

The Hawaii-based Longline Logbook Summary Report October–December 2009¹

Pacific Islands Fisheries Science Center
Fisheries Monitoring and Analysis Program

This report summarizes data on fish catch and fishing effort by Hawaii-based longline vessels during the fourth quarter of 2009 (Q4-2009). 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 fourth quarter of 2009 and most, but not all, Q4-2009 data from trips that began late in the fourth quarter and continued into the first quarter of 2010. Therefore, the Q4-2009 summary statistics reported here are preliminary.

During Q4-2009, 119 vessels were active in the Hawaii-based fleet, 4 fewer than in Q4-2008 (Table 1, Fig. 1). They made 388 longline trips (42 less than in Q4-2008), including 384 using deep-set gear to target tuna (29 less than in Q4-2008) and 4 using shallow-set gear to target swordfish (13 less than in Q4-2008; Fig. 2). During Q4-2009, the fleet deployed 11.1 million hooks, 500,000 less than in Q4-2008 (Fig. 3). They fished mainly in the Exclusive Economic Zone (EEZ) of the main Hawaiian Islands (MHI) (46% of the total hooks set) and on the high seas outside the U.S. EEZ (39%), followed by the Northwestern Hawaiian Islands (NWHI) EEZ (14%) 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 Q4-2009, the Hawaii longline fleet caught 42,720 bigeye tuna (Fig. 4); 47% were caught in waters outside the U.S. EEZ. The bigeye tuna catch-per-unit-of-effort (CPUE) on tuna-targeted trips was 3.9 fish per 1000 hooks, slightly higher than the Q4-2008 CPUE of 3.6 (Fig. 5). The albacore catch and CPUE on tuna-targeted trips in Q4-2009 were fourth quarter record lows of 552 fish and 0.05 fish per 1000 hooks, respectively (Figs. 6-7). The yellowfin tuna catch and CPUE on tuna-targeted trips in Q4-2009 were 2,831 fish and 0.26 fish per 1000 hooks, respectively (Figs. 8-9).

The Q4-2009 swordfish catch was 1,627 fish, 62% lower than in Q4-2008 (Fig. 10). In Q4-2009, swordfish CPUE on shallow-set swordfish-targeted trips was 15.3 fish per 1000 hooks, 30% higher than in Q4-2008 (Fig. 11).

The striped marlin catch in Q4-2009 was 1,478 fish, and the CPUE on tuna-targeted trips was 0.13 fish per 1000 hooks; both were 73% lower than in Q4-2008 (Figs. 12-13). The blue marlin catch (438 fish) and CPUE on tuna-targeted trips (0.04 fish per 1000 hooks) were also substantially lower in Q4-2009 than in Q4-2008 — by 58% and 56%, respectively (Figs. 14-15).

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The fleet caught 13,457 sharks in Q4-2009, of which 511 (4%) were kept. Blue shark comprised 88% of the total shark catch (11,794 fish) (Fig. 16). Blue shark CPUE on shallow-set swordfish-targeted trips in Q4-2009 was a record low 7.5 fish per 1000 hooks (Fig. 17).

In Q4-2009, the Hawaii longline catch of other key pelagic species included 15,334 mahimahi (Fig. 18) with a CPUE of 1.4 fish per 1000 hooks on tuna-targeted trips (Fig. 19); a fourth quarter record high 5,601 moonfish (Fig. 20) with a CPUE of 0.51 fish per 1000 hooks on tuna-targeted trips (Fig. 21); 6,495 pomfret (Fig. 22) with a CPUE of 0.59 fish per 1000 hooks on tuna-targeted trips (Fig. 23); and 1,451 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. Q4-2009 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. Q4-2009 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 from NMFS Western Pacific Daily Longline Fishing Log records. [PIFSC Information Management System, Longline Logbook Data, 3/1/2010 8:40:00AM].

Report Coverage					Number of vessels active 119	
Time Period	4th Quarter 2009				Number of trips 388	
Fishing Area	All Areas				Number of sets 4,948	
Trip Types	All Trip Types				Number of hooks set 11,086,408	

Pelagic Management Unit Species (PMUS)	Number Caught	Number Kept	Number Released	CPUE - Number Caught per 1000 hooks
Billfishes				
Blue marlin	438	434	4	0.04
Striped marlin	1,478	1,471	7	0.13
Shortbill spearfish	1,999	1,990	9	0.18
Swordfish	1,627	1,456	171	0.15
Other billfishes	69	69	0	0.01
Total	5,611	5,420	191	0.51
Sharks				
Blue shark	11,794	41	11,753	1.06
Mako sharks	827	356	471	0.07
Thresher sharks	678	100	578	0.06
Oceanic whitetip shark	89	8	81	0.01
Silky shark	1	0	1	0.00
Other sharks	68	6	62	0.01
Total	13,457	511	12,946	1.21
Tunas				
Albacore	552	533	19	0.05
Bigeye tuna	42,720	42,089	631	3.85
Yellowfin tuna	2,831	2,772	59	0.26
Bluefin tuna	2	2	0	0.00
Skipjack tuna	6,199	5,993	206	0.56
Other tunas	5	5	0	0.00
Total	52,309	51,394	915	4.72
Other PMUS				
Mahimahi	15,334	14,795	539	1.38
Moonfish	5,601	5,465	136	0.51
Wahoo	1,451	1,445	6	0.13
Oilfish	10,728	10,528	200	0.97
Pomfret	6,495	6,438	57	0.59
Total	39,609	38,671	938	3.57
Total PMUS	110,986	95,996	14,990	10.01
Total Non-PMUS	1,195	64	1,131	0.11
Total All Species	112,181	96,060	16,121	10.12

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, 3/1/2010 8:40:00AM].

Report Coverage					Number of vessels active		106
Time Period	4th Quarter 2009				Number of trips		272
Fishing Area	Main Hawaiian Islands EEZ				Number of sets		2,296
Trip Types	All Trip Types				Number of hooks set		5,064,426

Pelagic Management Unit Species (PMUS)	Number Caught	Number Kept	Number Released	CPUE - Number Caught per 1000 hooks
Billfishes				
Blue marlin	169	168	1	0.03
Striped marlin	608	606	2	0.12
Shortbill spearfish	646	645	1	0.13
Swordfish	279	247	32	0.06
Other billfishes	27	27	0	0.01
Total	1,729	1,693	36	0.34
Sharks				
Blue shark	5,177	24	5,153	1.02
Mako sharks	336	197	139	0.07
Thresher sharks	330	57	273	0.07
Oceanic whitetip shark	44	3	41	0.01
Silky shark	0	0	0	0.00
Other sharks	30	3	27	0.01
Total	5,917	284	5,633	1.17
Tunas				
Albacore	182	182	0	0.04
Bigeye tuna	15,414	15,260	154	3.04
Yellowfin tuna	1,189	1,166	23	0.23
Bluefin tuna	0	0	0	0.00
Skipjack tuna	2,294	2,257	37	0.45
Other tunas	4	4	0	0.00
Total	19,083	18,869	214	3.77
Other PMUS				
Mahimahi	5,711	5,689	22	1.13
Moonfish	1,135	1,133	2	0.22
Wahoo	436	436	0	0.09
Oilfish	4,883	4,863	20	0.96
Pomfret	2,561	2,533	28	0.51
Total	14,726	14,654	72	2.91
Total PMUS	41,455	35,500	5,955	8.19
Total Non-PMUS	440	38	402	0.09
Total All Species	41,895	35,538	6,357	8.27

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, 3/1/2010 8:40:00AM].

Report Coverage		Number of vessels active		60	
Time Period	4th Quarter 2009	Number of trips		79	
Fishing Area	Northwestern Hawaiian Islands EEZ	Number of sets		709	
Trip Types	All Trip Types	Number of hooks set		1,606,657	

Pelagic Management Unit Species (PMUS)	Number Caught	Number Kept	Number Released	CPUE - Number Caught per 1000 hooks
Billfishes				
Blue marlin	72	69	3	0.04
Striped marlin	225	223	2	0.14
Shortbill spearfish	415	408	7	0.26
Swordfish	82	79	3	0.05
Other billfishes	5	5	0	0.00
Total	799	784	15	0.50
Sharks				
Blue shark	3,026	5	3,021	1.88
Mako sharks	85	37	48	0.05
Thresher sharks	191	28	163	0.12
Oceanic whitetip shark	35	3	32	0.02
Silky shark	1	0	1	0.00
Other sharks	30	1	29	0.02
Total	3,368	74	3,294	2.10
Tunas				
Albacore	188	187	1	0.12
Bigeye tuna	6,878	6,620	258	4.28
Yellowfin tuna	723	692	31	0.45
Bluefin tuna	0	0	0	0.00
Skipjack tuna	1,299	1,253	46	0.81
Other tunas	1	1	0	0.00
Total	9,089	8,753	336	5.66
Other PMUS				
Mahimahi	899	875	24	0.56
Moonfish	347	344	3	0.22
Wahoo	235	232	3	0.15
Oilfish	2,100	2,089	11	1.31
Pomfret	738	730	8	0.46
Total	4,319	4,270	49	2.69
Total PMUS	17,575	13,881	3,694	10.94
Total Non-PMUS	212	18	194	0.13
Total All Species	17,787	13,899	3,888	11.07

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, 3/1/2010 8:40:00AM].

Report Coverage					Number of vessels active		5
Time Period	4th Quarter 2009				Number of trips		5
Fishing Area	Pacific Remote Island Areas (PRIA) EEZ				Number of sets		15
Trip Types	All Trip Types				Number of hooks set		42,300

Pelagic Management Unit Species (PMUS)	Number Caught	Number Kept	Number Released	CPUE - Number Caught per 1000 hooks
Billfishes				
Blue marlin	5	5	0	0.12
Striped marlin	5	5	0	0.12
Shortbill spearfish	23	23	0	0.54
Swordfish	4	2	2	0.09
Other billfishes	0	0	0	0.00
Total	37	35	2	0.87
Sharks				
Blue shark	91	0	91	2.15
Mako sharks	3	0	3	0.07
Thresher sharks	17	0	17	0.40
Oceanic whitetip shark	0	0	0	0.00
Silky shark	0	0	0	0.00
Other sharks	0	0	0	0.00
Total	111	0	111	2.62
Tunas				
Albacore	10	10	0	0.24
Bigeye tuna	185	184	1	4.37
Yellowfin tuna	28	28	0	0.66
Bluefin tuna	0	0	0	0.00
Skipjack tuna	51	51	0	1.21
Other tunas	0	0	0	0.00
Total	274	273	1	6.48
Other PMUS				
Mahimahi	28	27	1	0.66
Moonfish	15	15	0	0.35
Wahoo	13	13	0	0.31
Oilfish	56	56	0	1.32
Pomfret	16	16	0	0.38
Total	128	127	1	3.03
Total PMUS	550	435	115	13.00
Total Non-PMUS	0	0	0	0.00
Total All Species	550	435	115	13.00

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, 3/1/2010 8:40:00AM].

Report Coverage					Number of vessels active		112
Time Period	4th Quarter 2009				Number of trips		299
Fishing Area	Hawaiian Islands EEZ + PRIA EEZ				Number of sets		3,020
Trip Types	All Trip Types				Number of hooks set		6,713,383

Pelagic Management Unit Species (PMUS)	Number Caught	Number Kept	Number Released	CPUE - Number Caught per 1000 hooks
Billfishes				
Blue marlin	246	242	4	0.04
Striped marlin	838	834	4	0.12
Shortbill spearfish	1,084	1,076	8	0.16
Swordfish	365	328	37	0.05
Other billfishes	32	32	0	0.00
Total	2,565	2,512	53	0.38
Sharks				
Blue shark	8,294	29	8,265	1.24
Mako sharks	424	234	190	0.06
Thresher sharks	538	85	453	0.08
Oceanic whitetip shark	79	6	73	0.01
Silky shark	1	0	1	0.00
Other sharks	60	4	56	0.01
Total	9,396	358	9,038	1.40
Tunas				
Albacore	380	379	1	0.06
Bigeye tuna	22,477	22,064	413	3.35
Yellowfin tuna	1,940	1,886	54	0.29
Bluefin tuna	0	0	0	0.00
Skipjack tuna	3,644	3,561	83	0.54
Other tunas	5	5	0	0.00
Total	28,446	27,895	551	4.24
Other PMUS				
Mahimahi	6,638	6,591	47	0.99
Moonfish	1,497	1,492	5	0.22
Wahoo	684	681	3	0.10
Oilfish	7,039	7,008	31	1.05
Pomfret	3,315	3,279	36	0.49
Total	19,173	19,051	122	2.86
Total PMUS	59,580	49,816	9,764	8.87
Total Non-PMUS	652	56	596	0.10
Total All Species	60,232	49,872	10,360	8.97

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, 3/1/2010 8:40:00AM].

Report Coverage					Number of vessels active		107
Time Period	4th Quarter 2009				Number of trips		240
Fishing Area	Outside U.S. EEZ				Number of sets		1,928
Trip Types	All Trip Types				Number of hooks set		4,373,025

Pelagic Management Unit Species (PMUS)	Number Caught	Number Kept	Number Released	CPUE - Number Caught per 1000 hooks
Billfishes				
Blue marlin	192	192	0	0.04
Striped marlin	640	637	3	0.15
Shortbill spearfish	915	914	1	0.21
Swordfish	1,262	1,128	134	0.29
Other billfishes	37	37	0	0.01
Total	3,046	2,908	138	0.70
Sharks				
Blue shark	3,500	12	3,488	0.80
Mako sharks	403	122	281	0.09
Thresher sharks	140	15	125	0.03
Oceanic whitetip shark	10	2	8	0.00
Silky shark	0	0	0	0.00
Other sharks	8	2	6	0.00
Total	4,061	153	3,908	0.93
Tunas				
Albacore	172	154	18	0.04
Bigeye tuna	20,243	20,025	218	4.63
Yellowfin tuna	891	886	5	0.20
Bluefin tuna	2	2	0	0.00
Skipjack tuna	2,555	2,432	123	0.58
Other tunas	0	0	0	0.00
Total	23,863	23,499	364	5.46
Other PMUS				
Mahimahi	8,696	8,204	492	1.99
Moonfish	4,104	3,973	131	0.94
Wahoo	767	764	3	0.18
Oilfish	3,689	3,520	169	0.84
Pomfret	3,180	3,159	21	0.73
Total	20,436	19,620	816	4.67
Total PMUS	51,406	46,180	5,226	11.76
Total Non-PMUS	543	8	535	0.12
Total All Species	51,949	46,188	5,761	11.88

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, 3/1/2010 8:40:00AM].

Report Coverage					Number of vessels active		4
Time Period	4th Quarter 2009				Number of trips		4
Fishing Area	All Areas				Number of sets		74
Trip Types	Swordfish Targeted Trips				Number of hooks set		69,902

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	1	0	1	0.01
Shortbill spearfish	0	0	0	0.00
Swordfish	1,072	950	122	15.34
Other billfishes	0	0	0	0.00
Total	1,073	950	123	15.35
Sharks				
Blue shark	523	0	523	7.48
Mako sharks	153	1	152	2.19
Thresher sharks	2	0	2	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	678	1	677	9.70
Tunas				
Albacore	44	28	16	0.63
Bigeye tuna	12	11	1	0.17
Yellowfin tuna	0	0	0	0.00
Bluefin tuna	0	0	0	0.00
Skipjack tuna	1	1	0	0.01
Other tunas	0	0	0	0.00
Total	57	40	17	0.82
Other PMUS				
Mahimahi	0	0	0	0.00
Moonfish	15	0	15	0.21
Wahoo	0	0	0	0.00
Oilfish	117	28	89	1.67
Pomfret	1	1	0	0.01
Total	133	29	104	1.90
Total PMUS	1,941	1,020	921	27.77
Total Non-PMUS	0	0	0	0.00
Total All Species	1,941	1,020	921	27.77

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, 3/1/2010 8:40:00AM].

Report Coverage					Number of vessels active		119
Time Period	4th Quarter 2009				Number of trips		384
Fishing Area	All Areas				Number of sets		4,874
Trip Types	Tuna Targeted Trips				Number of hooks set		11,016,506

Pelagic Management Unit Species (PMUS)	Number Caught	Number Kept	Number Released	CPUE - Number Caught per 1000 hooks
Billfishes				
Blue marlin	438	434	4	0.04
Striped marlin	1,477	1,471	6	0.13
Shortbill spearfish	1,999	1,990	9	0.18
Swordfish	555	506	49	0.05
Other billfishes	69	69	0	0.01
Total	4,538	4,470	68	0.41
Sharks				
Blue shark	11,271	41	11,230	1.02
Mako sharks	674	355	319	0.06
Thresher sharks	676	100	576	0.06
Oceanic whitetip shark	89	8	81	0.01
Silky shark	1	0	1	0.00
Other sharks	68	6	62	0.01
Total	12,779	510	12,269	1.16
Tunas				
Albacore	508	505	3	0.05
Bigeye tuna	42,708	42,078	630	3.88
Yellowfin tuna	2,831	2,772	59	0.26
Bluefin tuna	2	2	0	0.00
Skipjack tuna	6,198	5,992	206	0.56
Other tunas	5	5	0	0.00
Total	52,252	51,354	898	4.74
Other PMUS				
Mahimahi	15,334	14,795	539	1.39
Moonfish	5,586	5,465	121	0.51
Wahoo	1,451	1,445	6	0.13
Oilfish	10,611	10,500	111	0.96
Pomfret	6,494	6,437	57	0.59
Total	39,476	38,642	834	3.58
Total PMUS	109,045	94,976	14,069	9.90
Total Non-PMUS	1,195	64	1,131	0.11
Total All Species	110,240	95,040	15,200	10.01

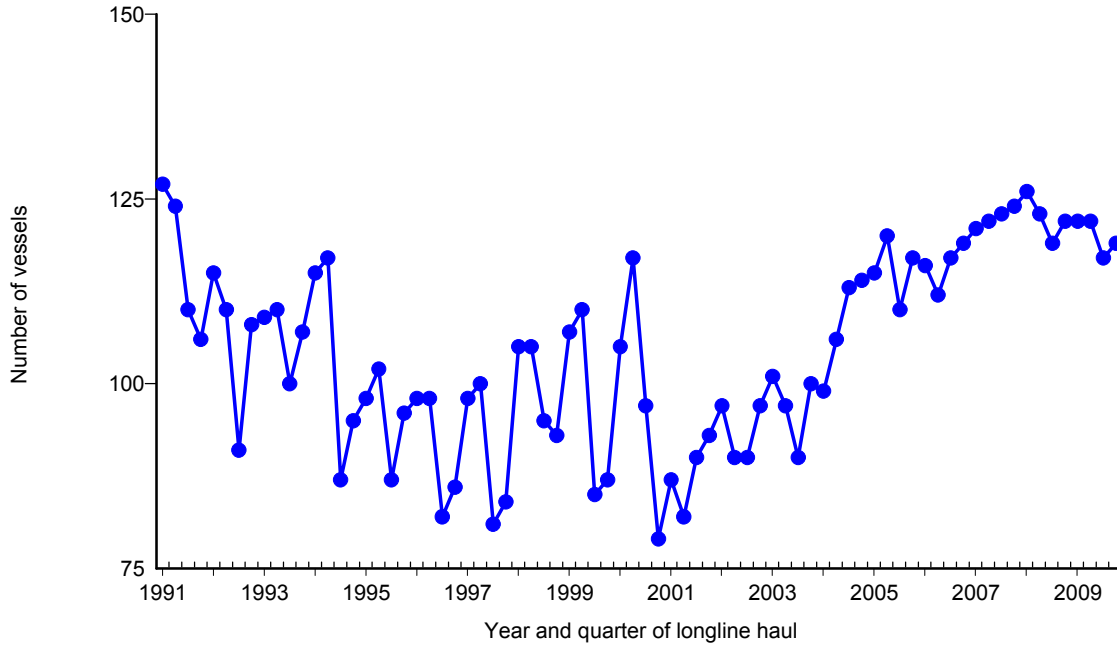


Figure 1. Number of active longline vessels based and landing in Hawaii, by quarter, . 1991-2009. [PIFSC IMS, Longline Logbook Data, 2/24/2010 8:09:00AM]

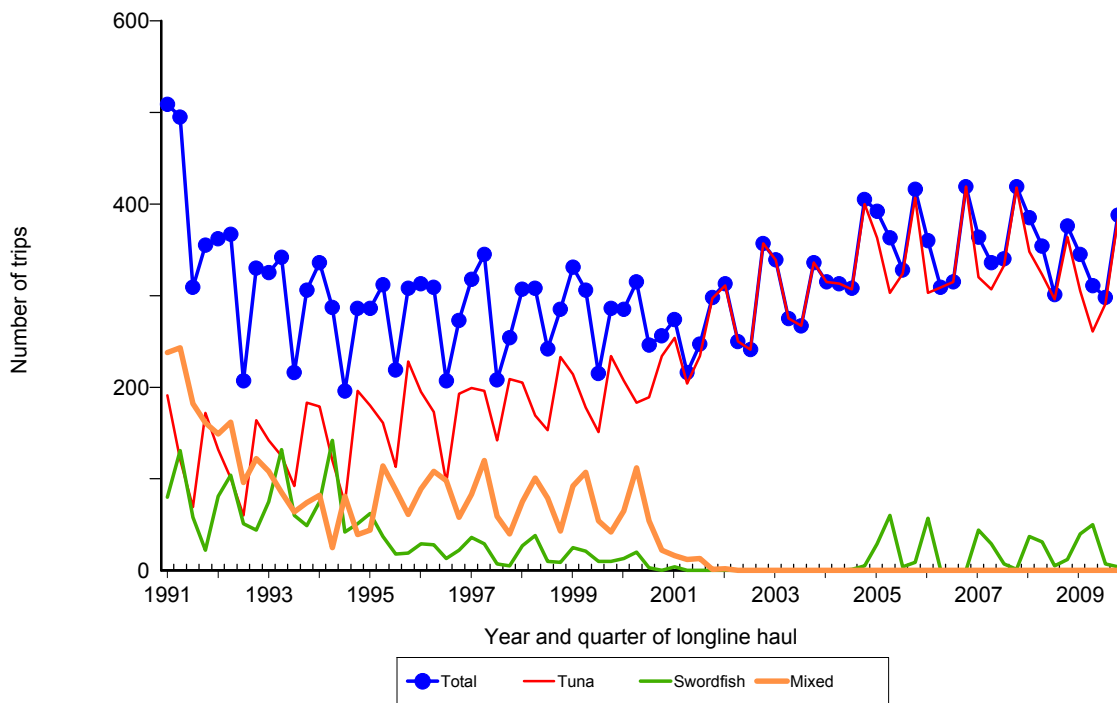


Figure 2. Number of fishing trips by longline vessels based and landing in Hawaii, by quarter and trip type, 1991-2009. [PIFSC IMS, Longline Logbook Data, 2/24/2010 8:09:00AM]

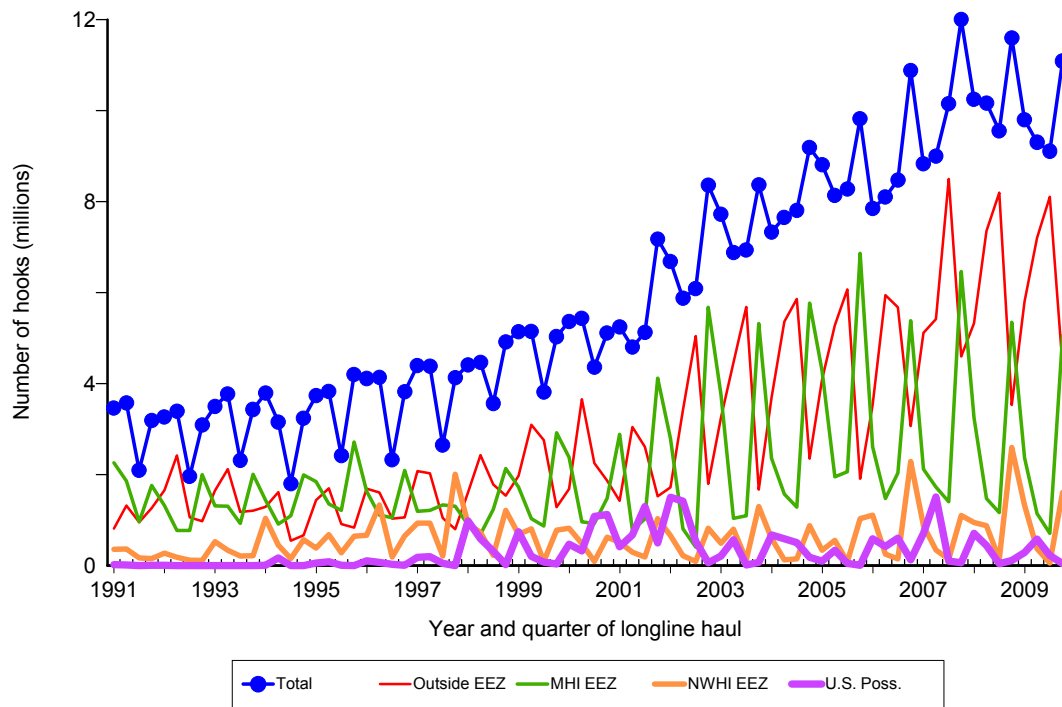


Figure 3. Number of hooks set by longline vessels based and landing in Hawaii, by quarter and fishing area, 1991-2009. [PIFSC IMS, Longline Logbook Data, 2/24/2010 8:09:00AM]

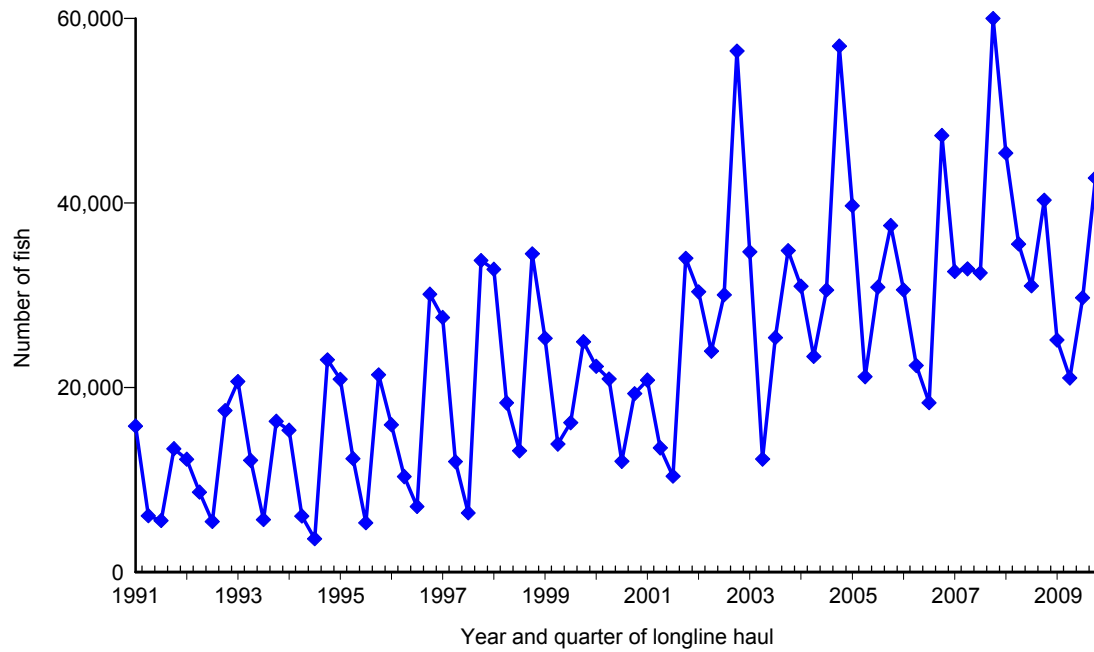


Figure 4. Quarterly catch of bigeye tuna by longline vessels based and landing in Hawaii, 1991-2009. [PIFSC IMS, Longline Logbook Data, 2/24/2010 8:09:00AM]

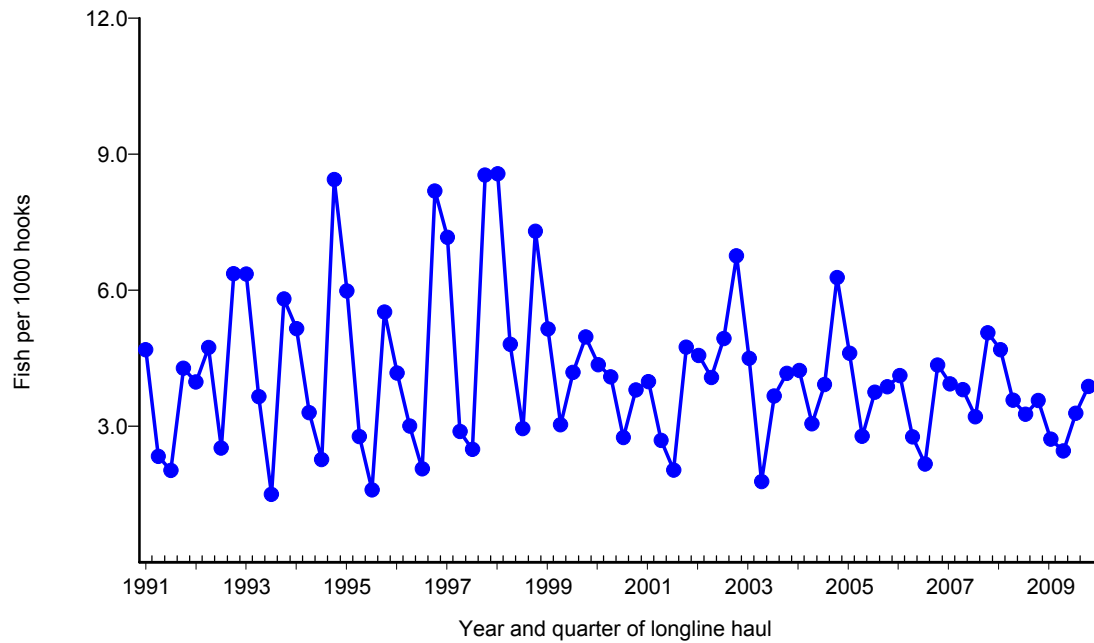


Figure 5. Quarterly CPUE of bigeye tuna (fish per 1000 hooks) on tuna trips by longline vessels based and landing in Hawaii, 1991-2009. [PIFSC IMS, Longline Logbook Data, 2/24/2010 8:09:00AM]

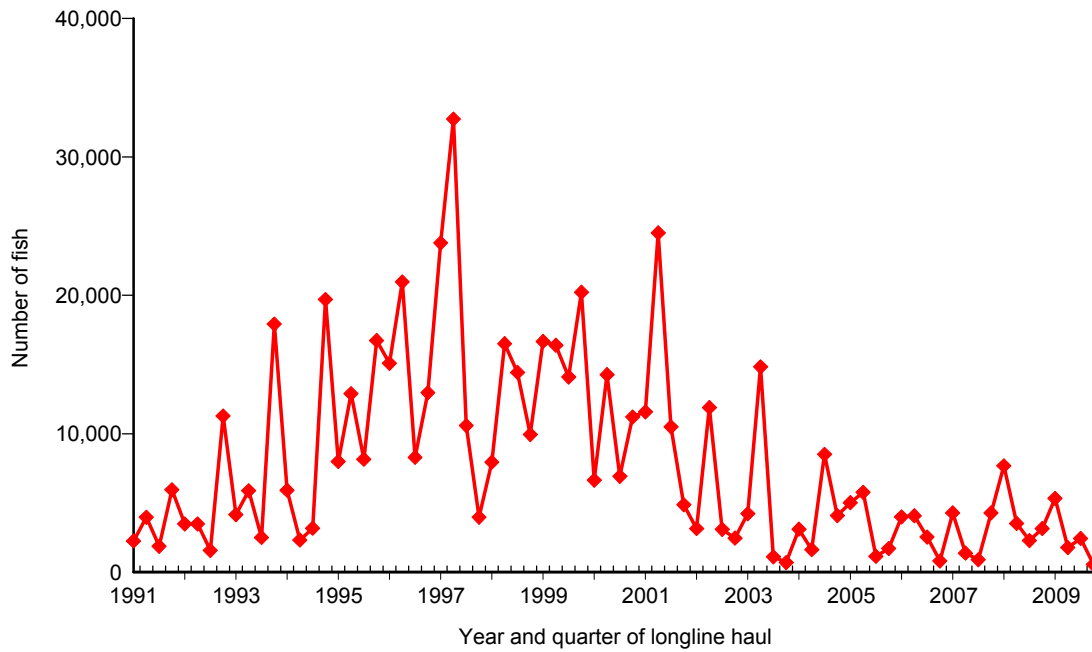


Figure 6. Quarterly catch of albacore by longline vessels based and landing in Hawaii, 1991-2009. [PIFSC IMS, Longline Logbook Data, 2/24/2010 8:09:00AM]

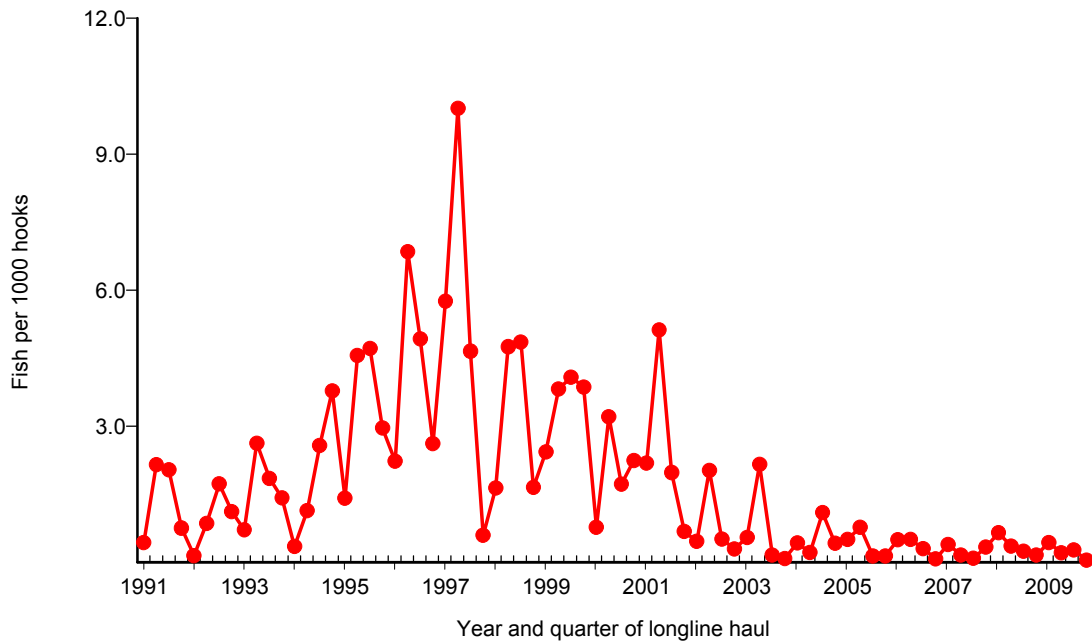


Figure 7. Quarterly CPUE of albacore (fish per 1000 hooks) on tuna trips by longline vessels based and landing in Hawaii, 1991-2009. [PIFSC IMS, Longline Logbook Data, 2/24/2010 8:09:00AM]

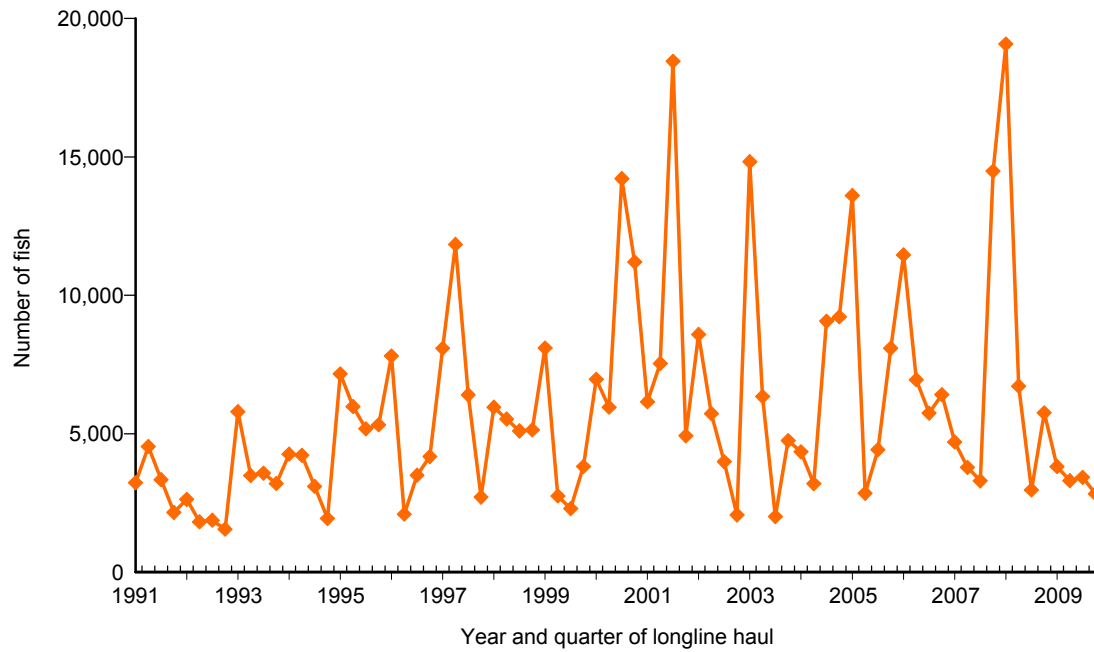


Figure 8. Quarterly catch of yellowfin tuna by longline vessels based and landing in Hawaii, 1991-2009. [PIFSC IMS, Longline Logbook Data, 2/24/2010 8:09:00AM]

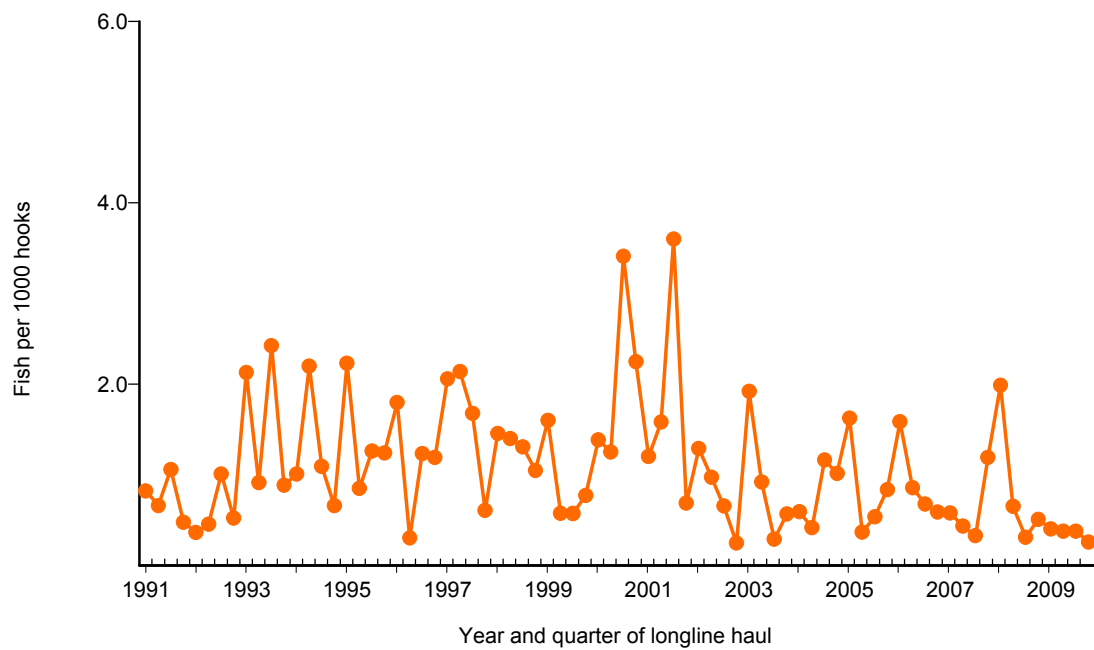


Figure 9. Quarterly CPUE of yellowfin tuna (fish per 1000 hooks) on tuna trips by longline vessels based and landing in Hawaii, 1991-2009. [PIFSC IMS, Longline Logbook Data, 2/24/2010 8:09:00AM]

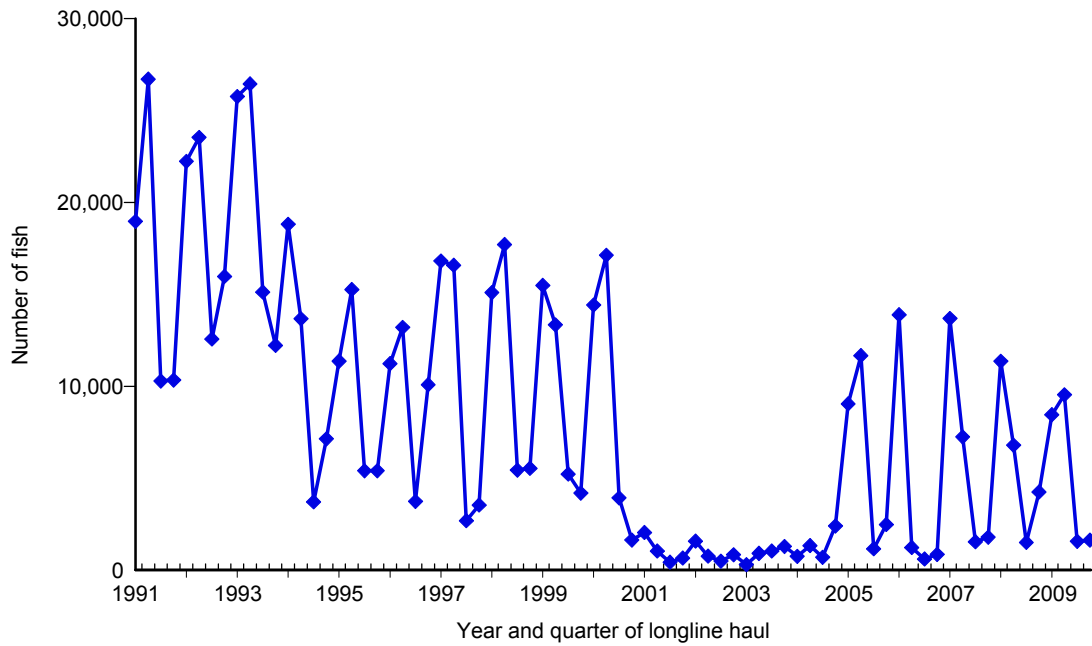


Figure 10. Quarterly catch of swordfish by longline vessels based and landing in Hawaii, 1991-2009. [PIFSC IMS, Longline Logbook Data, 2/24/2010 8:09:00AM]

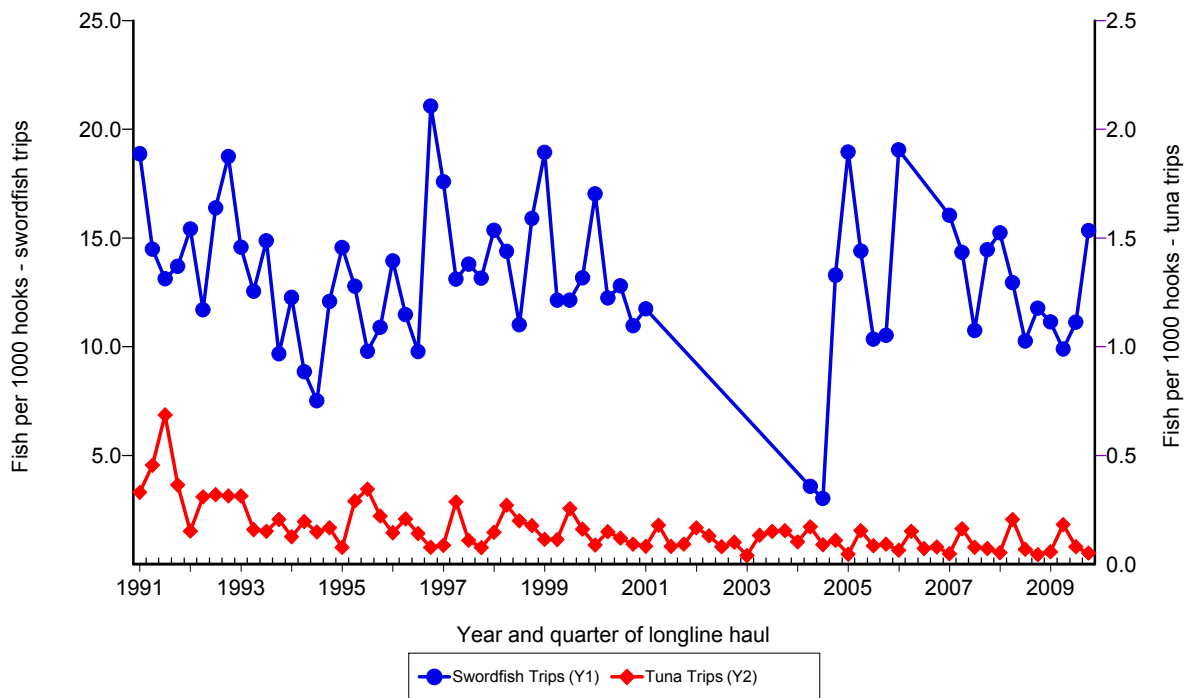


Figure 11. Quarterly CPUE of swordfish (fish per 1000 hooks) on swordfish trips and tuna trips by longline vessels based and landing in Hawaii, 1991-2009. [PIFSC IMS, Longline Logbook Data, 2/24/2010 8:09:00AM]

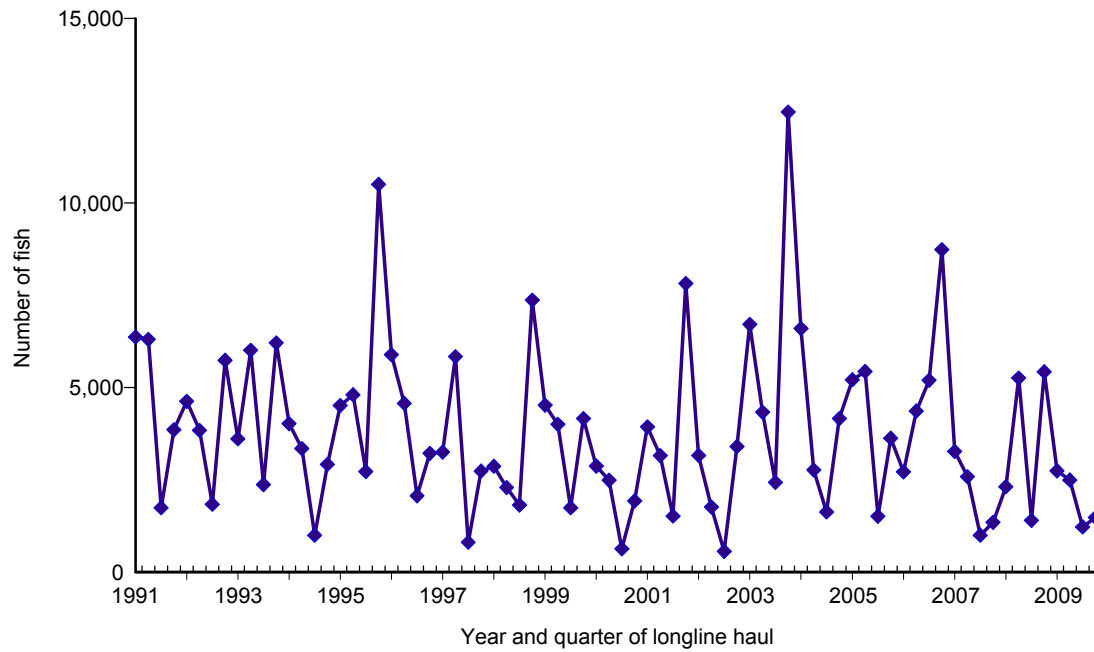


Figure 12. Quarterly catch of striped marlin by longline vessels based and landing in Hawaii, 1991-2009. [PIFSC IMS, Longline Logbook Data, 2/24/2010 8:09:00AM]

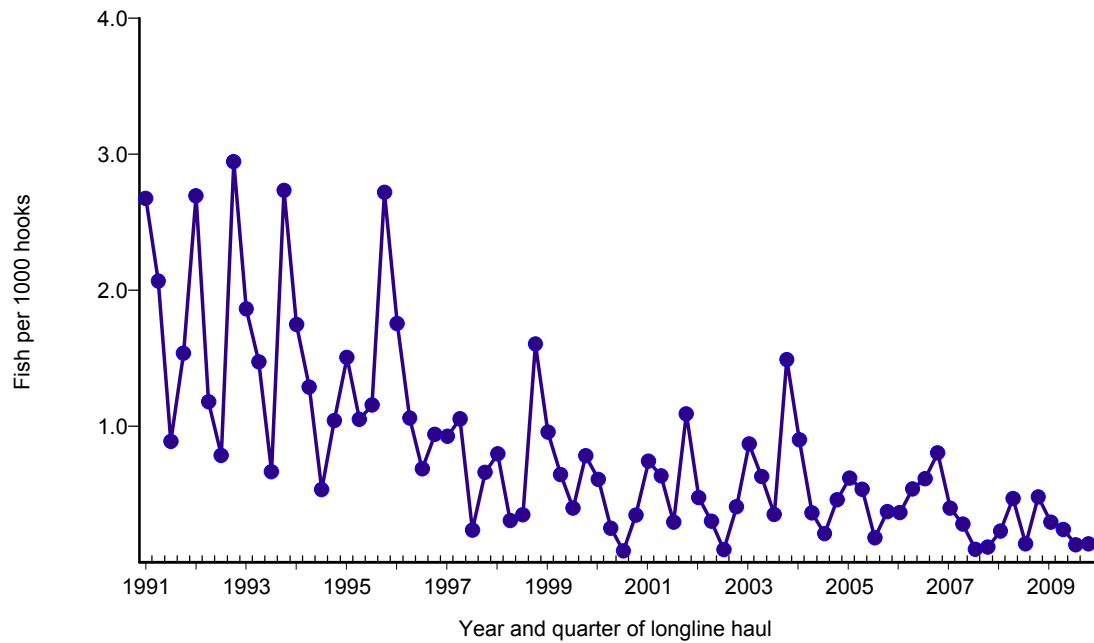


Figure 13. Quarterly CPUE of striped marlin (fish per 1000 hooks) on tuna trips by longline vessels based and landing in Hawaii, 1991-2009. [PIFSC IMS, Longline Logbook Data, 2/24/2010 8:09:00AM]

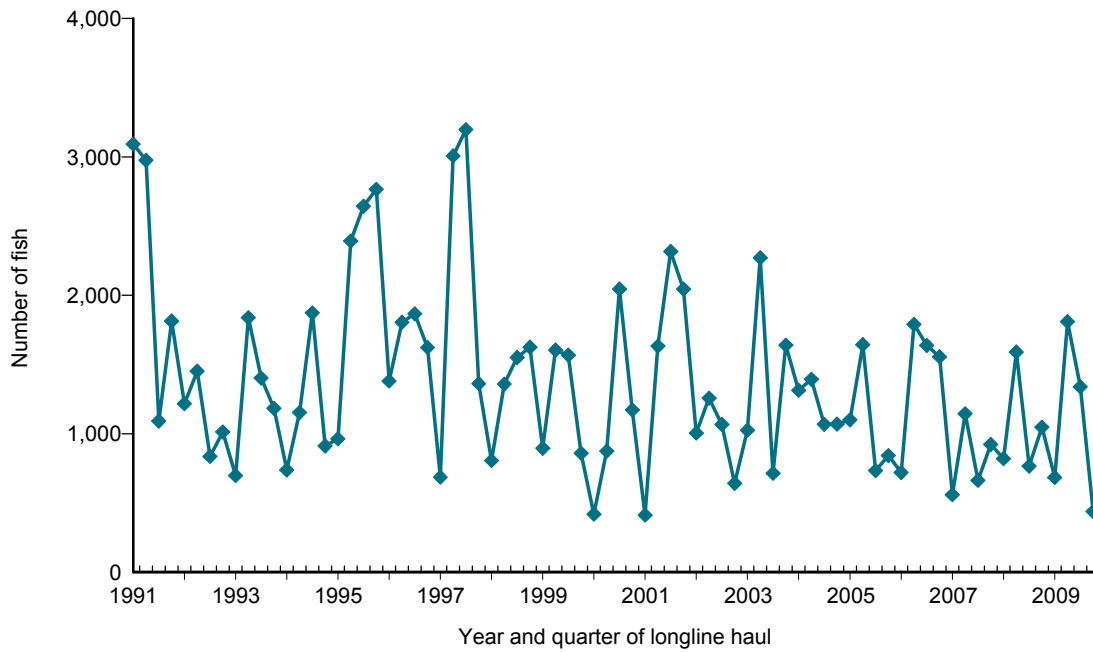


Figure 14. Quarterly catch of blue marlin by longline vessels based and landing in Hawaii, 1991-2009. [PIFSC IMS, Longline Logbook Data, 2/24/2010 8:09:00AM]

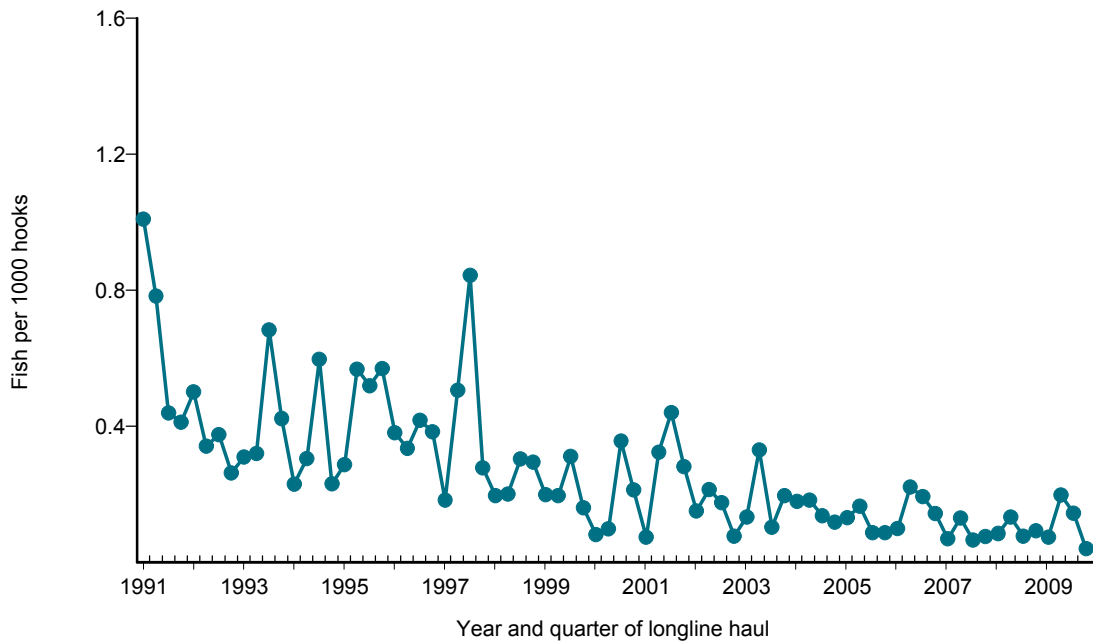


Figure 15. Quarterly CPUE of blue marlin (fish per 1000 hooks) on tuna trips by longline vessels based and landing in Hawaii, 1991-2009. [PIFSC IMS, Longline Logbook Data, 2/24/2010 8:09:00AM]

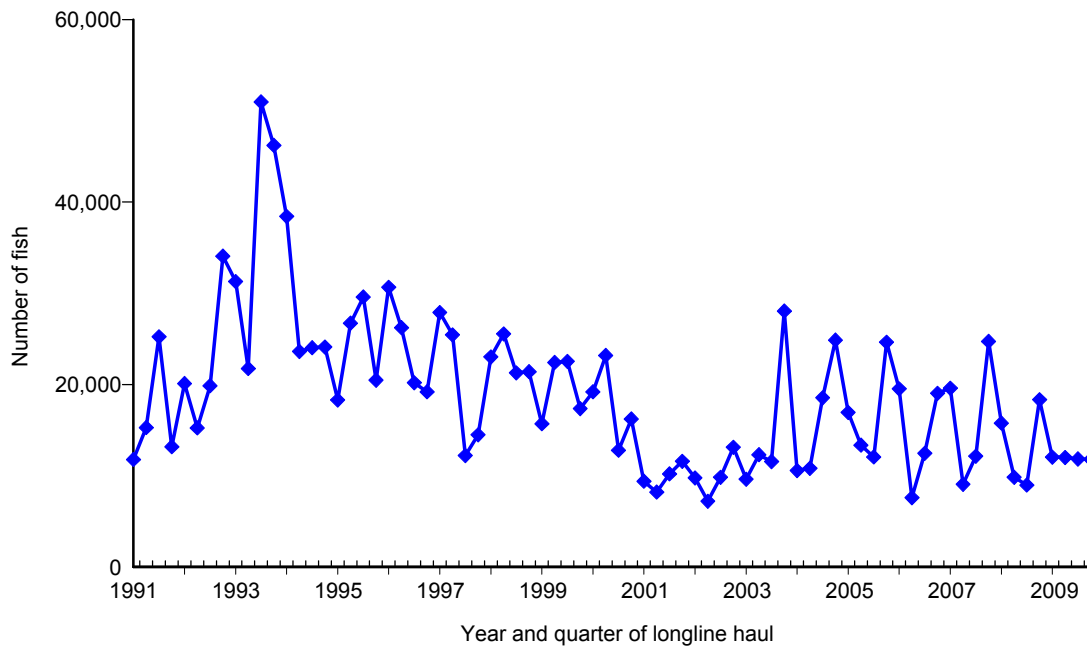


Figure 16. Quarterly catch of blue shark by longline vessels based and landing in Hawaii, 1991-2009. [PIFSC IMS, Longline Logbook Data, 2/24/2010 8:09:00AM]

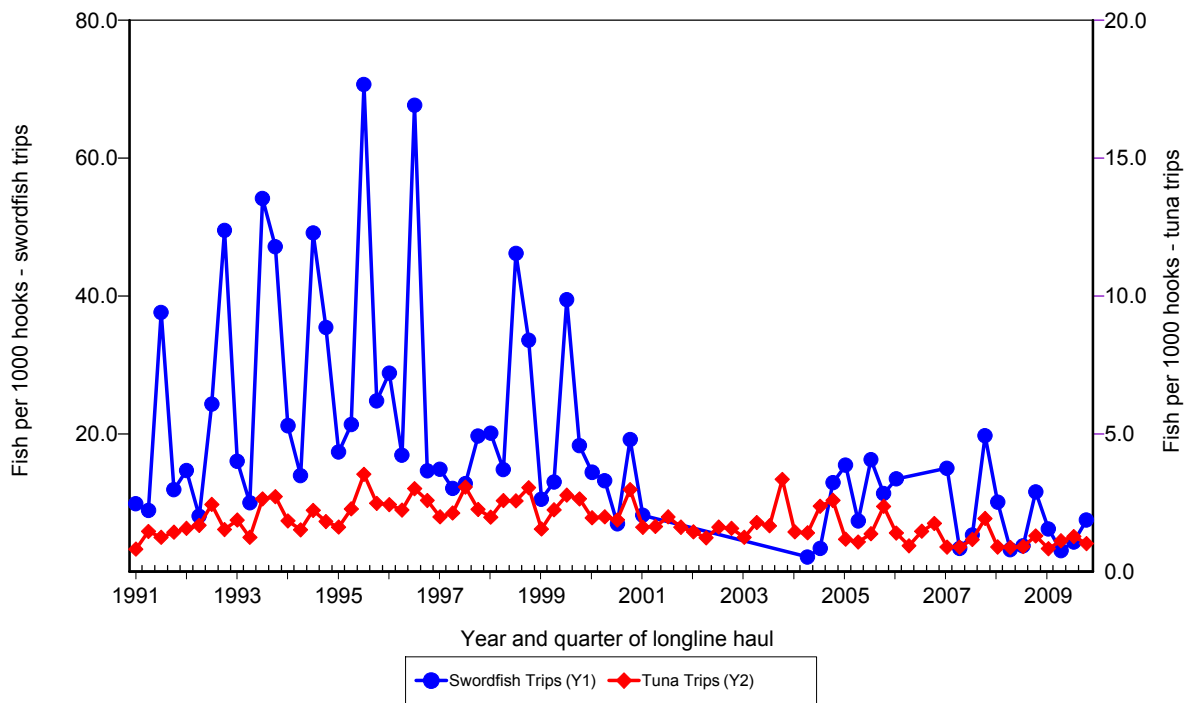


Figure 17. Quarterly CPUE of blue shark (fish per 1000 hooks) on swordfish trips and tuna trips by longline vessels based and landing in Hawaii, 1991-2009. [PIFSC IMS, Longline Logbook Data, 2/24/2010 8:09:00AM]

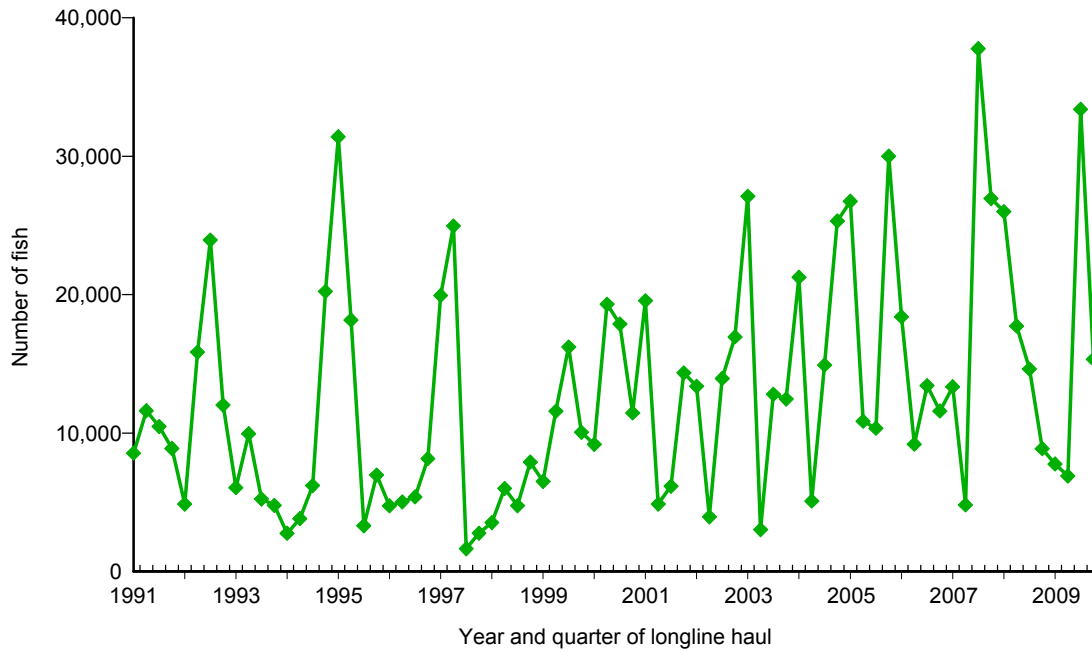


Figure 18. Quarterly catch of mahimahi by longline vessels based and landing in Hawaii, 1991-2009. [PIFSC IMS, Longline Logbook Data, 2/24/2010 8:09:00AM]

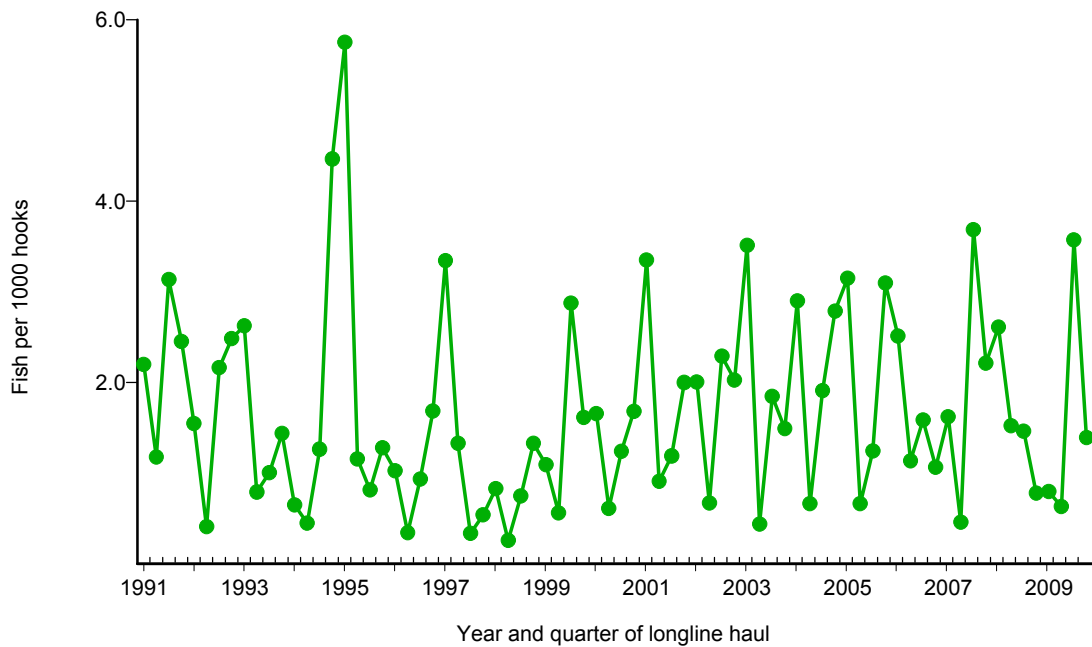


Figure 19. Quarterly CPUE of mahimahi (fish per 1000 hooks) on tuna trips by longline vessels based and landing in Hawaii, 1991-2009. [PIFSC IMS, Longline Logbook Data, 2/24/2010 8:09:00AM]

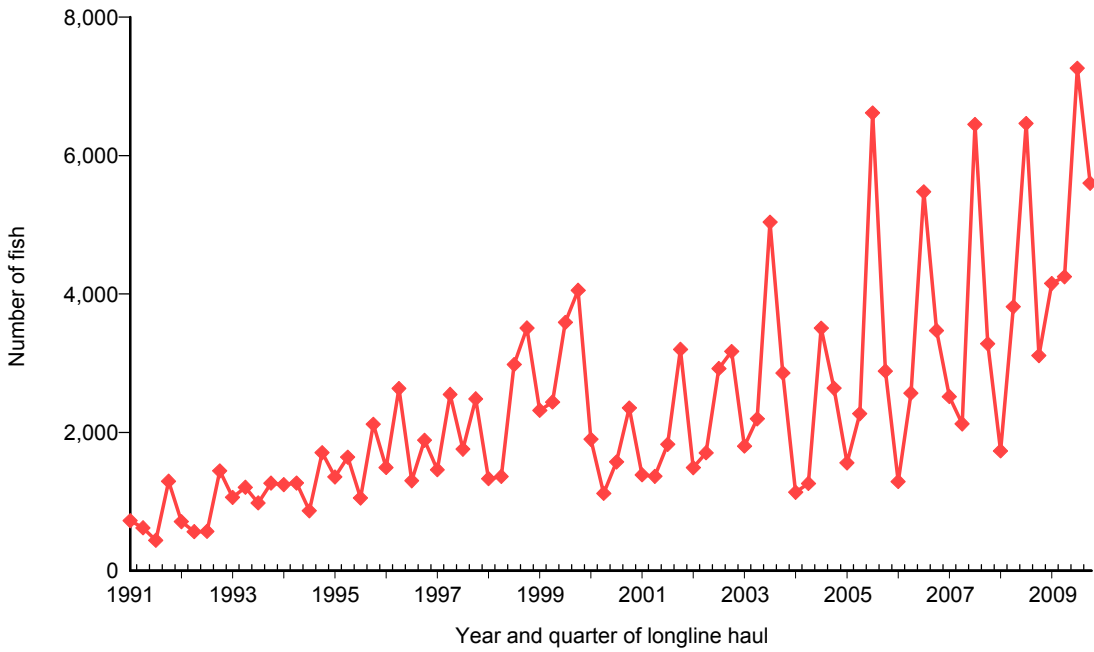


Figure 20. Quarterly catch of moonfish by longline vessels based and landing in Hawaii, 1991-2009. [PIFSC IMS, Longline Logbook Data, 2/24/2010 8:09:00AM]

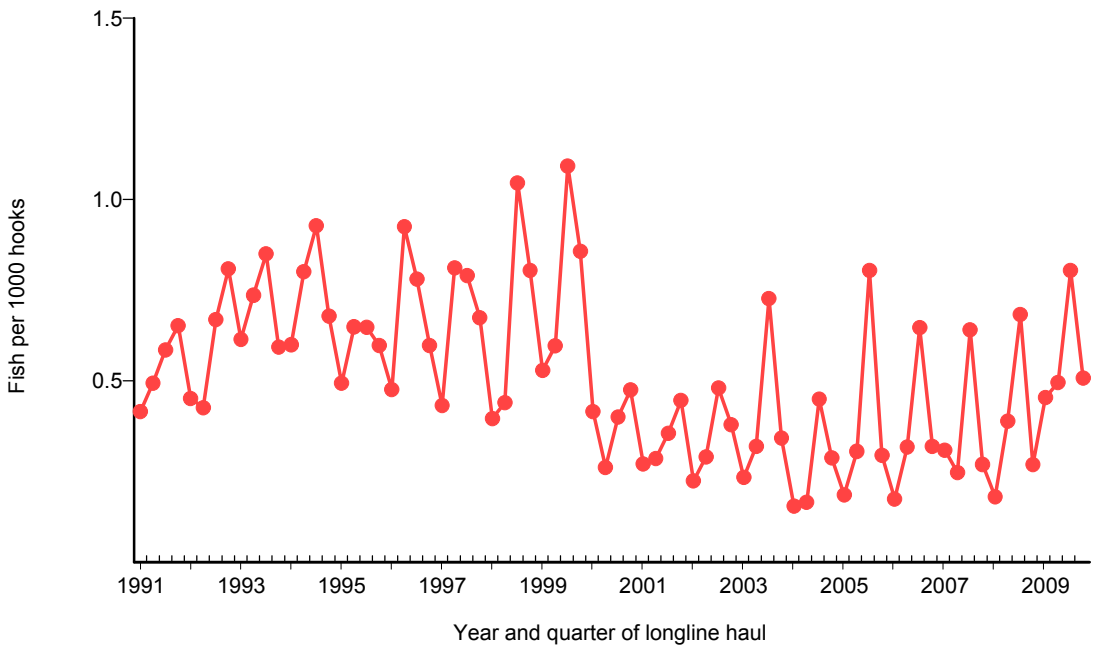


Figure 21. Quarterly CPUE of moonfish (fish per 1000 hooks) on tuna trips by longline vessels based and landing in Hawaii, 1991-2009. [PIFSC IMS, Longline Logbook Data, 2/24/2010 8:09:00AM]

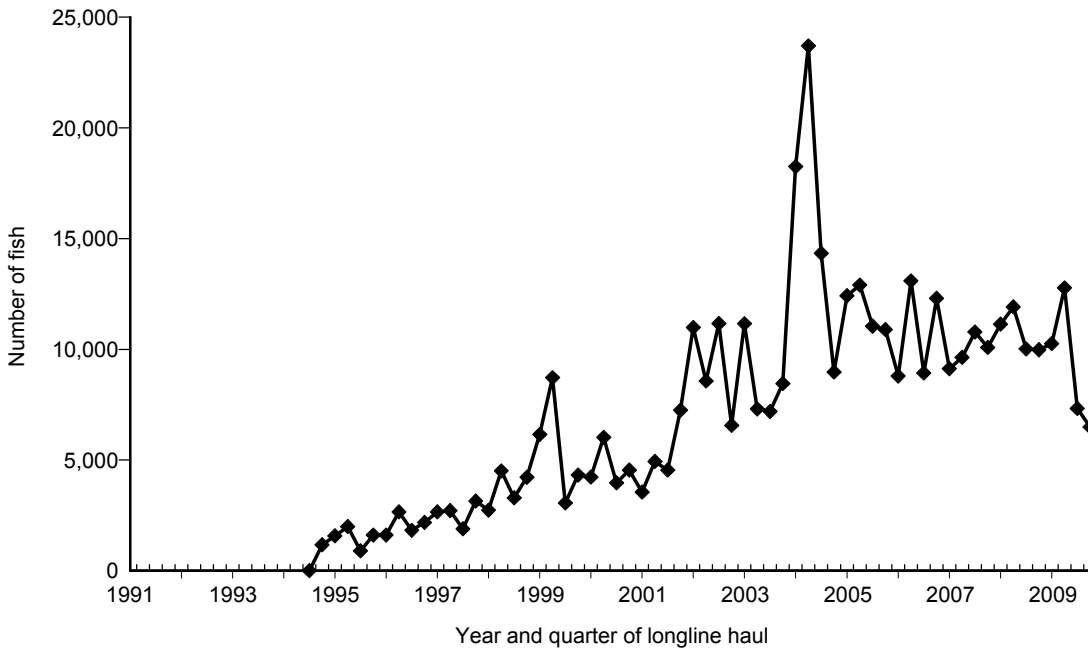


Figure 22. Quarterly catch of pomfret by longline vessels based and landing in Hawaii, 1991-2009. [PIFSC IMS, Longline Logbook Data, 2/24/2010 8:09:00AM]

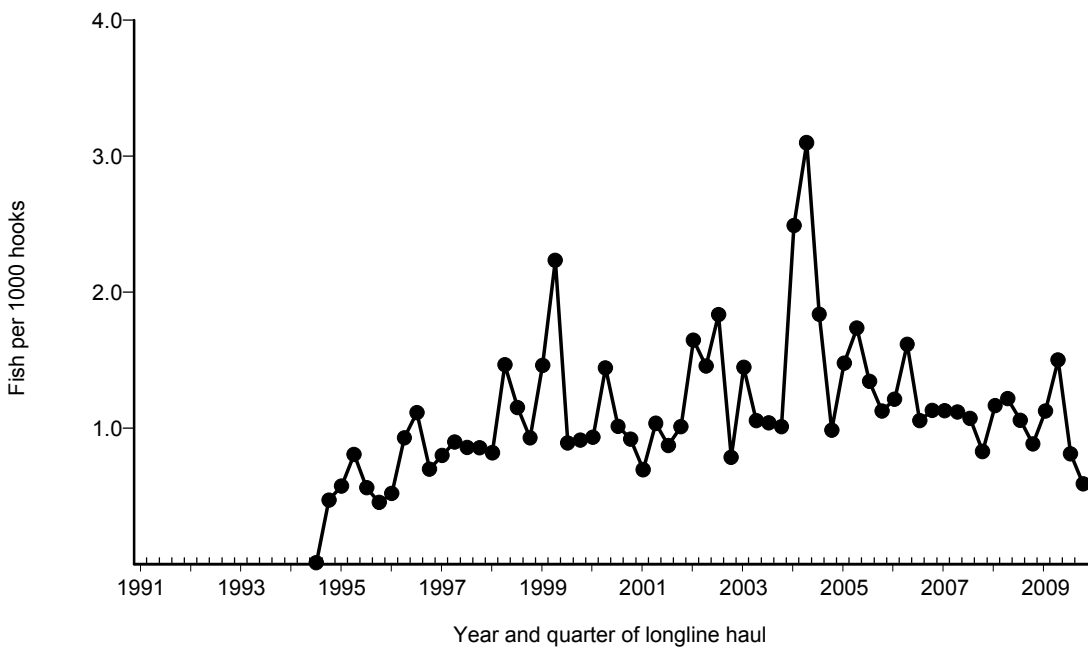


Figure 23. Quarterly CPUE of pomfret (fish per 1000 hooks) on tuna trips by longline vessels based and landing in Hawaii, 1991-2009. [PIFSC IMS, Longline Logbook Data, 2/24/2010 8:09:00AM]

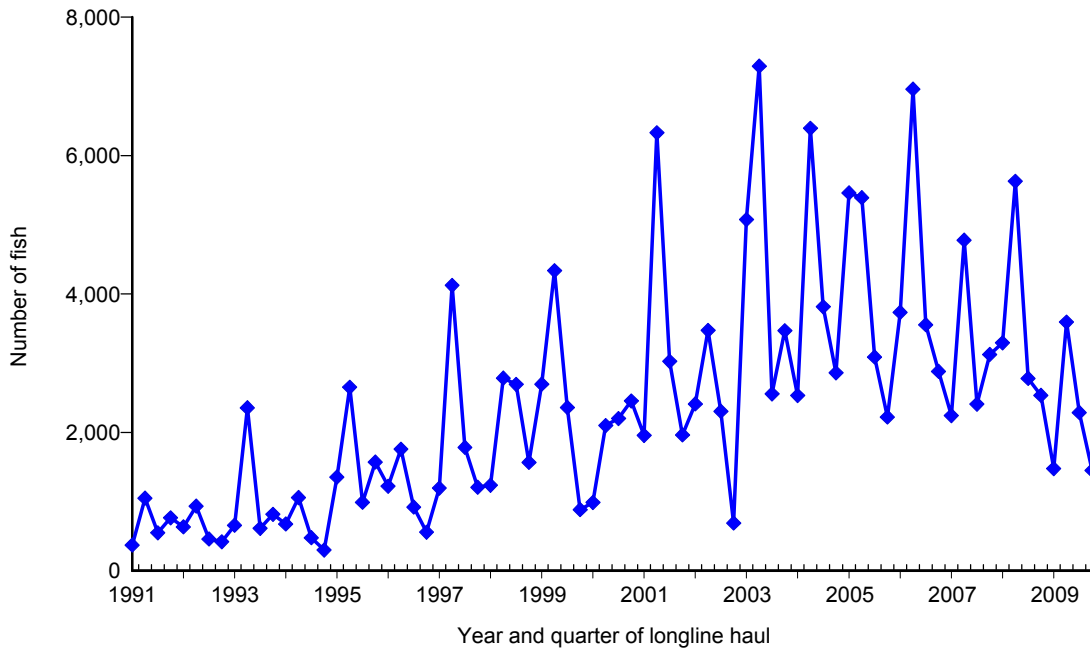


Figure 24. Quarterly catch of wahoo by longline vessels based and landing in Hawaii, { @datarange }. [PIFSC IMS, Longline Logbook Data, 2/24/2010 8:09:00AM]

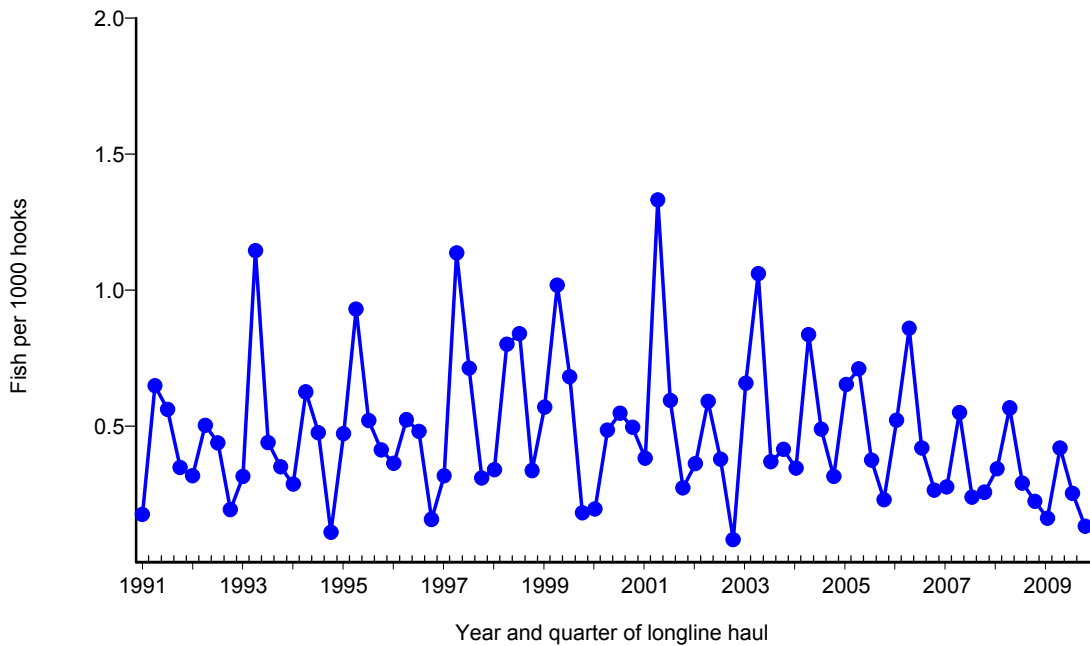


Figure 25. Quarterly CPUE of wahoo (fish per 1000 hooks) on tuna trips by longline vessels based and landing in Hawaii, 1991-2008. [PIFSC IMS, Longline Logbook Data, 2/24/2010 8:09:00AM]