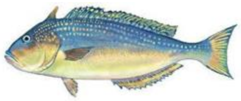

Golden Tilefish Advisory Panel Information Document[1]
February 2015

Management System

The Fishery Management Plan (FMP) which initiated the management for this species became effective November 1, 2001 (66 FR 49136; September 26, 2001) and included management and administrative measures to ensure effective management of the tilefish resource. The FMP also implemented a limited entry program and a tiered commercial quota allocation of the overall TAL. Amendment 1 to the Golden Tilefish FMP created an IFQ (Individual Fishing Quota) program that took effect on November 1, 2009 (74 FR 42580; September 24, 2009). The commercial tilefish fisheries (ITQ and incidental) are managed using catch and landings limits, commercial quotas, trip limits, gear regulations, permit requirements, and other provisions as prescribed by the FMP. While there is no direct recreational allocation, Amendment 1 implemented a recreational possession limit of eight tilefish per angler per trip, with no minimum fish length. Tilefish was under a stock rebuilding strategy beginning in 2001 until it was declared rebuilt in 2014. The Tilefish FMP, including subsequent Amendments and Frameworks, are available on the Council website at: http://www.mafmc.org/fisheries/fmp/tilefish.

Basic Biology

The information presented in this section can also be found in the Tilefish FMP (MAFMC, 2001; http://www.mafmc.org/fmp/history/tilefish.htm). Golden tilefish (*Lopholatilus chamaeleonticeps*) are found along the outer continental shelf and slope from Nova Scotia, Canada to Surinam on the northern coast of South America (Dooley 1978 and Markle et al. 1980) in depths of 250 to 1500 feet. In the southern New England/mid-Atlantic area, tilefish generally occur at depths of 250 to 1200 feet and at temperatures from 48°F to 62°F or 8.9°C to 16.7°C (Nelson and Carpenter 1968; Low et al. 1983; Grimes et al. 1986).

Katz et al. (1983) studied stock structure of tilefish from off the Yucatan Peninsula in Mexico to the southern New England region using both biochemical and morphological information. They identified two stocks -- one in the mid-Atlantic/southern New England and the other in the Gulf of Mexico and the south of Cape Hatteras.

[1] This document was prepared by the MAFMC staff. Data employed in the preparation of this document are from unpublished National Marine Fisheries Service (NMFS) Dealer, Vessel Trip Reports (VTRs), Permit, and Marine Recreational Statistics (MRFSS/MRIP) databases as of February 2014, unless otherwise noted.
Note: A few editorial modifications were made to the original AP information document which are reflected here. More specifically, the following changes were made on this version of the document: 1) The size category column was updated on Table 4, Percent Standard Error (PSE) values were added to Table 10, and additional text was added to the first paragraph on page 15.

Tilefish are shelter seeking and perhaps habitat limited. There are indications that at least some of the population is relatively nonmigratory (Turner 1986). Warme et al. (1977) first reported that tilefish occupied excavations in submarine canyon walls along with a variety of other fishes and invertebrates, and they referred to these areas as "pueblo villages." Valentine et al. (1980) described tilefish use of scour depressions around boulders for shelter. Able et al. (1982) observed tilefish use of vertical burrows in Pleistocene clay substrates in the Hudson Canyon area, and Grimes et al. (1986) found vertical burrows to be the predominant type of shelter used by tilefish in the mid-Atlantic/southern New England region. Able et al. (1982) suggested that sediment type might control the distribution and abundance of the species, and the longline fishery for tilefish in the Hudson Canyon area is primarily restricted to areas with Pleistocene clay substrate (Turner 1986).

Males achieved larger sizes than females, but they apparently did not live as long (Turner 1986). The largest male was 44.1 inches at 20 years old, and the largest female was 39 years at 40.2 inches FL. The oldest fish was a 46 year old female of 33.5 inches, while the oldest male was 41.3 inches and 29 years. On average, tilefish (sexes combined) grow about 3.5 to 4 inches fork length (FL) per year for the first four years, and thereafter growth slows, especially for females. After age 3, mean last back-calculated lengths of males were larger than those of females. At age 4 males and females averaged 19.3 and 18.9 inches FL, respectively, and by the tenth year males averaged 32.3 while females averaged 26.4 inches FL (Turner 1986). The largest male was 44.1 inches at 20 years old, and the largest female was 39 years at 40.2 inches FL. The oldest fish was a 46 year old female of 33.5 inches, while the oldest male was 41.3 inches and 29 years (Turner 1986).

The size of sexual maturity of tilefish collected off New Jersey in 1971-73 was 24-26 inches TL in females and 26-28 inches TL in males (Morse 1981). Idelberger (1985) reported that 50% of females were mature at about 20 inches FL, a finding consistent with studies of the South Atlantic stock, where some males delayed participating in spawning for 2-3 years when they were 4-6 inches larger (Erickson and Grossman 1986). Grimes et al. (1988) reported that in the late 1970s and early 1980s, both sexes were sexually mature at about 19-26 inches FL and 5-7 years of age; the mean size at 50% maturity varied with the method used and between sexes. Grimes et al. (1986) estimated that 50% of the females were mature at about 19 inches FL using a visual method and about 23 inches FL using a histological method. For males, the visual method estimated 50% maturity at 24 inches FL while the histological method estimated 50% maturity at 21 inches FL. The visual method is consistent with NEFSC estimates for other species (O'Brien et al. 1993). Grimes *et al.* (1988) reported that the mean size and age of maturity in males (but not females) was reduced after 4-5 years of heavy fishing effort. Vidal (2009) conducted an aging study to evaluate changes in growth curves since 1982, the last time the reproductive biology was evaluated by Grimes et al (1988). Histological results from Vidal's study indicate that size at 50% maturity was 18 inches for females and 19 inches for males (NEFSC 2009a).

> "*These results show a significant decrease in size and age at maturation since the last evaluation of this stock in the early 1980's (Grimes et al. 1986). An*

environment in which survival rates are low for potentially reproducing individuals, often favors selection of individuals that are able to reproduce at smaller sizes and younger ages (Hutchings 1993; Reznick et al. 1990). In a hook fishery, it is assumed that the smallest fish in the population are less vulnerable to the gear depending on the hook size. In this fishery, hook size has been intentionally increased to avoid catch of the smallest fish in the population. The fact that such dramatic changes have manifested in this stock may suggest a density-dependent effect of decreased population size. It is uncertain at this point in time, whether these changes are consequences of phenotypic plasticity or selection towards genotypes with lower size and age at maturation."

Nothing is known about the diets and feeding habits of tilefish larvae, but they probably prey on zooplankton. The examination of stomach and intestinal contents by various investigators reveal that tilefish feed on a great variety of food items (Collins 1884, Linton 1901a and 1901b, and Bigelow and Schroeder 1953). Among those items identified by Linton (1901a and 1901b) were several species of crabs, mollusks, annelid worms, polychaetes, sea cucumbers, anemones, tunicates and fish bones. Bigelow and Schroeder (1953) identified shrimp, sea urchins and several species of fishes in tilefish stomachs. Freeman and Turner (1977) reported examining nearly 150 tilefish ranging in length from 11.5 to 41.5 inches. Crustaceans were the principal food items of tilefish with the squat lobster (*Munida*) and spider crabs (*Euprognatha*) were by far the most important crustaceans. The authors report that crustaceans were the most important food item regardless of the size of tilefish, but that small tilefish fed more on mollusks and echinoderms than larger tilefish. Tilefish burrows provide habitat for numerous other species of fish and invertebrates (Able et al. 1982 and Grimes et al. 1986) and in this respect they are similar to "pueblo villages" (Warme et al. 1977).

Able et al. (1982) and Grimes et al. (1986) concluded that a primary function of tilefish burrows was predator avoidance. The NEFSC database only notes goosefish as a predator. While tilefish are sometimes preyed upon by spiny dogfish and conger eels, by far the most important predator of tilefish is other tilefish (Freeman and Turner 1977). It is also probable that large bottom-dwelling sharks of the genus *Carcharhinus*, especially the dusky and sandbar, prey upon free swimming tilefish.

Status of the Stock

The tilefish stock assessment was peer reviewed and approved for use by management at Stock Assessment Workshop 58 (SAW 58). A statistical catch at age model called ASAP (Age Structured Assessment Program) was used in this assessment to incorporate newly available length and age data to better characterize the population dynamics of the stock. The tilefish resource is not overfished and overfishing is not occurring in 2012. SSB was estimated be 11.53 million lb (5,229 mt) in 2012, about 101% of the biomass target SSBMSY proxy = $SSB_{25\%}$ = 11.36 million lb (5,153 mt). The fishing mortality rate was estimated to be 0.275 in 2012, below the fishing mortality threshold FMSY proxy = $F_{25\%}$ = 0.370. The tilefish stock was previously under a rebuilding plan, but was declared rebuilt by NMFS in 2014 based on SAW 58. The

assessment summary report and the entire assessment report can be found at http://nefsc.noaa.gov/publications/crd/crd1403/
and http://nefsc.noaa.gov/publications/crd/crd1404/, respectively.

Fishery Performance

For the 1970 to 2014 calendar years, golden tilefish landings have ranged from 128 thousand lb (1970) to 8.7 million lb (1979). Since 2001, golden tilefish landings have ranged from 1.5 (2005) to 2.5 (2004) million lb (Figure 3).

The principal measure used to manage golden tilefish is monitoring via dealer weighout data that is submitted weekly. Commercial vessels fishing under a tilefish IFQ Allocation Permit must submit a tilefish catch report by using the interactive voice response (IVR) phone line system within 48 hours after returning to port and offloading.

The directed fishery is managed via an IFQ program. If a permanent IFQ allocation is exceeded, including any overage that results from tilefish landed by a lessee in excess of the lease amount, the permanent allocation will be reduced by the amount of the overage in the subsequent fishing year. If a permanent IFQ allocation overage is not deducted from the appropriate allocation before the IFQ allocation permit is issued for the subsequent fishing year, a revised IFQ allocation permit reflecting the deduction of the overage will be issued. If the allocation cannot be reduced in the subsequent fishing year because the full allocation had already been landed or transferred, the IFQ allocation permit would indicate a reduced allocation for the amount of the overage in the next fishing year.

A vessel that holds a Commercial/Incidental Permit can possess up to 500 lb live weight (455 lb gutted) at one time without an IFQ Allocation Permit. If the incidental harvest exceeds 5 percent of the TAL for a given fishing year, the incidental trip limit of 500 lb may be reduced in the following fishing year.

Table 1 summarizes the tilefish management measures for the 2002-2017 fishing years (FYs). With the exception of FY 2003, 2004, and 2010 commercial tilefish landings have been below the commercial quota specified each year since the Tilefish FMP was first implemented. As a result of the decision of the Hadaja v. Evans lawsuit, the permitting and reporting requirements for the FMP were postponed for close to a year (May 15, 2003 through May 31, 2004). During that time period, it was not mandatory for permitted tilefish vessels to report their landings. In addition, during that time period, vessels that were not part of the tilefish limited entry program also landed tilefish.

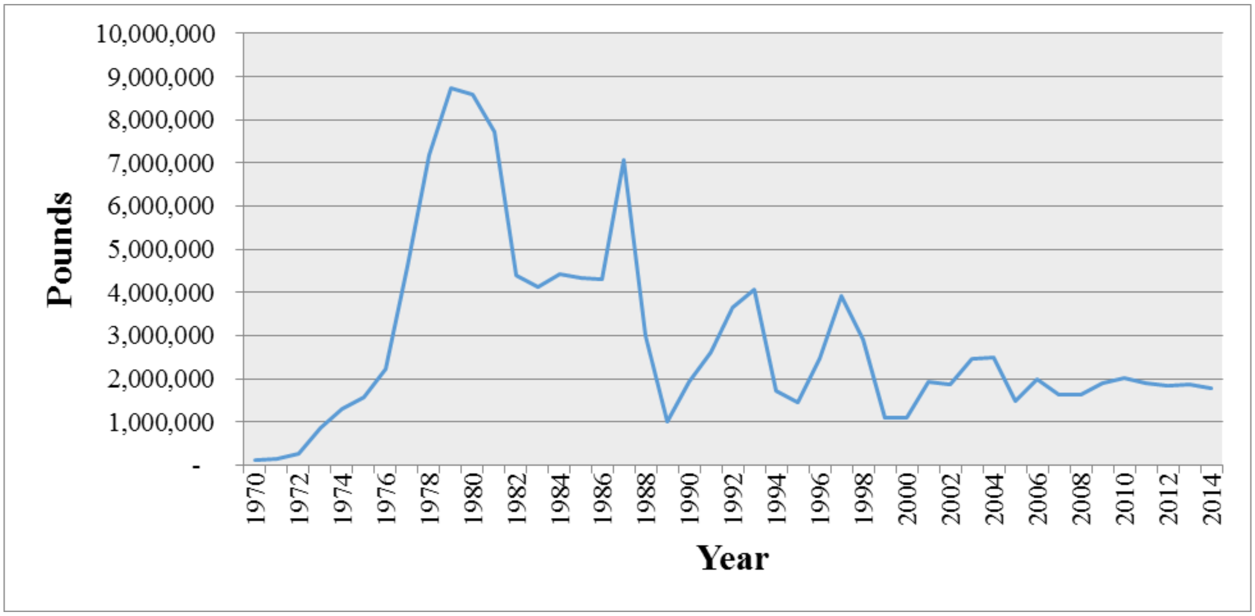

Figure 3. Commercial U.S. Golden Tilefish Landings (live weight) from Maine-Virginia, 1970-2014. Source: 1970-1993 Tilefish FMP. 1994-2014 NMFS unpublished dealer data.

Tilefish are primarily caught by longline and bottom otter trawl. Based on dealer data from 2010 through 2014, the bulk of the tilefish landings are taken by longline gear (98%) followed by bottom trawl gear (<2%). No other gear had any significant commercial landings. Minimal catches were also recorded for hand line, dredge (other), and gillnets (Table 2).

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Table 1. Summary of management measures and landings for FY[a] 2002 through 2017.

Management measures	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
ABC (m lb)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.013	2.013	1.766	1.898	1.898
TAL (m lb)	1.995	1.995	1.995	1.995	1.995	1.995	1.995	1.995	1.995	1.995	1.995	1.995	1.995	1.755	1.887	1.887
Com. quota-initial (m lb)	1.995	1.995	1.995	1.995	1.995	1.995	1.995	1.995	1.995	1.995	1.995	1.995	1.995	1.755	1.887	1.887
Com. quota-adjusted (m lb)	1.995	1.995	1.995	1.995	1.995	1.995	1.995	1.995	1.995	1.995	1.995	1.995	1.995	1.755	1.887	1.887
Com. landings	1.936	2.318[b]	2.606[b]	1.497	1.897	1.775	1.672	1.887	2.002	1.947	1.873	1.817	1.847	-	-	-
Com. overage/underage (m lb)	-0.059	+0.323	+0.611	-0.498	-0.098	-0.220	-0.323	-0.108	+0.007	-0.045	-0.122-	-0.178	-0.148	-	-	-
Incidental trip limit (lb)	300	300	300	133	300	300	300	300	300	300	500	500	500	500	500	500
Rec. possession limit	-	-	-	-	-	-	-	-	8[c]	8[c]	8[c]	8[c]	8[c]	8[c]	8[c]	8[c]

[a] FY 2002 (November 1, 2001 - October 31, 2002).
[b] Lawsuit period (see text above).
[c] Eight fish per person per trip.

Table 2. Tilefish commercial landings ('000 lb live weight) by gear, Maine through Virginia, 2010-2014 combined.

Gear	lb	Percent
Otter Trawl Bottom, Fish	140	1.5
Otter Trawl Bottom, Scallop	1	*
Otter Trawl Bottom, Other	4	*
Otter Trawl, Midwater	2	*
Gillnet, Anchored/Sink/Other	9	*
Lines Hand	18	*
Lines Long Set with Hooks	9,195	97.7
Dredge, Other	3	*
Unknown, Other Combined Gears	37	*
All Gear	9,409	100

Note: * = less than 1,000 lb or less than 1 percent.

Over 48 percent of the landings for 2014 were caught in statistical area 537, which includes Atlantis and Block Canyons; statistical area 616 had 44 percent of the landings, which includes Hudson Canyon; and statistical area 622 had 3 percent of the landings (Table 3). Less than 1 percent of the total landings were caught in statistical areas 525 (includes Oceanographer, Lydonia, and Gilbert Canyons) and 526 (includes Hydrographer and Veatch Canyons). NMFS statistical areas are shown in Figure 4.

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Table 3. Tilefish percent landings by statistical area and year, 1996-2014.

Year	Unk	513	525	526	533	536	537	539	612	613	614	615	616	622	626	Other
1996	19.76	0.14	0.07	5.15	0.61	-	43.76	0.38	*	1.06	-	-	27.82	0.01	-	1.24
1997	23.29	0.39	0.03	0.67	0.01	-	56.21	0.02	*	2.59	-	*	16.40	0.01	*	0.37
1998	16.21	*	1.24	2.15	0.04	-	65.84	0.04	-	5.44	-	0.03	8.53	*	*	0.46
1999	2.57	*	0.97	0.22	0.01	-	55.07	0.01	0.11	3.68	-	0.16	36.78	0.02	0.02	0.38
2000	*	-	0.36	3.76	0.99	-	45.64	0.01	0.05	2.35	-	1.26	43.49	0.47	0.14	1.49
2001	-	0.03	0.23	3.09	0.01	-	23.91	*	0.01	3.16	-	0.02	68.96	*	0.10	0.46
2002	-	-	0.12	8.73	-	-	35.86	0.07	0.01	15.39	-	*	39.64	0.02	0.02	0.13
2003	-	-	0.88	1.79	0.08	-	38.45	0.10	-	11.84	0.01	*	46.47	0.05	0.05	0.28
2004	-	*	1.02	2.59	0.01	-	61.66	0.06	5.28	0.70	-	0.02	25.91	0.03	0.06	2.64
2005	-	-	0.12	0.24	1.98	-	61.74	0.02	0.03	5.99	-	1.81	25.17	0.03	0.20	2.66
2006	-	-	*	1.54	*	1.96	61.69	0.50	1.24	0.71	-	0.07	30.09	0.04	0.05	2.09
2007	-	-	0.02	0.40	*	4.56	52.45	0.01	-	5.26	4.95	0.38	30.00	0.81	0.41	0.78
2008	-	-	1.02	0.05	*	7.61	36.83	-	-	4.30	6.92	0.94	40.27	1.91	0.02	0.13
2009	-	-	2.06	0.01	-	3.97	40.53	1.23	0.04	4.15	4.90	0.01	39.67	1.27	1.11	1.04
2010	-	-	0.01	0.01	0.01	-	57.13	0.55	0.02	7.28	*	0.05	33.94	0.69	0.04	0.26
2011	-	2.86	0.02	*	-	-	53.06	0.01	-	3.12	-	0.37	39.98	0.31	0.06	0.21
2012	-	-	0.01	0.01	-	-	52.54	0.03	*	0.58	-	2.58	43.92	0.20	0.10	0.03
2013	-	-	*	0.67	-	-	56.23	1.06	0.03	0.69	-	0.01	35.39	1.21	4.59	0.13
2014		-	0.01	0.43	*		48.55	1.92	0.01	1.31	-	0.34	43.62	2.72	0.36	0.74
All	4.57	0.19	0.44	1.65	0.16	0.82	51.03	0.31	0.51	4.05	0.75	0.35	33.48	0.46	0.37	0.84

Note: - = no landings; * = less than 0.01 percent.

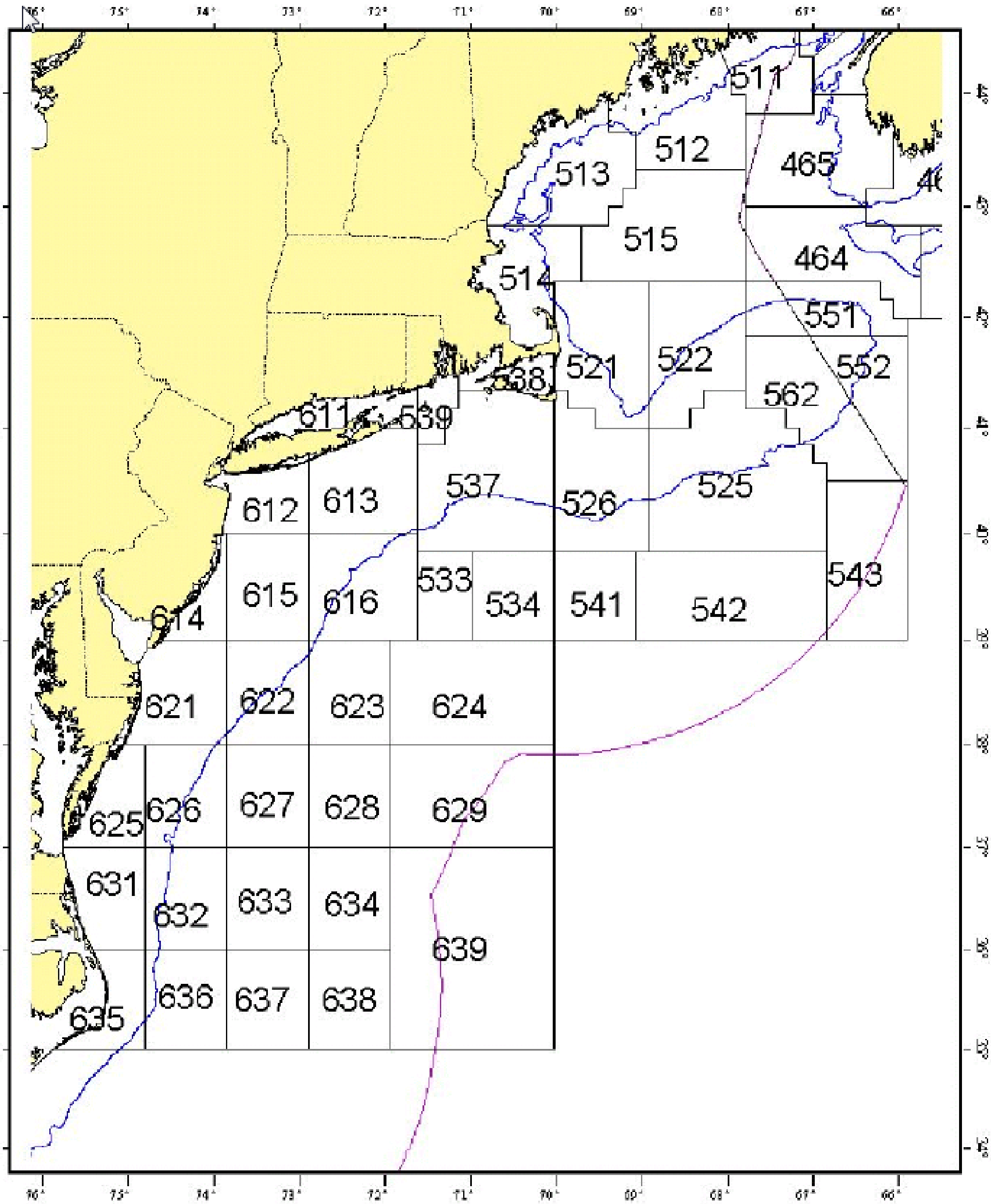

Figure 4. NMFS Statistical Areas.

Commercial tilefish ex-vessel revenues have ranged from $2.5 to $5.9 million for the 1999 through 2014 period. The mean price for tilefish (adjusted) has ranged from $1.03/lb in 2004 to $3.44/lb in 2014 (Figure 5).

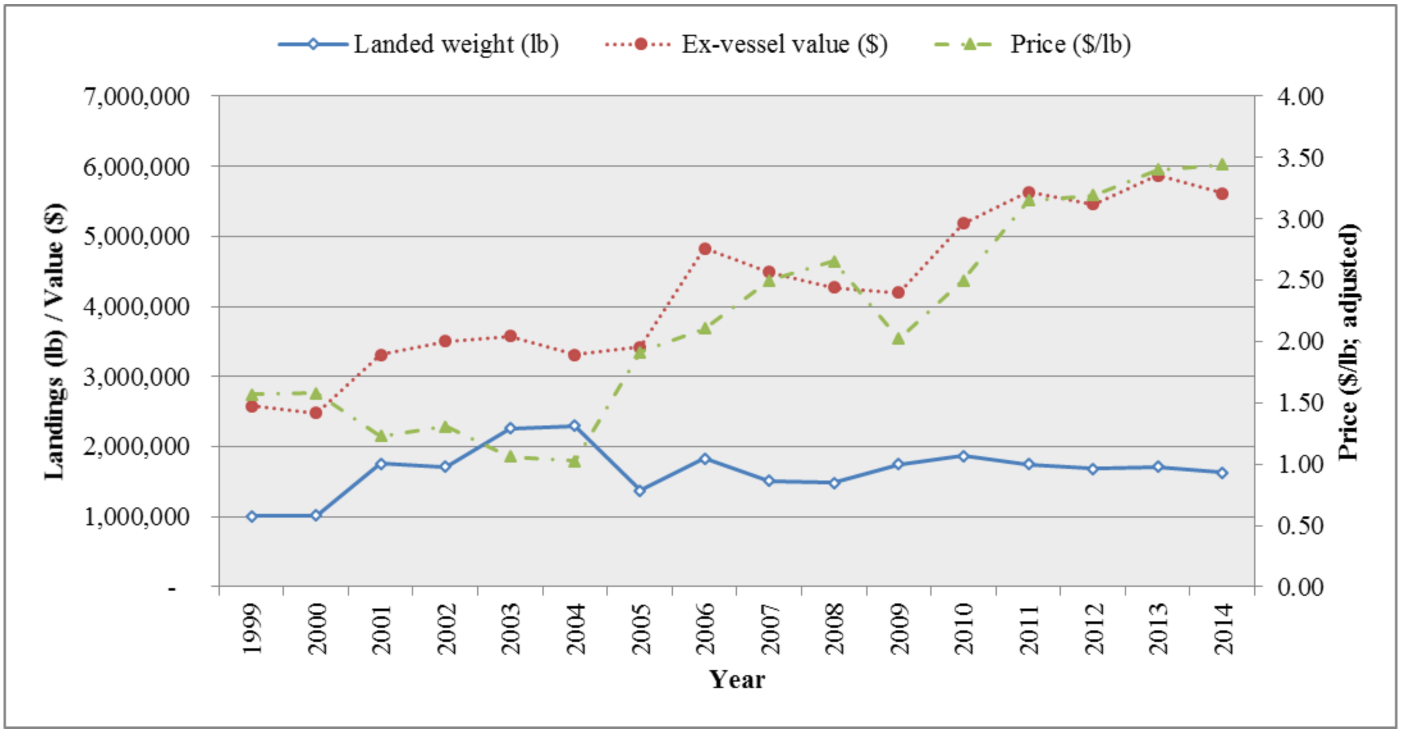

Figure 5. Landings, ex-vessel value, and price for tilefish, Maine through Virginia combined, 1999-2014. Note: Prices were adjusted to 2014 values using the Bureau of Labor Statistics Producer Price Index.

The 2009 through 2013 coastwide average ex-vessel price per pound for all market categories combined was $3.21. Price differential indicates that larger fish tend to bring higher prices (Table 4). Nevertheless, even though there is a price differential for various sizes of tilefish landed, tilefish fishermen land all fish caught as the survival rate of discarded fish is very low (L. Nolan 2006; Kitts et al. 2007). Furthermore, Amendment 1 to the Tilefish FMP prohibited the practice of highgrading (MAFMC 2009).

Table 4. Landings, ex-vessel value, and price of tilefish by size category, from Maine thought Virginia, 2010 through 2014.

Size Category	Landed Weight ('000 lb)	Value ($1,000)	Price ($/lb)
Extra large	227,897	886,707	3.89
Large	2,402,534	9,381,398	3.90
Large/Medium	206,756	789,200	2.82
Medium	3,032,231	9,133794	3.01
Small or Kittens	1,762,485	4,378,739	2.48
Extra small	126,203	277,045	2.20
Unclassified	880,703	2,915,517	3.31
All	8,638,809	27,762,400	3.21

The ports and communities that are dependent on tilefish are fully described in Amendment 1 to the FMP (section 6.5; MAFMC 2009; found at http://www.mafmc.org/fmp/pdf/Tilefish_Amend_1_Vol_1.pdf). Additional information on "Community Profiles for the Northeast US Fisheries" can be found at http://www.nefsc.noaa.gov/read/socialsci/community_profiles/.

To examine recent landings patterns among ports, 2013-2014 NMFS dealer data are used. The top commercial landings ports for tilefish are shown in Table 5. A “top port” is defined as any port that landed at least 10,000 lb of golden tilefish. Ports that received 1% or greater of their total revenue from tilefish are shown in Table 6.

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Table 5. Top ports of landing (in lb) for golden tilefish, based on NMFS 2013 - 2014 dealer data. Since this table includes only the "top ports," it may not include all of the landings for the year. (Note: values in parenthesis correspond to IFQ vessels).

Port	2013		2014	
	Landings (lb)	# Vessels	Landings (lb)	# Vessels
Montauk, NY	1,196,116 (1,192,000)	14 (4)	1,181,053 (1,177,288)	14 (4)
Barnegat Light/Long Beach, NJ	357,360 (355,845)	8 (6)	376,226 (372,013)	12 (8)
Hampton Bays, NY	267,221 (C)	4 (1)	168,770 (C)	4 (1)
Point Judith, RI	23,962 (C)	53 (1)	14,277 (0)	45 (0)
Shinnecock, NY	0 (0)	0 (0)	(C) (C)	2 (1)

Note: C = Confidential.

Table 6. Ports that generated 1% or greater of total revenues from golden tilefish, 2010-2014.

Port	State
Montauk	New York
Hampton Bays	New York
Barnegat Light/Long Beach	New Jersey
Shinnecock	New York
Other Monmouth	New Jersey

In 2014 there were 64 Federally permitted dealers who bought golden tilefish from 143 vessels that landed this species from Maine through Virginia. In addition, 64 dealers bought tilefish from 112 vessels in 2013. These dealers bought approximately $5.6 and $5.9 of tilefish in 2014 and 2013, respectively, and are distributed by state as indicated in Table 7. Table 8 shows relative dealer dependence on tilefish.

Table 7. Dealers reporting buying golden tilefish, by state in 2013 - 2014.

# of Dealers	MA		RI		CT		NY		NJ		MD		VA		Other	
	'13	'14	'13	'14	'13	'14	'13	'14	'13	'14	'13	'14	'13	'14	'13	'14
	9	8	10	9	8	10	17	20	10	9	C	3	7	4	1	1

Note: C = Confidential.

Table 8. Dealer dependence on tilefish, 2010-2014.

Number of Dealers	Relative Dependence on Tilefish
84	<5%
5	5%-10%
4	10% - 25%
1	25% - 50%
1	50% - 75%
1	90%+

According to VTR data, very little (< 0.3%) discarding was reported by longline vessels that targeted tilefish for the 2005 through 2014 period (Table 9). In addition, the 2014 tilefish stock assessment indicates that tilefish discards in the trawl and longline fishery are negligible (NEFSC 2014).

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Table 9. Catch disposition for directed tilefish trips[a], Maine through Virginia, 2005-2014 combined.

Common Name	Kept lb	% species	% total	Discarded lb	% species	% total	Total lb	Disc: Kept Ratio
GOLDEN TILEFISH	15,549,080	100.00%	99.08%	0	0.00%	0.00%	15,549,080	0.00
SPINY DOGFISH	94,828	85.55%	0.60%	16,018	14.45%	37.63%	110,846	0.17
BLUELINE TILEFISH	15,388	100.00%	0.10%	0	0.00%	0.00%	15,388	0.00
CONGER EEL	9,013	93.87%	0.06%	589	6.13%	1.38%	9,602	0.07
BLACK BELLIED ROSEFISH	4,269	100.00%	0.03%	0	0.00%	0.00%	4,269	0.00
SKATES OTHER	3,201	67.66%	0.02%	1,530	32.34%	3.59%	4,731	0.48
SNOWY GROUPER	3,100	100.00%	0.02%	0	0.00%	0.00%	3,100	0.00
TILEFISH OTHER	2,692	100.00%	0.02%	0	0.00%	0.00%	2,692	0.00
DOGFISH SMOOTH	2,634	76.26%	0.02%	820	23.74%	1.93%	3,454	0.31
EEL OTHER	1,809	100.00%	0.01%	0	0.00%	0.00%	1,809	0.00
WRECKFISH	1,240	100.00%	0.01%	0	0.00%	0.00%	1,240	0.00
BLUEFISH	898	22.63%	0.01%	3,070	77.37%	7.21%	3,968	3.42
MONKFISH	742	100.00%	0.00%	0	0.00%	0.00%	742	0.00
YELLOWFIN TUNA	680	100.00%	0.00%	0	0.00%	0.00%	680	0.00
DOLPHIN FISH	627	100.00%	0.00%	0	0.00%	0.00%	627	0.00
BLACK SEA BASS	563	100.00%	0.00%	0	0.00%	0.00%	563	0.00
MAKO SHORTFIN SHARK	524	100.00%	0.00%	0	0.00%	0.00%	524	0.00
BLUEFIN TUNA	440	91.67%	0.00%	40	8.33%	0.09%	480	0.09
RED HAKE	438	79.20%	0.00%	115	20.80%	0.27%	553	0.26
SILVER HAKE (WHITING)	300	93.75%	0.00%	20	6.25%	0.05%	320	0.07
MAKO SHARK OTHER	284	89.03%	0.00%	35	10.97%	0.08%	319	0.12
FISH OTHER	218	100.00%	0.00%	0	0.00%	0.00%	218	0.00
AMERICAN EEL	150	100.00%	0.00%	0	0.00%	0.00%	150	0.00
REDFISH	147	100.00%	0.00%	0	0.00%	0.00%	147	0.00
MIX RED & WHITE HAKE	125	100.00%	0.00%	0	0.00%	0.00%	125	0.00
CUSK	97	100.00%	0.00%	0	0.00%	0.00%	97	0.00
ALBACORE TUNA	75	100.00%	0.00%	0	0.00%	0.00%	75	0.00
PORBEAGLE SHARK	75	100.00%	0.00%	0	0.00%	0.00%	75	0.00
WHITE HAKE	74	100.00%	0.00%	0	0.00%	0.00%	74	0.00

Table 9 (continued). Catch disposition for directed tilefish trips[a], Maine through Virginia, 2005-2014 combined.

Common Name	Kept lb	% species	% total	Discarded lb	% species	% total	Total lb	Disc: Kept Ratio
SUMMER FLOUNDER	72	100.00%	0.00%	0	0.00%	0.00%	72	0.00
BLACK WHITING	24	100.00%	0.00%	0	0.00%	0.00%	24	0.00
AMBER JACK	18	100.00%	0.00%	0	0.00%	0.00%	18	0.00
POLLOCK	17	100.00%	0.00%	0	0.00%	0.00%	17	0.00
TIGER SHARK	0	0.00%	0.00%	10,400	100.00%	24.43%	10,400	--
SKATE BARDOOR	0	0.00%	0.00%	3,881	100.00%	9.12%	3,881	--
DOGFISH CHAIN	0	0.00%	0.00%	2,722	100.00%	6.39%	2,722	--
JONAH CRAB	0	0.00%	0.00%	1,273	100.00%	2.99%	1,273	--
LOBSTER	0	0.00%	0.00%	775	100.00%	1.82%	775	--
BLUE SHARK	0	0.00%	0.00%	725	100.00%	1.70%	725	--
SKATE ROSETTE	0	0.00%	0.00%	398	100.00%	0.93%	398	--
HAMMERHEAD SHARK	0	0.00%	0.00%	100	100.00%	0.23%	100	--
SHARK OTHER	0	0.00%	0.00%	60	100.00%	0.14%	60	--
ALL SPECIES	15,693,842	99.73%	100.00%	42,571	0.27%	100.00%	15,736,413	0.00

[a] Directed trips for tilefish were defined as trips comprising 75 percent or more by weight of tilefish landed. Number of trips = 1,161.

Recreational Fishery

A small recreational fishery briefly occurred during the mid 1970's, with less than 100,000 lb annually (MAFMC 2000). Subsequent recreational catches have been low for the 1982 - 2012 period, ranging from zero for most years to approximately 30,000 fish in 2010 according to NMFS recreational statistics (Table 10). In 2013, approximately 262,000 fish were caught. The tilefish catch in the MRIP survey is likely below detection levels of the survey judging from the sporadic estimates in the survey.

VTR data indicates that the number of tilefish caught by party/charter vessels from Maine through Virginia is low, ranging from 81 fish in 1996 to 6,856 fish in 2014 (Table 11). Mean party/charter effort ranged from less than one fish per angler in 1999 throughout 2002 and 2005 to approximately eight fish per angler in 1998, averaging 2.2 fish for the entire time series.

According to VTR data, for the 1996 through 2013 period, the largest amount of tilefish caught by party/charter vessels were made by New Jersey vessels (22,294), followed by New York (8,729), Virginia (527), Massachusetts (496), Delaware (420), Maryland (282), Rhode Island (182), and Connecticut (3). Party/charter boats from New Jersey have shown a significant uptrend in the number of tilefish caught during the time series while the boats from Rhode Island have shown a significant downward trend in the number of fish caught (Table 12).

The number of tilefish discarded by recreational anglers is low. According to VTR data, on average, approximately 2.6 fish per year were discarded by party/charter recreational anglers for the 1996 through 2014 period. The quantity of tilefish discarded by party/charter recreational anglers ranged from zero in most years to 13 in 2010.

Recreational anglers typically fish for tilefish when tuna fishing especially during the summer months (Freeman, pers. comm. 2006). However, some for hire vessels from New Jersey and New York are tilefish fishing in the winter months (Caputi pers. comm. 2006). In addition, recreational boats in Virginia are also reported to be fishing for tilefish (Pride pers. comm. 2006). However, it is not known with certainty how many boats may be targeting tilefish. Nevertheless, accounting for information presented in the Fishery Performance Reports (2012-2014) and a brief internet search conducted by Council Staff in 2014 indicates that there have been approximately 10 headboats actively engaged in the tilefish fishery in the Mid-Atlantic canyons in recent years. It is estimated that approximately 4 of these boats conducted direct tilefish fishing trips, while the other 6 boats may have caught tilefish while targeting tuna/swordfish or fishing for assorted deep water species. In addition, it appears that recreational interest onboard headboats for tilefish has increase in the last few years as seen in the FPRs, internet search conducted by Council staff, and recent VTR recreational party/charter statistics (MAFMC 2014).

Anglers are highly unlikely to catch tilefish while targeting tuna on tuna fishing trips. However, these boats may fish for tilefish at any time during a tuna trip (i.e., when the tuna limit has been reached, on the way out or on the way in from a tuna fishing trip, or at any time when tuna fishing is slow). While fishing for tuna recreational anglers may trawl using rod and reel (including downriggers), handline, and bandit gear. Rod and reel is the typical gear used in the recreational tilefish fishery. Because tilefish are found in relatively deep waters, electric reels may be used to facilitate landing (Freeman and Turner 1977).

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Table 10. Recreational tilefish data from the NMFS recreational statistics databases, 1982-2013.

Year	no. of fish measured	Landed no. party/charter		A and B1 private		Released no. B2 private	
1982	0	0		984	(72.4)	0	
1983	0	0		0		0	
1984	0	0		0		0	
1985	0	0		0		0	
1986	0	0		0		0	
1987	0	0		0		0	
1988	0	0		0		0	
1989	0	0		0		0	
1990	0	0		0		0	
1991	0	0		0		0	
1992	0	0		0		0	
1993	0	0		0		0	
1994	0	608	(100.0)	0		0	
1995	0	0		0		0	
1996	0	6,842	(50.9)	0		0	
1997	0	0		0		0	
1998	0	0		0		0	
1999	0	0		0		0	
2000	0	0		0		0	
2001	0	148	(100.0)	0		0	
2002	0	0		20,068	(59.4)	1,338	(100.0)
2003	18	722	(69.1)	0		0	
2004	3	62	(99.3)	0		0	
2005	0	0		0		0	
2006	0	541	(100.4)	0		0	
2007	2	1,330	(78.3)	0		0	
2008	0	0		0		0	
2009	0	177	(87.8)	0		0	
2010	3	2,812	(90.5)	27,514	(77.2)	0	
2011	0	0		0		0	
2012	0	0		0		0	
2013	0	262,216	(13.9)	0		0	

Source: NOAA, https://www.st.nmfs.noaa.gov/.

Table 11. Number of tilefish kept by party/charter anglers and mean effort from Maine through Virginia, 1996 through 2014.

Year	Number of tilefish kept	Mean effort
1996	81	1.4
1997	400	7.5
1998	243	8.1
1999	91	0.4
2000	147	0.5
2001	172	0.7
2002	774	0.9
2003	991	1.6
2004	737	1.2
2005	498	0.9
2006	477	1.2
2007	1,077	1.2
2008	1,100	1.3
2009	1,451	1.3
2010	1,866	2.0
2011	2,938	3.4
2012	6,424	2.8
2013	6,560	3.2
2014	6,856	3.2
All	32,893	2.2

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Table 12. Number of tilefish caught by party/charter vessels by state, 1996 through 2014.

Year	MA	RI	CT	NY	NJ	DE	MD	VA	All
1996	0	0	0	81	0	0	0	0	81
1997	0	0	0	400	0	0	0	0	400
1998	0	102	0	141	0	0	0	0	243
1999	0	1	0	88	0	0	2	0	91
2000	0	0	0	108	39	0	0	0	147
2001	0	0	0	122	51	0	0	0	173
2002	0	0	0	401	373	0	0	0	774
2003	0	3	0	86	902	0	0	0	991
2004	0	0	0	12	628	0	0	104	744
2005	0	72	0	82	318	14	0	16	502
2006	0	0	0	265	65	2	133	12	477
2007	0	0	0	447	459	88	5	80	1,079
2008	0	3	0	488	545	22	32	10	1,100
2009	0	0	0	720	675	18	7	31	1,451
2010	0	0	0	595	1,194	19	23	48	1,879
2011	496	0	0	720	1,654	60	5	14	2,949
2012	0	1	0	1,116	5,146	42	23	98	6,426
2013	0	0	0	1,900	4,568	39	12	41	6,560
2014	0	0	3	957	5,677	116	40	73	6,866
All	496	182	3	8,729	22,294	420	282	527	32,933

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