



New England Fishery Management Council

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MEMORANDUM

DATE: August 11, 2025
TO: Scientific and Statistical Committee
FROM: Skate Plan Development Team
SUBJECT: Skate specifications for fishing years 2026-2027 (defaults for 2028 - 2030)

This memo forwards information to support recommendations by the Scientific and Statistical Committee for setting the overfishing limit (OFL) and acceptable biological catch (ABC) for the Northeast Skate Complex for Fishing Years (FY) 2026 – 2027 and default values for FY 2028 - 2030. The Skate Plan Development Team (PDT) met on August 5, 2025, to develop this memo and finished it via correspondence.

Key Points:

- The PDT recommends that the OFL for FY 2026-2027 be unknown.
- The PDT recommends that the ABC for FY 2026-2027 be 41,282 mt based on a data update and application of the ABC control rule and
- The PDT recommends default values for FY 2028-2030 of 41,282 mt.

Table of Contents

1. Overview	2
2. 2025 Northeast Skate Complex Data Update.....	2
3. Reference Points.....	3
4. Potential OFLs and ABCs	9
5. Responses to SSC recommendations made in 2023.....	10
6. FY 2026 – 2027 Specifications Flow chart.....	14
7. Fishery Data	15
8. References	18

1. OVERVIEW

The Council manages seven skate species (barndoor, clearnose, little, rosette, smooth, thorny, and winter skate) off the New England and Mid-Atlantic coasts under the Northeast Skate Complex Fishery Management Plan (Skate FMP). Skate specifications have been set every two years for the skate wing and bait fisheries. These fisheries have different seasonal management structures and are subject to effort controls (e.g., possession limits) and accountability measures (AM).

Principally due to problems with species identification in commercial and recreational catch, the Original Skate FMP (implemented in 2003) did not derive or propose an absolute Maximum Sustainable Yield (MSY) estimate for skate species or for the skate complex. Catch histories for individual species were unreliable and probably underreported. Furthermore, the population dynamics of skates was largely unknown, so measures of carrying capacity or productivity were not available on which to base estimates of MSY. Likewise, an OFL has been unknown, because overfishing reference points are survey proxies, and estimates of fishing mortality or fishing mortality reference points have not been available. These issues are largely why the skate ABC is applied to the entire complex and are not set for individual species.

Indices of relative abundance (stratified mean weight/tow) have been developed from the Northeast Fisheries Science Center's (NEFSC) bottom trawl surveys for the seven species in the skate complex. These indices and their rates of change form the basis for all the conclusions about the status of the complex. The spring NEFSC survey data is used for little skate and the fall NEFSC survey data is used for the other managed skate species, due to survey catchability.

The Northeast Skate Complex was last assessed in 2023, a management track assessment that re-estimated commercial fishery catch data, updated survey biomass indices, added recreational catch to the total catch, and updated reference points with data through 2022 (NEFSC 2023). The assessment also included projections of total fishery catch of skates for 2024 and 2025.

To develop this memo, the PDT reviewed the data update provided by the NEFSC on August 1, 2025 (NEFSC 2025), prior SSC and PDT reports, and prior Council actions. Section 2 summarizes the 2025 data update. Section 3 discusses reference points. Section 4 provides potential OFLs and ABCs for SSC consideration. Responses to the SSC recommendations made in 2023 during FY 2024-2025 specifications setting are in Section 5. Section 6 explains the specifications that would result from the ABC developed in Section 4. Section 7 includes recent fishery data. Refer to the 2023 assessment report, the Risk Policy Matrix, and the Affected Environment of Framework Adjustment 12 for other supporting information.

2. 2025 NORTHEAST SKATE COMPLEX DATA UPDATE

In August 2025, the NEFSC completed a data update for the Northeast skate complex. The data update included: 1) updating each time series of species-specific survey indices and stratified mean indices at length with data for 2023, 2024 and 2025 (spring), and 2) updating the complex-wide commercial landings and discards time series with data for 2023 and 2024. An update to recreational landings and discard data was provided as a supplement to the PDT. The PDT makes the following observations:

- Overall, the indices indicate stable conditions for skates.
- The indices for barndoor and winter skate are above their biomass targets, thorny skate remains persistently below its biomass threshold, and other species are between their threshold and target.
- Winter skate has the highest biomass indices, followed by little skate, and the winter skate index has been increasing recently.
- The data update includes figures of stratified mean indices at length for each survey (e.g., NEFSC 2025 Figure 4). These figures are a new NEFSC data product appearing in the 2025 data updates, but for skates they are less informative. Skates are known to be long-lived, have low fecundity,

and have low catches in the survey. Thus, it can be difficult to identify recruitment events in such figures. The exception is winter skate, perhaps due to the higher survey indices (NEFSC 2025 Figure 22). There is evidence of a recruitment event around 2016 that may be contributing to an uptick in abundance. Potentially, there could be another recent recruitment to monitor going forward.

3. REFERENCE POINTS

Amendment 3 set the approach to defining the biomass target (B_{target}), biomass threshold ($B_{\text{threshold}}$), and maximum sustainable yield (MSY_{proxy}) (NEFMC 2009, Section 4.2). The species-specific overfishing definitions that determine stock status were defined in the Original FMP (NEFMC 2003), based on the outcomes of SAW 30 (NEFSC 2000) and maintained at SARC 44 (NEFSC 2007). Details about these reference points and how they were chosen are given in NEFSC (2000).

$B_{MSY_{\text{proxy}}}$

The proxy for biomass at MSY ($B_{MSY_{\text{proxy}}}$), above which skate species are considered rebuilt, is calculated for each skate species by first calculating a survey biomass index as the survey catch per tow (kg/tow) during a specific set of years (see “Time Series Basis” row in Table 3). The $B_{MSY_{\text{proxy}}}$ (also B_{target}) is the 75th percentile of the survey biomass index, except for barndoor skate which is the average of its index (NEFMC 2003, Section 4.4.3.). It was assumed that the biomass of all species had passed through B_{MSY} at some point in the original reference time series. For barndoor skate, the mean of the first four years of the autumn survey were used instead, given that biomass had been extremely low during most of the time series. A skate species is rebuilt if its survey biomass index is equal to or greater than its $B_{MSY_{\text{proxy}}}$.

$B_{MSY_{\text{proxy}}} = B_{\text{target}} = \text{the 75}^{\text{th}} \text{ percentile (average for barndoor) of its survey biomass index, measured in kg/tow during a specific set of years for each species (see “Time Series Basis” in Table 3).}$

MSY_{proxy}

The MSY_{proxy} can be thought of as the allowable catch if all skate species were at B_{target} . A MSY_{proxy} is calculated for the skate complex by first calculating the MSY_{proxy} for each species, which is the median of catch/biomass multiplied by the $B_{MSY_{\text{proxy}}}$. Here, “biomass” is the survey biomass index (kg/tow) and “catch” includes: commercial landings from dealer data, vessel to vessel transfers from Vessel Trip Report (VTR) data, commercial dead discards from observer data, and recreational landings and dead discards from Marine Recreational Information Program data. The 2023 assessment added recreational catch, and the time series was shortened to 1981 – 2022, as 1981 is the first year that recreational data for skates are available. The MSY_{proxy} for each species is then summed over all seven skate species to calculate the skate complex MSY_{proxy} .

*MSY_{proxy} for each species = median catch/biomass (C/B) over the entire time series * $B_{MSY_{\text{proxy}}}$ (kg/tow)*

Where “catch” = total landings from dealer data, vessel to vessel transfers from VTR data, dead discards, and recreational catch (kg); and “biomass” = survey biomass index (kg/tow).

MSY_{proxy} for the complex = the sum all seven skate MSY_{proxies} .

The skate MSY_{proxy} was last updated in 2023 through the management track assessment. The MSY_{proxy} increased to 41,698 mt (Table 1) from 36,794 mt, which was the MSY_{proxy} used in the FY 2018-2023 specification cycles. Through the 2024 NEFSC data update, an error in the thorny skate B_{target} was

identified (NEFMC 2024a), and the 2025 update identified an error in the little skate C/B index. With these corrections, MSY_{proxy} is 41,155 mt (Table 1).

Table 1. The MSY_{proxy} for the Northeast skate complex

Species	2023 Assessment			2025 Data Update		
	C/B (K mt/kg/tow)	B_{target} (kg/tow)	MSY_{proxy} (mt)	C/B (K mt/kg/tow)	B_{target} (kg/tow)	MSY_{proxy} (mt)
Barndoor	1.97	1.57	3,100	1.97	1.57	3,100
Clearnose	3.15	0.96	3,028	3.15	0.96	3,028
Little	2.23	6.76	15,063	2.09	6.76	14,108
Rosette	1.26	0.053	66	1.26	0.05	66
Smooth	2.43	0.23	567	2.43	0.23	567
Thorny	1.64	2.83	4,650	1.64	3.08	5,062
Winter	2.01	7.59	15,224	2.01	7.59	15,224
Total MSY_{proxy} = 41,698				41,155		

$B_{threshold}$

The biomass threshold, below which skate species are considered overfished, is half of the biomass target.

$$B_{threshold} = 0.5 * B_{target}$$

Status Determination Criteria

Overfishing definitions were created via the Original FMP and establish fishing mortality thresholds for all seven skate species. The thresholds for fishing mortality are based on annual percentage declines of the three-year moving average of the NEFSC trawl survey (spring or autumn, depending on the species). The percentages are specified for each species individually based on historical variation within the survey. The fishing mortality thresholds also include a precautionary “backstop” that indicates that overfishing is occurring if the trawl survey mean weight per tow declines for three consecutive years. The language for the overfishing definitions is presented below, first the simple definitions applicable to all species followed by species-specific definitions.

Overfishing. Overfishing is occurring on a skate species if the latest three-year moving average of the survey biomass index for a skate species declines by more than the average coefficient of variation (CV) of the survey time series, then fishing mortality is assumed to be greater than F_{MSY} .

Overfished. A skate species is *overfished* if the three-year moving average of the survey biomass index is below its biomass threshold reference point ($B_{threshold}$, defined above). An overfished determination triggers the need for a rebuilding plan.

To reduce the variability in the survey estimates, a three-year moving average of the survey indices is used to evaluate stock status for all species. Through the 2009 assessment (NDPSWG 2009), the reference time series for barndoor was unchanged, the time series was extended to 2008 for little skate and to 2007 for all other species. The 2023 assessment shifted the reference time series to 2022 for all species except barndoor. The percentages noted below are the average CV of the survey time series, as updated through the 2023 assessment (not the percentages from the Original FMP). The reference points and selected time series may be re-specified through a peer-reviewed process and/or as updated stock assessments are completed.

Barndoor skate is in an overfished condition when the three-year moving average of the autumn survey mean weight per tow is less than one-half of the mean weight per tow observed in the

autumn trawl survey from 1963-1966. Overfishing occurs when the three-year moving average of the autumn survey mean weight per tow declines 30% or more, or when the autumn survey mean weight per tow declines for three consecutive years.

Clearnose skate is in an overfished condition when the three-year moving average of the autumn survey mean weight per tow is less than one-half of the 75th percentile of the mean weight per tow observed in the autumn trawl survey from 1975-2022. Overfishing occurs when the three-year moving average of the autumn survey mean weight per tow declines 40% or more, or when the autumn survey mean weight per tow declines for three consecutive years.

Little skate is in an overfished condition when the three-year moving average of the spring survey mean weight per tow is less than one-half of the 75th percentile of the mean weight per tow observed in the spring trawl survey from 1982-2022. Overfishing occurs when the three-year moving average of the spring survey mean weight per tow declines 20% or more, or when the spring survey mean weight per tow declines for three consecutive years.

Rosette skate is in an overfished condition when the three-year moving average of the autumn survey mean weight per tow is less than one-half of the 75th percentile of the mean weight per tow observed in the autumn trawl survey from 1967-2022. Overfishing occurs when the three-year moving average of the autumn survey mean weight per tow declines 40% or more, or when the autumn survey mean weight per tow declines for three consecutive years.

Smooth skate is in an overfished condition when the three-year moving average of the autumn survey mean weight per tow is less than one-half of the 75th percentile of the mean weight per tow observed in the autumn trawl survey from 1962-2022. Overfishing occurs when the three-year moving average of the autumn survey mean weight per tow declines 30% or more, or when the autumn survey mean weight per tow declines for three consecutive years.

Thorny skate is in an overfished condition when the three-year moving average of the autumn survey mean weight per tow is less than one-half of the 75th percentile of the mean weight per tow observed in the autumn trawl survey from 1963-2022. Overfishing occurs when the three-year moving average of the autumn survey mean weight per tow declines 30% or more, or when the autumn survey mean weight per tow declines for three consecutive years.

Winter skate is in an overfished condition when the three-year moving average of the autumn survey mean weight per tow is less than one-half of the 75th percentile of the mean weight per tow observed in the autumn trawl survey from 1967-2022. Overfishing occurs when the three-year moving average of the autumn survey mean weight per tow declines 20% or more, or when the autumn survey mean weight per tow declines for three consecutive years.

Current Stock Status

The official stock status for the skate complex is that overfishing is not occurring on any species and just thorny skate is overfished. Up through the 2024 Skate Annual Monitoring report, the NEFSC had been updating the stock status of skate species annually. In annual updates just prior to the 2023 assessment, overfishing was not occurring on any skate species and the only species that was overfished was thorny skate. The 2023 assessment concluded that overfishing was occurring for winter and little skate, though the changes to the survey biomass indices were just exceeding the overfishing thresholds (-20.1% vs -20% for little skate, -20.3% vs 20% for winter skate; Table 3). Notably, the winter skate survey biomass index (8.21) was well above the $B_{MSYproxy}$ (7.59), but the little skate index (3.77) was near its $B_{threshold}$ (3.38). However, NOAA did not formally change the stock status for winter and little skate based on this

assessment. The 2024 Skate Annual Monitoring Report noted that the survey biomass indices for winter and little skate had increased such that overfishing was not occurring on these species.

In the 2025 data update, the NEFSC did not update stock status, but the PDT has calculated the latest three-year moving averages of the survey biomass indices (Table 2) and noted that the changes all signal that overfishing is unlikely for all skate species and that thorny skate is the only species likely to be overfished.

Thorny Skate

The survey biomass index for thorny skate has been well under $B_{\text{threshold}}$ since the mid-1990s (Figure 1). The thorny skate rebuilding plan was established in the Original FMP (2003) and includes prohibiting possession throughout the management unit. The rebuilding deadline for this stock is 2028 (25 years from implementation of the Skate FMP), yet the survey biomass has continued to show no significant signs of rebuilding with just 3 years remaining until the deadline. As of the 2025 data update, the survey biomass had continued to be low for thorny skate (0.15 kg/tow in 2024). The biomass index has ranged from 0.09-0.21 since 2017, and the 2024 index was just 4.9% of the B_{target} (3.08).

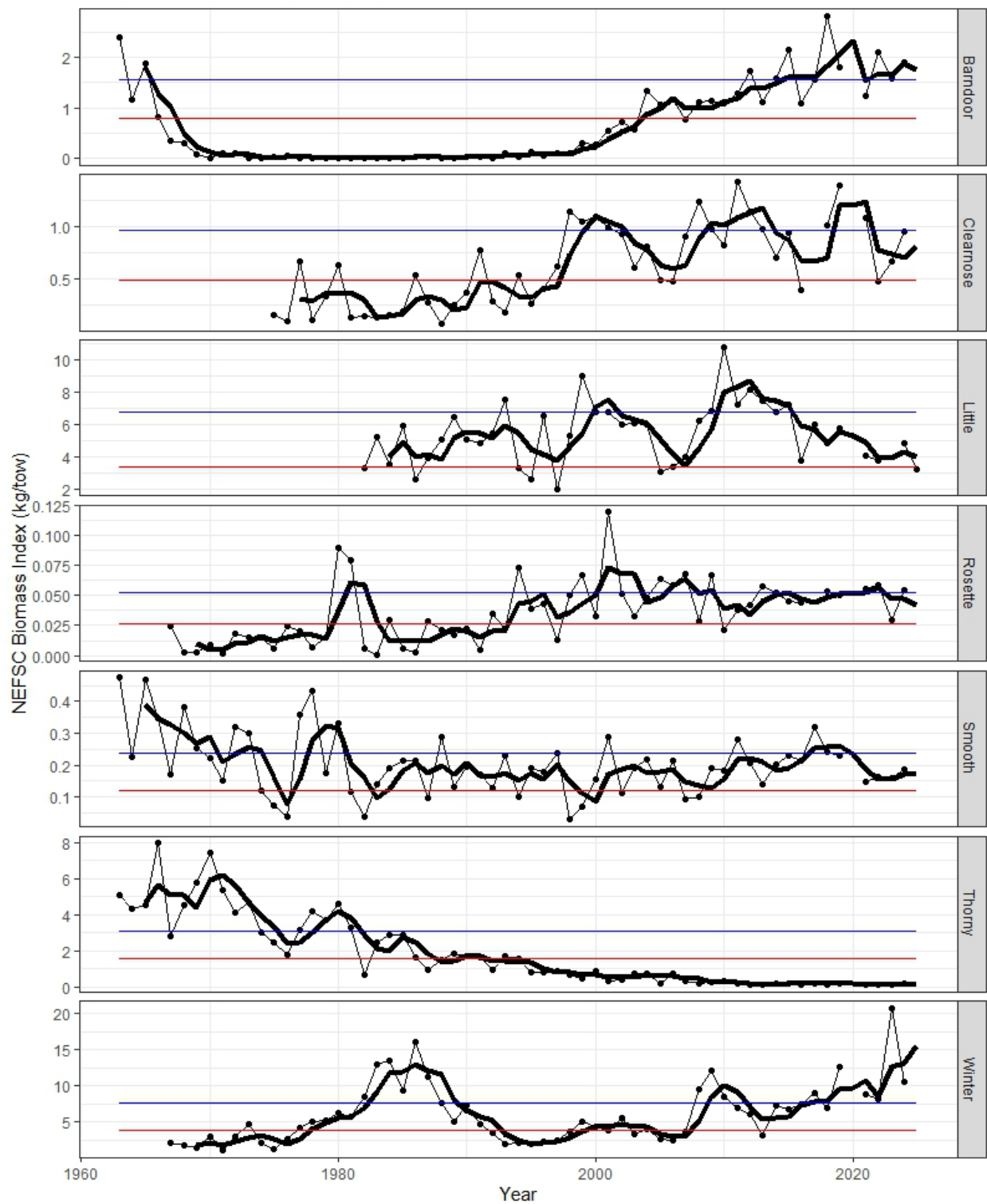
Catch of thorny skate has been low since the possession prohibition. From 1981-2000, thorny skate catch averaged 3,098 mt per year. From 2001-2022, average catch was 372 mt per year, with landings averaging 139 mt per year but decreasing from 481 mt in 2001 to under 10 mt since 2015 (NEFSC, 2025).

Section 7 includes more discussion of research updates on thorny skate.

Table 2. Recent survey indices, survey strata used, and biomass reference points of skate species.

	BARNDOR	CLEARNOSE	LITTLE	ROSETTE	SMOOTH	THORNY	WINTER
Annual survey	Autumn	Autumn	Spring	Autumn	Autumn	Autumn	Autumn
Time Series Basis	1963-1966	1975-2022	1982-2022	1967-2022	1963-2022	1963-2022	1967-2022
Strata Set	Offshore 1-30, 34-40	Offshore 61-76, Inshore 17,20,23,26,29,32,35,38,41,44	Offshore 1-30, 34-40, 61-76, Inshore 2,5,8,11,14,17,20,23,26,29,32,35,38,41,44-46,56,59-61,64-66	Offshore 61-76	Offshore 1-30, 34-40	Offshore 1-30, 34-40	Offshore 1-30, 34-40, 61-76
Biomass Target	1.57	0.96	6.76	0.053	0.23	3.08	7.59
Biomass Threshold	0.78	0.48	3.38	0.026	0.12	1.54	3.79
Survey Indices (kg/tow)							
2018	2.83 ^a	1.01	4.85	0.05	0.24 ^a	0.14 ^a	6.98 ^b
2019	1.80	1.39	5.75	0.05	0.23	0.17	12.55
2021	1.25	1.07	4.07 ^c	0.06	0.15	0.09	8.80
2022	2.12	0.47	3.77	0.06	0.16	0.10	8.21
2023	1.58	0.66	^d	0.03	0.16	0.11	20.68
2024	1.91	0.95	4.86	0.05	0.19	0.15	10.50
2025	-	-	3.20	-	-	-	-
OVERFISHED METRIC (If 3-year moving average of survey biomass index < B _{threshold} then overfished)							
2018-2019 2-year average	2.32 ^{a,b}	1.20 ^b	4.30 ^b	0.052 ^b	0.24 ^{a,b}	0.16 ^{a,b}	9.76 ^{a,b}
2019-2021 2-year average	1.53 ^b	1.23 ^b	4.91 ^{b,c}	0.053 ^b	0.19 ^b	0.14 ^b	10.67 ^b
2021-2022 2-year average	1.68 ^b	0.78 ^b	3.92 ^{b,c}	0.057 ^b	0.16 ^b	0.10 ^b	8.50 ^b
2021-2023 3-year average	1.65	0.74	3.92 ^{c,d}	0.048	0.16	0.10	12.56
2022-2024 3-year average	1.87	0.69	4.32 ^d	0.046	0.17	0.12	13.1
2024-2025 2-year average	-	-	4.03	-	-	-	-
OVERFISHING METRIC (If % change in 3-year moving average of survey biomass index > average coefficient of variation (CV) of the survey time series then overfishing is occurring.)							
% change 2019-2021 vs. 2018-2019	-34.1 ^{c,d}	+2.7 ^d	-7.4 ^{b,c}	+2.1 ^b	-20.0 ^{a,b}	-14.6 ^{a,b}	+9.3 ^{a,b}
% change 2021-2022 vs. 2019-2021	+10.2 ^b	-37.1 ^b	-20.1 ^{b,c}	+7.6 ^b	-17.6 ^b	-29.6 ^b	-20.3 ^b
% change 2021-2023 vs. 2021-2022	-2.1 ^b	-5.0 ^b	0.0 ^{b,c,d}	-16.2 ^b	+0.6 ^b	+6.3 ^b	+47.7 ^c
% change 2022-2024 vs. 2021-2023	+13.3	-6.8	+10.1 ^{d,c}	+4.2	+6.3	+20.0	+4.3
% change 2024-2025 vs. 2022, 2024	-	-	-6.7 ^d	-	-	-	-
% change for overfishing status determination	-30	-40	-20	-40	-30	-30	-20
<p>Source: 2025 Data Update: Northeast Skate Complex, Northeast Fisheries Science Center Population Dynamics Branch, July 29, 2025</p> <p>Notes: Grey shading indicates the assessment conclusion that a species that is overfished or overfishing is occurring.</p> <p>a. Values were adjusted for missing Offshore strata 30, 34 and 35.</p> <p>b. Spring and fall surveys not completed in 2020 due to COVID 19 restrictions.</p> <p>c. No survey tows completed in the most southern area in spring 2021. Values for 2021 were adjusted for missing strata (Offshore 61-64, Inshore 38, 41, 44) but may not be fully comparable to other surveys which sampled all strata.</p> <p>d. The 2023 spring survey did not cover all the areas and only conducted the survey during daylight hours, so no data is available.</p>							

Figure 1. NEFSC survey biomass indices (kg/tow) through spring 2025. Thin lines with symbols are annual indices, thick lines are 3-year moving averages, and the thin horizontal lines are the biomass thresholds (red) and targets (blue).



4. POTENTIAL OFLS AND ABCs

FY 2026-2027 Overfishing Limit

The PDT recommends that the OFL for the Northeast Skate Complex be unknown. The continued lack of an analytical assessment has precluded the estimation of absolute biomass and the fishing mortality rate. An OFL cannot be calculated without these parameters.

FY 2026-2027 Acceptable Biological Catch

The skates ABC control rule was established in Amendment 3 to Skate FMP (NEFMC 2009):

The skate ABC is the median ratio of catch/biomass of each of the seven skate species multiplied by its three-year moving average stratified mean biomass (weight/tow) for skates, summed over the seven skate species in the management unit. This method is considered an interim proxy for an ABC until an OFL and its uncertainty can be quantified.

The PDT used the 2025 data update to calculate an ABC.

Step 1: identify the median ratio of catch/biomass (C/B) of each species.

The time-series used for C/B is the same as used for the MSY_{proxy} (Table 1), 1981-2022. This time-series was revised through the 2023 assessment to: 1) include recreational catch, 2) have a consistent start year for all species using 1981 as that is when recreational catch became available, and 3) have a terminal year of 2022. This time-series was used for setting the FY 2024-2025 ABC and is not updated each specifications cycle, as adding 2-3 years of data would unlikely shift a ~40-year median substantially. As noted above, a correction to the little skate C/B has been made.

Step 2: identify the three-year moving average of the survey biomass index of each species.

The FY 2024-2025 ABC used two-year averages of the survey indices: spring 2021-2022 for little skate, because 2023 spring survey data were missing; and fall 2021-2022 for the other skates, because 2020 survey data were missing. For the FY 2026-2027 ABC (Table 3), the PDT used a two-year average of the spring 2024-2025 surveys for little skate (spring 2023 data are missing), and a three-year average of the fall 2022-2024 surveys for the other skates.

Step 3: multiply C/B and the survey biomass index; sum across each species

Using these updates, the ABC would be 41,282 mt for FY 2026-2027 (Table 3). This would be a 28% increase over the FY 2024-2025 ABC of 32,155 mt.

Table 3. Skate ABC using the control rule

Species	FY 2024-2025 ABC (actual)			FY 2026-2027 ABC (proposed)		
	C/B Median	Survey Biomass	ABC	C/B Median	Survey Biomass	ABC
Barndoor	1.97	1.68	3,319	1.97	1.87	3,690
Cleargnose	3.15	0.77	2,438	3.15	0.69	2,181
Little	2.23	3.92	8,739	2.09	4.03	8,421
Rosette	1.26	0.06	72	1.26	0.05	59
Smooth	2.43	0.15	377	2.43	0.17	414
Thorny	1.64	0.09	155	1.64	0.12	193
Winter	2.01	8.50	17,055	2.01	13.13	26,332
TOTAL			32,155			41,282

Additional discussion: In compliance with the Magnuson-Stevens Act, ABCs need to be set at levels that prevent overfishing and prevent a stock from becoming overfished. This is particularly important in cases where the OFL is unknown. The Skate ABC control rule has been used since FY 2010, and the Council has concluded in the past that use of the ABC control rule would likely accomplish that outcome, particularly in conjunction with species-specific possession limits. The notable exception has been thorny skate with persistently low biomass.

The proposed ABCs are the second highest in the time series. ABCs were first implemented for the skate fishery in FY 2010-2011 and were 41,080 mt. ABCs were increased to 50,435 mt for FY 2012-2013 and have been below 40,000 mt ever since (range: 31,081-37,236 mt).

Since 2010, the only skate species that has been declared overfished has been thorny skate (overfished since 2000). The only skate species that have been formally determined to be subject to overfishing were winter and thorny skates, both in 2013-2014. The ABC was lowered in FY 2014-2015 and again in FY 2016-2017, which likely contributed to ending overfishing. Today, winter skate has the highest indices.

The Index-based Methods Working Group and Legault et al. (2023) found that the skate approach, in the face of multiple uncertainties, likely provides catch advice that prevents overfishing and promotes long-term stability of catch and biomass. However, testing of the skate approach was done for species with life histories that resemble groundfish, so additional work would be needed on skates.

Default Values for FY 2028-2030

The SSC has traditionally recommended skate specifications at two-year intervals, but recent reductions in federal agency resources have highlighted a potential need for increased flexibility in management and regulatory processes. Thus, the SSC is being asked to consider specifications for FY 2028-2030 as defaults should future gaps in federal resources prevent the provision of updated data.

The PDT recommends setting default ABCs for FY 2028-2030 at the status quo levels set for FY 2026-2027 (41,282 mt). This approach would be consistent with skate regulations regarding rollover specifications:

“If the final specifications are not published in the Federal Register for the start of the fishing year, the previous year's specifications shall remain in effect until superseded by the final rule implementing the current year's specifications, to ensure that there is no lapse in regulations while new specifications are completed ([50 CFR 648.320\(a\)\(7\)](#)).”

Other fishery management plans have measures that would lower the ABC until replaced by new specifications, but to varying degrees. The Council is currently developing an omnibus amendment to consider increased consistency in management and regulatory processes and flexibility to adjust with available resources. That action includes an alternative that would create rollover provisions for all FMPs. The Council expects to take final action on this amendment in September 2025.

The PDT discussed a precautionary approach for default specifications for FY2028-2030, namely a tiered reduction in ABCs from 2026-2027 ranging from 10-20% given the uncertainty in future years, however the PDT recommends status quo ABC for the default years, consistent with existing regulations.

5. RESPONSES TO SSC RECOMMENDATIONS MADE IN 2023

In October 2023, the SSC made several recommendations for improving the skate assessment and specifications and commented on a thorny skate white paper that the PDT had prepared. The PDT responds here to the SSC comments.

Skate Specifications

SSC Comment: “The SSC recommends revisiting the overfished and overfishing definitions for the skate complex in the future. The notion of non-stationarity and whether reference points might need to be redefined in the context of changing ocean conditions and its impact on productivity are important factors to consider moving forward, particularly for thorny skate. The Council does not define reference points for all its index-based stocks and some careful thought would be required to revise the skate reference points based on time series and the use of the survey CV in their definition. Current reference points are defined using NEFSC bottom trawl survey; revisiting reference points could also allow for further discussion on using multiple surveys to inform inferences on biomass trends and reference points.”

PDT Response: The overfished and overfishing definitions, created in the Original FMP, are over 20 years old and are worth revisiting. The process and pathway for changing the definitions need to be considered. The analytical work to support a revision is substantial and could be included in a research track stock assessment, though such assessment for skates has yet to be prioritized. The Council would need to revise the definitions via an amendment to the FMP.

SSC Comment: “The SSC recommends work to propagate uncertainty in the calculations of estimated biomass of skates using the index-based method and consideration of how further characterization of uncertainty impacts stock status determination.”

PDT Response: This could be considered in an upcoming management track stock assessment; it would require the development of uncertainty estimates.

SSC Comment: “The SSC also recommends exploration of the feasibility of an analytical assessment model that might be length-based.”

PDT Response: This could be considered for a research track stock assessment, as the model used for an assessment cannot be changed in a management track stock assessment. Such work could improve speciation in data streams. Before 1994, commercial catch by species was estimated using the weight of species in the trawl survey. Since 1994, when skate length data from the survey started to be collected, the average species length composition of survey catch has been used (average length is a more accurate predictor of skate species than weight). A future assessment could explore using survey length data to extrapolate the speciation prior to 1994.

Thorny Skate Whitepaper

SSC Comment: “The SSC noted that more detailed analyses that describe the spatiotemporal overlap between the fishery (catch and discards) and the resource would be helpful.”

PDT Response: The PDT received an [update](#) regarding thorny skate bycatch hotspot work at its February 2025 meeting. The analysis calculated species abundance using NOAA survey and observer (NEFOP) data to develop relative abundance grids. Researchers then calculated the fishery interaction potential, then conducted a hotspot analysis, identifying interaction potential between thorny skate and the groundfish, monkfish, and sea scallop fisheries. An area of overlap for all three fisheries was in the western Gulf of Maine.

SSC Comment: There was discussion amongst the SSC and participants on forthcoming research on the genetic structure of thorny skates in U.S. waters and more broadly across the North Atlantic. These findings will be informative in understanding the stock’s diversity and resiliency and the degree to which collaboration with Canada and NAFO would provide a greater probability of stock rebuilding.

PDT Response: The PDT received a presentation on a recently published thorny skate genetics paper at its February 2025 meeting (Lesturgie et al. 2025). Researchers used mitochondrial DNA sequencing to look at similarities and differences between the Northeast and Northwest Atlantic populations, as well as between the Gulf of Maine and Canadian populations. Key outcomes from this and other recent work by the researchers include:

- There are two metapopulations of thorny skate, roughly separated into Northeast (Greenland, Iceland, North Sea) and Northwest (Gulf of Maine, Canada) populations. The Gulf of Maine and Newfoundland populations were found to be closely related.
- There are two distinct size morphs, large and small, of thorny skates. The northeast population only consists of the small size morph, while both morphs exist in the northwest population, following the ingression of genetic materials from another species, likely the Arctic skate, which led to the large morph.
- In Canadian waters, there is more breeding between the size morphs.
- In the Gulf of Maine, there is more assortive mating between the morphs, which could be contributing to the lack of rebounding by the Gulf of Maine thorny skate populations.
- Both morphs are caught in the U.S. skate and monkfish fisheries, and a discard mortality study in the trawl fishery found that smaller skates have a higher discard mortality than large skates, which could lead to greater impacts on the small size morph.
- Thorny skates do not appear to be leaving the Gulf of Maine, but contracting into cooler, deeper waters.

SSC Comment: Additional distribution metrics would be helpful to review in the future, such as information on the area occupied (km²), mean depth, center of biomass, and latitude and longitude over time. These metrics may provide a more quantitative assessment of the degree to which shifts in distribution may be occurring.

PDT Response: The 2023 management track assessment included distribution metrics for all species, but there was not time to discuss the findings during the peer review meeting. The skate assessment scientist initially planned to add more metrics during the 2025 management track assessment, which has been cancelled.

SSC Comment: Furthermore, evaluating the relationships between stock distribution and other aspects of stock dynamics and ecosystem and climate information would be useful.

PDT Response: This recommendation could be considered for a research track assessment.

SSC Comment: Additional information on trends in prey availability and predator populations could also provide insight on the probability of rebuilding.

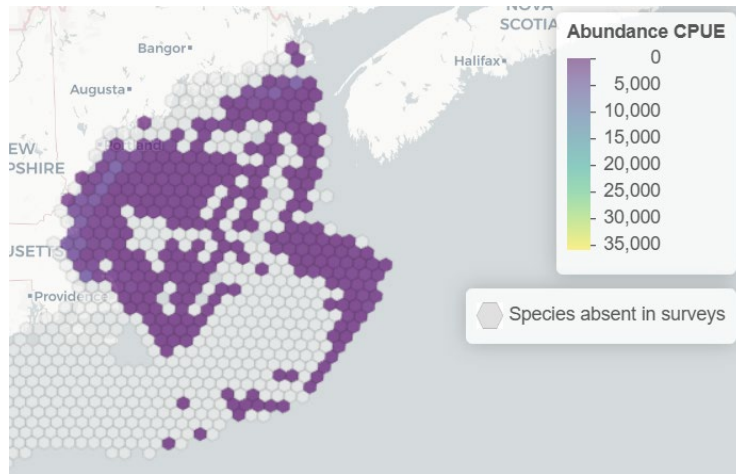
PDT Response: This recommendation could be considered as part of a research track assessment.

SSC Comment: Information on spawning habitat (e.g. where reproduction is taking place), specifically whether certain areas are of importance for the species to complete its life cycle, would be important to consider when thinking about spatial management measures."

PDT Response: This recommendation could be considered as part of a research track assessment. The NEFMC is also working on an omnibus amendment to update the essential fish habitat (EFH) for the

Northeast skate complex. To support this action, the Habitat PDT has developed through the Northeast Regional Habitat Assessment (NHRA), a shiny app, which contains data distribution, abundance, and length in federal and state surveys: <https://nrha.shinyapps.io/dataexplorer/#!/species> (Map 1). The Skate PDT has reviewed the NHRA data products and looks forward to using these tools.

Map 1. Example map from the [NHRA shiny app](https://nrha.shinyapps.io/dataexplorer/#!/species) showing thorny skate distribution in federal and state surveys, 2010-2019



SSC Comment: “The SSC noted the report did not discuss length composition data for the species, which would be helpful with contextualizing drivers in the stock (e.g., harvest, environmental). Further, if the stock is shifting inshore in the Gulf of Maine, state surveys may prove to be a more important tool in assessing the stock’s abundance and redistribution.”

PDT Response: Length composition data for thorny skate is available from all the surveys included in the 2023 assessment and 2025 data update. This could be considered for a research track assessment. The hotspot work noted above suggest that thorny skate may be shifting to deeper waters in the Gulf of Maine. State survey data could be examined more closely (available via the shiny app).

SSC Comment: “The SSC remained concerned about historical comparisons due to the challenges in identifying species earlier in the time series.”

PDT Response: The 2023 management track assessment Peer Review Panel also noted the need to improve skate species identification from fishery-dependent data sources. There has been no progress thus far.

SSC Comment: “The SSC also recommended further investigation into how other fisheries across the North Atlantic (such as in the North Sea) have addressed gear modifications and configurations to reduce thorny skate bycatch.”

PDT Response: The PDT notes that this information would help to inform management but may be less relevant for stock assessments. It is unclear whether other fisheries have addressed gear modifications to reduce thorny skate bycatch.

6. FY 2026 – 2027 SPECIFICATIONS FLOW CHART

Although the charge of the SSC is to recommend an OFL and ABC, provided here for context are the resultant fishery limits that stem from a potential ABC of 41,282 mt (Figure 2, Table 6).

Annual Catch Limit (ACL). The skate ACL is equal to the ABC. The ACL is a limit that will trigger accountability measures if catch exceeds this amount.

Annual Catch Target (ACT). The skate ACT is 90% of the ACL. There is a 10% uncertainty buffer between the ACL and ACT to account for scientific and management uncertainty.

Federal Total Allowable Landings (TAL). The skate federal TAL is set by subtracting deductions from the ACT for sources of catch outside of federal landings, using calendar year 2022-2024 data:

- Dead discards are calculated by applying the weighted discard mortality rate to the average discards from the most recent three calendar years.
- State landings are equal to the most recent average of three calendar years of landings by vessels that did not have a federal skate permit on the day of landing.
- Recreational catch is equal to the most recent average of three calendar years of recreational catch.

Wing and Bait TALs. The Wing and Bait TALs are set at 66.5% and 33.5% of the federal TAL, respectively.

Figure 2. Formula for skate specifications setting.

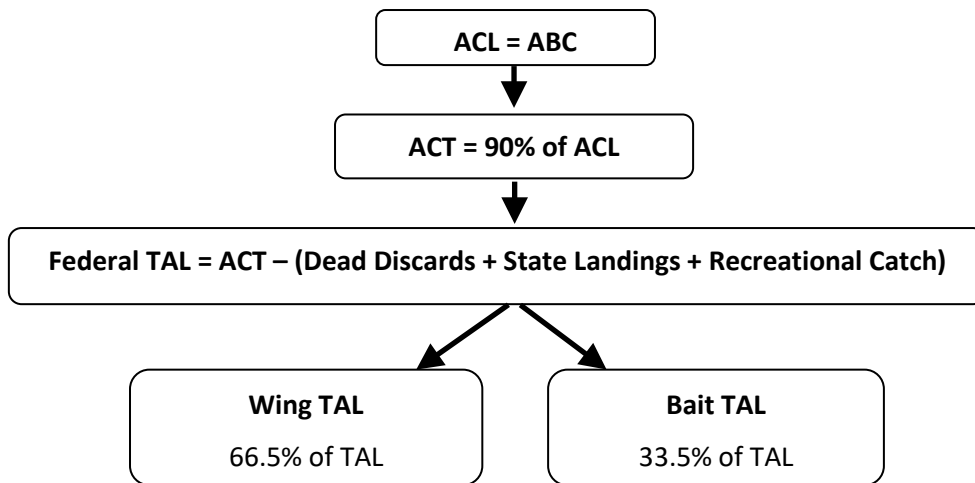


Table 4. Recent actual specifications and potential FY 2026-2027 specifications (in grey shading; mt).

	Actual Specifications		2026-2027 Potential
	2022-2023	2024-2025	
ABC = ACL	37,236	32,155	41,282
ACT (90% of ACL)	33,513	28,940	37,154
Dead Discards	11,856	12,149	15,486
State Landings	515	756	547
Recreational Catch	n/a	316	154
Federal TAL	21,142	15,718	20,966
Wing TAL (66.5% of TAL)	14,059	10,453	13,943
Bait TAL (33.5% of TAL)	7,082	5,266	7,024

7. FISHERY DATA

Provided here are recent fishery data for the in-season monitoring of landings against the Total Allowable Landings (TAL) for wing and bait fisheries and the year-end catch accounting against the Annual Catch Limit, both conducted by the Greater Atlantic Regional Fisheries Office.

Federal Landings – In-season Quota Monitoring

During the fishing year, the Greater Atlantic Regional Fisheries Office (GARFO) monitors skate landings against the wing and bait TALs, which are managed in season, and produces weekly landing reports on-line. This tally includes skate landings from vessels with a federal fishing permit on the day of landing. Skate landings excluded from TAL monitoring are those by vessels that do not have any federal fishing permits on the day of landing, landings from research, and recreational landings.

From FY 2020-2024, the overall federal skate TAL was not exceeded, with annual wing landings ranging from 42-77% of the wing TAL, and annual bait landings ranging from 45-62% of the bait TAL (Table 6). Federal landings were 70% of the TAL in FY 2020, decreasing to 44-46% in FY 2021-2023 before increasing to 68% in FY 2024. Total TALs increased from FY 2020-2021 (17,863 mt) to FY 2022-2023 (21,141 mt), then decreased again in FY 2024 (15,719 mt).

Table 5. FY 2020 - 2024 in-season monitoring of federal Northeast skate wing and bait landings.

Disposition	Live Landings		TAL (live weight)		Percent of TAL Landed
	(lb)	(mt)	(lb)	(mt)	
FY 2020					
Wing	20,204,415	9,163	26,193,195	11,879	77%
Bait	7,541,100	3,420	13,194,720	5,984	57%
Total	27,745,515	12,583	39,387,915	17,863	70%
FY 2021					
Wing	11,029,410	5,002	23,193,195	11,879	42%
Bait	6,193,845	2,809	13,194,720	5,984	47%
Total	17,223,255	7,811	39,387,915	17,863	44%
FY 2022					
Wing	12,888,225	5,845	31,000,095	14,059	42%
Bait	8,449,560	3,832	15,615,810	7,082	54%
Total	21,337,785	9,677	46,615,905	21,141	46%
FY 2023					
Wing	13,854,015	6,283	31,000,095	14,059	45%
Bait	6,965,595	3,159	15,615,810	7,082	45%
Total	20,819,610	9,442	46,615,905	21,141	45%
FY 2024					
Wing	16,284,661	7,387	23,044,920	10,453	71%
Bait	7,191,627	3,262	11,609,543	5,266	62%
Total	23,476,288	10,649	34,654,463	15,719	68%
FY 2020-2023 Source: CAMS Database, accessed 2/12/2025. Note: wing landings include landings by federally permitted skate vessels; Bait landings include all landings reported as bait or personal use.					
FY 2024 Source: CAMS Database, accessed 7/21/2025.					

Total Catch – Year-End ACL Accounting

At the end of each fishing year, GARFO tabulates skate catches into a few bins and compares the total to the annual catch limit. From FY 2020-2024, the ACL was not exceeded (and has never been; Table 7). Total Northeast skate catch was 83.9%, 58.3%, and 56.8% of the ACL in FY 2020-2022, respectively. Total catch was relatively low in FY 2023, with 17,105 mt of catch (45.9% of ACL), but rose to 20,943 mt or 65.1% of the ACL in FY 2024. State landings (defined as landings without a federal fishing permit) ranged from 282 – 921 mt over the most recent five years. Recreational catch remained lower than state landings from FY 2020-2022 but exceeded state landings in FY 2023 and FY 2024, reaching a recent high of 7.5% of the ACL in FY 2024.

Dead discards have been ~17-42% of total catch since FY 2020. The 2025 NEFSC data update indicates that dead discards have been declining over 1989-2024 (NEFSC 2025, Table 1). Discards have largely been from scallop dredge and otter trawl gear (NEFMC 2024b, Table 9)

Table 6. Year-end Northeast skate complex annual catch limit (ACL) accounting, FY2020-2024.

Catch accounting element	Pounds	Metric tons	% of ACL
FY 2020 (ACL = 32,715 mt)			
Commercial landings	27,452,375	12,452	38.1%
State-permitted only vessel landings	1,657,130	752	2.3%
Northeast skate non-landed bait	484,046	220	0.7%
Estimated dead discards	30,223,461	13,709	41.9%
Recreational catch	683,145	310	0.9%
Total Northeast skate catch	60,500,157	27,443	83.9%
FY 2021 (ACL = 32,715 mt)			
Commercial landings	17,440,045	7,911	24.2%
State-permitted only vessel landings	1,326,519	602	1.8%
Northeast skate non-landed bait	385,967	175	0.5%
Estimated dead discards	21,746,496	9,864	30.2%
Recreational catch	1,168,971	530	1.6%
Total Northeast skate catch	42,067,998	19,082	58.3%
FY 2022 (ACL = 37,236 mt)			
Commercial landings	21,397,412	9,706	26.1%
State-permitted only vessel landings	2,031,083	921	2.5%
Northeast skate non-landed bait	396,995	180	0.5%
Estimated dead discards	21,505,283	9,755	26.2%
Recreational catch	1,260,933	572	1.5%
Total Northeast skate catch	46,591,706	21,134	56.8%
FY 2023 (ACL = 37,236 mt)			
Commercial landings	20,988,574	9,520	25.6%
State-permitted only vessel landings	620,857	282	0.8%
Northeast skate non-landed bait	290,638	132	0.4%
Estimated dead discards	14,401,112	6,532	17.5%
Recreational catch	1,407,859	639	1.7%
Total Northeast skate catch	37,709,040	17,105	45.9%
FY 2024 (ACL = 32,155 mt)			
Commercial landings	23,779,102	10,786	33.5%
State-permitted only vessel landings	694,279	315	1%
Northeast skate non-landed bait	406,675	184	0.6%

Estimated dead discards	15,949,909	7,235	22.5%
Recreational catch	5,341,767	2,423	7.5%
Total Northeast skate catch	46,171,732	20,943	65.1%
<p><i>FY 2020 – FY 2022 Data Source:</i> CAMS accessed 8/18/2023; Marine Recreational Information Program accessed 8/18/2023. For terminology and additional notes, see Table 17 in Framework 12 final submission.</p> <p><i>FY 2023 Data Source:</i> CAMS, accessed July 2, 2024; Marine Recreational Information Program reports, accessed July 2, 2024. Notes: MRIP data are preliminary. Northeast skate federal commercial landings are landings by vessels that had a federal skate permit on the day of landing. Northeast skate state-permitted only vessel landings include landings by vessels with no federal skate permit on the day of landing. Northeast skate non-landed bait is catch reported only by VTRs (not by federal dealers).</p> <p><i>FY 2024 Data Source:</i> CAMS database and the Northeast Fishery Observer Program database, accessed on 7/21/2025; and Marine Recreational Information Program reports, accessed 7/21/2025; 2025 MRIP data are preliminary.</p>			

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