2018 Modification to MAFMC ABC Control Rule

The SSC shall review the ABC control rule assignment for stocks each time an ABC is recommended. ABCs may be recommended for up to 3 years for all stocks, with the exception of 5 years for spiny dogfish. **The SCC may specify constant, multi-year ABCs, derived from the average of ABCs (or average risk of overfishing) if the average probability of overfishing remains between zero and 40 percent, and does not to exceed a 50-percent probability in any given year. The average ABCs may remain constant for up to 3 years for all stocks, with the exception of 5 years for spiny dogfish.**

From February 2019 SSC meeting report

- The SSC was asked by the MAFMC to recommend two alternative ABCs
- One derived by the “typical” approach resulting in ABCs varying each year, and a constant ABC for all three fishing years derived by averaging the three ABCs resulting from the “typical” approach
- Neither the NEFSC nor the SSC had an algorithm available for calculating the 2019-2021 P* values for the latter alternative, but concluded that the values should remain less than 0.50 in each year, and less than 0.40 across all three years, which is consistent with the MAFMC’s risk policy.
- MAFMC staff will work with SSC members and NEFSC staff to develop an algorithm for estimating P* under the constant ABC scenario

Development of P* algorithm and calculation steps

- Mike W modified the ABC Excel spreadsheet to accommodate the new approach
  - Input OFL, ave. ABC, OFL CV and calculates P*
- Steps to calculate OFL and P*
  1. Calculate the ABCs for each year following the normal approach.
  2. Calculate the average ABC.
  3. Start a new projection using the average ABC for the ABC in the first year (the OFL should be the same as in the normal ABC approach), calculate the P* expected to be achieved using the new spreadsheet .
  4. Forecast biomass forward one step using the average ABC.
  5. Calculate the OFL using projected biomass and the threshold fishing mortality rate.
  6. Using the projected OFL and the average ABC, calculate P* using the new spreadsheet .
  7. Repeat steps 4-6 for the remainder of the projection.

Results comparison between varying/standard and average approaches for summer flounder

a) Varying 2019-2021 ABCs			
Year	OFL (m lb)	ABC (m lb)	ABC P*
2019 (current)	20.60	15.41	--
2019 (revised)	30.00	**23.52**	0.330
2020	31.36	**25.48**	0.354
2021	31.96	**26.10**	0.357
b) Averaged ABCs			
Year	OFL (m lb)	ABC (m lb)	ABC P*
2019 (current)	20.60	15.41	--
2019 (revised)	30.00	**25.03**	0.372
2020	30.94	**25.03**	0.351
2021	31.67	**25.03**	0.336