

The Hawaii-based Longline Logbook Summary Report October–December 2010¹

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 fourth quarter of 2010 (Q4-2010). 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 fourth quarter of 2010 and most, but not all, Q4-2010 data from trips that began late in the fourth quarter and continued into the first quarter of 2011. Therefore, the Q4-2010 summary statistics reported here are preliminary.

During Q4-2010, 120 vessels were active in the Hawaii-based fleet, the same number of vessels as in Q4-2009 (Table 1, Fig. 1). They made 346 longline trips (67 more than in Q4-2009), including 334 using deep-set gear to target tuna (61 less than in Q4-2009) and 12 using shallow-set gear to target swordfish (3 less than in Q4-2009; Fig. 2). During Q4-2010, the fleet deployed 10.0 million hooks, 1.2 million less than in Q4-2009 (Fig. 3). They fished mainly on the high seas outside the U.S. Exclusive Economic Zone (EEZ) (72% of the total hooks set), followed by the EEZ of the main Hawaiian Islands (MHI) (24%), the Northwestern Hawaiian Islands (NWHI) EEZ (3%) 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 Q4-2010, the Hawaii longline fleet caught 40,270 bigeye tuna (Fig. 4); 73% were caught in waters outside the U.S. EEZ. The bigeye tuna catch-per-unit-of-effort (CPUE) on tuna-targeted trips was 4.1 fish per 1000 hooks, 5% higher compared to Q4-2009 (Fig. 5). The albacore catch and CPUE on tuna-targeted trips in Q4-2010 were 3,089 fish and 0.20 fish per 1000 hooks, respectively (Figs. 6-7). The yellowfin tuna catch and CPUE on tuna-targeted trips in Q4-2010 were 2,669 fish and 0.27 fish per 1000 hooks, respectively (Figs. 8-9).

The Q4-2010 swordfish catch was 2,673 fish, 17% higher than the swordfish catch in Q4-2009 (Fig. 10). In Q4-2010, swordfish CPUE on shallow-set swordfish-targeted trips was 10.4 fish per 1000 hooks, 26% lower than in Q4-2009 (Fig. 11).

The striped marlin catch in Q4-2010 was 956 fish, and the CPUE on tuna-targeted trips was 0.10 fish per 1000 hooks (Figs. 12-13). The blue marlin catch in Q4-2010 was 437 fish with a CPUE of 0.04 fish per 1000 hooks on tuna-targeted trips (Figs. 14-15).

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The fleet caught 15,392 sharks in Q4-2010, of which 376 (2%) were kept. Blue shark comprised 89% of the total shark catch (13,716 fish) (Fig. 16). Blue shark CPUE on shallow-set swordfish-targeted trips in Q4-2010 was 7.4 fish per 1000 hooks (Fig. 17).

In Q4-2010, the Hawaii longline catch of other key pelagic species included 28,279 mahimahi (Fig. 18) with a CPUE of 2.8 fish per 1000 hooks on tuna-targeted trips (Fig. 19); 5,554 moonfish (Fig. 20) with a CPUE of 0.55 fish per 1000 hooks on tuna-targeted trips (Fig. 21); 7,149 pomfret (Fig. 22) with a CPUE of 0.73 fish per 1000 hooks on tuna-targeted trips (Fig. 23); and 958 wahoo (Fig. 24) with a CPUE of 0.10 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. Q4-2010 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. Q4-2010 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 website at <http://www.pifsc.noaa.gov/fmsd/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, 2/9/2011 1:11:51PM].

Report Coverage					Number of vessels active	120
Time Period	4th Quarter 2010				Number of trips	346
Fishing Area	All Areas				Number of sets	4,386
Trip Types	All Trip Types				Number of hooks set	10,038,584

Pelagic Management Unit Species (PMUS)	Number Caught	Number Kept	Number Released	CPUE - Number Caught per 1000 hooks
Billfishes				
Blue marlin	437	432	5	0.04
Striped marlin	956	942	14	0.10
Shortbill spearfish	2,164	2,152	12	0.22
Swordfish	2,673	2,376	297	0.27
Other billfishes	176	173	3	0.02
Total	6,406	6,075	331	0.64
Sharks				
Blue shark	13,716	73	13,643	1.37
Mako sharks	756	219	537	0.08
Thresher sharks	660	67	593	0.07
Oceanic whitetip shark	116	2	114	0.01
Silky shark	2	0	2	0.00
Other sharks	142	15	127	0.01
Total	15,392	376	15,016	1.53
Tunas				
Albacore	3,089	2,672	417	0.31
Bigeye tuna	40,270	39,543	727	4.01
Yellowfin tuna	2,669	2,627	42	0.27
Bluefin tuna	1	1	0	0.00
Skipjack tuna	3,117	3,060	57	0.31
Other tunas	7	0	7	0.00
Total	49,153	47,903	1,250	4.90
Other PMUS				
Mahimahi	28,279	27,765	514	2.82
Moonfish	5,554	5,495	59	0.55
Wahoo	958	948	10	0.10
Oilfish	8,032	7,753	279	0.80
Pomfret	7,149	7,021	128	0.71
Total	49,972	48,982	990	4.98
Total PMUS	120,923	103,336	17,587	12.05
Total Non-PMUS	825	399	426	0.08
Total All Species	121,748	103,735	18,013	12.13

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, 2/9/2011 1:11:51PM].

Report Coverage		Number of vessels active		86
Time Period	4th Quarter 2010	Number of trips		147
Fishing Area	Main Hawaiian Islands EEZ	Number of sets		1,021
Trip Types	All Trip Types	Number of hooks set		2,428,442

Pelagic Management Unit Species (PMUS)	Number Caught	Number Kept	Number Released	CPUE - Number Caught per 1000 hooks
Billfishes				
Blue marlin	136	135	1	0.06
Striped marlin	303	299	4	0.12
Shortbill spearfish	346	340	6	0.14
Swordfish	170	118	52	0.07
Other billfishes	42	42	0	0.02
Total	997	934	63	0.41
Sharks				
Blue shark	3,957	0	3,957	1.63
Mako sharks	109	56	53	0.04
Thresher sharks	207	42	165	0.09
Oceanic whitetip shark	41	1	40	0.02
Silky shark	0	0	0	0.00
Other sharks	60	0	60	0.02
Total	4,374	99	4,275	1.80
Tunas				
Albacore	139	136	3	0.06
Bigeye tuna	8,965	8,747	218	3.69
Yellowfin tuna	728	711	17	0.30
Bluefin tuna	0	0	0	0.00
Skipjack tuna	353	346	7	0.15
Other tunas	0	0	0	0.00
Total	10,185	9,940	245	4.19
Other PMUS				
Mahimahi	3,972	3,929	43	1.64
Moonfish	533	532	1	0.22
Wahoo	136	135	1	0.06
Oilfish	2,074	2,045	29	0.85
Pomfret	1,668	1,599	69	0.69
Total	8,383	8,240	143	3.45
Total PMUS	23,939	19,213	4,726	9.86
Total Non-PMUS	124	110	14	0.05
Total All Species	24,063	19,323	4,740	9.91

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, 2/9/2011 1:11:51PM].

Report Coverage		Number of vessels active			16
Time Period	4th Quarter 2010	Number of trips			17
Fishing Area	Northwestern Hawaiian Islands EEZ	Number of sets			127
Trip Types	All Trip Types	Number of hooks set			284,240

Pelagic Management Unit Species (PMUS)	Number Caught	Number Kept	Number Released	CPUE - Number Caught per 1000 hooks
Billfishes				
Blue marlin	25	25	0	0.09
Striped marlin	35	34	1	0.12
Shortbill spearfish	73	73	0	0.26
Swordfish	9	9	0	0.03
Other billfishes	0	0	0	0.00
Total	142	141	1	0.50
Sharks				
Blue shark	1,329	0	1,329	4.68
Mako sharks	3	1	2	0.01
Thresher sharks	56	0	56	0.20
Oceanic whitetip shark	4	0	4	0.01
Silky shark	0	0	0	0.00
Other sharks	1	0	1	0.00
Total	1,393	1	1,392	4.90
Tunas				
Albacore	32	32	0	0.11
Bigeye tuna	1,690	1,657	33	5.95
Yellowfin tuna	219	216	3	0.77
Bluefin tuna	0	0	0	0.00
Skipjack tuna	254	245	9	0.89
Other tunas	0	0	0	0.00
Total	2,195	2,150	45	7.72
Other PMUS				
Mahimahi	223	222	1	0.78
Moonfish	133	133	0	0.47
Wahoo	19	19	0	0.07
Oilfish	179	178	1	0.63
Pomfret	183	183	0	0.64
Total	737	735	2	2.59
Total PMUS	4,467	3,027	1,440	15.72
Total Non-PMUS	5	5	0	0.02
Total All Species	4,472	3,032	1,440	15.73

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, 2/9/2011 1:11:51PM].

Report Coverage		Number of vessels active		4
Time Period	4th Quarter 2010	Number of trips		4
Fishing Area	Pacific Remote Island Areas (PRIA) EEZ	Number of sets		31
Trip Types	All Trip Types	Number of hooks set		84,300

Pelagic Management Unit Species (PMUS)	Number Caught	Number Kept	Number Released	CPUE - Number Caught per 1000 hooks
Billfishes				
Blue marlin	7	7	0	0.08
Striped marlin	2	2	0	0.02
Shortbill spearfish	6	6	0	0.07
Swordfish	10	10	0	0.12
Other billfishes	5	5	0	0.06
Total	30	30	0	0.36
Sharks				
Blue shark	260	0	260	3.08
Mako sharks	0	0	0	0.00
Thresher sharks	21	0	21	0.25
Oceanic whitetip shark	31	0	31	0.37
Silky shark	0	0	0	0.00
Other sharks	1	0	1	0.01
Total	313	0	313	3.71
Tunas				
Albacore	15	15	0	0.18
Bigeye tuna	376	365	11	4.46
Yellowfin tuna	230	227	3	2.73
Bluefin tuna	0	0	0	0.00
Skipjack tuna	96	96	0	1.14
Other tunas	0	0	0	0.00
Total	717	703	14	8.51
Other PMUS				
Mahimahi	13	13	0	0.15
Moonfish	21	21	0	0.25
Wahoo	34	34	0	0.40
Oilfish	38	38	0	0.45
Pomfret	77	77	0	0.91
Total	183	183	0	2.17
Total PMUS	1,243	916	327	14.74
Total Non-PMUS	1	1	0	0.01
Total All Species	1,244	917	327	14.76

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, 2/9/2011 1:11:51PM].

Report Coverage		Number of vessels active		88	
Time Period	4th Quarter 2010	Number of trips		156	
Fishing Area	Hawaiian Islands EEZ + PRIA EEZ	Number of sets		1,179	
Trip Types	All Trip Types	Number of hooks set		2,796,982	

Pelagic Management Unit Species (PMUS)	Number Caught	Number Kept	Number Released	CPUE - Number Caught per 1000 hooks
Billfishes				
Blue marlin	168	167	1	0.06
Striped marlin	340	335	5	0.12
Shortbill spearfish	425	419	6	0.15
Swordfish	189	137	52	0.07
Other billfishes	47	47	0	0.02
Total	1,169	1,105	64	0.42
Sharks				
Blue shark	5,546	0	5,546	1.98
Mako sharks	112	57	55	0.04
Thresher sharks	284	42	242	0.10
Oceanic whitetip shark	76	1	75	0.03
Silky shark	0	0	0	0.00
Other sharks	62	0	62	0.02
Total	6,080	100	5,980	2.17
Tunas				
Albacore	186	183	3	0.07
Bigeye tuna	11,031	10,769	262	3.94
Yellowfin tuna	1,177	1,154	23	0.42
Bluefin tuna	0	0	0	0.00
Skipjack tuna	703	687	16	0.25
Other tunas	0	0	0	0.00
Total	13,097	12,793	304	4.68
Other PMUS				
Mahimahi	4,208	4,164	44	1.50
Moonfish	687	686	1	0.25
Wahoo	189	188	1	0.07
Oilfish	2,291	2,261	30	0.82
Pomfret	1,928	1,859	69	0.69
Total	9,303	9,158	145	3.33
Total PMUS	29,649	23,156	6,493	10.60
Total Non-PMUS	130	116	14	0.05
Total All Species	29,779	23,272	6,507	10.65

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, 2/9/2011 1:11:51PM].

Report Coverage		Number of vessels active		118
Time Period	4th Quarter 2010	Number of trips		284
Fishing Area	Outside U.S. EEZ	Number of sets		3,207
Trip Types	All Trip Types	Number of hooks set		7,241,602

Pelagic Management Unit Species (PMUS)	Number Caught	Number Kept	Number Released	CPUE - Number Caught per 1000 hooks
Billfishes				
Blue marlin	269	265	4	0.04
Striped marlin	616	607	9	0.09
Shortbill spearfish	1,739	1,733	6	0.24
Swordfish	2,484	2,239	245	0.34
Other billfishes	129	126	3	0.02
Total	5,237	4,970	267	0.72
Sharks				
Blue shark	8,170	73	8,097	1.13
Mako sharks	644	162	482	0.09
Thresher sharks	376	25	351	0.05
Oceanic whitetip shark	40	1	39	0.01
Silky shark	2	0	2	0.00
Other sharks	80	15	65	0.01
Total	9,312	276	9,036	1.29
Tunas				
Albacore	2,903	2,489	414	0.40
Bigeye tuna	29,239	28,774	465	4.04
Yellowfin tuna	1,492	1,473	19	0.21
Bluefin tuna	1	1	0	0.00
Skipjack tuna	2,414	2,373	41	0.33
Other tunas	7	0	7	0.00
Total	36,056	35,110	946	4.98
Other PMUS				
Mahimahi	24,071	23,601	470	3.32
Moonfish	4,867	4,809	58	0.67
Wahoo	769	760	9	0.11
Oilfish	5,741	5,492	249	0.79
Pomfret	5,221	5,162	59	0.72
Total	40,669	39,824	845	5.62
Total PMUS	91,274	80,180	11,094	12.60
Total Non-PMUS	695	283	412	0.10
Total All Species	91,969	80,463	11,506	12.70

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, 2/9/2011 1:11:51PM].

Report Coverage					Number of vessels active	9
Time Period	4th Quarter 2010				Number of trips	12
Fishing Area	All Areas				Number of sets	208
Trip Types	Swordfish Targeted Trips				Number of hooks set	204,079

Pelagic Management Unit Species (PMUS)	Number Caught	Number Kept	Number Released	CPUE - Number Caught per 1000 hooks
Billfishes				
Blue marlin	0	0	0	0.00
Striped marlin	7	2	5	0.03
Shortbill spearfish	4	1	3	0.02
Swordfish	2,121	1,922	199	10.39
Other billfishes	0	0	0	0.00
Total	2,132	1,925	207	10.45
Sharks				
Blue shark	1,517	0	1,517	7.43
Mako sharks	284	21	263	1.39
Thresher sharks	7	0	7	0.03
Oceanic whitetip shark	0	0	0	0.00
Silky shark	0	0	0	0.00
Other sharks	16	0	16	0.08
Total	1,824	21	1,803	8.94
Tunas				
Albacore	1,092	716	376	5.35
Bigeye tuna	17	10	7	0.08
Yellowfin tuna	2	2	0	0.01
Bluefin tuna	0	0	0	0.00
Skipjack tuna	2	2	0	0.01
Other tunas	7	0	7	0.03
Total	1,120	730	390	5.49
Other PMUS				
Mahimahi	623	612	11	3.05
Moonfish	102	54	48	0.50
Wahoo	3	0	3	0.01
Oilfish	262	74	188	1.28
Pomfret	8	5	3	0.04
Total	998	745	253	4.89
Total PMUS	6,074	3,421	2,653	29.76
Total Non-PMUS	4	2	2	0.02
Total All Species	6,078	3,423	2,655	29.78

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, 2/9/2011 1:11:51PM].

Report Coverage					Number of vessels active	117
Time Period	4th Quarter 2010				Number of trips	334
Fishing Area	All Areas				Number of sets	4,178
Trip Types	Tuna Targeted Trips				Number of hooks set	9,834,505

Pelagic Management Unit Species (PMUS)	Number Caught	Number Kept	Number Released	CPUE - Number Caught per 1000 hooks
Billfishes				
Blue marlin	437	432	5	0.04
Striped marlin	949	940	9	0.10
Shortbill spearfish	2,160	2,151	9	0.22
Swordfish	552	454	98	0.06
Other billfishes	176	173	3	0.02
Total	4,274	4,150	124	0.43
Sharks				
Blue shark	12,199	73	12,126	1.24
Mako sharks	472	198	274	0.05
Thresher sharks	653	67	586	0.07
Oceanic whitetip shark	116	2	114	0.01
Silky shark	2	0	2	0.00
Other sharks	126	15	111	0.01
Total	13,568	355	13,213	1.38
Tunas				
Albacore	1,997	1,956	41	0.20
Bigeye tuna	40,253	39,533	720	4.09
Yellowfin tuna	2,667	2,625	42	0.27
Bluefin tuna	1	1	0	0.00
Skipjack tuna	3,115	3,058	57	0.32
Other tunas	0	0	0	0.00
Total	48,033	47,173	860	4.88
Other PMUS				
Mahimahi	27,656	27,153	503	2.81
Moonfish	5,452	5,441	11	0.55
Wahoo	955	948	7	0.10
Oilfish	7,770	7,679	91	0.79
Pomfret	7,141	7,016	125	0.73
Total	48,974	48,237	737	4.98
Total PMUS	114,849	99,915	14,934	11.68
Total Non-PMUS	821	397	424	0.08
Total All Species	115,670	100,312	15,358	11.76

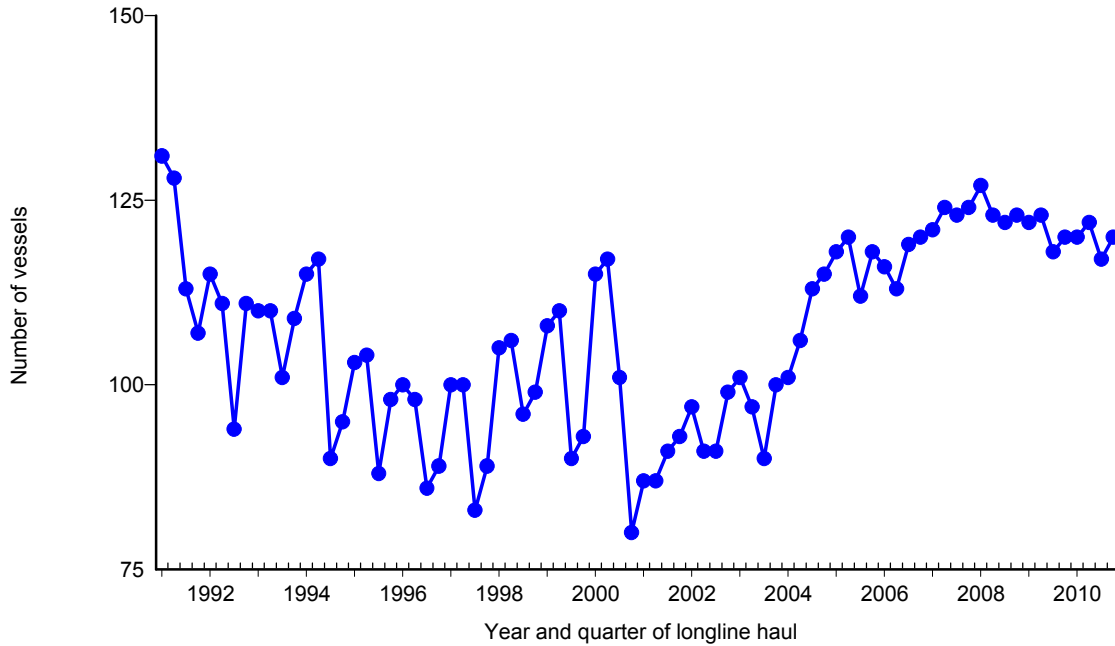


Figure 1. Number of active longline vessels based and landing in Hawaii, by quarter, 1991-2010. [PIFSC IMS, Longline Logbook Data, 2/9/2011 1:25:36PM]

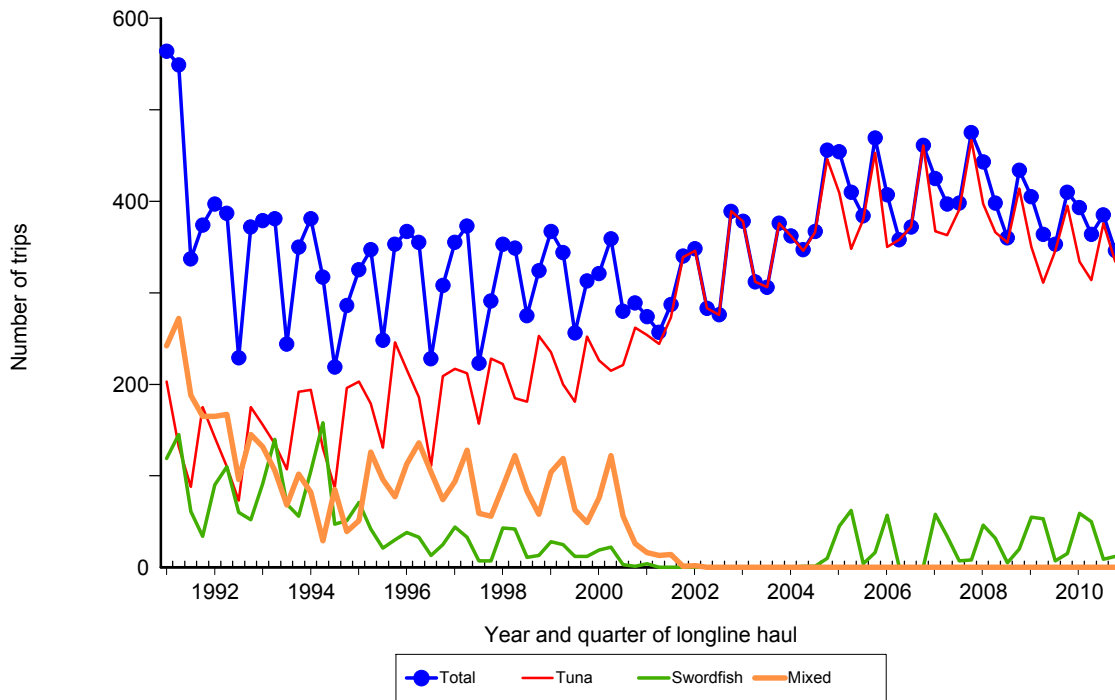


Figure 2. Number of fishing trips by longline vessels based and landing in Hawaii, by quarter and trip type, 1991-2010. [PIFSC IMS, Longline Logbook Data, 2/9/2011 1:25:36PM]

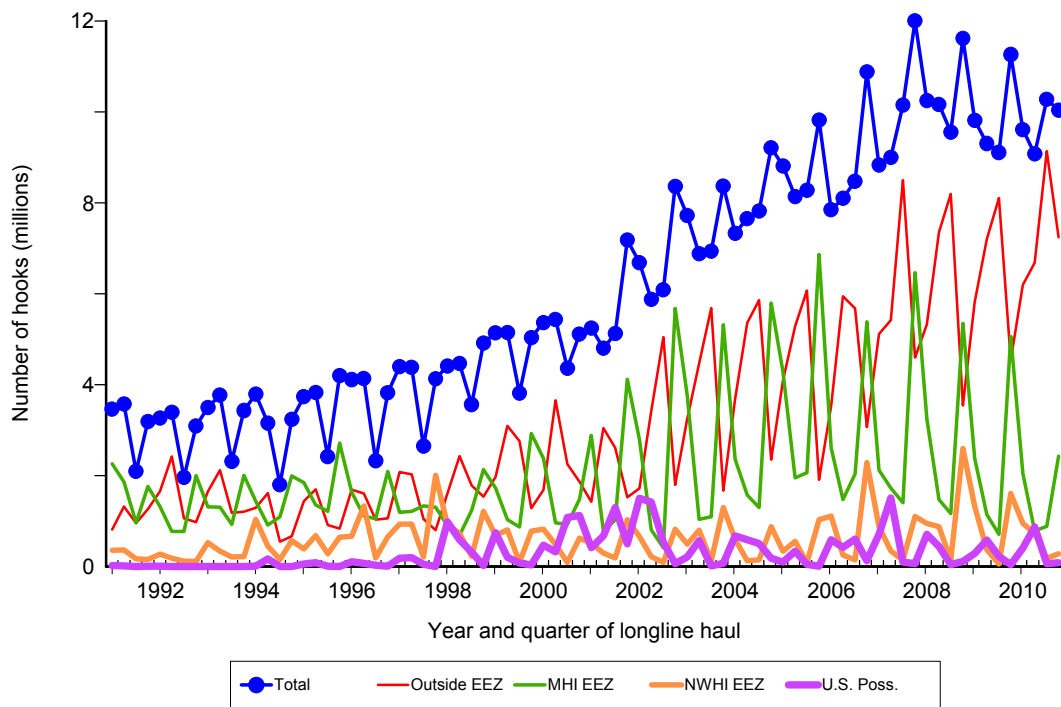


Figure 3. Number of hooks set by longline vessels based and landing in Hawaii, by quarter and fishing area, 1991-2010. [PIFSC IMS, Longline Logbook Data, 2/9/2011 1:25:45PM]

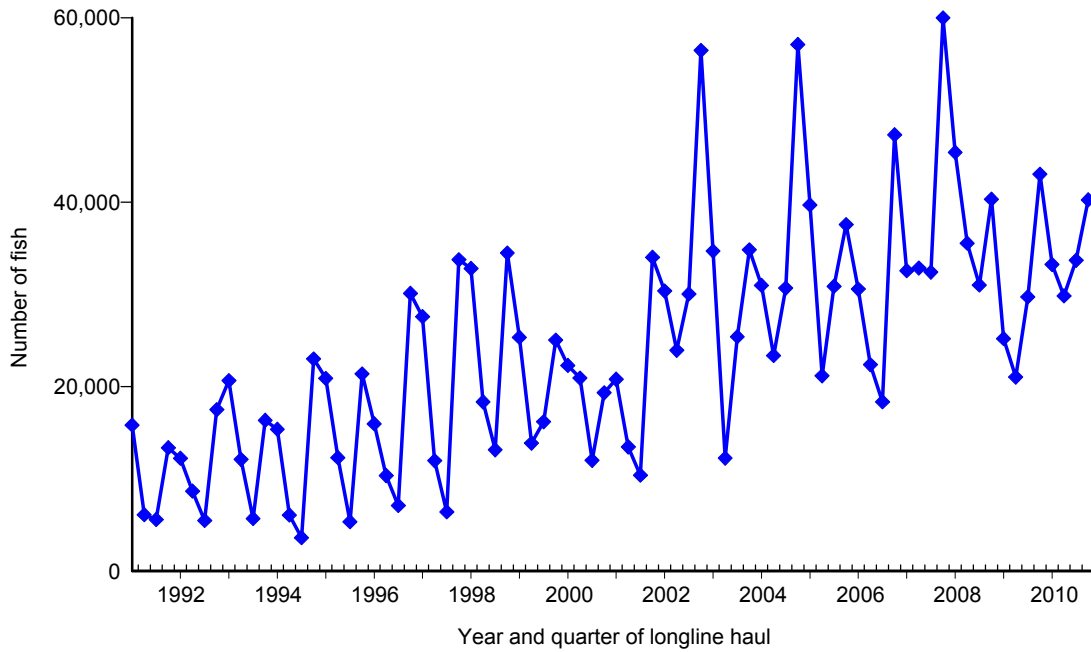


Figure 4. Quarterly catch of bigeye tuna by longline vessels based and landing in Hawaii, 1991-2010. [PIFSC IMS, Longline Logbook Data, 2/9/2011 1:26:08PM]

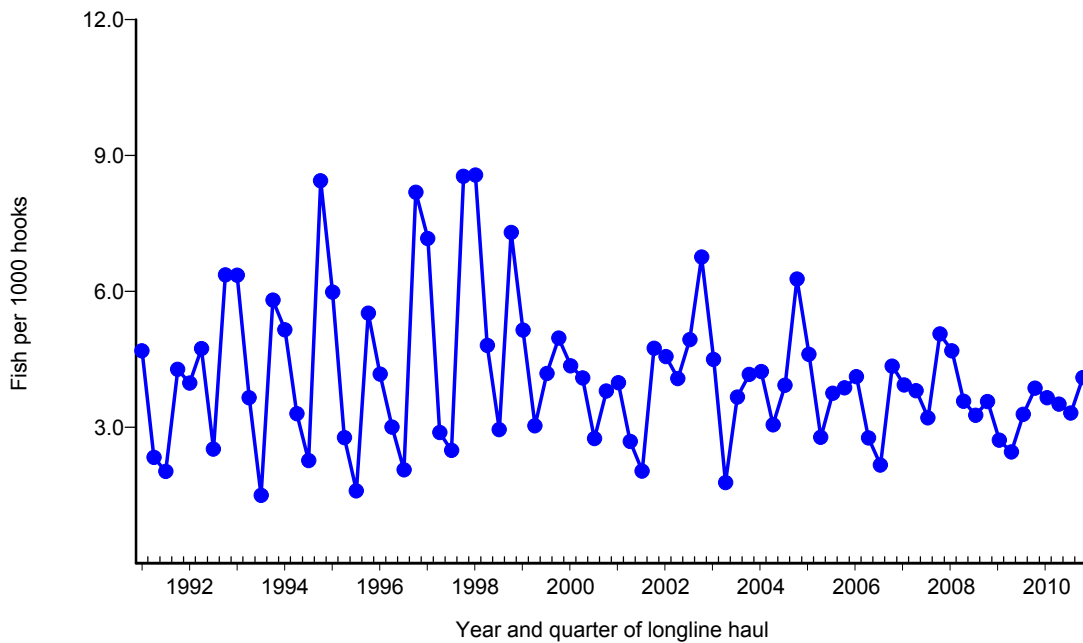


Figure 5. Quarterly CPUE of bigeye tuna (fish per 1000 hooks) on tuna trips by longline vessels based and landing in Hawaii, 1991-2010. [PIFSC IMS, Longline Logbook Data, 2/9/2011 1:26:08PM]

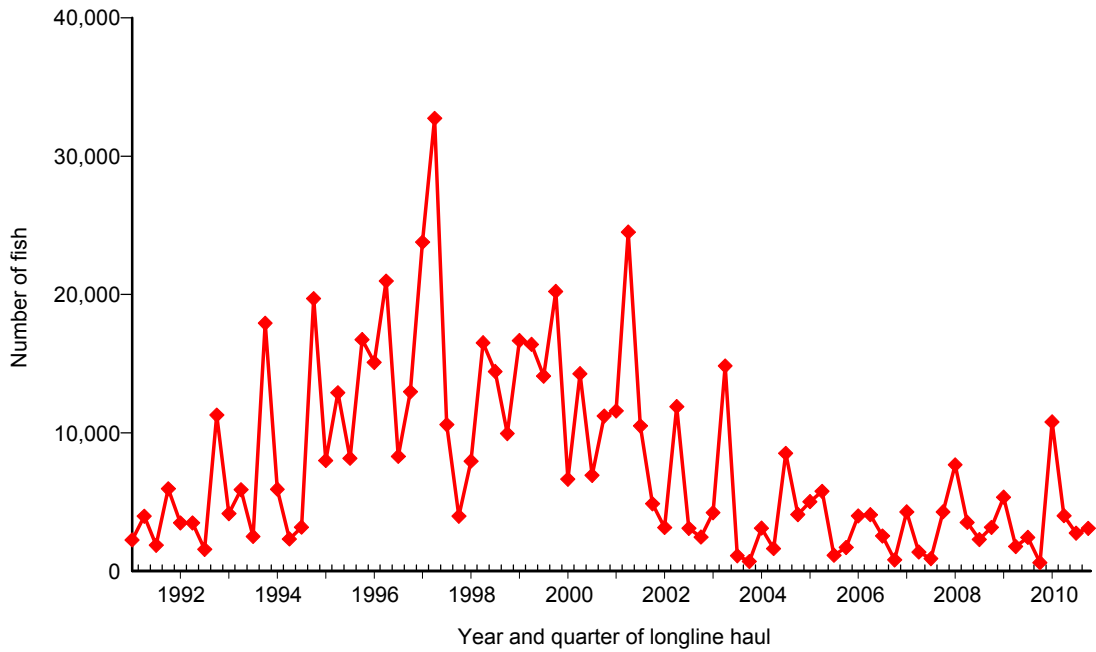


Figure 6. Quarterly catch of albacore by longline vessels based and landing in Hawaii, 1991-2010. [PIFSC IMS, Longline Logbook Data, 2/9/2011 1:26:37PM]

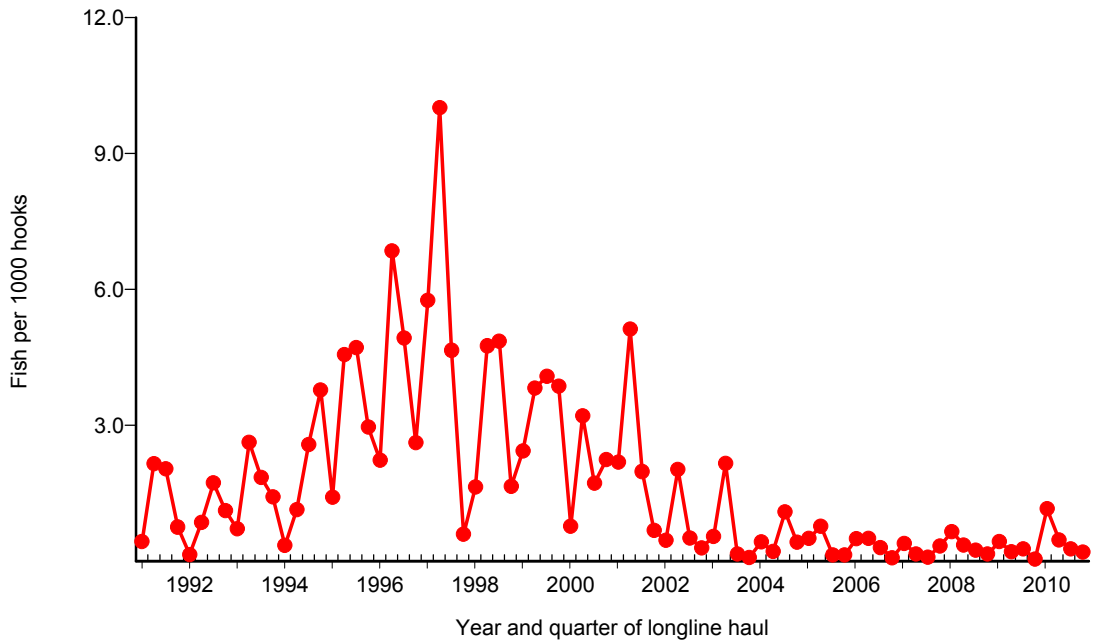


Figure 7. Quarterly CPUE of albacore (fish per 1000 hooks) on tuna trips by longline vessels based and landing in Hawaii, 1991-2010. [PIFSC IMS, Longline Logbook Data, 2/9/2011 1:26:37PM]

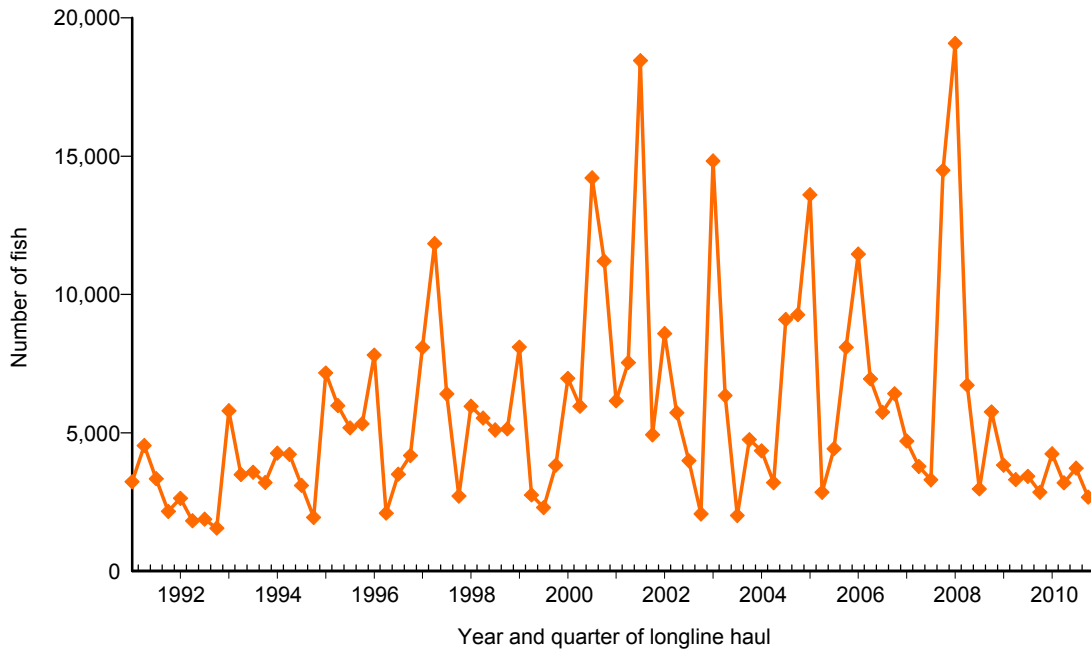


Figure 8. Quarterly catch of yellowfin tuna by longline vessels based and landing in Hawaii, 1991-2010. [PIFSC IMS, Longline Logbook Data, 2/9/2011 1:27:06PM]

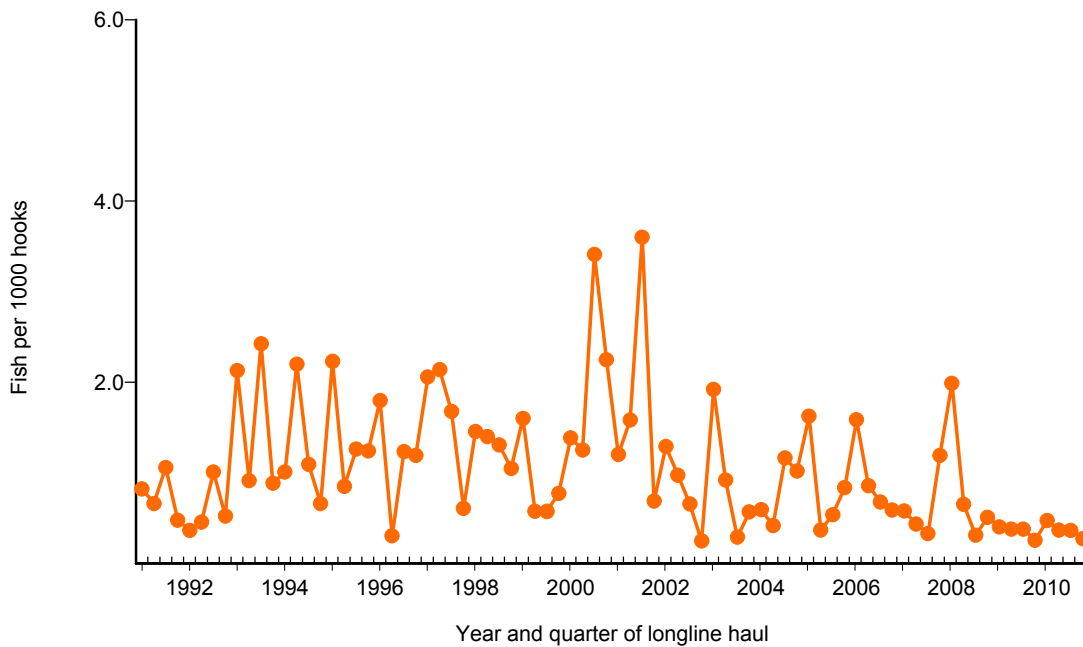


Figure 9. Quarterly CPUE of yellowfin tuna (fish per 1000 hooks) on tuna trips by longline vessels based and landing in Hawaii, 1991-2010. [PIFSC IMS, Longline Logbook Data, 2/9/2011 1:27:06PM]

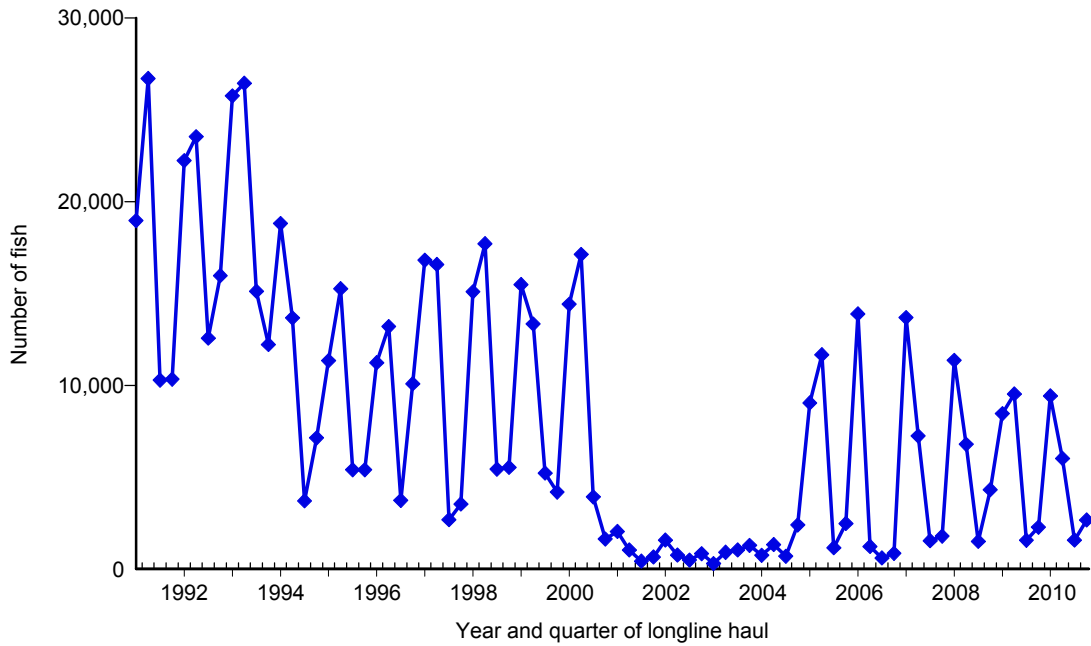


Figure 10. Quarterly catch of swordfish by longline vessels based and landing in Hawaii, 1991-2010. [PIFSC IMS, Longline Logbook Data, 2/9/2011 1:27:35PM]

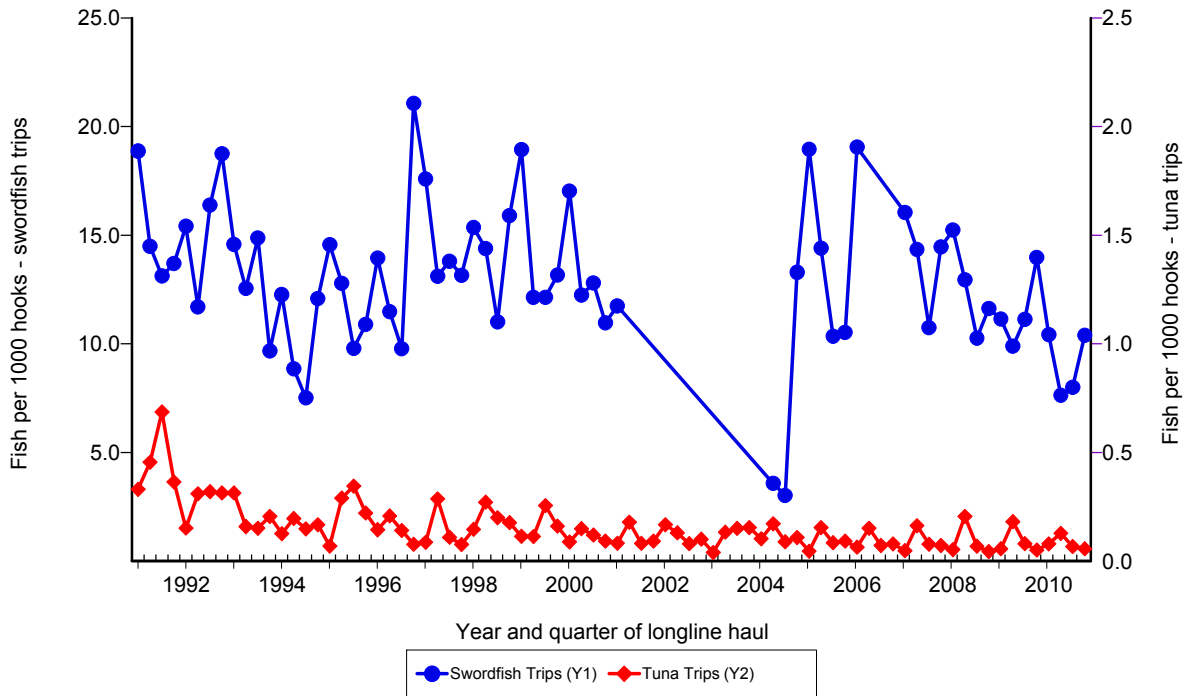


Figure 11. Quarterly CPUE of swordfish (fish per 1000 hooks) on swordfish trips and tuna trips by longline vessels based and landing in Hawaii, 1991-2010. [PIFSC IMS, Longline Logbook Data, 2/9/2011 1:27:35PM]

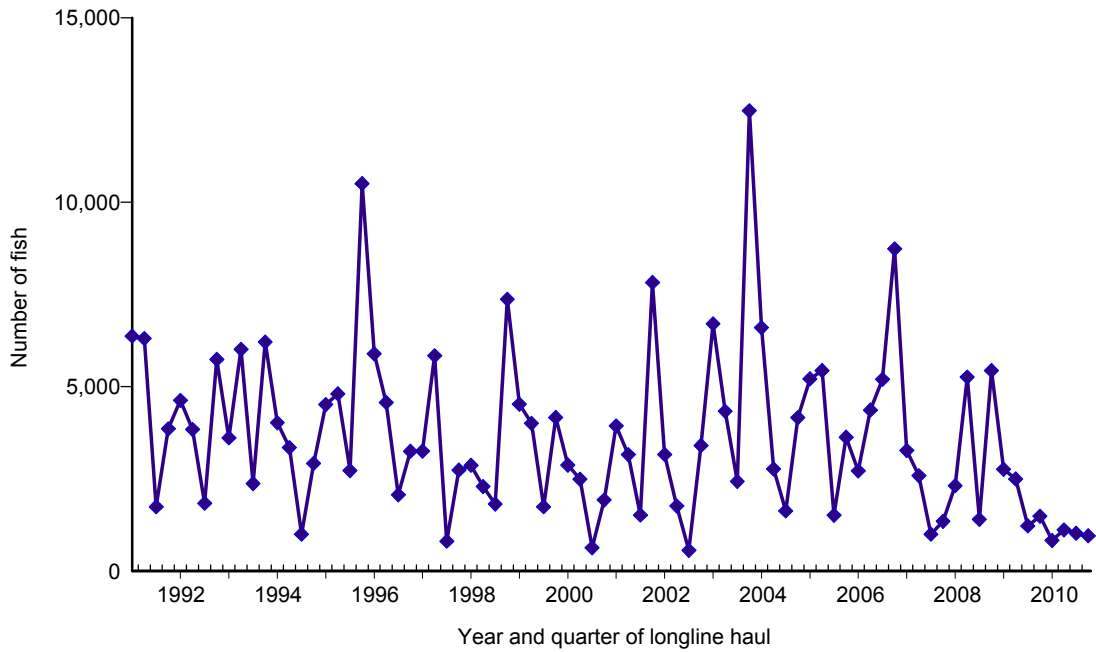


Figure 12. Quarterly catch of striped marlin by longline vessels based and landing in Hawaii, 1991-2010. [PIFSC IMS, Longline Logbook Data, 2/9/2011 1:28:03PM]

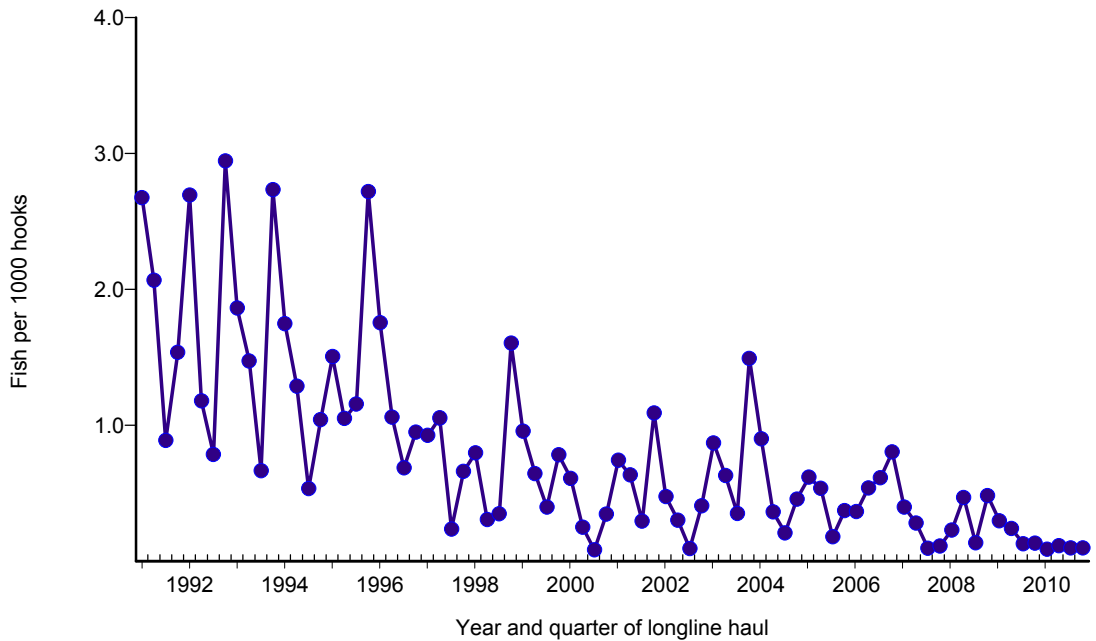


Figure 13. Quarterly CPUE of striped marlin (fish per 1000 hooks) on tuna trips by longline vessels based and landing in Hawaii, 1991-2010. [PIFSC IMS, Longline Logbook Data, 2/9/2011 1:28:03PM]

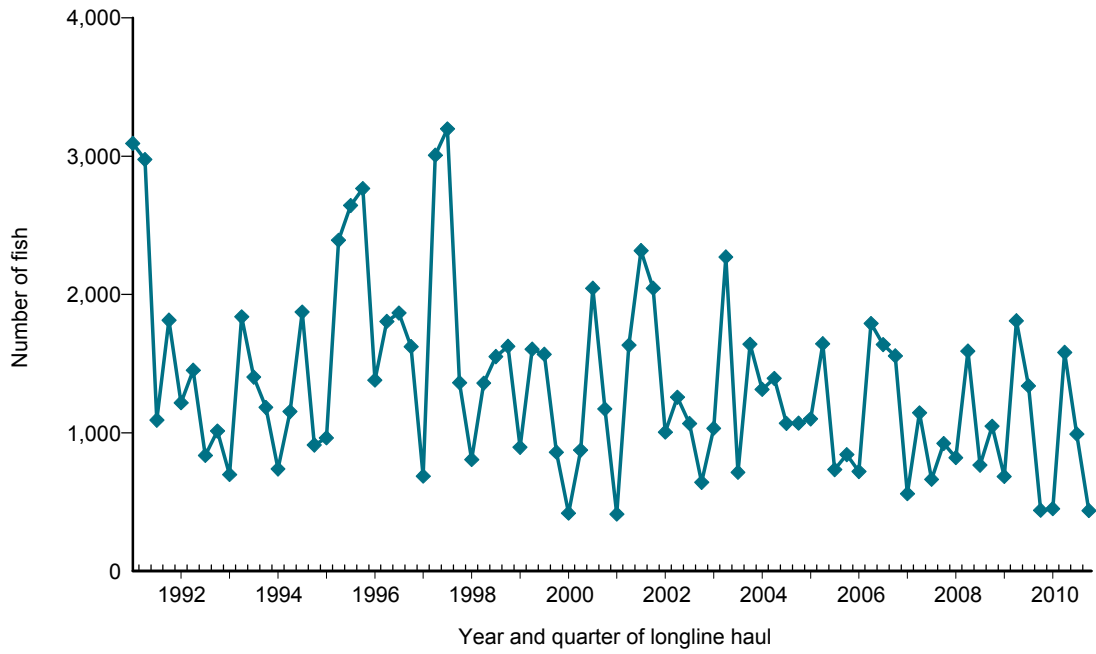


Figure 14. Quarterly catch of blue marlin by longline vessels based and landing in Hawaii, 1991-2010. [PIFSC IMS, Longline Logbook Data, 2/9/2011 1:28:32PM]

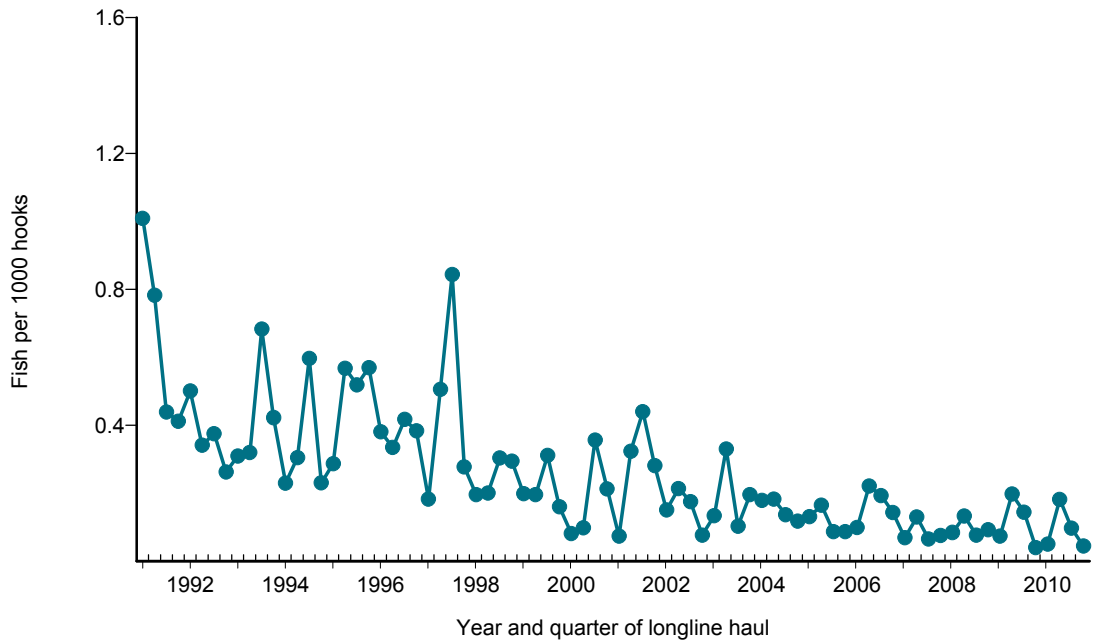


Figure 15. Quarterly CPUE of blue marlin (fish per 1000 hooks) on tuna trips by longline vessels based and landing in Hawaii, 1991-2010. [PIFSC IMS, Longline Logbook Data, 2/9/2011 1:28:32PM]

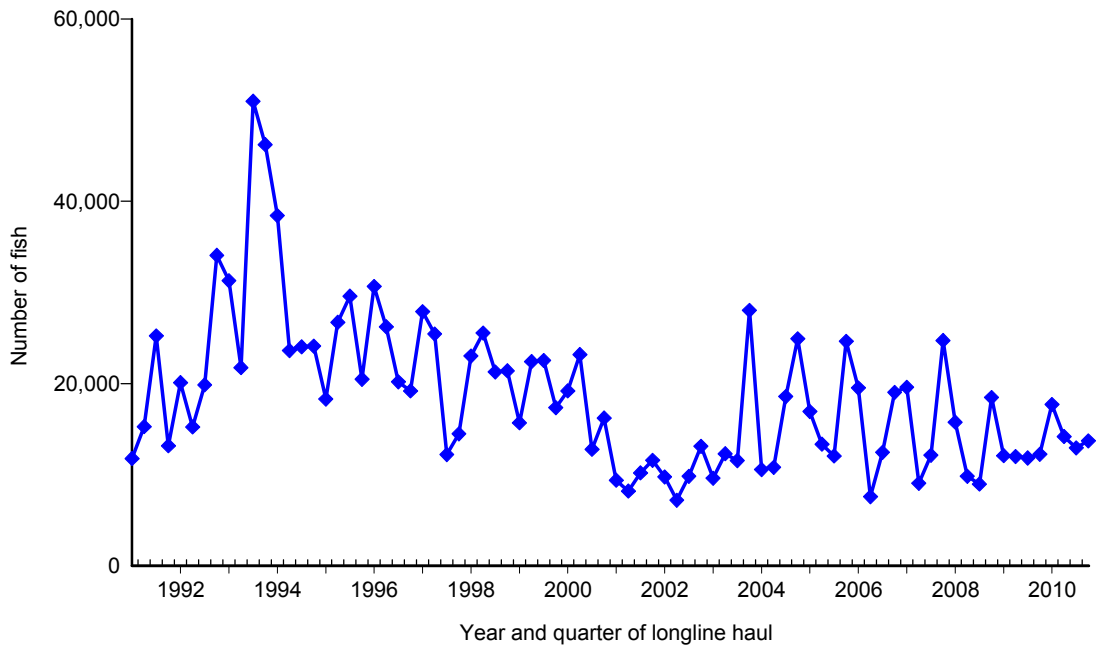


Figure 16. Quarterly catch of blue shark by longline vessels based and landing in Hawaii, 1991-2010. [PIFSC IMS, Longline Logbook Data, 2/9/2011 1:28:59PM]

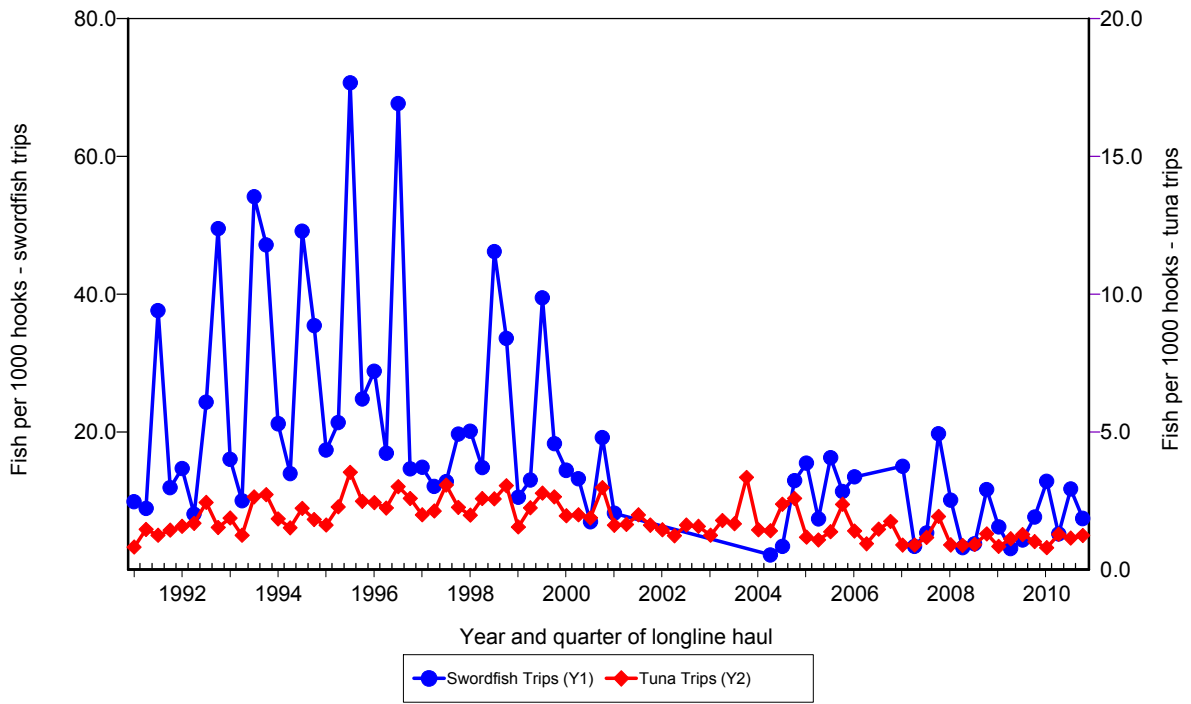


Figure 17. Quarterly CPUE of blue shark (fish per 1000 hooks) on swordfish trips and tuna trips by longline vessels based and landing in Hawaii, 1991-2010. [PIFSC IMS, Longline Logbook Data, 2/9/2011 1:28:59PM]

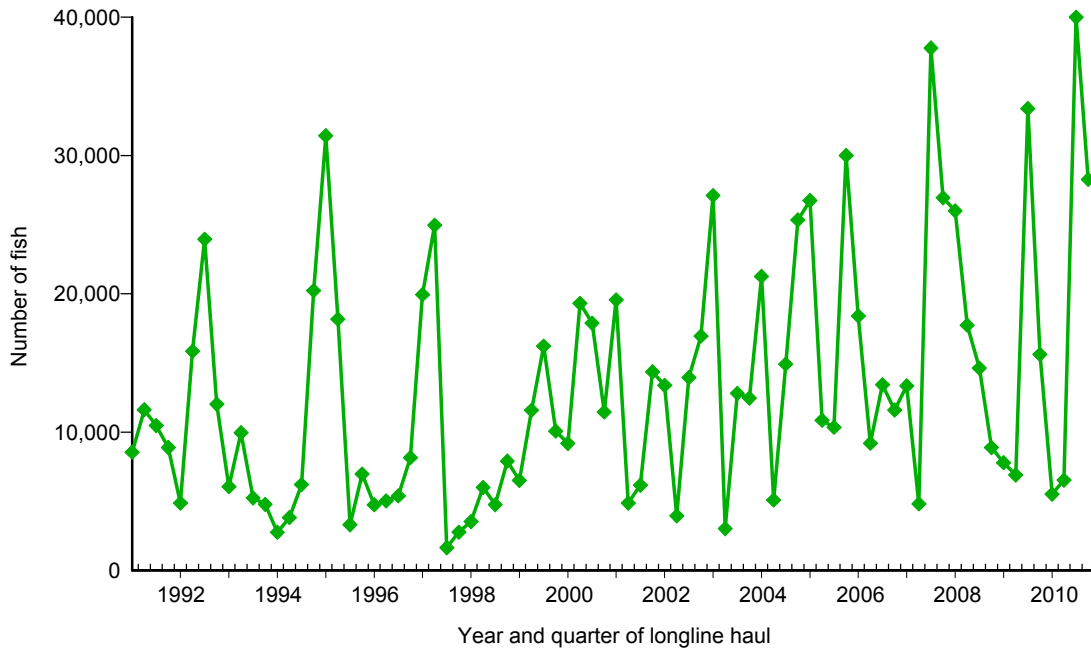


Figure 18. Quarterly catch of mahimahi by longline vessels based and landing in Hawaii, 1991-2010. [PIFSC IMS, Longline Logbook Data, 2/9/2011 1:29:28PM]

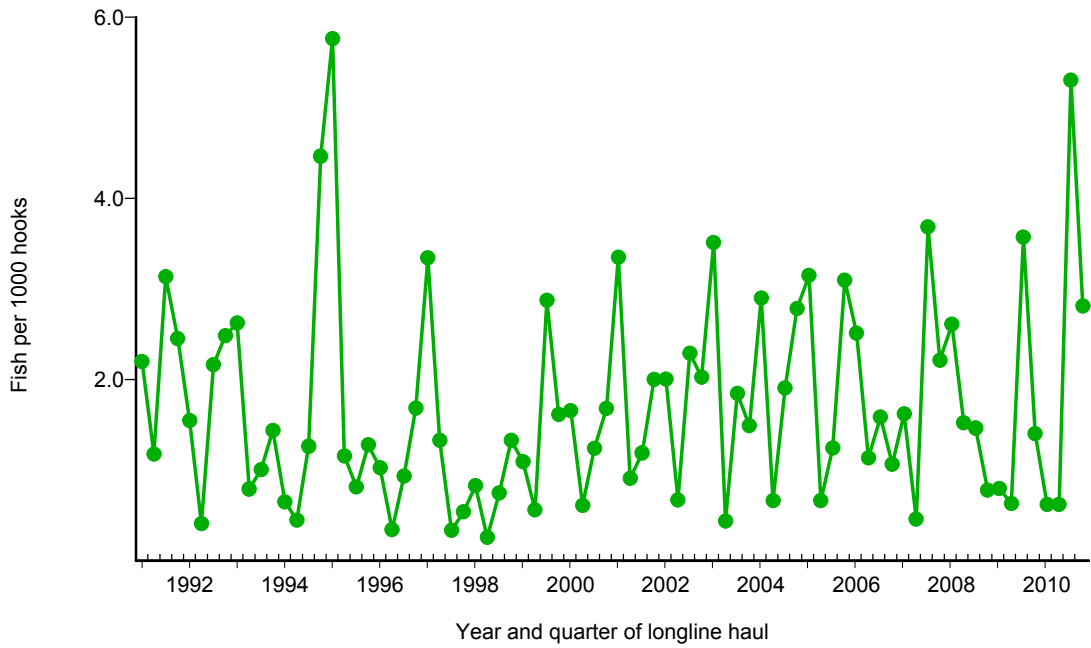


Figure 19. Quarterly CPUE of mahimahi (fish per 1000 hooks) on tuna trips by longline vessels based and landing in Hawaii, 1991-2010. [PIFSC IMS, Longline Logbook Data, 2/9/2011 1:29:28PM]

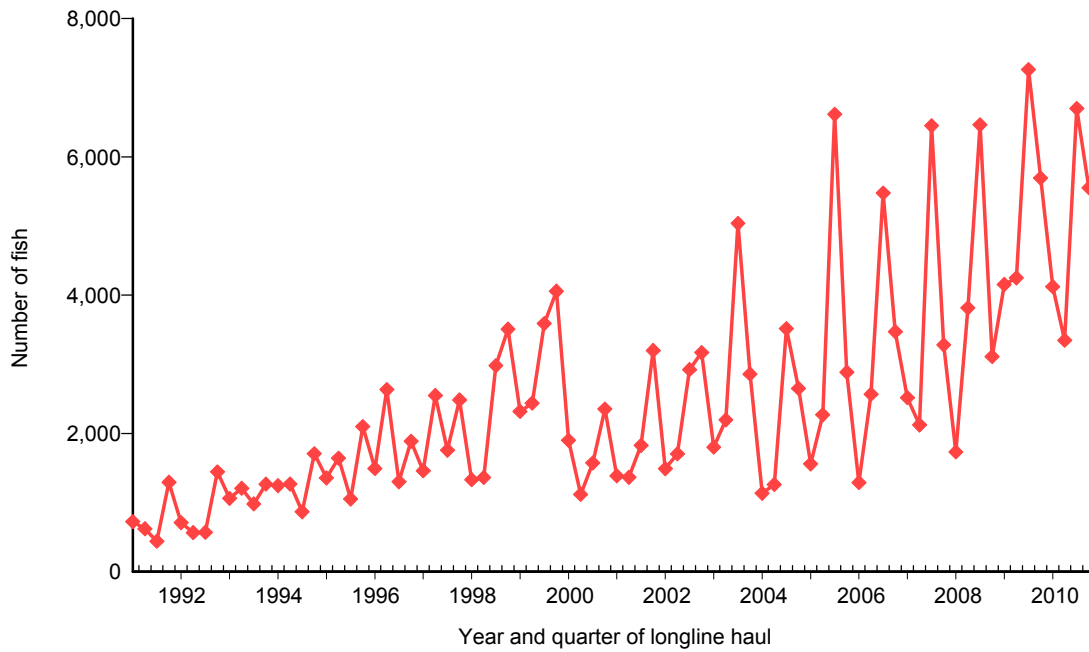


Figure 20. Quarterly catch of moonfish by longline vessels based and landing in Hawaii, 1991-2010. [PIFSC IMS, Longline Logbook Data, 2/9/2011 1:29:56PM]

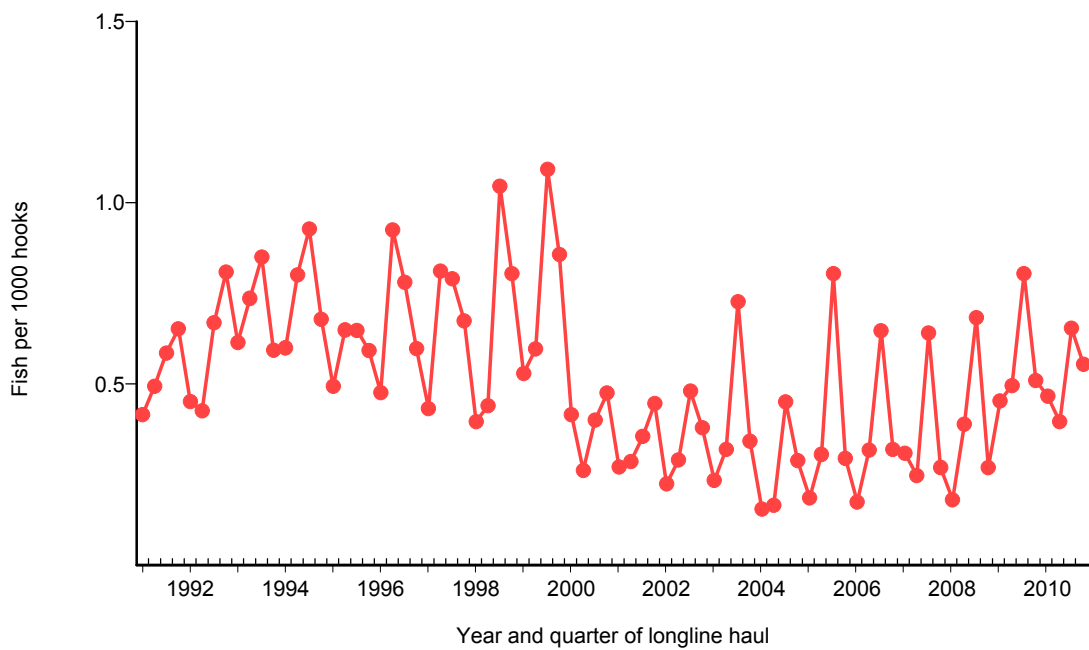


Figure 21. Quarterly CPUE of moonfish (fish per 1000 hooks) on tuna trips by longline vessels based and landing in Hawaii, 1991-2010. [PIFSC IMS, Longline Logbook Data, 2/9/2011 1:29:56PM]

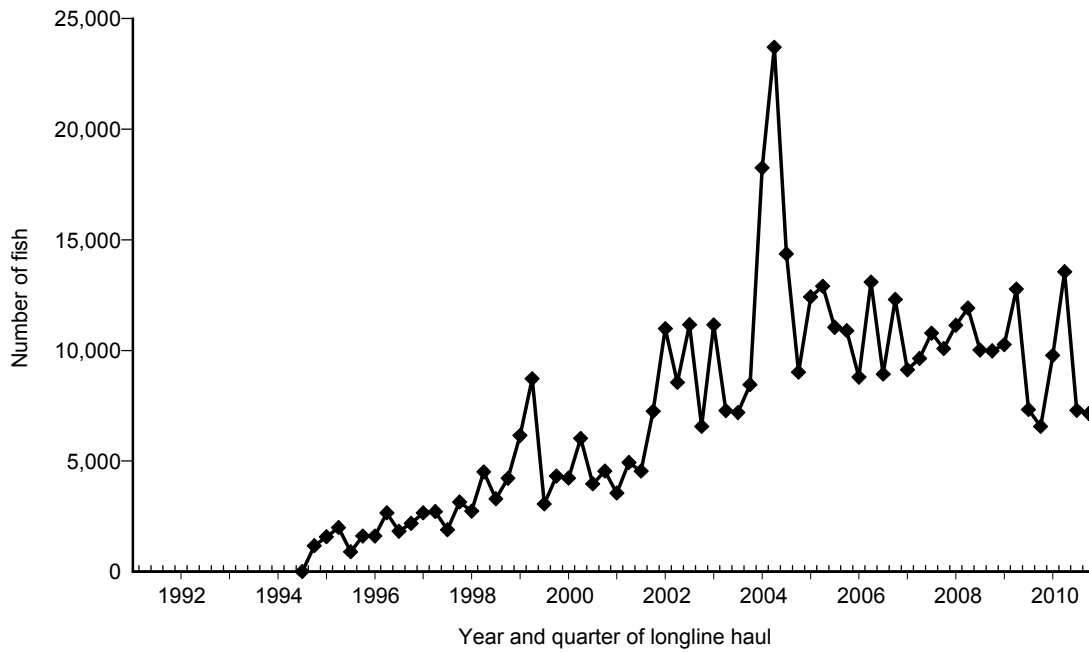


Figure 22. Quarterly catch of pomfret by longline vessels based and landing in Hawaii, 1991-2010. [PIFSC IMS, Longline Logbook Data, 2/9/2011 1:30:24PM]

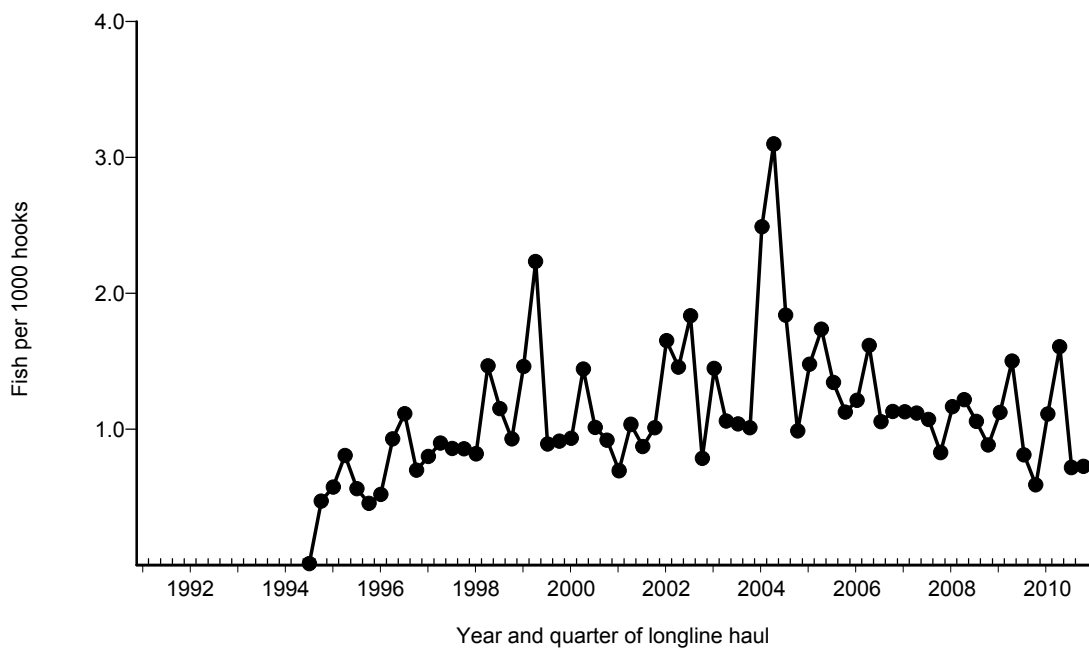


Figure 23. Quarterly CPUE of pomfret (fish per 1000 hooks) on tuna trips by longline vessels based and landing in Hawaii, 1991-2010. [PIFSC IMS, Longline Logbook Data, 2/9/2011 1:30:24PM]

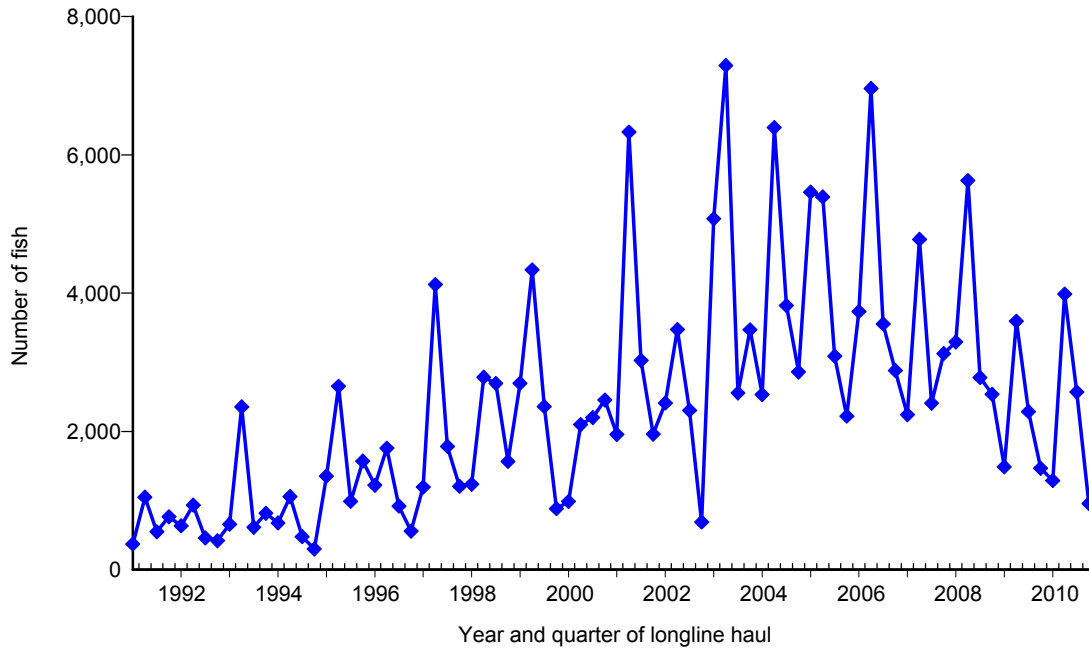


Figure 24. Quarterly catch of wahoo by longline vessels based and landing in Hawaii, 1991-2010. [PIFSC IMS, Longline Logbook Data, 2/9/2011 1:30:53PM]

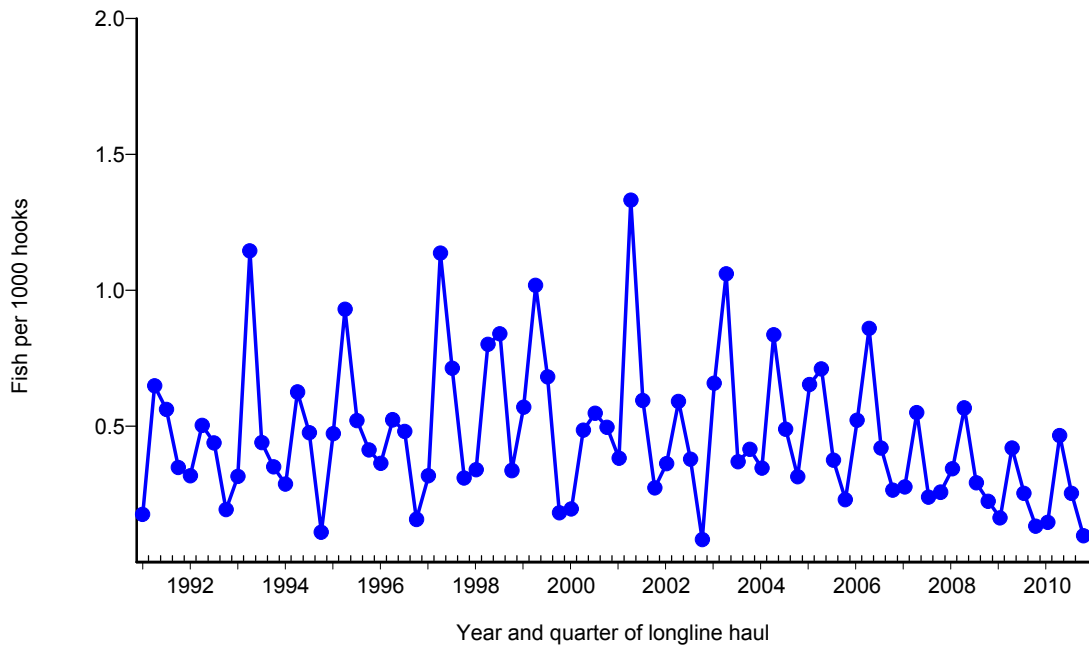


Figure 25. Quarterly CPUE of wahoo (fish per 1000 hooks) on tuna trips by longline vessels based and landing in Hawaii, 1991-2010. [PIFSC IMS, Longline Logbook Data, 2/9/2011 1:30:53PM]