

The Hawaii-based Longline Logbook Summary Report October–December 2008¹

Pacific Islands Fisheries Science Center
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This report summarizes data on fish catch and fishing effort by Hawaii-based longline vessels during the fourth quarter of 2008 (Q4-2008). 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 2008 and most, but not all, Q4-2008 data from trips that began late in the fourth quarter and continued into the first quarter of 2009. Therefore, the Q4-2008 summary statistics reported here are preliminary.

During Q4-2008, 123 vessels were active in the Hawaii-based fleet, 1 less than in Q4-2007 (Table 1, Fig. 1). They made 430 longline trips (45 less than in Q4-2007), including 413 using deep-set gear to target tuna (54 less than in Q4-2007) and 17 using shallow-set gear to target swordfish (9 more than in Q4-2007; Fig. 2). During Q4-2008, the fleet deployed 11.6 million hooks, 0.6 million less than in Q4-2007 (Fig. 3). They fished mainly within the U.S. Exclusive Economic Zone (EEZ) of the main Hawaiian Islands (MHI) (46% of the total hooks set), followed by waters outside the EEZ (30%), waters within the EEZ of the Northwestern Hawaiian Islands (NWHI) (22%) and waters inside the EEZ of 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 Q4-2008, the Hawaii longline fleet caught 40,308 bigeye tuna (Fig. 4); 40% were caught in the MHI EEZ, 31% outside the U.S. EEZ, 28% in the NWHI EEZ, and 1% in the PRIA EEZ. The bigeye tuna catch-per-unit-of-effort (CPUE) on tuna-targeted trips was 3.6 fish per 1000 hooks, well below the CPUE of 5.1 during Q4-2007 (Fig. 5). The albacore catch and CPUE on tuna-targeted trips in Q4-2008 were 3,150 fish and 0.16 fish per 1000 hooks, respectively (Figs. 6-7). The yellowfin tuna catch and CPUE on tuna-targeted trips in Q4-2008 were 5,754 fish and 0.51 fish per 1000 hooks, respectively (Figs. 8-9).

The Q4-2008 swordfish catch was 4,249 fish, 2.4 times higher than in Q4-2007 (Fig. 10). The larger swordfish catch is attributed mostly to more shallow sets made in Q4-2008. In Q4-2008, swordfish CPUE on shallow-set swordfish-targeted trips was 11.8 fish per 1000 hooks, 2.7 fish per 1000 hooks lower than in Q4-2007 (Fig. 11).

The Q4-2008 striped marlin catch (5,431 fish) and CPUE on tuna-targeted trips (0.48 fish per 1000 hooks) were both more than 4 times higher compared to Q4-2007 (Figs. 12-13). Similarly, the Q4-2008 blue marlin catch (1,048 fish) and CPUE on tuna-targeted trips (0.09 fish per 1000 hooks) were higher than in Q4-2007 by 14% and 13%, respectively (Figs. 14-15).

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The fleet caught 18,336 sharks in Q4-2008, of which 72 (0.3%) were kept. Blue shark comprised 90% of the total shark catch (20,460 fish) (Fig. 16). Blue shark CPUE on shallow-set swordfish-targeted trips was 11.6 fish per 1000 hooks (Fig. 17).

In Q4-2008, the Hawaii longline catch of other key pelagic species included 8,873 mahimahi (Fig. 18) with a CPUE of 0.78 fish per 1000 hooks on tuna-targeted trips (Fig. 19); 3,109 moonfish (Fig. 20) with a CPUE of 0.27 fish per 1000 hooks on tuna-targeted trips (Fig. 21); 9,982 pomfret (Fig. 22) with a CPUE of 0.88 fish per 1000 hooks on tuna-targeted trips (Fig. 23); and 2,535 wahoo (Fig. 24) with a CPUE of 0.22 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. Q4-2008 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. Q4-2008 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, 2/20/2009 3:25:12PM].

Report Coverage		Number of vessels active			123
Time Period	4th Quarter 2008	Number of trips			430
Fishing Area	All Areas	Number of sets			5,327
Trip Types	All Trip Types	Number of hooks set			11,597,730

Pelagic Management Unit Species (PMUS)	Number Caught	Number Kept	Number Released	CPUE - Number Caught per 1000 hooks
Billfishes				
Blue marlin	1,048	1,029	19	0.09
Striped marlin	5,431	5,383	48	0.47
Shortbill spearfish	3,040	3,010	30	0.26
Swordfish	4,249	3,917	332	0.37
Other billfishes	181	181	0	0.02
Total	13,949	13,520	429	1.20
Sharks				
Blue shark	18,336	72	18,264	1.58
Mako sharks	859	312	547	0.07
Thresher sharks	1,079	145	934	0.09
Oceanic whitetip shark	112	15	97	0.01
Silky shark	3	0	3	0.00
Other sharks	71	6	65	0.01
Total	20,460	550	19,910	1.76
Tunas				
Albacore	3,150	2,591	559	0.27
Bigeye tuna	40,308	39,600	708	3.48
Yellowfin tuna	5,754	5,594	160	0.50
Bluefin tuna	1	1	0	0.00
Skipjack tuna	3,386	3,303	83	0.29
Other tunas	6	2	4	0.00
Total	52,605	51,091	1,514	4.54
Other PMUS				
Mahimahi	8,873	8,804	69	0.77
Moonfish	3,109	3,072	37	0.27
Wahoo	2,535	2,521	14	0.22
Oilfish	8,745	8,495	250	0.75
Pomfret	9,982	9,937	45	0.86
Total	33,244	32,829	415	2.87
Total PMUS	120,258	97,990	22,268	10.37
Total Non-PMUS	1,217	213	1,004	0.10
Total All Species	121,475	98,203	1,217	10.47

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, 2/20/2009 3:25:12PM].

Report Coverage		Number of vessels active			113
Time Period	4th Quarter 2008	Number of trips			302
Fishing Area	Main Hawaiian Islands EEZ	Number of sets			2,379
Trip Types	All Trip Types	Number of hooks set			5,349,163

Pelagic Management Unit Species (PMUS)	Number Caught	Number Kept	Number Released	CPUE - Number Caught per 1000 hooks
Billfishes				
Blue marlin	371	370	1	0.07
Striped marlin	1,779	1,763	16	0.33
Shortbill spearfish	865	856	9	0.16
Swordfish	218	194	24	0.04
Other billfishes	60	60	0	0.01
Total	3,293	3,243	50	0.62
Sharks				
Blue shark	5,632	14	5,618	1.05
Mako sharks	241	162	79	0.05
Thresher sharks	371	70	301	0.07
Oceanic whitetip shark	40	5	35	0.01
Silky shark	0	0	0	0.00
Other sharks	19	1	18	0.00
Total	6,303	252	6,051	1.18
Tunas				
Albacore	173	170	3	0.03
Bigeye tuna	16,195	15,985	210	3.03
Yellowfin tuna	1,924	1,886	38	0.36
Bluefin tuna	0	0	0	0.00
Skipjack tuna	1,574	1,536	38	0.29
Other tunas	0	0	0	0.00
Total	19,866	19,577	289	3.71
Other PMUS				
Mahimahi	4,780	4,764	16	0.89
Moonfish	1,077	1,076	1	0.20
Wahoo	703	698	5	0.13
Oilfish	3,240	3,232	8	0.61
Pomfret	5,002	4,979	23	0.94
Total	14,802	14,749	53	2.77
Total PMUS	44,264	37,821	6,443	8.27
Total Non-PMUS	568	42	526	0.11
Total All Species	44,832	37,863	568	8.38

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, 2/20/2009 3:25:12PM].

Report Coverage		Number of vessels active			88
Time Period	4th Quarter 2008	Number of trips			129
Fishing Area	Northwestern Hawaiian Islands EEZ	Number of sets			1,169
Trip Types	All Trip Types	Number of hooks set			2,600,998

Pelagic Management Unit Species (PMUS)	Number Caught	Number Kept	Number Released	CPUE - Number Caught per 1000 hooks
Billfishes				
Blue marlin	373	359	14	0.14
Striped marlin	2,421	2,404	17	0.93
Shortbill spearfish	1,181	1,165	16	0.45
Swordfish	112	97	15	0.04
Other billfishes	67	67	0	0.03
Total	4,154	4,092	62	1.60
Sharks				
Blue shark	5,012	35	4,977	1.93
Mako sharks	110	46	64	0.04
Thresher sharks	458	55	403	0.18
Oceanic whitetip shark	48	8	40	0.02
Silky shark	0	0	0	0.00
Other sharks	37	5	32	0.01
Total	5,665	149	5,516	2.18
Tunas				
Albacore	427	421	6	0.16
Bigeye tuna	11,416	11,230	186	4.39
Yellowfin tuna	1,920	1,864	56	0.74
Bluefin tuna	0	0	0	0.00
Skipjack tuna	551	536	15	0.21
Other tunas	1	1	0	0.00
Total	14,315	14,052	263	5.50
Other PMUS				
Mahimahi	1,173	1,168	5	0.45
Moonfish	717	716	1	0.28
Wahoo	797	792	5	0.31
Oilfish	2,731	2,720	11	1.05
Pomfret	1,874	1,867	7	0.72
Total	7,292	7,263	29	2.80
Total PMUS	31,426	25,556	5,870	12.08
Total Non-PMUS	41	20	21	0.02
Total All Species	31,467	25,576	41	12.10

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, 2/20/2009 3:25:12PM].

Report Coverage		Number of vessels active		12
Time Period	4th Quarter 2008	Number of trips		12
Fishing Area	Pacific Remote Island Areas (PRIA) EEZ	Number of sets		53
Trip Types	All Trip Types	Number of hooks set		113,231

Pelagic Management Unit Species (PMUS)	Number Caught	Number Kept	Number Released	CPUE - Number Caught per 1000 hooks
Billfishes				
Blue marlin	18	18	0	0.16
Striped marlin	79	79	0	0.70
Shortbill spearfish	113	113	0	1.00
Swordfish	7	6	1	0.06
Other billfishes	2	2	0	0.02
Total	219	218	1	1.93
Sharks				
Blue shark	195	0	195	1.72
Mako sharks	0	0	0	0.00
Thresher sharks	19	1	18	0.17
Oceanic whitetip shark	0	0	0	0.00
Silky shark	0	0	0	0.00
Other sharks	0	0	0	0.00
Total	214	1	213	1.89
Tunas				
Albacore	246	245	1	2.17
Bigeye tuna	386	384	2	3.41
Yellowfin tuna	123	121	2	1.09
Bluefin tuna	0	0	0	0.00
Skipjack tuna	43	43	0	0.38
Other tunas	0	0	0	0.00
Total	798	793	5	7.05
Other PMUS				
Mahimahi	88	88	0	0.78
Moonfish	23	23	0	0.20
Wahoo	59	59	0	0.52
Oilfish	32	32	0	0.28
Pomfret	47	47	0	0.42
Total	249	249	0	2.20
Total PMUS	1,480	1,261	219	13.07
Total Non-PMUS	6	4	2	0.05
Total All Species	1,486	1,265	6	13.12

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, 2/20/2009 3:25:12PM].

Report Coverage		Number of vessels active		115	
Time Period	4th Quarter 2008	Number of trips		373	
Fishing Area	Hawaiian Islands EEZ + PRIA EEZ	Number of sets		3,601	
Trip Types	All Trip Types	Number of hooks set		8,063,392	

Pelagic Management Unit Species (PMUS)	Number Caught	Number Kept	Number Released	CPUE - Number Caught per 1000 hooks
Billfishes				
Blue marlin	762	747	15	0.09
Striped marlin	4,279	4,246	33	0.53
Shortbill spearfish	2,159	2,134	25	0.27
Swordfish	337	297	40	0.04
Other billfishes	129	129	0	0.02
Total	7,666	7,553	113	0.95
Sharks				
Blue shark	10,839	49	10,790	1.34
Mako sharks	351	208	143	0.04
Thresher sharks	848	126	722	0.11
Oceanic whitetip shark	88	13	75	0.01
Silky shark	0	0	0	0.00
Other sharks	56	6	50	0.01
Total	12,182	402	11,780	1.51
Tunas				
Albacore	846	836	10	0.10
Bigeye tuna	27,997	27,599	398	3.47
Yellowfin tuna	3,967	3,871	96	0.49
Bluefin tuna	0	0	0	0.00
Skipjack tuna	2,168	2,115	53	0.27
Other tunas	1	1	0	0.00
Total	34,979	34,422	557	4.34
Other PMUS				
Mahimahi	6,041	6,020	21	0.75
Moonfish	1,817	1,815	2	0.23
Wahoo	1,559	1,549	10	0.19
Oilfish	6,003	5,984	19	0.74
Pomfret	6,923	6,893	30	0.86
Total	22,343	22,261	82	2.77
Total PMUS	77,170	64,638	12,532	9.57
Total Non-PMUS	615	66	549	0.08
Total All Species	77,785	64,704	615	9.65

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, 2/20/2009 3:25:12PM].

Report Coverage		Number of vessels active		112	
Time Period	4th Quarter 2008	Number of trips		237	
Fishing Area	Outside U.S. EEZ	Number of sets		1,726	
Trip Types	All Trip Types	Number of hooks set		3,534,338	

Pelagic Management Unit Species (PMUS)	Number Caught	Number Kept	Number Released	CPUE - Number Caught per 1000 hooks
Billfishes				
Blue marlin	286	282	4	0.08
Striped marlin	1,152	1,137	15	0.33
Shortbill spearfish	881	876	5	0.25
Swordfish	3,912	3,620	292	1.11
Other billfishes	52	52	0	0.01
Total	6,283	5,967	316	1.78
Sharks				
Blue shark	7,497	23	7,474	2.12
Mako sharks	508	104	404	0.14
Thresher sharks	231	19	212	0.07
Oceanic whitetip shark	24	2	22	0.01
Silky shark	3	0	3	0.00
Other sharks	15	0	15	0.00
Total	8,278	148	8,130	2.34
Tunas				
Albacore	2,304	1,755	549	0.65
Bigeye tuna	12,311	12,001	310	3.48
Yellowfin tuna	1,787	1,723	64	0.51
Bluefin tuna	1	1	0	0.00
Skipjack tuna	1,218	1,188	30	0.34
Other tunas	5	1	4	0.00
Total	17,626	16,669	957	4.99
Other PMUS				
Mahimahi	2,832	2,784	48	0.80
Moonfish	1,292	1,257	35	0.37
Wahoo	976	972	4	0.28
Oilfish	2,742	2,511	231	0.78
Pomfret	3,059	3,044	15	0.87
Total	10,901	10,568	333	3.08
Total PMUS	43,088	33,352	9,736	12.19
Total Non-PMUS	602	147	455	0.17
Total All Species	43,690	33,499	602	12.36

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, 2/20/2009 3:25:12PM].

Report Coverage		Number of vessels active			15
Time Period	4th Quarter 2008	Number of trips			17
Fishing Area	All Areas	Number of sets			351
Trip Types	Swordfish Targeted Trips	Number of hooks set			319,091

Pelagic Management Unit Species (PMUS)	Number Caught	Number Kept	Number Released	CPUE - Number Caught per 1000 hooks
Billfishes				
Blue marlin	4	1	3	0.01
Striped marlin	8	5	3	0.03
Shortbill spearfish	3	2	1	0.01
Swordfish	3,755	3,482	273	11.77
Other billfishes	0	0	0	0.00
Total	3,770	3,490	280	11.81
Sharks				
Blue shark	3,697	0	3,697	11.59
Mako sharks	354	45	309	1.11
Thresher sharks	23	1	22	0.07
Oceanic whitetip shark	8	0	8	0.03
Silky shark	0	0	0	0.00
Other sharks	4	0	4	0.01
Total	4,086	46	4,040	12.81
Tunas				
Albacore	1,400	853	547	4.39
Bigeye tuna	57	53	4	0.18
Yellowfin tuna	3	2	1	0.01
Bluefin tuna	1	1	0	0.00
Skipjack tuna	1	1	0	0.00
Other tunas	4	0	4	0.01
Total	1,466	910	556	4.59
Other PMUS				
Mahimahi	86	63	23	0.27
Moonfish	77	47	30	0.24
Wahoo	12	12	0	0.04
Oilfish	520	293	227	1.63
Pomfret	23	21	2	0.07
Total	718	436	282	2.25
Total PMUS	10,040	4,882	5,158	31.46
Total Non-PMUS	32	1	31	0.10
Total All Species	10,072	4,883	32	31.56

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, 2/20/2009 3:25:12PM].

Report Coverage					Number of vessels active	118
Time Period	4th Quarter 2008				Number of trips	413
Fishing Area	All Areas				Number of sets	4,976
Trip Types	Tuna Targeted Trips				Number of hooks set	11,278,639

Pelagic Management Unit Species (PMUS)	Number Caught	Number Kept	Number Released	CPUE - Number Caught per 1000 hooks
Billfishes				
Blue marlin	1,044	1,028	16	0.09
Striped marlin	5,423	5,378	45	0.48
Shortbill spearfish	3,037	3,008	29	0.27
Swordfish	494	435	59	0.04
Other billfishes	181	181	0	0.02
Total	10,179	10,030	149	0.90
Sharks				
Blue shark	14,639	72	14,567	1.30
Mako sharks	505	267	238	0.04
Thresher sharks	1,056	144	912	0.09
Oceanic whitetip shark	104	15	89	0.01
Silky shark	3	0	3	0.00
Other sharks	67	6	61	0.01
Total	16,374	504	15,870	1.45
Tunas				
Albacore	1,750	1,738	12	0.16
Bigeye tuna	40,251	39,547	704	3.57
Yellowfin tuna	5,751	5,592	159	0.51
Bluefin tuna	0	0	0	0.00
Skipjack tuna	3,385	3,302	83	0.30
Other tunas	2	2	0	0.00
Total	51,139	50,181	958	4.53
Other PMUS				
Mahimahi	8,787	8,741	46	0.78
Moonfish	3,032	3,025	7	0.27
Wahoo	2,523	2,509	14	0.22
Oilfish	8,225	8,202	23	0.73
Pomfret	9,959	9,916	43	0.88
Total	32,526	32,393	133	2.88
Total PMUS	110,218	93,108	17,110	9.77
Total Non-PMUS	1,185	212	973	0.11
Total All Species	111,403	93,320	1,185	9.88

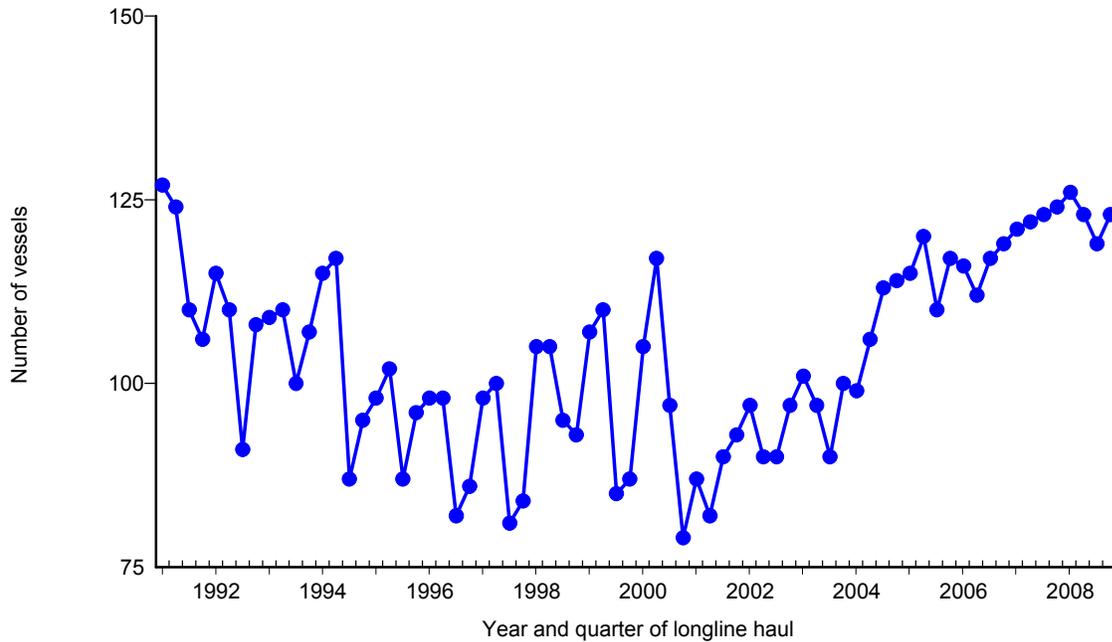


Figure 1. Number of active longline vessels based and landing in Hawaii, by quarter, 1991-2008. [PIFSC IMS, Longline Logbook Data, 2/20/2009 10:39:07AM]

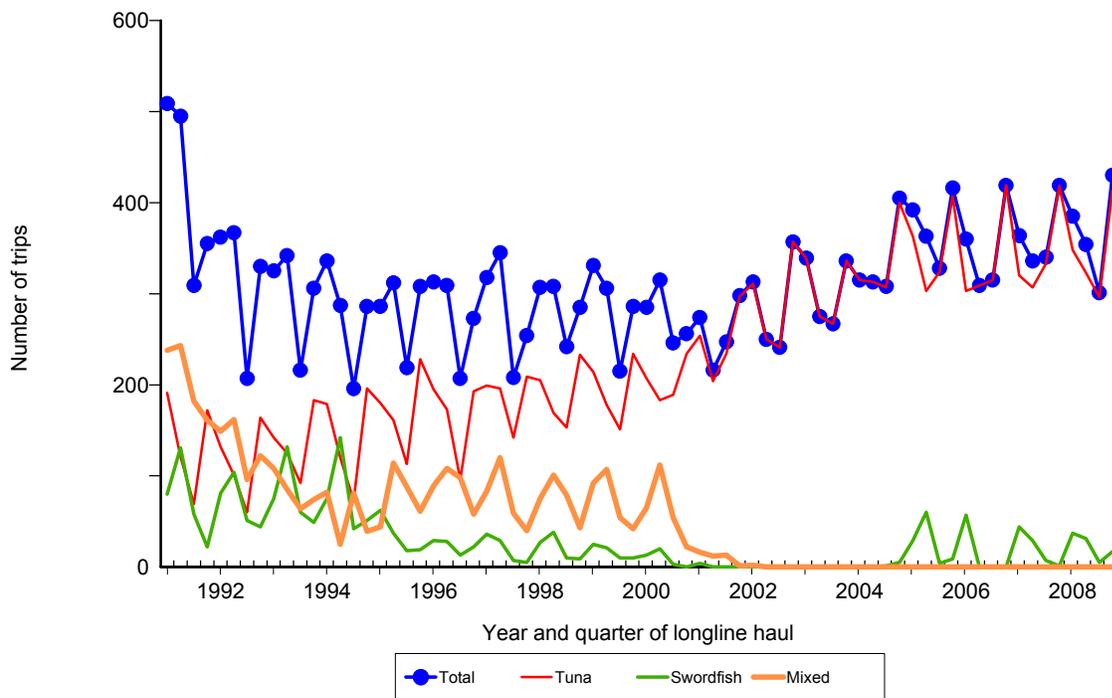


Figure 2. Number of fishing trips by longline vessels based and landing in Hawaii, by quarter and trip type, 1991-2008. [PIFSC IMS, Longline Logbook Data, 2/20/2009 10:39:07AM]

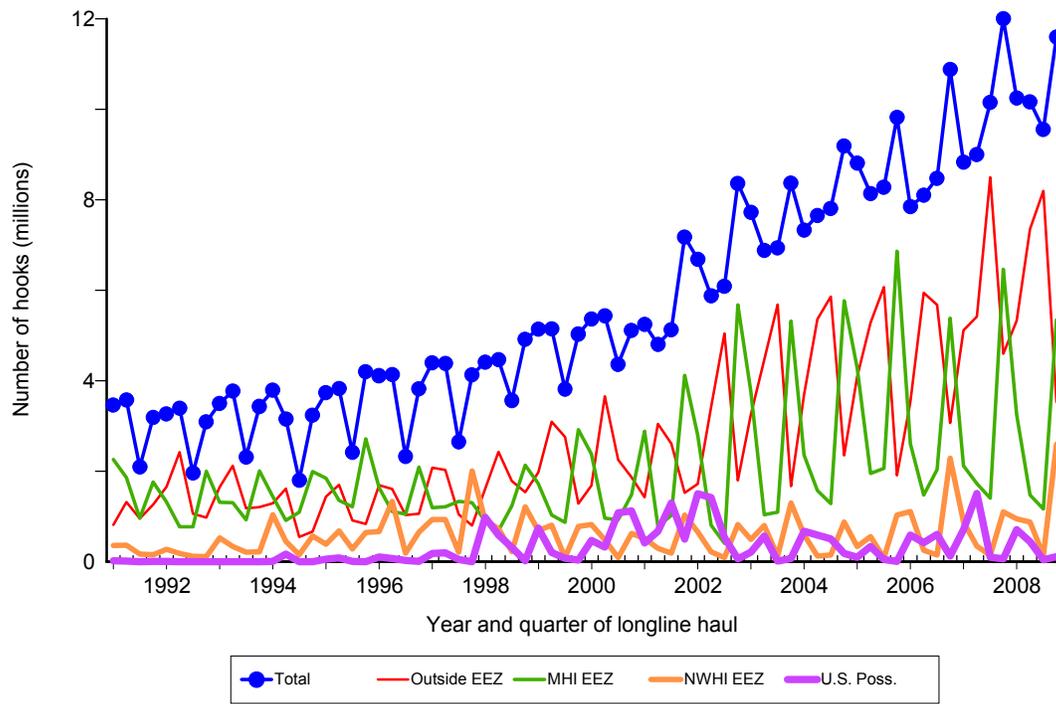


Figure 3. Number of hooks set by longline vessels based and landing in Hawaii, by quarter and fishing area, 1991-2008. [PIFSC IMS, Longline Logbook Data, 2/20/2009 10:39:10AM]

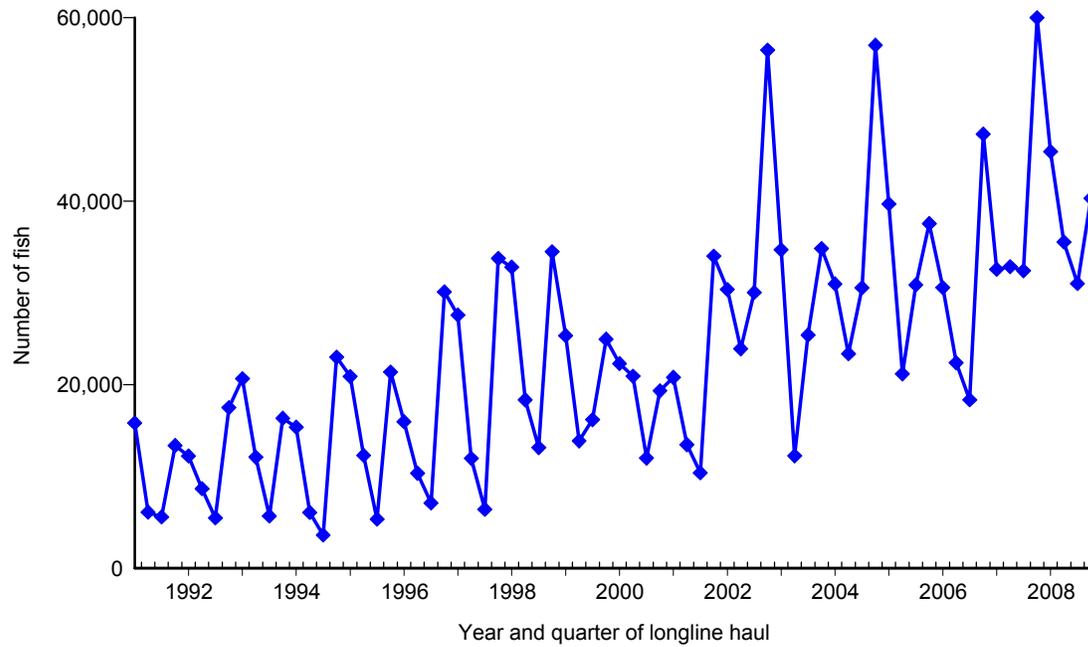


Figure 4. Quarterly catch of bigeye tuna by longline vessels based and landing in Hawaii, 1991-2008. [PIFSC IMS, Longline Logbook Data, 2/20/2009 10:39:52AM]

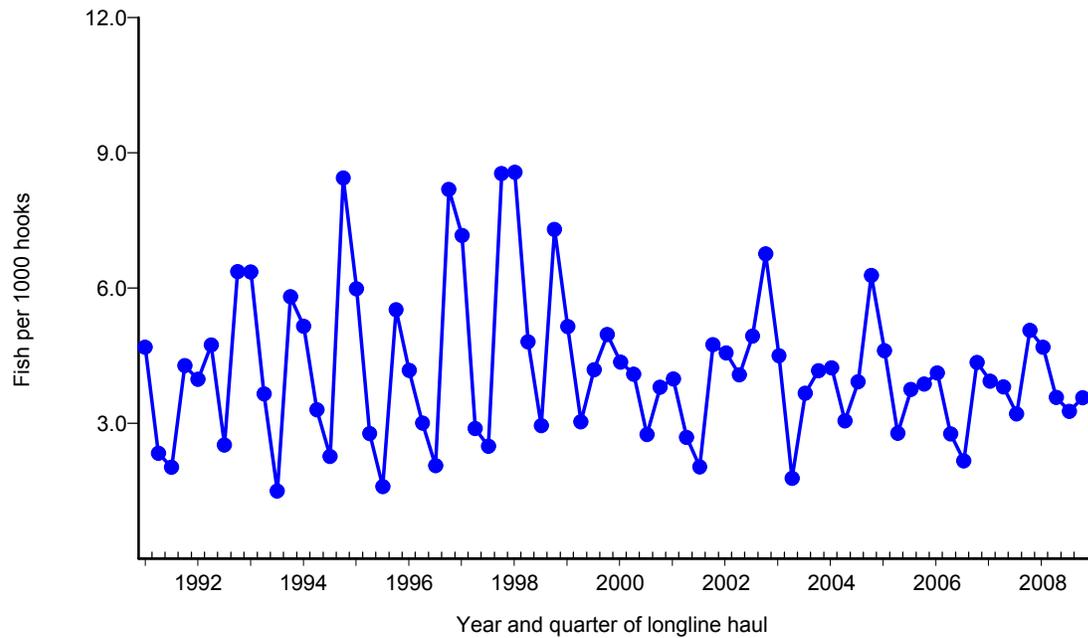


Figure 5. Quarterly CPUE of bigeye tuna (fish per 1000 hooks) on tuna trips by longline vessels based and landing in Hawaii, 1991-2008. [PIFSC IMS, Longline Logbook Data, 2/20/2009 10:39:52AM]

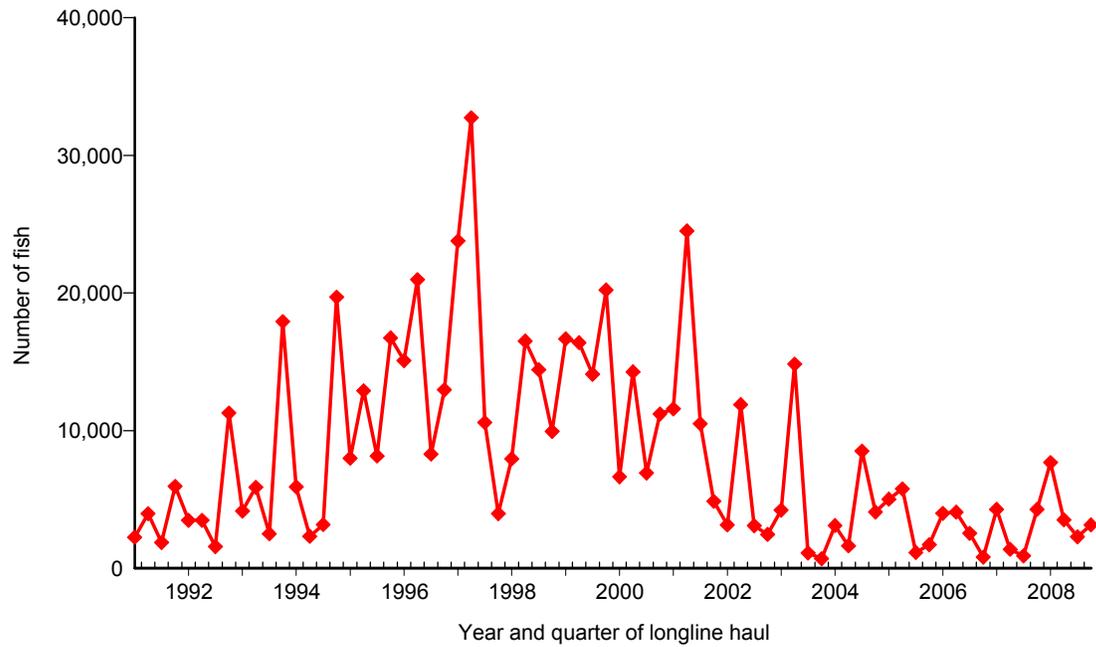


Figure 6. Quarterly catch of albacore by longline vessels based and landing in Hawaii, 1991-2008. [PIFSC IMS, Longline Logbook Data, 2/20/2009 10:48:26AM]

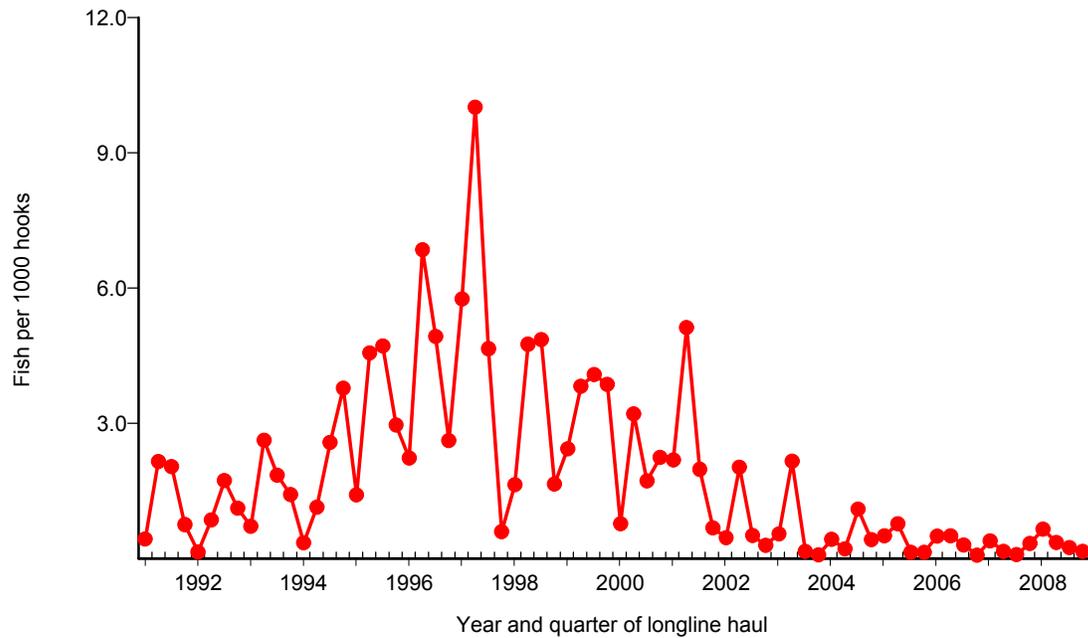


Figure 7. Quarterly CPUE of albacore (fish per 1000 hooks) on tuna trips by longline vessels based and landing in Hawaii, 1991-2008. [PIFSC IMS, Longline Logbook Data, 2/20/2009 10:48:26AM]

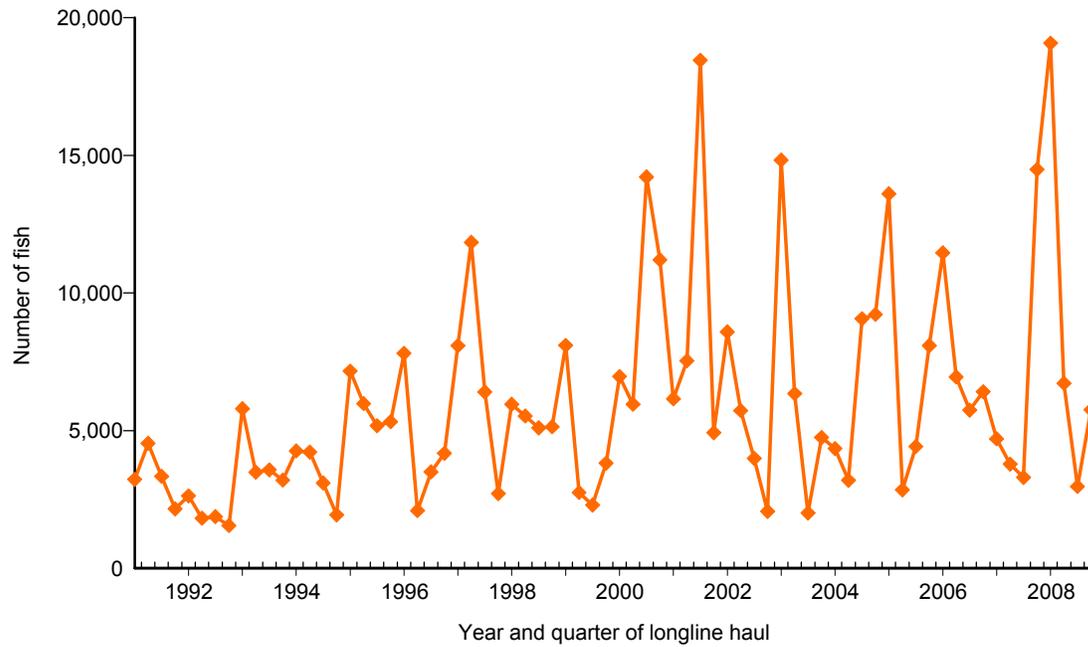


Figure 8. Quarterly catch of yellowfin tuna by longline vessels based and landing in Hawaii, 1991-2008. [PIFSC IMS, Longline Logbook Data, 2/20/2009 10:48:26AM]

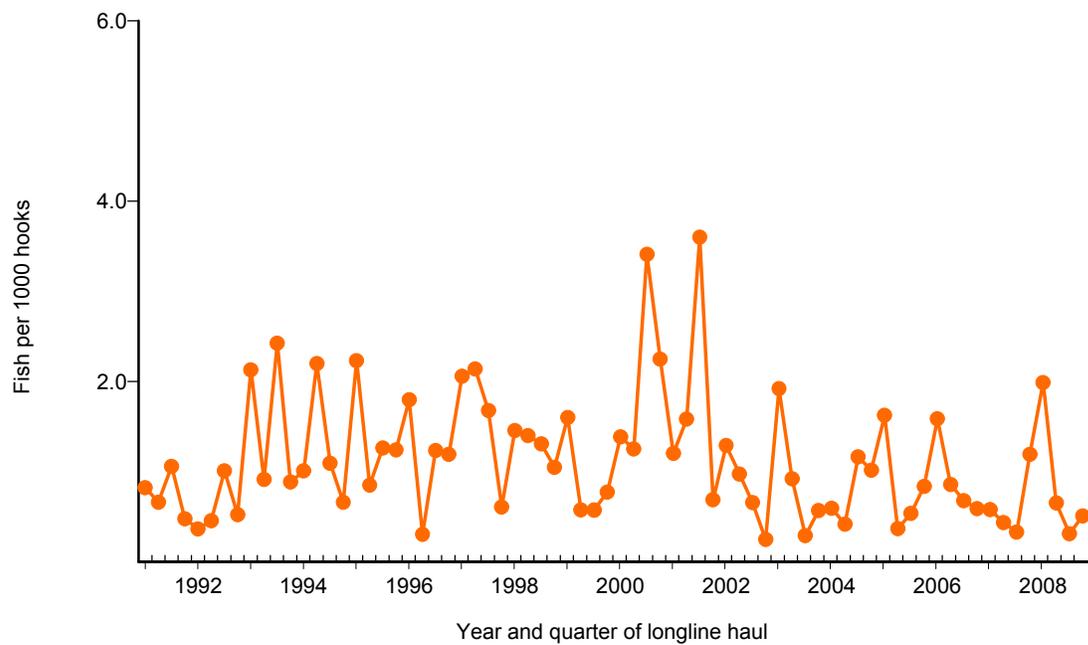


Figure 9. Quarterly CPUE of yellowfin tuna (fish per 1000 hooks) on tuna trips by longline vessels based and landing in Hawaii, 1991-2008. [PIFSC IMS, Longline Logbook Data, 2/20/2009 10:48:26AM]

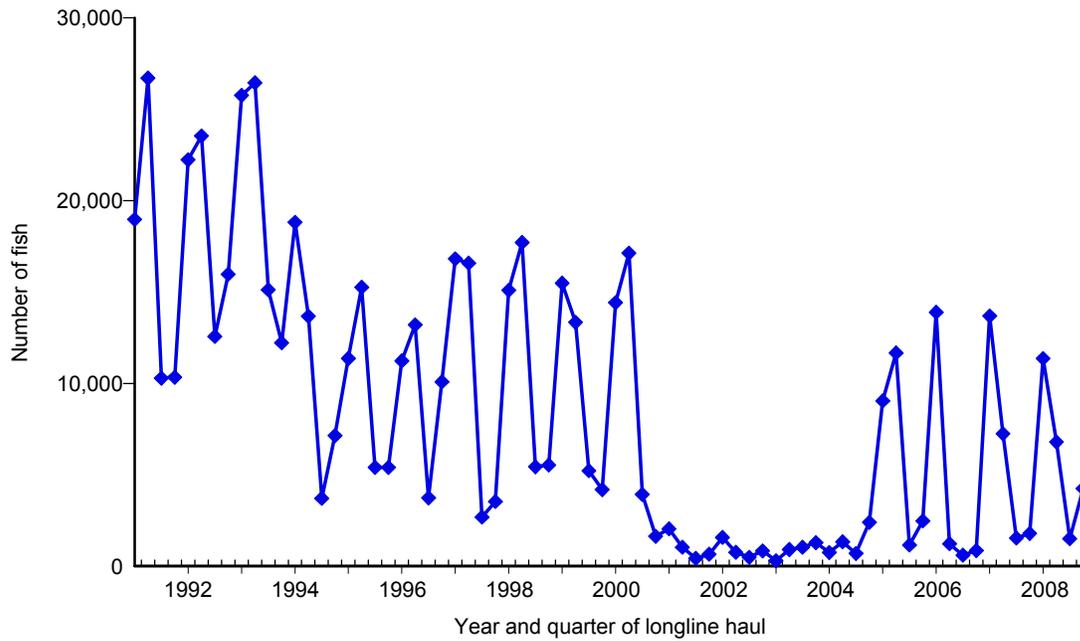


Figure 10. Quarterly catch of swordfish by longline vessels based and landing in Hawaii, 1991-2008. [PIFSC IMS, Longline Logbook Data, 2/20/2009 10:48:26AM]

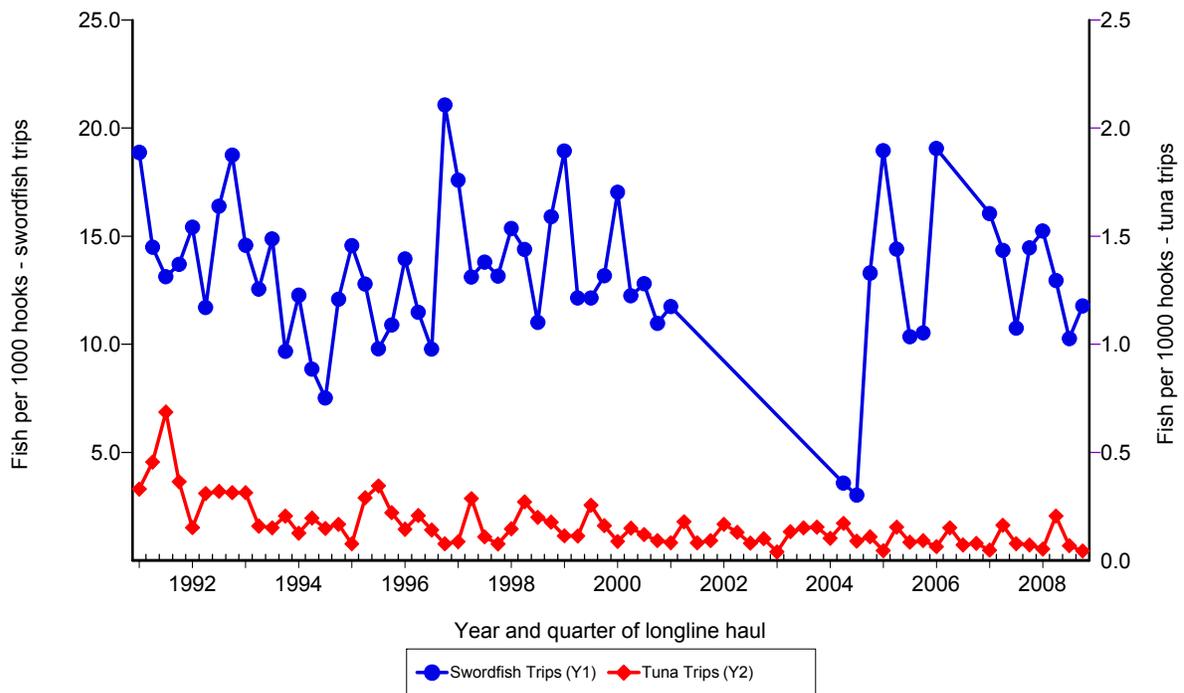


Figure 11. Quarterly CPUE of swordfish (fish per 1000 hooks) on swordfish trips and tuna trips by longline vessels based and landing in Hawaii, 1991-2008. [PIFSC IMS, Longline Logbook Data, 2/20/2009 10:48:26AM]

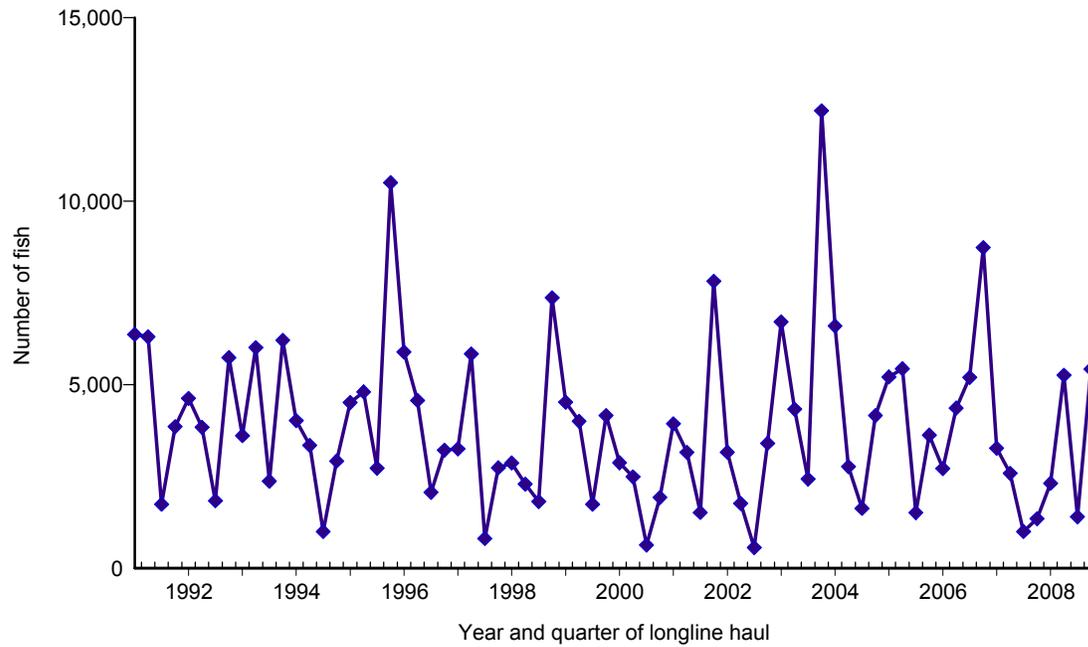


Figure 12. Quarterly catch of striped marlin by longline vessels based and landing in Hawaii, 1991-2008. [PIFSC IMS, Longline Logbook Data, 2/20/2009 10:48:26AM]

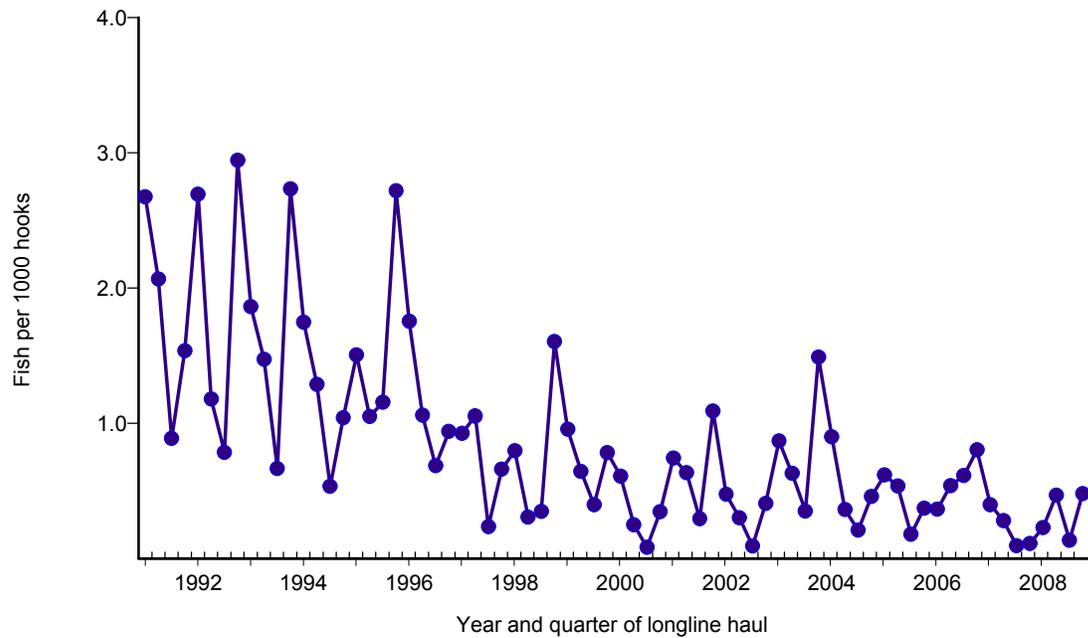


Figure 13. Quarterly CPUE of striped marlin (fish per 1000 hooks) on tuna trips by longline vessels based and landing in Hawaii, 1991-2008. [PIFSC IMS, Longline Logbook Data, 2/20/2009 10:48:26AM]

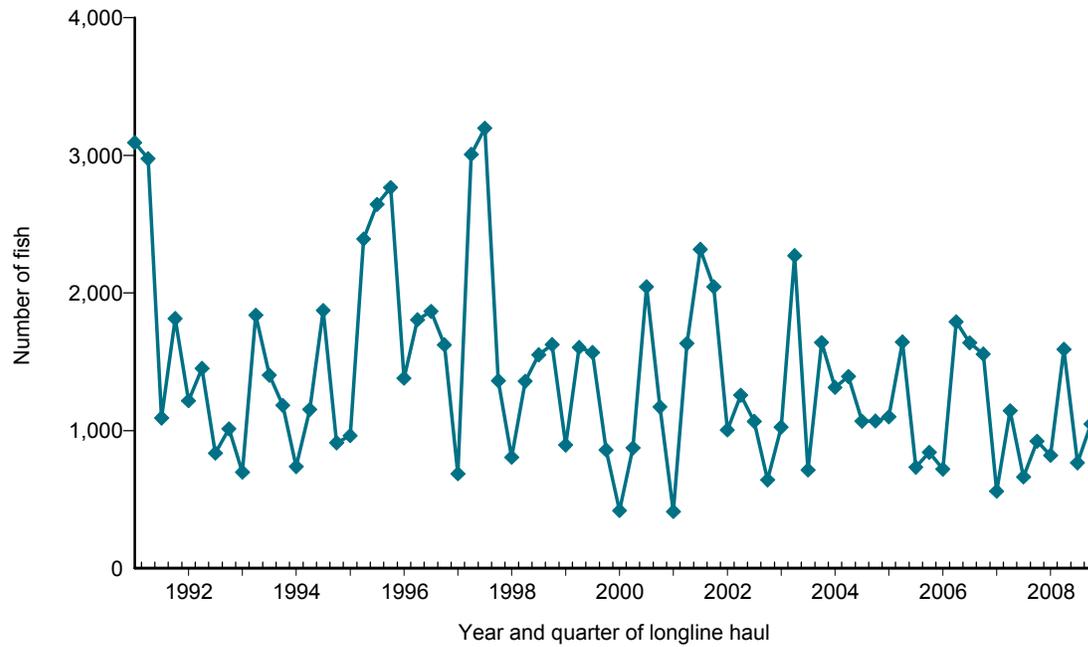


Figure 14. Quarterly catch of blue marlin by longline vessels based and landing in Hawaii, 1991-2008. [PIFSC IMS, Longline Logbook Data, 2/20/2009 10:48:26AM]

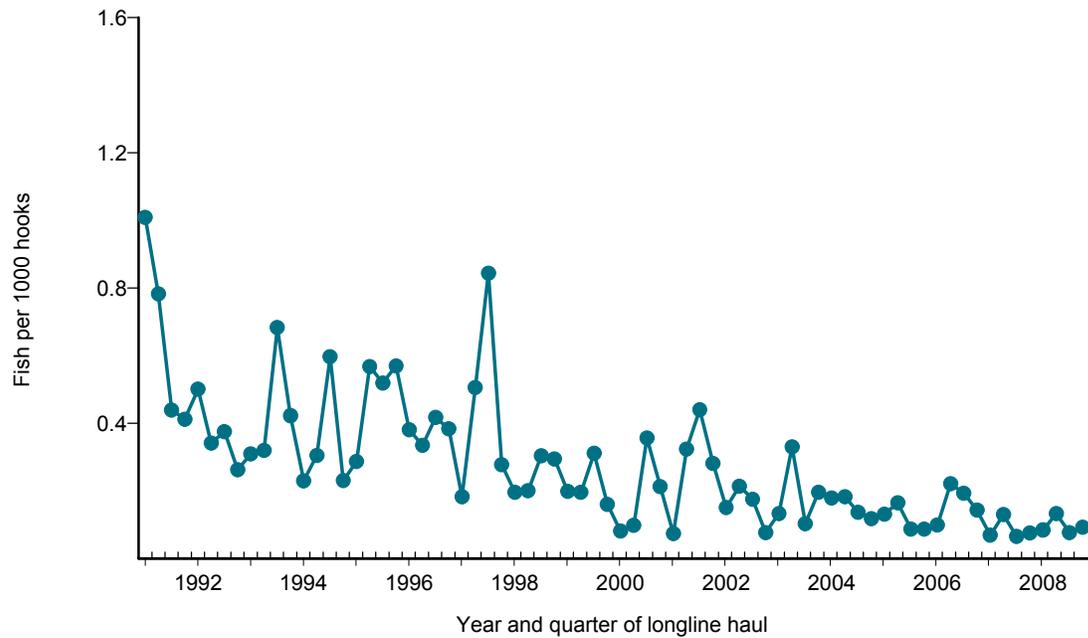


Figure 15. Quarterly CPUE of blue marlin (fish per 1000 hooks) on tuna trips by longline vessels based and landing in Hawaii, 1991-2008. [PIFSC IMS, Longline Logbook Data, 2/20/2009 10:48:26AM]

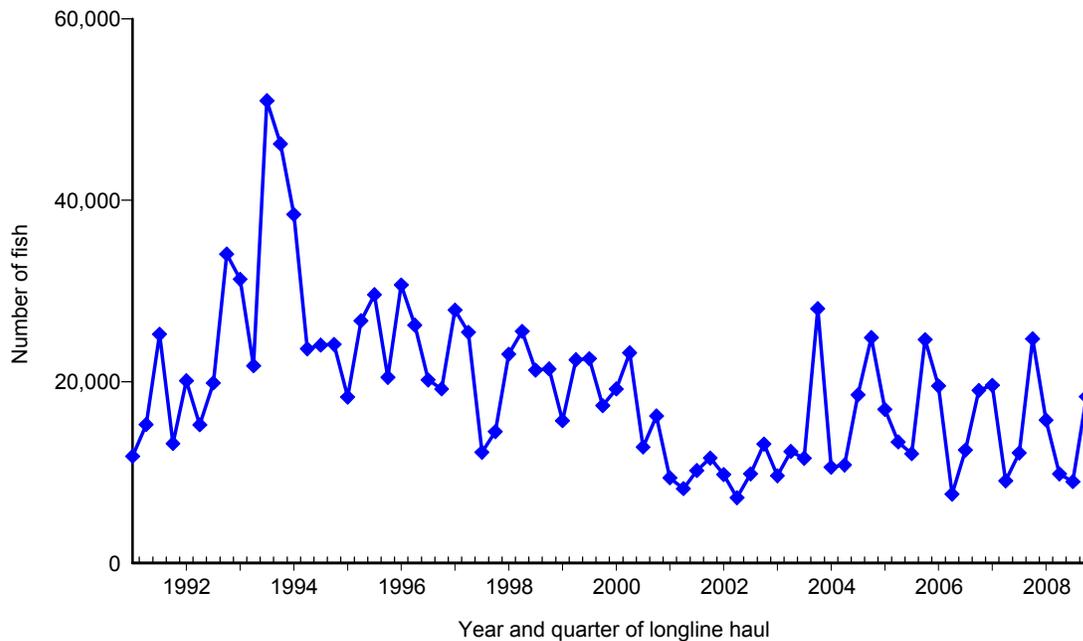


Figure 16. Quarterly catch of blue shark by longline vessels based and landing in Hawaii, 1991-2008. [PIFSC IMS, Longline Logbook Data, 2/20/2009 10:48:26AM]

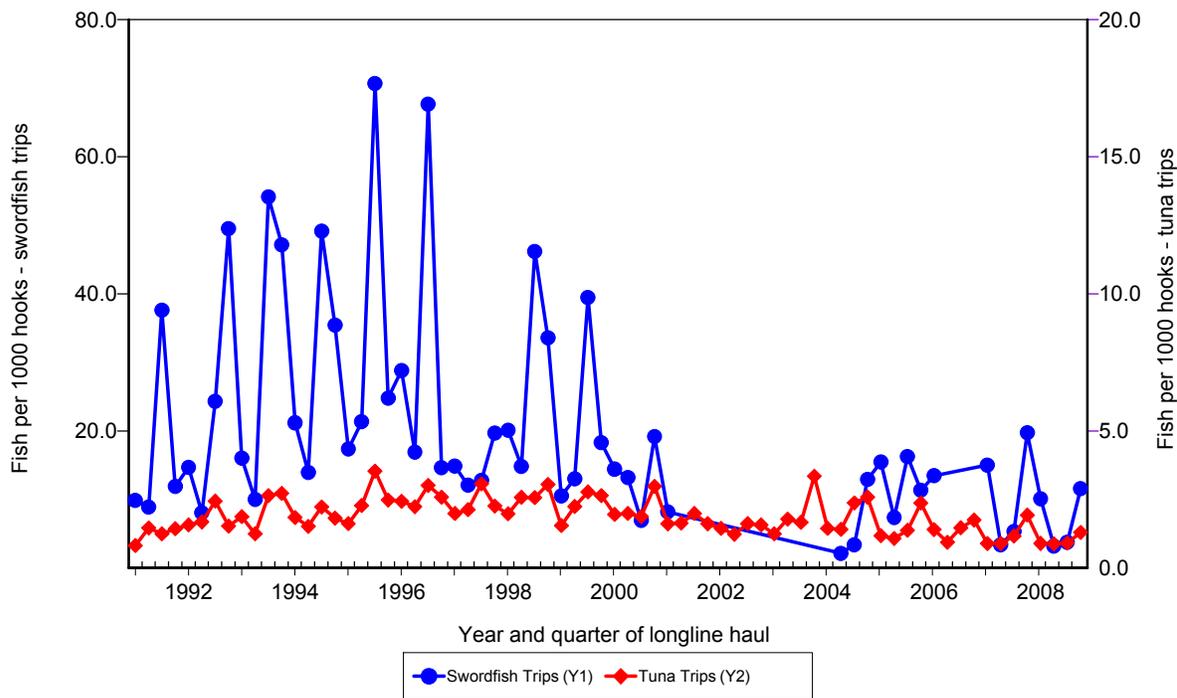


Figure 17. Quarterly CPUE of blue shark (fish per 1000 hooks) on swordfish trips and tuna trips by longline vessels based and landing in Hawaii, 1991-2008. [PIFSC IMS, Longline Logbook Data, 2/20/2009 10:48:26AM]

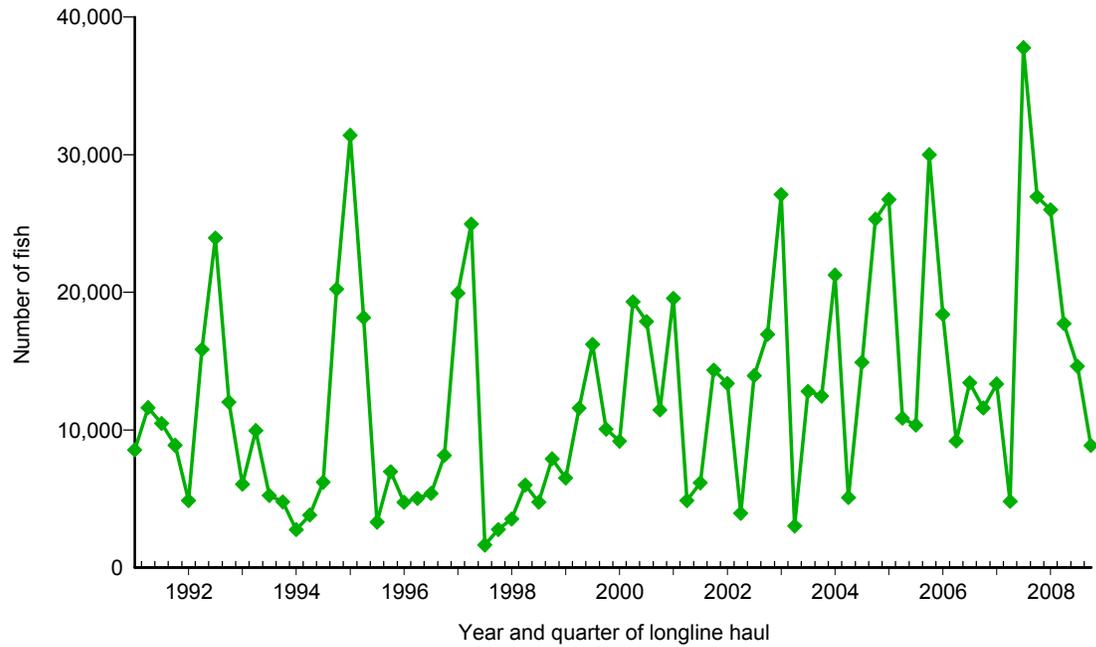


Figure 18. Quarterly catch of mahimahi by longline vessels based and landing in Hawaii, 1991-2008. [PIFSC IMS, Longline Logbook Data, 2/20/2009 10:48:26AM]

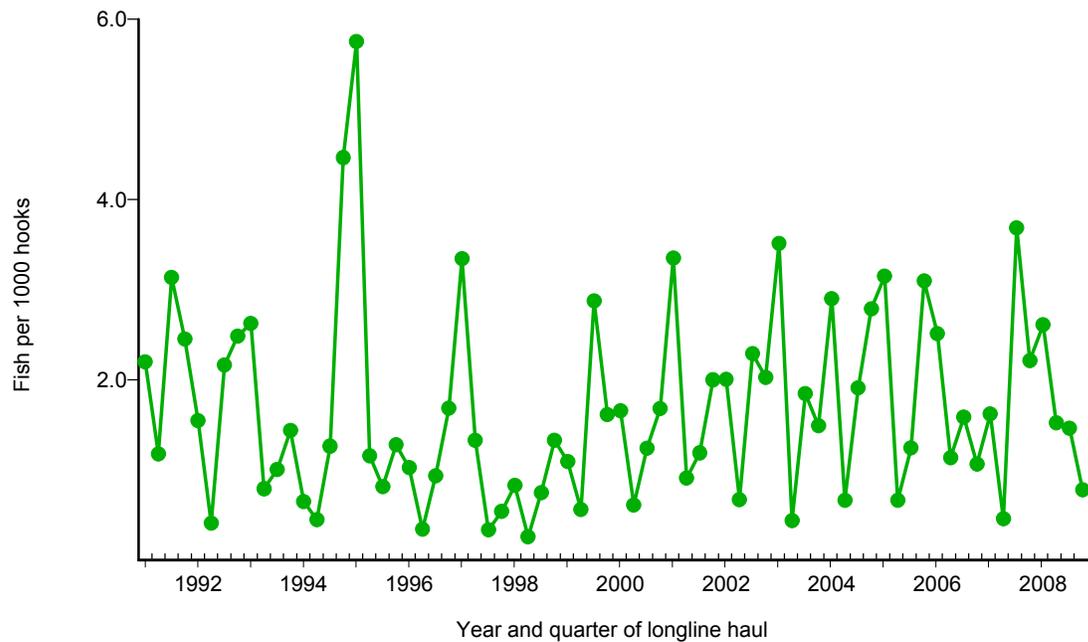


Figure 19. Quarterly CPUE of mahimahi (fish per 1000 hooks) on tuna trips by longline vessels based and landing in Hawaii, 1991-2008. [PIFSC IMS, Longline Logbook Data, 2/20/2009 10:48:26AM]

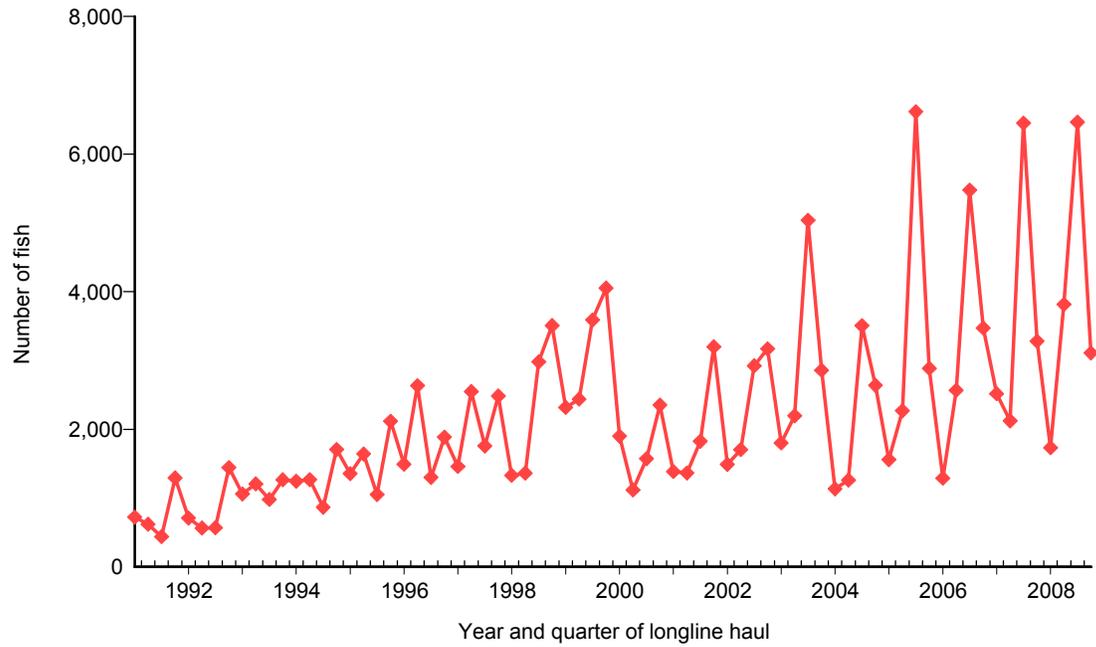


Figure 20. Quarterly catch of moonfish by longline vessels based and landing in Hawaii, 1991-2008. [PIFSC IMS, Longline Logbook Data, 2/20/2009 10:48:26AM]

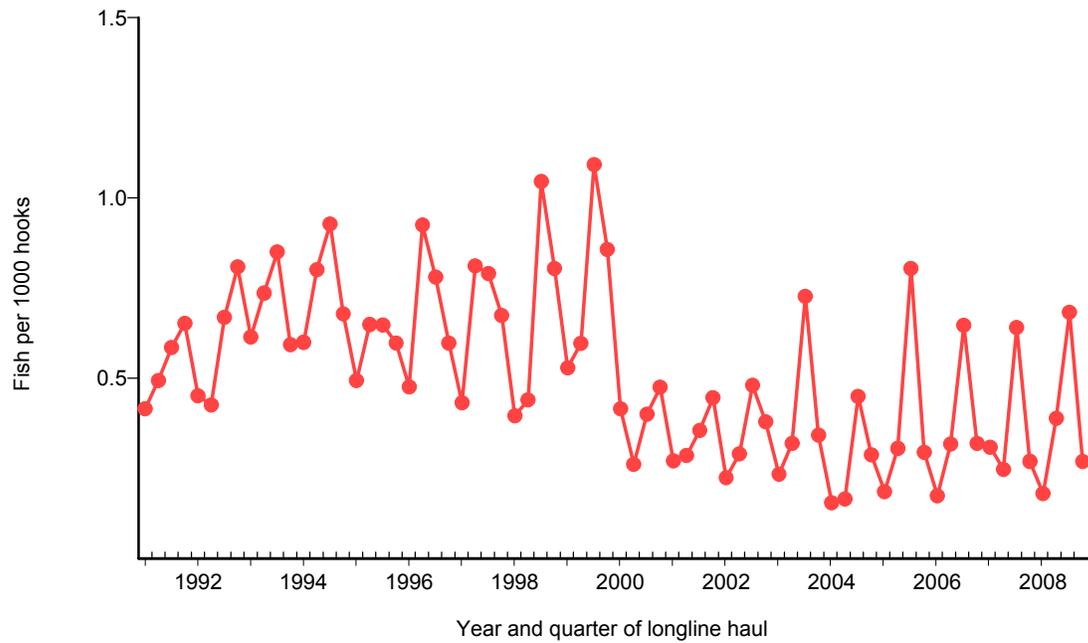


Figure 21. Quarterly CPUE of moonfish (fish per 1000 hooks) on tuna trips by longline vessels based and landing in Hawaii, 1991-2008. [PIFSC IMS, Longline Logbook Data, 2/20/2009 10:48:26AM]

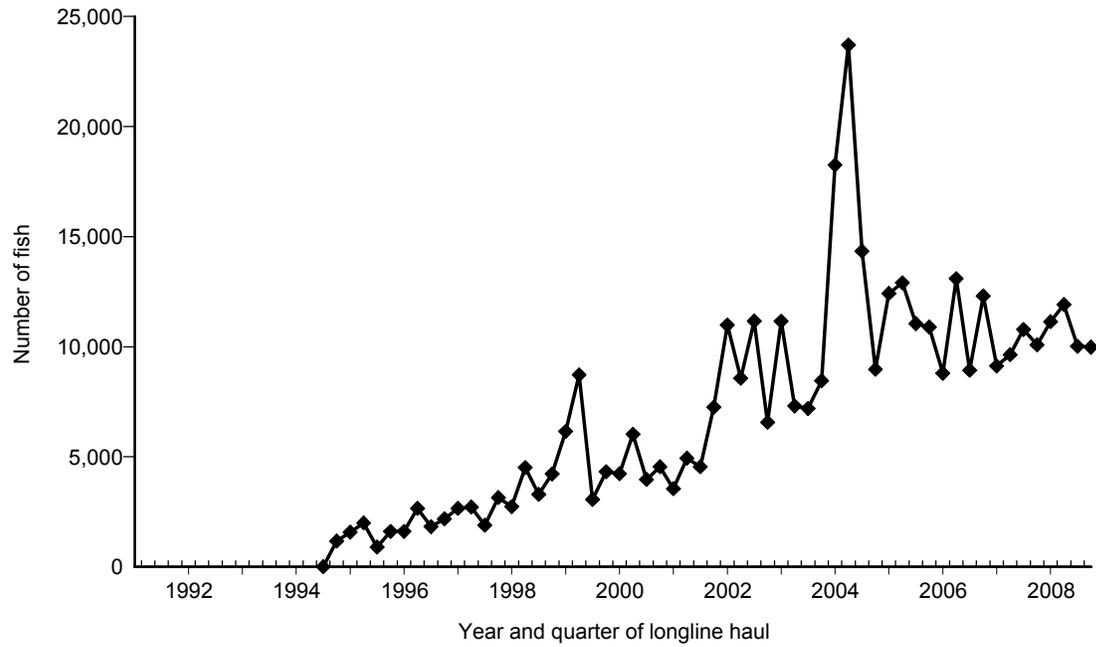


Figure 22. Quarterly catch of pomfret by longline vessels based and landing in Hawaii, 1991-2008. [PIFSC IMS, Longline Logbook Data, 2/20/2009 10:48:26AM]

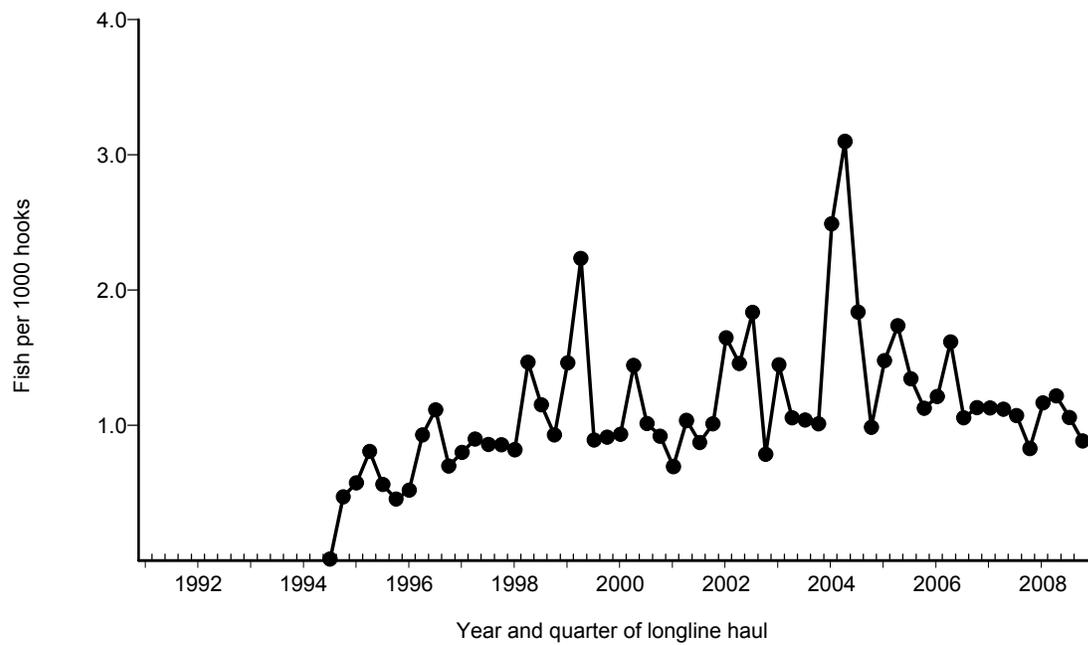


Figure 23. Quarterly CPUE of pomfret (fish per 1000 hooks) on tuna trips by longline vessels based and landing in Hawaii, 1991-2008. [PIFSC IMS, Longline Logbook Data, 2/20/2009 10:48:26AM]

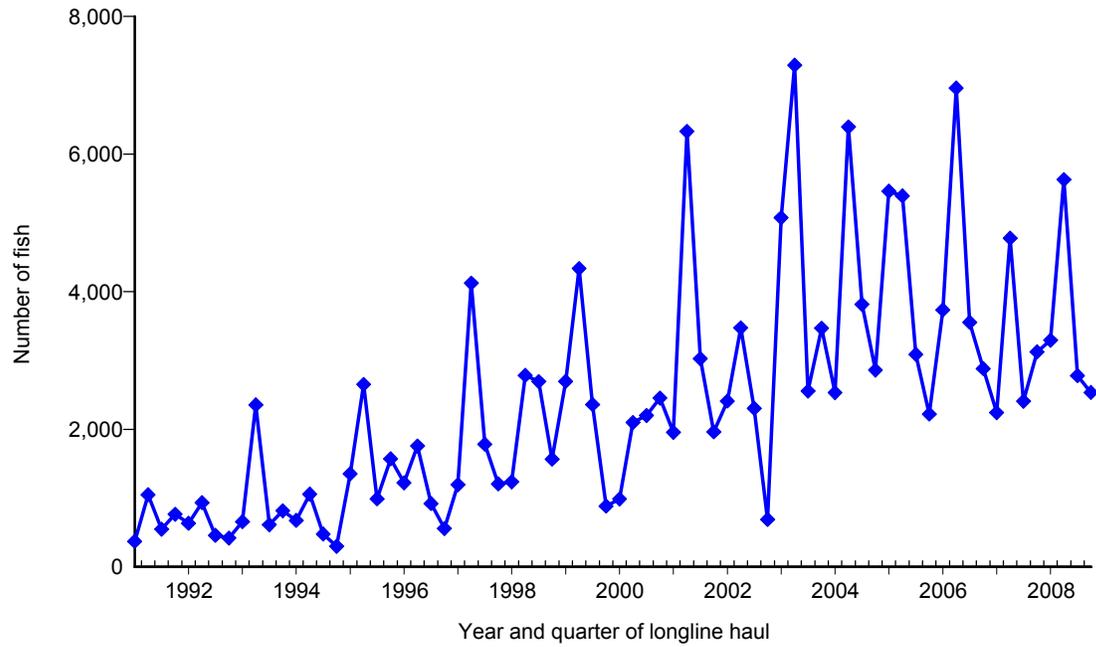


Figure 24. Quarterly catch of wahoo by longline vessels based and landing in Hawaii, 1991-2008. [PIFSC IMS, Longline Logbook Data, 2/20/2009 10:48:26AM]

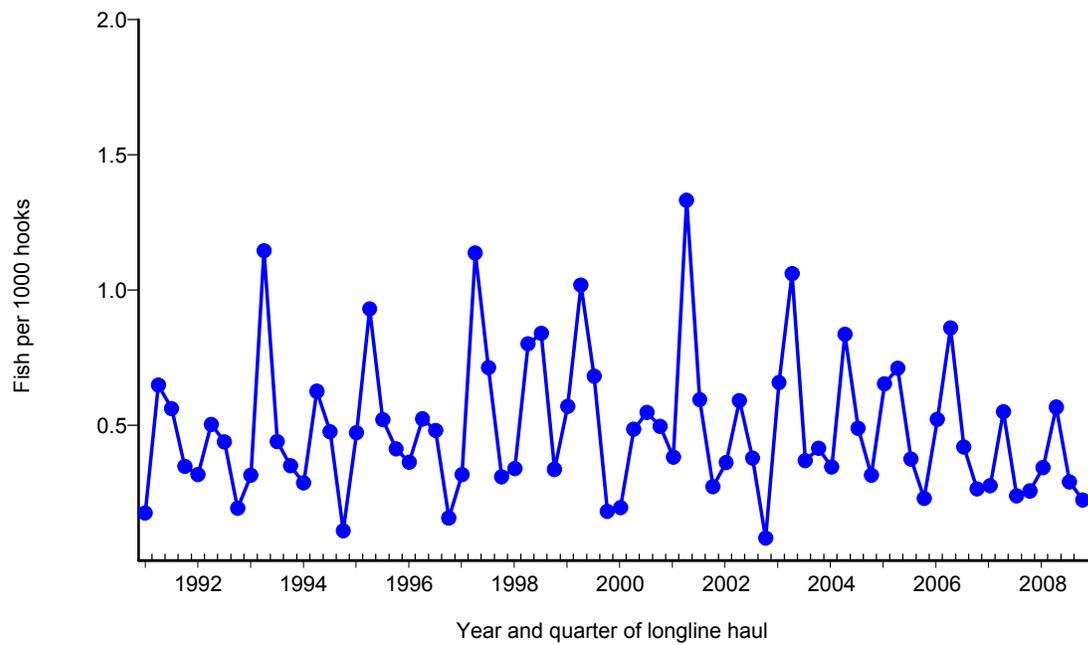


Figure 25. Quarterly CPUE of wahoo (fish per 1000 hooks) on tuna trips by longline vessels based and landing in Hawaii, 1991-2008. [PIFSC IMS, Longline Logbook Data, 2/20/2009 10:48:26AM]