Background

• In 2018, the MAFMC modified the harvest control rule to allow the SSC to provide constant ABCs between assessments that achieve a specific average probability of overfishing (P*)

• The previous approach to generating constant ABCs fails as P* approaches 0.5 (OLF>ABC)
<table>
<thead>
<tr>
<th>Variable</th>
<th>Year</th>
<th>OFL</th>
<th>ABC</th>
<th>P*</th>
<th>Year</th>
<th>OFL</th>
<th>ABC</th>
<th>P*</th>
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<tbody>
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<td>2022</td>
<td>8,735</td>
<td>8,555</td>
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<td>8,735</td>
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<td>2023</td>
<td>7,865</td>
<td>8,056</td>
<td>0.51</td>
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</table>

- SSC did not provide constant/average ABC recommendation, only the ABC for varying approach
- Council requested the SSC develop an alternative process in order to provide constant ABCs
Background

• The risk associated with ABC averaging depends on whether the stock and ABC are projected to increase or decrease.
Sub-group considerations

- Previous simulation work evaluating the HCR that uses projections for setting ABCs against an alternative that only projected to the first year and had the ABC be constant until the next assessment
- New optimization simulation approach to derive constant ABCs that would build off existing process and integrate with existing NEFSC modeling tools
- Timing of assessment updates and specification setting under new NRCC assessment process
Potential alternatives considered

- **Status quo**
  - If average exceeds OFL in any given year, then:
    - Not provide a constant ABC, or
    - Choose a constant ABC at minimum value

- **Three-step process**
  - If average exceeds the OFL in any year, find the maximum constant catch that does not exceed a specific $P^*$ (need to determine threshold)
  - Requires coding work and integration with NEFSC tool

- **Minimal projections**
  - Only do a one-year projection, calculate OFL and ABC and keep constant for specification period (2-3 years)
Sub-group recommendations

- **Short-term**
  - Status quo option - choose a constant ABC at minimum value
    - Alternative - find the maximum constant catch that does not exceed a specific P* (need to determine threshold). Done manually by iteratively evaluating ABCs that satisfy constraints.
  - Assessment lead, Council staff work with sub-group to consider different projection options and scenarios – for July 2023 meeting

- **Long-term**
  - Continue to work with NEFSC to potentially develop a projection component within Woods Hole Assessment Model (WHAM) to develop varying and constant/average ABC calculations