



Golden Tilefish Fishery Information Document

February 2023

This Fishery Information Document provides a brief overview of the biology, stock condition, management system, and fishery performance for golden tilefish with an emphasis on 2022. Data sources for Fishery Information Documents are generally from unpublished National Marine Fisheries Service (NMFS) survey, dealer, vessel trip report (VTR), permit, catch accounting and monitoring system (CAMS), and marine recreational information program (MRIP) databases and should be considered preliminary. For more resources, including previous Fishery Information Documents, please visit <http://www.mafmc.org/tilefish/>.

Key Facts

- There has been no change to the status of the golden tilefish stock in 2022; the stock is not overfished and overfishing is not occurring.
- In 2022, 1.4 million pounds (landed weight) of golden tilefish were landed with an ex-vessel value (revenues) of \$6.5 million. This represented a decrease in golden tilefish landings of 6 percent and an increase in ex-vessel value of 5 percent, when compared to 2021. For 2022, the mean price for golden tilefish was \$4.72 per pound. This represented a 12 percent increase from 2021 (\$4.23 per pound).
- Party/charter vessel landed 5,689 golden tilefish in 2022. This represented a 17 percent decrease from 2021 (6,833 fish landed).
- Private Recreational Angler Permitting and Reporting started August 2020. Private recreational vessels landed a total of 197 and 303 golden tilefish in 2021 and 2022, respectively.

Basic Biology

The information presented in this section can also be found in the Tilefish Fishery Management Plan (FMP) (MAFMC, 2001; <http://www.mafmc.org/fisheries/fmp/tilefish>). Golden tilefish (*Lopholatilus chamaeleonticeps*; tilefish from this point forward in this section) 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 1,500 feet. In the southern New England/mid-Atlantic area, tilefish generally occur at depths of 250 to 1,200 feet and at temperatures from 48°F to 62°F (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.

Tilefish are shelter seeking and perhaps habitat limited. There are indications that at least some of the population is relatively nonmigratory (Turner 1986). Warne 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 achieve larger sizes than females, but do not live as long (Turner 1986). The largest male reported by Turner was 44.1 inches fork length (FL) 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 FL, while the oldest male was 41.3 inches FL and 29 years. On average, tilefish (sexes combined) grow about 3.5 to 4 inches 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 size of sexual maturity of tilefish collected off New Jersey in 1971-73 was 24-26 inches TL (total length) in females and 26-28 inches TL in males (Morse 1981). Idelberger (1985) reported that 50 percent 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 percent maturity varied with the method used and between sexes. Grimes et al. (1986) estimated that 50 percent 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 percent maturity at 24 inches FL while the histological method estimated 50 percent maturity at 21 inches FL. The visual method is consistent with NEFSC (Northeast Fisheries Science Center) 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 percent maturity was 18 inches for females and 19 inches for males (NEFSC 2009).

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,b, and Bigelow and Schroeder 1953). Among those items identified by Linton (1901a,b) 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 squat lobster (*Munida*) and spider crabs (*Euprognatha*) 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" (Warne et al. 1977).

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

Status of the Stock

There has been no change to the status of the golden tilefish stock in 2022; the stock is not overfished and overfishing is not occurring.

Biological Reference Points

The biological reference points for golden tilefish were updated in the 2021 management track assessment (Nitschke 2021). The fishing mortality threshold for golden tilefish is $F_{40\%}$ (as F_{MSY} proxy) = 0.261, and $SSB_{40\%}$ (SSB_{MSY} proxy) is 24.23 million pounds (10,995 mt).

Stock Status

The latest assessment indicates that the golden tilefish stock was not overfished and overfishing was not occurring in 2020, relative to the newly updated biological reference points (Nitschke 2021). Fishing mortality in 2020 was estimated at $F=0.160$; 39 percent below the fishing mortality threshold of $F=0.261$ (F_{MSY} proxy). SSB in 2020 was estimated at 23.28 million pounds (10,562 mt), and was at 96 percent of the biomass target (SSB_{MSY} proxy).

Data Update

Commercial landings per unit effort is the only index of abundance for golden tilefish. Landings per unit of effort in 2022 decreased relative to the recent peak in 2020 as the strong 2013 year class appears to be aging out of the commercial fishery (Nitschke 2023).

Tracking of the strong 2013 year class is also reflected in the landings market category proportions and the landings at length distributions. There is some evidence of a stronger than average year class in 2017 which can be seen tracking through the updated 2021 and 2022 landings market category proportions and the landings at length distributions. However, the decrease in the 2022 CPUE (catch per unit effort) suggests that the 2017 year class may not be as strong as the 2013 year class (Nitschke 2023).

Management System and Fishery Performance

Management

There have been no significant changes to the overall golden tilefish management system since the Individual Fishing Quota (IFQ) system was implemented in 2009 (Amendment 1). However, Framework 2 to the Tilefish FMP (implemented in 2018) made several changes to the

management system intended to improve and simplify the administration of the golden tilefish fishery. These changes include removing an outdated reporting requirement, proscribing allowed gear for the recreational fishery, modifying the incidental trip landings, requiring commercial golden tilefish be landed with the head attached, and revising how assumed discards are accounted for when setting harvest limits.

Framework Adjustment 6 to the Tilefish Fishery Management Plan, implemented measures to revise the specifications process by considering the duration for setting multi-year management measures and the timing of the fishing year (i.e., January 1 to December 31).

The commercial golden tilefish fisheries (IFQ 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 golden tilefish per angler per trip, with no minimum fish length. Golden tilefish was under a stock rebuilding strategy beginning in 2001 until it was declared rebuilt in 2014. The Tilefish FMP, including amendments and frameworks, are available on the Council website at: <http://www.mafmc.org/fisheries/fmp/tilefish>.

Commercial Fishery

In 2022 calendar year, 1.4 million pounds (landed weight) of golden tilefish were landed with an ex-vessel value (revenues) of \$6.5 million. This represented a decrease in golden tilefish landings of 6 percent and an increase in ex-vessel value of 5 percent, when compared to 2021. For 2022, the mean price for golden tilefish was \$4.72 per pound, this represented a 12 percent increase from 2021 (\$4.23 per pound).

For the 1970 to 2022 calendar years, golden tilefish landings (live weight) have ranged from 128 thousand pounds (1970) to 8.7 million pounds (1979). For the 2001 to 2022 period (since FMP was implemented), golden tilefish landings have averaged 1.8 million pounds, ranging from 1.1 (2016) to 2.5 (2004) million pounds. In 2022, commercial golden tilefish landings were 1.5 million pounds (Figure 1).

The principal measure used to manage golden tilefish is monitoring via dealer weighout data that is submitted weekly to the Greater Atlantic Regional Fisheries Office (GARFO).¹ The directed fishery is managed via an IFQ program. If a permanent IFQ allocation is exceeded, including any overage that results from golden 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.

¹ This will be replaced with the catch accounting and monitoring system or CAMS. CAMS is a single comprehensive source for all Northeast U.S. commercial fisheries catch both landings and discards. CAMS will serve as a single source of data to be used in quota monitoring.

The commercial/incidental trip limit (for vessels that possess a Commercial/Incidental Tilefish Permit without an IFQ Allocation Permit) is 500 pounds or 50 percent, by weight, of all fish (including the golden tilefish) onboard the vessel, whichever is less. If the incidental harvest exceeds 5 percent of the TAL for a given fishing year, the incidental trip limit of 500 pounds may be reduced in the following fishing year.

Table 1 summarizes the golden tilefish management measures for the 2007-2024 fishing years. Commercial golden tilefish landings (live weight) have been below the commercial quota each year since the Tilefish FMP was first implemented except for fishing years 2003-2004 (not shown in Table 1), and 2010. In 2003 and 2004, the commercial quota was exceeded by 0.3 (16 percent) and 0.6 (31 percent) million pounds, respectively.² In 2021 and 2022, 1.5 million pounds (93 percent of the quota) and 1.7 million pounds (91 percent of the quota) of golden tilefish were landed, respectively.

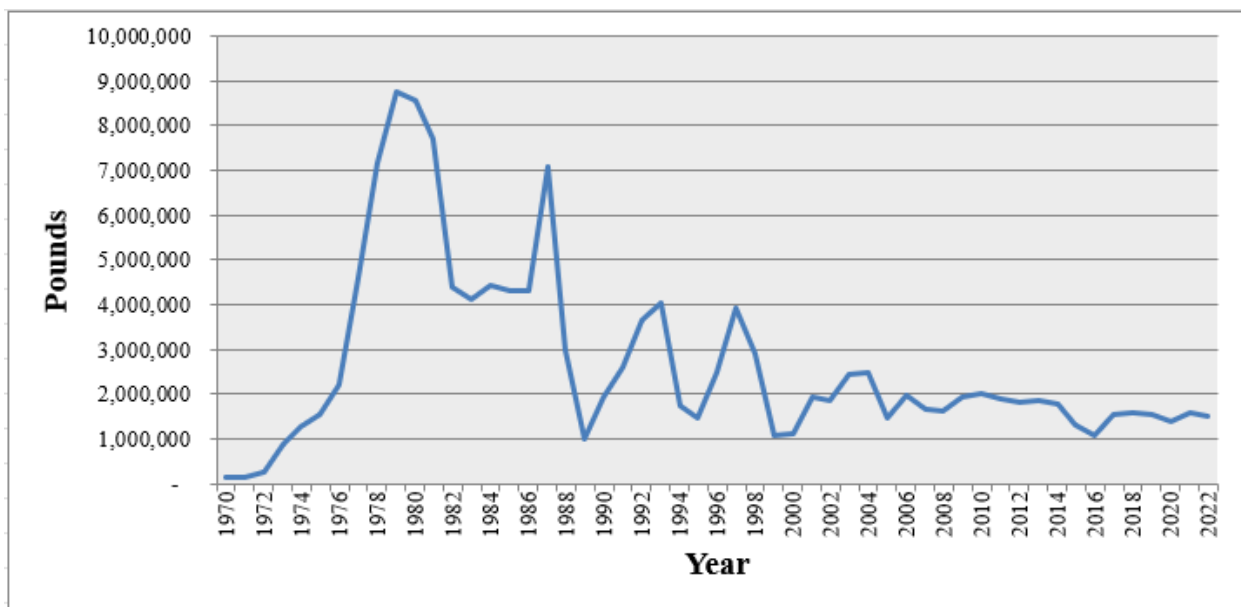


Figure 1. Commercial U.S. Golden Tilefish Landings (live weight) from Maine-Virginia, 1970-2022 (calendar year). Source: 1970-1993 Tilefish FMP; 1994-2022 NMFS unpublished dealer data.

Golden tilefish are primarily caught by longlines and bottom otter trawls. Based on dealer data for 2022, the bulk of the golden tilefish landings are taken by longline gear (99 percent) followed by otter trawl bottom (1 percent) and unknown gear (<1 percent). No other gear had any significant commercial landings. Minimal catches were also recorded for hand line, gillnets, and dredge (Table 2).

² 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 golden tilefish vessels to report their landings. In addition, during that time period, vessels that were not part of the golden tilefish limited entry program also landed golden tilefish.

Table 1. Summary of management measures and landings for fishing year 2007-2024.^a

Management Measures	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
ABC (m lb)	-	-	-	-	-	-	2.013	2.013	1.766	1.898	1.898	1.636	1.636	1.636	1.636	1.964	1.964	1.964
TAL (m lb)	1.995	1.995	1.995	1.995	1.995	1.995	1.995	1.995	1.755	1.887	1.887	1.626	1.626	1.626	1.625	1.839	1.839	1.839
Com. quota- (m lb)	1.995	1.995	1.995	1.995	1.995	1.995	1.995	1.995	1.755	1.887	1.887	1.626	1.626	1.626	1.625/ 1.672*	1.839	1.839	1.839
Com. landings	1.794	1.689	1.906	2.021	1.924	1.873	1.840	1.826	1.351	1.051	1.501	1.624	1.563	1.403	1.548	1.668	-	-
Com. Overage / underage (m lb)	-0201	-0.306	-0.089	+0.026	-0.071	-0.122	-0.155	-0.169	-0.404	-0.836	-0.387	-0.003	-0.064	-0.223	-0.123	-0.171	-	-
Incidental trip limit (lb)	300	300	300	300	300	500	500	500	500	500	500	500	500	500	500	500	500	500
Rec. possession limit	-	-	-	8 ^b	8 ^b	8 ^b	8 ^b	8 ^b	8 ^b	8 ^b	8 ^b	8 ^b	8 ^b	8 ^b	8 ^b	8 ^b	8 ^b	8 ^b

^a From 2001 to 2021, fishing year = November 1 – October 31 period. For example, 2007 fishing year = November 1, 2006 – October 31, 2007. For 2022, fishing year = November 1, 2021 – December 31, 2022. For 2023 on, fishing year = January 1 – December 31. ^b Eight fish per person per trip. *The Council requested for emergency action to allow unharvested 2020 IFQ pounds to be carried over into the 2021 fishing year, up to 5 percent of the quota shareholders initial 2020 allocation. Commercial landings from NMFS unpublished dealer data.

Table 2. Golden tilefish commercial landings ('000 pounds live weight) by gear, Maine through Virginia, 2022 (calendar year).

Gear	Pounds	Percent
Otter Trawl Bottom, Fish	11	*
Otter Trawl Bottom, Other	1	*
Gillnet, Anchored/Sink/Other	1	*
Lines, Hand	2	*
Lines, Long Set with Hooks	1,471	98.5
Pot & Trap	*	*
Dredge, other	*	*
Unknown, Other Combined Gears	5	*
All Gear	1,493	100.0

Note: * = less than 1,000 pounds or less than 1 percent. Source: NMFS unpublished dealer data.

Approximately 54 percent of the landings for 2021 were caught in statistical area 616; statistical area 537 had 39 percent; statistical areas 539, 613, and 612 had slightly over 1 percent each (Table 3). NMFS statistical areas are shown in Figure 2.

For the 1999 to 2022 period, commercial golden tilefish landings are spread across the years with no strong seasonal variation (Tables 4 and 5). However, in recent years, a slight downward trend in the proportion of golden tilefish landed during the winter period (November-February) and a slight upward trend in the proportion of golden tilefish landed during the May-June period are evident when compared to earlier years (Table 5).

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Table 3. Golden tilefish percent landings by statistical area and year, 1996-2022 (calendar year).

Year	525	526	537	539	612	613	616	622	626	Other
1996	0.05	5.21	64.04	0.39	*	1.09	27.81	0.01	-	1.40
1997	0.03	0.67	79.51	0.02	*	2.59	16.41	0.01	*	0.74
1998	1.26	2.19	81.95	0.04	0.02	5.45	8.55	*	*	0.53
1999	0.97	0.22	55.79	0.02	0.22	3.71	36.60	0.02	0.02	0.43
2000	0.36	3.79	46.10	0.01	0.05	2.36	43.94	0.47	0.14	2.78
2001	0.23	3.09	23.92	*	0.01	3.16	68.96	*	0.10	0.52
2002	0.12	8.73	35.86	0.07	0.01	18.50	36.54	0.02	0.02	0.14
2003	0.88	1.81	38.48	0.10	-	11.85	46.51	0.05	0.05	0.26
2004	1.03	2.59	62.85	0.05	5.28	0.70	25.95	0.03	0.06	1.66
2005	0.12	0.25	62.99	0.02	0.03	6.11	25.68	0.03	0.20	4.56
2006	*	1.54	64.30	0.50	1.24	0.71	30.09	0.04	0.05	1.53
2007	0.02	0.42	57.61	0.01	-	5.53	33.93	0.85	0.45	1.18
2008	1.09	0.06	44.07	0.01	-	4.62	46.94	2.05	0.02	1.14
2009	2.17	0.01	42.62	1.30	0.04	4.37	46.12	1.34	1.16	0.88
2010	0.01	0.01	57.14	0.55	0.02	8.39	32.83	0.69	0.04	0.31
2011	0.02	*	53.06	0.01	-	3.12	39.98	0.31	0.06	3.44
2012	0.01	0.01	52.54	0.03	*	0.58	43.92	0.20	0.10	2.62
2013	*	0.67	56.22	1.06	0.03	0.68	35.39	1.21	4.59	0.16
2014	0.01	0.52	49.36	1.89	0.01	1.29	42.85	2.67	0.35	1.06
2015	3.06	0.98	30.00	2.55	-	0.01	55.02	2.34	5.53	1.50
2016	1.03	4.77	32.33	0.01	-	0.98	54.50	0.17	5.81	0.39
2017	0.01	5.45	27.73	2.69	0.01	0.94	55.33	0.16	5.49	2.19
2018	*	1.65	46.99	3.27	-	0.06	41.18	0.57	6.13	0.15
2019	0.01	1.39	55.63	1.86	*	1.69	38.64	0.06	0.35	0.74
2020	0.02	3.40	35.98	4.81	0.02	1.39	48.19	0.10	2.15	3.95
2021	0.03	0.22	38.10	0.01	*	3.88	55.16	0.14	0.36	2.09
2022	*	1.37	41.22	0.11	*	0.02	51.28	0.08	0.03	5.89

Note: - = no landings; * = less than 0.01 percent. Source: 1996-2020 NMFS unpublished VTR data. 2021-2022 NMFS unpublished CAMS data.

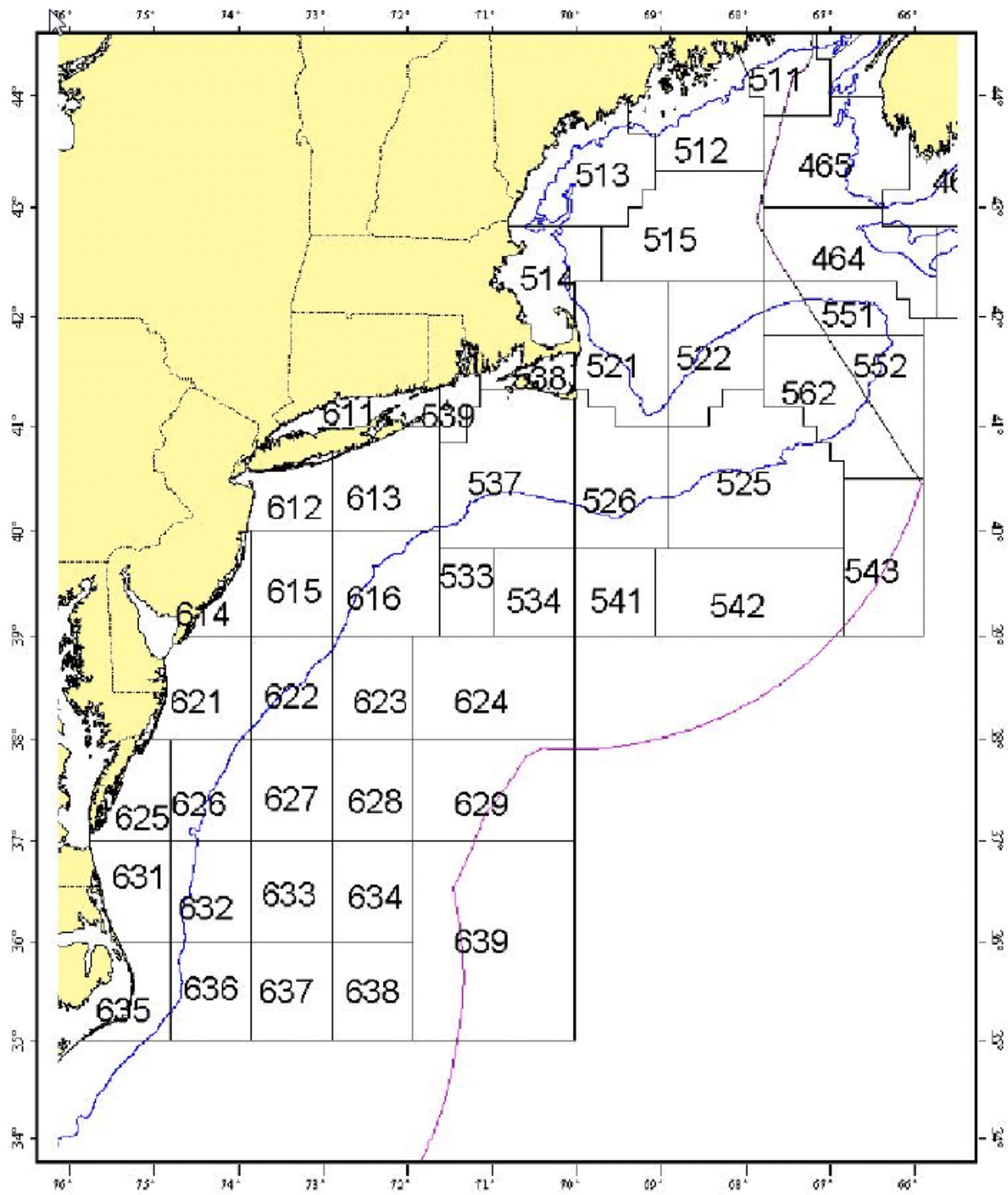


Figure 2. NMFS Statistical Areas.

Table 4. Golden tilefish commercial landings ('000 pound live weight) by month and year, Maine through Virginia, 1999-2022 (calendar year).

Year	Month												Total
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
1999	118	114	124	103	93	91	55	106	83	59	77	75	1,096
2000	52	105	159	101	107	99	34	91	42	107	96	112	1,105
2001	107	151	159	188	153	179	177	157	156	156	161	176	1,920
2002	143	232	257	144	164	117	107	141	148	146	68	200	1,867
2003	183	181	295	254	209	185	152	180	210	202	189	223	2,463
2004	192	354	514	323	143	56	113	122	181	236	71	189	2,492
2005	127	159	234	168	33	57	117	104	96	94	141	158	1,487
2006	210	226	292	125	127	124	86	152	116	140	169	228	1,996
2007	122	118	192	147	159	96	131	133	125	174	77	189	1,664
2008	235	206	219	173	124	123	62	90	101	90	109	104	1,636
2009	90	145	185	200	237	211	184	157	157	128	94	134	1,922
2010	149	133	273	216	195	157	149	157	176	188	98	137	2,027
2011	152	94	269	209	227	137	138	149	120	194	65	150	1,905
2012	146	114	142	207	151	131	157	204	186	221	39	139	1,836
2013	105	115	146	269	234	193	147	157	126	169	67	133	1,862
2014	114	93	146	183	187	233	215	171	134	149	50	102	1,778
2015	68	70	144	128	181	146	130	127	123	82	48	62	1,308
2016	43	53	91	71	110	119	131	136	91	96	83	64	1,089
2017	86	69	77	193	195	179	135	134	105	180	47	133	1,533
2018	81	134	124	194	149	196	181	148	133	103	64	98	1,606
2019	91	106	131	130	234	164	131	137	158	119	40	96	1,537
2020	75	95	143	54	187	160	147	133	93	180	65	66	1,397
2021	77	125	128	143	180	191	138	166	131	139	65	109	1,591
2022	91	110	120	148	191	170	126	160	110	87	101	79	1,494
Total	2,855	3,303	4,566	4,071	3,971	3,512	3,142	3,412	3,100	3,439	2,083	3,155	40,609
Avg13-22	83	97	125	151	185	175	148	147	120	130	63	94	1,519

Source: NMFS unpublished dealer data.

Table 5. Percent of golden tilefish commercial landings (live weight) by month and year, Maine through Virginia, 1999-2022 (calendar year).

Year	Month												Total
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
1999	10.75	10.38	11.28	9.41	8.50	8.29	4.99	9.66	7.55	5.36	6.98	6.86	100.00
2000	4.68	9.48	14.41	9.13	9.67	8.95	3.05	8.26	3.78	9.71	8.70	10.18	100.00
2001	5.59	7.88	8.30	9.77	7.95	9.32	9.24	8.16	8.13	8.11	8.40	9.14	100.00
2002	7.64	12.43	13.76	7.73	8.78	6.28	5.74	7.56	7.91	7.85	3.63	10.70	100.00
2003	7.44	7.33	11.98	10.31	8.47	7.52	6.18	7.32	8.52	8.19	7.68	9.05	100.00
2004	7.69	14.21	20.64	12.95	5.74	2.23	4.52	4.88	7.25	9.46	2.87	7.57	100.00
2005	8.54	10.71	15.77	11.28	2.24	3.82	7.85	6.98	6.43	6.32	9.46	10.60	100.00
2006	10.50	11.32	14.65	6.28	6.38	6.22	4.33	7.60	5.82	7.04	8.46	11.41	100.00
2007	7.35	7.08	11.55	8.83	9.56	5.79	7.86	7.99	7.53	10.48	4.63	11.35	100.00
2008	14.37	12.59	13.40	10.56	7.60	7.50	3.77	5.53	6.18	5.49	6.66	6.35	100.00
2009	4.67	7.55	9.64	10.39	12.36	10.97	9.56	8.18	8.16	6.65	4.88	6.99	100.00
2010	7.35	6.54	13.49	10.68	9.61	7.73	7.37	7.75	8.68	9.25	4.81	6.74	100.00
2011	7.96	4.96	14.13	10.99	11.93	7.20	7.24	7.82	6.30	10.18	3.41	7.88	100.00
2012	7.94	6.22	7.72	11.26	8.22	7.11	8.57	11.09	10.14	12.03	2.15	7.55	100.00
2013	5.66	6.18	7.84	14.47	12.54	10.37	7.90	8.45	6.75	9.07	3.61	7.14	100.00
2014	6.41	5.25	8.20	10.31	10.50	13.09	12.07	9.63	7.55	8.40	2.84	5.74	100.00
2015	5.21	5.37	10.97	9.78	13.86	11.15	9.91	9.71	9.40	6.23	3.67	4.73	100.00
2016	3.94	4.85	8.34	6.52	10.11	10.97	12.00	12.47	8.39	8.85	7.66	5.91	100.00
2017	5.59	4.52	5.05	12.56	12.72	11.67	8.84	8.72	6.87	11.73	3.05	8.68	100.00
2018	5.02	8.37	7.73	12.07	9.31	12.20	11.28	9.22	8.31	6.40	3.99	6.10	100.00
2019	5.93	6.87	8.53	8.46	15.24	10.64	8.49	8.92	10.26	7.77	2.62	6.27	100.00
2020	5.38	6.78	10.24	3.86	13.42	11.43	10.52	9.52	6.66	12.85	4.62	4.71	100.00
2021	4.81	7.87	8.06	9.00	11.29	12.03	8.65	10.41	8.21	8.76	4.06	6.86	100.00
2022	6.12	7.37	8.03	9.89	12.77	11.35	8.46	10.72	7.37	5.86	6.74	5.32	100.00
Total	7.03	8.13	11.24	10.02	9.78	8.65	7.74	8.40	7.63	8.47	5.13	7.77	100.00

Source: NMFS unpublished dealer data.

For the 1999 to 2022 calendar years, commercial golden tilefish landings (landed weight) have ranged from a low of 1.0 million pounds in 2016 (calendar year) to a high of 2.3 million pounds in 2004. Commercial golden tilefish ex-vessel revenues have ranged from a low of \$2.5 million in 2000 to a high of \$6.5 million in 2022. In 2022, 1.4 million pounds (landed weight) of golden tilefish were landed with an ex-vessel value (revenues) of \$6.5 million (Figure 3).

From 1999-2022, the mean price for golden tilefish (adjusted) has ranged from a low of \$2.16 per pound in 2004 to a high of \$5.18 per pound in 2016 (Figure 3). For 2022, the mean price for golden tilefish was \$4.72 per pound (Figure 3 and Table 6).

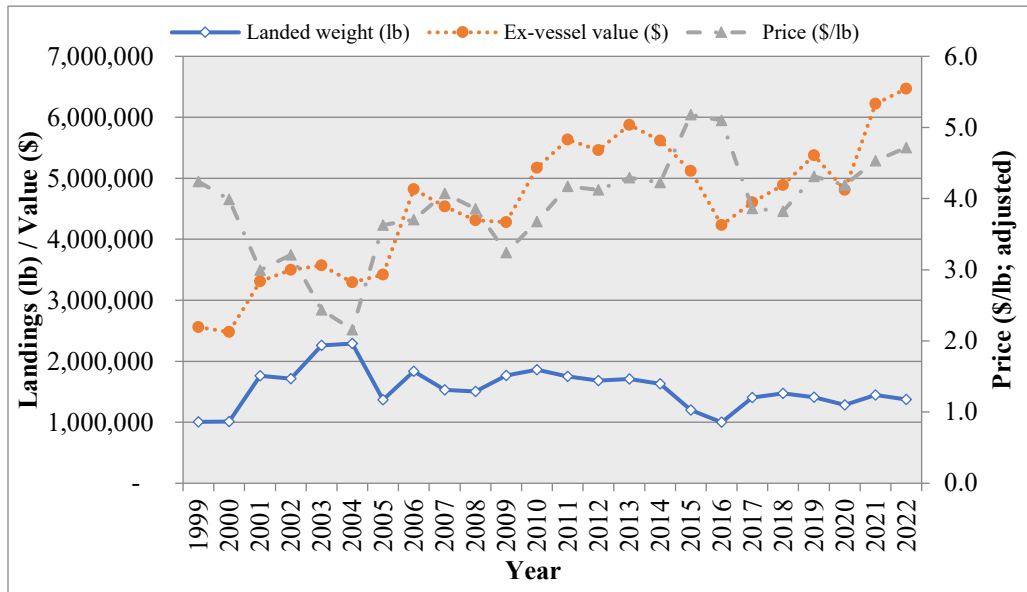


Figure 3. Landings (landed weight), ex-vessel value, and price for golden tilefish, Maine through Virginia combined, 1999-2021 (calendar year). Note: Price data have been adjusted by the GDP deflator indexed for 2022 (<https://fred.stlouisfed.org>). Source: NMFS unpublished dealer data.

The 2022 coastwide average ex-vessel price per pound for all market categories combined was \$4.72. Price differential indicates that larger fish tend to bring higher prices (Table 6). Nevertheless, even though there is a price differential for various sizes of golden tilefish landed, golden 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 6. Landings, ex-vessel value, and price of golden tilefish by size category, from Maine through Virginia, 2022 (calendar year).

Market category	Landed weight (pounds)	Value (\$)	Price (\$/pound)	Approximate market size range (pounds)
Extra large	370,090	202,407	5.46	> 25
Large	310,165	2,473,616	5.88	7 – 24
Large/medium ^a	262,010	1,287,466	4.91	5 – 7
Medium	579,466	2,473,616	4.27	3.5 – 5
Small or kittens	158,399	601,514	3.80	2 – 3.5
Extra small	13,845	42,556	3.07	< 2
Unclassified	10,206	35,422	3.47	---
All	1,371,181	6,467,170	4.72	---

^aLarge/medium code was implemented on May 1, 2016. Prior to that, golden tilefish sold in the large/medium range were sold as unclassified fish. Source: NMFS unpublished dealer data.

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

To examine recent landings patterns among ports, 2020-2021 NMFS dealer data are used. The top commercial landings ports for golden tilefish are shown in Table 7. A "top port" is defined as any port that landed at least 10,000 pounds of golden tilefish.

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Table 7. Top ports ($\geq 10,000$ pounds per year) of landing (live weight) for golden tilefish, 2021-2022 (calendar year). Since this table includes only the “top ports,” it may not include all the landings for the year.

Port	2021		2022	
	Landings (pounds)	# Vessels	Landings (pounds)	# Vessels
Montauk, NY	957,925 (955,335)	15 (3)	814,824 (812,747)	14 (3)
Barneгат Light/Long Beach, NJ	C (366,946)	C (4)	C (395,061)	C (5)
Hampton Bays, NY	220,645 (C)	4 (C)	255,559 (C)	6 (C)
Point Judith, RI	12,068 (0)	56 (0)	13,376 (0)	59 (0)

^aValues in parentheses correspond to IFQ vessels. Note: C = Confidential. Source: NMFS unpublished dealer data. Note: ports that may have had landings $\geq 10,000$ pounds not added to this table due to confidentiality issues.

In 2022 there were 55 federally permitted dealers who bought golden tilefish from 118 vessels that landed this species from Maine through Virginia. In addition, 47 dealers bought golden tilefish from 108 vessels in 2021. These dealers bought approximately \$6.2 and \$6.5 million of golden tilefish in 2021 and 2022, respectively, and are distributed by state as indicated in Table 8. In 2022, 1,641 open access commercial/incidental tilefish permits (valid for both golden and blueline tilefish) were issued.³

Table 8. Dealers reporting buying golden tilefish, by state in 2021-2022 (calendar year).

# of dealers	MA		RI		CT		NY		NJ		VA		MD	
	'21	'22	'21	'22	'21	'22	'21	'22	'21	'22	'21	'22	'21	'22
	6	5	6	10	6	7	14	17	7	10	4	4	4	4

Note: C = Confidential. Source: NMFS unpublished dealer data.

According to VTR data, none to very little discarding was reported by longline vessels that targeted golden tilefish from 2019-2021 (Table 9). In addition, the 2021 management track assessment (Nitschke 2021) indicates that golden tilefish discards in the trawl and longline fishery appear to be a minor component of the catch.

³ Source: <https://www.greateratlantic.fisheries.noaa.gov/public/public/web/NEROINET/aps/permits/data/index.html>.

Table 9. Catch disposition for directed golden tilefish trips^a, Maine through Virginia, 2019, 2020, and 2021 (calendar year).

(2019)

Common name	Kept pounds	% species	% total	Discarded pounds	% species	% total	Total pounds	Disc: Kept ratio
GOLDEN TILEFISH	1,316,702	100.00%	95.87%	0	0.00%	--	1,316,702	0.00
SPINY DOGFISH	41,605	100.00%	3.03%	0	0.00%	--	41,605	0.00
SMOOTH DOGFISH	5,315	100.00%	0.39%	0	0.00%	--	5,315	0.00
BLUELINE TILEFISH	3,551	100.00%	0.26%	0	0.00%	--	3,551	0.00
CONGER EEL	2,134	100.00%	0.16%	0	0.00%	--	2,134	0.00
YELLOWFIN TUNA	2,086	100.00%	0.15%	0	0.00%	--	2,086	0.00
BIG EYE TUNA	734	100.00%	0.05%	0	0.00%	--	734	0.00
SAND TILEFISH	506	100.00%	0.04%	0	0.00%	--	506	0.00
DOLPHIN FISH	455	100.00%	0.03%	0	0.00%	--	455	0.00
ANGLER	119	100.00%	0.01%	0	0.00%	--	119	0.00
SKATES OTHER	80	100.00%	0.01%	0	0.00%	--	80	0.00
ALBACORE TUNA	50	100.00%	0.00%	0	0.00%	--	50	0.00
BLACK BELLIED ROSEFISH	44	100.00%	0.00%	0	0.00%	--	44	0.00
SILVER HAKE (WHITING)	43	100.00%	0.00%	0	0.00%	--	43	0.00
SHKIPJACK TUNA	24	100.00%	0.00%	0	0.00%	--	24	0.00
BLACK SEA BASS	9	100.00%	0.00%	0	0.00%	--	9	0.00
ALL SPECIES	1,373,457	100.00%	100.00%	0	0.00%	--	1,373,457	0.00

^a Directed trips for golden tilefish were defined as trips comprising 75 percent or more by weight of golden tilefish landed. Number of trips = 92. Source: NMFS unpublished VTR data.

(2020)

Common name	Kept pounds	% species	% total	Discarded pounds	% species	% total	Total pounds	Disc: Kept ratio
GOLDEN TILEFISH	1,118,461	100.00%	95.68%	0	0.00%	--	1,118,461	0.00
SPINY DOGFISH	41,350	100.00%	3.54%	0	0.00%	--	41,350	0.00
BLUELINE TILEFISH	3,474	100.00%	0.30%	0	0.00%	--	3,474	0.00
SMOOTH DOGFISH	2,425	100.00%	0.21%	0	0.00%	--	2,425	0.00
CONGER EEL	1,512	100.00%	0.13%	0	0.00%	--	1,512	0.00
YELLOWFIN TUNA	733	100.00%	0.06%	0	0.00%	--	733	0.00
DOLPHIN FISH	451	100.00%	0.04%	0	0.00%	--	451	0.00
MAKO SHORTFIN SHARK	100	100.00%	0.01%	0	0.00%	--	100	0.00
RED HAKE	98	100.00%	0.01%	0	0.00%	--	98	0.00

BIG EYE TUNA	80	100.00%	0.01%	0	0.00%	--	80	0.00
WHITE HAKE	68	100.00%	0.01%	0	0.00%	--	68	0.00
ALBACORE TUNA	60	100.00%	0.01%	0	0.00%	--	60	0.00
CUNNER	47	1	0.00%	0	0.00%	--	47	0.00
SWORDFISH	40	100.00%	0.00%	0	0.00%	--	40	0.00
BARRELFISH	33	100.00%	0.00%	0	0.00%	--	33	0.00
BLACK BELLIED ROSEFISH	28	100.00%	0.00%	0	0.00%	--	28	0.00
SILVER HAKE (WHITING)	14	100.00%	0.00%	0	0.00%	--	14	0.00
ANGLER	2	100.00%	0.00%	0	0.00%	--	2	0.00
ALL SPECIES	1,168,976	100.00%	100.00%	0	0.00%	--	1,168,976	0.00

^a Directed trips for golden tilefish were defined as trips comprising 75 percent or more by weight of golden tilefish landed. Number of trips = 86.
Source: NMFS unpublished VTR data.

(2021)

Common name	Kept pounds	% species	% Total	Discarded pounds	% species	% total	Total pounds	Disc: Kept ratio
GOLDEN TILEFISH	1,384,226	100.00%	94.50%	3	0.00%	0.02%	1,384,229	0.00
SPINY DOGFISH	66,860	100.00%	4.56%	0	0.00%	0.00%	66,860	0.00
DOGFISH SMOOTH	7,075	100.00%	0.48%	0	0.00%	0.00%	7,075	0.00
CONGER EEL	4,199	100.00%	0.29%	0	0.00%	0.00%	4,199	0.00
BLUELINE TILEFISH	1,507	99.93%	0.10%	1	0.07%	0.01%	1,508	0.00
SAND TILEFISH	300	100.00%	0.02%	0	0.00%	0.00%	300	0.00
DOLPHIN FISH	199	100.00%	0.01%	0	0.00%	0.00%	199	0.00
YELLOWFIN TUNA	192	100.00%	0.01%	0	0.00%	0.00%	192	0.00
WRECKFISH	56	100.00%	0.00%	0	0.00%	0.00%	56	0.00
ALBACORE TUNA	50	100.00%	0.00%	0	0.00%	0.00%	50	0.00
WHITE HAKE	45	100.00%	0.00%	0	0.00%	0.00%	45	0.00
BLACK BELLIED ROSEFISH	22	100.00%	0.00%	0	0.00%	0.00%	22	0.00
ANGLER	10	20.83%	0.00%	38	79.17%	0.22%	48	3.80
BLACK SEA BASS	5	100.00%	0.00%	0	0.00%	0.00%	5	0.00
TIGER SHARK	0	0.00%	0.00%	6,050	100.00%	34.35%	6,050	--
SANDBAR SHARK	0	0.00%	0.00%	5,525	100.00%	31.37%	5,525	--
DOGFISH CHAIN	0	0.00%	0.00%	1,480	100.00%	8.40%	1,480	--
SKATE BARDOOR	0	0.00%	0.00%	1,420	100.00%	8.06%	1,420	--
HAMMERHEAD SHARK	0	0.00%	0.00%	1,250	100.00%	7.10%	1,250	--
JONAH CRAB	0	0.00%	0.00%	1,239	100.00%	7.03%	1,239	--
MAKO LONGFIN SHARK	0	0.00%	0.00%	250	100.00%	1.42%	250	--

SILVER HAKE (WHITING)	0	0.00%	0.00%	125	100.00%	0.71%	125	--
PORBEAGLE SHARK	0	0.00%	0.00%	100	100.00%	0.57%	100	--
LOBSTER	0	0.00%	0.00%	73	100.00%	0.41%	73	--
BLUEFISH	0	0.00%	0.00%	50	100.00%	0.28%	50	--
RED HAKE	0	0.00%	0.00%	10	100.00%	0.06%	10	--
ALL SPECIES	1,464,746	0.00%	100.00%	17,614	0.00%	100.00%	1,482,360	0.01

^a Directed trips for golden tilefish were defined as trips comprising 75 percent or more by weight of golden tilefish landed. Number of trips = 90. Source: NMFS unpublished VTR data.

Golden tilefish incidental commercial fishery landings in fishing year 2023 are near identical compared to fishing year 2022 landings for the same time period (Figure 4; for data reported through March 22, 2023). Incidental golden tilefish commercial landings for 2013-2022 fishing years are shown in Table 10.

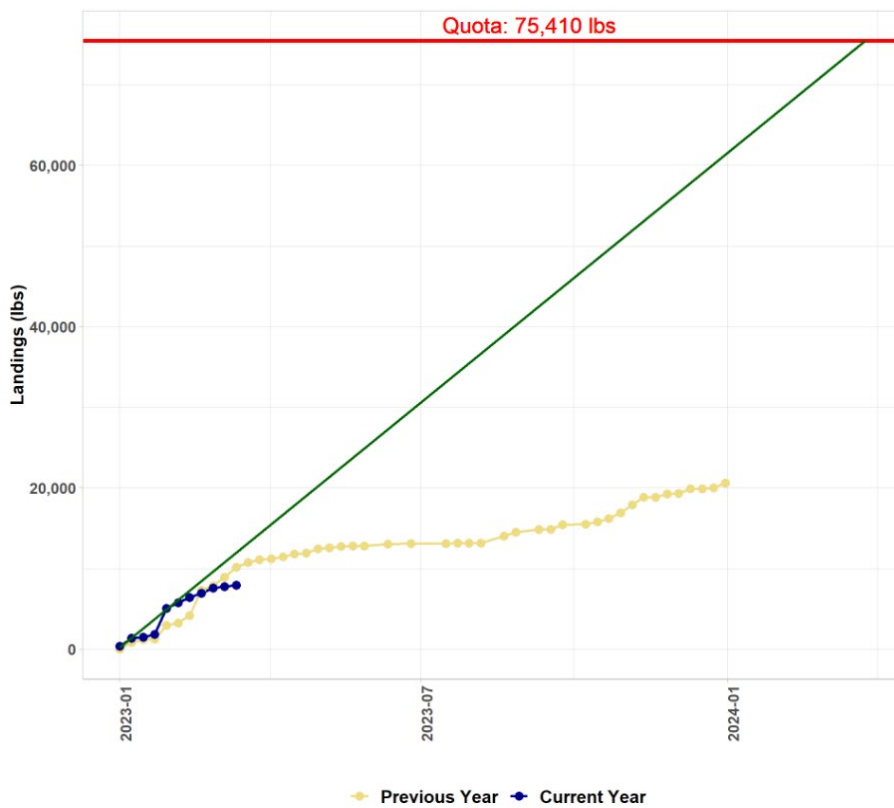


Figure 4. Incidental commercial landings for 2023 fishing year (FY) to date (for data reported through March 22, 2023). Blue Line = FY 2023, Yellow Line = FY 2022.

Source: <https://www.fisheries.noaa.gov/new-england-mid-atlantic/quota-monitoring-greater-atlantic-region>.

Table 10. Incidental golden tilefish commercial landings for fishing year 2013-2022.

Fishing year	Landings (pounds)	Incidental quota (pounds)	Percent of quota landed (%)
2013	36,442	99,750	37
2014	44,594	99,750	45
2015	18,839	87,744	21
2016	20,929	94,357	22
2017	60,409	94,357	64
2018	61,254	72,752	84
2019	22,246	72,752	31
2020	25,864	72,752	36
2021	25,321	70,548	36
2022*	26,827	75,410	36

Source: <https://www.fisheries.noaa.gov/new-england-mid-atlantic/quota-monitoring-greater-atlantic-region>. *2022 landings data provided by Kristopher Winiarski (GARFO, Analysis and Program Support Division Monitoring and Analysis Branch).

Recreational Fishery

In 2022, 703 open access charter/party tilefish permits were issued.⁴ According to CAMS data, 41 party/charter vessels reported a total of 144 trips that landed golden tilefish in 2022.

CAMS data indicates that party/charter vessels landed 5,689 golden tilefish in 2022. This represented a decrease of 11 percent from 2021 (6,833 fish landed; Table 12).

A small recreational fishery briefly occurred during the mid-1970's, with less than 125,000 pounds landed annually (MAFMC 2001). Subsequent recreational catches have been low for the 1982 - 2022 period, ranging from zero for most years to approximately 200,000 fish in 2010 according to NMFS recreational statistics (Table 11). In 2022, approximately 100,000 fish were landed according to MRIP data.

The number of golden tilefish kept by party/charter vessels from Maine through Virginia is low for the 1996-2021 period, ranging from 81 fish in 1996 to 8,257 fish in 2015 (Table 12). 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 the late 1990s, averaging 2.8 fish for the 1996-2020 period.

For the 1996-2022 period, the largest number of golden tilefish caught by party/charter vessels were made by New Jersey vessels (60,671; average = 2,247), followed by New York (16,656; average = 617), Virginia (1,562; average = 58), Delaware (1,232; average = 47), Maryland (1,260; average = 47); and Massachusetts (561; average = 21; Table 13).

The number of golden tilefish discarded by recreational anglers is low. On average, approximately 7 fish per year were discarded by party/charter recreational anglers for the 1996-

⁴ Source: <https://www.greateratlantic.fisheries.noaa.gov/public/public/web/NEROINET/aps/permits/data/index.html>.

2022 period (201 discarded fish in total). The quantity of golden tilefish discarded by party/charter recreational anglers ranged from zero in most years to 60 in each 2015 and 2021.

Tilefish Kept estimates from the Large Pelagic Survey are shown in Tables 14 and 15. The Golden Tilefish 2024 Research Track Assessment Working Group is in the process of reviewing available recreational data to determine if it can be used to derive a reliable time series of recreational catches for stock assessment purposes.

Private Recreational Angler Permitting and Reporting

To improve tilefish management and reporting, GARFO implemented mandatory private recreational permitting and reporting for tilefish anglers in August 2020. This action was approved in late 2017, but with delayed implementation. Outreach materials and webinars were provided by GARFO and the Council leading up to the final rule and will continue to be circulated as these regulations become commonplace.

Under this rule, private recreational vessels (including for-hire operators using their vessels for non-charter, recreational trips) are required to obtain a federal vessel permit to target or retain golden or blueline tilefish north of the Virginia/North Carolina border. These vessel operators would also be required to submit VTRs electronically within 24 hours of returning to port for trips where tilefish were targeted or retained. For more information about the proposed requirements, check out the [Recreational Tilefish Permitting and Reporting FAQs](#).

Permitting

Federal private recreational tilefish vessel permits can be obtained through [Fish Online](#). This new permit is required even if a vessel already holds a for-hire tilefish permit. Individuals can contact the GARFO Permit Office at 978-282-8438 for questions about the permitting process.

Reporting

NOAA Fisheries is encouraging anglers not already using another electronic VTR system to utilize NOAA Fish Online, which is available through a mobile app or a web-based portal. Other systems that may be suitable for recreational anglers include SAFIS eTrips/mobile and SAFIS eTrips Online. You can access information about approved applications and other aspects of electronic reporting on the [NOAA Fisheries website](#).

Additionally, a new app was released in 2020, to make the reporting process easy and convenient. Harbor Light Software's *eFin Logbook* has received certification from NOAA Fisheries as an approved application through which anglers can report their trips. Funded by the Council, *eFin Logbook* is a user-friendly application designed specifically for recreational tilefish anglers. The app is available for use on all Apple and Android mobile devices (iPhone, iPad, Android phone, and Android tablet).

At present, *eFin Logbook* can only be used by tilefish recreational anglers to satisfy reporting requirements. Future modifications may expand its capabilities to other reporting and personal fishing log applications. For-hire operators, many of whom have other reporting requirements, are encouraged to choose different software. To learn more about other electronic reporting options and decide which one is right for you, visit the [NOAA Fisheries Greater Atlantic Region Electronic Reporting Web Page](#).

As of October 5, 2022, 790 tilefish permits have been issued for private recreational anglers. This permit allows recreational anglers to land both golden and blueline tilefish. In 2021, 197 fish were reported landed by 15 boats on 23 private recreational trips (with 5 fish discarded). In 2022, 303 fish were reported landed by 23 boats on 32 private recreational trips (with no fish discarded).

Table 11. Recreational golden tilefish data from the NMFS recreational statistics databases, 1982-2022 (calendar year).

Year	Landed no. A and B1				Released no. B2			
	Party/charter		Private/rental		Party/charter		Private/rental	
1982			2,225	(102.0)				
1983-93								
1994	555	(101.6)						
1995								
1996	1,765	(80.5)						
1997-00								
2001	98	(101.4)						
2002			122,443	(85.7)			8,163	(85.7)
2003	967	(75.2)						
2004	55	(102.2)						
2005								
2006	471	(103.7)						
2007	1,837	(71.4)						
2008								
2009	168	(89.8)						
2010	4,754	(81.9)	213,382	(98.4)				
2011-12								
2013	1,145	(0)						
2014-15								
2016			26,691	(70.4)				
2017			59,413	(59.4)				
2018	7,925	(80.3)	893	(102.9)	4	(106.8)		
2019			10,364	(64.2)				
2020	1,933	(60.3)	9,336	(94.7)	41	(100.3)		
2021	270	(102.1)	9,921	(55.6)				
2022	1,306	(39.0)	96,718	(68.2)				

Source: Recreational Fisheries Statistics Queries: <https://www.st.nmfs.noaa.gov/recreational-fisheries/data-and-documentation/queries/index>. PSE (proportional standard error) values in parenthesis expresses the standard error of an estimate as a percentage of the estimate and is a measure of precision. A PSE value greater than 50 indicates a very imprecise estimate. 2022 values are preliminary.

Table 12. Number of golden tilefish kept by recreational anglers and mean effort from Maine through Virginia, 1996-2022 (calendar year).

Year	Party/Charter		Private	
	Number of golden tilefish kept	Mean effort	Number of golden tilefish kept	Mean effort
1996	81	1.4		
1997	400	7.5		
1998	141	4.7		
1999	91	0.4		
2000	147	0.5		
2001	222	0.6		
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	6,958	3.1		
2015	8,297	4.2		
2016	5,919	4.1		
2017	7,014	4.7		
2018	7,110	3.9		
2019	5,424	3.1		
2020 ^a	3,466	3.2	61	4.4
2021	6,833	^b	197	^b
2022	5,689	^b	303	^b
All	82,685	--	561	--

^a 2020 private recreational landings reported from August 1 to December 31, 2020. ^b Values for number of anglers were not available at the time this table was produced. Source: 1996-2020 NMFS unpublished VTR data. 2021-2022 NMFS unpublished CAMS data.

Table 13. Number of golden tilefish caught by party/charter vessels by state, 1996-2022 (calendar year).

Year	NH	MA	RI	CT	NY	NJ	DE	MD	VA	Unknown	All
1996					81						81
1997					400						400
1998					141						141
1999			1		88			2			91
2000					108	39					147
2001					122	101					223
2002					401	373					774
2003			3		86	902					991
2004					12	628			104		744
2005			72		82	318	14		16		502
2006					265	65	2	133	12		477
2007					447	459	88	5	80		1,079
2008			3		488	545	22	32	10		1,100
2009					720	675	18	7	31		1,451
2010					595	1,194	19	23	48		1,879
2011		496			720	1,654	60	5	14		2,949
2012			1		1,116	5,146	42	23	98		6,426
2013					1,900	4,568	39	12	41		6,560
2014				3	957	5,716	180	40	73		6,969
2015	14				637	7,376	100	56	174		8,357
2016					676	5,073	69	43	67		5,928
2017					424	6,373	118	76	38		7,029
2018					1,202	5,573	46	87	195	7	7,110
2019			5		995	3,956	146	56	267		5,425
2020		32			447	2,536	233	33	185		3,466
2021		33		4	2,340	3,871		252	82	311	6,893
2022					1,206	3,530	36	375	32	515	5,694
All	14	561	85	7	16,656	60,671	1,232	1,260	1,567	7	82,886
Avg. 96-22	0.5	21	3	0.3	617	2,247	47	47	58	0.3	3,070

Source: 1996-2020 NMFS unpublished VTR data. 2021-2022 NMFS unpublished CAMS data.

Table 14. Tilefish kept estimates (number of fish) for charter mode, LPS data, 2005-2022.

Year	Golden Tilefish		Blueline Tilefish		Sand Tilefish		Unclassified		Total	
	Sum Kept	PSE	Sum Kept	PSE	Sum Kept	PSE	Sum Kept	PSE	Sum Kept	PSE
2005	0	.	0	.	0	.	0	.	0	.
2006	0	.	0	.	0	.	27	76.44	27	76.44
2007	298	67.63	0	.	0	.	211	54.12	509	45.50
2008	7	99.48	0	.	0	.	449	85.08	455	83.81
2009	504	51.66	0	.	0	.	241	86.67	745	44.81
2010	4	100.00	0	.	0	.	398	82.81	402	81.94
2011	1,743	42.97	77	87.56	0	.	983	64.09	2,803	35.00
2012	168	48.28	156	68.34	21	98.16	179	74.66	523	36.34
2013	32	58.93	543	60.47	0	.	20	73.47	595	55.33
2014	1,554	49.94	785	34.43	0	.	135	71.21	2,474	33.44
2015	417	67.95	2,045	31.55	65	87.98	107	57.22	2,635	26.93
2016	722	58.03	3,108	29.07	0	.	641	66.02	4,471	24.20
2017	557	33.23	1,540	39.09	0	.	1,640	43.09	3,737	25.33
2018	372	51.09	1,856	30.07	0	.	782	48.13	3,010	23.24
2019	800	35.86	2,839	26.35	0	.	2,207	31.98	5,845	18.26
2020	1,656	36.83	4,431	19.51	0	.	2,639	47.83	8,726	18.87
2021	4,351	31.00	10,147	16.29	0	.	148	68.75	14,646	14.59
2022	2,097	30.77	8,352	18.81	0	.	518	40.86	10,968	15.60
Total	15,282	13.56	35,879	8.18	86	70.95	11,325	17.00	62,573	6.51

Source: Anthony Kaufman (NOAA Data Analyst and Programmer).

Table 15. Tilefish kept estimates (number of fish) for private mode, LPS data, 2005-2022.

Year	Golden Tilefish		Blueline Tilefish		Sand Tilefish		Unclassified		Total	
	Sum Kept	PSE	Sum Kept	PSE	Sum Kept	PSE	Sum Kept	PSE	Sum Kept	PSE
2005	0	.	0	.	0	.	209	71.23	209	71.23
2006	0	.	0	.	0	.	47	94.06	47	94.06
2007	288	70.19	0	.	0	.	552	52.21	840	41.90
2008	0	.	0	.	0	.	568	54.84	568	54.84
2009	0	.	0	.	0	.	971	51.52	971	51.52
2010	70	59.43	0	.	0	.	650	51.14	721	46.51
2011	1,346	42.77	78	79.50	0	.	697	37.72	2,121	29.98
2012	1,821	54.77	122	93.26	0	.	111	102.88	2,054	49.19
2013	315	47.19	349	52.29	0	.	390	47.30	1,054	28.37
2014	571	46.98	283	58.37	0	.	320	80.58	1,174	34.68
2015	294	51.22	1,312	36.70	0	.	1,622	50.84	3,228	29.95
2016	242	71.23	435	61.87	0	.	827	69.79	1,505	43.86
2017	2,121	42.22	2,322	38.67	0	.	893	40.45	5,336	24.71
2018	1,440	29.68	2,580	60.06	0	.	1,079	41.69	5,099	32.73
2019	2,357	32.46	2,335	27.59	0	.	247	52.00	4,939	20.42
2020	2,808	28.82	3,342	28.08	0	.	1,108	61.88	7,258	19.51
2021	3,095	34.86	3,568	27.04	0	.	0	.	6,663	21.72
2022	3,409	29.99	2,309	25.26	0	.	552	83.18	6,270	20.15
Total	20,177	12.09	19,036	13.03	0	.	10,842	15.41	50,055	7.71

Source: Anthony Kaufman (NOAA Data Analyst and Programmer).

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