

## Butterfish AP Informational Document - APRIL 2015

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**\*\*Note - Data Sources for the following are generally from unpublished NMFS Survey, Dealer, VTR, Permit, and MRFSS databases unless noted...everything should be considered preliminary.**

#### Basic Biology

Butterfish (*Peprilus triacanthus*) are distributed from the Florida to Nova Scotia, occasionally straying as far north as the Gulf of St Lawrence (Bigelow and Schroeder 2002). Butterfish is a fast growing species that schools by size, makes seasonal inshore and offshore movements, and seldom attains an age greater than 3 years but can occasionally live up to 6 years. Butterfish mature at age 1, spawn during the summer months (June-August), and begin schooling at about 60 mm (Bigelow and Schroeder 2002). They exhibit a planktivorous diet, feeding mainly on zooplankton, ctenophores, chaetognaths, euphausiids and other organisms. Butterfish are preyed upon by a large number of medium-sized predatory fishes such as bluefish, weakfish, and spiny dogfish, large pelagic fish including swordfish, marine mammals including pilot whales and common dolphins, seabirds such as greater shearwaters and northern gannets, and invertebrates such as squid (<http://www.nefsc.noaa.gov/publications/tm/tm145/tm145.pdf>). Recent assessments have explored consumption of butterfish by a subset of key finfish predators but estimates for marine mammals, birds, and invertebrates are not available.

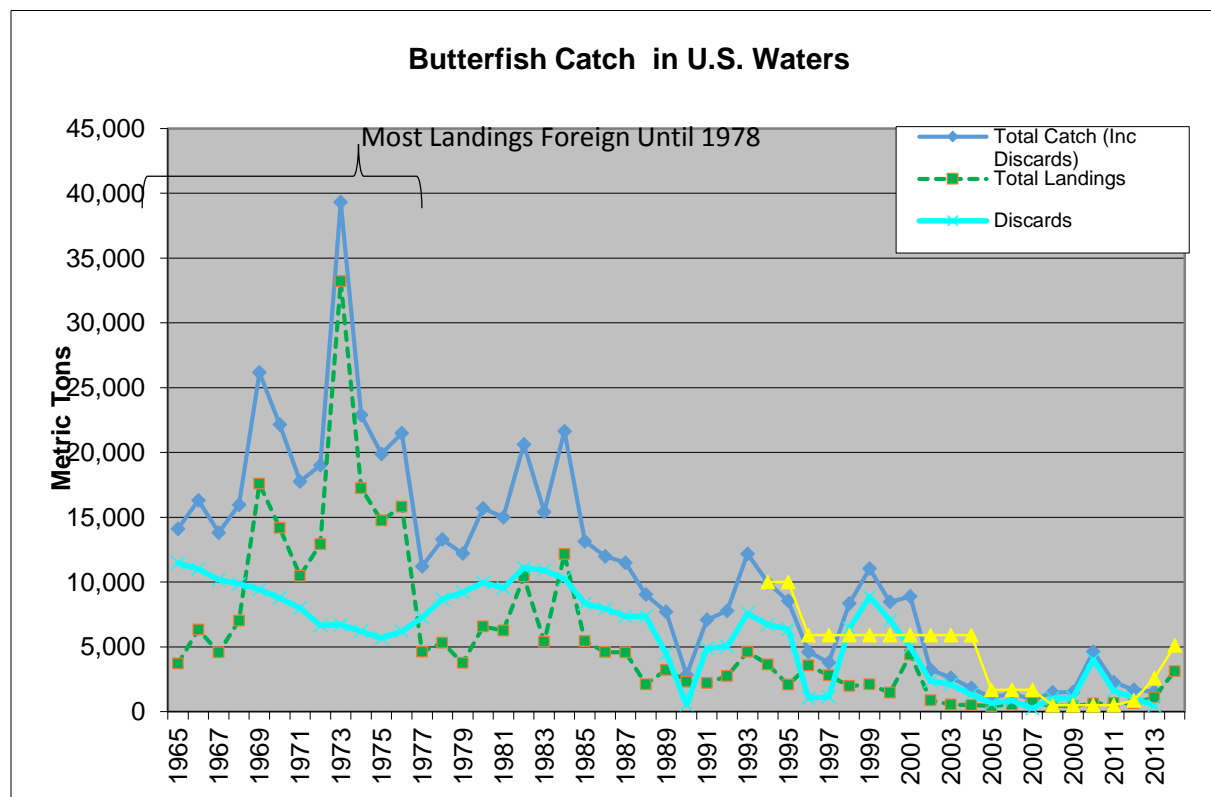
#### Status of the Stock

The butterfish stock was most recently assessed at SARC 58 (2014, but utilizing data through 2012). The SARC independent peer review panel accepted the assessment and its reference points. For the entirety of the time series used (1989-2012), the stock has been above the biomass target (the spawning stock size that results in maximum sustainable yield) and no overfishing has occurred. There are always potential improvements to be further explored in the future, but the reviewers were generally complementary of the assessment. An assessment summary is available at: <http://nefsc.noaa.gov/publications/crd/crd1403/>. The assessment results were also generally compatible with the "simple empirical analysis" that the NMFS' Northeast Fisheries Science Center conducted in recent years to support butterfish management while the new assessment was being developed. The NMFS Northeast Science Center has provided updates regarding indices and recent biological data (<http://www.mafmc.org/council-events/2015-msb-ap>). This document should be read in conjunction with the Center's update and much of the information from that document is not repeated in detail here.

## Fishery Performance (See Figure 1)

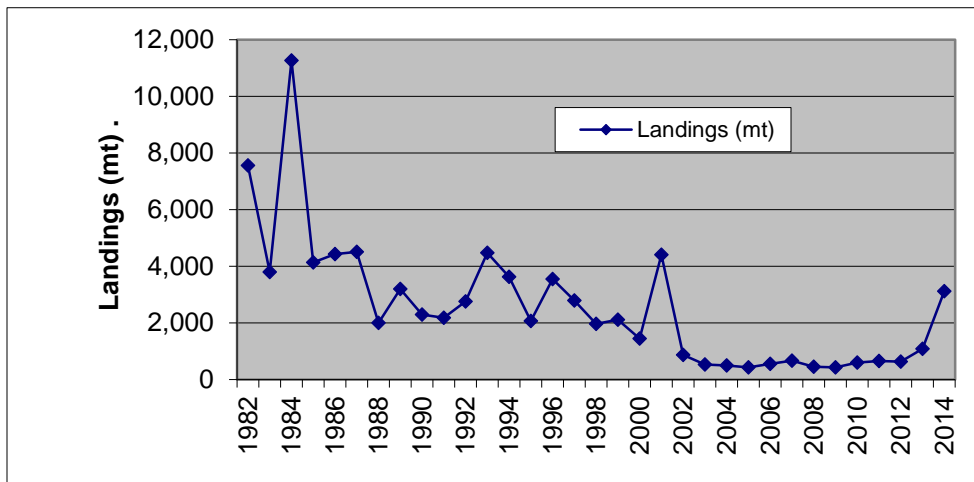
Atlantic butterfish were landed primarily by US fishermen from the late 1800's (when formal record keeping began) until 1962 (Murawski and Waring 1979). Reported landings averaged about 3,000 mt from 1920-1962 (Waring 1975). Beginning in 1963, vessels from Japan, Poland and the USSR began to exploit butterfish along the edge of the continental shelf during the late-autumn through early spring. Reported foreign landings of butterfish increased from 750 mt in 1965 to 15,000 mt in 1969, and then to about 32,000 mt in 1973. With the advent of extended jurisdiction in US waters, reported foreign catches declined sharply from 14,000 mt in 1976 to 2,000 mt in 1978. Foreign landings were completely phased out by 1987.

During the period 1965-1977, domestic butterfish landings averaged about 1,800 mt. From 1978-1987, average US landings averaged around 5,500 mt, with a historical peak of slightly less than 12,000 mt landed in 1984. The domestic market developed to supply butterfish to the Japanese market. A combination of lower abundance and market conditions are reported to be the cause for lower landings in the 1990s. Local availabilities in 2001 led to substantial landings by Seafreeze but the market was not supportive of high-volume sales and it took several years to reduce their butterfish inventory (pers Com Geir Monsen). Regulations precluded resumption of a directed fishery from 2005 until January 16, 2013, when a limited directed fishery was re-established. 2013 landings remained low (fishermen reported that mostly small butterfish were available in the winter when butterfish condition is optimal for the export market). 2014 saw additional directed butterfish fishing. Discards have historically been a major source of mortality and estimates are available in the assessments and updates provided from NMFS.



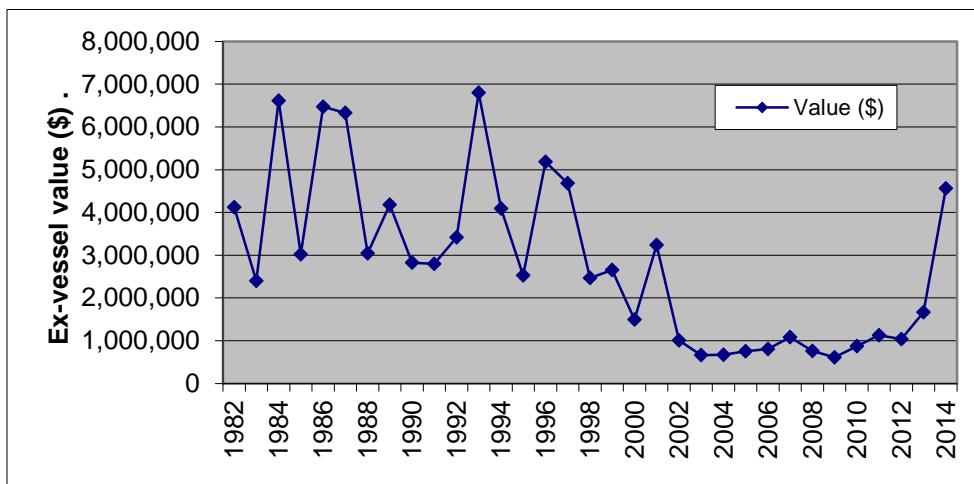
**Figure 1. Butterfish catch within 200 miles of U.S. Coast (2014 Preliminary).**

*Source: SAW/SARC 49, unpublished NEFSC dealer reports*



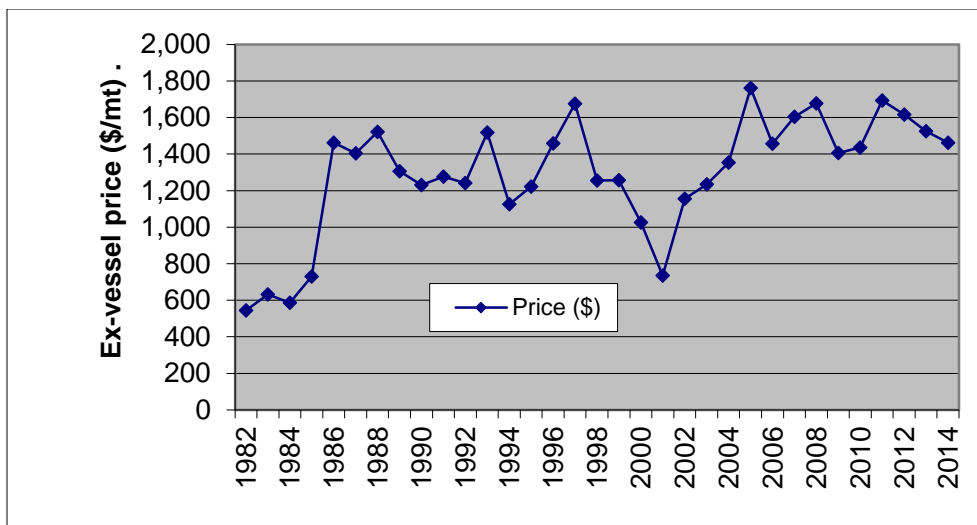
**Figure 2. U.S. Butterfish landings.**

*Source: unpublished NEFSC dealer reports*



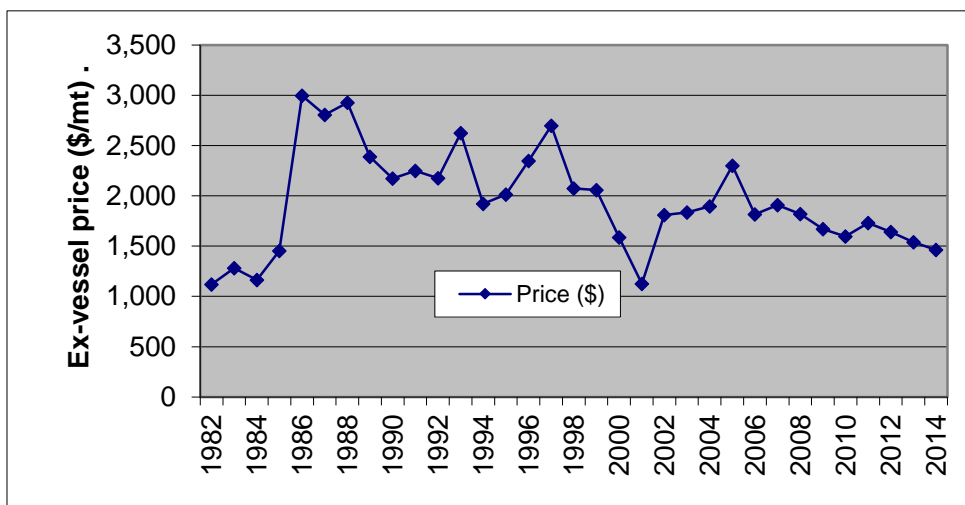
**Figure 3. U.S. Butterfish ex-vessel revenues (nominal)**

*Source: unpublished NEFSC dealer reports*



**Figure 4. U.S. Butterfish ex-vessel prices (Nominal)**

*Source: Unpublished NMFS dealer reports*

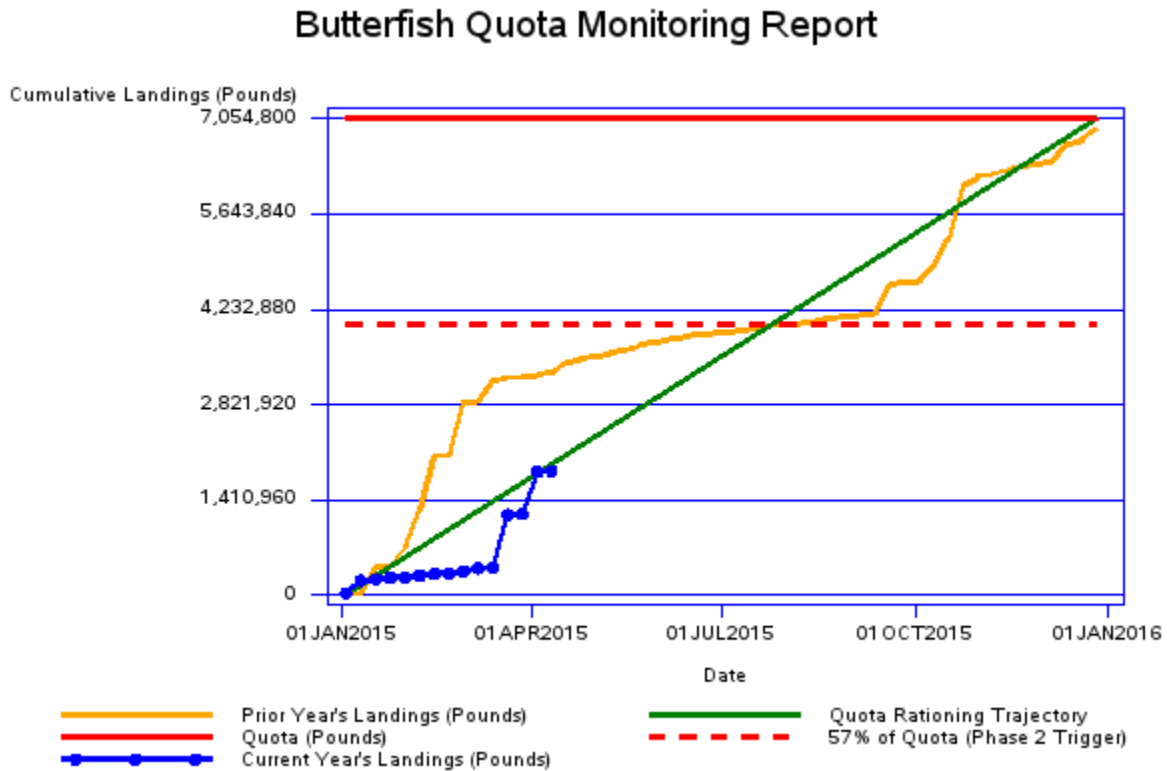


**Figure 5. U.S. Butterfish ex-vessel prices (Producer Price Index adjusted, 2014 dollars)**

*Source: Unpublished NMFS dealer reports*

## Butterfish Landings (Blue = 2015 to date, Orange = 2014)

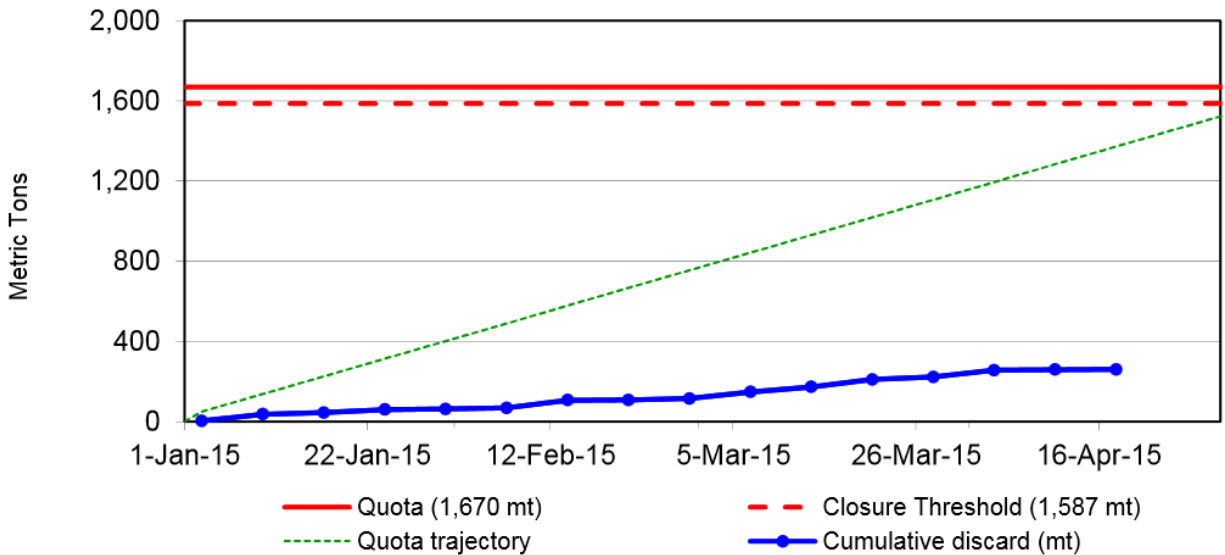
\*This graph should change on 4/24 to reflect new quotas



**Figure 6.** 2015 Landings to Date (April 15, 2015)

source: [http://www.nero.noaa.gov/ro/fso/reports/reports\\_frame.htm](http://www.nero.noaa.gov/ro/fso/reports/reports_frame.htm)

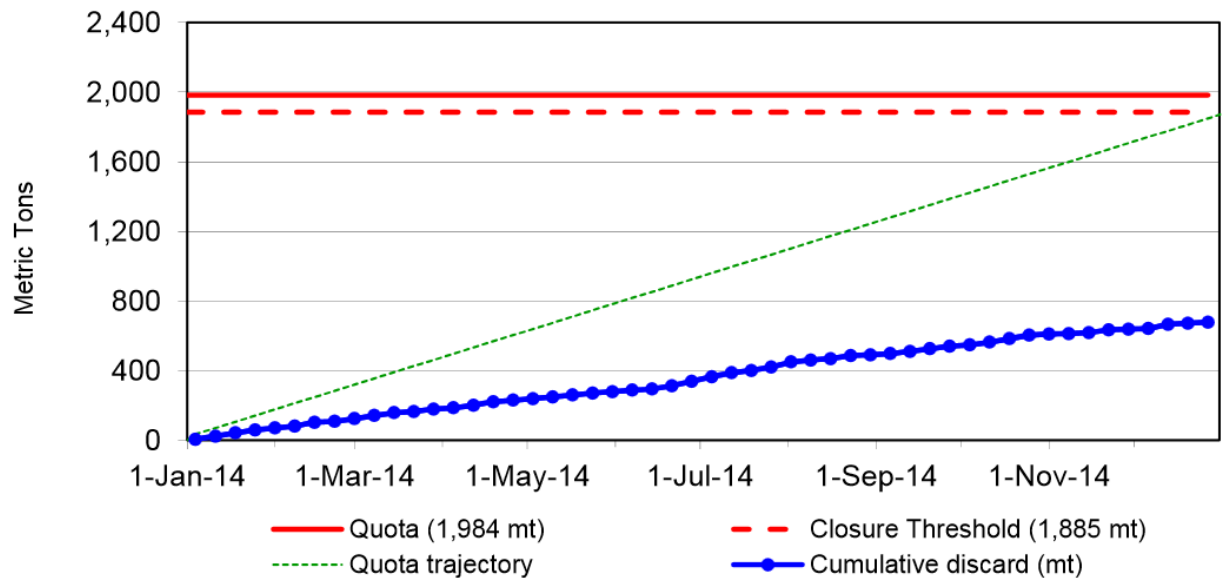
## 2015 Butterfish Discard Cap for the Longfin Squid Fishery to Date



**Figure 7. 2015 Butterfish/Loligo Cap to Date (April 15, 2015)**

source: [http://www.nero.noaa.gov/ro/fso/reports/reports\\_frame.htm](http://www.nero.noaa.gov/ro/fso/reports/reports_frame.htm)

## 2014 Butterfish Discard Cap for the Longfin Squid Fishery



**Figure 8. 2014 Butterfish/Loligo Cap**

source: [http://www.nero.noaa.gov/ro/fso/reports/reports\\_frame.htm](http://www.nero.noaa.gov/ro/fso/reports/reports_frame.htm)

## **Specification Performance**

Through 2012, dealer data triggered in-season management actions that instituted low trip limits when 80% of the landings quota was landed. With the resumption of a directed fishery in 2013, a 3-phase system of first no trip limits then sequentially lowered trip limits was instituted. Table 1 lists the performance of the butterfish fishery relative to the relevant specifications. While discards are not yet available for 2014, since the discard cap on the longfin squid fishery was relatively low, overall discards should also be relatively low.

**Table 1. Butterfish Performance (mt)**

Year	Harvest (only commercial)	Quota	Percent of Quota Landed	ABC	Discards	Total Catch	Percent of ABC Caught
2003	536	5,900	9%		2,088	2,624	
2004	497	5,900	8%		1,323	1,820	
2005	428	1,681	25%		647	1,075	
2006	555	1,681	33%		856	1,411	
2007	673	1,681	40%		239	912	
2008	452	500	90%		1,029	1,481	
2009	435	500	87%	1,500	1,079	1,514	101%
2010	607	500	121%	1,500	4,017	4,624	308%
2011	664	500	133%	1,811	1,612	2,276	126%
2012	640	872	73%	4,200	1,040	1,680	40%
2013	1,091	2,570	42%	8,400	444	1,535	18%
2014	3,122	5,100	61%	9,100	NA	NA	NA

2009 was the first year that the SSC provided an ABC recommendation. 2011 was the first year of the butterfish cap, which directly controls most discards. Any ABC overages from 2012 on must be repaid pound for pound.

*Source: Unpublished NMFS dealer reports*

2015-2017 commercial catch quotas (DAH) are currently set at 22,530 mt in 2015, 21,042 mt in 2016, and 20,652 in 2017. They decrease slightly because the projections for 2016 and 2017 assume approximately 30,000 mt of butterfish mortality (landings and discards), somewhat reducing the butterfish population (but not overfishing).

Given the higher landings quota, a simplified closure mechanism is being implemented, whereby once landings are projected to reach within 1,411 mt of the annual DAH, then a 5,000 pound trip limit will be implemented. Recent fishery performance (weekly landing rates in 2013-2014) suggests that it is unlikely that more than 1,411 mt will be landed after a trip limit of 5,000 is implemented. If all of the DAH is projected to have been landed then a 600 pound trip limit would be implemented to minimize any DAH overage. However, reserving 1,411 mt for after a 5,000 pound trip limit is instituted should avoid any overage based on 2013-2014 landing rates.

The recently implemented Framework 8 will continue to allow NMFS to shift quota between landings and the butterfish discard cap (in either direction) near the end of each year if one has extra quota and the other appears constrained.

**Table 2. 2014 Atlantic butterfish landings (mt) by state (more than 10 Metric Tons)**

\*Since states with low landings are not included, Percent column may not total 100%

State	Records	Metric Tons	Percent
RI	3734	2653.02	85%
NY	3888	261.32	8%
MA	431	93.6	3%
NJ	513	57.96	2%
CT	494	45.74	1%

*Source: unpublished NEFSC dealer reports*

**Table 3. 2014 Atlantic butterfish landings (mt) by month.**

MONTH	Metric Tons	Percent
1	311	10%
2	805	26%
3	348	11%
4	129	4%
5	101	3%
6	61	2%
7	54	2%
8	60	2%
9	232	7%
10	662	21%
11	127	4%
12	233	7%

*Source: unpublished NEFSC dealer reports*



**Table 4. Vessels active in various annual landing ranges (pounds per vessel)**

YEAR	Vessels 200,000 +	Vessels 50,000 - 200,000	Vessels 10,000 - 50,000	Vessels 1,000 - 10,000
1982	29	31	35	107
1983	9	33	67	111
1984	41	35	47	100
1985	11	36	52	122
1986	7	14	52	113
1987	8	38	40	86
1988	4	15	54	86
1989	7	29	40	99
1990	1	22	58	110
1991	5	15	45	96
1992	7	25	32	90
1993	12	30	36	108
1994	6	20	40	124
1995	3	11	63	141
1996	6	15	86	129
1997	6	12	77	169
1998	2	14	69	153
1999	2	10	72	146
2000	1	9	55	160
2001	4	6	73	129
2002	0	3	46	125
2003	0	0	20	115
2004	0	0	23	94
2005	0	1	11	85
2006	0	1	24	91
2007	0	3	35	96
2008	0	1	22	99
2009	0	2	17	83
2010	0	1	37	82
2011	0	2	36	91
2012	0	1	38	87
2013	1	1	46	82
2014	2	4	47	79

*Source: unpublished NEFSC dealer reports*

\*More detailed information about vessel activity and vessel dependence cannot be provided due to data confidentiality concerns.