Summer Flounder
2019 Specifications

SSC
July 18, 2018
Overview

- No 2019 specifications in place for summer flounder; required by January 1, 2019
- Benchmark assessment in development for November 2018 SARC
- Objective: develop **interim 2019 specifications** for likely revision in Spring 2019
Stock Status

- Last benchmark assessment: SAW/SARC 57 (2013)
  - Age-structured assessment program (ASAP)

- 2015 and 2016: assessment updates

- 2014, 2017 and 2018: data updates
Stock Status: 2016 Update

**SSB**
- 2015 SSB = 36,240 mt
- 58% of SSB\(_{35\%}\) = SSB\(_{MSY}\) = 62,394 mt
- 16% above MSST = ½ SSB\(_{35\%}\) = 31,197 mt
- Not overfished in 2015

**F**
- 2015 F = 0.390
- 26% above F\(_{35\%}\) = F\(_{MSY}\) proxy = 0.309
- Overfishing occurring in 2015
Fishing Mortality

Total Catch and Fishing Mortality (F) 2016 Update

- Total Catch
- F (age 4)
- FMSY = F35% = 0.309
Spawning Stock Biomass (SSB) and Recruitment (R)

SSB and Recruitment

SSBMSY = SSB35% = 62,394 mt

1/2 SSBMSY = 1/2 SSB35% = 31,197 mt

2016 Update
Total Catch

Summer Flounder Fishery Total Catch: 1982-2017
Landings

- Commercial landings (mil lb)
- Recreational landings (mil lb)
- Total landings (mil lb)

Landings (Millions of lb)

- Commercial landings (mil lb)
- Recreational landings (mil lb)
- Total landings (mil lb)


- 1980: 5 million lb
- 1981: 5.83 million lb
- 1982: 6 million lb
- 1983: 7 million lb
- 1984: 8 million lb
- 1985: 9 million lb
- 1986: 9 million lb
- 1987: 9 million lb
- 1988: 9 million lb
- 1989: 9 million lb
- 1990: 9 million lb
- 1991: 8 million lb
- 1992: 7 million lb
- 1993: 6 million lb
- 1994: 5 million lb
- 1995: 4 million lb
- 1996: 3 million lb
- 1997: 2 million lb
- 1998: 1 million lb
- 1999: 0.5 million lb
- 2000: 0.25 million lb
- 2001: 0.1 million lb
- 2002: 0.05 million lb
- 2003: 0.025 million lb
- 2004: 0.01 million lb
- 2005: 0.005 million lb
- 2006: 0.0025 million lb
- 2007: 0.001 million lb
- 2008: 0.0005 million lb
- 2009: 0.00025 million lb
- 2010: 0.0001 million lb
- 2011: 0.00005 million lb
- 2012: 0.000025 million lb
- 2013: 0.00001 million lb
- 2014: 0.000005 million lb
- 2015: 0.0000025 million lb
- 2016: 0.000001 million lb
- 2017: 0.0000005 million lb
<table>
<thead>
<tr>
<th>Year</th>
<th>Comm. Landings (mil lb)</th>
<th>Comm. Quota (mil lb)</th>
<th>Comm. % Overage (+)/Underage(-)</th>
<th>Rec. Landings (mil lb)</th>
<th>Rec. Harvest Limit (mil lb)</th>
<th>Rec. % Overage (+)/Underage(-)</th>
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<tbody>
<tr>
<td>2013</td>
<td>12.44</td>
<td>11.44</td>
<td>+9%</td>
<td>7.36</td>
<td>7.63</td>
<td>-4%</td>
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<tr>
<td>2014</td>
<td>11.00</td>
<td>10.51</td>
<td>+5%</td>
<td>7.39</td>
<td>7.01</td>
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<td>2015</td>
<td>10.68</td>
<td>11.07</td>
<td>-4%</td>
<td>4.72</td>
<td>7.38</td>
<td>-36%</td>
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<tr>
<td>2016</td>
<td>7.81</td>
<td>8.12</td>
<td>-4%</td>
<td>6.18</td>
<td>5.42</td>
<td>+14%</td>
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<td>2017</td>
<td>5.83</td>
<td>5.66</td>
<td>+3%</td>
<td>3.19</td>
<td>3.77</td>
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<tr>
<td>5-yr Avg.</td>
<td></td>
<td></td>
<td>+2%</td>
<td></td>
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<td>-7%</td>
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</table>
2018 Data Update

NEFSC Trawl Surveys

- Spring and Fall kg/tow
- Winter kg/tow

Graph showing trends in trawl survey data from 1965 to 2020, with data points for Spring Offshore ALB, Spring ALB, Winter, Spring HBB, and Fall HBB.
2018 Data Update

Summer flounder: Spring kg/tow

Index (kg/tow)

Year

Summer flounder: Fall kg/tow  Through 2016
2018 Data Update

NEFSC Larval Surveys

Year


MARMAP Index of SSB

ECOMON Index of SSB

Year


MARMAP

ECOMON
2018 Data Update

MA Trawl Surveys

Year

Number/tow
0 1 2 3 4 5 6 7

MA Spr
MA Fall
2018 Data Update

RI Trawl Surveys

Year

RI Number/tow

URIGSO Number/tow

RI Fall
RI Monthly
URIGSO
2018 Data Update

CT and NY Trawl Surveys

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<td>1985</td>
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<td>1990</td>
<td>3</td>
<td>0.75</td>
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<td>1995</td>
<td>4</td>
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<tr>
<td>2015</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2020</td>
<td></td>
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- CT Fall
- CT Spr
- CT NY

Year
2018 Data Update

NJ and DE Trawl Surveys

<table>
<thead>
<tr>
<th>Year</th>
<th>NJ Number/tow</th>
<th>DE Number/tow</th>
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<tbody>
<tr>
<td>1975</td>
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<td>0.00</td>
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<tr>
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<td>0.25</td>
</tr>
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<td>1985</td>
<td>6</td>
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<td>2015</td>
<td>18</td>
<td>1.50</td>
</tr>
<tr>
<td>2020</td>
<td>18</td>
<td>1.50</td>
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</table>
2018 Data Update

ChesMMap and NEAMAP Trawl Surveys

Year

ChesMMap Number/tow
0 100 200

NEAMAP Number/tow
0 1 2 3 4 5 6

ChesMMap
NEAMAP Spr
NEAMAP Fall
2018 Data Update

Summer flounder Aggregate Numeric Indices
Scaled to time series means

- NEFSC Winter
- NEFSC Spring
- NEFSC Fall
- MADMF Spring
- MADMF Fall
- RIDFW Fall
- RIDFW Monthly
- URIGSO
- CTDEEP Spring
- CTDEEP Fall
- NYDEC
- NJDFW
- DEDFW
- ChesMMAP
- NEAMAP Spring
- NEAMAP Fall
- MARMAP LV
- ECOMON LV
- 2013 SAW 57
- 2016 Update
2018 Data Update

NEFSC Fall Age 0 Index

Year


NEFSC Number/tow

0.00 0.25 0.50 0.75 1.00 1.25

MA and RI Age 0 Indices

Year


MA Seine number/100 m²

0.000 0.002 0.004 0.006 0.008 0.010

Number/tow

0.0 0.1 0.2 0.3 0.4 0.5

MA Seine

RI

MA F0
2018 Data Update

ChesMMAP and NEAMAP Age 0 Indices

- ChesMMAP
- NEAMAP Fall

Year:
- 1975
- 1980
- 1985
- 1990
- 1995
- 2000
- 2005
- 2010
- 2015
- 2020

ChesMMAP Number/tow:
- 0
- 20
- 40
- 60
- 80
- 100

NEAMAP Number/tow:
- 0.0
- 0.3
- 0.6
- 0.9
- 1.2
- 1.5

Graph showing changes in ChesMMAP and NEAMAP Age 0 Indices from 1975 to 2020.
Indices of summer flounder age 0 recruitment 
Scaled to time series means
General Management Issues

- Request Council/SSC presence at AP meetings
- MRIP data fundamentally flawed; many want mobile app reporting
- Stability/predictability in specifications important
- Concerns with trawl surveys
- Support for return of RSA
Stock Status

- “Need to look into numbers rather than at them” - 2015 catch was better than shown by data.
- One observation of seeing more small (likely juvenile) fish lately
- Reference points need to be addressed ASAP – the biomass reference point is unattainable
- Concern that observers are not capturing useful data as they are too concerned with turtles
Environmental and Ecological Issues

- Climate change needs to be considered more thoroughly in terms of area/timing of trawl surveys
  - Inshore areas need to be better addressed (e.g., Nantucket Shoals and Buzzard’s Bay)
  - Larger fish are observed inshore more often these days
Market and Economic Issues

- Less overlap between state open seasons = better price

- IFQ quota holders in MD make more money leasing quota than fishing it

- Not enough quota along coast to keep everyone going

- Derby conditions occur when fishery opens, driving price down
Research Recommendations

- Investigate ocean ranching of juvenile fluke to improve recruitment (as Japan has done)
- Several support reviving RSA or similar program
- More collaborative research, with focus on species in apparent decline like summer flounder
Advisor Written Comments

- Additional support for RSA program
- Additional comments regarding ocean ranching/stock enhancement
- Support for commercial landings limits instead of possession limits (transit to offload catch in multiple states)
Advisor Written Comments

- Different NJ recreational regulations for Delaware Bay are helpful, though fishing businesses in southern NJ are still suffering.

- Fluke stocks appear to be at a low level in DE Bay.

- Suggest additional research on both genetics and migration patterns; could help explain stock declines and/or shifts.
Must stop removing only large females in recreational fishery (support for slot limits)

Rec. fishing in CT waters of Long Island Sound has been “off” in recent years
- Fluke fishing ends earlier in the year than it used to

Private anglers underrepresented in the AP/public input process
Prior SSC Recommendations

- July 2016: SSC recommended two-year ABCs (2017-2018) based on 2016 assessment update

- This revised previous multi-year recommendations (2015 3-yr phased-in reduction approach)
  - Reverted to standard application of risk policy
Prior SSC Recommendations

- SSC-modified OFL probability distribution

- 2018: Typical life history; Proj. 2017 $B/B_{MSY} = 70\%$; Lognormal distribution of OFL with CV = 60%
  
  - 2018 ABC = 13.23 million lb = 5,999 mt ($P^* = 0.267$)
2019 OFL Projections

- See 2018 data update
- Uses 2016 assessment update outputs with realized 2016 and 2017 catch
- Assumes 100% of 2018 ABC (5,999 mt) is caught
- Resulting OFL associated with $F_{\text{MSY}} = 0.309$ is 20.60 mil lb (9,343 mt)
Assumes:
- Lognormal distribution of OFL with 60% CV
- Projected 2018 SSB = 76% of SSB_{MSY}
- Typical life history

Resulting 2019 ABC = 15.41 mil lb = 6,988 mt
## 2019 Staff ABC Recommendation

### Memo Table 3

<table>
<thead>
<tr>
<th>OFL</th>
<th>ABC</th>
<th>ABC % of OFL</th>
<th>F</th>
<th>P*</th>
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<tbody>
<tr>
<td>20.60 mil lb (9,343 mt)</td>
<td>15.41 mil lb (6,988 mt)</td>
<td>75%</td>
<td>0.225</td>
<td>0.300</td>
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<tr>
<td></td>
<td>2018</td>
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<td>Mil lb.</td>
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