CP CHINOOK AND CHUM SALMON BYCATCH REDUCTION INCENTIVE PLAN AGREEMENT

ANNUAL REPORT 2021

June 2022
NPFMC

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Austin Estabrooks
PRIMARY IPA COMPONENTS

- Data gathering, monitoring, reporting, information sharing.
- Identification of bycatch avoidance areas (Rolling Hot Spot Closures).
- Fishing area prohibitions for vessels with poor bycatch performance.
- Fixed Closures: A-season closed area & conditional B-season closed areas.
- Performance criteria to ensure Chinook PSC rates in October are not significantly higher than prior months.
- Penalties for vessels with consistently higher Chinook salmon bycatch rates relative to the fleet.
- Requires the use of Salmon Excluder Devices.
DATA GATHERING, MONITORING, REPORTING, INFORMATION SHARING

- Bi-weekly and Weekly Bycatch Reports
- Other Regulatory Constraints
  - Steller Sea Lion Conservation Area
  - Catcher Vessel Operational Area
  - Pribilof Island Habitat Conservation Area

8/9/21-8/16/21
CHINOOK CONSERVATION AREAS

735 square mile area closed to all pollock fishing 100% of the time during A-season

Areas totaling 1,295 square miles closed to CP pollock fishing Oct 15-Oct 31 if the Chinook bycatch rate for September exceeds 1.5 Chinook per 100 tons pollock.

B season Chinook Conservation Areas to be closed October 15 - October 31 if the chinook bycatch rate for September exceeds .015 salmon per mt.
## CHINOOK PROHIBITED SPECIES CATCH LIMITS

<table>
<thead>
<tr>
<th>Pollock Sector</th>
<th>Performance Standard limit (Low Abundance)</th>
<th>Absolute Limit (Low Abundance)</th>
<th>Performance Standard limit</th>
<th>Absolute Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDQ</td>
<td>2,732</td>
<td>3,690</td>
<td>3,883</td>
<td>4,896</td>
</tr>
<tr>
<td>CP</td>
<td>9,462</td>
<td>12,780</td>
<td>13,516</td>
<td>17,040</td>
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<tr>
<td>Totals</td>
<td>12,194</td>
<td>16,470</td>
<td>17,399</td>
<td>21,936</td>
</tr>
<tr>
<td>Average Vessel Limit (with buffers)</td>
<td>903</td>
<td>1,267</td>
<td>1,304</td>
<td>1,687</td>
</tr>
<tr>
<td>Chinook rate (Number/mt pollock)*</td>
<td>0.019</td>
<td>0.027</td>
<td>0.028</td>
<td>0.036</td>
</tr>
</tbody>
</table>

* Based on 2021 pollock harvest levels
## CHINOOK & CHUM PSC AND POLLOCK CATCH

<table>
<thead>
<tr>
<th></th>
<th>A season</th>
<th>B season</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pollock (mt)</td>
<td>Chinook (n)</td>
</tr>
<tr>
<td></td>
<td>277,829</td>
<td>4,368</td>
</tr>
<tr>
<td>Rate (n/mt)</td>
<td>0.015</td>
<td>0.00019</td>
</tr>
</tbody>
</table>

Catch totals include all IPA participants (PCC, HSCC, OP, CDQ)
<table>
<thead>
<tr>
<th>Week</th>
<th>2/19</th>
<th>2/26</th>
<th>3/5</th>
<th>3/12</th>
<th>3/19</th>
<th>4/2</th>
<th>9/17</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of CPs excluded from BAAs</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Week</td>
<td>7/2</td>
<td>7/9</td>
<td>7/16</td>
<td>7/23</td>
<td>7/30</td>
<td>8/6</td>
<td>8/13</td>
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<td>------</td>
</tr>
<tr>
<td>Number of CPs excluded from BAAs</td>
<td>2</td>
<td>2</td>
<td>6</td>
<td>7</td>
<td>6</td>
<td>4</td>
<td>2</td>
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</table>
EFFECTS OF INCENTIVE PLAN AGREEMENT

CP Vessel Chinook bycatch rate distribution by year for 1 Sept-1 March.
EFFECTS OF INCENTIVE PLAN AGREEMENT

Upper panel: A-Season CP Vessel Chinook Bycatch Rate Frequency Distribution for 2010 with a variance pre-Amendment 91 of 0.0014 and Lower panel: Distribution for 2021 with variance equal to 0.00018.
EFFECTS OF INCENTIVE PLAN AGREEMENT

![Graph showing effects of incentive plan agreement for Chinook N/mt pollock with mean and 1.5 standard deviation for 2021 A-season and 2021 B-season.](image)
Pollock CP trawl locations between September 1st and February 28th for the years 2008-2010 (blue), 2021-2022 (orange).
POLLOCK CONSERVATION COOPERATIVE RESEARCH CENTER-SALMON RESEARCH

- Shipside Salmon Stock Identification-Mitochondrial DNA sequencing
- Chum Species Distribution Models- AYK-SSI Proposal
- Spatiotemporal dynamics of Chum Salmon Bycatch in the Bering Sea [https://pdbarry.shinyapps.io/GSI_Salmon_LandingPage]
- Getting ahead of bycatch spikes: using species distribution models to predict Chinook salmon and walleye pollock fleet overlap
GEAR RESEARCH AND DEVELOPMENT

- All vessels continue to utilize a salmon excluder device in accordance with Amendment 110 regulations
- New BREP Proposal for continued funding of ActSel device testing on our CP vessels
- Most CP vessels continue to operate with a live-feed camera system allowing them to view catch composition in real time helping mitigate lightning strike events
NEW CP IPA AMENDMENTS

- New chum salmon Bycatch Avoidance Areas may be implemented on Monday for a Tuesday to Friday closure
  - Allows for a more reactive approach, as chum salmon is known to be more dynamic than Chinook, with large pulses of chum showing up on the fishing grounds in a matter of days.

- Restrictions for all vessels from fishing in known areas of “extremely” high chum bycatch (defined as 5 chum/mt pollock).
  - Periodic spikes in chum salmon bycatch will be reduced and lightning strike tows of chum salmon by multiple vessels in known high bycatch areas will be minimized.

- Include chum salmon to the “outlier provision” to create incentives for chronic poor chum bycatch performers to improve bycatch rates.
  - Increases accountability for all vessels and provides further incentives to reduce chum salmon bycatch
QUESTIONS