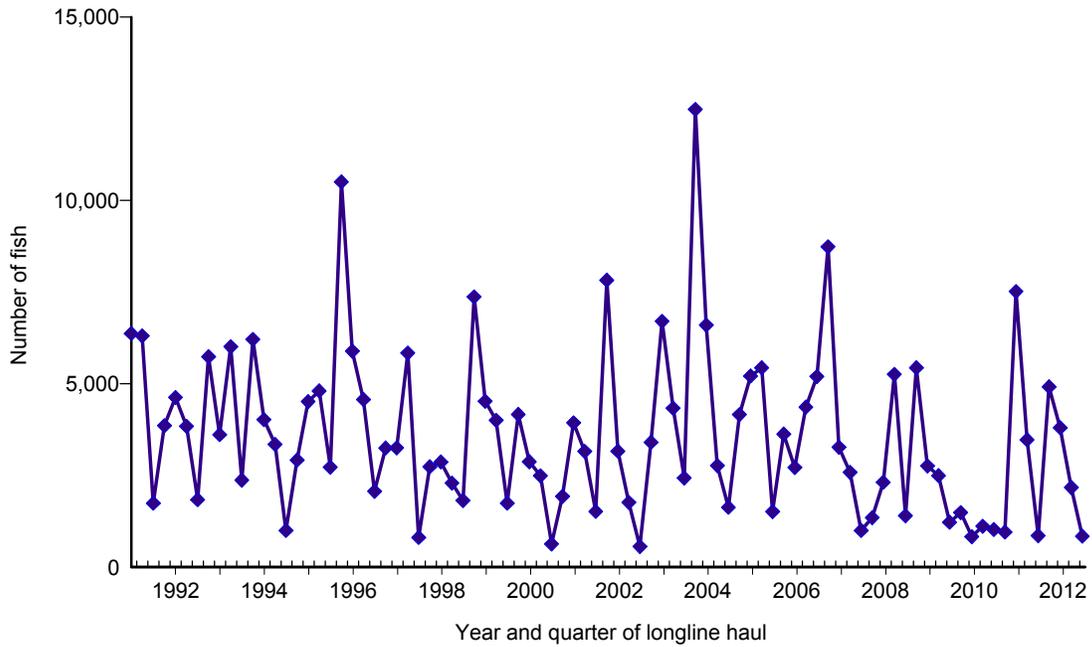


Figure 12. Quarterly catch of striped marlin by longline vessels based and landing in Hawaii, 1991-2012. [PIFSC IMS, Longline Logbook Data, 11/12/2012 3:05:05PM]

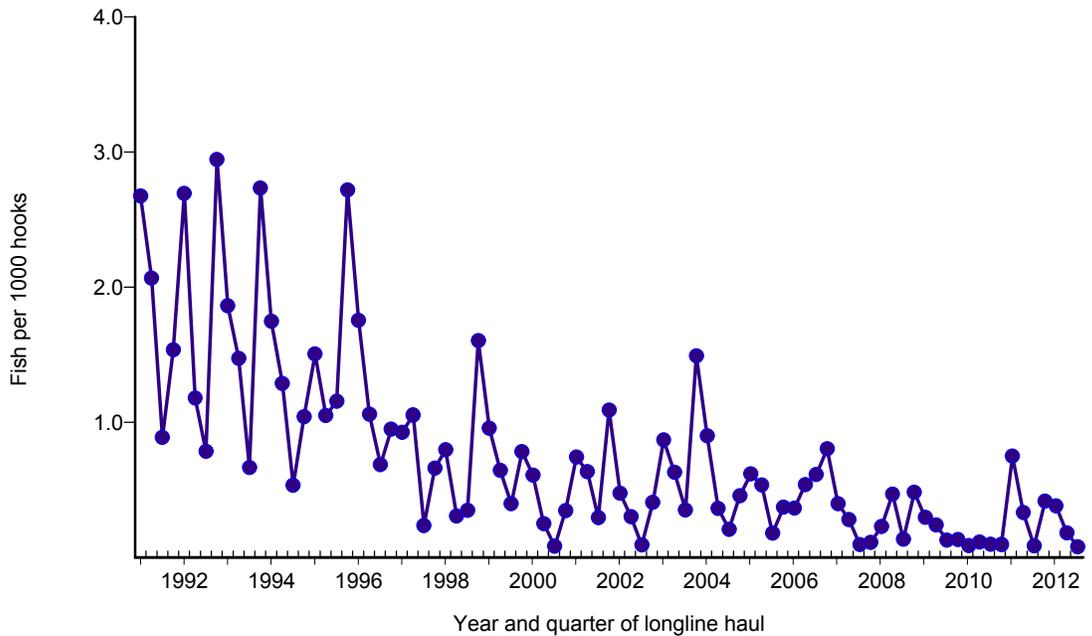


Figure 13. Quarterly CPUE of striped marlin (fish per 1000 hooks) on tuna trips by longline vessels based and landing in Hawaii, 1991-2012. [PIFSC IMS, Longline Logbook Data, 11/12/2012 3:05:05PM]

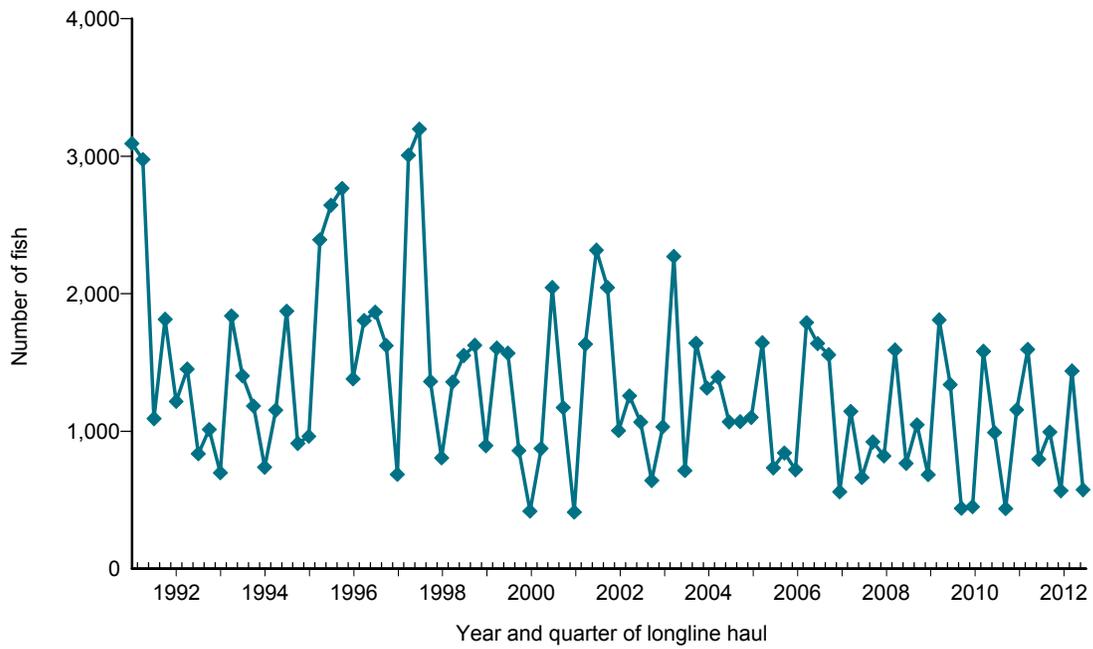


Figure 14. Quarterly catch of blue marlin by longline vessels based and landing in Hawaii, 1991-2012. [PIFSC IMS, Longline Logbook Data, 11/12/2012 3:05:31PM]

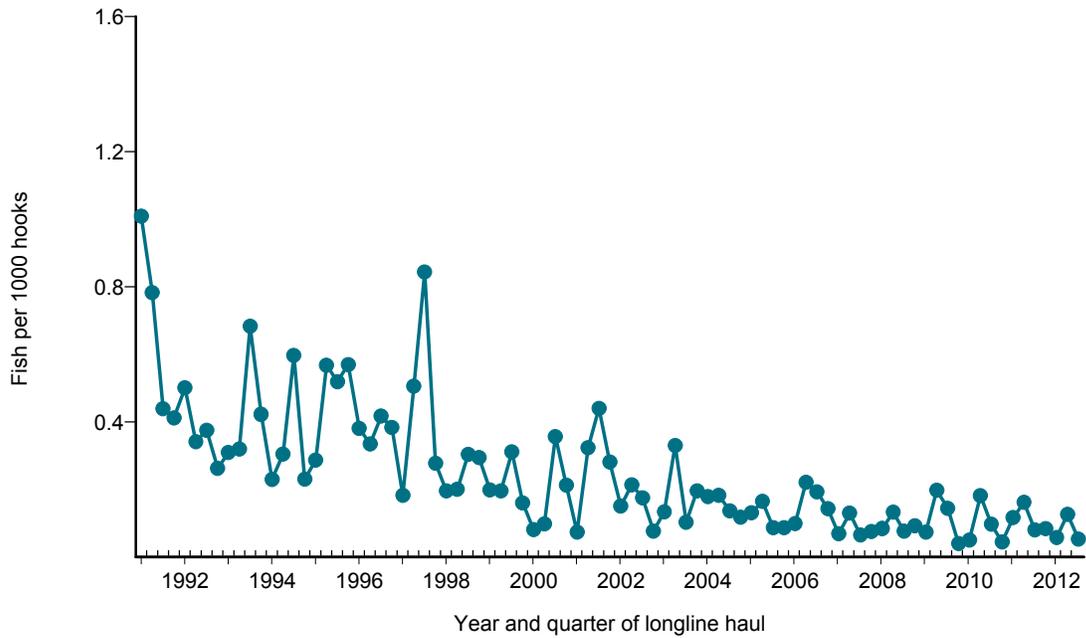


Figure 15. Quarterly CPUE of blue marlin (fish per 1000 hooks) on tuna trips by longline vessels based and landing in Hawaii, 1991-2012. [PIFSC IMS, Longline Logbook Data, 11/12/2012 3:05:31PM]

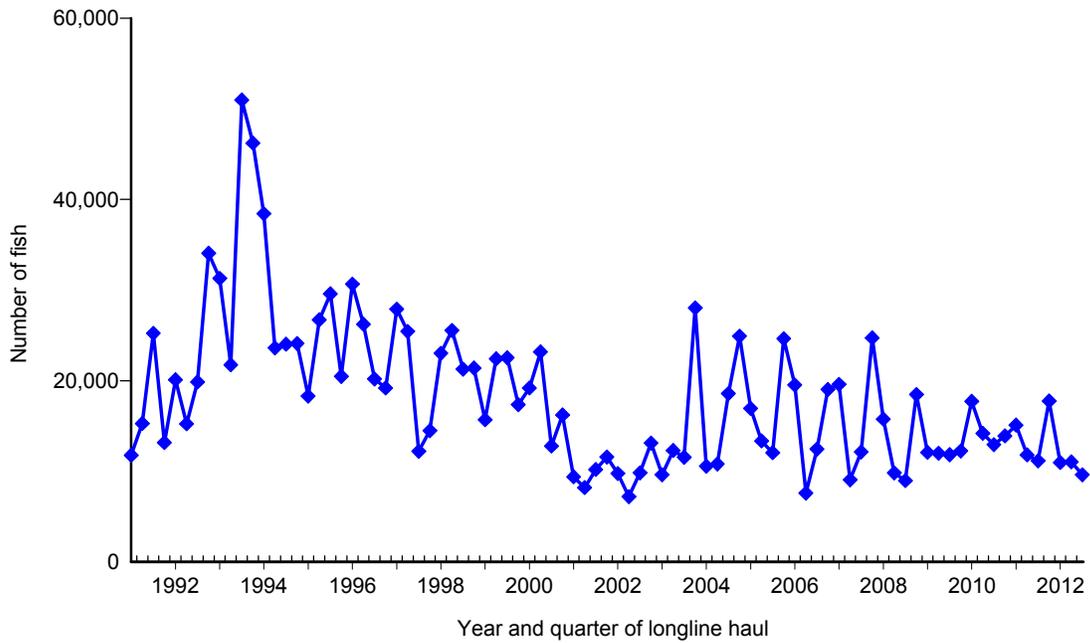


Figure 16. Quarterly catch of blue shark by longline vessels based and landing in Hawaii, 1991-2012. [PIFSC IMS, Longline Logbook Data, 11/12/2012 3:05:56PM]

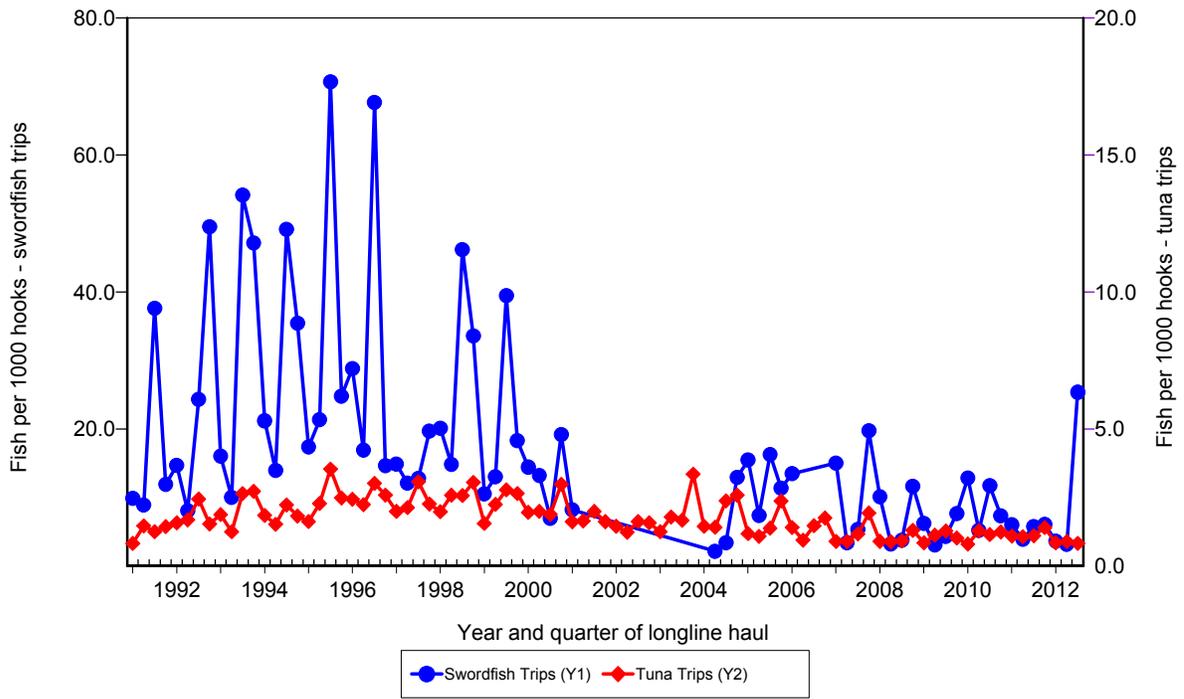


Figure 17. Quarterly CPUE of blue shark (fish per 1000 hooks) on swordfish trips and tuna trips by longline vessels based and landing in Hawaii, 1991-2012. [PIFSC IMS, Longline Logbook Data, 11/12/2012 3:05:56PM]

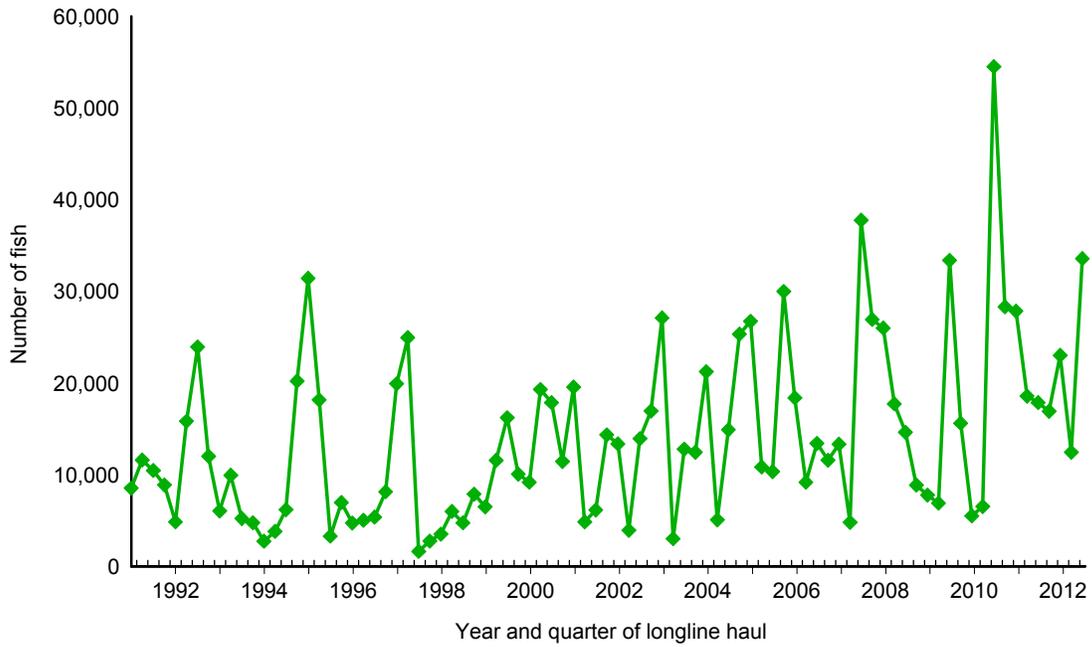


Figure 18. Quarterly catch of mahimahi by longline vessels based and landing in Hawaii, 1991-2012. [PIFSC IMS, Longline Logbook Data, 11/12/2012 3:06:22PM]

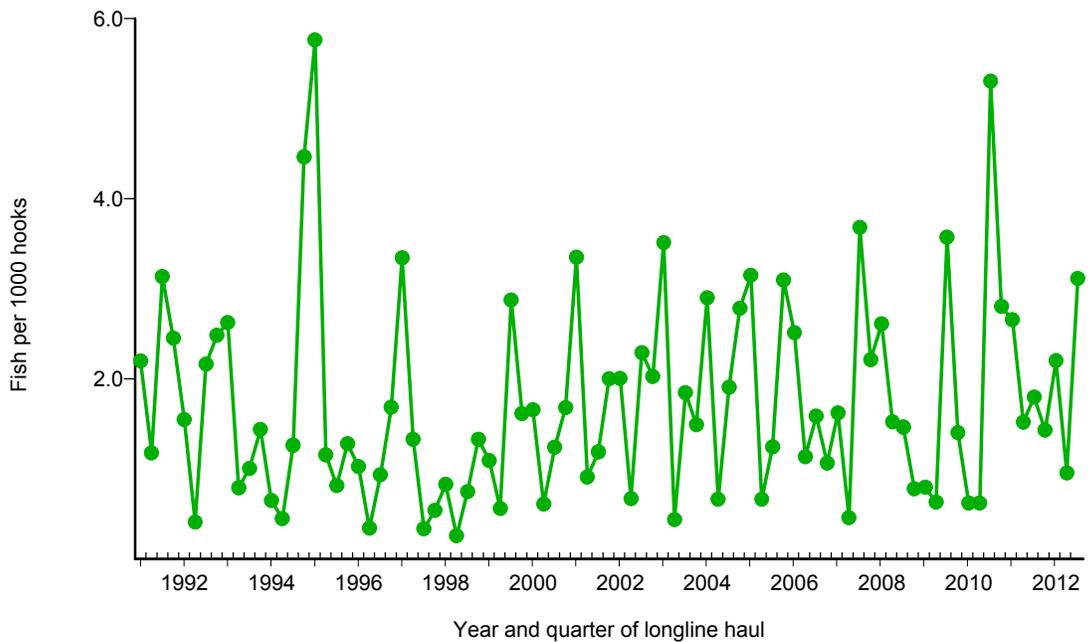


Figure 19. Quarterly CPUE of mahimahi (fish per 1000 hooks) on tuna trips by longline vessels based and landing in Hawaii, 1991-2012. [PIFSC IMS, Longline Logbook Data, 11/12/2012 3:06:22PM]

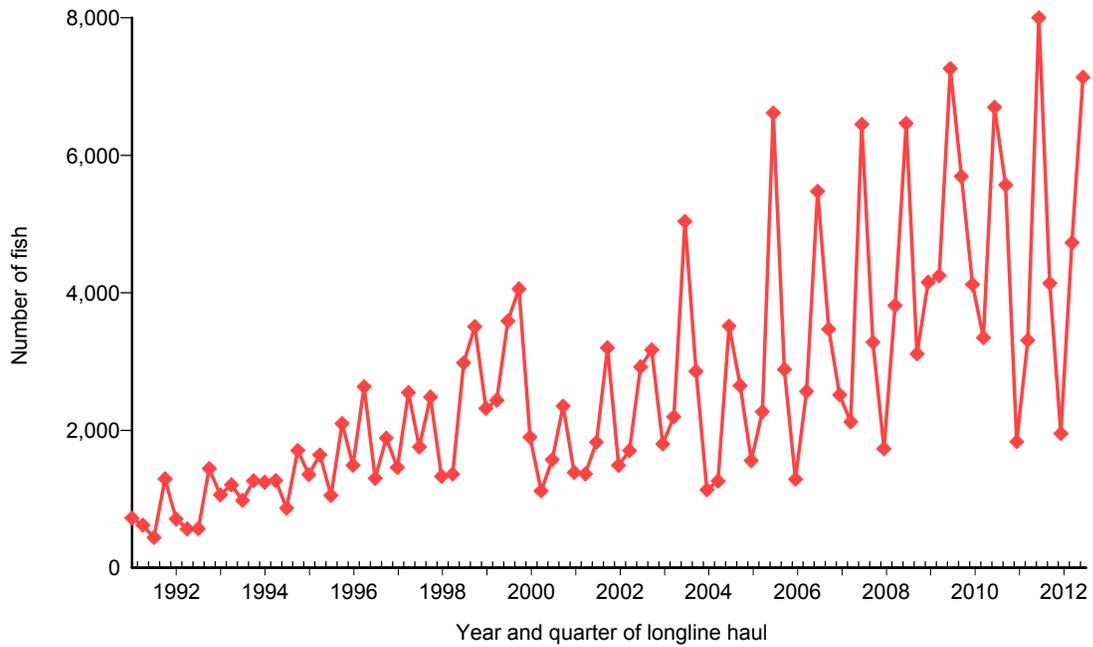


Figure 20. Quarterly catch of moonfish by longline vessels based and landing in Hawaii, 1991-2012. [PIFSC IMS, Longline Logbook Data, 11/12/2012 3:06:48PM]

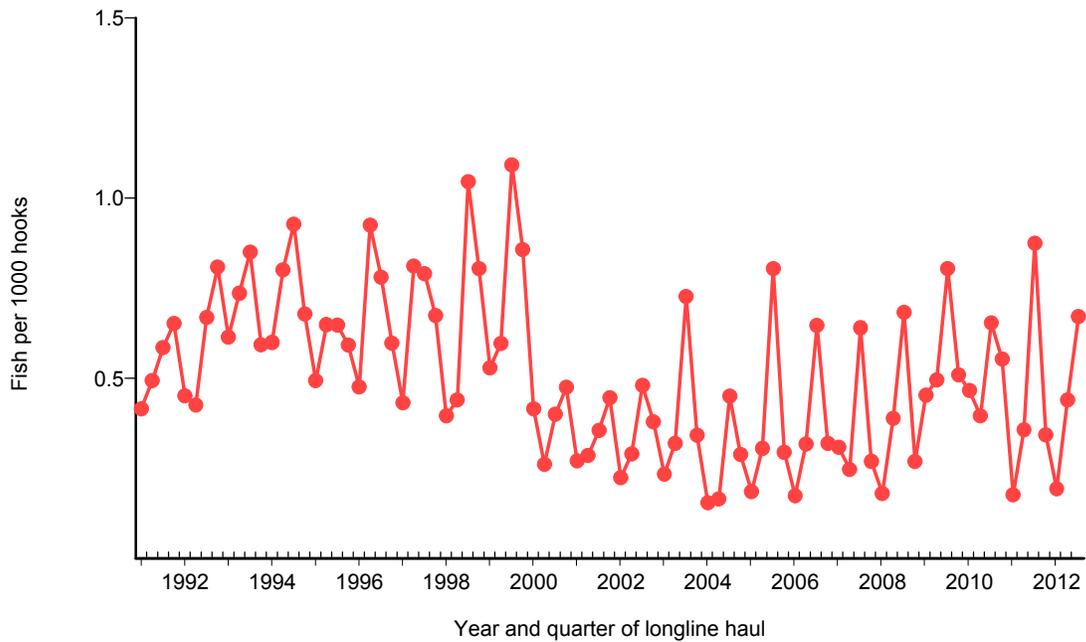


Figure 21. Quarterly CPUE of moonfish (fish per 1000 hooks) on tuna trips by longline vessels based and landing in Hawaii, 1991-2012. [PIFSC IMS, Longline Logbook Data, 11/12/2012 3:06:48PM]

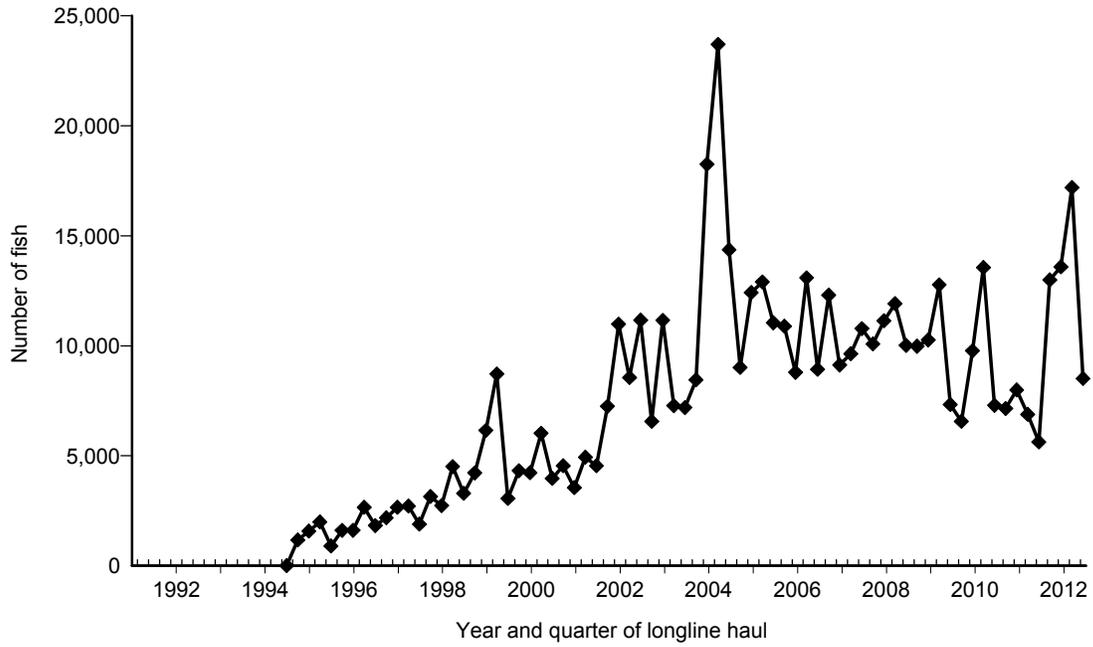


Figure 22. Quarterly catch of pomfret by longline vessels based and landing in Hawaii, 1991-2012. [PIFSC IMS, Longline Logbook Data, 11/12/2012 3:07:13PM]

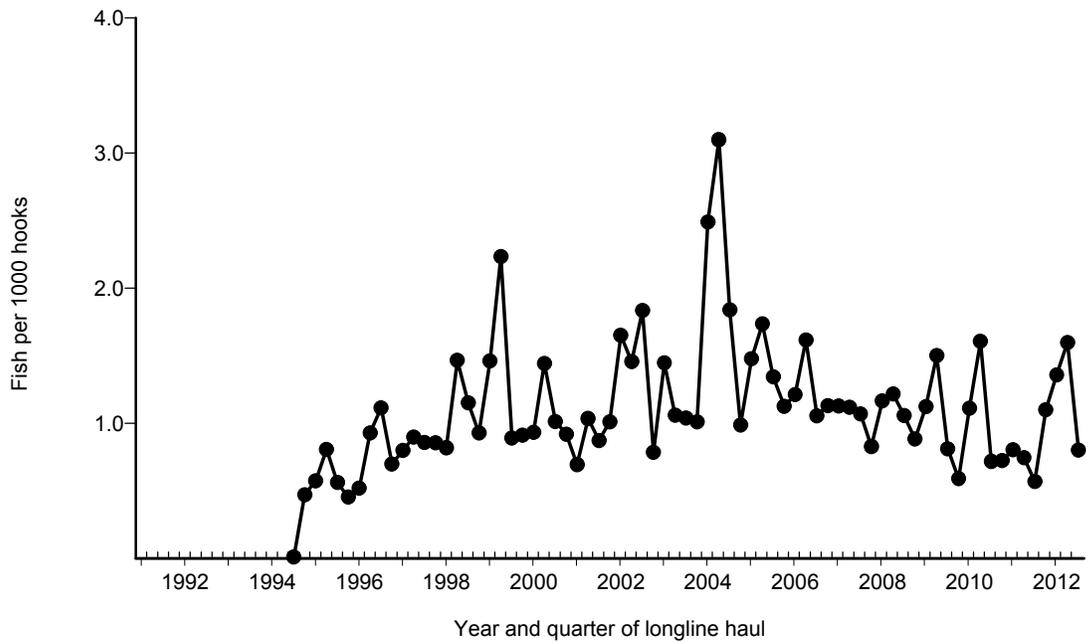


Figure 23. Quarterly CPUE of pomfret (fish per 1000 hooks) on tuna trips by longline vessels based and landing in Hawaii, 1991-2012. [PIFSC IMS, Longline Logbook Data, 11/12/2012 3:07:13PM]

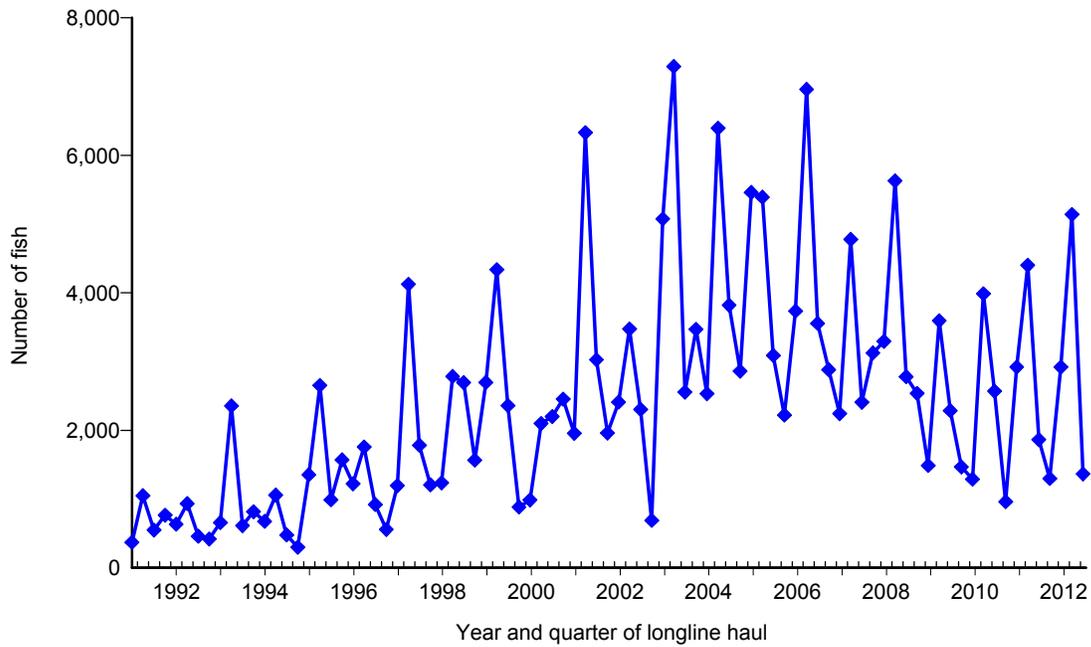


Figure 24. Quarterly catch of wahoo by longline vessels based and landing in Hawaii, 1991-2012. [PIFSC IMS, Longline Logbook Data, 11/12/2012 3:07:40PM]

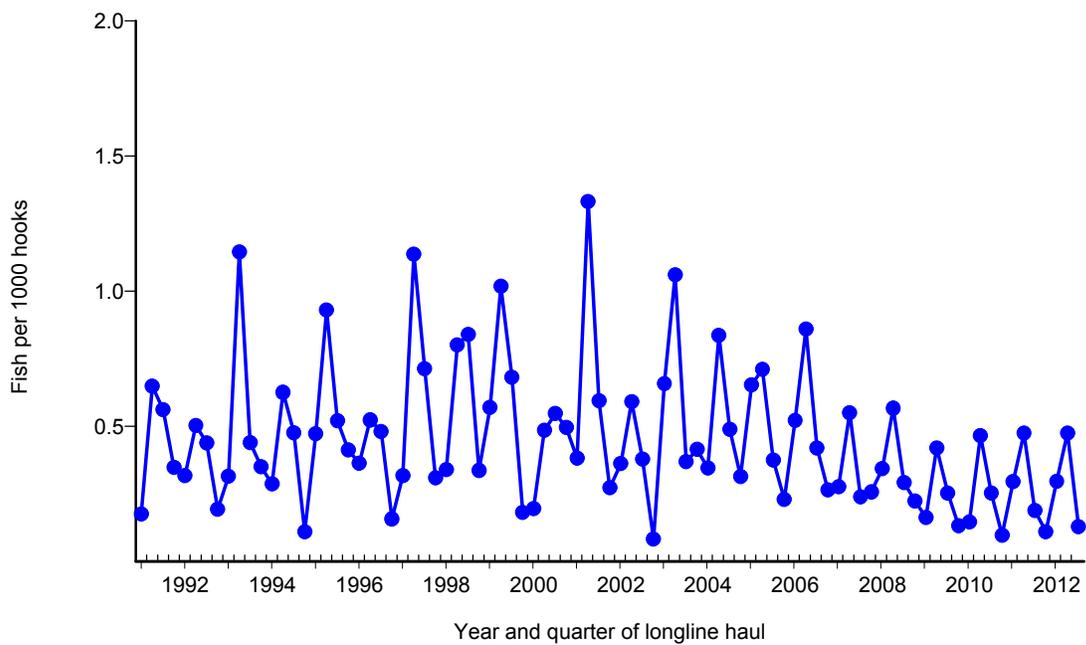


Figure 25. Quarterly CPUE of wahoo (fish per 1000 hooks) on tuna trips by longline vessels based and landing in Hawaii, 1991-2012. [PIFSC IMS, Longline Logbook Data, 11/12/2012 3:07:40PM]