

Northeast Skate Complex Fishery Management Plan 2024 – 2025 Specifications



DRAFT Discussion Document

June 8, 2023

For June 12 and 14, 2023, Skate AP and Committee meetings

Prepared by the
New England Fishery Management Council
In consultation with the
National Marine Fisheries Service



**2024-2025 SPECIFICATIONS FOR THE NORTHEAST SKATE COMPLEX
FISHERY MANAGEMENT PLAN**

Proposed Action: Propose skate specifications for fishing years 2024 and 2025 and skate possession limits.

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Abstract: [to be completed]

1.0 EXECUTIVE SUMMARY

The New England Fishery Management Council (NEFMC) is charged with developing management plans that meet the requirements of the Magnuson-Stevens Act (MSA). The Northeast Skate Complex Fishery Management Plan (Skate FMP) contains the management measures for seven skate species (barndoor, clearnose, little, rosette, smooth, thorny, and winter skates) off the New England and Mid-Atlantic coasts. The FMP has been updated through a series of amendments, framework adjustments and specification packages. Amendment 3 to the FMP established a control rule for setting the skate acceptable biological catch (ABC) based on survey biomass indices and median exploitation ratios; the annual catch limit (ACL) is set to the ABC.

[to be completed]

2.0 TABLE OF CONTENTS

1.0	EXECUTIVE SUMMARY.....	4
2.0	TABLE OF CONTENTS.....	4
3.0	BACKGROUND	5
4.0	ALTERNATIVES UNDER CONSIDERATION.....	9
4.1	Action 1 – Specifications	9
4.1.1	Alternative 1 - No Action.....	9
4.1.2	Alternative 2 – Updated Specifications.....	10
4.2	Action 2 – Skate Possession Limits	10
5.0	AFFECTED ENVIRONMENT	13
5.1	Target Species.....	13
5.2	Human Communities	15
5.2.1	Commercial Skate Fishing	15
5.2.1.1	Catch Limits, Catch, and Landings	15
5.2.1.2	Possession Limits	18
6.0	REFERENCES	37

3.0 BACKGROUND

The Skate FMP specifies the management measures for seven skate species (barndoor, clearnose, little, rosette, smooth, thorny, and winter skate) off the New England and Mid-Atlantic coasts. The NEFMC sets specifications every two years for the skate complex using an established flowchart (Figure 1), including possession limits for the skate wing and bait fisheries. These fisheries have different seasonal management structures and are subject to effort controls and accountability measures (AM).

Principally due to problems with species identification in commercial catches, 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 (NEFMC 2003, Section 4.3.2). 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 overfishing limit (OFL) has been undetermined in the Skate FMP. In their February 11, 2009, report, the Scientific and Statistical Committee (SSC) recommended that an OFL “cannot be determined, because overfishing reference points are survey proxies, and estimates of fishing mortality or fishing mortality reference points are not available.” These issues are largely why skate specifications apply to the entire complex and are not set for individual species.

Indices of relative abundance (stratified mean weight/tow) have been developed using Northeast Fisheries Science Center (NEFSC) bottom trawl survey data 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 (Section 5.1). Based on the work of SAW 30 (NEFSC 2000), the Original FMP established that the spring survey data are used for little skate and the fall survey data are used for the other managed skate species.

A proxy for the biomass at maximum sustainable yield ($B_{MSY_{proxy}}$) is calculated for each skate species. First, a survey biomass index is calculated as survey catch per tow (kg/tow) during a specific set of years (e.g., 1963-1966 for barndoor; Table 4). The $B_{MSY_{proxy}}$ (also the 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.).

A proxy for the maximum sustainable yield (MSY_{proxy}) is calculated for the skate complex by first calculating the MSY_{proxy} for each species, which is the median of catch/biomass over the entire time series multiplied by the $B_{MSY_{proxy}}$. Here, “catch” is total landings from dealer data, vessel to vessel transfers from Vessel Trip Report (VTR) data and dead discards (kg), and “biomass” is the survey biomass index (kg/tow). The MSY_{proxy} for each species is then summed over all seven skate species to calculate the skate complex MSY_{proxy} .

The MSY_{proxy} was last calculated in 2017 for the FY 2018-2022 specifications at 36,794 mt, so the “entire time series” includes data through 2016 (Table 2). This MSY_{proxy} was a slight decrease relative to MSY_{proxy} that was calculated in 2015 for the FY 2016–2017 specifications: 36,806 mt, due to an update in discard mortality rate assumptions that changed data in the time series.

2023 Assessment. Skates will have a [Level 3](#) management track assessment in 2023. The scope of the assessment was set by the Assessment Oversight Panel during its meeting on May 22. The topics that may be considered in the assessment include (but not limited to):

- Add recreational catch data to the fishery catch time series used to develop reference points. This would include examining species-level data and addressing any issues with species attribution.
- Use fishery compliance assumptions to reduce the landings attributed to the skates that have had a possession prohibition (could shift some landings to discards and increase landings attributed to other species). Some skates are very difficult to identify by species, and use of dealer and observer data to characterize the catch by species has been hampered by known data errors. As a proxy, the species and length-frequency data in the bottom trawl survey have been used to attribute fishery catch by species.

- Update the data time series used to calculate MSY_{proxy} and consider how frequently it should be updated. The current MSY_{proxy} was calculated with data through 2016. It should be noted though that adding a few more years of data to a 50+ year time series for most species is unlikely to substantially change the MSY_{proxy} .
- Revisit the status determination criteria for thorny skate due to the lack of rebuilding progress. The status of thorny skate is particularly concerning. In the fall of 2022, the Center reported that thorny skate remain overfished, and the survey index was at just 3.6% of the rebuilding target despite being 19 years into its rebuilding period that ends in 2028. While the possession prohibition has kept thorny skate catch at very low levels, the survey biomass has continued to have no significant signs of rebuilding.
- Update abundance indices for the fall and spring bottom trawl surveys for all species and evaluate the potential for revising which survey is used to calculate biomass indices. Since the Original FMP, the spring survey has been used for little skate and the fall survey for other skates.¹ An alternate approach may be to averaging the spring and fall survey results.
- Update abundance indices for other surveys such as the Gulf of Maine longline survey and include in the assessment report to provide additional perspectives on abundance trends.

Acceptable Biological Catch (ABC). The ABC control rule for the Northeast Skate Complex, established through Amendment 3 (NEFMC 2009) is:

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.

For the FY 2020-2021 and 2022-2023 specifications, gaps in survey coverage precluded the exact application of this control rule (Table 1). In the 2017 fall survey, southern stations were missed resulting in no survey indices for rosette or clearnose skate that year. To a lesser degree, the missed stations in 2017 also impacted the time series for barndoor, thorny, smooth, and winter skate, and there were missed stations in the 2018 fall survey that impacted the time series for these species as well. For these species, the surveys were adjusted to account for the missing strata using an average of the ratio between the series with all strata and the series with the missing strata dropped. This was consistent with how missing data in the 2017 fall survey was handled for these species in the 2018 stock status update. The survey was missed entirely in 2020, so there will need to be adjustments to the data used for FY 2024-2025 specifications.

¹ The Original FMP established the overfishing definition for each species in the skate complex based on the reference points developed through SAW 30 and specifies which survey is used for the biomass index. Per National Standard 1 Guidelines, overfishing definitions are established via Council action. Until the Council takes action to revise the overfishing definition, the assessment should update abundance indices using current methods but could explore other approaches (e.g., using data from both surveys).

Table 1. Years of data used for the setting FY 2020-2023 specifications and data expected to be used for FY 2024-2025

			FY 2020-21	FY 2022-23	FY 2024-25	
			(implemented)	(implemented)	(control rule)	(expected)
Survey indices	Spring	Little	2017-2019	2019, 2021	2021-2023	2021-2023
	Fall	Rosette & clearnose	2016, 2018	2018-2019	2020-2022	2021-2022
		Barndoor, thorny, smooth, winter	2016-2018	2017-2019	2020-2022	2021-2022
Catch/biomass time series			Time series to 2016	Times series to 2016	Not always updated	May update to 2022
ABC			32,715 mt	37,236 mt	tbd	tbd
Deductions from ACT			2016-2018	2017-2019	2020-2022	2020-2022

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 (NEFMC 2018).

Total Allowable Landings (TAL). The skate federal TALs is set by subtracting deductions from the ACT for sources of catch outside of federal landings, using calendar year 2020-2022 data (Figure 1):

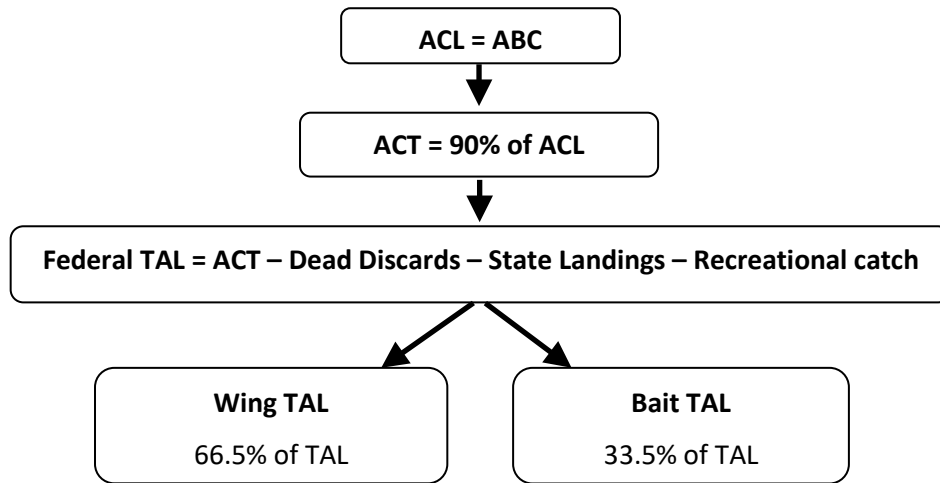
- Dead discards are calculated by applying the weighted discard mortality rate to the average discards from the most recent three calendar years (using observer and ASM data).
- State landings are equal to the most recent average of three calendar years of landings by vessels that did not have a federal skate permit on the day of landing (Table 6).²
- Recreational catch is equal to the most recent average of three calendar years of recreational catch used for ABC setting.³

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

² These are the “state landings” in year-end ACL accounting, except on a calendar year basis. The definition of state landings was revised in 2022 for FY 2021 ACL accounting, in the setting of FY 2024-2025 specifications, and going forward. The prior definition was landings by vessels that have never had a federal fishing permit (permit # = 000000)

³ Recreational catch is a new deduction for the FY 2024-2025 specifications.

Figure 1. Formula for skate specifications setting.



4.0 ALTERNATIVES UNDER CONSIDERATION

4.1 ACTION 1 – SPECIFICATIONS

Notes for AP and Committee

- The PDT will develop ABCs with updated data from the 2023 assessment and following the control rule to be reviewed by the Scientific and Statistical Committee in October 2023.
- No decisions are needed on Action 1 currently.

This action sets fishery specifications for FY 2024 and 2023 according to the formula (Figure 1) established through Amendment 3 (NEFMC 2009).

4.1.1 Alternative 1 - No Action

Under Alternative 1 (No Action), the ABC specifications for FY 2024-2025 would be unchanged from that of FY 2022-2023 since specifications in the Skate FMP remain in place until replaced by a future action. The ABC would be 37,236 mt and an equivalent annual catch limit (ACL; Table 2). The Federal total allowable landings (TAL) would be 21,142 mt, the wing TAL would be 14,059 mt, and the bait TAL would be 7,082 mt. Deductions for expected dead discards and state landings would be 11,856 and 515 mt, respectively (35% and 1.5% of the annual catch target (ACT)).

These specifications were derived from the median catch/biomass exploitation ratio for the National Marine Fisheries Service (NMFS) bottom trawl time series up to 2016 and the three-year average stratified mean biomass for skates; using the 2017-2019 spring Northeast Fisheries Science Center (NEFSC) survey data for little skate; the 2018-2019 fall survey data for rosette and clearnose skate; and 2017-2019 fall survey data for barndoor, thorny, smooth, and winter skate (modifications due to some missed fall survey stations in 2017 and 2018).

Table 2. Specifications for FY 2020-2021 and FY 2022-2023.

		FY 2020-2021		FY 2022-2023	
		(mt)	(lb)	(mt)	(lb)
ABC = ACL	live weight	32,715	72,124,143	37,236	82,091,230
ACT (90% of ACL)	live weight	29,444	64,912,831	33,513	73,883,430
Expected Dead Discards	live weight	10,942	24,122,952	11,856	26,137,975
Expected State Landings	live weight	638	1,406,548	515	1,135,379
Federal TAL	live weight	17,864	39,383,332	21,142	46,610,076
Wing TAL (66.5% of TAL)	live weight	11,879	26,188,681	14,059	30,994,753
	wing weight	5,233	11,536,864	6,193	13,654,076
Bait TAL (33.5% of TAL)	live weight	5,984	13,192,446	7,082	15,613,119

Note: All values in whole weight.

4.1.2 Alternative 2 – Updated Specifications

Under Alternative 2, ...

4.2 ACTION 2 – SKATE POSSESSION LIMITS

Notes for AP and Committee

- On March 22, 2023, the Skate Committee tasked the PDT “to develop information that would support decisions about allowing possession of smooth skate, increasing possession limits in the wing and bait fishery, and potentially increasing the barndoor skate partial possession limit in the wing fishery (currently 25%). The Committee is interested in exploring approaches to increase barndoor possession such as having a separate barndoor limit, removing the barndoor partial possession, allowing incidental possession of barndoor, etc. This would help evaluate if there are opportunities to turn discards into landings and increase efficiency in the fishery.”
- Information to support decisions is in Section 5.2.1.2.
- Should alternatives be considered that would change:
 - The possession limits for wing and/or bait?
 - The wing possession limit for B-DAS (220 lb) and non-DAS tips (500 lb)?
 - The partial possession limit for barndoor skate in the wing fishery?
 - The possession prohibition for smooth skate?
- The Council would need to initiate a framework adjustment action to consider changing the species-specific possession limits.
- PDT recommendations:
 - Barndoor: If the Committee moves forward with expanded barndoor skate possession, the PDT recommends that reintegrating barndoor skate into the complex without restrictions for the bait fishery or incidental catch would simplify harvesting, management, and enforcement. Removing the 25% partial possession limit would eliminate a choke species for the fishery. The PDT recommends not creating a separate barndoor skate possession limit. Doing so would pose added challenges for both enforcement and the fishery.
 - Smooth: The PDT recommends that if the 2023 skate assessment indicates that smooth skate biomass is stable, reintegrating the species into the complex would ease enforcement and potentially shift discards into landings. Like barndoor skate, the PDT recommends merging smooth skate back into the skate complex as opposed to keeping management of the species separate.

The Wing TAL is managed in two seasons and the Bait TAL is managed in three seasons (Table 3). Season 1 for the wing fishery (May 1 – August 31) receives 57% of the Wing TAL and the remainder is allocated to Season 2. Season 1 for the bait fishery (May 1 – July 31) receives 30.8% of the Bait TAL, Season 2 (August 1 – October 31) receives 37.1% and the remainder is allocated to Season 3.

Table 3. Skate seasonal management with FY 2020-2023 possession limits.

Fishery	Season	Dates	% of TAL	Possession Limit	Trigger	Incidental Limit
Wing	1	May 1 – Aug 31	57%	3,000 lb wing weight (6,810 lb whole weight)	85% of seasonal TAL	500 lb wing weight (1,135 lb whole weight)
	2	Sept 1 – Apr 30	remainder	5,000 lb wing weight (11,350 lb whole weight)	85% of annual TAL	
Bait	1	May 1 – Jul 31	30.8%	25,000 lb whole weight	90% of seasonal TAL	8,000 lb whole weight
	2	Aug 1 - Oct 31	37.1%		90% of seasonal TAL	
	3	Nov 1 – Apr 30	remainder		80% of annual TAL	

The wing and bait fisheries have different seasonal possession limits and triggers for when an incidental limit may be implemented under the discretion of the Regional Administrator (Table 3; further described on the [GARFO website](#)). If for either skate fishery, at the end of a fishing year, it is calculated that the TAL was exceeded by more than 5%, an automatic adjustment to that fishery’s TAL trigger would occur for the next fishing year. A straight one-for-one percent reduction in a TAL trigger for prior overages reduces the likelihood that future landings would exceed that TAL. This increases the buffer between the TAL and trigger to account for incidental landings in a skate fishery when the skate possession limit declines to the incidental limit. An overage of less than 5% would not be alarming and might be offset by reductions in skate discards.

Skate Wing Possession Limits

For trips fishing on a DAS, FY 2020-2023, the skate wing possession limits have been 3,000 lb for Season 1 (May 1 to August 31) and 5,000 lb for Season 2 (September 1 to April 30). The barndoor skate possession limit has been 750 lb in Season 1 and 1,250 lb in Season 2 (set proportional at 25% of the limits). There is a seasonal incidental possession limit trigger of 85% of the Wing TAL. The incidental possession limit is 500 lb and the wing fishery closes once 100% of the TAL is reached.

For trips not fishing on a DAS or on a Northeast multispecies B-DAS, the skate wing possession limits are 500 lb and 220 lb, respectively. If a seasonal incidental possession limit is triggered, these limits remain. Barndoor skate cannot be retained on trips not fishing on a DAS or on a Northeast multispecies B-DAS.

Skate Bait Possession Limits

For FY 2020-2023, the skate bait possession limits have been 25,000 lb in all three seasons. There is a seasonal incidental possession limit trigger of 90% in Seasons 1 and 2 and 80% in Season 3. Vessels that obtain a Skate Bait Letter of Authorization (LOA) from GARFO can retain whole skates up to the possession limit in all three seasons if they comply with related rules and size limits. The incidental possession limit is 8,000 lb, and when 100% of the bait TAL is reached, the bait LOAs are voided to slow landings.

Barndoor Skate

NOAA Fisheries declared that barndoor skate was overfished after the skate stock assessment in 1999 (NEFSC 2000) and the Original FMP prohibited possession of barndoor skate. Barndoor skate was

declared rebuilt in 2016 and possession has been allowed since FY 2018 (through Framework Adjustment 5), as up to 25% of the skate wing possession limit (further described on the [GARFO website](#)). The barndoor partial possession limit of 25% in the wing fishery was initially set to match the proportion of barndoor skate in the fishery, and thus limit high-grading of catch. At the time, the intent was to potentially adjust this in the future as barndoor becomes part of the fishery. No possession of barndoor skate is permitted for vessels fishing with a Skate Bait LOA.

Smooth Skate

Like barndoor skate, NOAA Fisheries declared that smooth skate was overfished after SAW 30 (NEFSC 2000). By the time the Original FMP was finalized, smooth skate was no longer overfished, yet was depleted and well below the target biomass level. Possession of smooth skate was prohibited within the [GOM Regulated Mesh Area](#) (where smooth skate largely occurs; NEFMC 2003, Section 4.13). Smooth skate has been considered rebuilt since 2018, yet possession is still prohibited in the Gulf of Maine.

5.0 AFFECTED ENVIRONMENT

[See 2021 Annual Monitoring Report, the FY 2022-2023 Specifications document and Framework 8 for additional details on the Affected Environment. Information will be updated and provided in future versions of this document as the year progresses.]

5.1 TARGET SPECIES

The last formal skate assessment was in 2008 (NDPSWG 2009), but the NEFSC has annually updated survey biomass indices used to determine stock status. The fishing mortality reference points are based on changes in survey biomass indices. If the three-year moving average of the survey biomass index for a skate species declines by more than the average CV of the survey time series, then fishing mortality is assumed to be greater than FMSY and overfishing is assumed to be occurring for that skate species. A skate species is considered overfished if the three-year moving average of the survey biomass index is less than $B_{\text{threshold}}$, where $B_{\text{threshold}}$ is half of the $B_{\text{MSY proxy}}$. The average CVs of the indices are given (as percent change for overfishing status determination in FMP) by species in Table 4.

Barndoor skate: The 2019 and 2021 average NEFSC fall survey biomass index of 1.52 kg/tow is above the biomass threshold reference point (0.78 kg/tow) but slightly below the BMSY proxy (1.57 kg/tow). The 2019 and 2021 average index is below the 2017-2019 average index by 24.8%, which is less than the threshold percent change of 30%. It is recommended that this stock is not overfished and overfishing is not occurring.

Clearence skate: The 2019 and 2021 average NEFSC fall biomass index of 1.10 kg/tow is above the biomass threshold reference point (0.33 kg/tow) and the BMSY proxy (0.66 kg/tow). The 2019 and 2021 average index is above the 2018 and 2019 average index by 4.4%. It is recommended that this stock is not overfished and overfishing is not occurring.

Little skate: the 2021-2022 NEFSC spring average biomass index of 4.07 kg/tow is above the biomass threshold reference point (3.07 kg/tow) but below the BMSY proxy (6.15 kg/tow). The 2021-2022 average index is below the 2019 and 2021 average by 15.8%, which is less than the threshold percent change of 20%. It is recommended that this stock is not overfished and overfishing is not occurring.

Rosette skate: The 2019 and 2021 average NEFSC fall biomass index of 0.054 kg/tow was above the biomass threshold reference point (0.024 kg/tow) and above the BMSY proxy (0.048 kg/tow). The 2019 and 2021 average index is above the 2018 and 2019 average index by 7.6%. It is recommended that this stock is not overfished and overfishing is not occurring.

Smooth skate: The 2019 and 2021 average NEFSC fall biomass index of 0.20 kg/tow is above the biomass threshold reference point (0.134 kg/tow) but below the BMSY proxy (0.27 kg/tow). The 2019 and 2021 average index is below the 2017-2019 average index by 26.2%, which is less than the threshold percent change of 30%. It is recommended that this stock is not overfished and overfishing is not occurring.

Thorny skate: The 2019 and 2021 average NEFSC fall biomass index of 0.15 kg/tow is well below the biomass threshold reference point (2.06 kg/tow). The 2019 and 2021 average index is below the 2017-2019 average index by 19.0%, which is less than the threshold percent change of 20%. It is recommended that this stock is overfished but overfishing is not occurring.

Winter skate: The 2019 and 2021 average NEFSC fall biomass index of 9.70 kg/tow is above the biomass threshold reference point (2.83 kg/tow) and above the BMSY proxy (5.66 kg/tow). The 2019 and 2021 average index is above the 2017-2019 average index by 12.7%. It is recommended that this stock is not overfished and overfishing is not occurring.

Table 4. Recent survey indices, survey strata used, and biomass reference points of skate species

	BARNDOOR	CLEARNOSE	LITTLE	ROSETTE	SMOOTH	THORNY	WINTER	
Annual survey	Autumn	Autumn	Spring	Autumn	Autumn	Autumn	Autumn	
Time Series Basis	1963-1966	1975-2007	1982-2008	1967-2007	1963-2007	1963-2007	1967-2007	
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	0.66	6.15	0.048	0.27	4.13	5.66	
Biomass Threshold	0.78	0.33	3.07	0.024	0.13	2.06	2.83	
Survey Indices (kg/tow)	2014	1.62	0.61	6.54 ^a	0.053	0.22	0.21	6.95
	2015	2.08	0.82	6.82	0.045	0.25	0.19	6.15
	2016	1.09	0.34	3.56 ^b	0.044	0.27	0.13	6.84
	2017	1.54 ^c	c	6.09	c	0.34 ^c	0.21 ^c	8.40 ^c
	2018	2.80 ^e	0.88	4.41	0.051	0.25 ^e	0.14 ^e	6.41 ^e
	2019	1.71	1.23	5.45	0.050	0.24	0.18	11.00
	2021	1.33	0.97	4.21	0.058	0.17	0.11	8.40
	2022			3.92				
OVERFISHED METRIC (If 3-year moving average of survey biomass index < B_{threshold} then overfished)								
2015-2017 3-year average	1.57 ^c	c	5.49 ^b	c	0.27 ^c	0.18 ^c	7.13 ^c	
2016-2018 3-year average	1.81 ^{c,e}	0.61 ^d	4.69 ^b	0.047 ^d	0.27 ^{c,e}	0.16 ^{c,e}	7.22 ^{c,e}	
2017-2019 3-year average	2.02 ^{c,e}	1.05 ^d	5.32	0.050 ^d	0.27 ^{c,e}	0.18 ^{c,e}	8.61 ^{c,e}	
2019,21 2-year average	1.52 ^f	1.10 ^f	4.83 ^f	0.054 ^f	0.20 ^f	0.15 ^f	9.70 ^f	
2021-22 2-year average			4.07 ^f					
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 2016-2018 vs. 2015-2017	+15.3 ^{c,e}	+3.1 ^d	-14.6 ^b	+0.1 ^d	-0.2 ^{c,e}	-8.4 ^{c,e}	+1.2 ^{c,e}	
% change 2017-2019 vs. 2016-2018	+11.4 ^{c,e}	+73.1 ^d	+13.4 ^b	+6.4 ^d	+1.7 ^{c,e}	+11.4 ^{c,e}	+19.2 ^{c,e}	
% change 2019-2021 vs. 2017-2019	-24.8 ^f	+4.4 ^f	-9.1 ^f	+7.6 ^f	-26.2 ^f	-19.0 ^f	+12.7 ^f	
% change 2021-2022 vs. 2019-2021			-15.8 ^f					
% change for overfishing status determination in FMP	-30	-40	-20	-60	-30	-20	-20	
<p>a. No survey tows completed south of Delaware in spring 2014. Values for 2014 were adjusted for missing strata (Offshore 61-68, Inshore 32, 35, 38, 41, 44) but may not be fully comparable to other surveys which sampled all strata.</p> <p>b. The 2016 spring survey was later than usual. c. No survey tows completed south of Georges Bank in fall 2017. Values either missing or adjusted for missing strata (Offshore 1-12, 61-76).</p> <p>d. Two-year average due to missing 2017 survey. e. Values were adjusted for missing Offshore strata 30, 34 and 35.</p> <p>f. Spring and fall surveys not completed due to COVID 19 restrictions.</p> <p>Grey shading indicates an overfished species.</p>								

5.2 HUMAN COMMUNITIES

5.2.1 Commercial Skate Fishing

5.2.1.1 Catch Limits, Catch, and Landings

In-season Quota Monitoring

Table 5. FY 2017-2022 in-season monitoring of Northeast skate wing and bait landings (live weights).

	TAL		Landings		
	lb	mt	lb	mt	%
FY 2017					
Wing	18,457,000	8,372	18,662,000	8,465	101.1%
Bait	9,299,098	4,218	8,769,989	3,978	94.3%
Total	27,756,098	12,590	27,431,989	12,443	98.8%
FY 2018					
Wing	23,146,333	10,499	17,278,000	7,837	74.6%
Bait	11,660,249	5,289	7,398,714	3,356	63.5%
Total	34,806,582	15,788	24,676,714	11,193	70.9%
FY 2019					
Wing	23,146,333	10,499	18,620,780	8,446	80%
Bait	11,660,249	5,289	8,537,124	3,872	73%
Total	34,806,582	15,788	27,157,904	12,319	78%
FY 2020					
Wing	26,188,712	11,879	20,200,770	9,163	77%
Bait	13,192,462	5,984	7,496,802	3,400	57%
Total	39,381,174	17,863	27,697,572	12,563	70%
FY 2021					
Wing	26,188,712	11,879	10,762,565	4,882	41%
Bait	13,192,462	5,984	6,361,527	2,886	48%
Total	39,381,174	17,863	17,124,092	7,768	44%
FY 2022*					
Wing	30,994,753	14,059	12,766,450	5,791	37%
Bait	15,613,119	7,082	8,455,545	3,835	50%
Total	46,610,076	21,142	21,221,995	9,626	46%
<p><i>Source:</i> cfders2021 and cfders2022, Vessel Trip Reports, and permit databases, accessed 7/08/2022. FY 2022 data from in-season quota monitoring reports, accessed 5/10/2023.</p> <p><i>Notes:</i></p> <ul style="list-style-type: none"> • Data aggregates landings from the weekly, in-season quota monitoring reports. • Landings are the subset of landings with a Federal skate permit on the day of landing. 					

Year-End ACL Accounting

Table 6. FY 2019-2021 year-end Northeast skate complex ACL accounting.

	Live weight		Percent of ACL
	(lb)	(mt)	
FY 2017 (ACL = 31,081 mt)			
Northeast skate federal commercial landings	31,854,574	14,449	46.5%
Northeast skate state-permitted only vessel landings	1,752,206	795	2.6%
Northeast skate estimated dead discards	18,790,080	8,523	27.4%
Northeast skate recreational catch	3,367,634	1,528	4.9%
Total Northeast skate catch	55,764,494	25,294	81.4%
FY 2018 (ACL = 31,327 mt)			
Northeast skate federal commercial landings	32,155,182	14,585	46.9%
Northeast skate state-permitted only vessel landings	1,268,820	576	1.9%
Northeast skate estimated dead discards	17,369,954	7,879	25.3%
Northeast skate recreational catch	2,398,508	1,088	3.5%
Total Northeast skate catch	53,192,464	24,128	77.6%
FY 2019 (ACL = 31,327 mt)			
Northeast skate federal commercial landings	27,807,878	12,613	40.3%
Northeast skate state-permitted only vessel landings	2,532,286	1,149	3.7%
Northeast skate non-landed bait	463,069	210	0.6%
Northeast skate estimated dead discards	13,144,115	5,962	19.0%
Northeast skate recreational catch	2,229,125	1,011	3.2%
Total Northeast skate catch	46,176,472	20,945	66.9%
FY 2020 (ACL = 32,715 mt)			
Northeast skate federal commercial landings	28,223,460	12,802	39.1%
Northeast skate state-permitted only vessel landings	1,880,350	853	2.6%
Northeast skate non-landed bait	485,421	220	0.7%
Northeast skate estimated dead discards	18,791,428	8,524	26.1%
Northeast skate recreational catch	692,135	314	1.0%
Total Northeast skate catch	50,072,794	22,713	69.4%
FY 2021 (ACL = 32,715 mt)			
Northeast skate federal commercial landings	17,806,964	8,077	24.7%
Northeast skate state-permitted only vessel landings	1,655,445	751	2.3%
Northeast skate non-landed bait	382,062	173	0.5%
Northeast skate estimated dead discards	14,556,155	6,603	20.2%
Northeast skate recreational catch	1,111,664	504	1.5%
Total Northeast skate catch	35,512,289	16,108	49.2%

Source of FY 2019 data: Commercial fisheries dealer database accessed 8/9/2022; Northeast Fishery Observer Program database, accessed 7/01/2020; Marine Recreational Information Program reports, accessed 7/06/2020; and VTR database accessed 8/2022 (new method only).

Source of FY 2020 data: Commercial fisheries dealer database accessed 8/9/2022; Northeast Fishery Observer Program database, accessed 6/30/2021; Marine Recreational Information Program reports, accessed 7/07/2022; and VTR database accessed 8/2022 (new method only).

Notes:

- “Northeast skate federal commercial landings” are landings by vessels that had a federal skate permit on the day of landing (include research landings reported to federal dealers).
- “Northeast skate state-permitted only vessel landings” are landings with no federal skate permit on the day of landing. May include state permitted landings reported by state-only dealers provided to GARFO from states.
- “Northeast skate non-landed bait” is catch reported only in VTRs (not by federal dealers).
- “Northeast skate estimated dead discards” is based on landings of all species and skate discards on observed trips extrapolated to all commercial landings of all species (weighted by area, gear, etc.) to calculate total skate discards. Then, a discard mortality rate is applied to the calculated total skate discards (discard estimation method differs from how discards are estimated during specifications setting, which uses the NEFSC method).
- “Northeast skate recreational catch” is private angler and party/charter landings and dead discards.

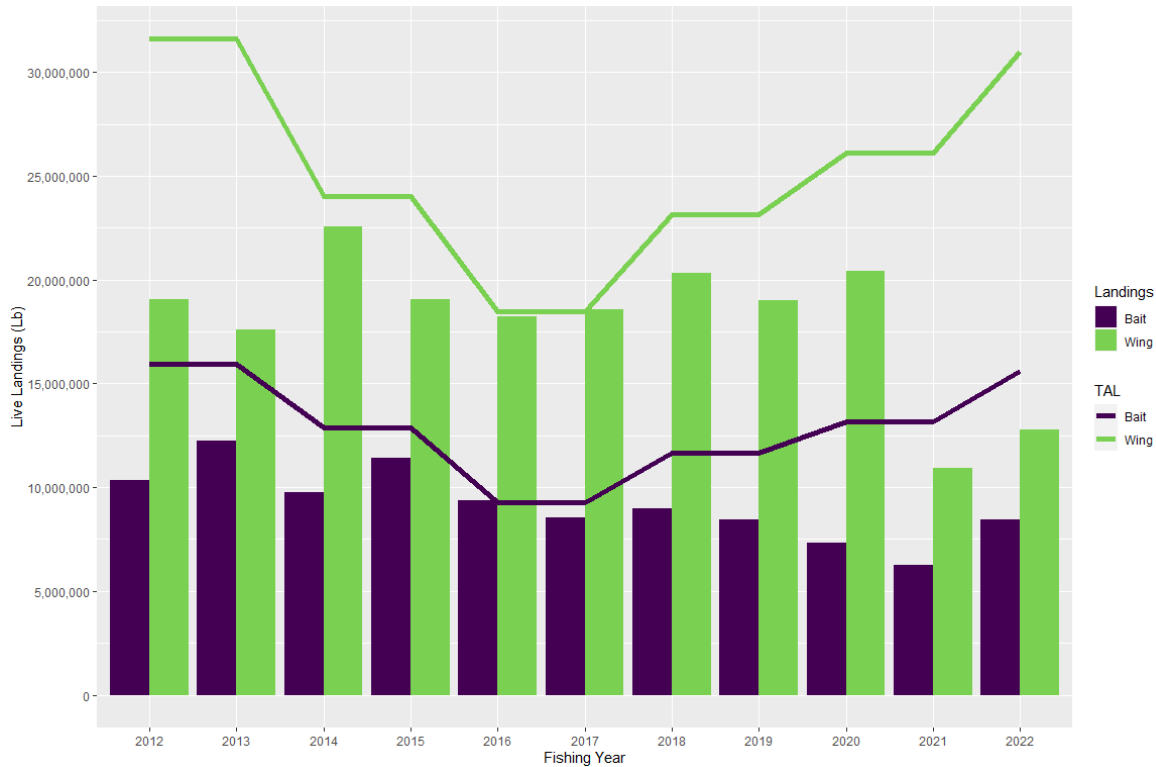
Table 7. Total allowable landings (TAL) (pounds), live landings, and percent of TAL achieved for the wing and bait fisheries by fishing year, 2010-2022.

FY	Wing			Bait		
	TAL	Landings (Live lb)	% TAL achieved	TAL	Landings (Live lb)	% TAL achieved
2010	20.3 M	22,200,790	109%	10.2 M	9,949,098	97%
2011	31.6 M	25,992,579	82%	15.9 M	9,108,500	57%
2012	31.6 M	19,060,914	60%	15.9 M	10,368,251	65%
2013	31.6 M	17,611,487	56%	15.9 M	12,230,497	77%
2014	24.0 M	22,558,411	94%	12.1 M	9,760,925	81%
2015	24.0 M	19,065,405	79%	12.1 M	11,434,945	94%
2016	18.5 M	18,057,360	98%	9.3 M	9,379,919	101%
2017	18.5 M	18,577,059	100%	9.3 M	8,557,568	91%
2018	23.1 M	20,334,407	88%	11.7 M	8,992,742	77%
2019	23.1 M	19,019,727	82%	11.7 M	8,424,659	72%
2020	26.2 M	20,409,990	78%	13.2 M	7,329,043	56%
2021	26.2 M	10,914,913	42%	13.2 M	6,249,027	47%
2022*	31.0 M	12,766,450	41%	15.6 M	8,455,545	54%

Source: GARFO Quota Monitoring Archive, accessed 5/10/2023.

*2022 data reported as of 5/10/2023.

Figure 2. Skate wing and bait landings relative to total allowable landings (TAL), FY 2012 - 2022*.



Source: GARFO Quota Monitoring Archive, accessed 5/10/2023.
 *2022 data reported as of 5/10/2023.

5.2.1.2 Possession Limits

Committee tasking to PDT March 22, 2023:

“That the Committee task the PDT to develop information that would support decisions about allowing possession of smooth skate, increasing possession limits in the wing and bait fishery, and potentially increasing the barndoor skate partial possession limit in the wing fishery (currently 25%). The Committee is interested in exploring approaches to increase barndoor possession such as having a separate barndoor limit, removing the barndoor partial possession, allowing incidental possession of barndoor, etc. This would help evaluate if there are opportunities to turn discards into landings and increase efficiency in the fishery.”

The wing and bait fisheries have differing seasonal possession limits and triggers for when an incidental limit may be implemented under the discretion of the Regional Administrator. If for either skate fishery, at the end of a fishing year, it is calculated that the TAL was exceeded by more than 5%, an automatic adjustment to that fishery’s TAL trigger would occur for the next fishing year. A straight one-for-one percent reduction in a TAL trigger for prior overages reduces the likelihood that future landings would exceed that TAL. This increases the buffer between the TAL and trigger to account for incidental landings in a skate fishery when the skate possession limit declines to the incidental limit. An overage of less than 5% would not be alarming and might be offset by reductions in skate discards.

In fishing year 2022 and 2023, the bait fishery has three seasons with a 25,000 lb whole weight possession limit (Table 3). The wing fishery has two seasons, with 3,000 lb and 5,000 lb wing weight

possession limits. Multispecies B-DAS and non-DAS trips are limited to a 220 lb and 500 lb wing weight possession limit, respectively. In the wing fishery, if an 85% trigger is reached, the incidental limit will be in place until the end of the season. In the bait fishery, if a 90% trigger is reached in Seasons 1 and 2, or 80% in Season 3, the incidental limit will be in place until the end of the season. In both fisheries, the Regional Administrator has the discretion to not implement, or to later lift, the incidental limit if the full TAL is not expected to be reached.

During the FY 2022-2023 Specifications process, the PDT conducted an analysis of landings and discards of skate wing and bait relative to seasonal possession limits for FY 2018. The Skate Committee then considered changes to skate wing and bait seasonal possession limits but concluded that because skate wing and bait landings were stable, keeping possession limits the same would stabilize the fishery following disruptions to fishing activity and market conditions during the COVID-19 pandemic.

Provided below are data on skate landings and discards relative to possession limits to inform decisions around the potential adjustments to Fishing Year 2024-2025 possession limits, including the expansion of barndoor skate possession and permitting smooth skate possession. Data from FY 2018 through FY 2021 were obtained from the NOAA Catch Accounting and Monitoring System, as FY 2022 data were not yet available. This analysis does not change the conclusions of the previously analysis of FY 2018 data but expands upon the scope of the analysis and includes three years of additional data.

5.2.1.2.1 Skate Wing Possession Limit Performance

The PDT examined skate landings and discards from FY 2018-2021. These years of data were used so that the results could be compared with data that the PDT provided during the FY 2022-2023 specification setting process (FY 2018 only). Data from FY 2022 are not yet appropriately validated to use in the analysis.

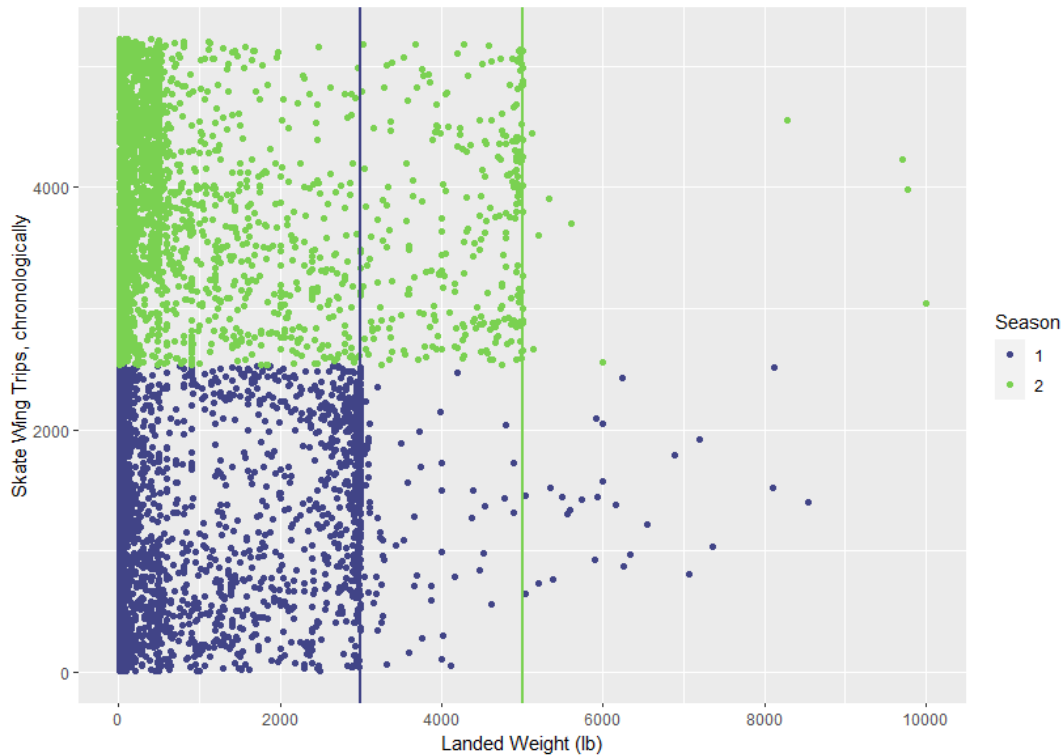
First, like the analysis for the FY 2022-2023 specifications, the PDT looked at skate wing landings relative to possession limits by trip and season (Figure 3, Table 8). The threshold of +/- 5% of the seasonal possession limit was initially chosen to remain consistent with the previous analysis, but the PDT opted to use +/- 10% instead to increase the sample size for the calculation of discards by possession limit performance.

The PDT makes the following observations:

- Trips in Season 1 (with a lower possession limit) tend to near the wing possession limit more so than in Season 2.
- The possession limits increased between FY 2019 and FY 2020. However, there is no clear difference in the proportion of trips within 10% of the possession limit between FY 2018-2019 and FY 2020-2021, but this may be obfuscated by the general decline in trips taken.
- Many trips in both seasons landed at or below 500 lb wing weight, ranging from 58-64% of all wing trips from FY 2018 – FY 2021. Of these:
 - There were just seven trips with a 220 lb possession limit, i.e., were declared Northeast multispecies B-DAS trips.
 - 36% of the trips had a 500 lb possession limit, i.e., were non-DAS trips (e.g., declared Northeast multispecies non-DAS, DOF). Of these, 15-18% of trips landed within 10% of the 500 lb limit, and 72-82% landed below the limit (Table 9). Consistently, a greater proportion of non-DAS trips landed within 10% of the 500 lb limit during Season 1 than 2, despite the limit not changing.
 - 33% were using a DAS (under the general wing limit), and 24-32% of all trips were using a Northeast multispecies DAS.
 - 31% of these trips did not have a declaration code, which could be a facet of inconsistencies within the CAMS data.

- A small number of wing trips appeared to exceed the seasonal possession limits. Primarily, these were trips where landed weight equaled live weight, suggesting that skate were landed whole, and the dealer processed the wings. Other reasons why trips appeared to exceed the seasonal possession limits include:
 - Vessels landing aggregated landings, such as those with a federal fishing permit number ending in #998 that may fish in state waters and land an aggregate federal possession limit. Some of these are state-only permit landings by multiple vessels submitted by a state in aggregate (mostly a historic occurrence), and others are submitted by single vessels (e.g., allowed in Rhode Island), but more investigation would be needed to determine if the trips were in state or federal waters;
 - Miscoding between wing and bait disposition codes;
 - Data entry errors; or
 - Fishing activity that is inconsistent with regulations.

Figure 3. Skate wing landings relative to possession limits by trip and season, FY 2021



Notes: Purple vertical line represents Season 1 possession limit (3,000 lb) and the green vertical line represents Season 2 possession limit (5,000 lb), and landed weight = wing weight. Each colored dot represents an individual trip. Trips are organized in chronological order (e.g., wing trip at 500 means the 500th trip during FY 2021). 24 trips were excluded from Figure 3 because wing landings exceeded 10,000 lb and skewed the visualization of the other trips.

Source: CAMS data, accessed 5/10/2023.

Table 8. Skate wing trips with landings below, within +/- 10%, and above the seasonal possession limits

Fishing Year	Wing Season	PL Category	# of Wing Trips	% of Wing Trips
2018	<i>Season 1 2,600 lb</i>	Below PL	3,523	75%
		Within +/-10% of PL	995	21%
		Above PL	205	4%
	<i>Season 2 4,100 lb</i>	Below PL	5,345	91%
		Within +/- 10% of PL	438	7%
		Above PL	65	1%
	Total	Below PL	8,868	84%
		Within +/-10% of PL	1,433	14%
		Above PL	270	3%
2019	<i>Season 1 2,600 lb</i>	Below PL	3,271	76%
		Within +/-10% of PL	927	21%
		Above PL	120	3%
	<i>Season 2 4,100 lb</i>	Below PL	4,305	89%
		Within +/- 10% of PL	506	10%
		Above PL	50	1%
	Total	Below PL	7,576	83%
		Within +/-10% of PL	1,433	16%
		Above PL	170	2%
2020	<i>Season 1 3,000 lb</i>	Below PL	2,789	69%
		Within +/-10% of PL	1,239	31%
		Above PL	33	1%
	<i>Season 2 5,000 lb</i>	Below PL	3,585	92%
		Within +/- 10% of PL	319	8%
		Above PL	14	<1%
	Total	Below PL	6,374	80%
		Within +/-10% of PL	1,558	20%
		Above PL	47	<1%
2021	<i>Season 1 3,000 lb</i>	Below PL	1,986	78%
		Within +/-10% of PL	485	19%
		Above PL	59	2%
	<i>Season 2 5,000 lb</i>	Below PL	2,559	95%
		Within +/- 10% of PL	132	5%
		Above PL	6	<1%
	Total	Below PL	4,545	87%
		Within +/-10% of PL	617	12%
		Above PL	65	1%

Notes:

'Below PL' = landings that are <10% below the seasonal possession limit.

'Above PL' = landings that are >=10% above the seasonal possession limit.

Source: CAMS data, accessed 5/10/2023.

Table 9. Non-DAS trips within +/- 10%, and above the 500 lb possession limit, as a subset of total skate wing trips

Fishing Year	Wing Season	PL Category	# of Trips	% of Total Non-DAS Trips	% of Total Skate Wing Trips
2018	<i>Season 1 500 lb</i>	Below PL	588	88%	12%
		Within +/-10% of PL	66	10%	1%
		Above PL	16	2%	<1%
	<i>Season 2 500 lb</i>	Below PL	1,425	80%	24%
		Within +/- 10% of PL	313	18%	5%
		Above PL	34	2%	<1%
	Total	Below PL	2,013	82%	19%
		Within +/-10% of PL	379	16%	4%
		Above PL	50	2%	<1%
2019	<i>Season 1 500 lb</i>	Below PL	592	90%	14%
		Within +/-10% of PL	48	7%	1%
		Above PL	18	3%	<1%
	<i>Season 2 500 lb</i>	Below PL	999	75%	21%
		Within +/- 10% of PL	241	18%	5%
		Above PL	90	7%	2%
	Total	Below PL	1,591	80%	17%
		Within +/-10% of PL	289	15%	3%
		Above PL	108	5%	1%
2020	<i>Season 1 500 lb</i>	Below PL	582	81%	14%
		Within +/-10% of PL	88	12%	2%
		Above PL	48	7%	1%
	<i>Season 2 500 lb</i>	Below PL	966	74%	25%
		Within +/- 10% of PL	266	20%	7%
		Above PL	75	6%	2%
	Total	Below PL	1,548	76%	19%
		Within +/-10% of PL	354	17%	4%
		Above PL	123	6%	2%
2021	<i>Season 1 500 lb</i>	Below PL	337	75%	13%
		Within +/-10% of PL	62	14%	2%
		Above PL	52	12%	2%
	<i>Season 2 500 lb</i>	Below PL	714	71%	26%
		Within +/- 10% of PL	205	21%	8%
		Above PL	80	8%	3%
	Total	Below PL	1,051	72%	20%
		Within +/-10% of PL	267	18%	5%
		Above PL	132	9%	3%

Notes:

Non-DAS trips include those with VMS declarations of Declared Out of Fishery and Northeast Multispecies Sector trips not using a Day-at-Sea.

'Below PL' = landings that are <10% below the seasonal possession limit.
 'Above PL' = landings that are >=10% above the seasonal possession limit.
 Source: CAMS data, accessed 5/10/2023.

Next, the PDT assessed skate discards from observed trips landing skate wings below or within 10% of the wing possession limit from FY 2018 - 2021. This could help in determining if discards could be reduced by increasing possession limits. Notably, there were very few observed trips landing skate wings from FY 2020 (n=173) due to a lack of observer coverage from March - July 2020. The results are presented below in Table 10 and Figure 4.

The PDT makes the following observations:

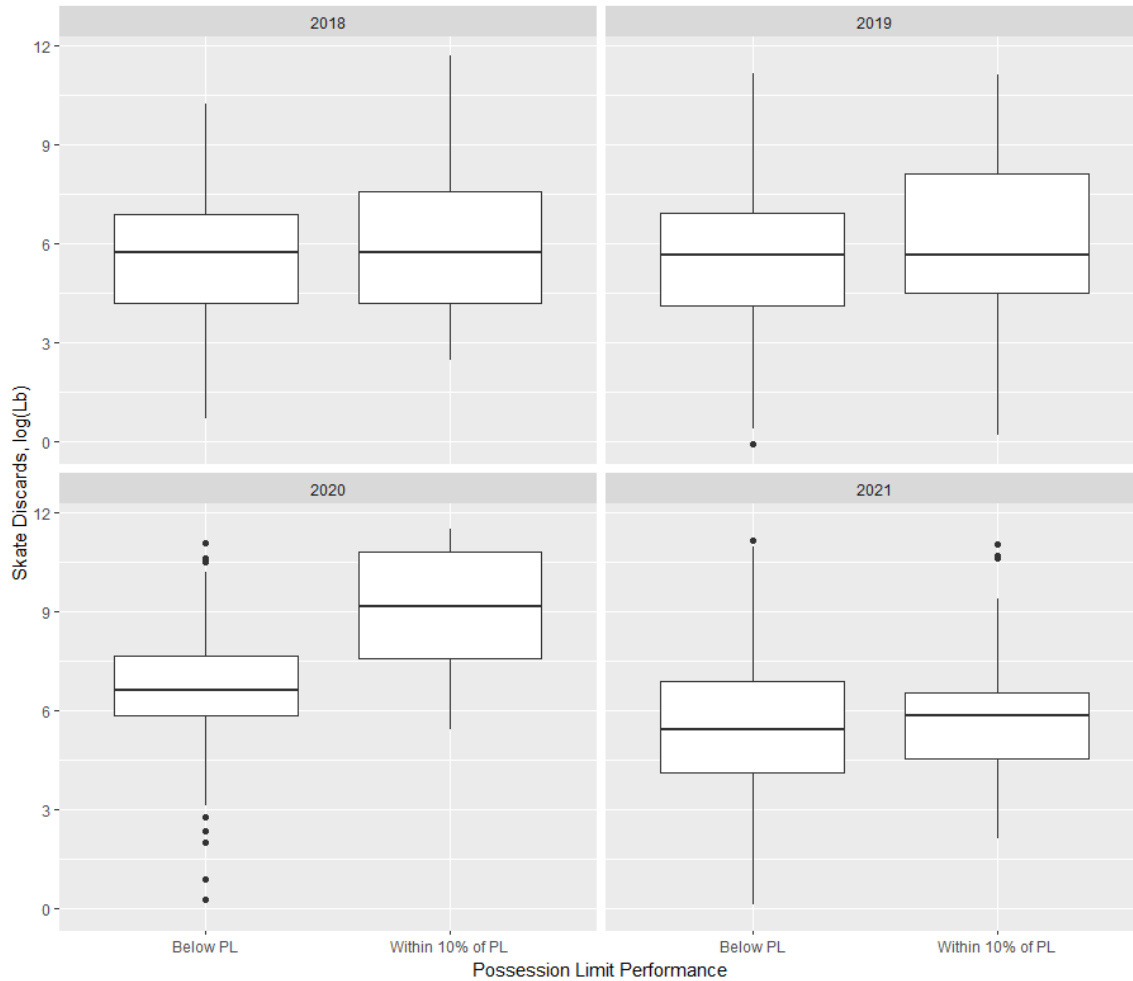
- Skate discards for trips landing within 10% were significantly higher than trips landing below the limit, which held true even when excluding the abnormal conditions of FY 2020 (P=.00006). The mean discards for trips landing below the limit were 218 lb (95% CI [199, 241]), while those within 10% of the limit were 514 lb (95% CI [366, 714]).
- When a +/- 5% threshold was used, skate discards on trips landing within 5% of the limit were still significantly higher than those landing below the limit (P=.002). The mean discards for trips landing below the limit were 227 lb (95% CI [207, 248]), while those within 10% of the limit were 389 lb (95% CI [271, 557]).
- Skate discards for non-DAS trips landing within 10% of the 500 lb possession limit were significantly higher than those landing below the limit (P<.000001). The mean skate discards for trips landing below the limit were 396 lb (95% CI [352, 451]), while those within 10% of the limit were 1,395 lb (95% CI [1076 1809]).
- Some observed trips had very high skate discards (large outliers): 33 trips had discards above 50,000 lb, and one trip had discards above 100,000 lb.

Table 10. Mean skate live discards on observed trips that landed skate wings by year and possession limit performance.

FY	Trips below possession limit		Trips within 10% of possession limit	
	Mean live discards	n	Mean live discards	n
2018	211 lb	819	458 lb	59
2019	201 lb	777	422 lb	89
2020	625 lb	155	7,588 lb	18
2021	180 lb	417	338 lb	63

Source: CAMS data, accessed 5/10/2023.

Figure 4. Skate live discards on observed trips that landed skate wings either below or within 10% of the wing possession limit, FY 2018 – 2021.



Note: Trips landing skate wings exceeding the skate wing possession limit are excluded; discard-only trips also excluded.

Source: CAMS data, accessed 5/10/2023.

The PDT examined the species composition of landings for trips landing skate wings below and within 10% of the skate wing seasonal possession limit from FY 2018 – 2021 (Table 11).

The PDT makes the following observations:

- For trips landing within 10% of the possession limit, skate wings and dogfish make up a much larger proportion of landings than those landing skate below the limit, suggesting that these are mainly directed skate trips.
- Trips landing below the limit had a much larger species diversity of catch, landing less dogfish and monkfish, and more scup and fluke, than those trips landing skate wings within 10% of the possession limit.

Table 11. Skate wing landings by proportion of catch and possession limit performance, FY 2018 – 2021.

Catch	Mean proportion of landings by weight	
	Below PL	Within 10% of PL
Skate wing	18%	66%
Monkfish	16%	9%
Scup	10%	< 1%
Fluke	10%	< 1%
Silver hake	7%	< 1%
Dogfish	7%	18%
Loligo squid	7%	< 1%
Bait skate	3%	2%

Source: CAMS data, accessed 5/10/2023.

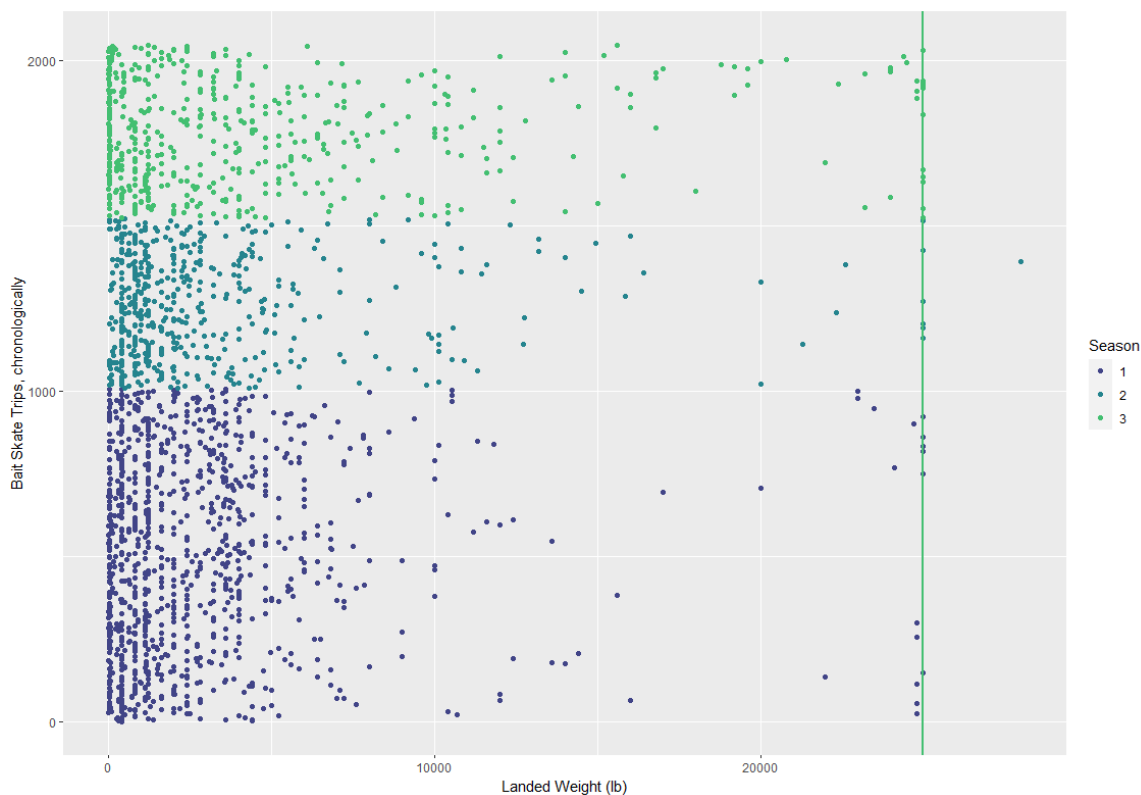
5.2.1.2.2 Bait Possession Limit Performance

Mirroring the skate wing analysis (Section 5.2.1.2.1), the PDT looked at bait skate landings relative to possession limits by trip and season from FY 2018 – 2021 (Figure 5). These years of data were used so that the results could be compared with data that the PDT provided during the FY 2022-2023 specification setting process. Data from FY 2022 were not yet appropriately validated to use in the analysis.

The PDT makes the following observations:

- Generally, only a small fraction (2-7%) of trips landed skate bait close to or at the seasonal possession limits from FY 2018 – FY 2021 (Figure 5; Table). The exception to this can be seen for FY 2018 and 2019 in Season 3 where a lower possession limit is associated with a much higher proportion of landings at the possession limit (10-18%). The mean proportion of trips in this category for Season 1, Season 2, and Season 3 were 2%, 2%, and 10% respectively.
- A small number of trips (<1% annually, Table) appeared to exceed the seasonal possession limits. Reasons could include:
 - Data entry errors; or
 - Activity inconsistent with regulations.

Figure 5. Skate bait landings relative to possession limits by trip and season, FY 2021



Notes: The green vertical line represents the possession limit for all seasons (25,000 lb). Landed weight = whole weight. Each colored dot represents an individual trip. Trips are organized in chronological order (e.g., wing trip at 500 means the 500th trip during FY 2021).

Source: CAMS data, accessed 5/10/2023.

Table 12. Skate bait trips landing below, within +/- 10%, and above the seasonal possession limits.

Fishing Year	Bait Season	PL Category	# of Bait Trips	% of Bait Trips
2018	Season 1 25,000 lb	Below PL	968	97%
		Within +/-10% of PL	28	3%
		Above PL	1	<1%
	Season 2 25,000 lb	Below PL	353	95%
		Within +/- 10% of PL	20	5%
		Above PL	0	0%
	Season 3 12,000 lb	Below PL	693	89%
		Within +/- 10% of PL	81	10%
		Above PL	2	<1%
	Total	Below PL	2,014	94%
Within +/-10% of PL		129	6%	
Above PL		3	<1%	
2019	Season 1 25,000 lb	Below PL	1,080	97%
		Within +/-10% of PL	28	3%
		Above PL	1	<1%
	Season 2 25,000 lb	Below PL	418	98%
		Within +/- 10% of PL	10	2%
		Above PL	0	0%
	Season 3 12,000 lb	Below PL	576	82%
		Within +/- 10% of PL	127	18%
		Above PL	3	<1%
	Total	Below PL	2,074	92%
Within +/-10% of PL		165	7%	
Above PL		4	<1%	
2020	Season 1 25,000 lb	Below PL	825	99%
		Within +/-10% of PL	8	1%
		Above PL	0	0%
	Season 2 25,000 lb	Below PL	388	99%
		Within +/- 10% of PL	3	1%
		Above PL	0	0%
	Season 3 25,000 lb	Below PL	694	95%
		Within +/- 10% of PL	33	5%
		Above PL	0	0%
	Total	Below PL	1,907	98%
Within +/-10% of PL		44	2%	
Above PL		0	0%	
		Below PL	990	98%

Fishing Year	Bait Season	PL Category	# of Bait Trips	% of Bait Trips
2021	Season 1 25,000 lb	Within +/-10% of PL	16	2%
		Above PL	0	0%
	Season 2 25,000 lb	Below PL	507	98%
		Within +/- 10% of PL	7	1%
		Above PL	1	<1%
	Season 3 25,000 lb	Below PL	502	96%
		Within +/- 10% of PL	22	4%
		Above PL	0	0%
	Total	Below PL	1,999	98%
		Within +/-10% of PL	45	2%
Above PL		1	<1%	

Notes:

'Below PL' = landings that are <10% below the seasonal possession limit.

'Above PL' = landings that are >1=0% above the seasonal possession limit.

Source: CAMS data accessed 5/10/2023

Next, the PDT assessed skate discards from observed trips landing bait skates below or within 10% of the bait skate possession limit. This could help in determining if discards could be reduced by increasing possession limits. The results are presented below in Table 12 and Figure 6. Note that there are very few observations from FY 2020 (n=25) due to a lack of observer coverage from March - July 2020.

The PDT makes the following observations:

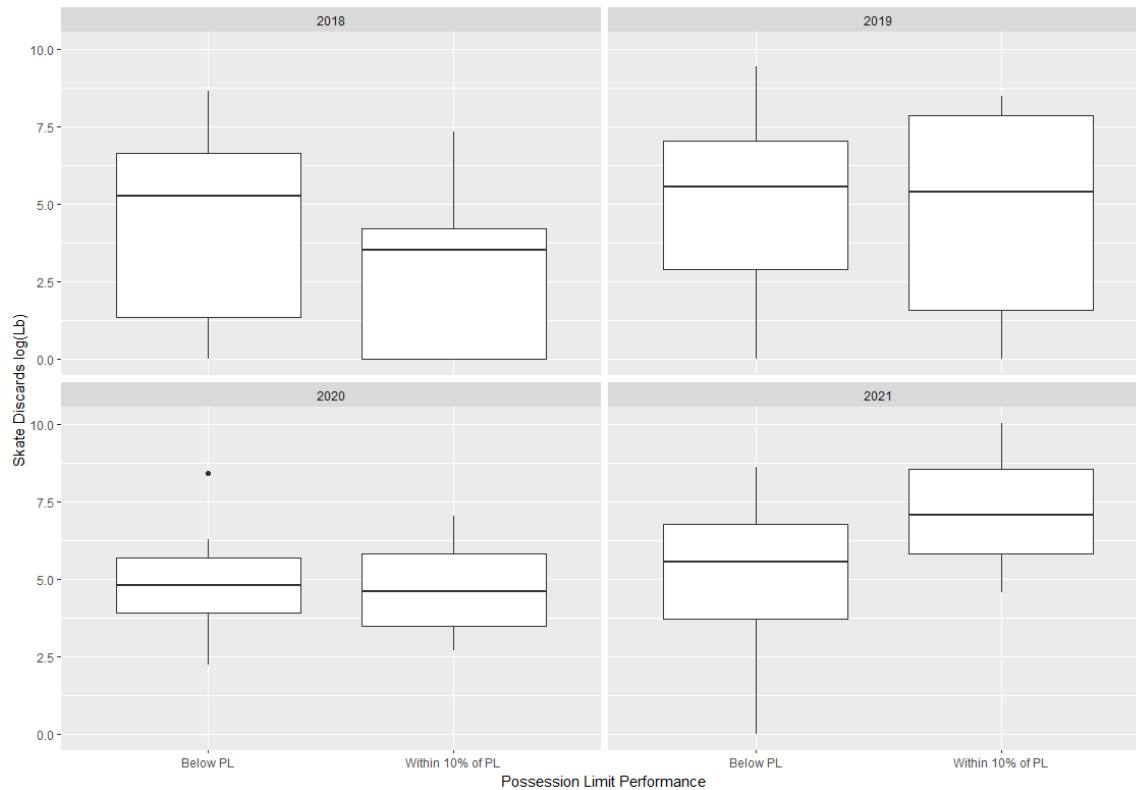
- Discards for trips landing within 10% were not significantly different than trips landing below the limit, which held true even when excluding the abnormal conditions of FY 2020 ($P=.4896$). The mean discards for trips landing below the limit were 118 lb (95% CI [95, 147]), while those within 10% of the limit were 86 lb (95% CI [36, 207]).

Table 12. Mean skate live discards on observed trips landing bait skate by seasonal possession limit performance.

FY	Trips below possession limit		Trips within 10% of possession limit	
	Mean live discards	n	Mean live discards	n
2018	665 lb	176	180 lb	14
2019	952 lb	223	1,346 lb	25
2020	391 lb	21	360 lb	4
2021	652 lb	158	8,240 lb	3

Source: CAMS data, accessed 5/10/2023.

Figure 6. Skate discards on observed trips that landed bait skate either below or within 10% of the bait possession limit.



Note: Trips landing skate bait exceeding the skate bait possession limit are excluded; discard-only trips also excluded.

Source: CAMS data, accessed 5/10/2023.

The PDT considered the differences in the species composition of landings for trips landing bait skate below and within 10% of the bait skate seasonal possession limit (Table 13). The PDT makes the following observations:

- For trips landing within 10% of the possession limit, bait skates make up most of the landings, with only a small percentage of other species.
- For trips landing below the possession limit, bait skates still made up most of the landings, but with a larger percentage of other landings such as fluke, skate wings, and scup.

Table 13. Bait skate landings by proportion of catch and possession limit performance, FY 2018 - 2021

Catch	Mean proportion of landings by weight	
	Below PL	Within 10% of PL
Bait skates	63%	93%
Fluke	8%	2%
Skate wings	6%	< 1%
Scup	5%	1%
Dogfish	3%	3%
Monkfish	3%	< 1%
Silver hake	2%	< 1%

Source: CAMS data, accessed 5/10/2023.

5.2.1.2.3 Barndoor Skate Catch

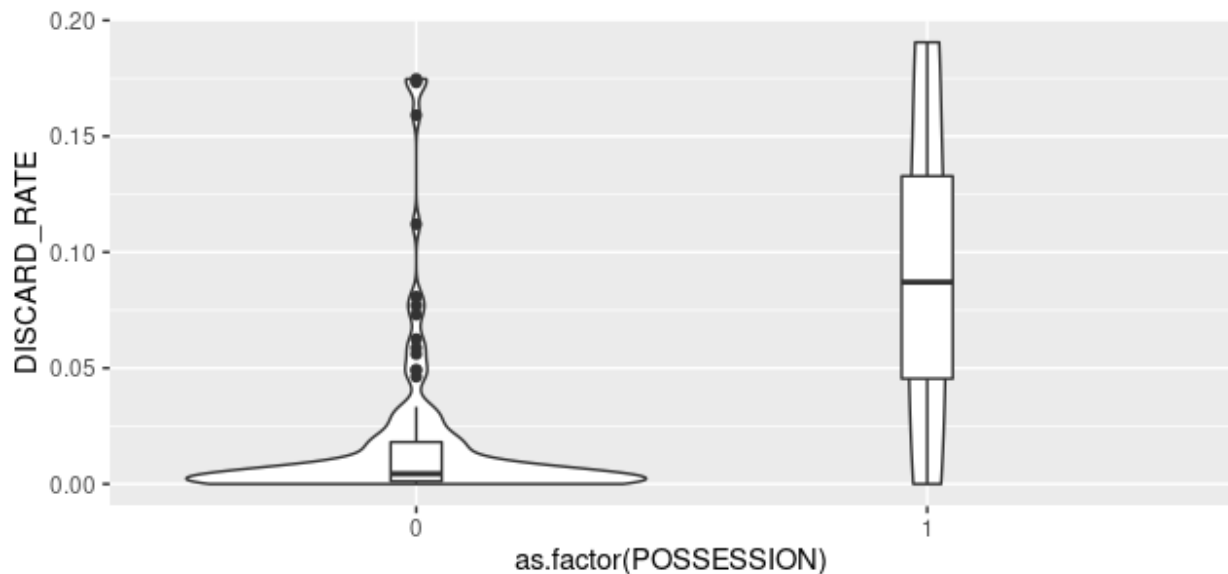
The PDT conducted an analysis of possession limit performance and discards for trips landing barndoor skate under the 25% partial possession limit. A threshold of +/- 10% of the possession limit was used to increase the sample size of the analysis, as there were few observed trips landing greater than 50 lb of barndoor skate. Data from FY 2018 – 2021 were aggregated to assess the rate of barndoor discards due to a low number of observed trips.

Observer data include codes indicating the reason for discarding, such as lack of market due to size or that regulations prohibit retention. While an attempt was made to filter the data by reason for discarding given in the observer-reported disposition code, idiosyncrasies in the data made this approach unreliable. For example, some barndoor skate were reported to have been discarded due to the quota having been reached, despite the vessel's landings being far below the possession limit. Another code described that there was both no market for the species and the quota had been reached, an unclear determination. Thus, the PDT did not filter trips by disposition code for this analysis.

The PDT makes the following observations:

- For the four years combined, the proportion of barndoor skate catch that was discarded was higher for trips landing within 10% of the partial possession limit (9%) than those landing below the limit (1%).
- A greater proportion of trips landing barndoor skates were landing within 10% of the limit in FY 2020 – 2021 than FY 2018 – 2019, despite a relative increase in the overall skate possession limit between those periods which would allow a greater amount of barndoor skate to be landed.

Figure 7. Barndoor skate discard rate for observed trips landing below and within 10% of partial possession limit, FY 2018 – 2021.



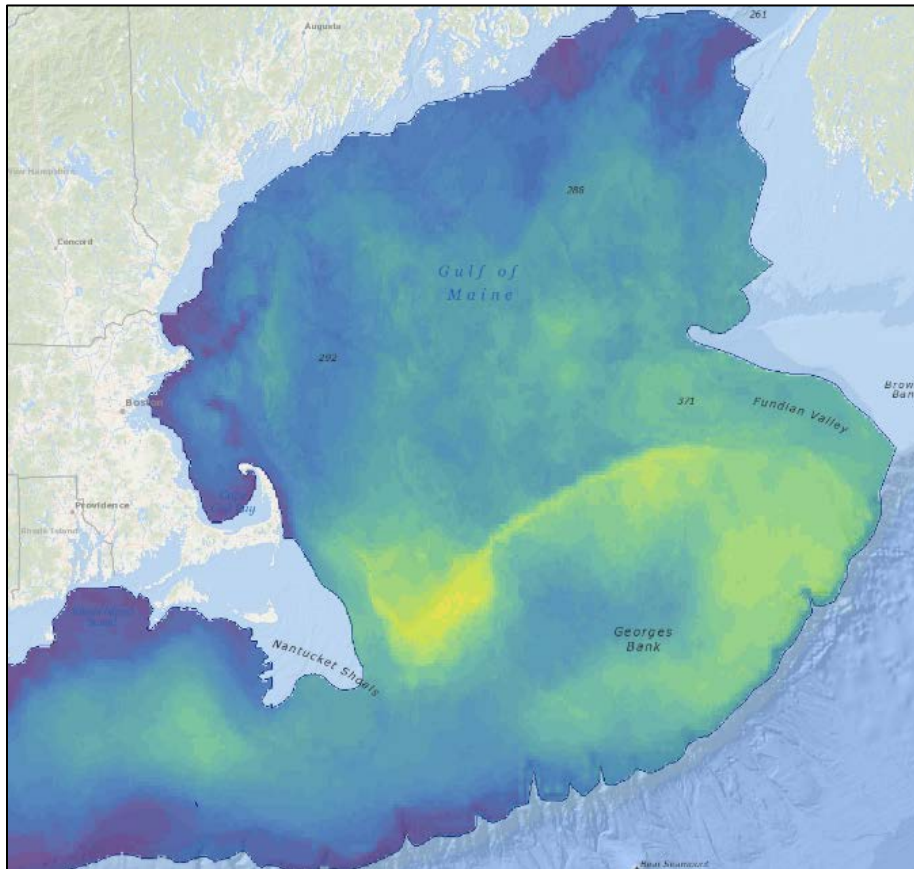
Notes: On the x-axis, possession = 0 refers to trips landing more than 10% below the barndoor skate partial possession limit, while possession = 1 refers to trips landing within 10%.

Table 14. Barndoor skate partial possession limit performance, FY 2018 - 2021

FY	Below limit		Within 10% of limit		Total
	# of trips	% of trips	# of trips	% of trips	# of trips
2018	293	94.2%	18	5.8%	311
2019	608	91.8%	54	8.2%	662
2020	367	85.5%	62	14.5%	429
2021	379	88.3%	50	11.7%	429

Notes: Trips include all trips landing greater than 50 lb of barndoor skate.
Source: CAMS data, accessed 5/10/2023

Map 1. Barndoor skate biomass, NEFSC Fall Bottom-Trawl Survey, 2010-2019



Source: Northeast Ocean Data Portal, accessed 5/18/2023

5.2.1.2.4 Smooth Skate Catch

The Committee was considering allowing possession of smooth skate and reintegrating the species back into the skate complex. The PDT determined that understanding the magnitude of smooth skate discarding would be helpful to evaluate whether there was the potential to turn these discards into landings. Below are data showing the amount of discard and landings data for smooth skate from FY 2018 – 2021 (Table 15), as well as the estimated discard of smooth skate over a longer period using total discards attributed using NEFSC survey length-frequency data (Table 16. Discards of smooth skate on all trips, CY 2009 - 2019).

The PDT makes the following observations:

- Otter trawl gear is mainly responsible for smooth skate discards and considering the species’ range, suggest that allowing possession would not affect the directed bait skate fishery in Southern New England, but would affect the groundfish fishery in the Gulf of Maine (Table 17, Map 2).
- Most smooth skate discards came from trips in the eastern and southern Gulf of Maine (Statistical areas 515, 521, 522), but a small number of trips appeared to be discarding smooth skate in areas outside of the species’ range in Southern New England.

Table 15. Discards of smooth skate on observed trips and dealer-reported landings, FY 2018 - 2021

FY	Longline	Gillnet	Scallop Dredge	Otter Trawl	Total Observed Discards	Dealer-reported Landings
2018	< 1 mt	< 1 mt	< 1 mt	14 mt	15 mt	71 mt
2019	< 1 mt	< 1 mt	1 mt	45 mt	46 mt	84 mt
2020	< 1 mt	1 mt	< 1 mt	23 mt	24 mt	88 mt
2021	< 1 mt	1 mt	< 1 mt	26 mt	28 mt	101 mt

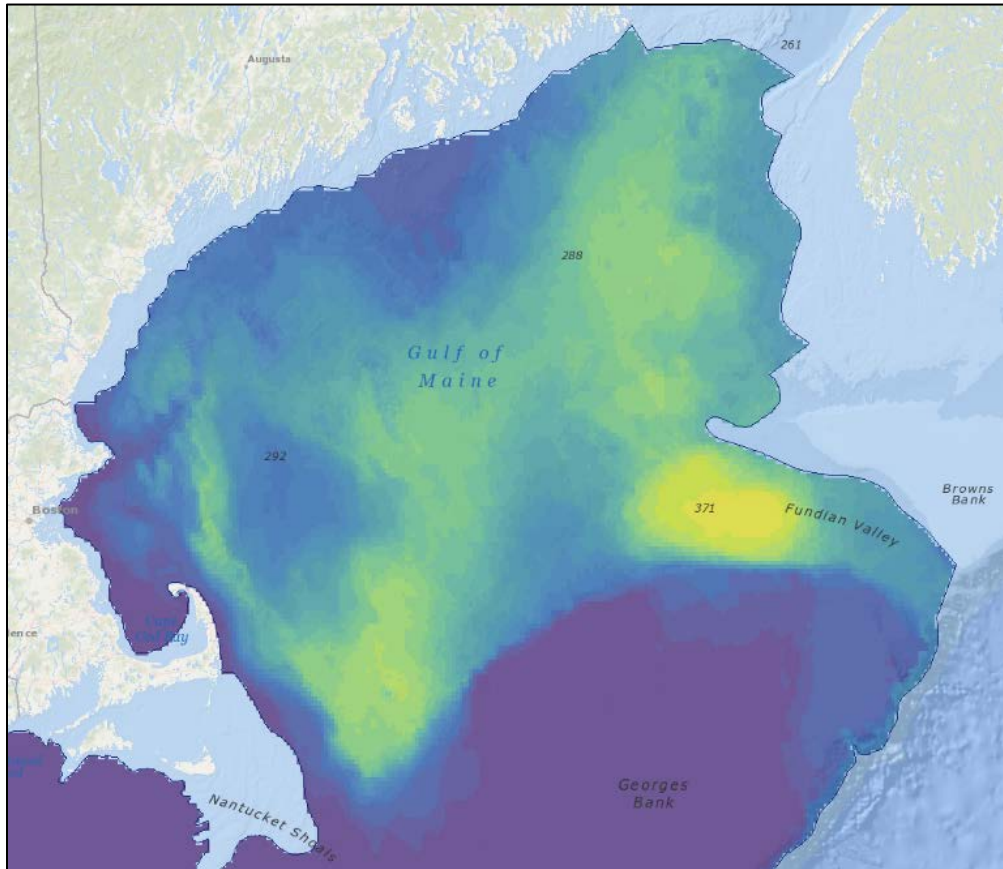
Note: Observed discards on a trip include both observed and unobserved hauls; the discard rate on observed hauls is applied to unobserved hauls.
Source: CAMS data, accessed 5/10/2023.

Table 16. Discards of smooth skate on all trips, CY 2009 - 2019

CY	Longline	Gillnet	Scallop Dredge	Otter Trawl	Total Estimated Discards
2009	1 mt	10 mt	33 mt	188 mt	232 mt
2010	7 mt	13 mt	21 mt	143 mt	184 mt
2011	5 mt	24 mt	65 mt	261 mt	355 mt
2012	2 mt	23 mt	78 mt	270 mt	373 mt
2013	2 mt	12 mt	67 mt	172 mt	253 mt
2014	1 mt	6 mt	59 mt	138 mt	204 mt
2015	3 mt	8 mt	87 mt	170 mt	268 mt
2016	1 mt	13 mt	73 mt	312 mt	399 mt
2017	1 mt	10 mt	105 mt	249 mt	365 mt
2018	< 1 mt	13 mt	151 mt	169 mt	334 mt
2019	< 1 mt	24 mt	127 mt	180 mt	313 mt

Notes: Estimated discards are attributed to species using NEFSC survey proportions at length. A discard mortality rate of 50% is assumed for all gear.
Source: NEFSC data, accessed February 2023,

Map 2. Smooth skate biomass, NEFSC Fall Bottom-Trawl Survey, 2010-2019.



Source: Northeast Ocean Data Portal, accessed 5/18/2023.

5.2.1.2.5 History of Skate Possession Limits

The wing possession limits for both seasons have remained relatively constant since annual catch limits and accountability measures were implemented in 2010, with seasonal possession limit increases effective beginning in FY 2020 (Table 17).

The bait possession limits have varied since annual catch limits and accountability measures were implemented in 2010, with Season 3 possession limit increases effective beginning in FY 2020 (Table 17). The incidental limit trigger and incidental possession limit have also changed over time. As explained above, the in-season adjustments to possession limits were linked between the bait and wing fisheries through March 15, 2018, which was problematic in FY 2016 (Table 19).

Table 17. Skate wing possession limits by season and fishing year.

FY	Season	Dates	Possession Limit	Barndoor Skate Wing Possession Limit	Incidental Limit
2003 – Northeast Skate Complex FMP implemented			10,000 lb/ <24 hours (i.e. day) & 20,000 lb/ > 24 hours (i.e. trip)		
FY 2009	No season	May 1–Apr. 30	10,000 lb/ <24 hours (i.e. day) & 20,000 lb/ > 24 hours (i.e. trip)	0	
FY 2010	No season	May 1–Jul. 16	10,000 lb/ <24 hours (i.e. day) & 20,000 lb/ > 24 hours (i.e. trip)		
		Jul. 16–Sep. 3	5,000 lb		500 lb (if 80% of wing TAL is landed)
		Sep. 3–Apr. 30	500 lb		
FY 2011	No season	May 1–May 17	5,000 lb		500 lb (if 85% of wing TAL is landed)
	1	May 17–Aug. 31	2,600 lb		
	2	Sept. 1–Apr. 30	4,100 lb		
FY 2012 – 2015	1	May 1 – Aug. 31	2,600 lb		
	2	Sept. 1 – Apr. 30	4,100 lb		
FY 2016	1	May 1 – Aug. 31	2,600 lb		
		Sept. 1 – Jan. 29	4,100 lb		
	2	Jan. 30 – Mar. 13	500 lb		
		Mar. 14 – Apr. 30	4,100 lb		
FY 2017	1	May 1 – Aug. 31	2,600 lb		
		Sept. 1 – Dec. 26	4,100 lb		
	2	Dec. 27 – Apr. 8	500 lb	*	
		Apr. 9 – Apr. 30	4,100 lb	1,025 lb	
FY 2018 - 2019	1	May 1 – Aug. 31	2,600 lb	650 lb	
	2	Sept. 1 – Apr. 30	4,100 lb	1,025 lb	
FY 2020 - 2023	1	May 1 – Aug. 31	3,000 lb	750 lb	
	2	Sept. 1 – Apr. 30	5,000 lb	1,250 lb	

*From February 13 – April 8, 2018, the barndoor skate possession limit was 125 lb due to the soft closure.

Table 18. Skate bait possession limits by season and fishing year.

FY	Season	Dates	Possession Limit	Incidental Limit Regulations
2003 – Northeast Skate Complex FMP implemented, Skate Bait LOA requirement				
FY 2010 - 2011	1	May 1 – Jul. 31	20,000 lb	5,902 lb (Season 1) and 9,307 lb (Season 2) (if 90% of bait season’s TAL or annual TAL is landed) or 1,135 lb (if 85% of wing TAL is also landed) ¹
	2	Aug. 1 – Oct. 31		
	3	Nov. 1 – Apr. 30		
FY 2012 - 2015	1	May 1 – Jul. 31	25,000 lb	
	2	Aug. 1 – Oct. 31		
	3	Nov. 1 – Apr. 30		
FY 2016	1	May 1 – Aug. 31	25,000 lb	
		Sep. 1 – Oct. 17	25,000 lb	
	2	Oct. 18 – Oct. 31	9,307 lb	
		Nov. 1 – Jan. 29	25,000 lb	
		Jan. 30 – Mar. 13	1,135 lb	
3	Mar. 14 – Apr. 30	9,307 lb		
	1	May 1 – Jul. 31	25,000 lb	
		2		Aug. 1 – Oct. 31
3	Nov. 1 – Mar. 14	25,000 lb		
	Mar. 15 – Apr. 30	12,000 lb	8,000 lb (if 80% of bait TAL is landed in a season)	
FY 2018 - 2019	1	May 1 – Jul. 31	25,000 lb	8,000 lb (if 90% of bait TAL is landed in a season)
	2	Aug. 1 – Oct. 31		
	3	Nov. 1 – Apr. 30	12,000 lb	8,000 lb (if 80% of bait TAL is landed in a season)
FY 2020 - 2023	1	May 1 – Jul. 31	25,000 lb	8,000 lb (if 90% of bait TAL is landed in a season)
	2	Aug. 1 – Oct. 31		
	3	Nov. 1 – Apr. 30		8,000 lb (if 80% of bait TAL is landed in a season)
¹ The bait fishery was only held to the wing incidental limit if BOTH the bait AND wing triggers were reached. If only the wing fishery trigger was reached, the bait fishery would still operate at normal limits until it hits its 90% trigger.				

5.2.1.2.6 Triggering of Incidental Limit

An incidental limit has been triggered five times (two for bait, three for wing) since first implemented July 2010, out of over 50 seasons of the wing and bait fisheries. The first time was in September 2010 when the wing fishery reached 80% of the wing TAL, triggering the 500 lb incidental limit for about eight months (Table 19). This was due to increased landings of skate wings and a delay in implementing Amendment 3 which reduced the skate wing possession limit to 5,000 lb. The second time the incidental limit was triggered was in October 2016 for the bait fishery in Bait Season 2 for the remainder of that season (about two weeks).

Then later in FY 2016 (January 2017), both the wing and bait fisheries reached their respective triggers of 85% (wing) and 90% (bait), so the incidental limit for the third and fourth time was triggered for both fisheries (Table 19). At the time, the bait incidental limit was tied to the wing incidental limit, meaning 1,135 lb whole weight for bait and 500 lb wing weight for wings. Both fisheries were limited to the wing

incidental limit until March 14, 2017. At that time, the RA projected the wing and bait TALs would not be exceeded for the remainder of that fishing year (about one and a half months), so the skate wing possession limit was increased to the full 4,100 lb possession limit, while the bait possession limit was not increased to the full 25,000 lb limit but rather the whole weight wing limit equivalent of 9,307 lb.

At the next Council meeting (April 2017, when the Council also received the Amendment 5 scoping comments), the Council initiated Framework 4. Implemented on March 15, 2018, this action lowered the Bait Season 3 possession limit and trigger and de-coupled the triggers of the wing and bait incidental limits, creating an independent incidental possession limit for the bait fishery. Since then, the bait trigger is no longer linked to the wing fishery possession limits.

The fifth (and latest) time an incidental limit was triggered was for the wing fishery in December 2017. It remained in place for most of the rest of the fishing year (about 3.5 months). For the last few weeks of that fishing year, the Regional Administrator returned the fishery to its regular seasonal limit when it was determined that the annual TAL was unlikely to be reached.

Table 19. Dates when the incidental limits have been triggered in the skate fishery.

Fishery	Date	Action
Wing	September 3, 2010	Possession limit reduced from 5,000 to 500 lb (wing weight) when 80% of annual TAL was expected to be reached. Remained in place until the end of the fishing year, April 30, 2011.
Bait	October 18, 2016	Season 2 PL reduced from 25,000 to 9,307 lb (whole weight; equal to the 4,100 landed lb wing limit) when 90% of Season 2 TAL was expected to be reached. Remained in place until the end of Season 2, October 31, 2016.
Wing & Bait	January 30, 2017	WING: Season 2 PL reduced from 4,100 to 500 lb (wing weight) when 85% of annual <u>wing</u> TAL was expected to be reached. Remained in place until March 14, 2017. PL returned to 4,100 lb as RA projected that the wing TAL would not be exceeded.
		BAIT: Season 3 PL reduced from 25,000 to 1,135 lb (wing weight; equal to the 500 landed lb wing limit) when 90% of the annual <u>bait</u> TAL was expected to be reached. Remained in place until March 14, 2017. PL increased to 9,307 lb as RA projected that the bait TAL would not be exceeded.
Wing	December 27, 2017	Season 2 PL reduced from 4,100 to 500 lb (wing weight) when 85% of annual TAL was expected to be reached. Remained in place until April 8, 2018. PL returned to 4,100 as RA projected that TAL would not be exceeded.

6.0 REFERENCES

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