The Case for Sustainable Anchovy Management

Agenda Item H.3.b
Supplemental Public Presentation 1
November 2020

Anchovy management controversy ~
We would appreciate the Council's consideration of these facts

Biological Context:

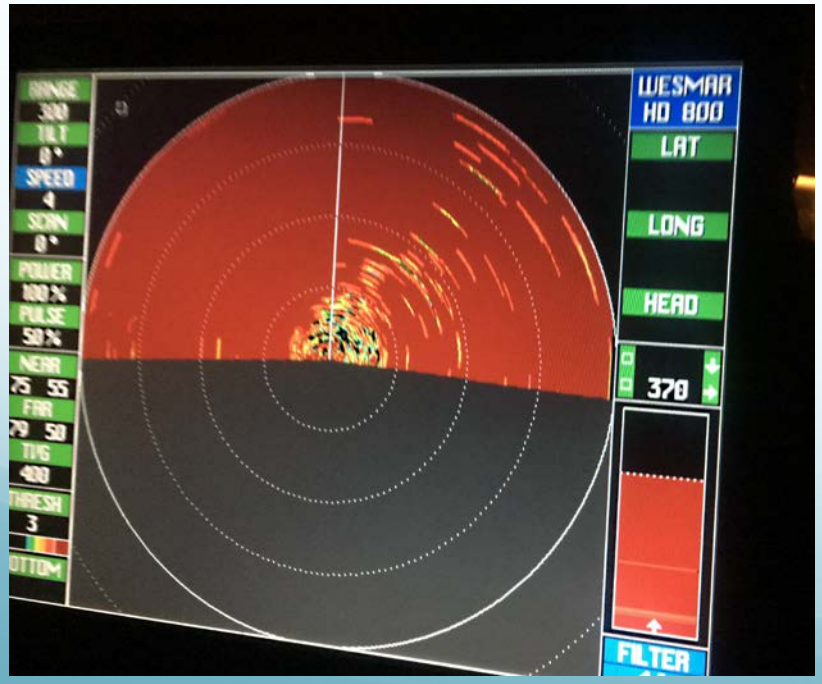
We hold these truths to be self evident…

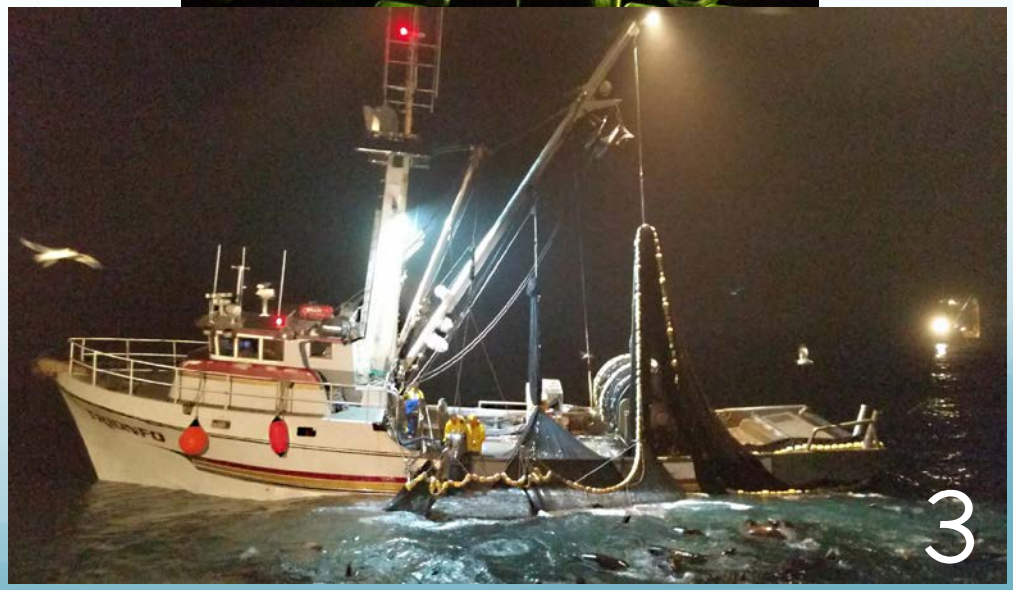
- Central stock Anchovy is now acknowledged to be at record abundance
- Abundance has occurred in the presence of California's anchovy fishery
  - Ecosystem Status Report for the CA Current 2019-20
    - "*Northern anchovy (Engraulis mordax) abundances were among the* ***highest ever observed in research surveys*** *off Central and Southern California*."
- **Best available science and fishery managers recognize**: Anchovy abundance is driven primarily by environmental forcing and **variability occurs even without a significant fishery**
- **Current anchovy management is ultra-precautionary**
  - Far more precautionary than other fisheries managed under MSA
- **Important to recognize: anchovy stock has NOT been overfished nor is overfishing occurring**

Fishermen have reported anchovy abundance since 2014 ~ finally validated

Sonar and fathometer screen images from Farallon Is. To S.CA.

Schools for miles and miles ~ tens of thousands of tons





Biological Context:

Anchovy is only one species in the larger forage pool

Fisheries harvest **only 2%** of key forage species, **only 0.6% anchovy**

California Current Forage Fish Consumption

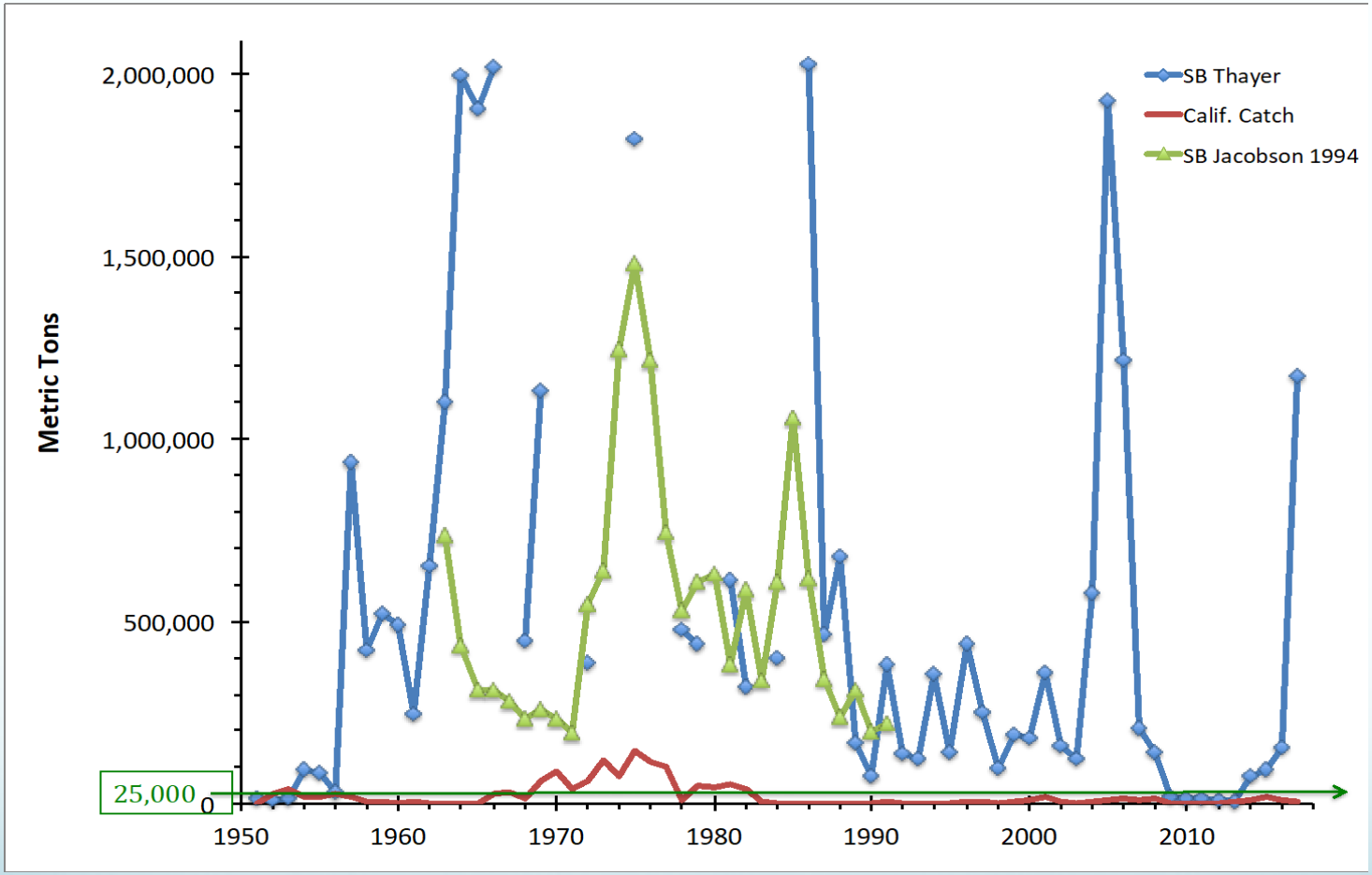
Agenda Item G.2.b. Sep '18-Parrish FEP Scoping

Table 1. **Annual consumption (mt) of forage** by major faunal groups and average (**2000-2014**) U. S. landings. (Calculated from Koehn et al. 2016: Table 1 and supplemental data).

Key Forage Species	TOTAL	Fishes	Mammals	Birds	Fishery	Fishery %
Sardine	918,256	379,032	530,061	9,163	76,754	8.4%
Anchovy	1,318,094	633,862	429,545	254,687	8,095	0.6%
Herring	913,513	709,657	136,559	67,297	1,829	0.2%
Other for. fish	1,322,808	906,608	220,288	195,911	16	0.0%
Juvenile fishes	2,887,172	1,691,576	842,913	352,682	0	0.0%
Market squid	1,309,632	406,604	650,128	252,901	80,460	6.1%
Pacific mackerel	100,146	23,915	75,512	718	5,860	5.9%
Total	**8,769,620**	**4,751,254**	**2,885,006**	**1,133,360**	**173,014**	**2.0%**
Euphausids	52,478,145	49,085,682	3,132,986	259,478	0	0.0%

Spawning Biomass vs. California Landings

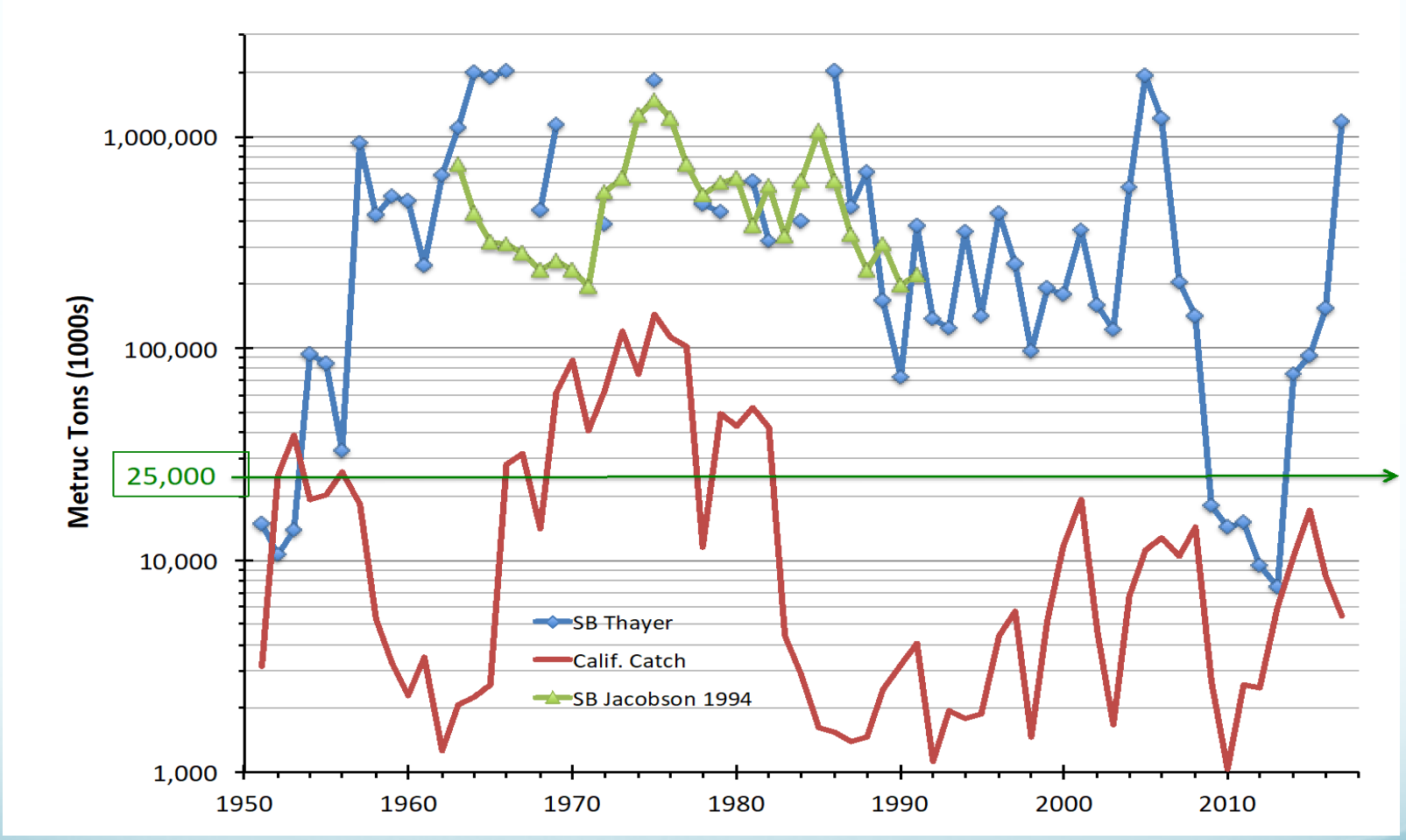
(Thayer et al. 2017, Thayer Pers. Comm. for 2015-17 updated estimates and Jacobson et al 1994)



California anchovy was never overfished, is not overfished now nor is overfishing occurring

Log Spawning Biomass: CA Landings

(Thayer et al. 2017, Thayer Pers. Com. for 2015-17 updated estimates and Jacobson et al 1994)



Anchovy catch has averaged less than 10,000 mt / yr since early 1980s

Legal Context:

- **Court did not dictate HOW to revise** the anchovy catch rule. **Council and NMFS can act based on <u>your</u> assessment of best available science and National Standards.**
- **NMFS and Council must balance economic, social and ecological factors** in all management decisions.
- MSA guidelines **DO allow for use of multi-year catch limits for forage fish.**
  - **No requirement in MSA compels the recalculation of OFL and ABC every year. Annual assessment, i.e. momentary ''snapshot'', is not best management for species with natural abundance cycles.**
    - **Not practical for CA's small anchovy fishery – landings consistently below ACL since 1980s (the original rationale for ''monitored'' status)**
  - **Current anchovy management is consistent** with MSA's flexible management principles. **Annual (or bi-annual) ABC review is sufficient to anticipate and adjust to trends in biomass**.
  - **Management framework must be driven by science, not artificial timelines.**
- **The MSA's ''overfishing'' provisions do not apply to anchovy fishery**
  - **CA's anchovy fishery IS NOT overfished ~ and it never was overfished.**
- **This Court Order is under appeal.**

Anchovy Management Considerations

- The anchovy OFL/MSY (**Emsy**) is intended to reflect the **largest long-term average fishing mortality** rate that can be harvested over the long term
  - Given anchovy's high variability (**even without fishing**), **OFL should be based on a trend – not a single stock assessment**
- **Optimum Yield is not a year-by-year number, but a long-term average amount of desired yield from a stock**
  - **There is no legal or scientific justification for annual trigger**
  - **No documented evidence exists that current fishing level has had competition effect on dependent predators**
    - Most predators have opportunistic diets, e.g. prey switching
- **Also important to recognize that CA has MPA network in place to protect forage for place-based predators**

Anchovy Management Considerations

- **The Council, SSC and Management Team have already begun work to review / update the anchovy management framework**
  - Prelim. Modeling suggests no significant difference between assessment frequency, i.e. 1, 4, 8 yrs.
  - **OFL should not be updated without stock assessment**
  - Management Team suggested reviewing ABC on bi-annual schedule
- **Workshop could help Council select a way to use ATM results and evaluate alternative management strategies**
- **Important considerations:**
  - **Need stability in fishing limits to minimize socio-econ. Impacts**
  - Best scientific findings indicate California's small anchovy fishery has had **no measurable impact on ecosystem function**
  - **Fishery has not reached ACL / ABC since early 1980s**

Tradeoffs
Protected Species vs Fisheries

- Most of the protected species in the California Current have critical breeding areas on offshore islands and remote areas of the coastline. In CA many breeding areas are protected by marine reserves.
- **In contrast, CPS fisheries have critical berthing, mooring and processing facilities that will be permanently lost if fisheries are reduced to very low levels**.
- Prey switching is very common in marine mammals and birds – **but not in fisheries.**
- **California's CPS fisheries are highly dependent upon 4 species; market squid, sardine, Pacific mackerel and anchovy.**
  - Sardine is now closed; mackerel is largely not available to the fleet now and squid is influenced by El Niño cycles.
- **Tradeoffs:**
  - Need to consider the critical importance of **maintaining fishing infrastructure**
  - **CA's anchovy fishery harvests small portion of anchovy available (<1%)**
  - MSA mandates **BALANCE between fishery and forage needs.**

CA Ports Rely on CPS Fisheries

Moss Landing
CPS average
94% of port landings
63.9% of dockside value

Monterey Harbor
CPS average
88.8% of port landings
44.4% of dockside value

Anchovy fishing takes place close to harbors to preserve quality.

Socio-Economic Considerations

- **The anchovy fishery is very important to CA's historic wetfish industry**
- Anchovy fishery is necessary (especially in Monterey) to keep fishing boats employed and market doors open, especially when no other CPS are available (as in 2015 and 2018)
  - Fish meal production is gone from CA
  - Landings for the past two decades averaged less than 10,000 mt per year
  - **CA's wetfish industry needs to maintain the opportunity to fish anchovy when abundant and other CPS are not available**

Economic Impacts in Monterey

- 3 major processors
- **All rely on anchovy at least 6 months a year**
  - Fill in-between squid season, or when other CPS are unavailable
- More than 1,000 people directly affected
  - Up to 15 vessels with average 5-6 crew
  - 300+ plant workers
  - Trucking
  - Packaging
- **Anchovy is a lifeline ~ keeps boats and markets working**

Recommendations for Council Proposed Rule Comments

- **Support Proposed Rule as stated.**
- **Emphasize record anchovy abundance** now validated by NOAA surveys
- Describe Council's stepwise actions to review / update anchovy management (**with related time lines for completion)**
- **Emphasize the need for science-based decisions that allow the Council to continue its work based on real best available science**
  - **(as determined by the SSC)**
- Also please consider:
- **Support Management Workshop as high priority** and continue the **step-wise approach** to gather data essential to produce an integrated population model to assess biomass (**incorporating multiple indices of abundance, not only AT surveys)**.
- **Workshop can determine frequency of assessments, changes to OFL and ABC based on best available science.**

Core Issues in Summary…

- **Biology**
  - Anchovy population is now at record abundance – time to continue work on science-based management plan
    - Record abundance occurred in presence of CA's small anchovy fishery (NO overfishing!)
    - Fishery harvests less than 1% of forage consumed by predators

- **Legal**
  - **Court order did not dictate HOW catch rule should be revised.**
  - MSA guidelines and other Courts **DO allow for use of multi-year catch limits**
    - **No requirement in MSA compels the recalculation of OFL/ABC every year.**

- **Management**
  - **Council is already working to review / update anchovy management.**
  - **Stock assessment is planned for 2021**
  - **Management framework must be driven by science, not artificial timelines.**
  - **NMFS must balance economic, social and ecological factors in all management decisions**

- **We support continuation of the stepwise scientific approach already initiated by Council and NMFS. We support the NMFS Proposed Rule and rationale as stated.**

Last word: No crisis (or collapse) exists

- There is **no biological point of concern** re: anchovy abundance
- but there could be a serious **socio-economic point of concern** if the small harvest limit now allowed in the anchovy fishery is further restricted.
- **The key to the future is accurate stock assessments!**
- **(and we're ready and willing to help!)**

Thank you for your attention!
Questions?