

The Hawaii-based Longline Logbook Summary Report July-September 2011¹

Pacific Islands Fisheries Science Center
Fisheries Monitoring Branch

This report summarizes data on fish catch and fishing effort by Hawaii-based longline vessels during the third quarter of 2011 (Q3-2011). Results are based on the date gear was hauled, as reported by vessel operators to the National Marine Fisheries Service in federal logbooks of daily fishing activity. The report covers longline operations for fishing trips completed in the third quarter of 2011 and most, but not all, Q3-2011 data from trips that began late in the third quarter and continued into the fourth quarter of 2011. Therefore, the Q3-2011 summary statistics reported here are preliminary.

During Q3-2011, 116 vessels were active in the Hawaii-based fleet, one less vessel than in Q3-2010 (Table 1, Fig. 1). They made 351 longline trips (34 less than in Q3-2010), including 348 using deep-set gear to target tuna (28 less in Q3-2010) and 3 using shallow-set gear to target swordfish (6 less than in Q3-2010; Fig. 2). During Q3-2011, the fleet deployed 9.9 million hooks, 350,000 less than in Q3-2010 (Fig. 3). They fished mainly on the high seas outside the U.S. Exclusive Economic Zone (EEZ) (88% of the total hooks set), followed by the EEZ of the main Hawaiian Islands (MHI) (10%), the Northwestern Hawaiian Islands (NWHI) EEZ (2%), and the EEZ of the U.S. Pacific Remote Island Areas (PRIA, consisting of U.S. possessions Wake Island, Jarvis Island, Howland Island, Baker Island, Kingman Reef, Palmyra Atoll, and Johnston Atoll) (<1%).

In Q3-2011, the Hawaii longline fleet caught 32,882 bigeye tuna (Fig. 4); 88% were caught in waters outside the U.S. EEZ. The bigeye tuna catch-per-unit-of-effort (CPUE) on tuna-targeted trips was 3.3 fish per 1000 hooks, the same as in Q3-2010 (Fig. 5). The albacore catch and CPUE on tuna-targeted trips in Q3-2011 were 8,867 fish and 0.90 fish per 1000 hooks, respectively (Figs. 6-7). The yellowfin tuna catch and CPUE on tuna-targeted trips in Q3-2011 were 4,363 fish and 0.44 fish per 1000 hooks, respectively (Figs. 8-9).

The Q3-2011 swordfish catch was 1,261 fish, 20% lower than the swordfish catch in Q3-2010 (Fig. 10). In Q3-2011, swordfish CPUE on shallow-set swordfish-targeted trips was 10.3 fish per 1000 hooks, 29% higher than in Q3-2010 (Fig. 11).

The striped marlin catch in Q3-2011 was 859 fish, and the CPUE on tuna-targeted trips was 0.08 fish per 1000 hooks; these figures represent decreases of 16% and 20% in the catch and CPUE, respectively, compared to Q3-2010 (Figs. 12-13). The blue marlin catch in Q3-2011 was 796 fish with a CPUE of 0.08 fish per 1000 hooks on tuna-targeted trips (Figs. 14-15).

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The fleet caught 12,293 sharks in Q3-2011, of which 194 (2%) were kept. Blue shark comprised 91% of the total shark catch (11,170 fish) (Fig. 16). Blue shark CPUE on shallow-set swordfish-targeted trips in Q3-2011 was 5.8 fish per 1000 hooks, 50% lower than in Q3-2010 (Fig. 17).

In Q3-2011, the Hawaii longline catch of other key pelagic species included 17,873 mahimahi (Fig. 18) with a CPUE of 1.8 fish per 1000 hooks on tuna-targeted trips (Fig. 19); 8,632 moonfish (Fig. 20) with a CPUE of 0.87 fish per 1000 hooks on tuna-targeted trips (Fig. 21); 5,629 pomfret (Fig. 22) with a CPUE of 0.57 fish per 1000 hooks on tuna-targeted trips (Fig. 23); and 1,865 wahoo (Fig. 24) with a CPUE of 0.19 fish per 1000 hooks on tuna-targeted trips (Fig. 25). A high percentage of the catch of these species was kept.

The summary statistics in Table 1 are based on logbook records from all fishing areas combined and all types of longline trips—those targeting swordfish and those aimed at catching tuna. Hence, the CPUE figures in Table 1 differ from those reported above, which were calculated using data exclusively from tuna-targeted trips or swordfish-targeted trips, depending on the species of interest.

The longline logbook statistics reported above refer to all fishing areas combined. Q3-2011 summary catch and effort were also compiled by several geographical sub-areas including: the MHI EEZ; the NWHI EEZ; the PRIA EEZ; the combined EEZ of MHI, NWHI and PRIA; and waters outside the U.S. EEZ. These statistics are presented in Tables 2-6. Q3-2011 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, 12/5/2011 3:55:44PM].

Report Coverage		Number of vessels active		
Time Period	3rd Quarter 2011	116		
Fishing Area	All Areas	Number of trips 351		
Trip Types	All Trip Types	Number of sets 4,195		
		Number of hooks set 9,923,022		

Pelagic Management Unit Species (PMUS)	Number Caught	Number Kept	Number Released	CPUE - Number Caught per 1000 hooks
Billfishes				
Blue marlin	796	782	14	0.08
Striped marlin	859	848	11	0.09
Shortbill spearfish	1,949	1,937	12	0.20
Swordfish	1,261	1,080	181	0.13
Other billfishes	122	122	0	0.01
Total	4,987	4,769	218	0.50
Sharks				
Blue shark	11,170	55	11,115	1.13
Mako sharks	474	124	350	0.05
Thresher sharks	413	14	399	0.04
Oceanic whitetip shark	105	0	105	0.01
Silky shark	60	0	60	0.01
Other sharks	71	1	70	0.01
Total	12,293	194	12,099	1.24
Tunas				
Albacore	8,867	8,754	113	0.89
Bigeye tuna	32,882	32,526	356	3.31
Yellowfin tuna	4,363	4,277	86	0.44
Bluefin tuna	0	0	0	0.00
Skipjack tuna	4,327	4,277	50	0.44
Other tunas	0	0	0	0.00
Total	50,439	49,834	605	5.08
Other PMUS				
Mahimahi	17,873	17,753	120	1.80
Moonfish	8,632	8,596	36	0.87
Wahoo	1,865	1,854	11	0.19
Oilfish	5,791	5,697	94	0.58
Pomfret	5,629	5,471	158	0.57
Total	39,790	39,371	419	4.01
Total PMUS	107,509	94,168	13,341	10.83
Total Non-PMUS	643	629	14	0.06
Total All Species	108,152	94,797	13,355	10.90

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, 12/5/2011 3:55:44PM].

Report Coverage		Number of vessels active		62
Time Period	3rd Quarter 2011	Number of trips		106
Fishing Area	Main Hawaiian Islands EEZ	Number of sets		463
Trip Types	All Trip Types	Number of hooks set		992,236

Pelagic Management Unit Species (PMUS)	Number Caught	Number Kept	Number Released	CPUE - Number Caught per 1000 hooks
Billfishes				
Blue marlin	144	140	4	0.15
Striped marlin	98	98	0	0.10
Shortbill spearfish	204	201	3	0.21
Swordfish	62	36	26	0.06
Other billfishes	9	9	0	0.01
Total	517	484	33	0.52
Sharks				
Blue shark	1,658	2	1,656	1.67
Mako sharks	38	16	22	0.04
Thresher sharks	44	0	44	0.04
Oceanic whitetip shark	37	0	37	0.04
Silky shark	12	0	12	0.01
Other sharks	17	0	17	0.02
Total	1,806	18	1,788	1.82
Tunas				
Albacore	735	732	3	0.74
Bigeye tuna	1,780	1,753	27	1.79
Yellowfin tuna	1,476	1,466	10	1.49
Bluefin tuna	0	0	0	0.00
Skipjack tuna	701	696	5	0.71
Other tunas	0	0	0	0.00
Total	4,692	4,647	45	4.73
Other PMUS				
Mahimahi	1,018	1,015	3	1.03
Moonfish	218	217	1	0.22
Wahoo	277	275	2	0.28
Oilfish	332	316	16	0.33
Pomfret	999	979	20	1.01
Total	2,844	2,802	42	2.87
Total PMUS	9,859	7,951	1,908	9.94
Total Non-PMUS	435	433	2	0.44
Total All Species	10,294	8,384	1,910	10.37

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, 12/5/2011 3:55:44PM].

Report Coverage		Number of vessels active		12
Time Period	3rd Quarter 2011	Number of trips		14
Fishing Area	Northwestern Hawaiian Islands EEZ	Number of sets		68
Trip Types	All Trip Types	Number of hooks set		154,720

Pelagic Management Unit Species (PMUS)	Number Caught	Number Kept	Number Released	CPUE - Number Caught per 1000 hooks
Billfishes				
Blue marlin	41	41	0	0.26
Striped marlin	36	35	1	0.23
Shortbill spearfish	25	25	0	0.16
Swordfish	14	9	5	0.09
Other billfishes	7	7	0	0.05
Total	123	117	6	0.79
Sharks				
Blue shark	521	0	521	3.37
Mako sharks	7	0	7	0.05
Thresher sharks	10	0	10	0.06
Oceanic whitetip shark	10	0	10	0.06
Silky shark	1	0	1	0.01
Other sharks	5	1	4	0.03
Total	554	1	553	3.58
Tunas				
Albacore	202	195	7	1.31
Bigeye tuna	58	56	2	0.37
Yellowfin tuna	398	385	13	2.57
Bluefin tuna	0	0	0	0.00
Skipjack tuna	206	206	0	1.33
Other tunas	0	0	0	0.00
Total	864	842	22	5.58
Other PMUS				
Mahimahi	78	75	3	0.50
Moonfish	90	87	3	0.58
Wahoo	145	144	1	0.94
Oilfish	59	58	1	0.38
Pomfret	65	64	1	0.42
Total	437	428	9	2.82
Total PMUS	1,978	1,388	590	12.78
Total Non-PMUS	60	59	1	0.39
Total All Species	2,038	1,447	591	13.17

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, 12/5/2011 3:55:44PM].

Report Coverage		Number of vessels active	
Time Period	3rd Quarter 2011		6
Fishing Area	Pacific Remote Island Areas (PRIA) EEZ	Number of trips	6
Trip Types	All Trip Types	Number of sets	17
		Number of hooks set	47,000

Pelagic Management Unit Species (PMUS)	Number Caught	Number Kept	Number Released	CPUE - Number Caught per 1000 hooks
Billfishes				
Blue marlin	7	7	0	0.15
Striped marlin	3	2	1	0.06
Shortbill spearfish	5	4	1	0.11
Swordfish	1	1	0	0.02
Other billfishes	0	0	0	0.00
Total	16	14	2	0.34
Sharks				
Blue shark	41	0	41	0.87
Mako sharks	2	0	2	0.04
Thresher sharks	6	0	6	0.13
Oceanic whitetip shark	13	0	13	0.28
Silky shark	40	0	40	0.85
Other sharks	0	0	0	0.00
Total	102	0	102	2.17
Tunas				
Albacore	77	77	0	1.64
Bigeye tuna	84	81	3	1.79
Yellowfin tuna	72	69	3	1.53
Bluefin tuna	0	0	0	0.00
Skipjack tuna	195	191	4	4.15
Other tunas	0	0	0	0.00
Total	428	418	10	9.11
Other PMUS				
Mahimahi	13	13	0	0.28
Moonfish	4	4	0	0.09
Wahoo	21	20	1	0.45
Oilfish	28	26	2	0.60
Pomfret	15	15	0	0.32
Total	81	78	3	1.72
Total PMUS	627	510	117	13.34
Total Non-PMUS	5	0	5	0.11

Total All Species	632	510	122	13.45
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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, 12/5/2011 3:55:44PM].

Report Coverage		Number of vessels active		65	
Time Period	3rd Quarter 2011	Number of trips		114	
Fishing Area	Hawaiian Islands EEZ + PRIA EEZ	Number of sets		548	
Trip Types	All Trip Types	Number of hooks set		1,193,956	

Pelagic Management Unit Species (PMUS)	Number Caught	Number Kept	Number Released	CPUE - Number Caught per 1000 hooks
Billfishes				
Blue marlin	192	188	4	0.16
Striped marlin	137	135	2	0.11
Shortbill spearfish	234	230	4	0.20
Swordfish	77	46	31	0.06
Other billfishes	16	16	0	0.01
Total	656	615	41	0.55
Sharks				
Blue shark	2,220	2	2,218	1.86
Mako sharks	47	16	31	0.04
Thresher sharks	60	0	60	0.05
Oceanic whitetip shark	60	0	60	0.05
Silky shark	53	0	53	0.04
Other sharks	22	1	21	0.02
Total	2,462	19	2,443	2.06
Tunas				
Albacore	1,014	1,004	10	0.85
Bigeye tuna	1,922	1,890	32	1.61
Yellowfin tuna	1,946	1,920	26	1.63
Bluefin tuna	0	0	0	0.00
Skipjack tuna	1,102	1,093	9	0.92
Other tunas	0	0	0	0.00
Total	5,984	5,907	77	5.01
Other PMUS				
Mahimahi	1,109	1,103	6	0.93
Moonfish	312	308	4	0.26
Wahoo	443	439	4	0.37
Oilfish	419	400	19	0.35
Pomfret	1,079	1,058	21	0.90
Total	3,362	3,308	54	2.82
Total PMUS	12,464	9,849	2,615	10.44
Total Non-PMUS	500	492	8	0.42
Total All Species	12,964	10,341	2,623	10.86

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, 12/5/2011 3:55:44PM].

Report Coverage		Number of vessels active		112	
Time Period	3rd Quarter 2011	Number of trips		315	
Fishing Area	Outside U.S. EEZ	Number of sets		3,647	
Trip Types	All Trip Types	Number of hooks set		8,729,066	

Pelagic Management Unit Species (PMUS)	Number Caught	Number Kept	Number Released	CPUE - Number Caught per 1000 hooks
Billfishes				
Blue marlin	604	594	10	0.07
Striped marlin	722	713	9	0.08
Shortbill spearfish	1,715	1,707	8	0.20
Swordfish	1,184	1,034	150	0.14
Other billfishes	106	106	0	0.01
Total	4,331	4,154	177	0.50
Sharks				
Blue shark	8,950	53	8,897	1.03
Mako sharks	427	108	319	0.05
Thresher sharks	353	14	339	0.04
Oceanic whitetip shark	45	0	45	0.01
Silky shark	7	0	7	0.00
Other sharks	49	0	49	0.01
Total	9,831	175	9,656	1.13
Tunas				
Albacore	7,853	7,750	103	0.90
Bigeye tuna	30,960	30,636	324	3.55
Yellowfin tuna	2,417	2,357	60	0.28
Bluefin tuna	0	0	0	0.00
Skipjack tuna	3,225	3,184	41	0.37
Other tunas	0	0	0	0.00
Total	44,455	43,927	528	5.09
Other PMUS				
Mahimahi	16,764	16,650	114	1.92
Moonfish	8,320	8,288	32	0.95
Wahoo	1,422	1,415	7	0.16
Oilfish	5,372	5,297	75	0.62
Pomfret	4,550	4,413	137	0.52
Total	36,428	36,063	365	4.17
Total PMUS	95,045	84,319	10,726	10.89
Total Non-PMUS	143	137	6	0.02
Total All Species	95,188	84,456	10,732	10.90

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, 12/5/2011 3:55:44PM].

Report Coverage		Number of vessels active	
Time Period	3rd Quarter 2011		3
Fishing Area	All Areas	Number of trips	3
Trip Types	Swordfish Targeted Trips	Number of sets	47
		Number of hooks set	47,986

Pelagic Management Unit Species (PMUS)	Number Caught	Number Kept	Number Released	CPUE - Number Caught per 1000 hooks
Billfishes				
Blue marlin	4	4	0	0.08
Striped marlin	23	22	1	0.48
Shortbill spearfish	1	1	0	0.02
Swordfish	492	489	3	10.25
Other billfishes	1	1	0	0.02
Total	521	517	4	10.86
Sharks				
Blue shark	276	0	276	5.75
Mako sharks	30	0	30	0.63
Thresher sharks	18	1	17	0.38
Oceanic whitetip shark	5	0	5	0.10
Silky shark	0	0	0	0.00
Other sharks	13	0	13	0.27
Total	342	1	341	7.13
Tunas				
Albacore	0	0	0	0.00
Bigeye tuna	10	10	0	0.21
Yellowfin tuna	0	0	0	0.00
Bluefin tuna	0	0	0	0.00
Skipjack tuna	0	0	0	0.00
Other tunas	0	0	0	0.00
Total	10	10	0	0.21
Other PMUS				
Mahimahi	135	133	2	2.81
Moonfish	0	0	0	0.00
Wahoo	5	5	0	0.10
Oilfish	34	30	4	0.71
Pomfret	3	3	0	0.06
Total	177	171	6	3.69
Total PMUS	1,050	699	351	21.88
Total Non-PMUS	0	0	0	0.00
Total All Species	1,050	699	351	21.88

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, 12/5/2011 3:55:44PM].

Report Coverage		Number of vessels active		116
Time Period	3rd Quarter 2011	Number of trips		348
Fishing Area	All Areas	Number of sets		4,148
Trip Types	Tuna Targeted Trips	Number of hooks set		9,875,036

Pelagic Management Unit Species (PMUS)	Number Caught	Number Kept	Number Released	CPUE - Number Caught per 1000 hooks
Billfishes				
Blue marlin	792	778	14	0.08
Striped marlin	836	826	10	0.08
Shortbill spearfish	1,948	1,936	12	0.20
Swordfish	769	591	178	0.08
Other billfishes	121	121	0	0.01
Total	4,466	4,252	214	0.45
Sharks				
Blue shark	10,894	55	10,839	1.10
Mako sharks	444	124	320	0.04
Thresher sharks	395	13	382	0.04
Oceanic whitetip shark	100	0	100	0.01
Silky shark	60	0	60	0.01
Other sharks	58	1	57	0.01
Total	11,951	193	11,758	1.21
Tunas				
Albacore	8,867	8,754	113	0.90
Bigeye tuna	32,872	32,516	356	3.33
Yellowfin tuna	4,363	4,277	86	0.44
Bluefin tuna	0	0	0	0.00
Skipjack tuna	4,327	4,277	50	0.44
Other tunas	0	0	0	0.00
Total	50,429	49,824	605	5.11
Other PMUS				
Mahimahi	17,738	17,620	118	1.80
Moonfish	8,632	8,596	36	0.87
Wahoo	1,860	1,849	11	0.19
Oilfish	5,757	5,667	90	0.58
Pomfret	5,626	5,468	158	0.57
Total	39,613	39,200	413	4.01
Total PMUS	106,459	93,469	12,990	10.78
Total Non-PMUS	643	629	14	0.07
Total All Species	107,102	94,098	13,004	10.85

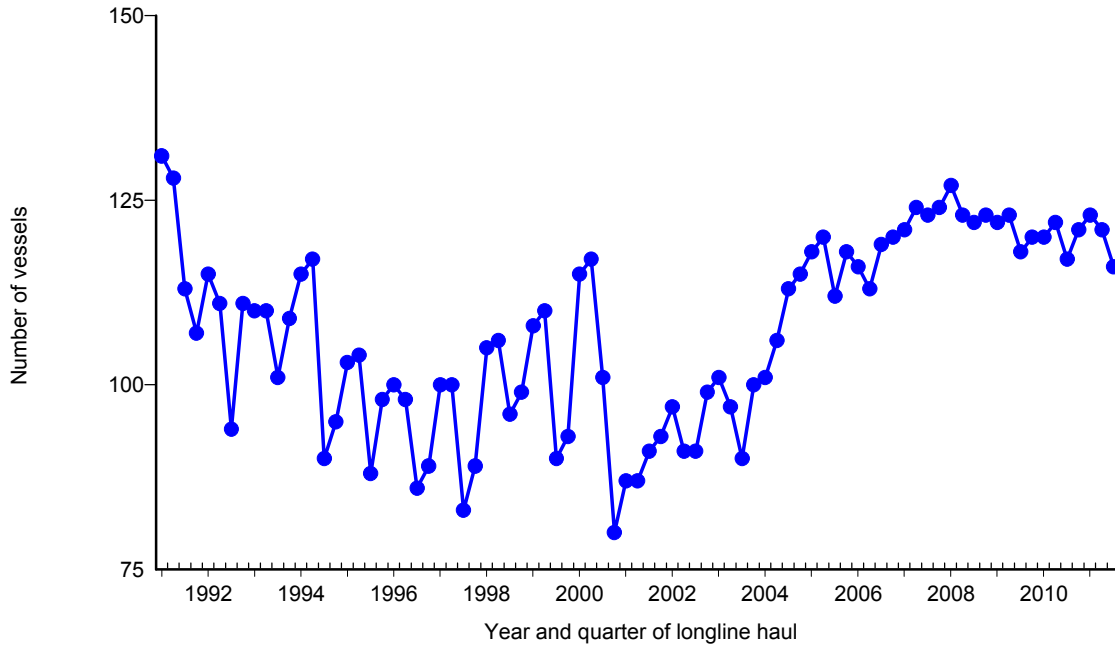


Figure 1. Number of active longline vessels based and landing in Hawaii, by quarter, 1991-2011. [PIFSC IMS, Longline Logbook Data, 12/8/2011 9:10:40AM]

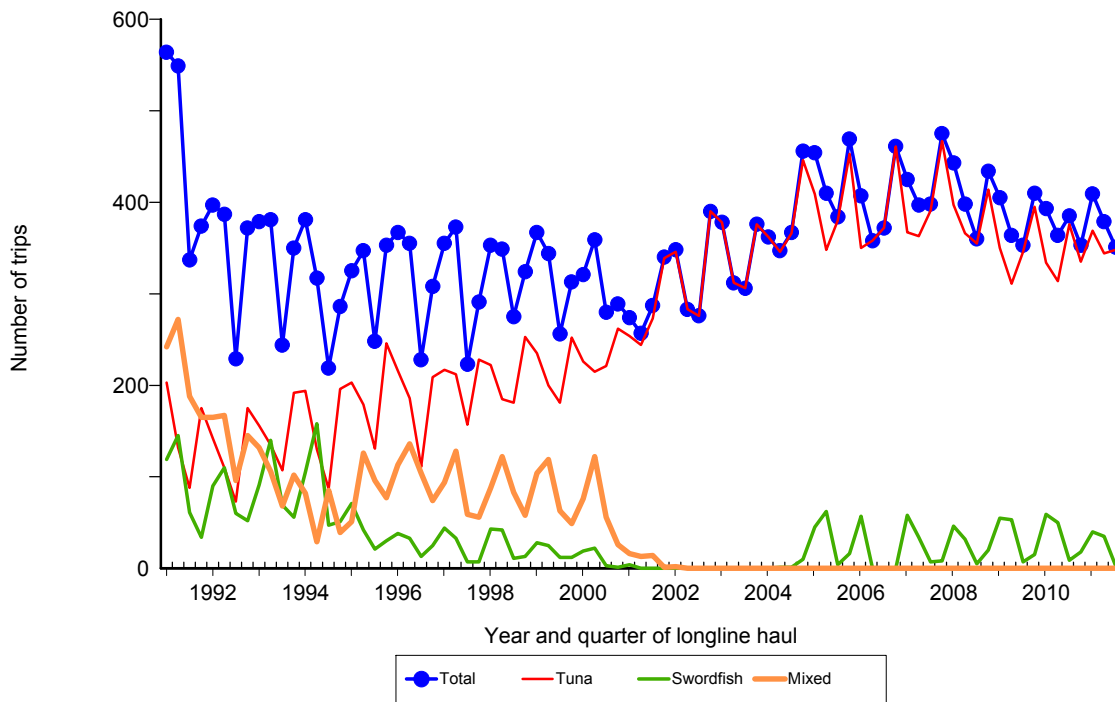


Figure 2. Number of fishing trips by longline vessels based and landing in Hawaii, by quarter and trip type, 1991-2011. [PIFSC IMS, Longline Logbook Data, 12/8/2011 9:10:40AM]

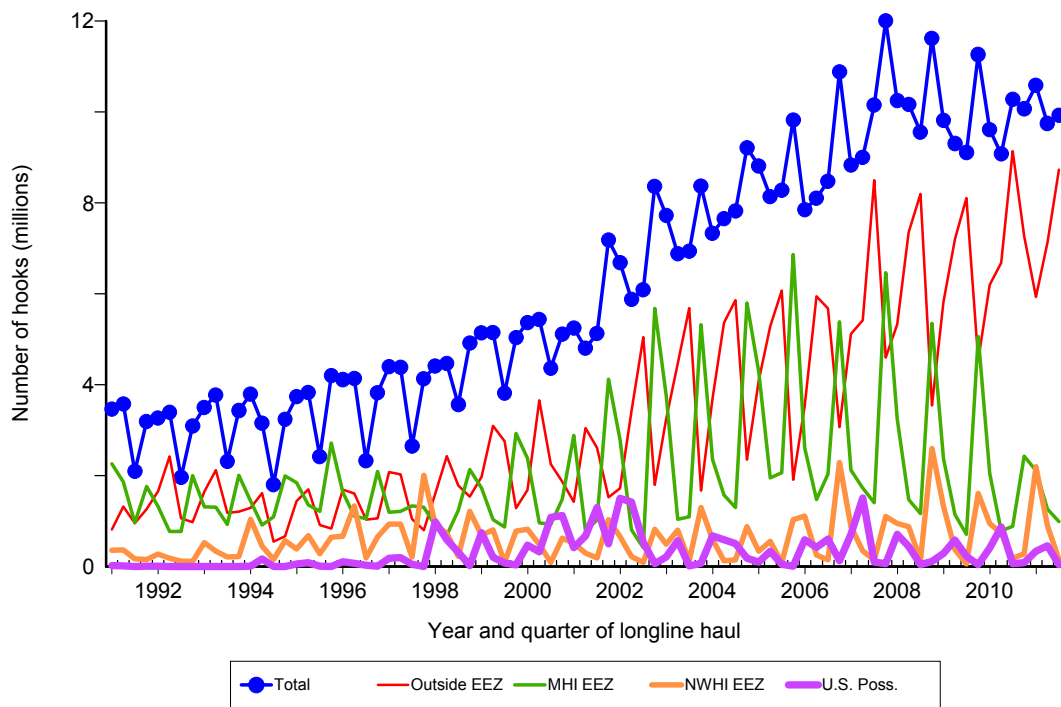


Figure 3. Number of hooks set by longline vessels based and landing in Hawaii, by quarter and fishing area, 1991-2011. [PIFSC IMS, Longline Logbook Data, 12/8/2011 9:11:15AM]

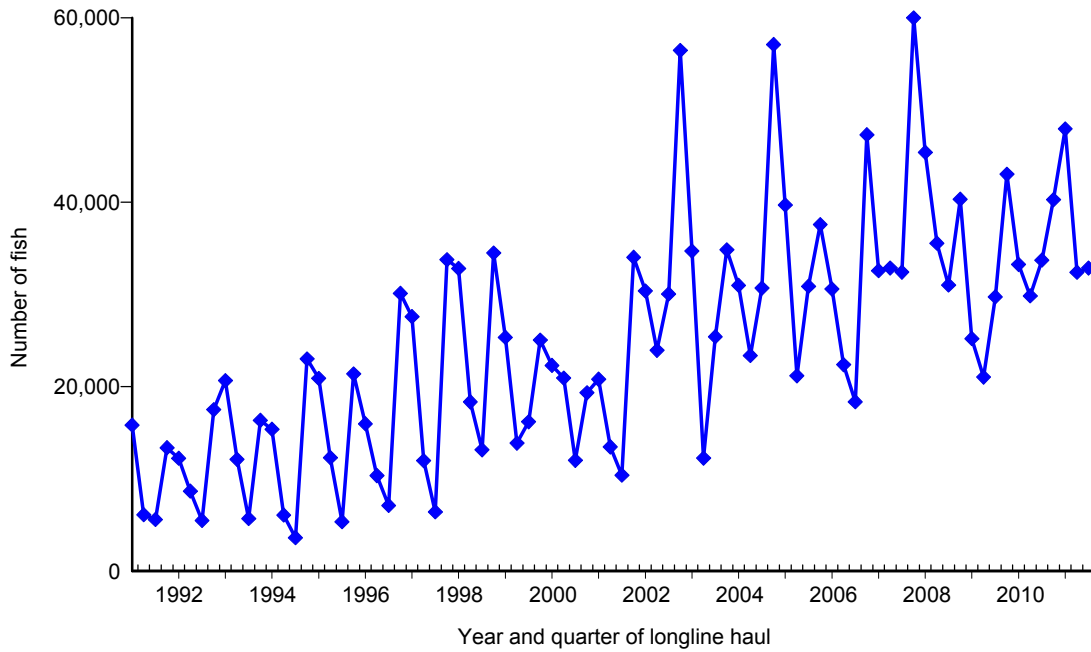


Figure 4. Quarterly catch of bigeye tuna by longline vessels based and landing in Hawaii, 1991-2011. [PIFSC IMS, Longline Logbook Data, 12/8/2011 9:12:03AM]

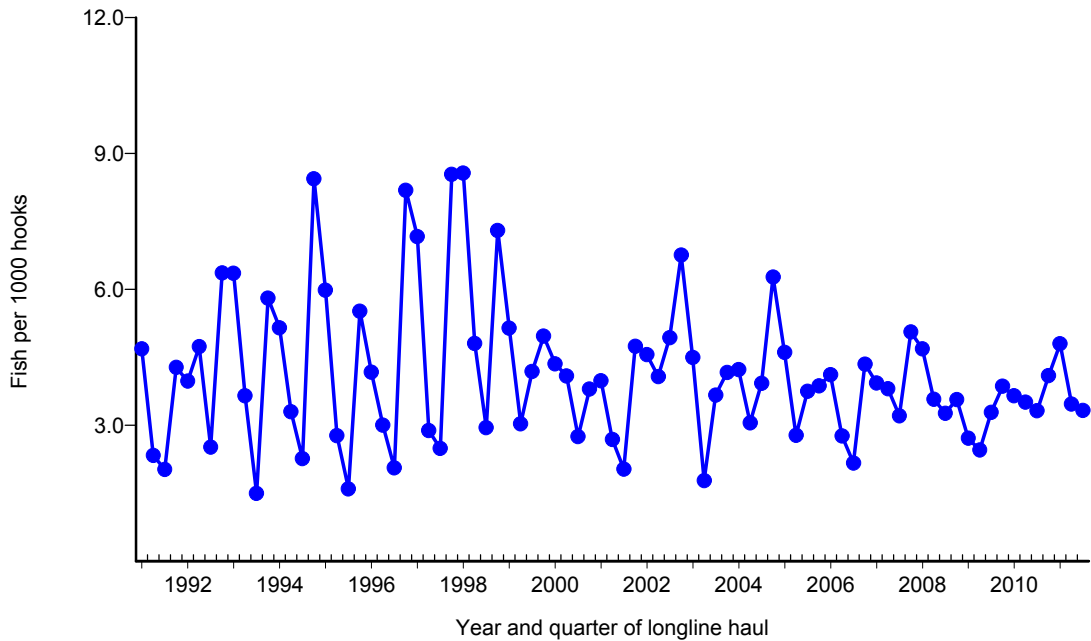


Figure 5. Quarterly CPUE of bigeye tuna (fish per 1000 hooks) on tuna trips by longline vessels based and landing in Hawaii, 1991-2011. [PIFSC IMS, Longline Logbook Data, 12/8/2011 9:12:03AM]

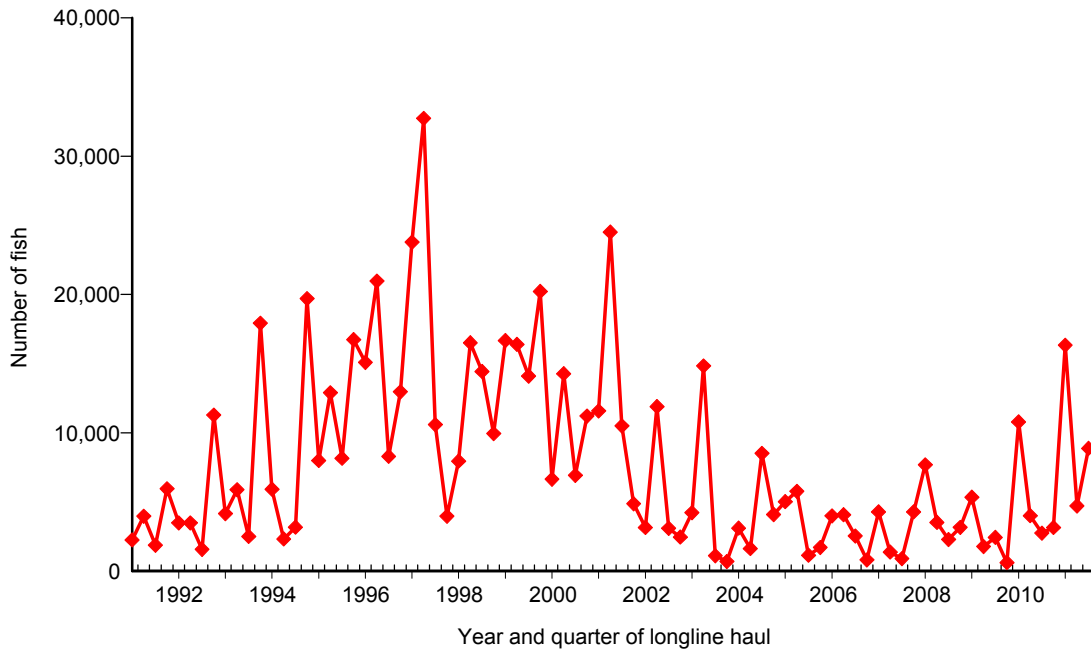


Figure 6. Quarterly catch of albacore by longline vessels based and landing in Hawaii, 1991-2011. [PIFSC IMS, Longline Logbook Data, 12/8/2011 9:12:53AM]

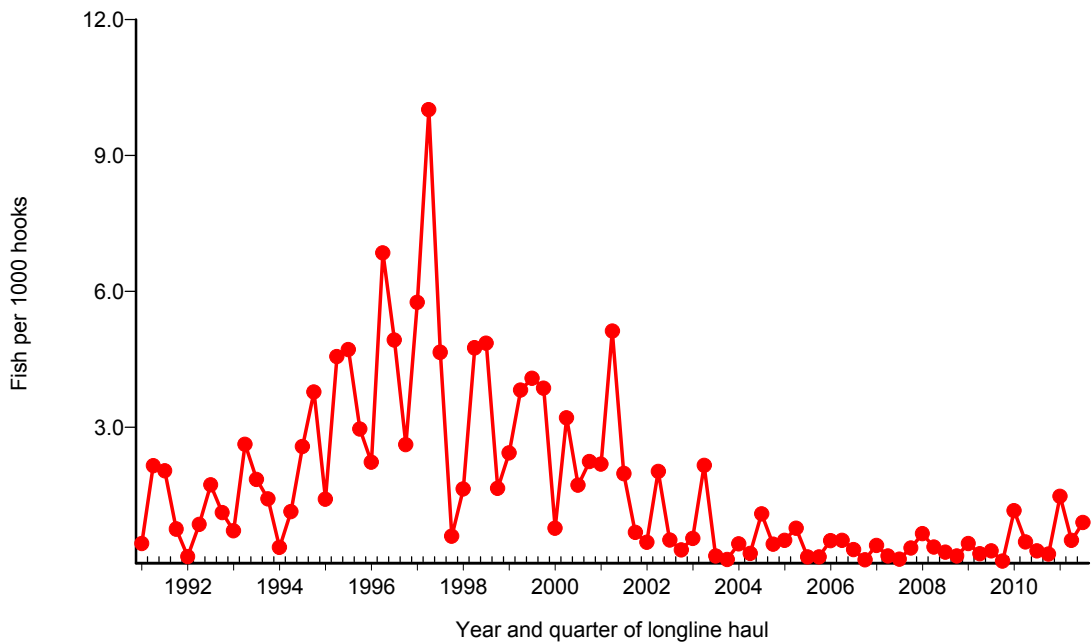


Figure 7. Quarterly CPUE of albacore (fish per 1000 hooks) on tuna trips by longline vessels based and landing in Hawaii, 1991-2011. [PIFSC IMS, Longline Logbook Data, 12/8/2011 9:12:53AM]

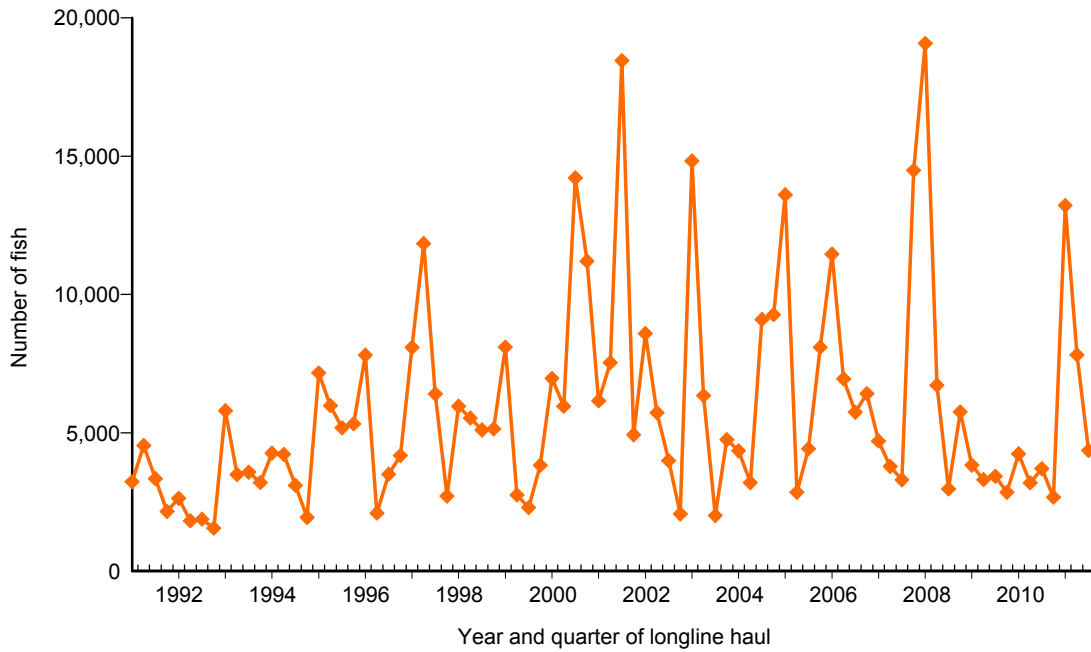


Figure 8. Quarterly catch of yellowfin tuna by longline vessels based and landing in Hawaii, 1991-2011. [PIFSC IMS, Longline Logbook Data, 12/8/2011 9:18:46AM]

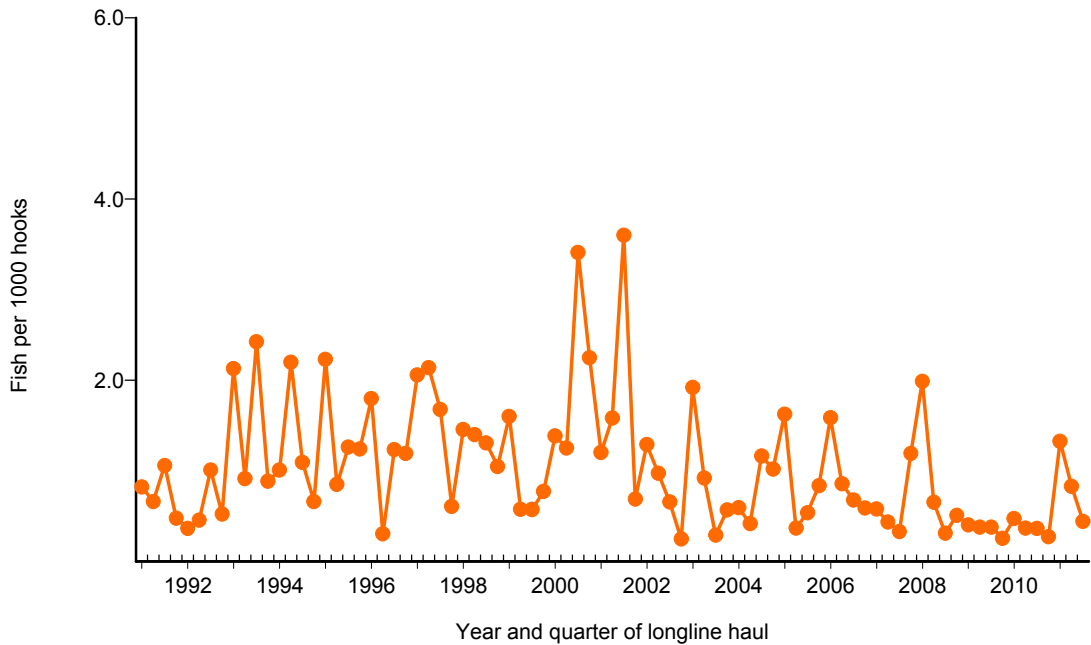


Figure 9. Quarterly CPUE of yellowfin tuna (fish per 1000 hooks) on tuna trips by longline vessels based and landing in Hawaii, 1991-2011. [PIFSC IMS, Longline Logbook Data, 12/8/2011 9:18:46AM]

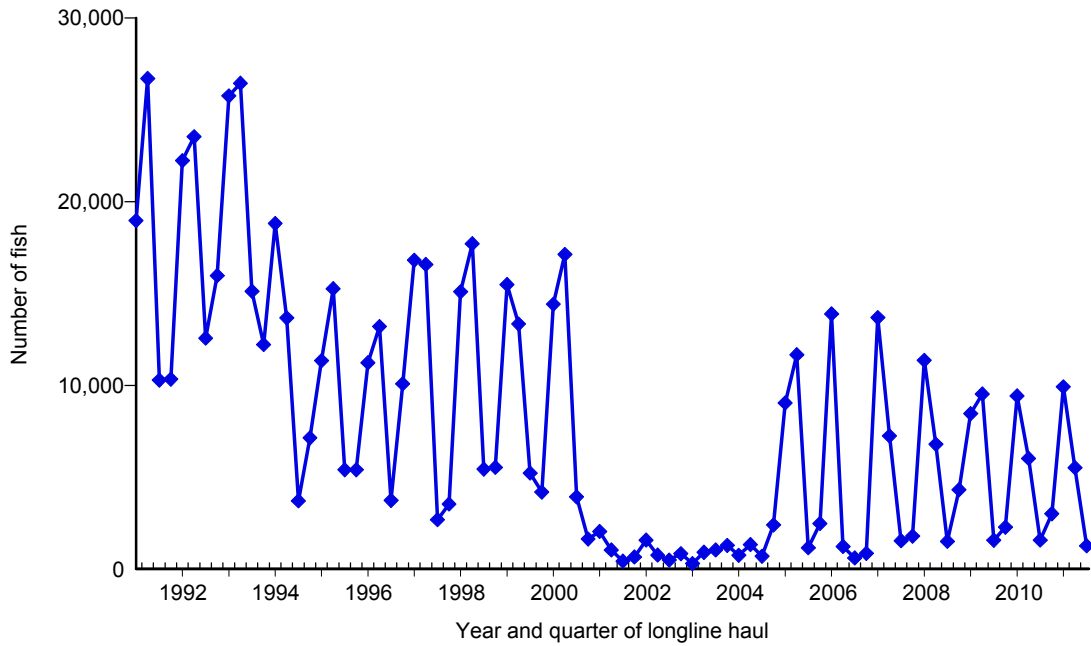


Figure 10. Quarterly catch of swordfish by longline vessels based and landing in Hawaii, 1991-2011. [PIFSC IMS, Longline Logbook Data, 12/8/2011 9:19:25AM]

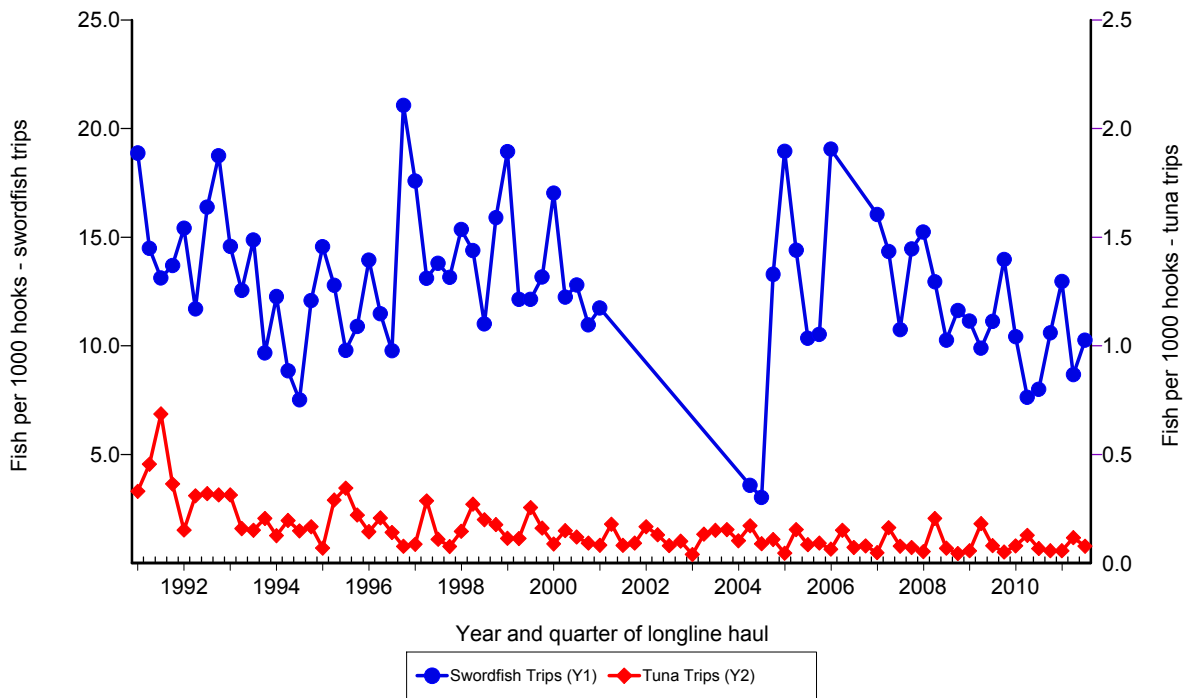


Figure 11. Quarterly CPUE of swordfish (fish per 1000 hooks) on swordfish trips and tuna trips by longline vessels based and landing in Hawaii, 1991-2011. [PIFSC IMS, Longline Logbook Data, 12/8/2011 9:19:25AM]

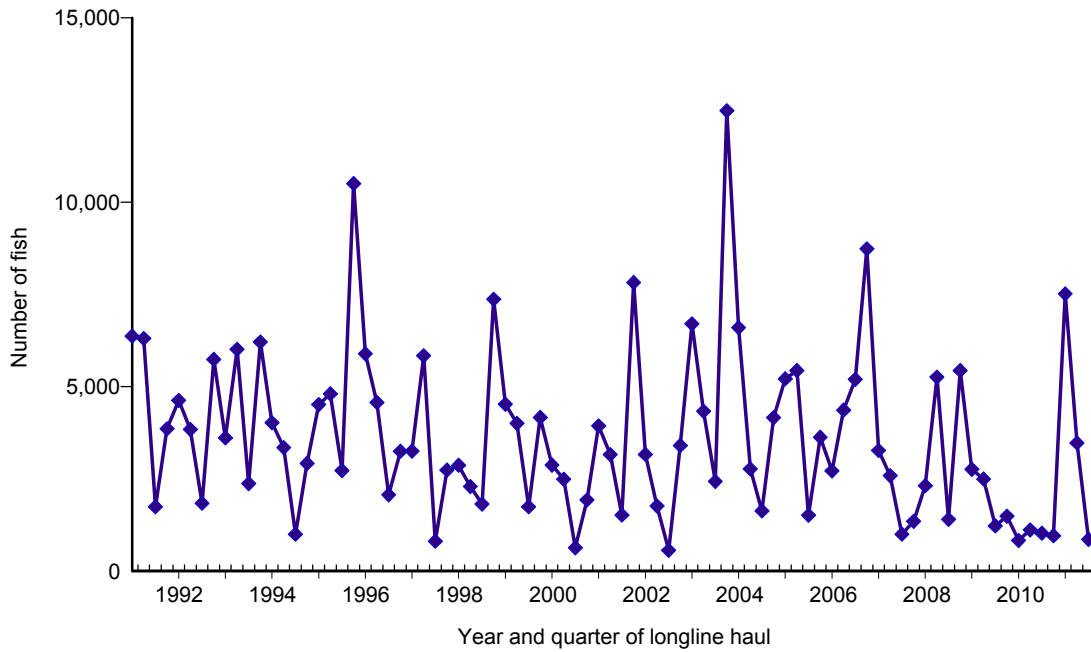


Figure 12. Quarterly catch of striped marlin by longline vessels based and landing in Hawaii, 1991-2011. [PIFSC IMS, Longline Logbook Data, 12/8/2011 9:19:52AM]

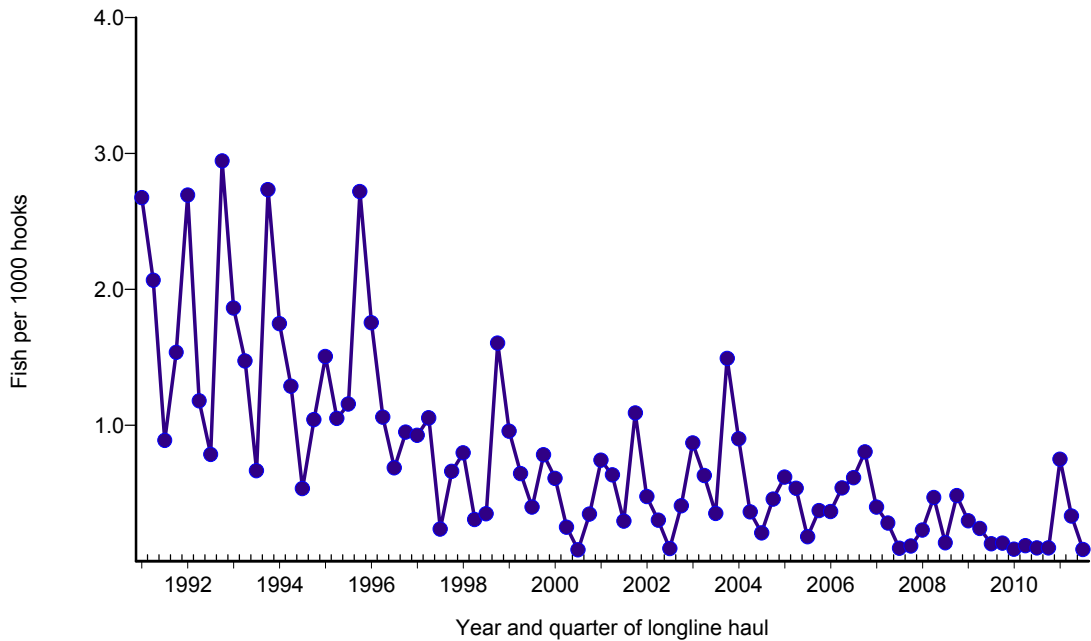


Figure 13. Quarterly CPUE of striped marlin (fish per 1000 hooks) on tuna trips by longline vessels based and landing in Hawaii, 1991-2011. [PIFSC IMS, Longline Logbook Data, 12/8/2011 9:19:52AM]

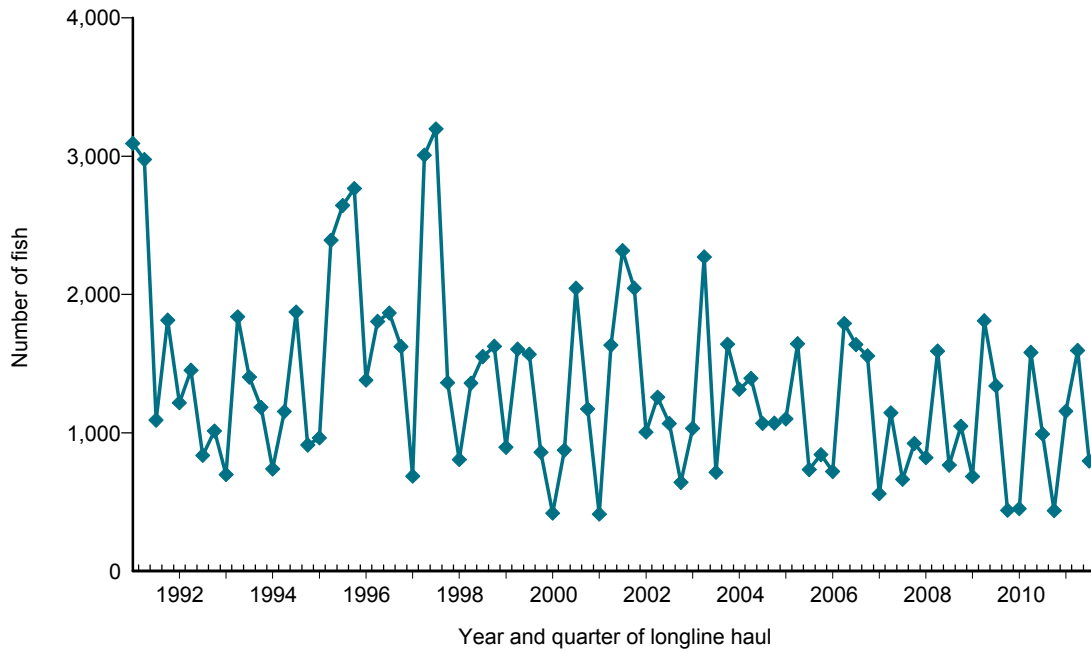


Figure 14. Quarterly catch of blue marlin by longline vessels based and landing in Hawaii, 1991-2011. [PIFSC IMS, Longline Logbook Data, 12/8/2011 9:20:21AM]

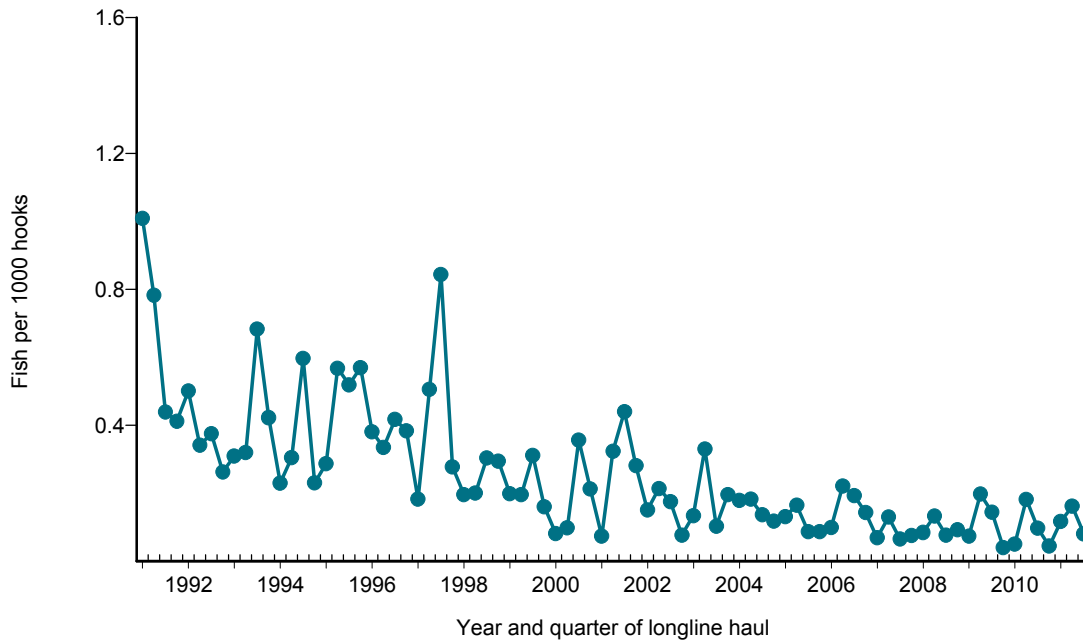


Figure 15. Quarterly CPUE of blue marlin (fish per 1000 hooks) on tuna trips by longline vessels based and landing in Hawaii, 1991-2011. [PIFSC IMS, Longline Logbook Data, 12/8/2011 9:20:21AM]

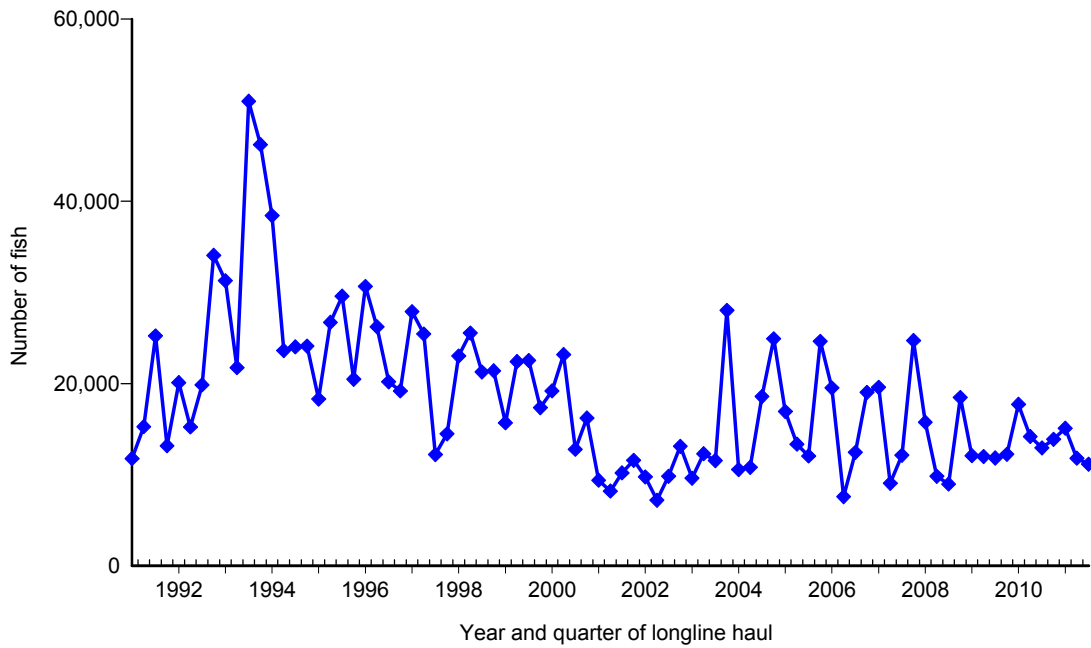


Figure 16. Quarterly catch of blue shark by longline vessels based and landing in Hawaii, 1991-2011. [PIFSC IMS, Longline Logbook Data, 12/8/2011 9:20:44AM]

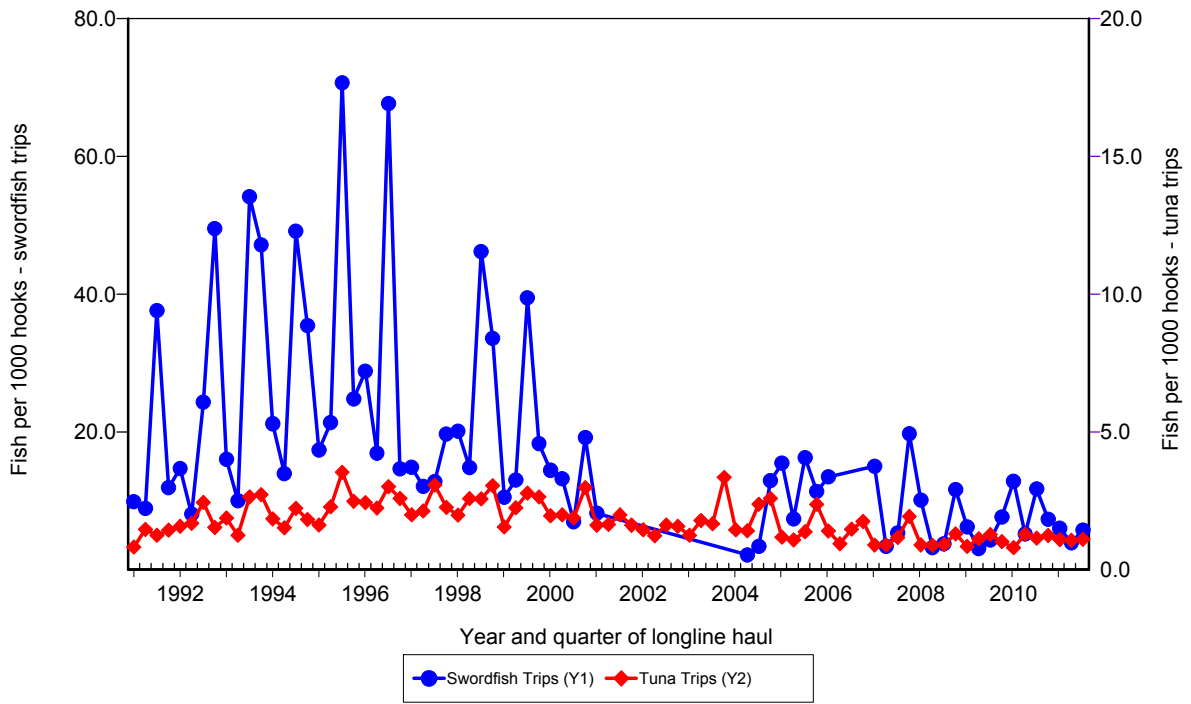


Figure 17. Quarterly CPUE of blue shark (fish per 1000 hooks) on swordfish trips and tuna trips by longline vessels based and landing in Hawaii, 1991-2011. [PIFSC IMS, Longline Logbook Data, 12/8/2011 9:20:44AM]

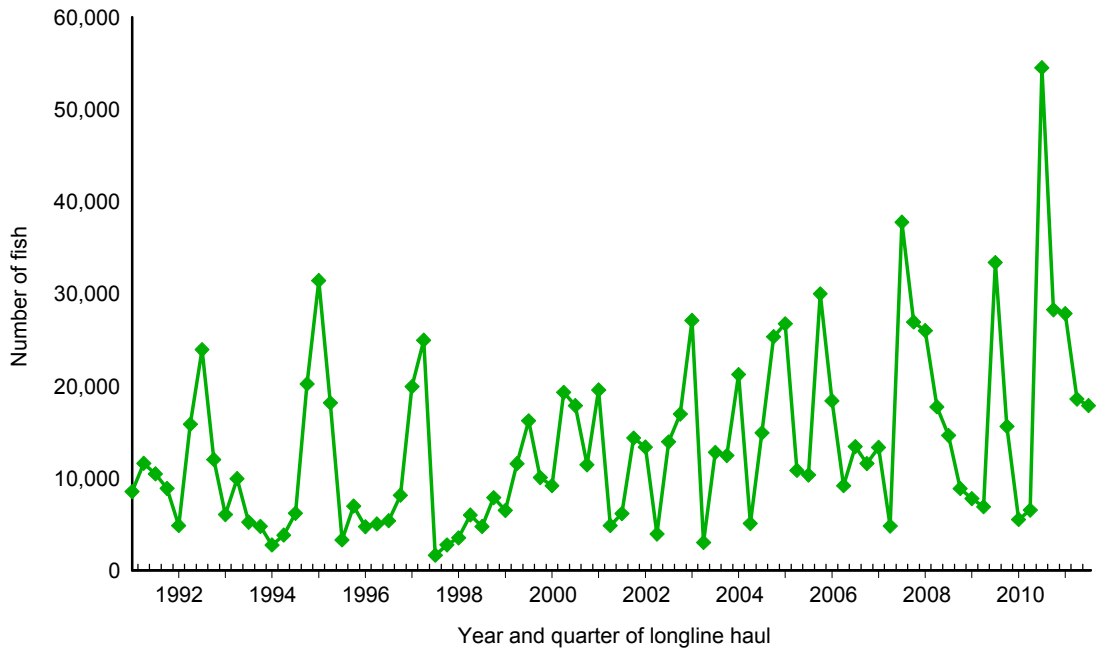


Figure 18. Quarterly catch of mahimahi by longline vessels based and landing in Hawaii, 1991-2011. [PIFSC IMS, Longline Logbook Data, 12/8/2011 9:21:09AM]

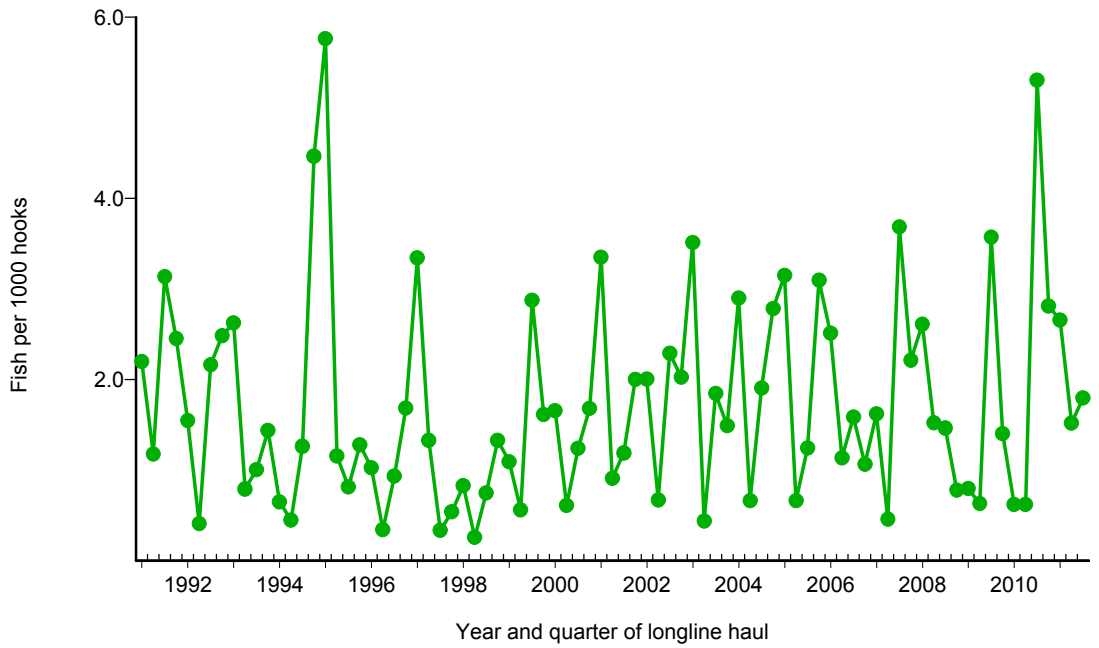


Figure 19. Quarterly CPUE of mahimahi (fish per 1000 hooks) on tuna trips by longline vessels based and landing in Hawaii, 1991-2011. [PIFSC IMS, Longline Logbook Data, 12/8/2011 9:21:09AM]

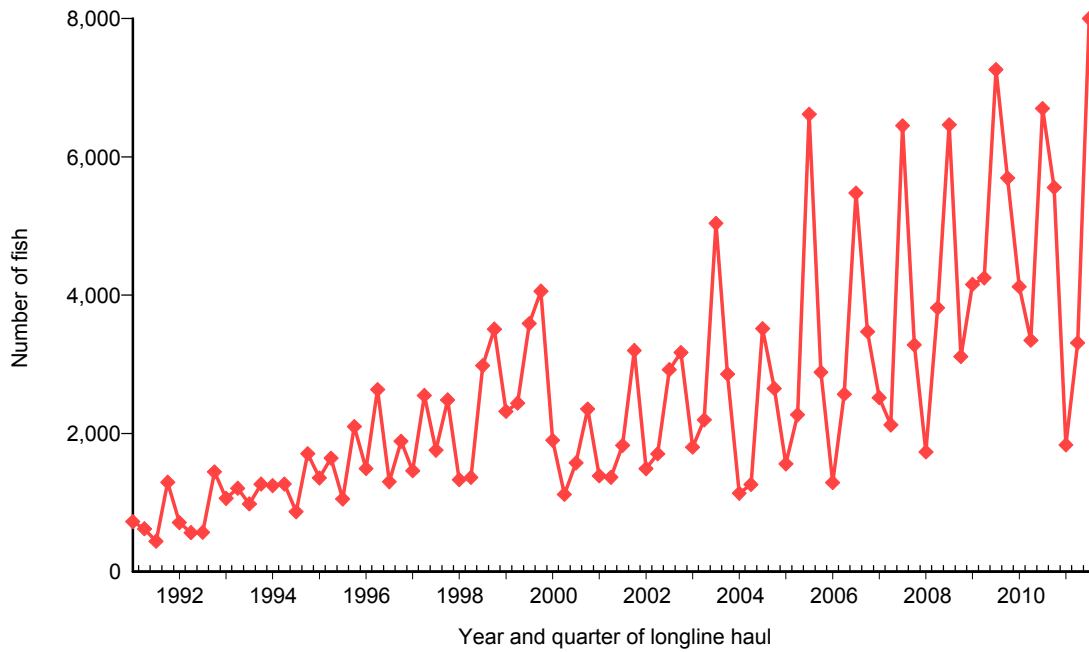


Figure 20. Quarterly catch of moonfish by longline vessels based and landing in Hawaii, 1991-2011. [PIFSC IMS, Longline Logbook Data, 12/8/2011 9:21:33AM]

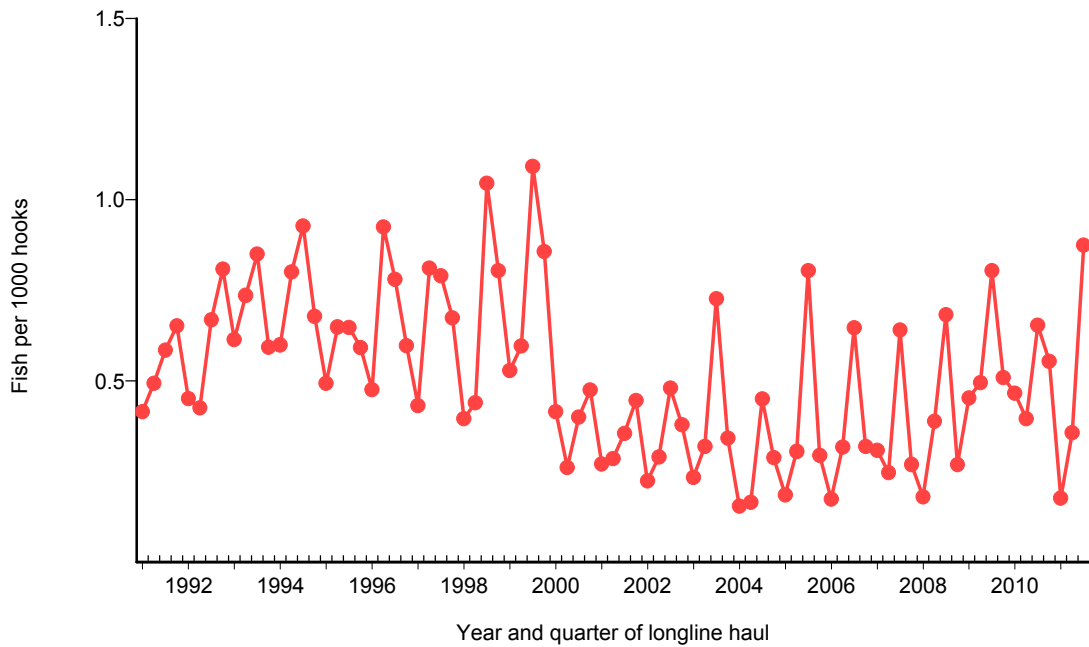


Figure 21. Quarterly CPUE of moonfish (fish per 1000 hooks) on tuna trips by longline vessels based and landing in Hawaii, 1991-2011. [PIFSC IMS, Longline Logbook Data, 12/8/2011 9:21:33AM]

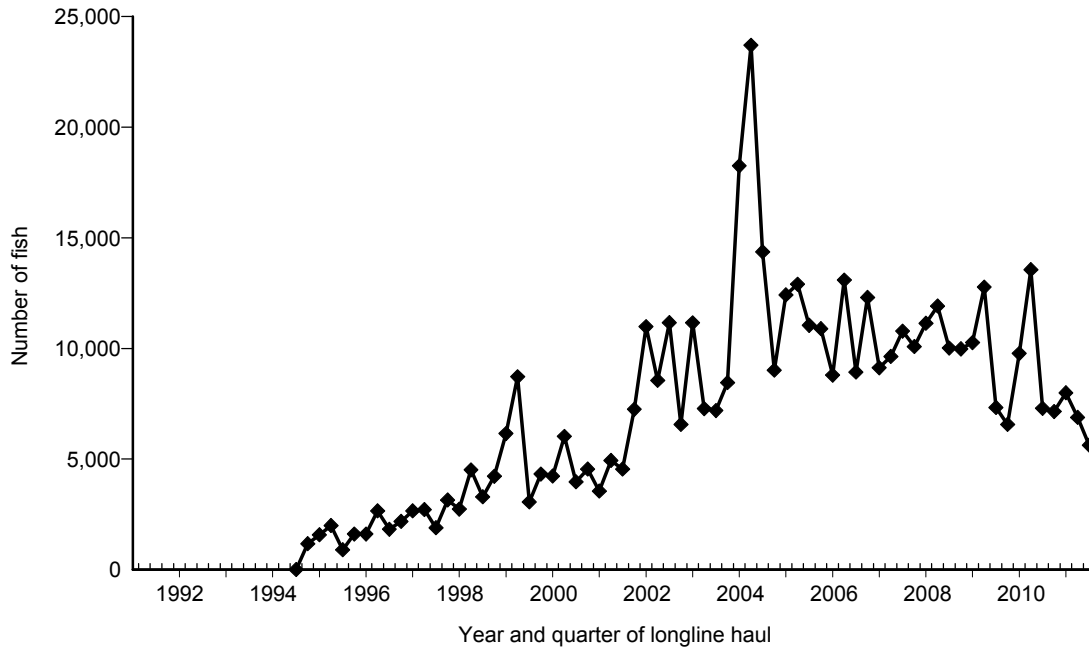


Figure 22. Quarterly catch of pomfret by longline vessels based and landing in Hawaii, 1991-2011. [PIFSC IMS, Longline Logbook Data, 12/8/2011 9:21:56AM]

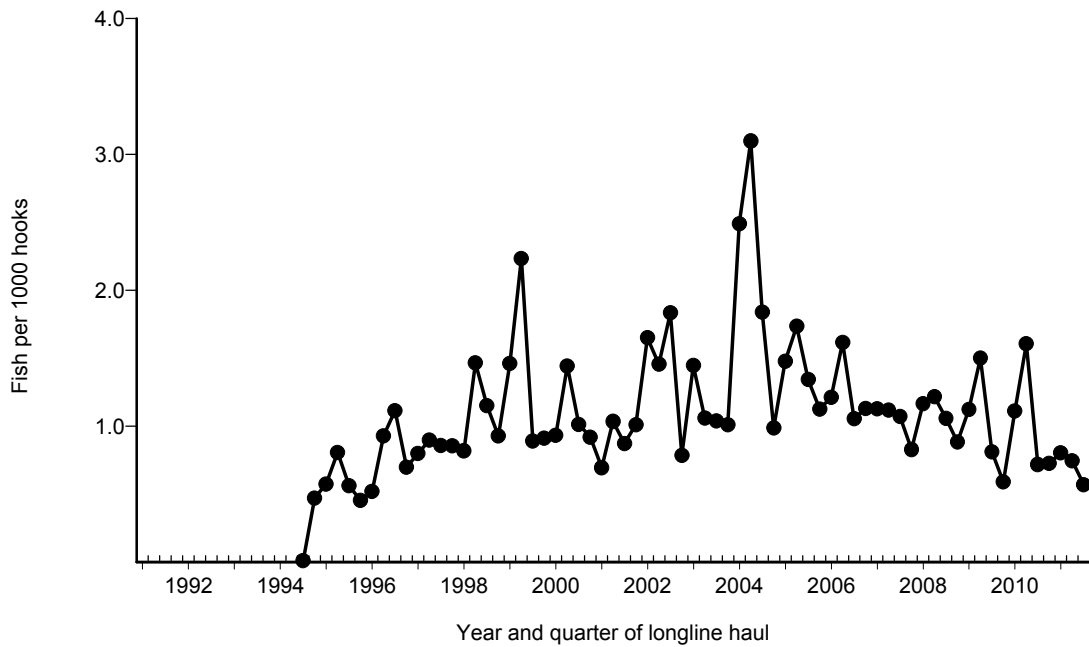


Figure 23. Quarterly CPUE of pomfret (fish per 1000 hooks) on tuna trips by longline vessels based and landing in Hawaii, 1991-2011. [PIFSC IMS, Longline Logbook Data, 12/8/2011 9:21:56AM]

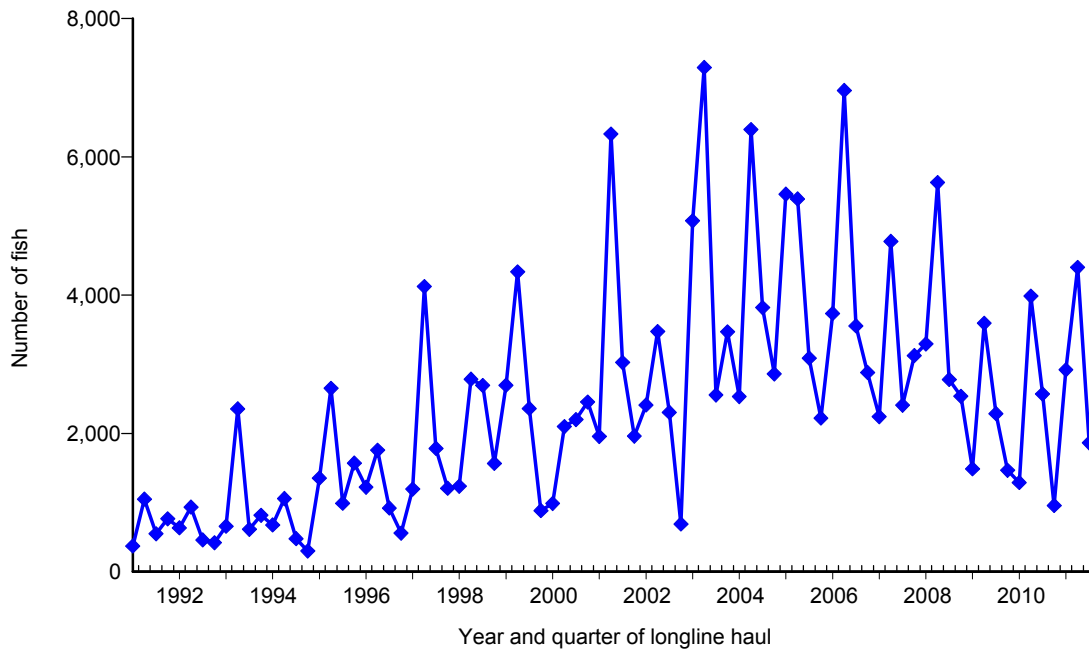


Figure 24. Quarterly catch of wahoo by longline vessels based and landing in Hawaii, 1991-2011. [PIFSC IMS, Longline Logbook Data, 12/8/2011 9:22:21AM]

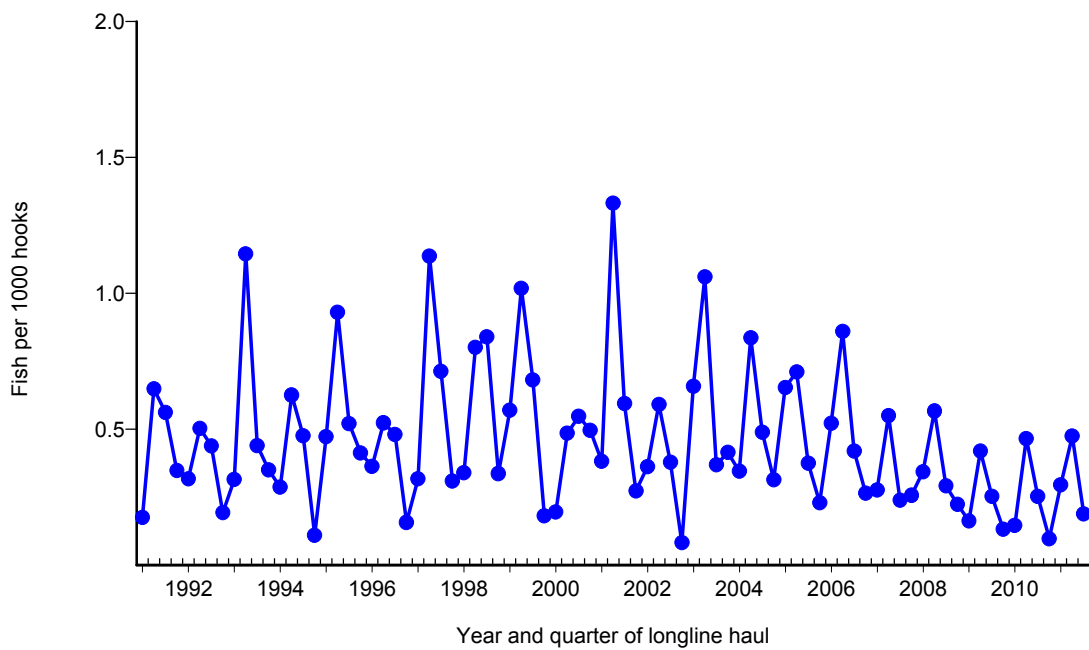


Figure 25. Quarterly CPUE of wahoo (fish per 1000 hooks) on tuna trips by longline vessels based and landing in Hawaii, 1991-2011. [PIFSC IMS, Longline Logbook Data, 12/8/2011 9:22:21AM]