Summer Flounder Fishery Information Document

June 2023

This document provides a brief overview of the biology, stock condition, management system, and fishery performance for summer flounder (*Paralichthys dentatus*), with an emphasis on 2022. Data sources include unpublished National Marine Fisheries Service (NMFS) survey, dealer, vessel trip report (VTR), and permit data, as well as Marine Recreational Information Program (MRIP) data[1] and stock assessment information. All 2022 data should be considered preliminary. For more resources on summer flounder management, including previous Fishery Information Documents, please visit http://www.mafmc.org/sf-s-bsb.

Key Facts:

- Current stock status is based on a 2021 management track stock assessment, which found that in 2019, summer flounder was not overfished and overfishing was not occurring. A new management track assessment will be peer reviewed in late June 2023.
- Recruitment for summer flounder was generally below-average from 2011-2017. Recruitment in 2018 was above average and the largest year class estimated since 2009; however, 2019 recruitment was estimated to be below average. Updated recruitment estimates for 2020-2022 will be provided in the 2023 management track assessment.
- 2022 recreational summer flounder harvest was estimated at 8.83 million pounds, about 85% of the harvest limit of 10.36 million pounds. This is a 29% increase from the 2021 recreational harvest estimate of 6.82 million pounds, which was the lowest estimate since 1989.
- Commercial landings in 2022 (12.47 million pounds; 80% of commercial quota) increased by about 18% from 2021 landings (10.56 million pounds; 85% of commercial quota).
- Average commercial ex-vessel price decreased from $3.10 in 2021 to $2.44 in 2022. Average price per pound has decreased in recent years from its peak in 2017 ($4.98 per pound in 2022 dollars).

[1] In July 2018, MRIP released revisions to their time series of recreational catch and landings estimates based on adjustments for a revised angler intercept methodology and a new effort estimation methodology (i.e., a transition from a telephone-based effort survey to a mail-based effort survey). The revised estimates of catch and landings are higher than the previous estimates for shore and private boat modes. Most recreational estimates in this document reflect revised MRIP estimates except where otherwise noted.

Basic Biology

Summer flounder spawn during the fall and winter over the open ocean areas of the continental shelf. From October to May, larvae and postlarvae migrate inshore, entering coastal and estuarine nursery areas. Juveniles are distributed inshore and in many estuaries throughout the range of the species during spring, summer, and fall. Adult summer flounder exhibit strong seasonal inshore-offshore movements, normally inhabiting shallow coastal and estuarine waters during the warmer months of the year and remaining offshore during the colder months.

Summer flounder habitat includes pelagic waters, demersal waters, saltmarsh creeks, seagrass beds, mudflats, and open bay areas from the Gulf of Maine through North Carolina. Summer flounder are opportunistic feeders; their prey includes a variety of fish and crustaceans. While the natural predators of adult summer flounder are not fully documented, larger predators (e.g., large sharks, rays, and monkfish) probably include summer flounder in their diets.

Spawning occurs during autumn and early winter, and the larvae are transported toward coastal areas by prevailing water currents. Development of post larvae and juveniles occurs primarily within bays and estuarine areas (Packer et al. 1999). Most fish are sexually mature by age 2. The largest fish are females, which can attain lengths over 90 cm (36 in) and weights up to 11.8 kg (26 lb). The Northeast Fisheries Science Center (NEFSC) commercial fishery sampling in 2018 observed the oldest summer flounder collected to date, a 57 cm (22.4 in) fish (likely a male) estimated to be age 20. Also sampled were two age 17 fish, at 52 cm (20.5 in; likely a male) and at 72 cm (28.3 in; likely a female). Two large (likely female) fish at 80 and 82 cm (31.5 and 32.3 in) were both estimated to be age 9, from the 2009 year class (the 6th largest of the 36 year modeled time series). These samples indicate that increased survival of summer flounder over the last two decades has allowed fish of both sexes to grow to the oldest ages estimated to date (NEFSC 2019).

Status of the Stock

The information below is based on the most recent stock assessment information available as of the completion of this document. An updated management track stock assessment will be available in late June/July 2023.

In June 2021, the NEFSC provided a management track assessment (NEFSC 2021) for summer flounder with data through 2019, providing estimates of spawning stock biomass (SSB) and fishing mortality (F). Given data gaps for 2020 related to COVID-19 and the time required to address those gaps, 2020 data could not be incorporated into the 2021 management track assessment. Assessment results indicate that the summer flounder stock was not overfished and overfishing was not occurring in 2019. SSB has generally decreased since 2003, and in 2019 was estimated to be about 86% of the biomass target reference point and about 72% above the overfished threshold which is equivalent to ½ of the biomass target (Table 1; Figure 1). Fishing mortality in 2019 was estimated to be 19% below the fishing mortality threshold reference point (Table 1; Figure 2).

Average recruitment from 1982 to 2019 was estimated at 53 million fish at age 0. Recruitment of juvenile summer flounder was below-average from 2011-2017, ranging from 31 to 45 million fish and averaging 36 million fish. The driving factors behind this period of below average recruitment have not been identified. The 2018 year class is above average at an estimated 61 million fish, which is largest recruitment estimate since 2009, while the 2019 year class is below average at 49 million fish.

In 2022, the NEFSC provided a data update which included 2020 and 2021 landings information as well as NEFSC trawl survey data from 2021 through spring 2022 (2020-2021 dead discard estimates were not available at the time and no NEFSC trawl surveys were conducted in 2020 due to COVID). The NEFSC spring survey index of summer flounder stock biomass decreased by 41% from 2019 to 2022; the fall index increased by 6% from 2019 to 2021 (NEFSC 2022).

Table 1: Biomass and fishing mortality rate reference points and terminal year estimates for summer flounder from the 2021 management track assessment (NEFSC 2021).

	Spawning stock biomass	**Fishing mortality rate (F)**
Terminal year estimate (2019)	104.49 million lb (47,397 mt)	0.340
Target	121.73 mil lb (55,217 mt)	N/A
Threshold	60.87 million lb (27,609 mt)	0.422
Status	**Not overfished**	**Not overfishing**

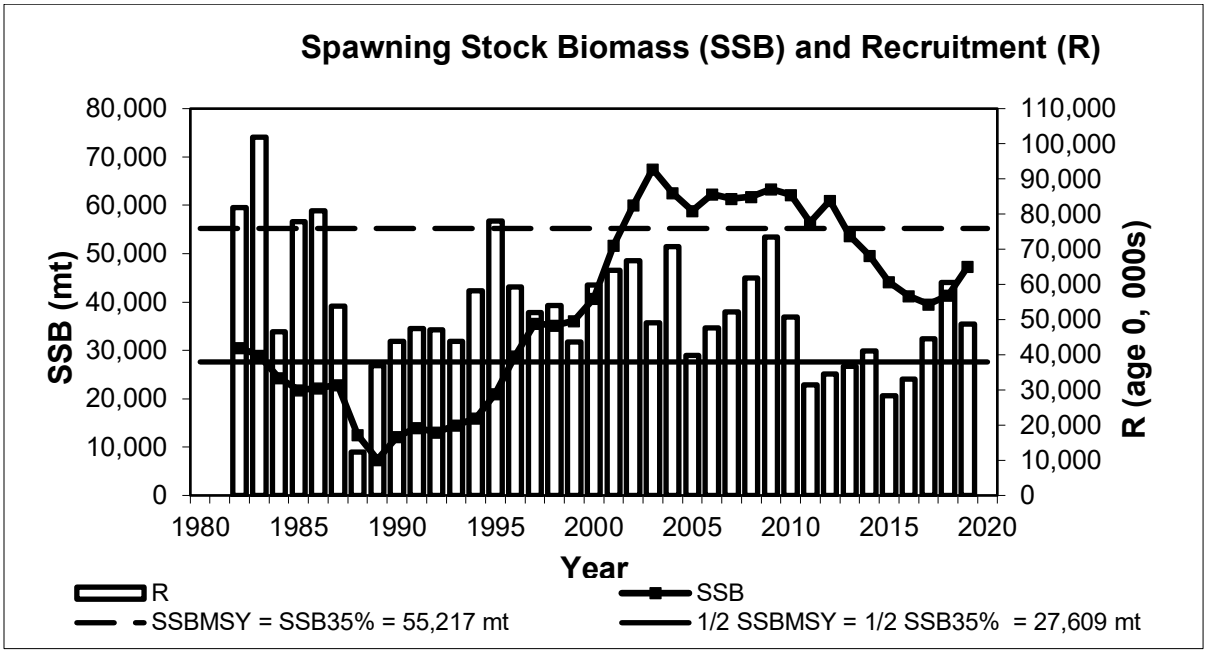

Figure 1: Summer flounder spawning stock biomass (SSB; solid line with square markers) and recruitment at age 0 (R; vertical bars),1982-2019. The horizontal dashed line is the target biomass level. The horizontal solid line is the threshold biomass level defining an overfished condition. Source: NEFSC 2021.

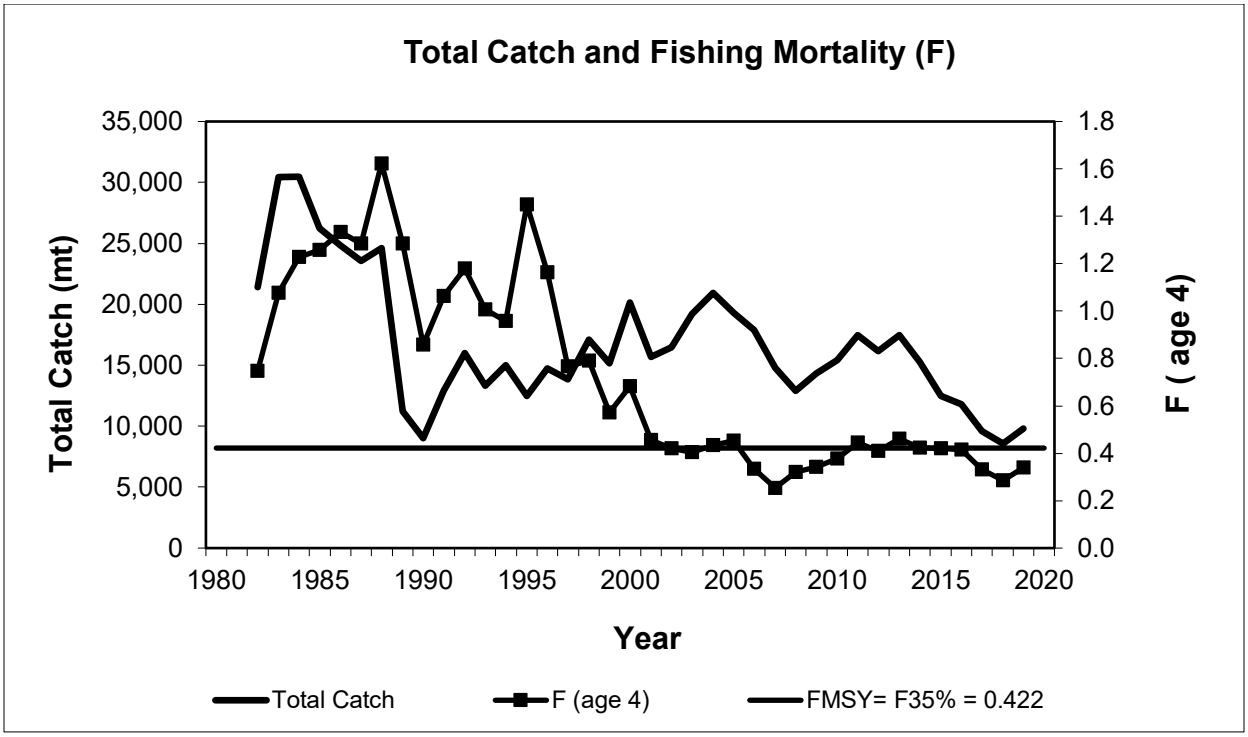

Figure 2: Total fishery catch (metric tons; mt; solid line) and fully-recruited fishing mortality (F, peak at age 4; squares) of summer flounder, 1982-2019. The horizontal solid line is the fishing mortality reference point. When F exceeds this threshold, overfishing is occurring. Source: NEFSC 2021.

Management System and Fishery Performance

Management

The Mid-Atlantic Fishery Management Council (Council) and the Atlantic States Marine Fisheries Commission (Commission) work cooperatively to develop fishery regulations for summer flounder off the east coast of the United States. The Council and Commission work in conjunction with NMFS, which serves as the federal implementation and enforcement entity. This cooperative management endeavor was developed because a significant portion of the catch is taken from both state (0-3 miles offshore) and federal waters (3-200 miles offshore, also known as the Exclusive Economic Zone, or EEZ).

The joint Fishery Management Plan (FMP) for summer flounder became effective in 1988 and established the management unit for summer flounder as U.S. waters from the southern border of North Carolina northward to the U.S.-Canadian border. The FMP also established measures to ensure effective management of summer flounder fisheries, which currently include catch and landings limits, commercial quotas, recreational harvest limits (RHLs), minimum size limits, gear regulations, permit requirements, and other provisions as prescribed by the FMP. The Summer Flounder FMP, including subsequent Amendments and Frameworks, are available on the Council website at: http://www.mafmc.org/fisheries/fmp/sf-s-bsb.

There are large commercial and recreational fisheries for summer flounder. These fisheries are managed primarily using output controls (catch and landings limits). The Council's Scientific and Statistical Committee (SSC) recommends annual Acceptable Biological Catch (ABC) levels for summer flounder. The ABC is divided into commercial and recreational Annual Catch Limits (ACLs), which include both allowable landings and expected dead discards. Through 2022, 60% of the total allowable landings (calculated by subtracting total expected dead discards from the ABC) were allocated to the commercial fishery as a commercial quota and 40% was allocated to the recreational fishery as an RHL. Starting with 2023, the ABC is now allocated 55% to the commercial fishery as a commercial ACL and 45% to the recreational fishery as a recreational ACL.[2]

Fishery Catch Summary

Table 2 shows summer flounder total catch and catch limits from 2014 through 2023, as well as the overfishing limit (OFL) from which the ABC is derived. The ABC is set less than or equal to the OFL to account for scientific uncertainty. The OFL for summer flounder has not been exceeded in the last ten years (based on total dead catch estimates that use the prior time series of MRIP through 2018, and corresponding OFLs based on assessments that did not account for the revised MRIP data). The summer flounder ABC has not been exceeded since 2017 (Table 2).

Table 2: Total summer flounder dead catch (i.e., commercial and recreational landings and dead discards) compared to the OFL and ABC. All values are in millions of pounds. Total dead catch calculations use "old" MRIP data through 2018, and "new" MRIP data for 2019-2022.

Year	Total dead catch[a]	OFL	OFL overage/underage	ABC	ABC overage/underage
2014	22.27	26.76	-17%	21.94	+2%
2015	18.22	27.06	-33%	22.57	-19%
2016	17.16	18.06	-5%	16.26	+6%
2017	12.00	16.76	-28%	11.30	+6%
2018	12.65	18.69	-32%	13.23	-4%
2019	21.63	30.00	-28%	25.03	-14%
2020	24.27	30.94	-22%	25.03	-3%
2021	21.50	31.67	-32%	27.11	-21%
2022	25.55	36.28	-30%	33.12	-23%
2023	--	34.98	--	33.12	--

[a] See Table 3 and Table 10 for the commercial and recreational data contributing to the total catch estimates.

[2] For more information on these allocation revisions, see the fact sheet at: https://www.mafmc.org/s/SFSBSB-Allocation-FAQs.pdf.

Figure 3 shows commercial and recreational landings and dead discards from 1993 through 2022. Total (commercial and recreational combined) summer flounder catch during this time period peaked in 2004, generally declining to a low in 2018, with a slight increase since then.

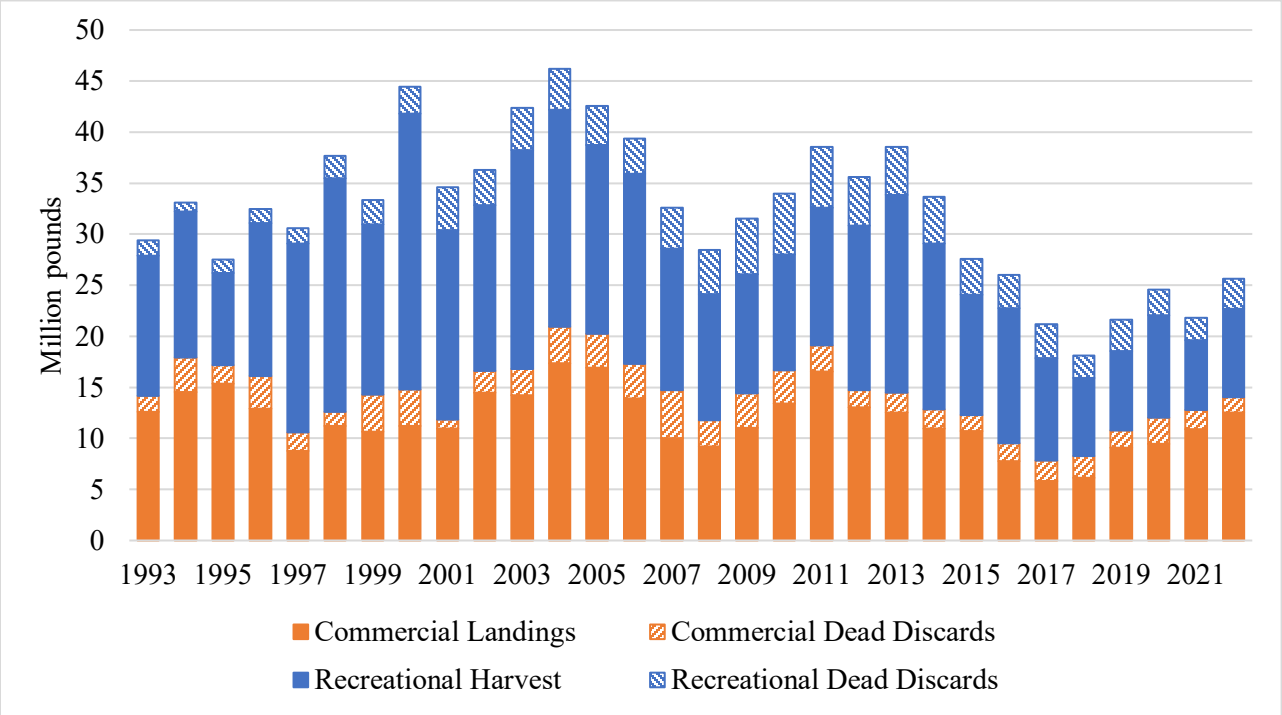

Figure 3: Commercial and recreational summer flounder landings and dead discards in millions of pounds, Maine-North Carolina, 1993-2022, based on federal dealer data, MRIP data, and NEFSC provided discard data.

Commercial Fishery

Commercial landings of summer flounder peaked in 1984 at 37.77 million pounds and reached a low of 5.87 million pounds in 2017 (Figure 3). In 2022, dealer data indicate that commercial fishermen from Maine through North Carolina landed 12.47 million pounds of summer flounder, about 82% of the commercial quota (15.53 million pounds). Commercial dead catch has not exceeded the commercial ACL since 2018. Where commercial ACL overages have occurred, they are generally caused by higher-than-expected dead discards, as commercial fishery landings for summer flounder are typically well controlled to the commercial quota (Table 3).

Table 3: Summer flounder commercial landings, dead discards, and dead catch compared to the commercial quota and commercial ACL, 2014-2023. All values are in millions of pounds.

Year	Com. landings[a]	Com. quota	Quota overage/ underage	Com. dead discards[a]	Com. dead catch[a]	ACL	ACL overage/ underage
2014	11.00	10.51[b]	5%	1.83	12.83	12.87	0%
2015	10.71	11.07	-3%	1.55	12.26	13.34	-8%
2016	7.80	8.12	-4%	1.7	9.5	9.43	1%
2017	5.87	5.66	4%	2.0	7.87	6.57	20%
2018	6.17	6.63	-7%	2.16	8.33	7.70	8%
2019	9.06	10.98	-17%	1.73	10.79	13.53	-20%
2020	9.11	11.53	-21%	2.56	11.67	13.53	-14%
2021	10.56	12.49	-15%	1.92	12.48	14.63	-15%
2022	12.47	15.53	-20%	1.5	13.97	18.48	-24%
2023	--	15.27	--	--	--	18.21	--

[a] Commercial landings based on NMFS dealer data; commercial dead discards from NEFSC 2021 and M. Terceiro, personal communication, June 2023.

[b] The 2014 commercial quota was adjusted for Research Set Aside (RSA). Quotas for 2015-2023 do not reflect an adjustment for RSA due to the suspension of the program in 2014. Commercial quotas also reflect deductions from prior year landings overages and discard-based Accountability Measures.

The commercial quota is divided among the states based on the allocation percentages specified in the FMP. Each state sets measures to achieve their state-specific commercial quotas. Two or more states may transfer or combine their summer flounder commercial quota under mutual agreement and with the approval of the NMFS Regional Administrator. The commercial allocations to the states were modified via Amendment 21, which became effective on January 1, 2021. This allocation system specifies that coastwide commercial quota up to 9.55 million pounds will be distributed according to the baseline allocations specified in Table 4 below (based on the pre-2021 state allocation percentages). When the coastwide quota exceeds 9.55 million pounds, the first 9.55 million pounds will be allocated according to the baseline percentages, but the *additional* quota amount beyond this trigger will be distributed by equal shares to all states except Maine, Delaware, and New Hampshire, which would split 1% of the additional quota (Table 4). The total percentage allocated annually to each state is dependent on how much additional quota beyond 9.55 million pounds, if any, is available in any given year. This allocation system is designed to provide for more equitable distribution of quota when stock biomass is higher, while also considering the historic importance of the fishery to each state.

Table 4: Allocation of summer flounder commercial quota to the states.

State	Total state commercial quota allocation = baseline quota allocation + additional quota allocation	
	Allocation of baseline quota ≤9.55 mil lb	Allocation of additional quota beyond 9.55 mil lb
ME	0.04756%	0.333%
NH	0.00046%	0.333%
MA	6.82046%	12.375%
RI	15.68298%	12.375%
CT	2.25708%	12.375%
NY	7.64699%	12.375%
NJ	16.72499%	12.375%
DE	0.01779%	0.333%
MD	2.03910%	12.375%
VA	21.31676%	12.375%
NC	27.44584%	12.375%
Total	100%	100%

For 1994 through 2022, NMFS dealer data indicate that summer flounder total ex-vessel revenue from Maine to North Carolina ranged from a low of $24.84 million in 1996 to a high of $40.90 million in 2005 (values adjusted to 2022 dollars to account for inflation). The mean price per pound ranged from a low of $2.11 in 2002 to a high of $4.98 in 2017 (both values in 2022 dollars). In 2022, 12.46 million pounds of summer flounder were landed generating $30.45 million in total ex-vessel revenue (an average of $2.44 per pound; Figure 4).

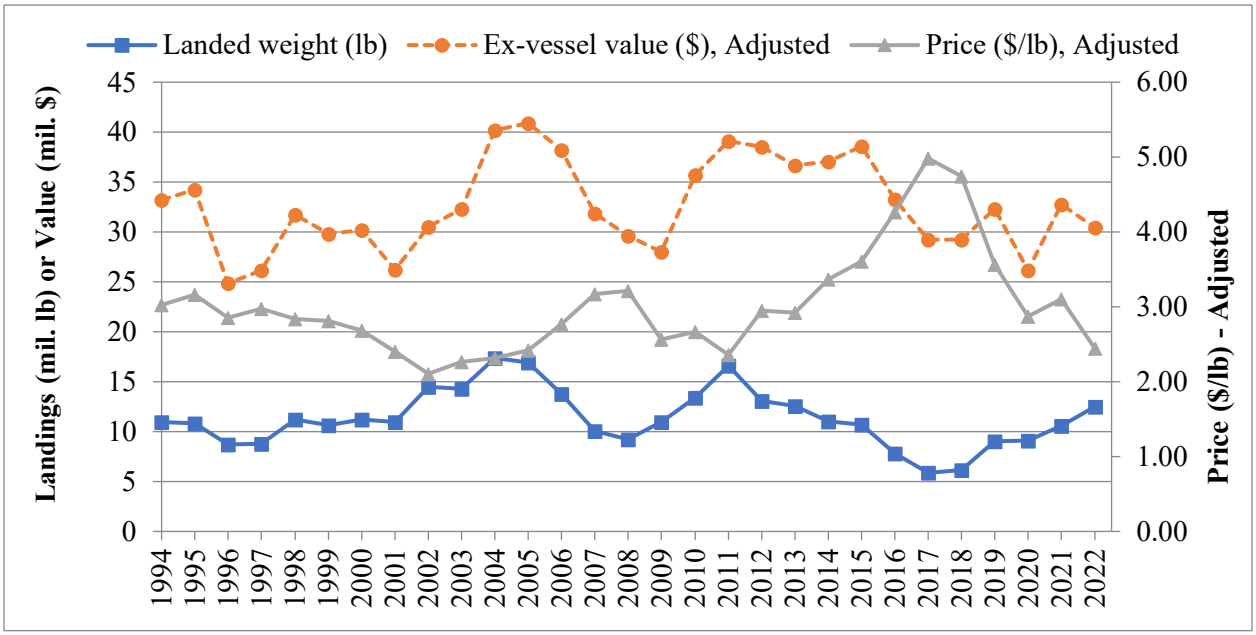

Figure 4: Landings, ex-vessel value, and price per pound for summer flounder, Maine through North Carolina, 1994-2022. Ex-vessel value and price are adjusted to real 2022 dollars using the Gross Domestic Product Price Deflator (GDPDEF).

VTR data indicate that 99% of summer flounder landings in 2021 were taken by bottom otter trawls. Current regulations require a 14-inch total length minimum fish size in the commercial fishery. Trawl nets are required to have 5.5-inch diamond or 6-inch square minimum mesh in the entire net for vessels possessing more than the threshold amount of summer flounder (i.e., 200 lb from November 1-April 30 and 100 lb from May 1-October 31).

According to federal VTR data, statistical areas 537 and 616 were responsible for the highest percentage of commercial summer flounder catch in 2022 (29% and 22% respectively; Table 5; Figure 5). Statistical areas 613 and 539 had the highest number of trips that caught summer flounder (1,653 and 1,626 trips, respectively; Table 5).

Over 167 federally permitted dealers from Maine through North Carolina bought summer flounder in 2022. More dealers from New York bought summer flounder than any other state (Table 6). All dealers combined bought approximately $30.45 million worth of summer flounder in 2022.

Since 1993, a moratorium permit has been required to fish commercially for summer flounder in federal waters. In 2022, 718 vessels held such permits.

Federal dealer data indicate that at least 100,000 pounds of summer flounder were landed by commercial fishermen in 20 ports in 8 states in 2022. These ports accounted for 93% of all 2022 commercial summer flounder landings. Point Judith, RI and Pt. Pleasant, NJ were the leading ports in 2022 in pounds of summer flounder landed, while Point Judith, RI was the leading port in number of vessels landing summer flounder (Table 7). Detailed community profiles developed by the Northeast Fisheries Science Center's Social Science Branch can be found at www.mafmc.org/communities/.

Table 5: Statistical areas that accounted for at least 5% of the total summer flounder catch in 2022, with associated number of trips, from federal VTR data. Federal VTR data do not capture landings by vessels only permitted to fish in state waters.

Statistical Area	Percent of 2022 Commercial Summer Flounder Catch	Number of Trips
537	29%	1,461
616	22%	508
613	14%	1,653
612	7%	758
539	6%	1,626
615	5%	393
622	5%	134

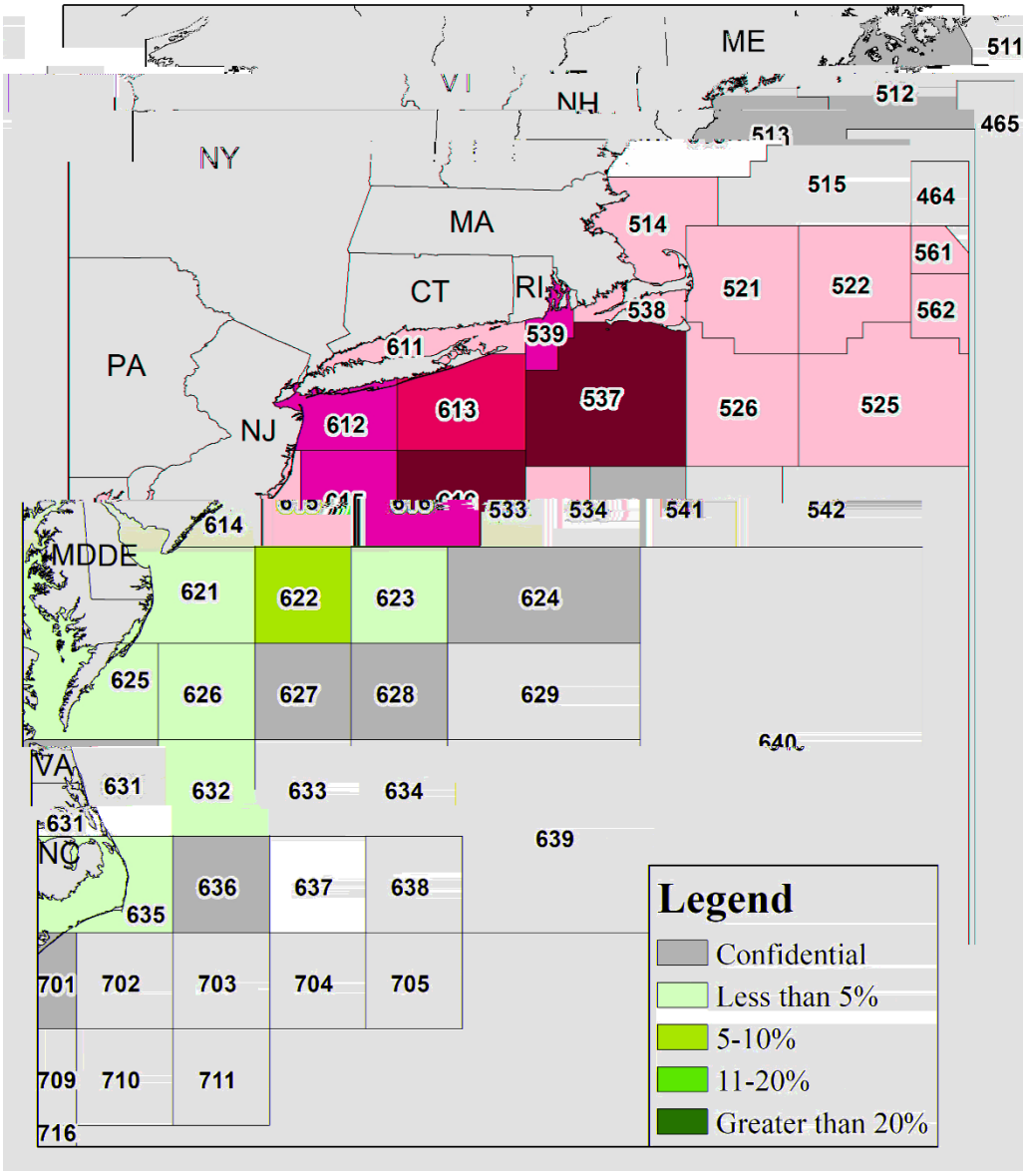

Figure 5: Proportion of commercial summer flounder catch (all vessel reported landings and discards) by NMFS statistical area in 2022 based on federal VTR data. Statistical areas marked "confidential" are associated with fewer than three vessels and/or dealers. The amount of catch not reported on federal VTRs (e.g., catch from vessels permitted to fish only in state waters) is unknown.

Table 6: Number of dealers per state which reported purchases of summer flounder in 2022. C = Confidential.

State	NH	MA	RI	CT	NY	NJ	DE	MD	VA	NC
# of Dealers	0	30	24	14	46	26	C	3	11	13

Table 7: Ports reporting at least 100,000 pounds of commercial summer flounder landings in 2022, based on federal dealer data.

Port	Commercial summer flounder landings (lb)	% of total	Number of vessels
POINT JUDITH, RI	1,921,868	15	107
PT. PLEASANT, NJ	1,475,985	12	39
BEAUFORT, NC	1,285,732	10	28
NEWPORT NEWS, VA	1,133,724	9	32
HAMPTON, VA	854,395	7	34
MONTAUK, NY	600,918	5	52
CAPE MAY, NJ	553,444	4	34
ENGELHARD, NC	535,408	4	6
NEW BEDFORD, MA	529,055	4	54
STONINGTON, CT	446,181	4	17
HAMPTON BAYS, NY	388,412	3	25
OCEAN CITY, MD	336,852	3	15
EAST HAVEN, CT	300,663	2	7
SHINNECOCK, NY	222,777	2	13
BELFORD, NJ	218,201	2	13
WANCHESE, NC	206,655	2	5
ORIENTAL, NC	202,688	2	4
CHINCOTEAGUE, VA	141,968	1	8
BARNEGAT LIGHT, NJ	127,249	1	13
WOODS HOLE, MA	102,589	1	8

The top non-target species in the commercial summer flounder fishery were identified based on raw data from Northeast Fisheries Observer Program (NEFOP) observed trips from 2017-2022 where summer flounder made up at least 75% of the landings by weight. Using this definition of a directed trip, the most common non-target species in the summer flounder fishery include little skate, Northern sea robin, and winter skate (Table 8).

Table 8. Percent of non-target species caught in observed trawls where summer flounder made up at least 75% of the observed landings, 2017-2022. Only those non-target species comprising at least 2% of the aggregate non-target catch are listed.

Species	**% of total catch on summer flounder observed directed trips, 2017-2022[a]**
SKATE, LITTLE	19.5%
SEA ROBIN, NORTHERN	6.4%
SKATE, WINTER (BIG)	6.3%
SKATE, CLEARNOSE	4.6%
DOGFISH, SPINY	4.5%
MONKFISH (GOOSEFISH)	2.7%
SCUP	2.6%
SKATE, BARNDOOR	2.5%
DOGFISH, SMOOTH	2.3%
SKATE, NK	2.1%

[a] Percentages shown are aggregate totals over 2017-2022 and do not reflect the percentages of non-target species caught on individual trips. This analysis describes only observed trips and has not been expanded to the fishery as a whole.

Recreational Fishery

There is a significant recreational fishery for summer flounder, primarily in state waters when the fish migrate inshore during the warm summer months. The Council and Commission determine annually whether to manage the recreational fishery under coastwide measures or conservation equivalency. Under conservation equivalency, state- or region- specific measures are developed through the Commission's management process and submitted to NMFS. The combined state or regional measures must achieve the same level of harvest as a set of coastwide measures developed to adhere to the overall RHL. If NMFS considers the combination of the state- or region- specific measures to be "equivalent" to the coastwide measures, they may then waive regulations in federal waters. Anglers fishing in federal waters are then subject to the measures of the state in which they land summer flounder.

The recreational fishery has been managed using federal conservation equivalency each year since 2001. Since 2014, a regional approach has been used, under which the states within each region must have identical size limits, possession limits, and season length. Table 9 shows the 2023 and regional conservation equivalency measures, which remained unchanged from 2022.

Table 9: Summer flounder recreational fishing measures 2022-2023, by state, under regional conservation equivalency. Conservation equivalency regions (highlighted in alternating colors) include: 1) Massachusetts, 2) Rhode Island, 3) Connecticut and New York, 4) New Jersey, 5) Delaware, Maryland, The Potomac River Fisheries Commission, and Virginia, and 6) North Carolina.

State	Minimum Size (inches)	Possession Limit	Open Season
Massachusetts	16.5	5 fish	May 21-September 19
Rhode Island (Private, For-Hire, and all other shore-based fishing sites)	18	4 fish	May 3-December 31
RI 7 designated shore sites	18	2 fish[a]	
	17	2 fish[a]	
Connecticut	18.5	4 fish	May 1-October 9
CT Shore Program (45 designed shore sites)	17		
New York	18.5		
New Jersey	17-17.99 slot limit	2 fish	May 2-September 27
	18	1 fish	
NJ Shore program site (ISBSP)	16	2 fish	
New Jersey/Delaware Bay COLREGS	17	3 fish	
Delaware	16	4 fish	January 1-December 31
Maryland			
PRFC			
Virginia			
North Carolina	15	1 fish	September 1-September 30[b]

[a] Rhode Island's shore program includes a combined possession limit of 6 fish, no more than 2 fish at 17-inch minimum size limit.

[b] North Carolina has restricted their recreational season in recent years for all flounders in North Carolina (southern, gulf, and summer flounder) due to the need to end overfishing on southern flounder. North Carolina manages all flounder in the recreational fishery under the same regulations.

MRIP estimates indicate that recreational summer flounder harvest peaked in 1983, with 25.78 million fish landed, totaling 36.74 million pounds. Recreational harvest in numbers of fish reached a low in 2021 with 2.32 million fish landed (6.82 million pounds), while recreational harvest in pounds was lowest in 1989 at 5.66 million pounds (3.10 million fish). Recreational catch (harvest plus live and dead discards) peaked in 2010 with 58.89 million fish caught, and was lowest in 1989 with 5.06 million fish caught (Figure 6).

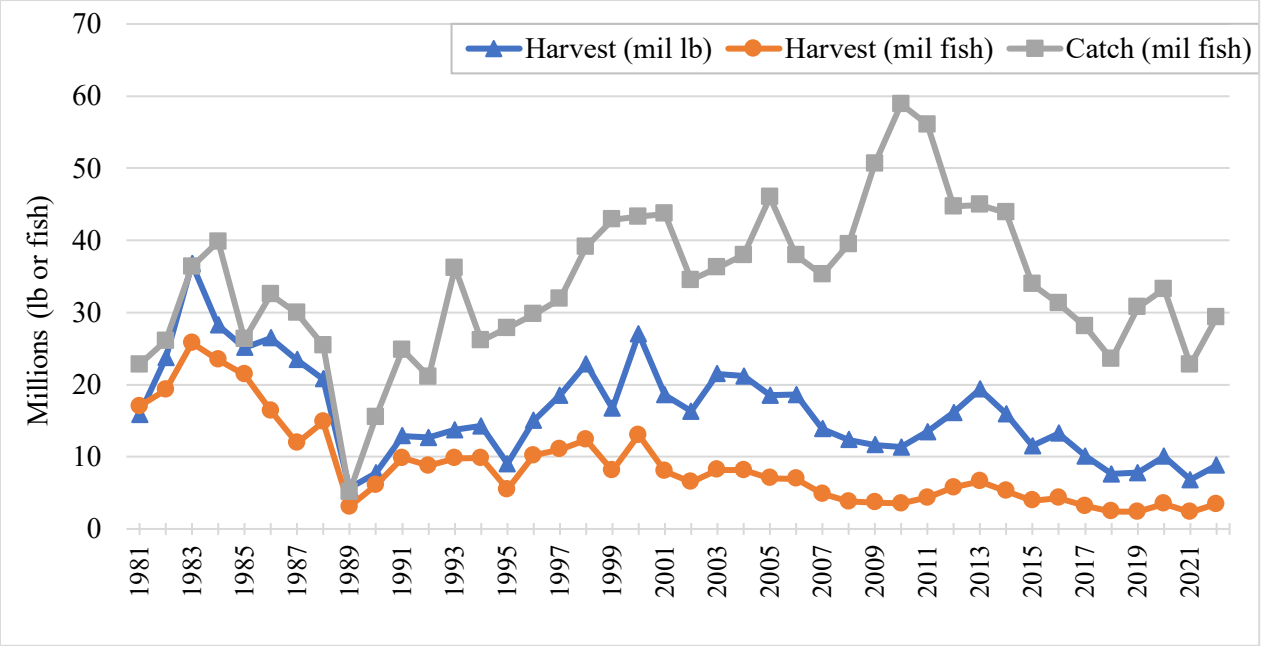

Figure 6: MRIP estimates of recreational summer flounder harvest in numbers of fish and pounds and catch in numbers of fish, ME - NC, 1981-2022. All values are in new MRIP currency.

Table 10: Summer flounder recreational landings, dead discards, and dead catch compared to the RHL, projected recreational dead discards, and recreational ACL, 2014-2023. Information is provided in the "old" MRIP units for 2014-2018, and in the "new" MRIP units for 2019-2022. For summer flounder, ACLs and RHLs did not account for the revised MRIP data until 2019. Therefore, overage/underage evaluations must be based in the old MRIP units through 2018 and the new MRIP units starting in 2019. All values are in millions of pounds.

Year	Version of MRIP data used	Rec. harvest[a]	RHL	RHL over/ under	Rec. dead disc.[a]	Rec. dead catch	ACL	ACL over/ under
2014	Old MRIP (pre-revision)	*7.39*	7.01[b]	*5%*	*2.05*	9.44	9.07	*4%*
2015		*4.72*	7.38	*-36%*	*1.24*	5.96	9.44	*-37%*
2016		*6.18*	5.42	*14%*	*1.48*	7.66	6.84	*12%*
2017		*3.19*	3.77	*-15%*	*0.94*	4.13	4.72	*-13%*
2018		*3.35*	4.42	*-24%*	*0.97*	4.32	5.53	*-22%*
2019	New MRIP (post-revision)	7.80	7.69	1%	3.04	10.84	11.51	-6%
2020[c]		10.07	7.69	31%	2.52	12.60	11.51	9%
2021		6.82	8.32	-18%	2.20	9.02	12.48	-28%
2022		8.83	10.36	-17%	2.95	11.58	14.64	-21%
2023		--	10.62	--	--	--	14.9	--

[a] Recreational harvest data from MRIP; recreational dead discards from NEFSC 2021 and M. Terceiro, personal communication, June 2023.

[b] For 2014, the RHL was adjusted for Research Set Aside (RSA). RHLs for 2015-2023 do not reflect an adjustment for RSA due to the suspension of the program in 2014.

[c] Recreational harvest estimates for 2020 were impacted by temporary suspension of shoreside intercept surveys due to COVID-19. NMFS used imputation methods to fill gaps in 2020 catch data with data collected in 2018 and 2019. For summer flounder, the 2020 harvest estimate relied on approximately 19% imputed data. For more information on imputation methods see: https://www.mafmc.org/s/1-2020-Marine-Recreational-Catch-Estimates-QA-52121.pdf.]

For-hire vessels carrying passengers in federal waters must obtain a federal party/charter permit. In 2022, 961 vessels held summer flounder federal party/charter permits. Many of these vessels also hold recreational permits for scup and black sea bass.

On average, an estimated 77% of the recreational landings (in numbers of fish) occurred in state waters over the past ten years (Table 11). Most summer flounder are typically landed in New York and New Jersey (Table 12).

About 81% of recreational summer flounder harvest from 2020-2022 was from anglers who fished on private or rental boats. About 4% was from party or charter boats, and about 15% was from anglers fishing from shore (Table 13).

The top non-target species in the recreational fishery were identified by a species guild approach that identifies species with the strongest associations on recreational trips from 2017-2021 (2021 MRIP data used here were preliminary and excluded wave 6). Sea robins, black sea bass, scup, smooth dogfish, and bluefish were highly correlated with summer flounder in the recreational fishery (J. Brust, personal communication March 2022).

Table 11: Estimated percentage of summer flounder recreational landings (in numbers of fish) from state vs. federal waters, Maine through North Carolina, 2013-2022.

Year	State ≤ 3 mi	EEZ > 3 mi
2013	77%	23%
2014	78%	22%
2015	82%	18%
2016	79%	21%
2017	80%	20%
2018	83%	17%
2019	79%	21%
2020	61%	39%
2021	66%	34%
2022	80%	20%
Avg. 2013- 2022	**77%**	**23%**
Avg. 2020 - 2022	**69%**	**31%**

Table 12: State contribution (as a percentage) to total recreational landings of summer flounder (in numbers of fish), from Maine through North Carolina, 2020-2022.

State	2020	2021	2022	2020-2022 average
Maine	0%	0%	0%	0%
New Hampshire	0%	0%	0%	0%
Massachusetts	2%	2%	3%	2%
Rhode Island	3%	2%	3%	3%
Connecticut	4%	5%	5%	5%
New York	21%	15%	26%	21%
New Jersey	57%	58%	47%	54%
Delaware	6%	4%	3%	4%
Maryland	2%	3%	3%	3%
Virginia	4%	10%	11%	8%
North Carolina	1%	1%	0%	1%
Total	100%	100%	100%	100%

Table 13: The percent of summer flounder landings (in number of fish) by recreational fishing mode, Maine through North Carolina, 2013-2022.

Year	Shore	Party/Charter	Private/Rental	Total number of fish landed (millions)
2013	11%	4%	85%	6.60
2014	7%	8%	84%	5.36
2015	7%	7%	86%	4.03
2016	8%	4%	89%	4.30
2017	13%	4%	83%	3.17
2018	11%	6%	84%	2.41
2019	10%	3%	87%	2.38
2020	18%	2%	80%	3.49
2021	11%	7%	82%	2.32
2022	15%	4%	81%	3.38
% of Total, 2013-2022	**11%**	**5%**	**84%**	**--**
% of Total, 2020-2022	**15%**	**4%**	**81%**	**--**

References

Northeast Fisheries Science Center. 2019. Data Update for Summer Flounder.

Northeast Fisheries Science Center (NEFSC). 2021. Summer Flounder Management Track Assessment for 2021. 14p. Available at: https://www.mafmc.org/s/c_2021_summer_flounder_MTA_report.pdf.

Northeast Fisheries Science Center (NEFSC). 2022. Summer Flounder Data Update for 2022. 3p. Available at: https://www.mafmc.org/s/b_Summer_flounder_2022_Data_Update_6-15-22.pdf.

Packer, D. B, S. J. Griesbach, P. L. Berrien, C. A. Zetlin, D. L. Johnson, and W.W. Morse. 1999. Essential Fish Habitat Source Document: Summer Flounder, *Paralichthys dentatus*, Life History and Habitat Characteristics. NOAA Technical Memorandum NMFS-NE-151.

Recreational data accessed from the National Marine Fisheries Service, Fisheries Statistics Division as of March 10, 2023. Available at: http://www.st.nmfs.noaa.gov/recreational-fisheries/index.

Unpublished NMFS dealer and permit data as of May 18, 2023; unpublished NMFS Vessel Trip Report (VTR) data as of May 17, 2023; unpublished Northeast Fisheries Observer Program (NEFOP) data as of April 7, 2023.