

Northeast Skate Complex Fishery Management Plan 2022 – 2023 Specifications



DRAFT Discussion Document **for May 2021 AP and Committee meetings**

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



Document history

Final Specifications Meeting: Month ##, 2021 [September expected]

Preliminary Submission: Month ##, 2021

Final Submission: Month ##, 2021

Cover image

[Insert credit]



**2022-2023 SPECIFICATIONS FOR THE NORTHEAST SKATE COMPLEX
FISHERY MANAGEMENT PLAN**

Proposed Action: Propose skate specifications for fishing years 2020 and 2021 and skate possession limits.

Responsible Agencies: New England Fishery Management Council
50 Water Street, Mill #2
Newburyport, MA 01950

National Marine Fisheries Service
National Oceanic and Atmospheric Administration
U.S. Department of Commerce
Washington, D.C. 20235

For Further Information: Thomas A. Nies, Executive Director
New England Fishery Management Council
50 Water Street, Mill #2
Newburyport, Massachusetts 01950
Phone: (978) 465-0492
Fax: (978) 465-3116

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 (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 AND PURPOSE.....	5
3.1	Background.....	5
3.2	Purpose and Need.....	7
4.0	ALTERNATIVES UNDER CONSIDERATION.....	7
4.1	Action 1 – Specifications.....	7
4.1.1	Alternative 1 - No Action.....	7
4.1.2	Alternative 2 - ???.....	7
4.2	Action 2 – Skate Possession Limits.....	8
4.2.1	Skate Wing Possession Limits.....	9
4.2.1.1	Alternative 1 – No Action.....	9
4.2.1.2	Alternative 2 - ???.....	9
4.2.2	Skate Bait Possession Limits.....	9
4.2.2.1	Alternative 1 – No Action.....	9
4.2.2.2	Alternative 2 - ???.....	9
4.2.3	Background Information.....	10
4.2.3.1	Skate wing landings relative to possession limits.....	10
4.2.3.2	Skate bait landings relative to possession limits.....	12
5.0	REFERENCES.....	14

3.0 BACKGROUND AND PURPOSE

3.1 BACKGROUND

The Northeast Skate Complex Fishery Management Plan (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 New England Fishery Management Council (Council) sets specifications every two years for the skate complex 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. 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 is undetermined in the Skate FMP. In their February 11, 2009 report, the 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 from 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.

For all skate species except barndoor, $B_{MSY_{proxy}} = B_{target}$ = the 75th percentile of its survey biomass index. For barndoor skate, $B_{MSY_{proxy}} = B_{target}$ = the average of its survey biomass index. The survey biomass index is measured in kg/tow during a specific set of years for each species (table in AE document).

The skate complex MSY_{proxy} is the median of catch/biomass over the time series multiplied by the $B_{MSY_{proxy}}$. Here, “catch” is total landings from dealer data, vessel to vessel transfers from VTR data and dead discards (kg), and “biomass” is the survey biomass index (kg/tow). For each species, the median of that ratio across the entire time series is multiplied by its B_{target} (kg/tow). The MSY_{proxy} for each species is then summed over all seven skate species in the management unit.

[NOTE: in 2019, for the FY 2020-2021 specifications setting (Framework 8), the MSY_{proxy} was unchanged from the level set in 2017 for the FY 2018-2019 specifications, because the catch/biomass medians were the same as estimated for the FY 2018-2019 specifications (36,794 mt). The PDT is developing an MSY_{proxy} for the FY 2022-2023 specifications, to be reviewed by the SSC in July 2021.] This action sets fishery specifications for fishing years (FY) 2022 and 2023 according to the formula (Figure 1) established through Amendment 3 (NEFMC 2009).

Acceptable Biological Catch (ABC). The control rule established through Amendment 3 sets the skate ABC at the median ratio of catch/biomass as explained above 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 until an OFL and its uncertainty can be quantified.

[NOTE: in 2019, for the FY 2020-2021 specifications setting (Framework 8), gaps in survey coverage precluded the exact application of this control rule. Ideally, spring survey data for 2017-2019 would have been used for little skate and fall 2016-2018 data would have been used

for all other species. In the 2017 fall survey, southern stations were missed resulting in no survey indices for rosette or clearnose skate that year, and a two-year average (2016 and 2018) was used instead. 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, a three-year average (2017-2019) was used, but 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.

For the FY 2022-2023 specifications, if following the control rule exactly, spring survey data for 2019-2021 would be used for little skate and fall 2018-2020 data would be used for all other species. However, due to missed surveys in 2020, the NEFSC has determined that only survey data through 2019 may be used. Also, the missed stations in the fall 2018 survey would still be impacting the calculations.]

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.

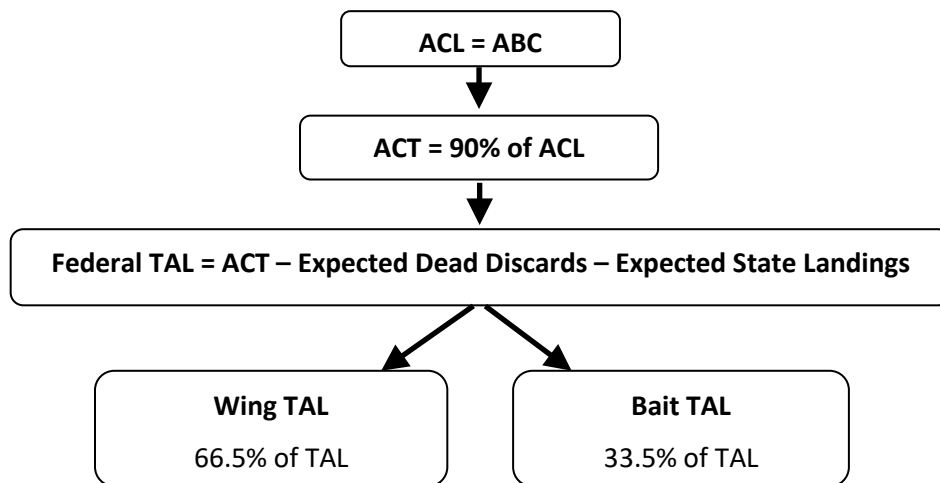
Annual Catch Target (ACT). The skate ACT is 90% of the ACL. There is a 10% uncertainty buffer between the ACL and ACT to account for scientific and management uncertainty (NEFMC 2018). This buffer is further explained in Section ???(in AE document).

Total Allowable Landings (TAL). The skate TALs is set by subtracting expected dead discards and expected state landings from the ACT. These values are calculated as follows:

- Expected dead discards are calculated by applying the weighted discard mortality rate to the average discards from the most recent three years (using observer and ASM data).
- Expected state landings is equal to the average of the most recent three years of landings by vessels that have never had a federal fishing permit (permit # = 0) from data reported to the federal database. The landings from these vessels are the “state-permitted only vessel landings” in the year-end ACL accounting (table in AE document).

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

Figure 1. Formula for skate specifications setting used since Amendment 3.



3.2 PURPOSE AND NEED

The purpose for this action (Table 1) is to set specifications for FY 2022 and 2023 for the skate fishery including the ABC, ACL, and resultant landing limits as well as possession limits consistent with the Magnuson-Stevens Act and the [goal and objectives of the Skate FMP](#). This action is needed to meet regulatory requirements to prevent overfishing, ensure rebuilding, and achieve optimum yield.

Table 1. Purpose and need for 2022-2023 Specifications.

Purpose	Need
Specify ABC, ACL, and resultant landing limits as well as possession limits for the skate fishery for FY 2022-2023, consistent with the MSA and the FMP goal and objectives.	To meet regulatory requirements needed to prevent overfishing, ensure rebuilding, and to achieve optimum yield.

4.0 ALTERNATIVES UNDER CONSIDERATION

4.1 ACTION 1 – SPECIFICATIONS

This action sets fishery specifications for FY 2022 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 ACL specifications for FY 2022-2023 would be unchanged from the ACL specifications for FY 2020-2021 since specifications in the Skate FMP remain in place until replaced by a future action. The specifications for FY 2020-2021 were derived from the median catch/biomass exploitation ratio for the NMFS bottom trawl time series up to 2019 and the three-year average stratified mean biomass for skates, using the 2017-2019 spring NEFSC survey data for little skate and the 2016-2018 fall NEFSC survey data for the other managed skate species (with modifications due to some missed fall survey stations in 2017 and 2018).

Table 2. Specification alternatives for FY 2022-2023.

	Alternative 1	Alternative 2
ABC = ACL	32,715 mt	[TBD]
ACT (90% of ACL)	29,444 mt	
Expected Dead Discards	10,942 mt	
Expected State Landings	638 mt	
Federal TAL (ACT – dead discards – state landings)	17,864 mt	
Wing TAL (66.5% of TAL)	11,879 mt	
Bait TAL (33.5% of TAL)	5,984 mt	

[NOTE: The PDT is developing ABC recommendations to be reviewed by the Scientific and Statistical Committee on July 29, 2021.]

4.1.2 Alternative 2 - ???

Under Alternative 2, ...

4.2 ACTION 2 – SKATE POSSESSION LIMITS

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.

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. 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.

Table 3. Skate seasonal management with FY 2020-2021 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	

[NOTE: In the past, limits have been adjusted according to the size of the TAL, with a goal of optimizing use of the TAL. Possession limits increased in FY 2020, but TAL use has been low, particularly for bait (55% as of April 24, 2021), potentially in part to disruptions in market demand due to the pandemic. At its April 19 meeting, the PDT agreed that some stability in possession limits may be warranted at this time. However, the PDT wanted to examine trip frequencies more thoroughly to understand the degree to which trips were below possession limits. Section 4.2 includes a preliminary look at trip frequencies in 2018.]

Questions/Considerations for the AP and Committee:

- *Should possession limits in place for FY2020-2021 be maintained in FY 2022-2023 or are adjustments warranted? If so, how? Should any adjustments be proportional to the change in ABC? If not, what other criteria/rationale be used?*
- *The prohibition on barndoor skate was lifted through Framework 5 and a possession limit was created as a percentage of the wing limit (25%). At the time, the intent was to potentially adjust this in the future as barndoor becomes part of the fishery. Should this approach be maintained or are adjustments warranted?*

4.2.1 Skate Wing Possession Limits

These alternatives would set the skate wing possession limits. Under any of these alternatives, the formula for setting the barndoor skate possession limit would be unchanged (25% of the total limit). Barndoor skate possession limits are within the overall skate possession limit for each trip, not in addition to it. Also unchanged would be the trigger for the 500 lb incidental possession limit, remaining at 85% of the Wing TAL.

4.2.1.1 Alternative 1 – No Action

Under Alternative 1 (No Action), the skate wing possession limits would remain at 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 would remain a 750 lb in Season 1 and 1,250 lb in Season 2 (set at 25% of the limits).

4.2.1.2 Alternative 2 - ???

Under Alternative 2, ...

4.2.2 Skate Bait Possession Limits

These alternatives would set skate bait possession limits. None of these alternatives would adjust the seasonal incidental possession limit triggers (90% in Seasons 1 and 2; 80% in Season 3), revise the incidental possession limit (8,000 lb), or modify the regulation that the bait fishery is closed once 100% of the TAL is reached. Vessels that obtain a Skate Bait Letter of Authorization (LOA) from GARFO could retain whole skates up to the possession limit in all three seasons if they comply with related rules and size limits. No possession of barndoor skate is permitted for vessels fishing with a Skate Bait LOA.

4.2.2.1 Alternative 1 – No Action

Under Alternative 1 (No Action), the skate bait possession limit would remain at 25,000 lb in all three seasons.

4.2.2.2 Alternative 2 - ???

Under Alternative 2, ...

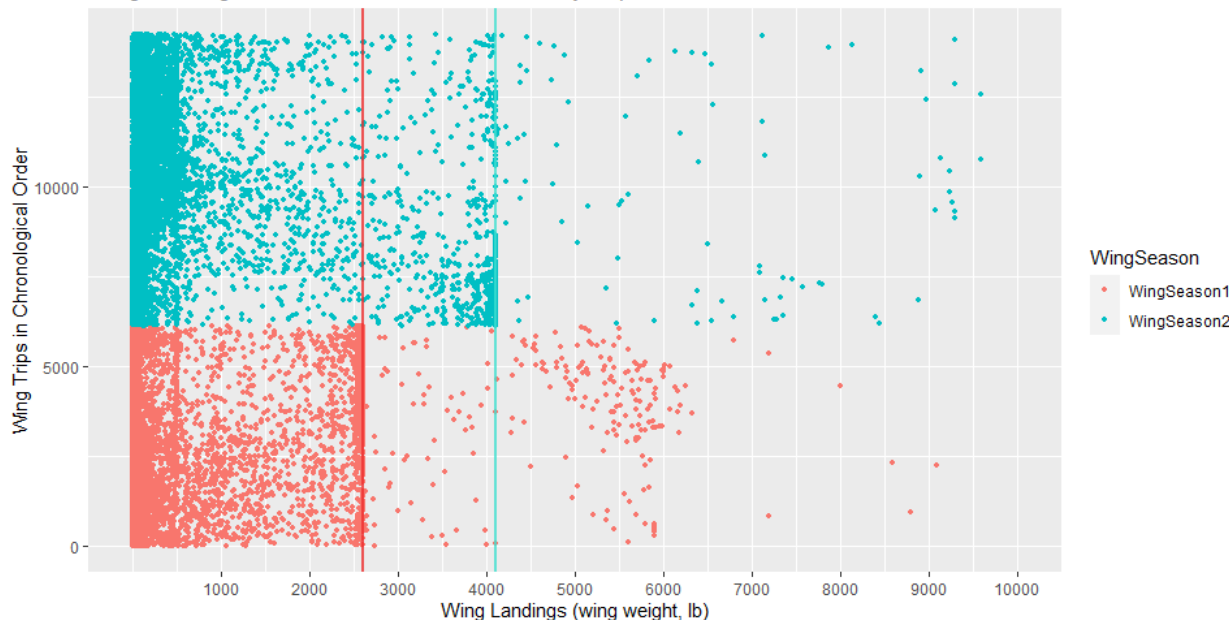
4.2.3 Background Information

Provided here are data on skate landings frequency to inform the development of possession limit alternatives. The data source is CFDETS AA, because it has the most complete trip-level data with species level information and are the ‘official’ corrected data that have gone through the QA/QC process. Data from FY 2018 (a combination of calendar years 2018 and 2019) are provided here, because that is the latest ‘official’ data available as of May 2021; the data to provide a similar look at FY 2019 will likely be available in June 2021, after which the analysis in this section can be redone.

Since the possession limits were higher in FY 2020 (and 2021), it would be helpful to look at that year and compare how many trips are landing at the higher limits. FY 2020 data could be explored for this type of analysis. However, a different database must be used, one that is more challenging to query for rip-level information. Given the market disruptions due to the pandemic, the landings in FY 2020 are likely atypical.

4.2.3.1 Skate wing landings relative to possession limits

Figure 2. Skate wing landings relative to possession limits by trip and season, FY 2018.



Notes:

- Pink vertical line represents Season 1 possession limit (2,600 lb), turquoise vertical line represents Season 2 possession limit (4,100 lb).
- 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 2018).
- Three trips were excluded from Figure 2 because wing landings exceeded 10,000 lb and skewed the visualization of the other trips.

Source: CFDETS AA, 2018 and 2019.

Table 4. Total number and percent of wing trips below, within +/- 5%, and above the seasonal possession limits, FY 2018.

Wing Season	PL Category	# of Wing Trips	% of Wing Trips
Season 1	Below PL	4,034	79%
	Within +/-5% of PL	868	17%
	Above PL	224	4%
Season 2	Below PL	6,485	94%
	Within +/- 5% of PL	347	5%
	Above PL	79	1%
FY18 OVERALL	Below PL	10,519	87%
	Within +/-5% of PL	1,215	10%
	Above PL	303	3%

Notes:
 Possession limits (PL) were 2,600 In in Season 1 and 4,100 in Season 2.
 'Below PL' = landings that are <5% below the seasonal possession limit.
 'Above PL' = landings that are >5% above the seasonal possession limit.
 Source: CFDETS AA, 2018 and 2019.

Table 5. Number of unique wing vessels landing skate wings below, within +/- 5%, and above the seasonal possession limits, FY 2018.

Wing Season	PL Category	# of Wing Vessels	% of Wing Vessels within Season
Season 1 (294 vessels)	Below PL	294	100%
	Within +/-5% of PL	66	23%
	Above PL	22	8%
Season 2 (323 vessels)	Below PL	321	99%
	Within +/- 5% of PL	39	12%
	Above PL	15	5%

Notes:
 Possession limits (PL) were 2,600 In in Season 1 and 4,100 in Season 2.
 The number of unique vessels is calculated based on the 'PL Category,' meaning the number of unique vessels is not additive across the possession limit categories (e.g., if a vessel lands below the PL on one trip but over the PL on a different trip within Season 1, then that vessel would be considered a unique vessel in both of those categories).
 Source: CFDETS AA, 2018 and 2019.

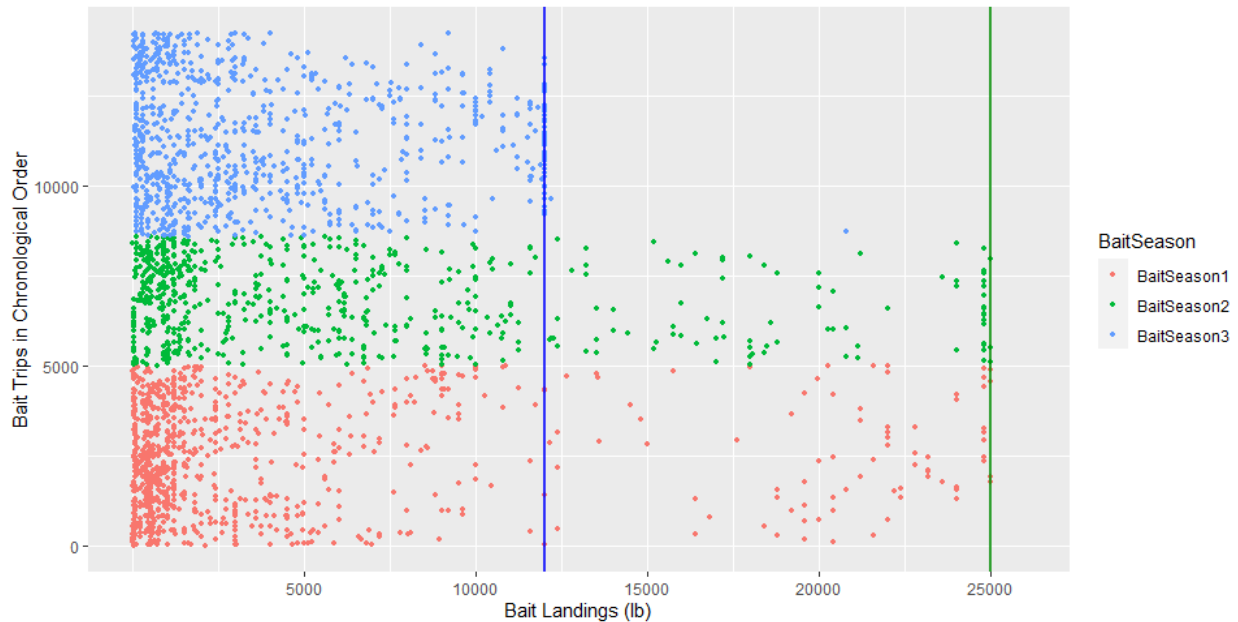
Main take-aways – wing landings

- Several vessels landed skate wing close to or at the seasonal possession limits in FY 2018.
- Many trips landed the incidental limit of skate wings (500 lb wing weight).
- Several wing trips exceeded the seasonal possession limits, which could be due to:
 - o Aggregate records (not ending in permit XXX998);
 - o Have landed=live pounds whereby the dealer processes the wings, which could account for the trips landing over the possession limits and for trips > 10,000 lb;
 - o Miscoding between wing and bait disposition code;
 - o Data entry errors; or

- Activity inconsistent with regulations.
- For the vessels (e.g., unique permit numbers) in FY 2018 that landed skate wings below the possession limit, monkfish was landed in high amounts (~1,400 lb/trip), followed to a much lesser extent of haddock (~200 lb/trip). Many other species were also landed to a lesser extent on these trips.
- For the vessels (e.g., unique permit numbers) in FY 2018 that landed skate wings within +/- 5% of the seasonal possession limits, monkfish was also landed in high amounts (~ 660 lb/trip), followed by spiny dogfish (~350 lb/trip). Other species were landed to a lesser extent on these trips.
- For the vessels (e.g., unique permit numbers) in FY 2018 that landed skate wings above the possession limit, spiny dogfish and monkfish were both landed in high amounts (>700 lb/trip for each species). Limited other species were landed in small amounts on these trips.

4.2.3.2 Skate bait landings relative to possession limits

Figure 3. Skate bait landings relative to possession limits by trip and season, FY 2018.



Notes:

- Green vertical line represents Season 1 and Season 2 possession limits (25k lb); blue vertical line represents Season 3 possession limit (12k lb).
- Each colored dot represents an individual trip.
- Trips are organized in chronological order (e.g., bait trip at 500 means the 500th trip during FY2018).

Source: CFDETS AA, 2018 and 2019.

Table 6. Total number and percent of bait trips well below, within +/- 5%, and well above the seasonal possession limits (25,000 lb Seasons 1 and 2, 12,000 lb Season 3), FY2018.

Bait Season	PL Category	# of Bait Trips	% of Bait Trips
<i>Season 1</i>	Below PL	887	98%
	Within +/- 5% of PL	18	2%
	Above PL	0	0%
<i>Season 2</i>	Below PL	607	96%
	Within +/- 5% of PL	26	4%
	Above PL	0	0%
<i>Season 3</i>	Below PL	794	92%
	Within +/- 5% of PL	70	8%
	Above PL	c	c
FY18 OVERALL	Below PL	2,288	95%
	Within +/- 5% of PL	114	5%
	Above PL	c	c

Notes:
 'Below PL' = landings that are <5% below the seasonal possession limit.
 'Above PL' = landings that are >5% above the seasonal possession limit.
 Due to confidentiality reasons, some data (c) were excluded for ≤3 vessels.
 Source: CFDETS AA, 2018 and 2019.

Table 7. Number of unique bait vessels landing skate bait below, within +/- 5%, and above the seasonal possession limits (PL) (25,000 lb Seasons 1 and 2, 12,000 lb Season 3), FY 2018.

Bait Season	PL Category	# of Vessels	% of Bait Vessels within Season
<i>Season 1</i> (41 vessels)	Below PL	41	100%
	Within +/- 5% of PL	5	12%
	Above PL	0	0%
<i>Season 2</i> (48 vessels)	Below PL	48	100%
	Within +/- 5% of PL	4	8%
	Above PL	0	0%
<i>Season 3</i> (60 vessels)	Below PL	60	100%
	Within +/- 5% of PL	9	15%
	Above PL	c	c

Notes:
 The number of unique vessels is calculated based on the 'PL Category,' meaning the number of unique vessels is not additive across the possession limit categories (e.g., if a vessel lands below the PL on one trip but over the PL on a different trip within Season 1, then that vessel would be considered a unique vessel in both of those categories).
 Due to confidentiality reasons, some data (c) were excluded for ≤3 vessels.
 Source: CFDETS AA, 2018 and 2019.

Main take-aways – bait landings

- Several vessels landed skate bait close to or at the seasonal possession limits in FY18.
- Some trips exceeding the seasonal possession limits could be:
 - o Aggregate records (not ending in permit XXX998);
 - o Data entry errors; or
 - o Activity inconsistent with regulations.
- For the vessels (e.g., unique permit numbers) in FY18 that landed skate bait below the possession limit, skate wings were landed in higher amounts (~650 lb/trip), while a mix of other species were landed in more moderate amounts (100-350 lb/trip) including monkfish, scup, spiny dogfish, and fluke, primarily.
- For the vessels (e.g., unique permit numbers) in FY18 that landed skate bait within +/- 5% of the seasonal possession limits, spiny dogfish was landed in minimal amounts (~ 225 lb/trip), with other species landed to an even lesser extent on these trips.

5.0 REFERENCES

- NEFMC. (2009). *Final Amendment 3 to the Fishery Management Plan for the Northeast Skate Complex and Final Environmental Impact Statement*. Newburyport, MA: New England Fishery Management Council and National Marine Fisheries Service. 459 p.
- NEFMC. (2018). *Framework Adjustment 6 to the Northeast Skate Complex Fishery Management Plan*. Newburyport, MA: New England Fishery Management Council in cooperation with the National Marine Fisheries Service. 150 p.
<https://www.nefmc.org/library/framework-6>.
- Sosebee K, Miller A, O'Brien L, McElroy D & Sherman S. (2016). *Update of Thorny Skate (Amblyraja radiata) Commercial and Survey Data*. Woods Hole, MA: USDo Commerce. NEFSC Reference Document 16-08. 148 p.
- Stevenson D, Chiarella L, Stephan D, Reid RN, Wilhelm K, McCarthy J & Pentony M. (2004). *Characterization of the Fishing Practices and Marine Benthic Ecosystems of the Northeast U.S. Shelf, and an Evaluation of the Potential Effects of Fishing on Essential Fish Habitat*. Woods Hole, MA: U.S. Dept. of Commerce. NEFSC Technical Memo NMFS-NE-181. 179 p.
- Thunberg EM & Correia SJ. From Fishing Capacity to Diversity: Changing Fishery Management Priorities in the New England Groundfish Fishery. Proceedings of the 17th Biennial Conference of the International Institute of Fisheries Economics and Trade; 2014; Brisbane, Australia.