Measurements and Extrapolations of Nearshore CPS Biomass

3 April 2019
NOAA Fisheries Survey Vessel

- Scientific echosounders
- Multi-beam Sonar
- Imaging Sonar
- Scanning Sonar
Echo Classification

38 kHz

120 kHz

Unidentified plankton

Hake

Krill
Acoustic-Trawl Surveys
Recent trawl sampling effort
Sardine Lengths and Biomass

Predominant year-classes:
- 2003-2005
- 2008
- 2009-2010
- 2014
- 2015
- 2016
- 2017
- 2018

Biomass (Mt)

Standard length (cm)

Year

NOAA FISHERIES
Anchovy Lengths and Biomass
Summer 2017 Nearshore Measurements

Planned Transects

Northern stock anchovy
Lasker – 22,607 t (CV=64%)
Lisa Marie – 102 t (CV=34%)

0.5% more anchovy nearshore
Summer 2017 Nearshore Measurements
Central stock anchovy
Lasker – 716,887 t (CV~17%)
Saildrone – 6,939 t (CV=71%)
1% more anchovy nearshore
Nearshore Extrapolations

1. Distances were calculated for the projections of each transect to the 5-m isobath.

2. The biomass densities along these unsampled transect extensions were assigned the values measured along the sampled transects, equal distances from the eastern ends of the transects.
Nearshore extrapolation area

“Nearshore” - the unsampled area between the east end of the acoustic transects, sampled either by saildrone or Lasker, and the 5-m isobaths.

Nearshore strata examples in the 2017 summer survey
Nearshore biomass “data”

The biomass density data used to calculate the abundance in the nearshore strata are taken from an interval in the nearest acoustic transects, with a length equal to the distance between the transect endpoint and the 5-m isobath.
Nearshore Extrapolations results

The extrapolated values depend on the nearest measurements (acoustic and trawl samples) to the unsampled areas, which primarily depend on the stock distributions at the time of the survey.

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<th>NS Pacific Sardine</th>
<th>SS Pacific Sardine</th>
<th>NS Northern Anchovy</th>
<th>CS Northern Anchovy</th>
<th>Pacific Mackerel</th>
<th>Jack Mackerel</th>
<th>Pacific Herring</th>
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<tr>
<td></td>
<td>Biomass (t)</td>
<td>CV (%)</td>
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Questions?