Agenda Item I.4.a
Supplemental NMFS Presentation 1
September 2019

Agenda Item I.4

National Marine Fisheries Service (NMFS)
Report on Preliminary Draft EIS for
Authorization of Deep-Set Buoy Gear

September 16, 2019
Overview

• Introduction

• Alternatives

• Affected Environment

• Impacts

• Sections to be Completed for Draft EIS

• Supplemental Report on Socioeconomic Impacts

• Addressing SSC Review of Biological Analysis
Introduction

• NMFS has prepared a preliminary draft EIS (PDEIS) to analyze impacts of the Council’s ROA for authorizing DSBG under the HMS FMP

• Description of the Proposed Action

• Purpose and Need

• Proposed Action Area

• PDEIS also includes a preliminary socioeconomic analysis
Alternatives

• Alternative 1: No Action

• Alternative 2: Open Access
  • Gear Description and Tending Requirements
  • Deployment and Retrieval requirements

• Alternative 3: Limited Entry in the SCB, open access elsewhere
  • 5 permit issuance options
  • 5 qualifying criteria options
Affected Environment

• All federal waters (3-200nm from shore) off California and Oregon

• Affected environment includes species in the action area, essential fish habitat & critical habitat, and the socioeconomic environment

• Species are categorized according to their status (target fish, non-target fish, prohibited fish, and protected species) and relationship to the Proposed Action (likely to be affected, may be affected, not likely to be affected)
Affected Environment (continued)

- **Species likely to be affected**
  - Based on those which have been caught so far in DSBG EFP trials

Table 3-1. Summary of Reported DSBG Trials Catch, in Number of Individuals

<table>
<thead>
<tr>
<th>Species</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
<th>2019*</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Swordfish</td>
<td>136</td>
<td>474</td>
<td>556</td>
<td>640</td>
<td>19</td>
<td>1825</td>
</tr>
<tr>
<td>Bigeye thresher shark</td>
<td>66</td>
<td>57</td>
<td>35</td>
<td>35</td>
<td>0</td>
<td>193</td>
</tr>
<tr>
<td>Pelagic thresher shark</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>2</td>
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<tr>
<td>Common thresher shark</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Shortfin mako shark</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Blue shark</td>
<td>3</td>
<td>4</td>
<td>2</td>
<td>3</td>
<td>0</td>
<td>12</td>
</tr>
<tr>
<td>Common mola</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Opah</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Escolar</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td>4</td>
<td>0</td>
<td>15</td>
</tr>
<tr>
<td>Humboldt squid</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Giant squid</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Yelloweye rockfish</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Northern elephant seal</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Loggerhead sea turtle</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total Days Fished</strong></td>
<td>132</td>
<td>280</td>
<td>326</td>
<td>606</td>
<td>30</td>
<td>1374</td>
</tr>
</tbody>
</table>

*Only includes January & February 2019
Affected Environment (continued)

• Species which may be affected are included based on technical discussions with NMFS Protected Resources Division (PRD).
  • These species dive deep and/or feed on squid like those used as bait in DSBG fishing, have been documented entangled by other fisheries that employ vertical lines, or are ESA-listed pinnipeds that have been caught by longline fishing near the action.

• Prohibited fish species, and other HMS species in the action area which are overfished or subject to overfishing, are not likely to be affected by the Proposed Action
Affected Environment (continued)

• **Essential Fish Habitat (EFH)**
  • EFH consists of the epipelagic and mesopelagic zones of neritic and oceanic waters
  • The Proposed Action is not likely to affect EFH

• **Critical Habitat**
  • The Proposed Action is not likely to affect Steller sea lion critical habitat because DSBG fishing is not likely to occur within 3,000 feet of rookeries
  • The Proposed Action is also not likely to affect leatherback sea turtle critical habitat, as it is highly unlikely that jellyfish bycatch would occur
Socioeconomic Environment

- Other fisheries in or near the action area
  - DSBG EFP fishing trials
  - Other swordfish fisheries (DGN, harpoon, longline)
  - Recreational fisheries

- The price of DSBG caught swordfish is a key indicator of socioeconomic impacts
  - Evidence from landings data suggest that DSBG price is higher on average than the price of DGN or longline, comparable to the price of harpoon
  - Also some evidence that DSBG price tends to fall over the course of a fishing season
  - Price analysis suggests a small but negative impact on DSBG price as the quantity of DSBG landings increases

- Fishers and fishing communities
- Processors, restaurants and consumers
Impacts

• No Action Alternative
  • No biological or socioeconomic impacts expected relative to baseline
  • Council may continue to recommend EFPs
Impacts

• Alternative 2 (Open Access)
  • Biological Impacts
    • Most likely swordfish catch in a given year is 6,635 individuals
    • Impacts not likely to affect species at a population level
    • Most likely number of protected species interactions in a given year is 5 northern elephant seals and 0 loggerhead sea turtles
  • Socioeconomic Impacts
    • Expected average swordfish price is $5.58 per pound
    • Estimated $5.7 million in total annual revenues, if swordfish CPUE remains at the levels seen so far in EFP trials
Impacts

• Alternative 3 (Limited Entry)
  • Biological Impacts
    • Most likely swordfish catch in a given year is 4,030 individuals
    • Impacts not likely to affect species at a population level
    • Most likely number of protected species interactions in a given year is 2 northern elephant seals and 0 loggerhead sea turtles
  • Socioeconomic Impacts
    • Expected average swordfish price is $5.67 per pound
    • Estimated $3.5 million in total annual revenues, if swordfish CPUE remains at the levels seen so far in EFP trials
Sections to be Completed for Draft EIS

• Cumulative Impacts

• Applicability with Other Laws & Regulations

• List of Acronyms, Indexes, etc.
Supplemental Report on Socioeconomic Impacts

• Analyze a scenario where CPUE declines with increasing effort

• From 2017 to 2018, active vessels rose from 5 to 26, and swordfish CPUE declined from about 1.7 per day to 1.1 per day

• Findings indicate that, if CPUE remains at 2018 levels after authorization, total revenues may be around 24% lower than if we see the average CPUE from all DSBG EFP fishing

• Profitability at the vessel level may constrain participation
Addressing SSC Review of Biological Analysis

- NMFS has been working on a number of sensitivity analyses based on the recommendations of the Council’s SSC from their review of our methodology in June.

- Overall, no drastic change in the results presented in the PDEIS resulting from these sensitivity analyses. However, some of the approaches proposed by the SSC do reflect a higher degree of uncertainty in the predictions
  - Use of negative binomial model for swordfish
    - Negative binomial model fits source data better
    - Resulting annual catch predictions have a wider range, lower median and mode, and similar mean
  - Using distribution of effort estimates rather than a point estimate introduces more uncertainty in the predictions