Summary of the IPHC 2013 stock assessment

IPHHC staff
11 December, 2013

Presentation to the NPFMC
Outline

• Assessment
  – Data summary
  – Results for 2014
  – Decision table
• Apportionment
• Halibut Bycatch Work Group report
• 2014 IPHC Annual Meeting
Assessment summary

• Survey and fishery trends down in 2013

• Major data reconstruction of historical datasets during 2013 provided additional perspectives

• Comparative models
  – Stronger assessment
  – Better estimation of uncertainty
  – Historical perspective

• 2013 results consistent with 2012 projections
Halibut removals

![Graph showing Halibut removals from 1888 to 2009 with categories: Bycatch, Personal use/subsistence, Sport, Fishery wastage, Fishery landings.](chart.png)
Survey trends – O32 WPUE

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Fishery trends

Commercial WPUE (net lb/skate)

- 2A: +30%
- 2B: +8%
- 2C: +10%
- 3A: -9%
- 3B: -15%
- 4A: -15%
- 4B: -18%
- 4C: -7%
- 4D: -2%
- Total: -4%
Long time-series perspective

Spawning biomass (million lbs)

Commission formed
1970’s

Year
Recruitment trends
Comparison: Point estimates (million lbs)

<table>
<thead>
<tr>
<th>Quantity</th>
<th>2012 Assessment model</th>
<th>2013 Ensemble</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014 Exploitable biomass</td>
<td>176</td>
<td>170</td>
</tr>
<tr>
<td>2014 Spawning biomass</td>
<td>198</td>
<td>197</td>
</tr>
</tbody>
</table>
New advice process implemented for 2013

Staff provides harvest advice
  – Application of IPHC harvest policy to the estimated biomass
  – The decision table presents a suite of potential choices and their estimated consequences.
  – The decision table is a framework to assist the Commission in its decision making and should not be interpreted as a specific recommendation
### Decision table

**Presentation to NPFMC, Dec2013**

#### Stock Trend

<table>
<thead>
<tr>
<th>Total removals (M lb)</th>
<th>Stock Status</th>
<th>Fishery Status</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Spawning biomass</td>
<td>Harves</td>
</tr>
<tr>
<td>No removals 0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>FCEY = 0</td>
<td>11.4</td>
<td>0.0</td>
</tr>
<tr>
<td>Blue Line 20.0</td>
<td>20.0</td>
<td>8.5</td>
</tr>
<tr>
<td>status quo 30.0</td>
<td>30.0</td>
<td>18.2</td>
</tr>
<tr>
<td></td>
<td>56/100</td>
<td>1/100</td>
</tr>
<tr>
<td>40.0</td>
<td>40.0</td>
<td>28.0</td>
</tr>
<tr>
<td>45.0</td>
<td>45.0</td>
<td>32.8</td>
</tr>
<tr>
<td>48.5</td>
<td>48.5</td>
<td>36.1</td>
</tr>
<tr>
<td>55.0</td>
<td>55.0</td>
<td>42.6</td>
</tr>
<tr>
<td>60.0</td>
<td>60.0</td>
<td>47.5</td>
</tr>
</tbody>
</table>

#### Stock Status

- **Harvest rate**
- **Spawning biomass in 2014**
- **Spawning biomass in 2015**
- **Spawning biomass in 2017**

#### Fishery Trend

- **Fishery CEY from the harvest policy in 2014**
- **Fishery CEY from the harvest policy in 2015**
- **Fishery CEY from the harvest policy in 2017**

#### Fishery Status

- **Harvest rate**

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[Image of a fish and a fish skeleton]

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Assessment conclusions

- Historical information provides perspective on recent declines
- Incoming recruitments likely to be low
- Size-at-age changes slowly and is currently low
- As in 2012, the stock trend is projected to be relatively flat or declining in the near-term
- As the stock stabilizes at lower biomass levels, stock response to management actions may increase
Apportionment results - biomass

Exploitable biomass (million lbs)

- 2013 Biomass
- 2014 Biomass

2A, 2B, 2C, 3A, 3B, 4A, 4B, 4CDE
Apportionment results

**• Blue Line for 2014**

<table>
<thead>
<tr>
<th></th>
<th>2A</th>
<th>2B</th>
<th>2C</th>
<th>3A</th>
<th>3B</th>
<th>4A</th>
<th>4B</th>
<th>4CDE</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exploitable bio.</td>
<td>4.03</td>
<td>26.64</td>
<td>25.44</td>
<td>56.07</td>
<td>23.14</td>
<td>9.69</td>
<td>7.23</td>
<td>18.06</td>
<td>170.29</td>
</tr>
<tr>
<td>Percent of total</td>
<td>2.4%</td>
<td>15.6%</td>
<td>14.9%</td>
<td>32.9%</td>
<td>13.6%</td>
<td>5.7%</td>
<td>4.2%</td>
<td>10.6%</td>
<td>100.0%</td>
</tr>
<tr>
<td>Harvest rate</td>
<td>21.5%</td>
<td>21.5%</td>
<td>21.5%</td>
<td>21.5%</td>
<td>16.1%</td>
<td>16.1%</td>
<td>16.1%</td>
<td>16.1%</td>
<td>19.7%</td>
</tr>
<tr>
<td>TCEY</td>
<td>0.87</td>
<td>5.73</td>
<td>5.47</td>
<td>12.05</td>
<td>3.73</td>
<td>1.56</td>
<td>1.17</td>
<td>2.91</td>
<td>33.49</td>
</tr>
<tr>
<td>Other O26</td>
<td>0.14</td>
<td>0.74</td>
<td>1.31</td>
<td>2.63</td>
<td>0.90</td>
<td>0.71</td>
<td>0.34</td>
<td>2.27</td>
<td>9.04</td>
</tr>
<tr>
<td>FCEY</td>
<td>0.72</td>
<td>4.98</td>
<td>4.16*</td>
<td>9.43*</td>
<td>2.84</td>
<td>0.85</td>
<td>0.82</td>
<td>0.64</td>
<td>24.45</td>
</tr>
</tbody>
</table>

2C FCEY \(\rightarrow\) 3.40 Mlbs comm fishery + 0.76 Mlbs guided rec.
3A FCEY \(\rightarrow\) 7.65 Mlbs comm fishery + 1.78 Mlbs guided rec.

**• Adopted for 2013 (last year’s final decision)**

<table>
<thead>
<tr>
<th></th>
<th>2A</th>
<th>2B</th>
<th>2C</th>
<th>3A</th>
<th>3B</th>
<th>4A</th>
<th>4B</th>
<th>4CDE</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exploitable bio.</td>
<td>3.81</td>
<td>24.54</td>
<td>23.28</td>
<td>70.38</td>
<td>26.02</td>
<td>11.97</td>
<td>6.75</td>
<td>19.74</td>
<td>186.49</td>
</tr>
<tr>
<td>Percent of total</td>
<td>2.0</td>
<td>13.2</td>
<td>12.5</td>
<td>37.7</td>
<td>14.0</td>
<td>6.4</td>
<td>3.6</td>
<td>10.6</td>
<td>100.0%</td>
</tr>
<tr>
<td>Harvest rate</td>
<td>29.0%</td>
<td>31.7%</td>
<td>21.6%</td>
<td>24.2%</td>
<td>22.6%</td>
<td>20.3%</td>
<td>28.6%</td>
<td>21.7%</td>
<td>24.4%</td>
</tr>
<tr>
<td>TCEY</td>
<td>1.11</td>
<td>7.78</td>
<td>5.02</td>
<td>17.07</td>
<td>5.87</td>
<td>2.43</td>
<td>1.93</td>
<td>4.28</td>
<td>45.48</td>
</tr>
<tr>
<td>Other O26</td>
<td>0.11</td>
<td>0.73</td>
<td>2.05</td>
<td>6.04</td>
<td>1.58</td>
<td>1.10</td>
<td>0.48</td>
<td>2.35</td>
<td>14.45</td>
</tr>
<tr>
<td>FCEY</td>
<td>0.99</td>
<td>7.04</td>
<td>2.97</td>
<td>11.03</td>
<td>4.29</td>
<td>1.33</td>
<td>1.45</td>
<td>1.93</td>
<td>31.03</td>
</tr>
</tbody>
</table>
**IPHC Assessment Briefing**

- Thursday evening, shortly after the Council concludes for the day (approx. 5:30 pm)
- In the Council meeting room
- IPHC assessment scientist Dr. Ian Stewart
  - More in-depth assessment results
- IPHC Executive Director Dr. Bruce Leaman
  - Apportionment results
- Q&A
Bycatch Work Group

• An initiative which began in 2011 to review the status of bycatch, impacts to the stock and fishery yields, and recent actions taken to reduce bycatch

• Recent report contained a suite of options which could be used to reduce bycatch

• Public comment on options – Nov. 11-27

• Comment period reopened/extended to Dec. 17

• Further discussion at 2014 Annual Meeting
2014 Annual Meeting

• January 13-17, 2014
• Grand Hyatt Seattle in downtown Seattle
• Special meeting rates for rooms, available until December 23.
• All public and administrative sessions will be open. Open sessions will be webcasted.
• Further details on IPHC web site www.iphc.int