

The Hawaii-based Longline Logbook Summary Report January–March 2009¹

Pacific Islands Fisheries Science Center
Fisheries Monitoring and Socioeconomics Division

This report summarizes data on fish catch and fishing effort by Hawaii-based longline vessels during the first quarter of 2009 (Q1-2009). 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 2009 and most, but not all, Q1-2009 data from trips that began late in the first quarter and continued into the second quarter of 2009. Therefore, the Q1-2009 summary statistics reported here are preliminary.

During Q1-2009, 122 vessels were active in the Hawaii-based fleet, 5 less than in Q1-2008 (Table 1, Fig. 1). They made 393 longline trips (50 less than in Q1-2008), including 345 using deep-set gear to target tuna (52 less than in Q1-2008) and 48 using shallow-set gear to target swordfish (2 more than in Q1-2008; Fig. 2). During Q1-2009, the fleet deployed 9.7 million hooks, 0.5 million less than in Q1-2008 (Fig. 3). They fished mainly outside the U.S. Exclusive Economic Zone (EEZ) (59% of the total hooks set), followed by EEZ waters of the main Hawaiian Islands (MHI) (24%), the Northwestern Hawaiian Islands (NWHI) (14%), and 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 Q1-2009, the Hawaii longline fleet caught 25,089 bigeye tuna, 45% fewer than in Q1-2008 (Fig. 4). Most of the bigeye (58%) were caught outside the U.S. EEZ, with 22% caught in the MHI EEZ, 16% in the NWHI EEZ, and 4% in the PRIA EEZ. The bigeye tuna catch-per-unit-of-effort (CPUE) on tuna-targeted trips was a first quarter record low 2.7 fish per 1000 hooks, far below the CPUE of 4.7 in Q1-2008 (Fig. 5). The albacore catch and CPUE on tuna-targeted trips in Q1-2009 were 5,321 fish and 0.43 fish per 1000 hooks, respectively (Figs. 6-7). The yellowfin tuna catch and CPUE on tuna-targeted trips in Q1-2009 were 3,809 fish and 0.40 fish per 1000 hooks, respectively (Figs. 8-9).

The Q1-2009 swordfish catch was 8,176 fish, 28% lower than in Q1-2008 (Fig. 10). Swordfish CPUE on shallow-set swordfish-targeted trips was 11.2 fish per 1000 hooks, a record low for the first quarter and 4.0 fish per 1000 hooks below Q1-2008 (Fig. 11).

The Q1-2009 striped marlin catch (2,734 fish) and CPUE on tuna-targeted trips (0.29 fish per 1000 hooks) were both slightly higher compared to Q1-2008 (Figs. 12-13). Conversely, the Q1-2009 blue marlin catch (681 fish) and CPUE on tuna-targeted trips (0.07 fish per 1000 hooks) were slightly lower than in Q1-2008 (Figs. 14-15).

¹ PIFSC Data Report DR-09-005
Issued 29 May 2009

The fleet caught 15,002 sharks in Q1-2009, of which 654 (4%) were kept. Blue shark comprised 80% of the total shark catch (11,916 fish) (Fig. 16). Blue shark CPUE on shallow-set swordfish-targeted trips was 6.3 fish per 1000 hooks (Fig. 17), a record low for the first quarter.

In Q1-2009, the Hawaii longline catch of other key pelagic species included 7,730 mahimahi (Fig. 18) with a CPUE of 0.80 fish per 1000 hooks on tuna-targeted trips (Fig. 19); a first quarter record high 4,147 moonfish (Fig. 20) with a CPUE of 0.45 fish per 1000 hooks on tuna-targeted trips (Fig. 21); 10,253 pomfret (Fig. 22) with a CPUE of 1.13 fish per 1000 hooks on tuna-targeted trips (Fig. 23); and 1,472 wahoo (Fig. 24) with a CPUE of 0.16 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. Q1-2009 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. Q1-2009 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 for NMFS Western Pacific Daily Longline Fishing Log records. [PIFSC Information Management System, Longline Logbook Data, 5/21/2009 2:58:04PM].

Report Coverage					Number of vessels active	122
Time Period	1st Quarter 2009				Number of trips	393
Fishing Area	All Areas				Number of sets	4,738
Trip Types	All Trip Types				Number of hooks set	9,749,465

Pelagic Management Unit Species (PMUS)	Number Caught	Number Kept	Number Released	CPUE - Number Caught per 1000 hooks
Billfishes				
Blue marlin	681	679	2	0.07
Striped marlin	2,734	2,695	39	0.28
Shortbill spearfish	2,801	2,768	33	0.29
Swordfish	8,176	7,594	582	0.84
Other billfishes	70	65	5	0.01
Total	14,462	13,801	661	1.48
Sharks				
Blue shark	11,916	110	11,806	1.22
Mako sharks	1,347	453	894	0.14
Thresher sharks	1,525	73	1,452	0.16
Oceanic whitetip shark	83	6	77	0.01
Silky shark	20	0	20	0.00
Other sharks	111	12	99	0.01
Total	15,002	654	14,348	1.54
Tunas				
Albacore	5,321	4,970	351	0.55
Bigeye tuna	25,089	24,725	364	2.57
Yellowfin tuna	3,809	3,726	83	0.39
Bluefin tuna	0	0	0	0.00
Skipjack tuna	2,243	2,033	210	0.23
Other tunas	5	4	1	0.00
Total	36,467	35,458	1,009	3.74
Other PMUS				
Mahimahi	7,730	7,585	145	0.79
Moonfish	4,147	4,131	16	0.43
Wahoo	1,472	1,468	4	0.15
Oilfish	9,802	9,556	246	1.01
Pomfret	10,253	10,208	45	1.05
Total	33,404	32,948	456	3.43
Total PMUS	99,335	82,861	16,474	10.19
Total Non-PMUS	861	185	676	0.09
Total All Species	100,196	83,046	861	10.28

Table 2. Quarterly summary report of fishing effort and catch statistics for U.S. longline vessels landing in Hawaii as derived for NMFS Western Pacific Daily Longline Fishing Log records. [PIFSC Information Management System, Longline Logbook Data, 5/21/2009 2:58:04PM].

Report Coverage		Number of vessels active		95
Time Period	1st Quarter 2009	Number of trips		196
Fishing Area	Main Hawaiian Islands EEZ	Number of sets		1,087
Trip Types	All Trip Types	Number of hooks set		2,376,500

Pelagic Management Unit Species (PMUS)	Number Caught	Number Kept	Number Released	CPUE - Number Caught per 1000 hooks
Billfishes				
Blue marlin	101	101	0	0.04
Striped marlin	692	682	10	0.29
Shortbill spearfish	585	577	8	0.25
Swordfish	78	76	2	0.03
Other billfishes	16	11	5	0.01
Total	1,472	1,447	25	0.62
Sharks				
Blue shark	1,826	4	1,822	0.77
Mako sharks	233	129	104	0.10
Thresher sharks	147	18	129	0.06
Oceanic whitetip shark	16	0	16	0.01
Silky shark	0	0	0	0.00
Other sharks	18	2	16	0.01
Total	2,240	153	2,087	0.94
Tunas				
Albacore	201	198	3	0.08
Bigeye tuna	5,546	5,417	129	2.33
Yellowfin tuna	689	647	42	0.29
Bluefin tuna	0	0	0	0.00
Skipjack tuna	326	286	40	0.14
Other tunas	2	2	0	0.00
Total	6,764	6,550	214	2.85
Other PMUS				
Mahimahi	2,112	2,070	42	0.89
Moonfish	717	712	5	0.30
Wahoo	248	246	2	0.10
Oilfish	2,325	2,312	13	0.98
Pomfret	2,069	2,058	11	0.87
Total	7,471	7,398	73	3.14
Total PMUS	17,947	15,548	2,399	7.55
Total Non-PMUS	422	102	320	0.18
Total All Species	18,369	15,650	422	7.73

Table 3. Quarterly summary report of fishing effort and catch statistics for U.S. longline vessels landing in Hawaii as derived for NMFS Western Pacific Daily Longline Fishing Log records. [PIFSC Information Management System, Longline Logbook Data, 5/21/2009 2:58:04PM].

Report Coverage		Number of vessels active		64
Time Period	1st Quarter 2009	Number of trips		90
Fishing Area	Northwestern Hawaiian Islands EEZ	Number of sets		563
Trip Types	All Trip Types	Number of hooks set		1,328,481

Pelagic Management Unit Species (PMUS)	Number Caught	Number Kept	Number Released	CPUE - Number Caught per 1000 hooks
Billfishes				
Blue marlin	92	91	1	0.07
Striped marlin	744	738	6	0.56
Shortbill spearfish	195	195	0	0.15
Swordfish	369	328	41	0.28
Other billfishes	8	8	0	0.01
Total	1,408	1,360	48	1.06
Sharks				
Blue shark	1,496	24	1,472	1.13
Mako sharks	117	57	60	0.09
Thresher sharks	85	13	72	0.06
Oceanic whitetip shark	34	0	34	0.03
Silky shark	1	0	1	0.00
Other sharks	43	2	41	0.03
Total	1,776	96	1,680	1.34
Tunas				
Albacore	1,400	1,400	0	1.05
Bigeye tuna	4,094	4,038	56	3.08
Yellowfin tuna	942	936	6	0.71
Bluefin tuna	0	0	0	0.00
Skipjack tuna	355	286	69	0.27
Other tunas	0	0	0	0.00
Total	6,791	6,660	131	5.11
Other PMUS				
Mahimahi	388	385	3	0.29
Moonfish	385	385	0	0.29
Wahoo	138	138	0	0.10
Oilfish	1,975	1,965	10	1.49
Pomfret	1,178	1,175	3	0.89
Total	4,064	4,048	16	3.06
Total PMUS	14,039	12,164	1,875	10.57
Total Non-PMUS	15	11	4	0.01
Total All Species	14,054	12,175	15	10.58

Table 4. Quarterly summary report of fishing effort and catch statistics for U.S. longline vessels landing in Hawaii as derived for NMFS Western Pacific Daily Longline Fishing Log records. [PIFSC Information Management System, Longline Logbook Data, 5/21/2009 2:58:04PM].

Report Coverage		Number of vessels active		27
Time Period	1st Quarter 2009	Number of trips		30
Fishing Area	Pacific Remote Island Areas (PRIA) EEZ	Number of sets		130
Trip Types	All Trip Types	Number of hooks set		283,063

Pelagic Management Unit Species (PMUS)	Number Caught	Number Kept	Number Released	CPUE - Number Caught per 1000 hooks
Billfishes				
Blue marlin	68	68	0	0.24
Striped marlin	73	72	1	0.26
Shortbill spearfish	123	122	1	0.43
Swordfish	22	22	0	0.08
Other billfishes	21	21	0	0.07
Total	307	305	2	1.08
Sharks				
Blue shark	273	18	255	0.96
Mako sharks	11	3	8	0.04
Thresher sharks	37	7	30	0.13
Oceanic whitetip shark	9	2	7	0.03
Silky shark	1	0	1	0.00
Other sharks	10	3	7	0.04
Total	341	33	308	1.20
Tunas				
Albacore	348	348	0	1.23
Bigeye tuna	946	934	12	3.34
Yellowfin tuna	158	152	6	0.56
Bluefin tuna	0	0	0	0.00
Skipjack tuna	112	112	0	0.40
Other tunas	0	0	0	0.00
Total	1,564	1,546	18	5.53
Other PMUS				
Mahimahi	181	181	0	0.64
Moonfish	47	47	0	0.17
Wahoo	108	108	0	0.38
Oilfish	223	223	0	0.79
Pomfret	295	294	1	1.04
Total	854	853	1	3.02
Total PMUS	3,066	2,737	329	10.83
Total Non-PMUS	2	2	0	0.01
Total All Species	3,068	2,739	2	10.84

Table 5. Quarterly summary report of fishing effort and catch statistics for U.S. longline vessels landing in Hawaii as derived for NMFS Western Pacific Daily Longline Fishing Log records. [PIFSC Information Management System, Longline Logbook Data, 5/21/2009 2:58:04PM].

Report Coverage		Number of vessels active		104	
Time Period	1st Quarter 2009	Number of trips		265	
Fishing Area	Hawaiian Islands EEZ + PRIA EEZ	Number of sets		1,780	
Trip Types	All Trip Types	Number of hooks set		3,988,044	

Pelagic Management Unit Species (PMUS)	Number Caught	Number Kept	Number Released	CPUE - Number Caught per 1000 hooks
Billfishes				
Blue marlin	261	260	1	0.07
Striped marlin	1,509	1,492	17	0.38
Shortbill spearfish	903	894	9	0.23
Swordfish	469	426	43	0.12
Other billfishes	45	40	5	0.01
Total	3,187	3,112	75	0.80
Sharks				
Blue shark	3,595	46	3,549	0.90
Mako sharks	361	189	172	0.09
Thresher sharks	269	38	231	0.07
Oceanic whitetip shark	59	2	57	0.01
Silky shark	2	0	2	0.00
Other sharks	71	7	64	0.02
Total	4,357	282	4,075	1.09
Tunas				
Albacore	1,949	1,946	3	0.49
Bigeye tuna	10,586	10,389	197	2.65
Yellowfin tuna	1,789	1,735	54	0.45
Bluefin tuna	0	0	0	0.00
Skipjack tuna	793	684	109	0.20
Other tunas	2	2	0	0.00
Total	15,119	14,756	363	3.79
Other PMUS				
Mahimahi	2,681	2,636	45	0.67
Moonfish	1,149	1,144	5	0.29
Wahoo	494	492	2	0.12
Oilfish	4,523	4,500	23	1.13
Pomfret	3,542	3,527	15	0.89
Total	12,389	12,299	90	3.11
Total PMUS	35,052	30,449	4,603	8.79
Total Non-PMUS	439	115	324	0.11
Total All Species	35,491	30,564	439	8.90

Table 6. Quarterly summary report of fishing effort and catch statistics for U.S. longline vessels landing in Hawaii as derived for NMFS Western Pacific Daily Longline Fishing Log records. [PIFSC Information Management System, Longline Logbook Data, 5/21/2009 2:58:04PM].

Report Coverage					Number of vessels active	118
Time Period	1st Quarter 2009				Number of trips	321
Fishing Area	Outside U.S. EEZ				Number of sets	2,958
Trip Types	All Trip Types				Number of hooks set	5,761,421

Pelagic Management Unit Species (PMUS)	Number Caught	Number Kept	Number Released	CPUE - Number Caught per 1000 hooks
Billfishes				
Blue marlin	420	419	1	0.07
Striped marlin	1,225	1,203	22	0.21
Shortbill spearfish	1,898	1,874	24	0.33
Swordfish	7,707	7,168	539	1.34
Other billfishes	25	25	0	0.00
Total	11,275	10,689	586	1.96
Sharks				
Blue shark	8,321	64	8,257	1.44
Mako sharks	986	264	722	0.17
Thresher sharks	1,256	35	1,221	0.22
Oceanic whitetip shark	24	4	20	0.00
Silky shark	18	0	18	0.00
Other sharks	40	5	35	0.01
Total	10,645	372	10,273	1.85
Tunas				
Albacore	3,372	3,024	348	0.59
Bigeye tuna	14,503	14,336	167	2.52
Yellowfin tuna	2,020	1,991	29	0.35
Bluefin tuna	0	0	0	0.00
Skipjack tuna	1,450	1,349	101	0.25
Other tunas	3	2	1	0.00
Total	21,348	20,702	646	3.71
Other PMUS				
Mahimahi	5,049	4,949	100	0.88
Moonfish	2,998	2,987	11	0.52
Wahoo	978	976	2	0.17
Oilfish	5,279	5,056	223	0.92
Pomfret	6,711	6,681	30	1.16
Total	21,015	20,649	366	3.65
Total PMUS	64,283	52,412	11,871	11.16
Total Non-PMUS	422	70	352	0.07
Total All Species	64,705	52,482	422	11.23

Table 7. Quarterly summary report of fishing effort and catch statistics for U.S. longline vessels landing in Hawaii as derived for NMFS Western Pacific Daily Longline Fishing Log records. [PIFSC Information Management System, Longline Logbook Data, 5/21/2009 2:58:04PM].

Report Coverage		Number of vessels active		24
Time Period	1st Quarter 2009	Number of trips		48
Fishing Area	All Areas	Number of sets		698
Trip Types	Swordfish Targeted Trips	Number of hooks set		684,105

Pelagic Management Unit Species (PMUS)	Number Caught	Number Kept	Number Released	CPUE - Number Caught per 1000 hooks
Billfishes				
Blue marlin	13	12	1	0.02
Striped marlin	60	55	5	0.09
Shortbill spearfish	9	6	3	0.01
Swordfish	7,666	7,115	551	11.21
Other billfishes	0	0	0	0.00
Total	7,748	7,188	560	11.33
Sharks				
Blue shark	4,311	40	4,271	6.30
Mako sharks	578	65	513	0.84
Thresher sharks	11	0	11	0.02
Oceanic whitetip shark	0	0	0	0.00
Silky shark	0	0	0	0.00
Other sharks	8	0	8	0.01
Total	4,908	105	4,803	7.17
Tunas				
Albacore	1,397	1,054	343	2.04
Bigeye tuna	517	472	45	0.76
Yellowfin tuna	149	147	2	0.22
Bluefin tuna	0	0	0	0.00
Skipjack tuna	13	13	0	0.02
Other tunas	3	2	1	0.00
Total	2,079	1,688	391	3.04
Other PMUS				
Mahimahi	505	462	43	0.74
Moonfish	32	29	3	0.05
Wahoo	11	10	1	0.02
Oilfish	970	776	194	1.42
Pomfret	42	36	6	0.06
Total	1,560	1,313	247	2.28
Total PMUS	16,295	10,294	6,001	23.82
Total Non-PMUS	13	8	5	0.02
Total All Species	16,308	10,302	13	23.84

Table 8. Quarterly summary report of fishing effort and catch statistics for U.S. longline vessels landing in Hawaii as derived for NMFS Western Pacific Daily Longline Fishing Log records. [PIFSC Information Management System, Longline Logbook Data, 5/21/2009 2:58:04PM].

Report Coverage		Number of vessels active		105
Time Period	1st Quarter 2009	Number of trips		345
Fishing Area	All Areas	Number of sets		4,040
Trip Types	Tuna Targeted Trips	Number of hooks set		9,065,360

Pelagic Management Unit Species (PMUS)	Number Caught	Number Kept	Number Released	CPUE - Number Caught per 1000 hooks
Billfishes				
Blue marlin	668	667	1	0.07
Striped marlin	2,674	2,640	34	0.29
Shortbill spearfish	2,792	2,762	30	0.31
Swordfish	510	479	31	0.06
Other billfishes	70	65	5	0.01
Total	6,714	6,613	101	0.74
Sharks				
Blue shark	7,605	70	7,535	0.84
Mako sharks	769	388	381	0.08
Thresher sharks	1,514	73	1,441	0.17
Oceanic whitetip shark	83	6	77	0.01
Silky shark	20	0	20	0.00
Other sharks	103	12	91	0.01
Total	10,094	549	9,545	1.11
Tunas				
Albacore	3,924	3,916	8	0.43
Bigeye tuna	24,572	24,253	319	2.71
Yellowfin tuna	3,660	3,579	81	0.40
Bluefin tuna	0	0	0	0.00
Skipjack tuna	2,230	2,020	210	0.25
Other tunas	2	2	0	0.00
Total	34,388	33,770	618	3.79
Other PMUS				
Mahimahi	7,225	7,123	102	0.80
Moonfish	4,115	4,102	13	0.45
Wahoo	1,461	1,458	3	0.16
Oilfish	8,832	8,780	52	0.97
Pomfret	10,211	10,172	39	1.13
Total	31,844	31,635	209	3.51
Total PMUS	83,040	72,567	10,473	9.16
Total Non-PMUS	848	177	671	0.09
Total All Species	83,888	72,744	848	9.25

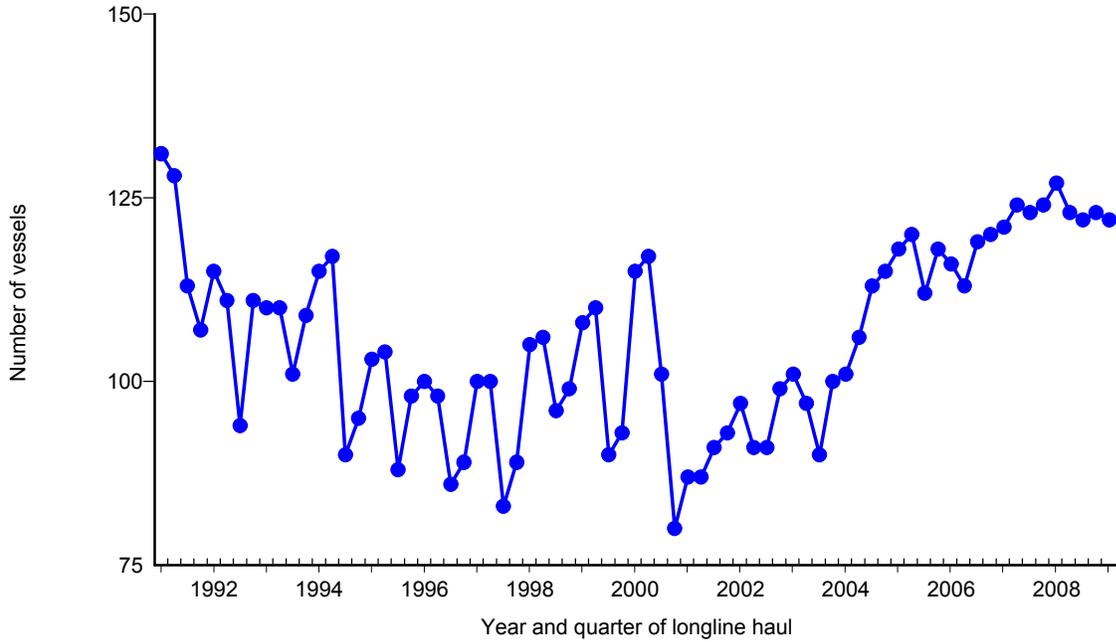


Figure 1. Number of active longline vessels based and landing in Hawaii, by quarter, . 1991-2009. [PIFSC IMS, Longline Logbook Data, 5/28/2009 7:52:31AM]

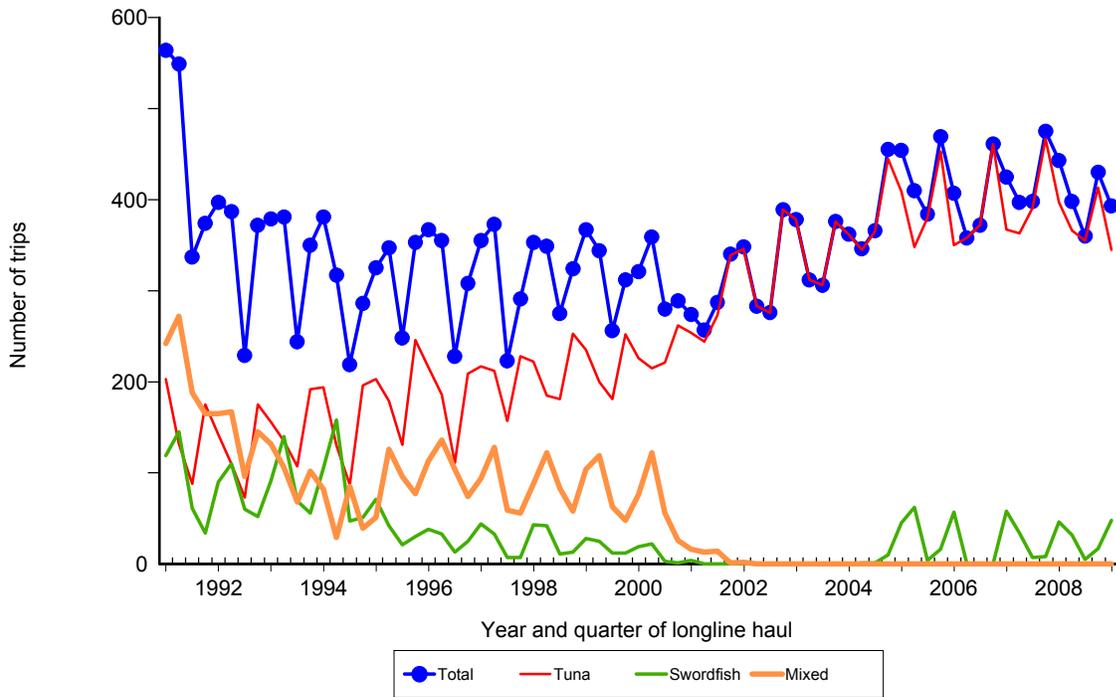


Figure 2. Number of fishing trips by longline vessels based and landing in Hawaii, by quarter and trip type, 1991-2009. [PIFSC IMS, Longline Logbook Data, 5/28/2009 7:52:31AM]

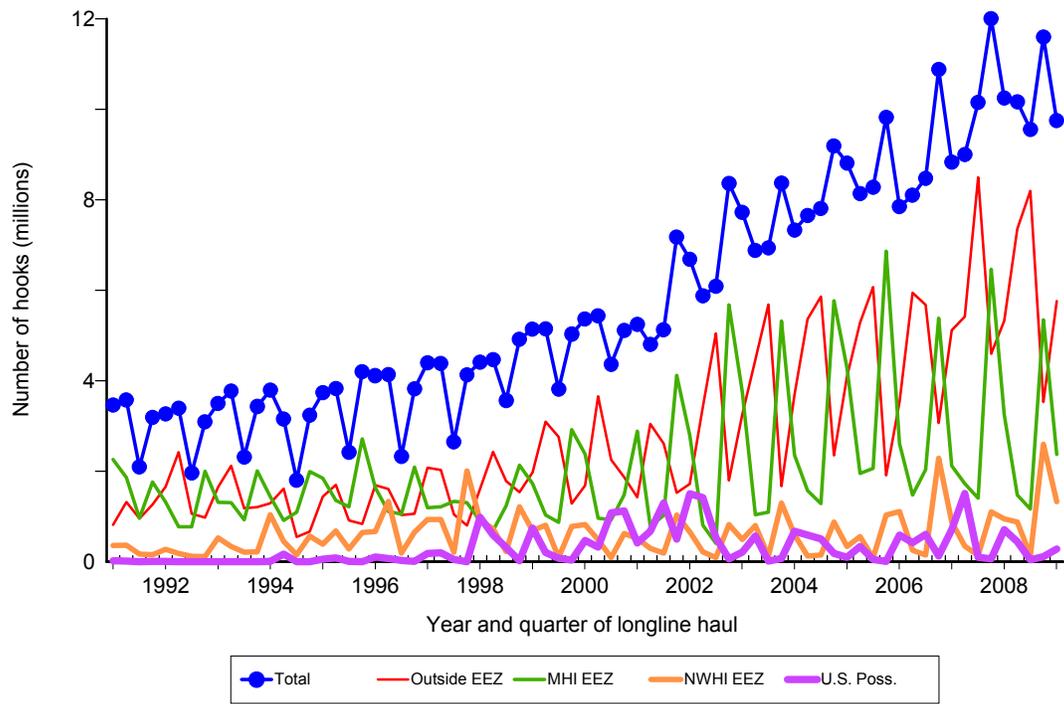


Figure 3. Number of hooks set by longline vessels based and landing in Hawaii, by quarter and fishing area, 1991-2009. [PIFSC IMS, Longline Logbook Data, 5/28/2009 7:52:33AM]

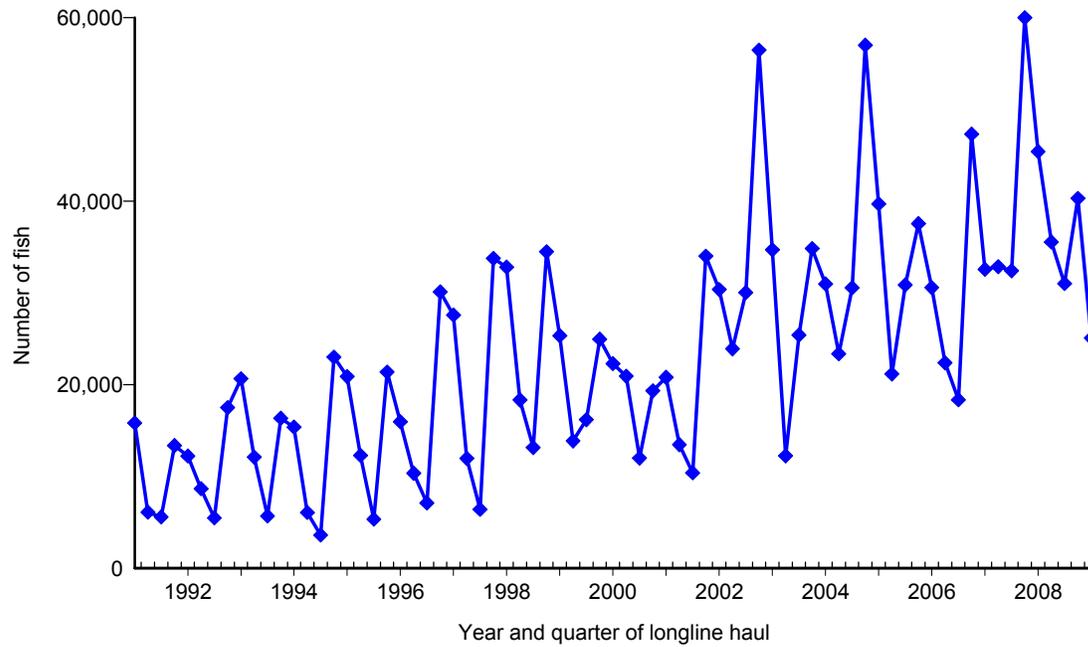


Figure 4. Quarterly catch of bigeye tuna by longline vessels based and landing in Hawaii, 1991-2009. [PIFSC IMS, Longline Logbook Data, 5/28/2009 7:52:56AM]

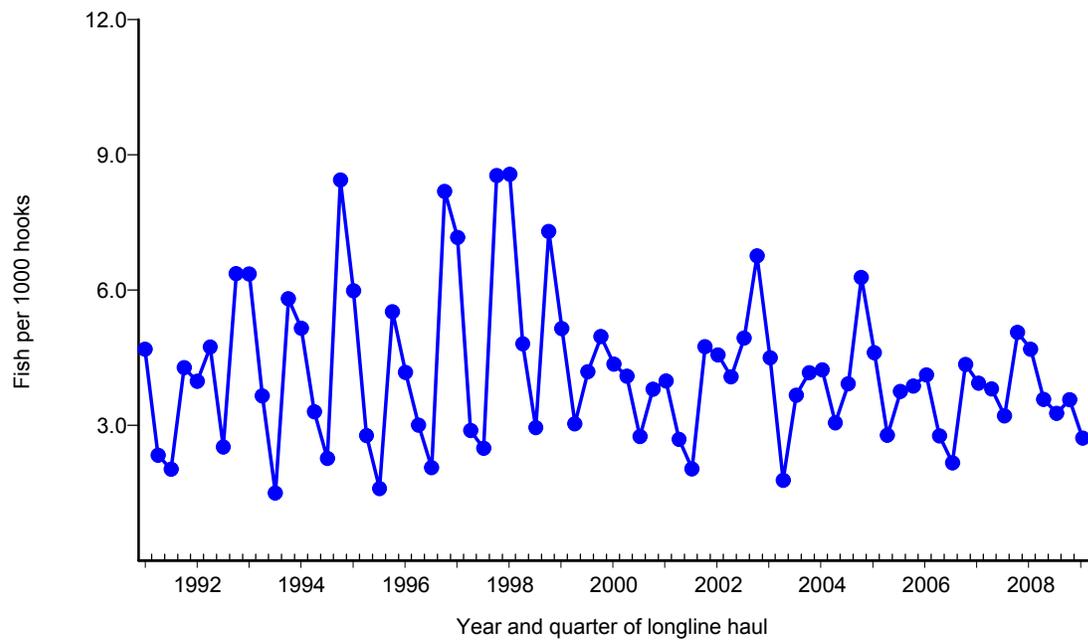


Figure 5. Quarterly CPUE of bigeye tuna (fish per 1000 hooks) on tuna trips by longline vessels based and landing in Hawaii, 1991-2009. [PIFSC IMS, Longline Logbook Data, 5/28/2009 7:52:56AM]

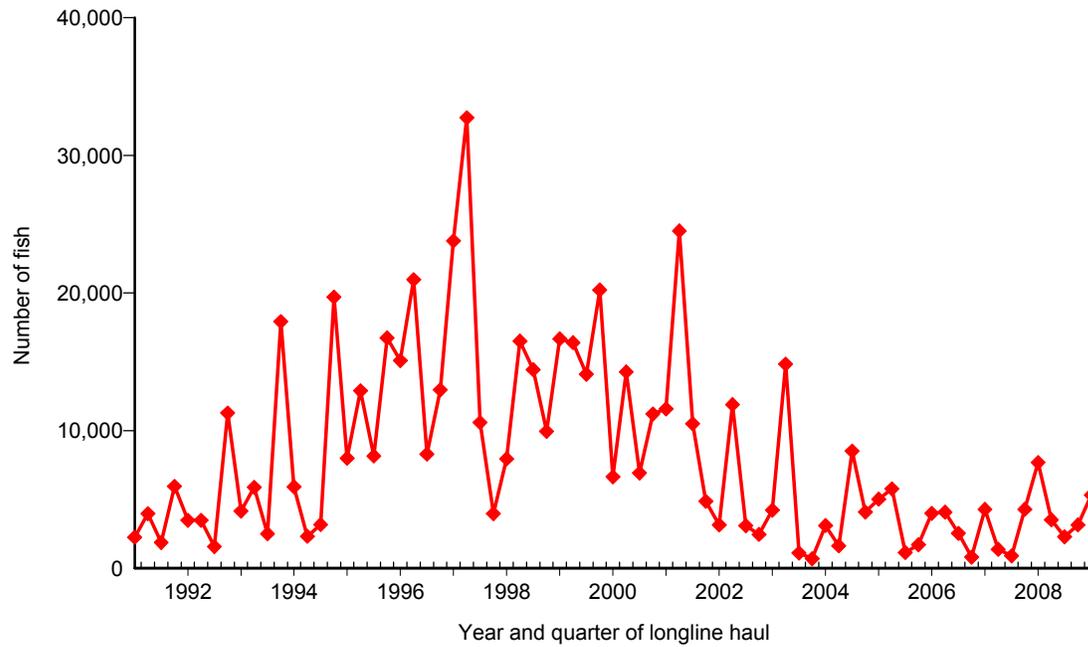


Figure 6. Quarterly catch of albacore by longline vessels based and landing in Hawaii, 1991-2009. [PIFSC IMS, Longline Logbook Data, 5/28/2009 7:54:44AM]

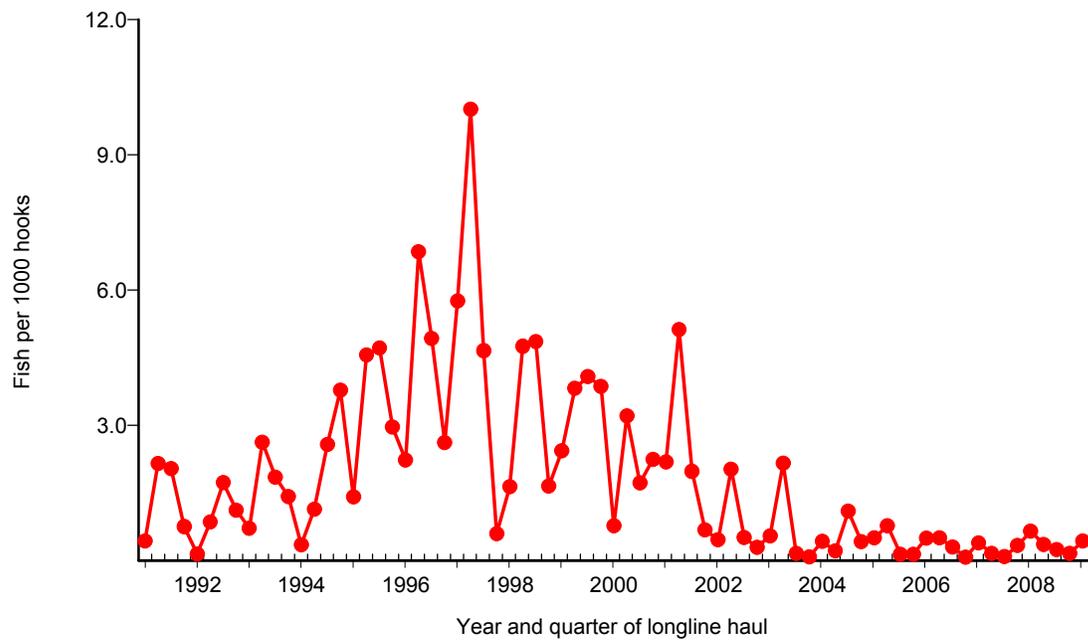


Figure 7. Quarterly CPUE of albacore (fish per 1000 hooks) on tuna trips by longline vessels based and landing in Hawaii, 1991-2009. [PIFSC IMS, Longline Logbook Data, 5/28/2009 7:54:44AM]

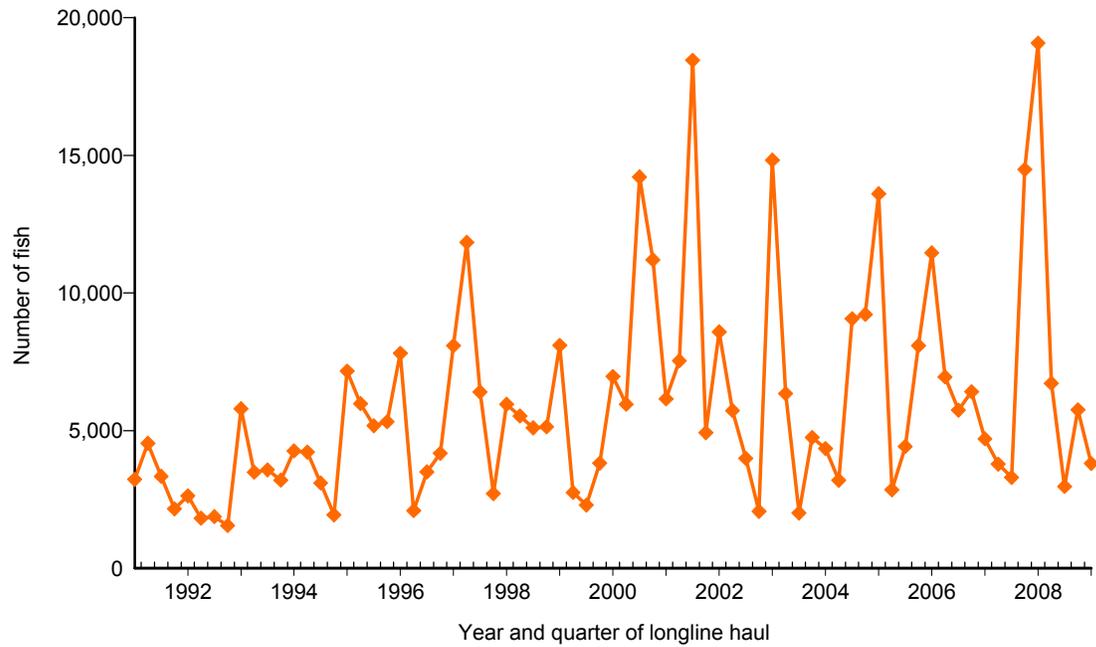


Figure 8. Quarterly catch of yellowfin tuna by longline vessels based and landing in Hawaii, 1991-2009. [PIFSC IMS, Longline Logbook Data, 5/28/2009 7:55:10AM]

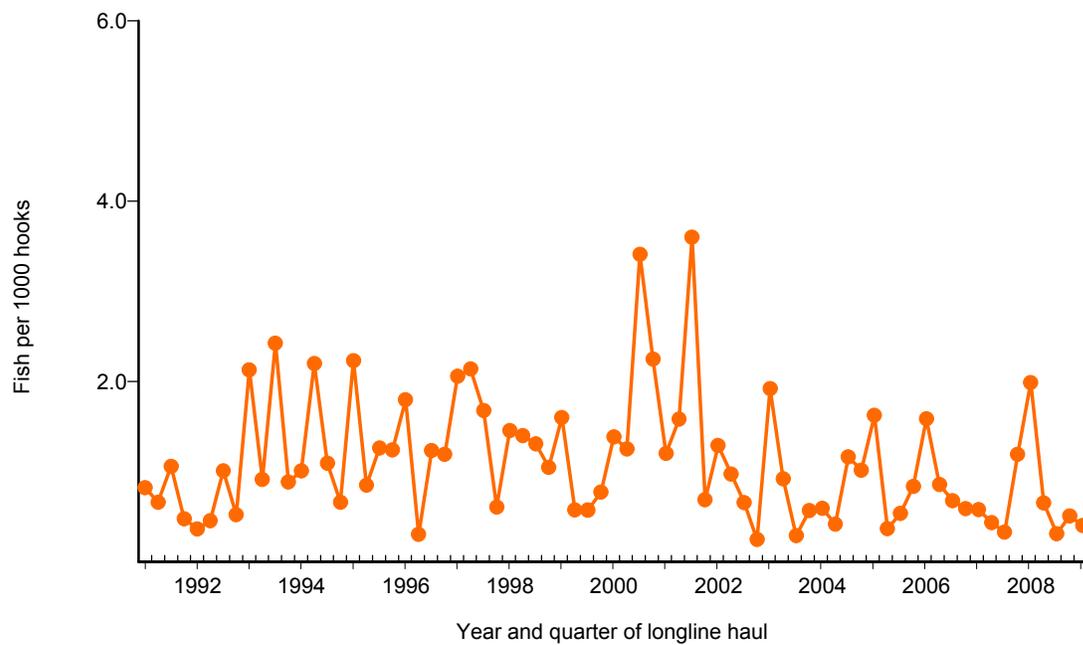


Figure 9. Quarterly CPUE of yellowfin tuna (fish per 1000 hooks) on tuna trips by longline vessels based and landing in Hawaii, 1991-2009. [PIFSC IMS, Longline Logbook Data, 5/28/2009 7:55:10AM]

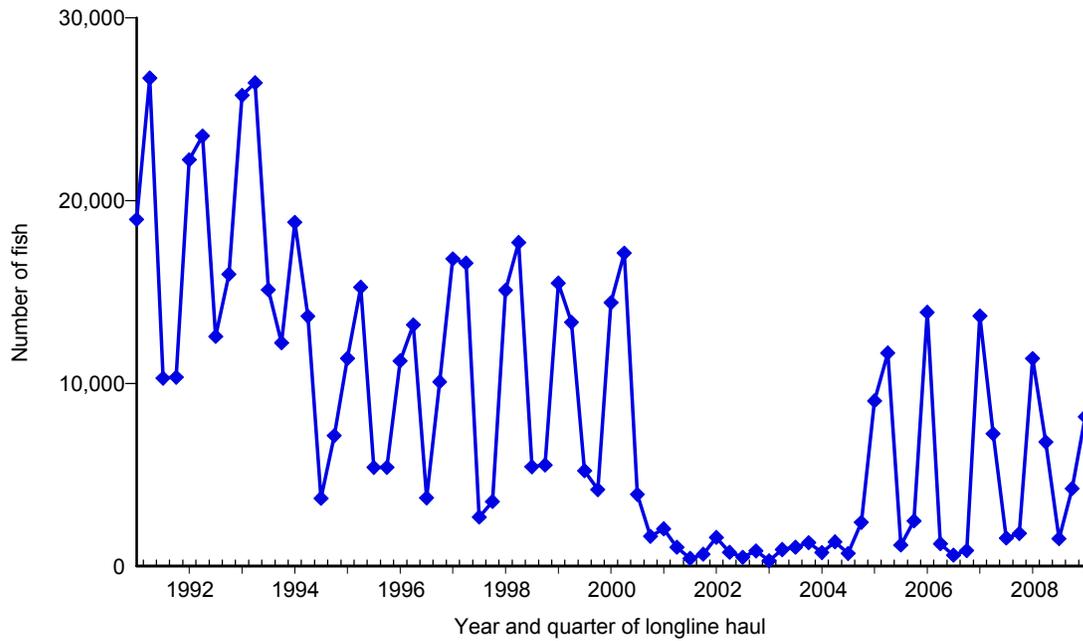


Figure 10. Quarterly catch of swordfish by longline vessels based and landing in Hawaii, 1991-2009. [PIFSC IMS, Longline Logbook Data, 5/28/2009 7:55:35AM]

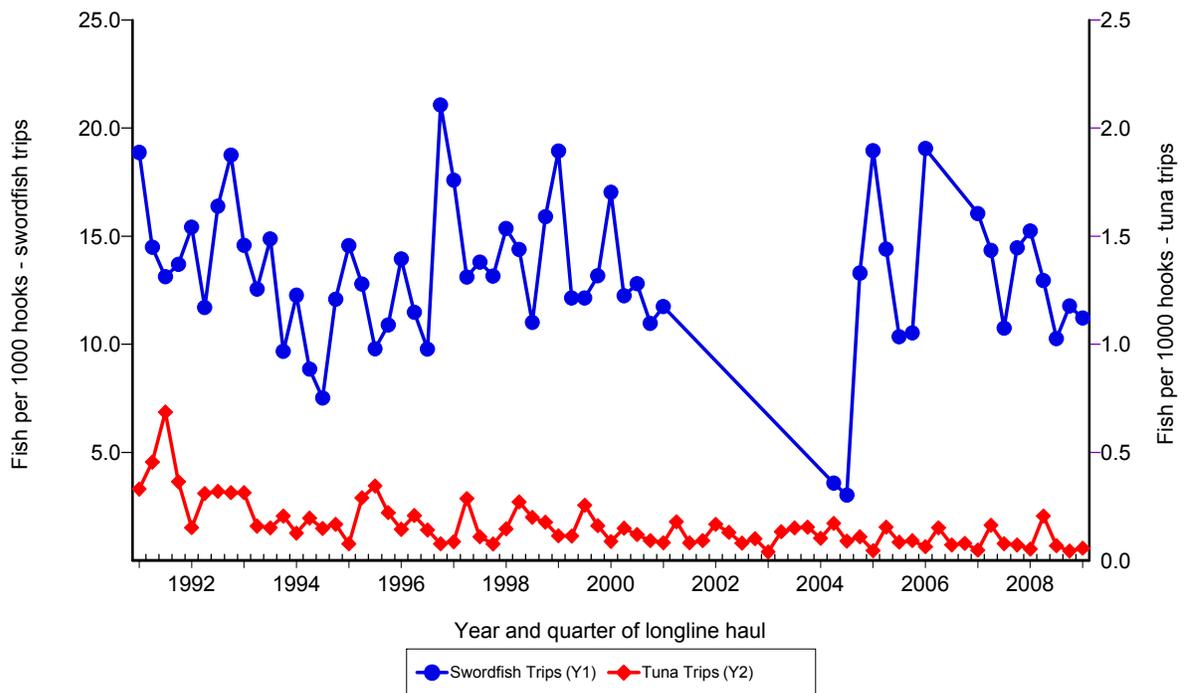


Figure 11. Quarterly CPUE of swordfish (fish per 1000 hooks) on swordfish trips and tuna trips by longline vessels based and landing in Hawaii, 1991-2009. [PIFSC IMS, Longline Logbook Data, 5/28/2009 7:55:35AM]

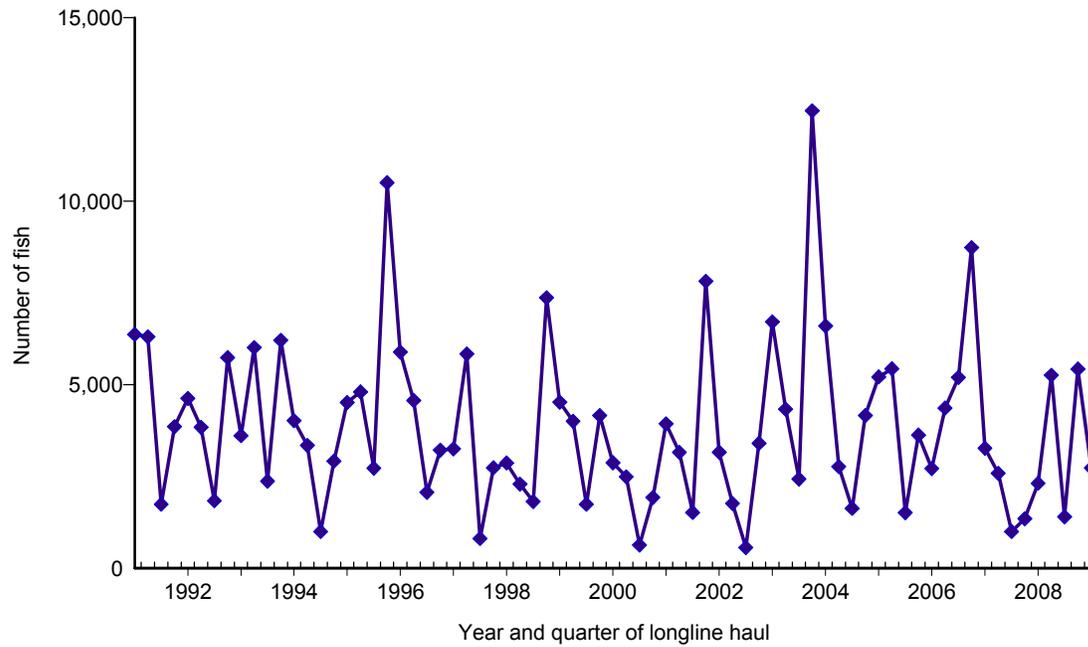


Figure 12. Quarterly catch of striped marlin by longline vessels based and landing in Hawaii, 1991-2009. [PIFSC IMS, Longline Logbook Data, 5/28/2009 7:56:01AM]

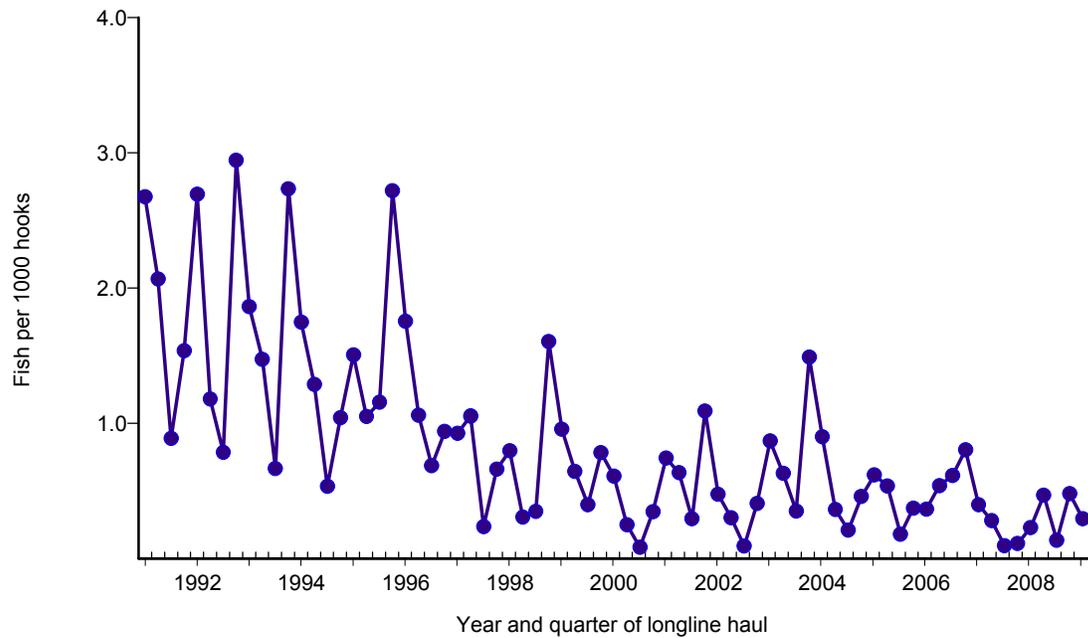


Figure 13. Quarterly CPUE of striped marlin (fish per 1000 hooks) on tuna trips by longline vessels based and landing in Hawaii, 1991-2009. [PIFSC IMS, Longline Logbook Data, 5/28/2009 7:56:01AM]

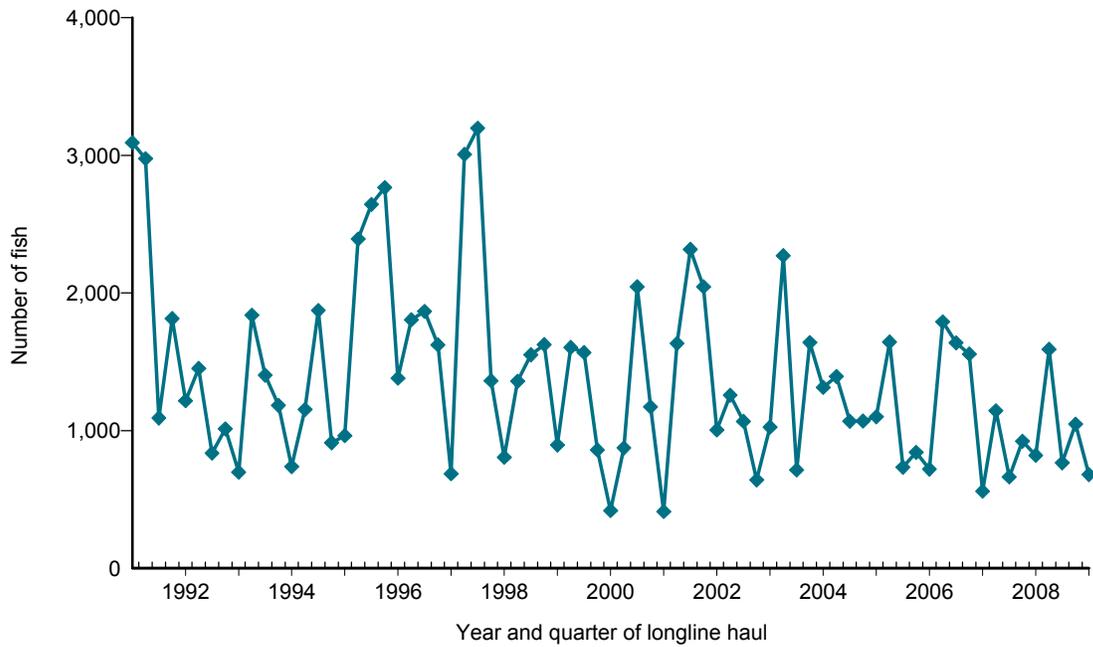


Figure 14. Quarterly catch of blue marlin by longline vessels based and landing in Hawaii, 1991-2009. [PIFSC IMS, Longline Logbook Data, 5/28/2009 7:56:26AM]

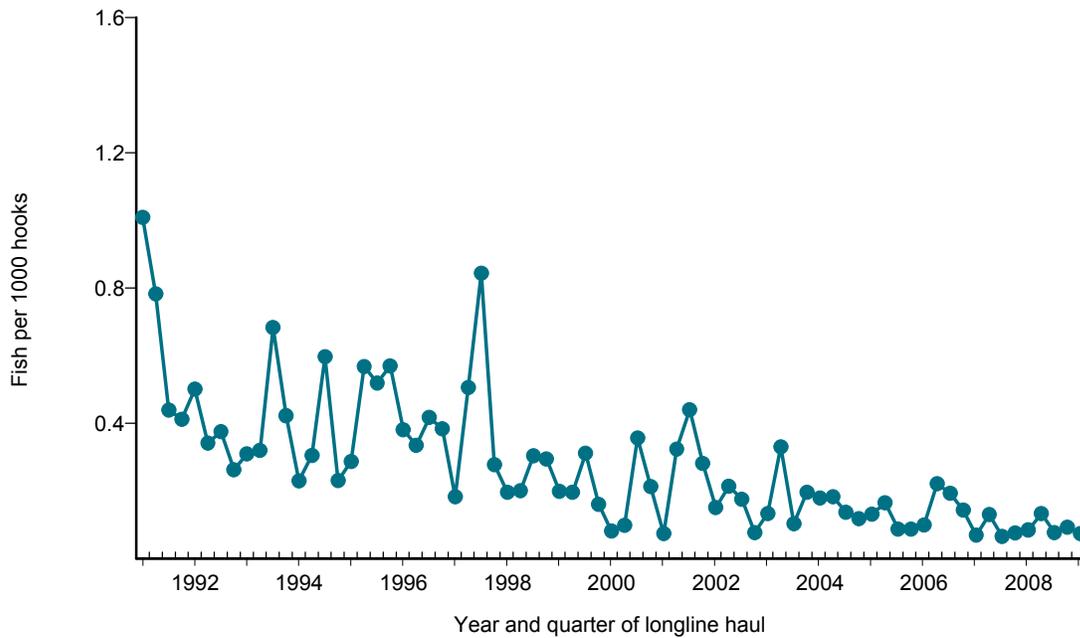


Figure 15. Quarterly CPUE of blue marlin (fish per 1000 hooks) on tuna trips by longline vessels based and landing in Hawaii, 1991-2009. [PIFSC IMS, Longline Logbook Data, 5/28/2009 7:56:26AM]

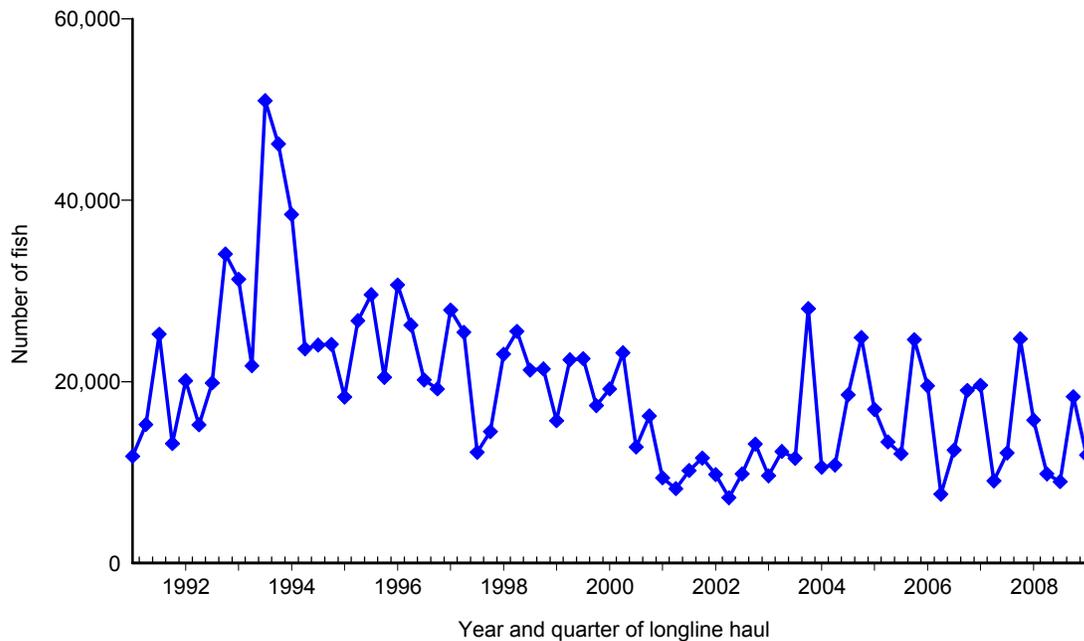


Figure 16. Quarterly catch of blue shark by longline vessels based and landing in Hawaii, 1991-2009. [PIFSC IMS, Longline Logbook Data, 5/28/2009 7:56:51AM]

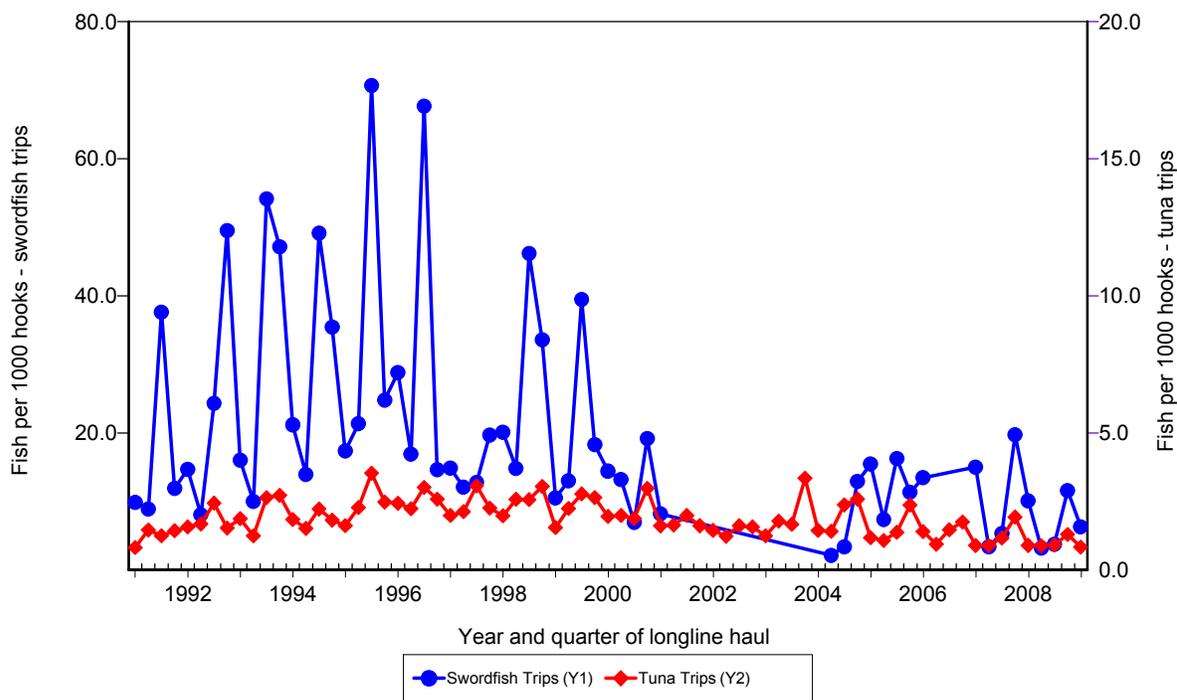


Figure 17. Quarterly CPUE of blue shark (fish per 1000 hooks) on swordfish trips and tuna trips by longline vessels based and landing in Hawaii, 1991-2009. [PIFSC IMS, Longline Logbook Data, 5/28/2009 7:56:51AM]

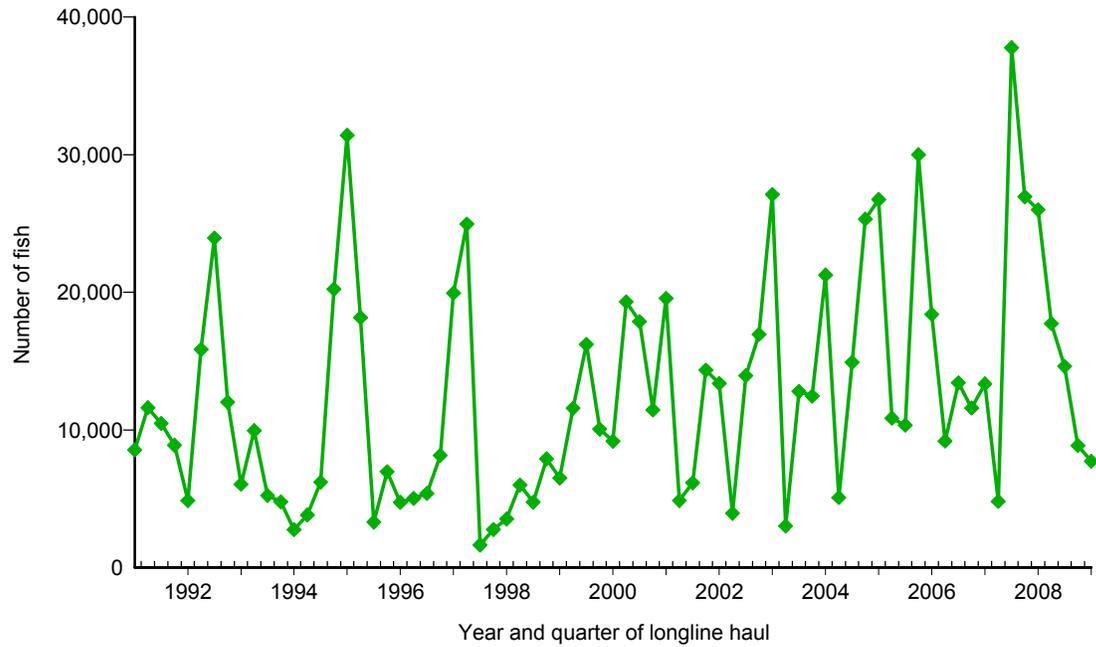


Figure 18. Quarterly catch of mahimahi by longline vessels based and landing in Hawaii, 1991-2009. [PIFSC IMS, Longline Logbook Data, 5/28/2009 7:57:18AM]

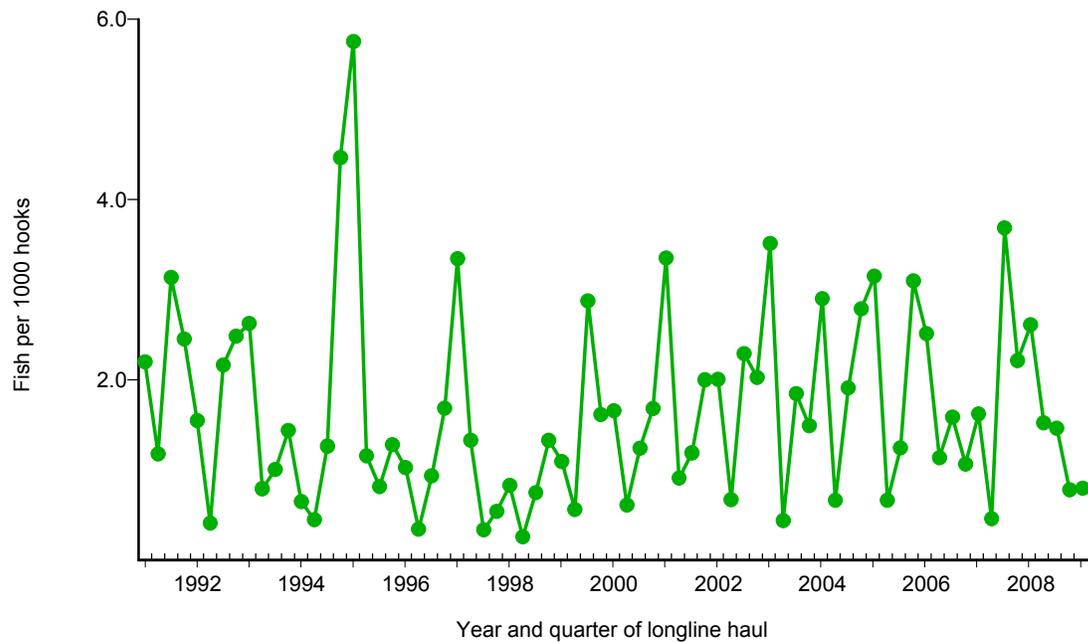


Figure 19. Quarterly CPUE of mahimahi (fish per 1000 hooks) on tuna trips by longline vessels based and landing in Hawaii, 1991-2009. [PIFSC IMS, Longline Logbook Data, 5/28/2009 7:57:18AM]

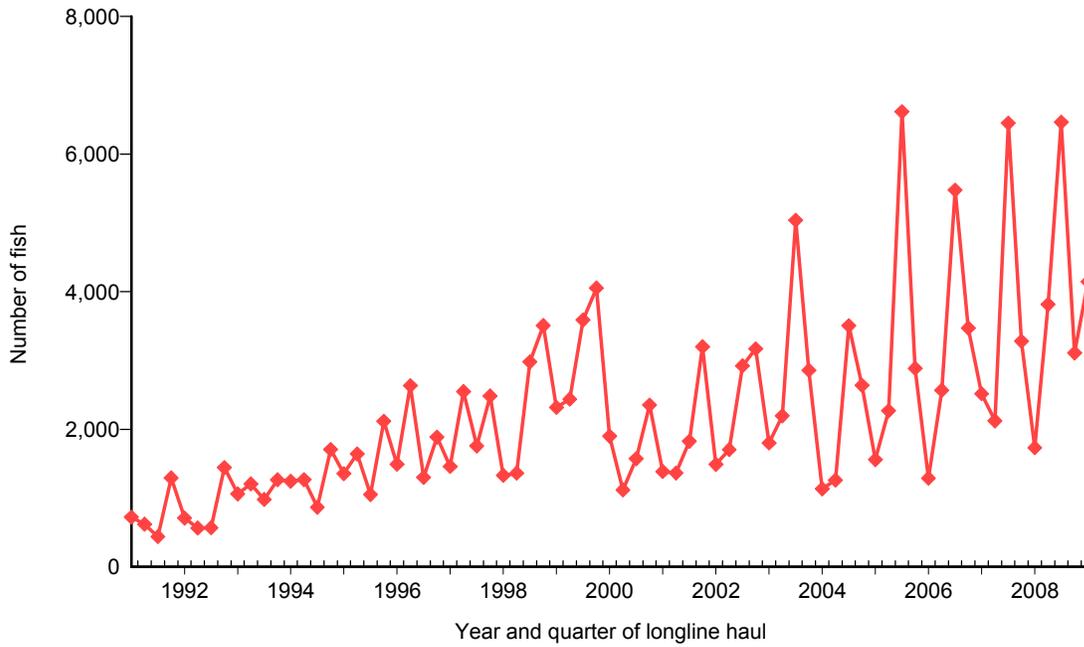


Figure 20. Quarterly catch of moonfish by longline vessels based and landing in Hawaii, 1991-2009. [PIFSC IMS, Longline Logbook Data, 5/28/2009 7:57:43AM]

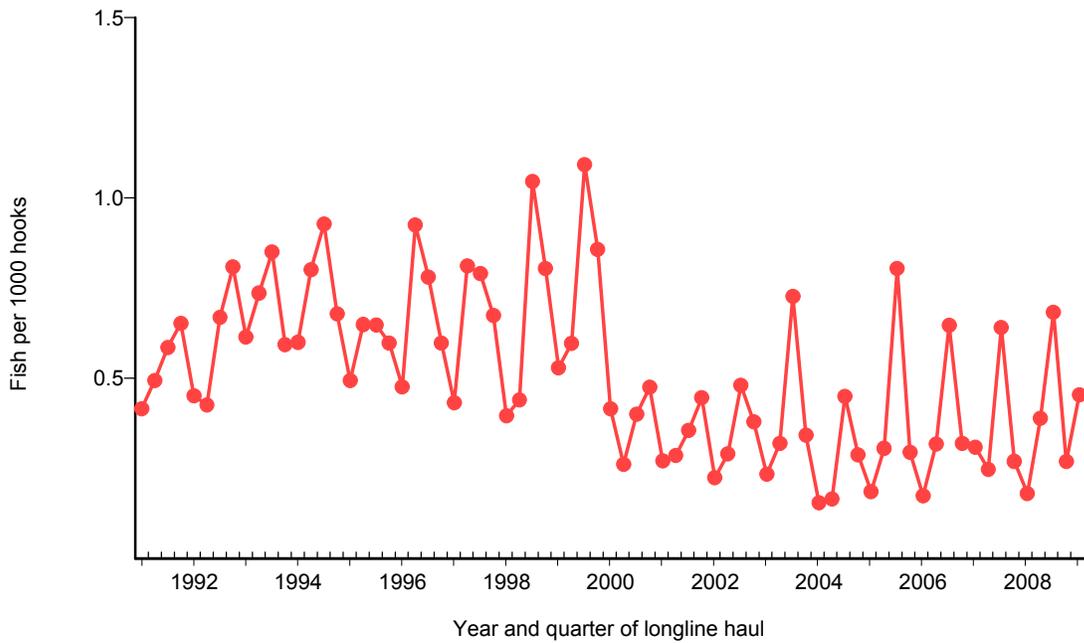


Figure 21. Quarterly CPUE of moonfish (fish per 1000 hooks) on tuna trips by longline vessels based and landing in Hawaii, 1991-2009. [PIFSC IMS, Longline Logbook Data, 5/28/2009 7:57:43AM]

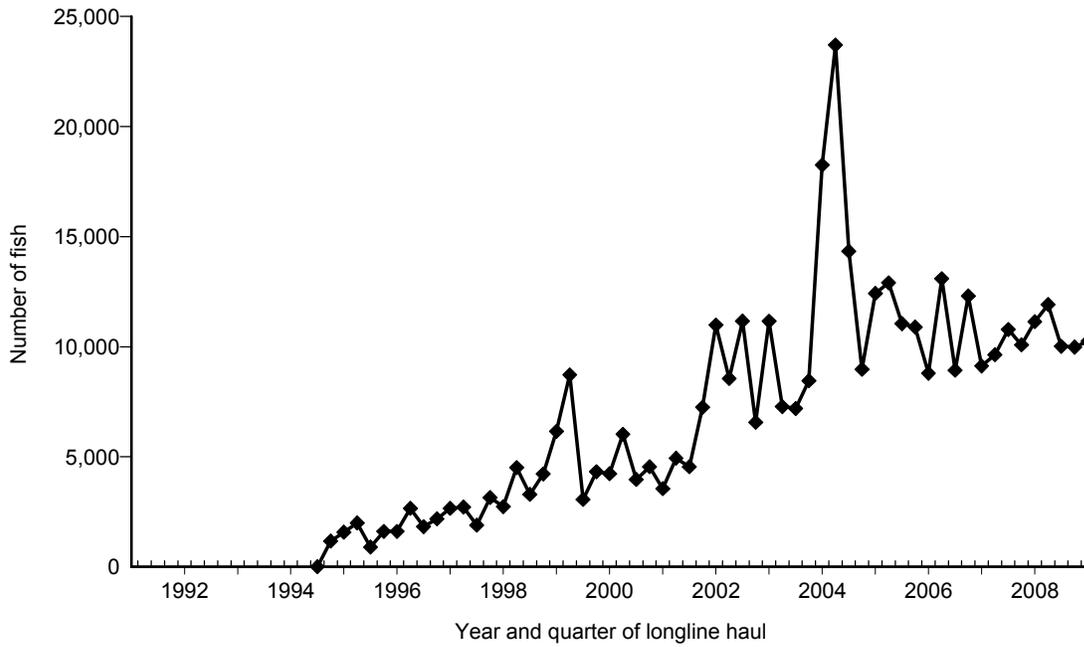


Figure 22. Quarterly catch of pomfret by longline vessels based and landing in Hawaii, 1991-2009. [PIFSC IMS, Longline Logbook Data, 5/28/2009 7:58:08AM]

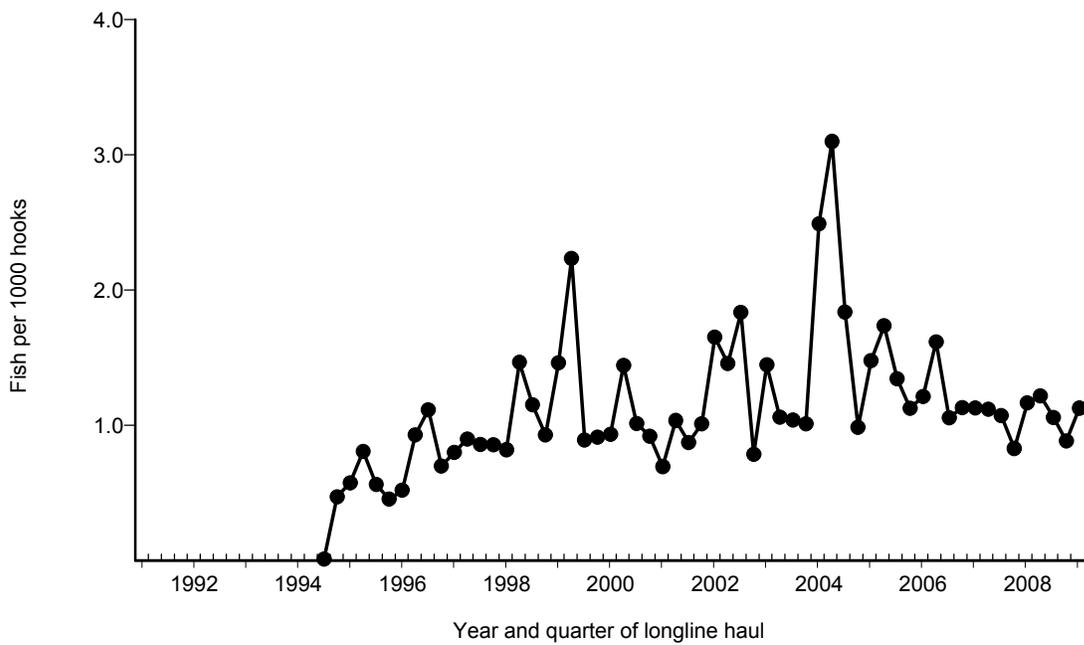


Figure 23. Quarterly CPUE of pomfret (fish per 1000 hooks) on tuna trips by longline vessels based and landing in Hawaii, 1991-2009. [PIFSC IMS, Longline Logbook Data, 5/28/2009 7:58:08AM]

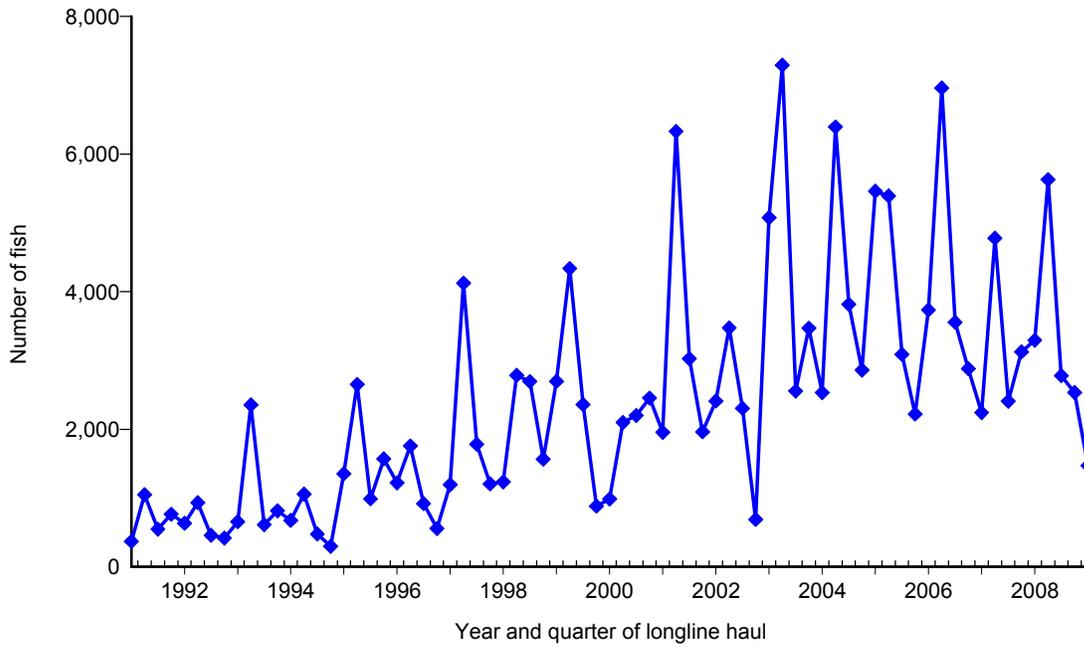


Figure 24. Quarterly catch of wahoo by longline vessels based and landing in Hawaii, 1991-2009. [PIFSC IMS, Longline Logbook Data, 5/28/2009 7:58:35AM]

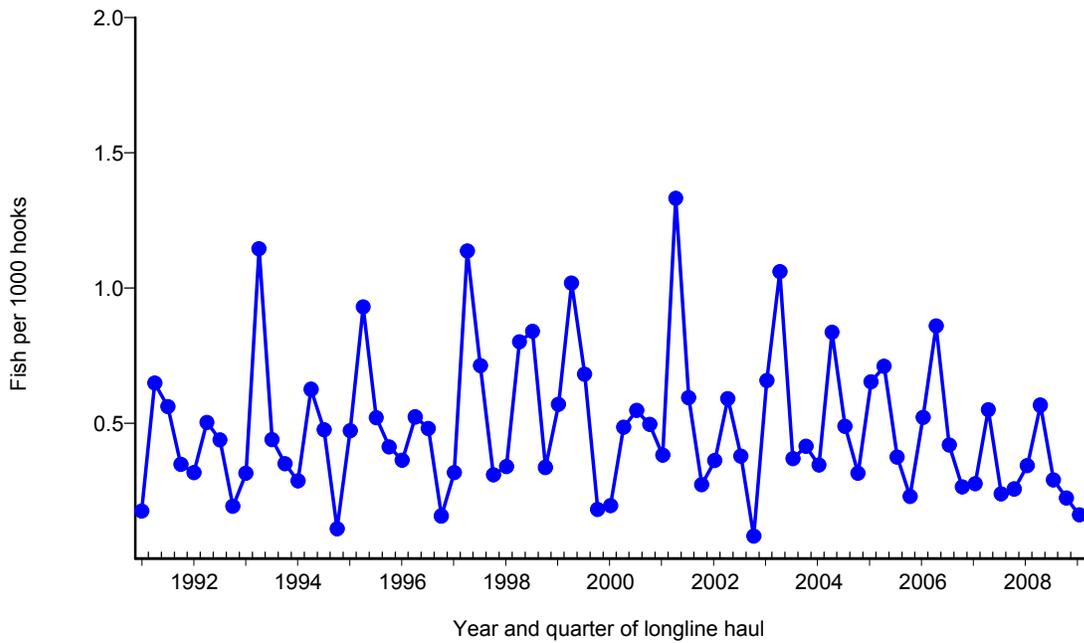


Figure 25. Quarterly CPUE of wahoo (fish per 1000 hooks) on tuna trips by longline vessels based and landing in Hawaii, 1991-2009. [PIFSC IMS, Longline Logbook Data, 5/28/2009 7:58:35AM]