Atlantic Herring

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Background

- Last assessed and reviewed October 2018 (SAW 65)
- Assessed using ASAP
  - Two fleets (fixed and mobile gears); **fixed catch >90% Canadian**
  - Four surveys: spring BTS, fall BTS, summer/shrimp BTS, acoustic time series collected during fall BTS
  - Constant M=0.35
  - No ability to estimate SR relationship; MSY reference points use F40% as proxy
TOR 1: Estimate catch from all sources including landings and discards

• Catch = landings + discards
  • Discards only available since 1996, but generally <1% of landings
TOR 1: Estimate catch from all sources including landings and discards

<table>
<thead>
<tr>
<th>Year</th>
<th>Mobile</th>
<th>Fixed</th>
<th>%Fixed</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>87162</td>
<td>513</td>
<td>0.006</td>
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<tr>
<td>2013</td>
<td>95182</td>
<td>6440</td>
<td>0.063</td>
</tr>
<tr>
<td>2014</td>
<td>92566</td>
<td>2667</td>
<td>0.028</td>
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<tr>
<td>2015</td>
<td>80465</td>
<td>884</td>
<td>0.011</td>
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<tr>
<td>2016</td>
<td>61808</td>
<td>4849</td>
<td>0.073</td>
</tr>
<tr>
<td>2017</td>
<td>48531</td>
<td>2368</td>
<td>0.047</td>
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<tr>
<td>2018</td>
<td>45189</td>
<td>11912</td>
<td>0.209</td>
</tr>
<tr>
<td>2019</td>
<td>12721</td>
<td>5115</td>
<td>0.287</td>
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</table>
TOR 2: Evaluate indices used in the assessment
TOR 2: Evaluate indices used in the assessment
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TOR 2: Evaluate indices used in the assessment
TOR 3: Estimate...

- No changes to ASAP configuration other than to add 2 years of data
TOR 3:
Estimate...
TOR 3:
Estimate...
TOR 3:
Estimate...
TOR 3:
Estimate...
TOR 4: BRPs

- Previous/existing methods summary
  - Life history traits (e.g., weights-at-age) based on 5 year average
  - Selectivity equals 5 year average of total F-at-age (summed over fleets) rescaled to max of 1.0
  - Recruitment sampled from empirical CDF using the entire times series except most recent two years

- Short-term projections
  - A recent average of fixed gear catches (Canadian and some US) is deducted from the ABC to determine ACL
  - Implication is that the "combined" selectivity includes about the right amount of fixed gear catches
TOR 4: BRPs

- The combined selectivity no longer includes about the right amount of fixed gear catches; the age composition is skewed to fixed gear
- The BRPs are being unduly effected by a foreign fleet; BRPs inappropriate
- Also requires assumption that Canadian fixed gear catch adheres to US HCR
TOR 4: BRPs

• Solution
  • Base BRPs on Mobile fleet selectivity only; no longer affected by foreign fleet
  • Previous/existing BRPs: F40% = 0.51; SSBproxy = 189,000 mt (corrected = 266,000 mt)
  • Updated BRPs: F40% = 0.54; SSBproxy = 269,000 mt
TOR 4: BRPs

• Solution
  • Short-term projections will explicitly include both fleets; fixed catch set equal to a recent average, just as before, but now a specific value as opposed to implicit
  • Probability of overfishing based on comparing Mobile F to Mobile only reference points, but explicitly responsive to input Canadian catch
  • Probability of overfished based on comparing SSB to SSBproxy
  • No other changes to projection methods
TOR 4: BRPs

- The stock is overfished; overfishing is not occurring
TOR 5: Short-term projections

- Fixed gear catches equal in all years and based on 10 year average
- Canadian Catch = 4669 mt; US Fixed Fleet (i.e., stop seine, weir, and pound nets) = 109 mt
- Mobile fleet F based on NEFMC selected harvest control rule

<table>
<thead>
<tr>
<th></th>
<th>Mobile Fleet F</th>
<th>SSB</th>
<th>P(overfishing)</th>
<th>P(overfished)</th>
<th>OFL</th>
<th>ABC</th>
<th>SSB/SSBmsy</th>
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<tbody>
<tr>
<td>2020</td>
<td>0.243</td>
<td>56375</td>
<td>0.002</td>
<td>0.999</td>
<td>–</td>
<td>–</td>
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<td>2021</td>
<td>0.119</td>
<td>48841</td>
<td>0.000</td>
<td>0.932</td>
<td>23423</td>
<td>9483</td>
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<td>2022</td>
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<td>45921</td>
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<td>26292</td>
<td>8767</td>
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<td>2023</td>
<td>0.077</td>
<td>130616</td>
<td>0.000</td>
<td>0.525</td>
<td>44600</td>
<td>11025</td>
<td>0.486</td>
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Those listed as “high” priority research areas in 2018

- Further research on the use of acoustic technology for inclusion in stock assessment, including information using industry based platforms
  - No progress
- Evaluate data collected in study fleet program for informing assessment data. Development research ideas that can be addressed within the context of the study fleet
  - Herring depth preference (ongoing)
- Evaluate the ability of state-space models to reliably estimate observation and process error variances under a range of scenarios, as well as their ability to estimate quantities of management interest
  - Several local, national, and international projects
Report and Reviewer Comments

• Draft report imminent
• Reviewer comments largely positive
• Some research recommendations are likely (e.g., defining multi-fleet BRPs)
Questions?
Current Measures

• Category A
  • 4 Landing Days
  • 240,000 lb weekly landing limit per vessel (6 trucks)

• Category C and D SMBT: 5 Landing Days

• No carriers

• Harvester vessel to harvester vessel transfers only
TAC Update - Current Week

• Landings as of this morning ~ 136 MT (299,828 lbs)

• 5 vessels reporting landings to date

• 5-10 vessels participating per week
TAC Update - June 1 through September 30

• June 1 – September 30 TAC = 2,152 MT (4,745,212 lbs)

• ~872 MT taken to date

• ~1280 MT remain
TAC Update - NOAA Quota Monitoring (Through July 31)

Quota: 3,214 mt