An analysis of rockfish landings associated with commercial salmon troll fishery off California

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Data & Analysis (1 of 2)

• Data:
  – California Cooperative Survey (Port Sampling)

• Trip: all landings by a given boat on a given day
  – accounts for many but not all split trips (catches from same trip might be landed on different days)

• ‘Salmon trip’: a trip on which salmon were landed, regardless of whether salmon were main catch
Data & Analysis (2 of 2)

- 99% of all salmon landed by troll
  - trips with landings based on all other gear types dropped from analysis
- 99.9% of all salmon landings in ‘Chinook salmon’ market category
  - trips with landings based on all other market categories dropped from analysis
- Compiled associated landings in all rockfish market categories
- Stratified by port complex
  - Crescent City, Eureka, Fort Bragg, Bodega Bay, San Francisco, Monterey, Morro Bay, and Santa Barbara

### Commercial Salmon Troll-Associated Rockfish Landings (CSTARL)

<table>
<thead>
<tr>
<th>Port Complex</th>
<th>Rockfish (lbs)</th>
<th>Number of Salmon Trips</th>
<th>Bycatch Rate (lbs rockfish/trip)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crescent City</td>
<td>579</td>
<td>516</td>
<td>1.12</td>
</tr>
<tr>
<td>Eureka</td>
<td>2,999</td>
<td>2,715</td>
<td>1.10</td>
</tr>
<tr>
<td>Fort Bragg</td>
<td>17,442</td>
<td>8,428</td>
<td>2.07</td>
</tr>
<tr>
<td>Bodega Bay</td>
<td>45,415</td>
<td>15,597</td>
<td>2.91</td>
</tr>
<tr>
<td>San Francisco</td>
<td>55,391</td>
<td>21,169</td>
<td>2.62</td>
</tr>
<tr>
<td>Monterey</td>
<td>27,041</td>
<td>25,742</td>
<td>1.05</td>
</tr>
<tr>
<td>Morro Bay</td>
<td>35,446</td>
<td>4,423</td>
<td>8.01</td>
</tr>
<tr>
<td>Santa Barbara</td>
<td>1,645</td>
<td>516</td>
<td>3.19</td>
</tr>
<tr>
<td>Combined</td>
<td>185,958</td>
<td>79,106</td>
<td>2.35</td>
</tr>
</tbody>
</table>

Mean CSTARL <3 lbs/trip in port complexes within study area over entire period 1997-2005
Rockfish landings associated with salmon troll fishery have been very low throughout the early 2000’s

- Bodega: ~0.2 lbs/trip
- San Francisco: ~0.6 lbs/trip

Data do not discern whether trend is due to change in frequency of split tickets or change in rate of at-sea discards.

CSTARL as portion of trip landings

Weight:weight comparisons also indicate that commercial salmon troll fishery is a clean fishery—especially in early 2000s.

- Bodega: R:S ~0.0005
- San Francisco: R:S ~0.0007
Most salmon trips do not land rockfish.

Most salmon trips that do land rockfish are dominated by salmon; exceptions are rare and more so in 2000s.

CSTARL: Species Composition

Yellowtail rockfish and chilipepper were largest components of landings associated with salmon troll fishery (~17% each).

Most other species represent between 0.5% to 5% of total CSTARL.

Species vary in likely susceptibility to commercial salmon trolling gear.
Rockfish landings associated with commercial salmon troll fishery are very small component of total rockfish landings.

Closing thoughts

- Overall CSTARL is very small, regardless of metric (e.g., weight/trip, RF:Salmon, CSTARL:TRL)
- Trips with positive CSTARL are rare
- CSTARL dominated by two species: yellowtail and chilipepper
- Rockfish species’ susceptibility to trolling gear should be considered in evaluating species-specific consequences of commercial salmon trolling
- Tightening rockfish regulations might contribute to trend of declining CSTARL from 1990s to 2000s