New England Fishery Management Council

To: Tom Nies, Executive Director

From: Scientific and Statistical Committee

Date: September 10, 2021

Subject: Terms of Reference for Northeast Skate Complex MSY and ABC recommendations for fishing years 2022 and 2023.

The SSC met on July 29, 2021 via webinar to address the following term of reference (TOR):

Review the information provided by the Skate Plan Development Team (PDT) and considering the Council's Risk Policy Statement, recommend an acceptable biological catch (ABC) for the Northeast Skate Complex for fishing years 2022-2023 consistent with the ABC control rule for skates.

To address this TOR, the SSC considered the following information:

1. Skate PDT presentation regarding setting the skate ABC
2. Memo from the Skate PDT to SSC re Northeast Skate Complex ABC for FY 2022 – 2023, July 14, 2021
3. Risk Policy Matrix for the Northeast Skate Complex
4. Northeast Skate Complex Affected Environment
5. 2020 Skate Annual Monitoring Report, including 2019 Northeast Skate Stock Status Update from the NEFSC
6. The Council's Risk Policy Road Map (2016), which includes the Risk Policy Statement and Implementation Plan, see pp. 4-5. Available at:
https://s3.amazonaws.com/nefmc.org/Risk.Policy.Road.Map_Final_063016.pdf
7. State of the Ecosystem and Current Conditions. NOAA/NEFSC. Available at:
https://www.fisheries.noaa.gov/new-england-mid-atlantic/ecosystems/state-ecosystem-reports-northeast-us-shelf
8. Documents from 2019 SSC meeting relevant to setting the skate ABC
    a. PDT memo
    b. SSC report

SSC ATTENDANCE
Anna Birkenbach, Michael Carroll, Yong Chen, Jeremy Collie, Adrian Jordaan, Lisa Kerr, Jean-Jacques Maguire, Conor McManus, Jason McNamee, Richard Merrick, Cate O'Keefe, Fred Serchuk, Kevin St Martin, Terry Stockwell, Hirotsugu Uchida, John Wiedenmann, Lindsey Williams

TOR
The SSC reviewed the PDT memo as well as the assessment update for skates. The SSC continues to support the use of the index-based empirical approach for recommending an ABC for the Northeast Skate Complex, and notes that this method has performed well except for thorny skate. Although the

index-based approach does not allow formal estimation of population reference points, proxy values have been developed for each of the species in the Northeast Skate Complex using research vessel survey data and fisheries catch information. Hence, stock status is evaluated with respect to these reference point proxies.

The **SSC concludes that OFL for the Northeast Skate Complex remains unknown for fishing years (FY) 2022 and FY 2023**. OFL cannot be determined in the absence of analytical assessments.

The **SSC recommends an ABC of 37,236 metric tons (MT) for FY 2022 and 2023**. This is consistent with the PDT recommendation titled "Alternative 2" that represented the consensus of the PDT, and results from the use of modified research survey indices to account for survey strata not sampled during recent years due to mechanical issues with the survey vessel and disruptions from the pandemic.

RATIONALE INCLUDING SIGNIFICANT SOURCES OF UNCERTAINTY
As noted by the PDT, the specifications for FY 2022 and 2023 are affected by issues with non--sampled strata and now a missing year in the NEFSC trawl surveys (2020 NEFSC surveys were not conducted due to Covid-19). For survey indices, the SSC supports continued use of three-year averages where possible. This was accomplished for little skate, barndoor, thorny, smooth, and winter skate. In cases where this was not an option due to a lack of data, the two-year average was used. This was the case for rosette and clearnose skate.

For the catch biomass time series, the SSC recommended continuing to use data through 2016. We felt that adding 3 years of data to the 50+ year time series was unlikely to substantially change the MSY_{proxy}, and given the issues with the most recent years for this information, using data through 2016 appeared to be the best option.

Additional rationale from the SSC was that landings have been below the total allowable landings for several years, therefore overfishing relative to management metrics does not appear to be a problem even with the uncertainties in the survey and catch information. Also, the surveys are indicating stable to increasing trends across the complex. It is important to note that the thorny skate index is also stable with potential positive trends, but the biomass level remains far below its historical levels.

The catch and survey gaps are important uncertainties to consider, but basing the ABC recommendation on the modified survey information as described above and using catch information through 2016 were considered the best scientific advice from the SSC, thereby addressing the TOR for the skate species complex.

ADDITIONAL COMMENTS
Overall, six of the seven species (winter, little, barndoor, smooth, clearnose, and rosette) are estimated to be in good status with biomass levels near or above their species-specific biomass targets, and all six are above their respective biomass thresholds. The exception in the complex is thorny skate, whose stock status remains poor. The SSC recommends that thorny skate research currently underway (the PDT noted tracking over seven research projects on the subject) be presented to the SSC when completed, so that the SSC can evaluate the research findings in the context of the poor stock status of this species. This research should also be considered during the 2023 Management Track assessment process. Some of the ongoing research focuses on thorny skate movements, which could alter the interpretation of the status of this species. The SSC wondered if

stock rebuilding is being influenced by climate effects, and therefore the productivity or spatial extent of the species may have changed. These are all important considerations for this species in the context of stock status.

The SSC also discussed calculating reference points for the complex. The notion of non-stationarity and whether reference points might need to be redefined in the context of changing ocean conditions and its impact on productivity is an important factor to consider moving forward. This would be a good item to investigate in the 2023 Management Track assessment or during the next Research Track process for the complex if the Management Track won't accommodate it. Additionally, the SSC discussed the notion that the various species have different life history traits. This would be another factor to investigate to see if there were some way to incorporate these differences into the calculation of reference points or at least to consider them in the development of the specifications.

The SSC agreed with the PDT's conclusion that the averaging approach provides adequate information on which to base catch advice for this specification setting cycle. However, the SSC felt there was a need for a more systematic approach to address non-sampled strata in the trawl surveys, rather than using a case-by-case approach. Non--sampled strata may become more common in the future due to both natural and anthropogenic events (e.g. offshore wind energy areas; adverse weather conditions; etc.). Evaluating approaches that are robust to missing values is therefore important and exploration of this during the 2023 assessment process is encouraged. This may include state space methods as one alternative to investigate, as well as information gained through the index-based assessment Research Track that had recently occurred.

The SSC appreciated the sections devoted to responding to previous SSC advice, much of which will be addressed during the 2023 Management Track assessment.

ADDITIONAL AGENDA ITEMS

The SSC had three other agenda items that they discussed during the meeting. These items did not have specific TORs associated with them. The first was a report from the Social Science Subpanel that had been tasked with reviewing the economic and social aspects of groundfish and scallop specifications. The SSC generally appreciated the report and did not add any additional items for the group to consider. The only suggestion from this item was to encourage the Council to implement this type of review for more management plans/species and to also make it an annual review if feasible.

The next item was a quick report out on the Groundfish Plan Development Team Sub-Group on ABC Control Rules. NEFMC staff informed the full SSC who had been selected for the subgroup, and that the SSC would receive interim reports as the group conducted their work.

Finally, the SSC reviewed a technical memo from NOAA on National Standard 1 Technical Guidance Subgroup 3, the subgroup focused on managing ACLs for data-limited stocks in Federally managed fisheries. The SSC felt that categorizing information into binary designations still does not address stocks that change categories, i.e. a stock that goes from an analytical framework to an index-based method. On the topic of managing with indicators, the SSC noted that often trying to use a single indicator is not adequate; therefore, multiple indicators should be considered. The SSC noted that Europe has a process for this that could be investigated. Managing by rate was another area that was mentioned by the SSC. This is a method that is used by the NEFMC for Atlantic halibut and Atlantic red crab. More subtly, there are often stocks that have significant amounts of data but are not easily modeled for any number of reasons, therefore the SSC suggested a listing of

how NOAA was defining data limited stocks would be helpful. The guidance was written very specifically, and this specificity limits the usefulness for NEFMC stocks, however if the consideration were broadened, it might apply to and be more useful for NEFMC stocks. The SSC noted that there was no reference to how climate change is a factor in why existing data was becoming difficult to model, and tangentially how things like development of offshore wind will impact assessment moving into the future. Finally, Executive Director Nies commented to the SSC that this Guidance was meant to deal with a very narrow definition of data-limited stocks specifically called out in the language of the reauthorized MSRA. Caribbean and Western Pacific stocks were the candidate stocks for applying this ACL guidance, and not New England stocks.

SUMMARY OF RECOMMENDATIONS

1. **The SSC concludes that OFL for the Northeast Skate Complex remains unknown.**

2. **The SSC recommends that the ABC for fishing years 2022 and 2023 be no greater than 37,236 MT.**

3. **The SSC requests updates on thorny skate research findings as the studies underway are completed and encourages using any information available in the 2023 Management Track assessment process.**

4. **The SSC continues to encourage the exploration of ways to address survey gaps as this may be a feature that needs to be addressed frequently in the future.**