

Pacific Sardine 2021-22 Management

Public Comment to PFMCC on Agenda Item E.4. April 2021

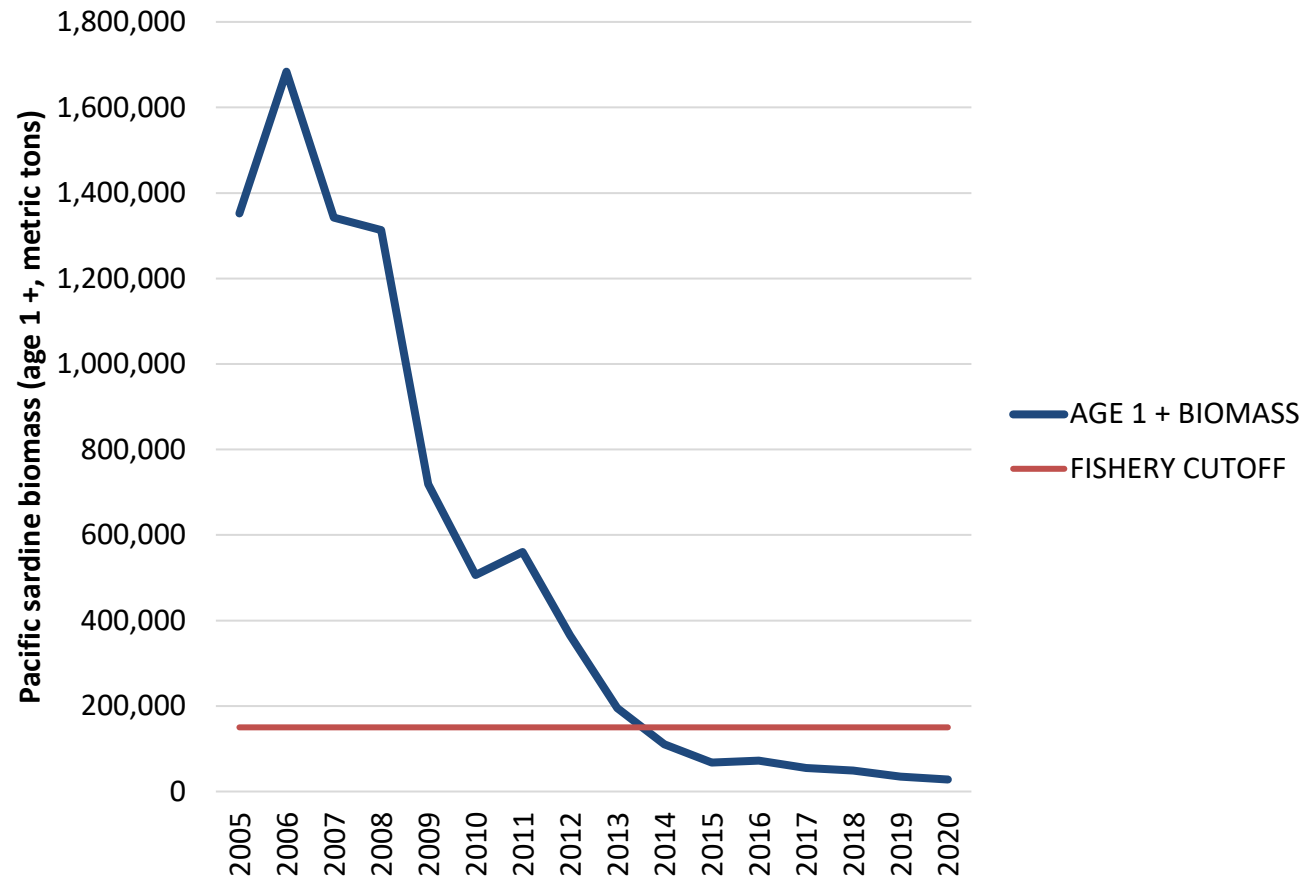
April 9, 2021

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World's Oceans



Pacific Sardine Have Collapsed

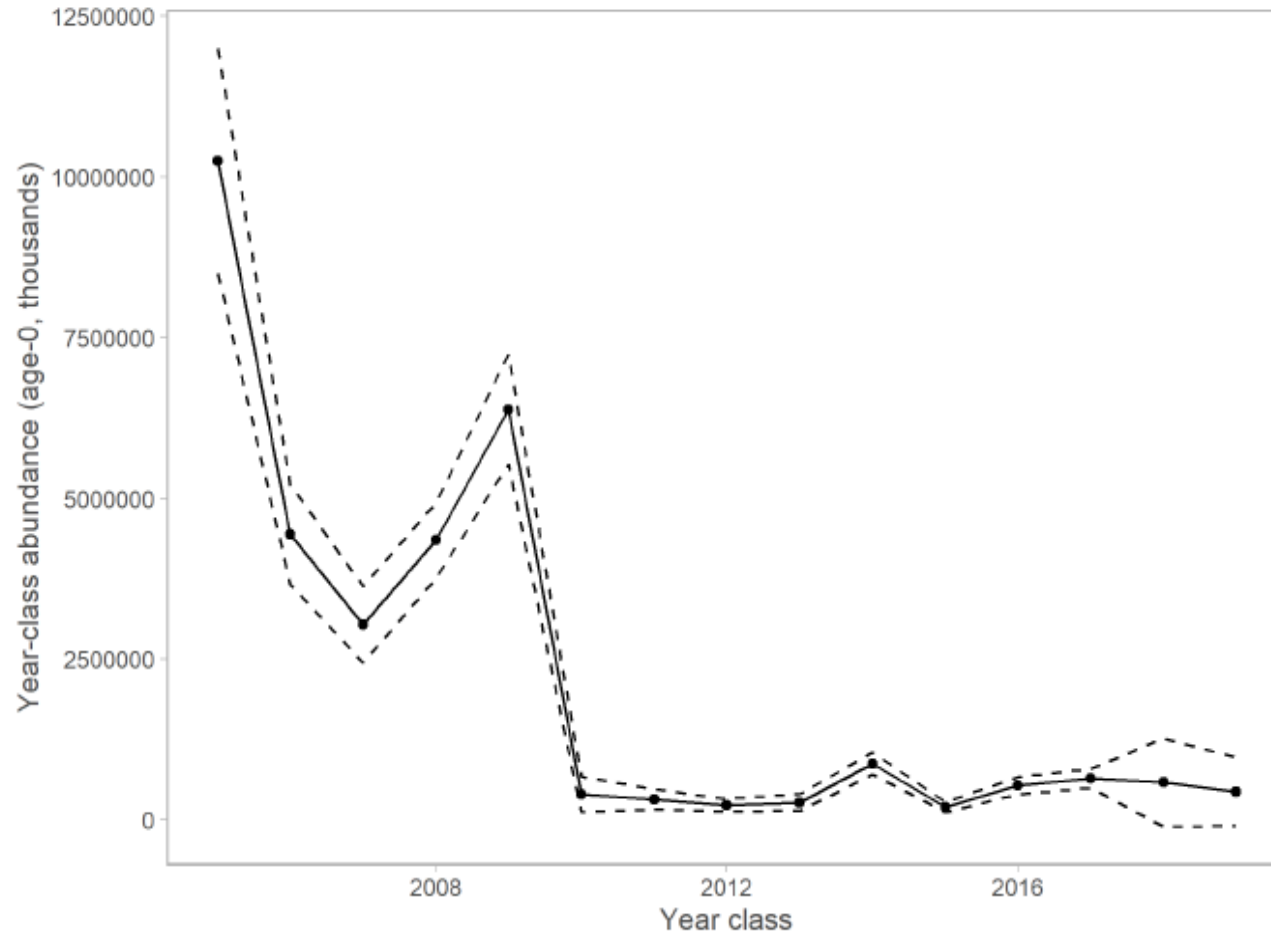


Data from: Kuriyama et al. 2020. Assessment of the Pacific sardine resource in 2020 for U.S. management in 2020-2021. Pacific Fishery Management Council, Portland, OR.

$$\text{OFL} = \text{Biomass} * \text{Emsy} * \text{Distribution}$$

- Emsy: Maximum sustainable yield exploitation rate
- MSY must be set based prevailing ecological and environmental conditions using best available science (NS1 guidelines)
- Emsy ranged from 5-15% in original CPS FMP
 - 5% intended for low recruitment conditions

“Lowest recruitment in recent history”



Rebuilding analysis
predicated on low
productivity

However, current MSY
exploitation rate is set too
high at 22% due to use of
CalCOFI temperature index
which predicts high
sardine recruitment

Estimated Pacific sardine recruitment (age-0, thousands of fish) (figure ES-2 in the 2020 assessment).

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Re-evaluation of the environmental dependence of Pacific sardine recruitment

Re-evaluation of the environmental dependence of Pacific sardine recruitment

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<https://doi.org/10.1016/j.fishres.2019.03.022>

- The CalCOFI SST index used to calculate Emsy is “invalid”
- “spurious relationship between sardine recruitment success and [CalCOFI SST index]”.
- Emsy should be based on measurements of recent stock productivity inferred directly from surveys or assessments.

Sardine Specifications for 2021-22

	CalCOFI Emsy	5% Emsy
Biomass (1+)	28,276	28,276
Emsy	0.224584	0.05
Distribution	0.87	0.87
OFL	5,525	1,230
Tier 3 P*=.40 buffer	0.60248	0.60248
ABC	3,329	741

Oceana Recommendations:

Adopt a 5% Emsy

ACL = 700 mt

ACT = 600 mt

10% Incidental catch allowance in other CPS fisheries

Incidental Sardine Catch in Other CPS Fisheries

- CPS FMP: Incidental catch limits can be set from 0-20% for overfished stock
- Limit has been 20% since sardines declared overfished
- We request Council set limit at 10%
 - Minimize incidental catch
 - Prevent exceeding ACT and ACL
 - Prevent constraining other fisheries
- This would not have major economic impacts
 - Vast majority of CPS landings do not contain sardines (CDFW Rep. 2)
 - Of the recent market squid landings containing incidental sardines, 90% of sets had incidental sardine catch less than 10% (CDFW Rep. 2)

Live Bait Fishery

- Amendment 17 removed prohibition on directed live bait fishing for overfished sardine stock
- CPS FMP: “the live bait catch is expected to be mostly sardine when sardines are abundant and mostly anchovy when anchovy are abundant.” In 1990s, live bait was primarily anchovy
- Ask live bait sector to shift focus to anchovy, and lay off sardines until they recover
- Reasonable limits to reduce sardine live bait catch are needed to prevent further declines
- Recent ACTs and ACLs (4,000-8,000 mt) have not constrained live bait sardine fishery
 - Live bait sardine catch ~1,000 mt in last two seasons (CDFW Report 2)

Southern Subpopulation of Pacific Sardine

- CPSAS Consensus Proposal (September 2020)
 - Align management with scientific separation of stocks
 - If there are 2 stocks, add Southern Stock to CPS FMP
 - Separate management and ACL for southern stock
 - Improve nearshore ATM estimates
 - Improve science for differentiating stocks
 - Coordinate with Mexico
- <https://www.pcouncil.org/documents/2020/09/c-2-a-supplemental-cpsas-report-1.pdf/>

Need to Overhaul Sardine Management

- Direct NMFS to develop a new method for setting Emsy based on recent recruitment;
- Fix the distribution parameter in the control rule to reflect the best available science on the stock biomass in US waters;
- Initiate discussions with Mexico and Canada to coordinate management;
- Increase the cutoff biomass threshold to 640,000 mt;
- Use ATM survey biomass estimates to directly set annual harvest specifications;
- Update the minimum stock size threshold (2016 NMFS MSST Report).



Thank you