Agenda Item H.3.b
Supplemental Public Comment 7
Electronic Only
November 2015

H.3 Northern Anchovy Status and Management

Geoff Shester, Ph.D.
Oceana

November 15, 2015

Video shown; please contact
Geoff Shester, Oceana
gshester@oceana.org for details.

Courtesy Cascadia Research, NMFS Research Permit # 16111. Video from Oct. 15, 2015, Monterey Bay.

Summary of Requests

- Make N. Anchovy assessment a top priority for 2016
- Schedule consideration of interim management safeguards for March 2016
  - Point of Concern Framework is one avenue
  - Base on best available data
- Move toward ecosystem-based Harvest Control Rule and actively managed CPS “assemblage”

CPS FMP Point of Concern

"The point-of-concern process is the Council's primary tool (along with setting HGs, ACLs, ACTs, or harvest quotas) for exercising resource stewardship responsibilities."

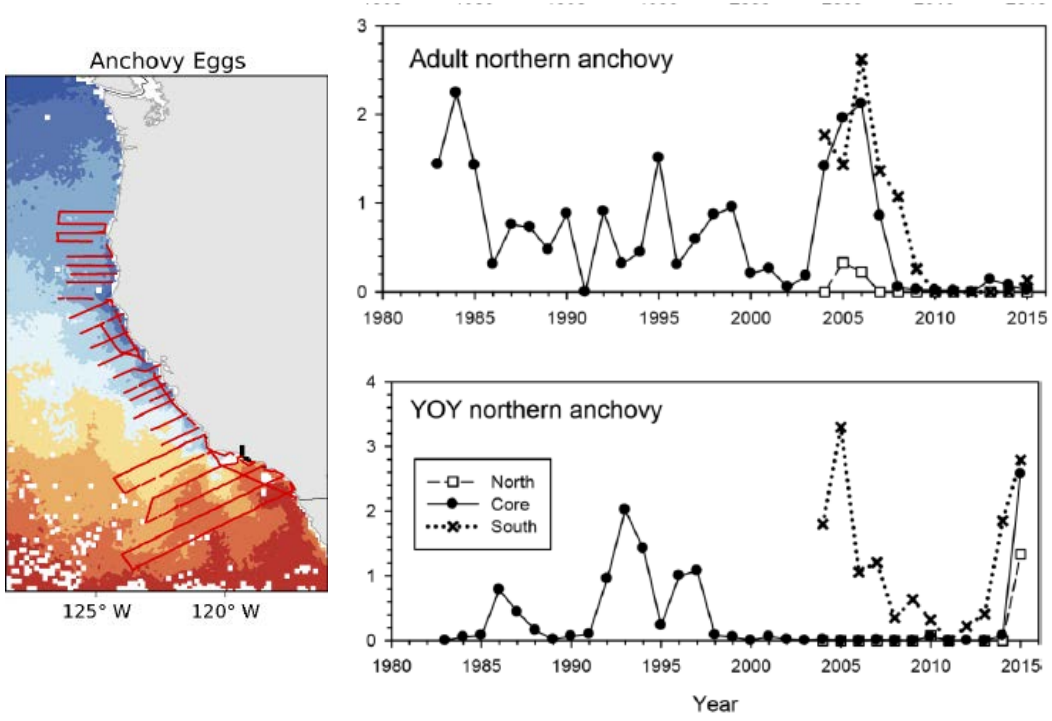
"A 'point-of-concern' occurs when one or more of the following is found or expected"

- "Any adverse or significant change in the biological characteristics of a species (age composition, size composition, age at maturity, or recruitment) is discovered."
- "An overfishing condition appears to be imminent or likely within two years."
- "Any adverse or significant change in ecological factors such as the availability of CPS forage for dependent species or in the status of a dependent species is discovered."

Source: CPS FMP at 15

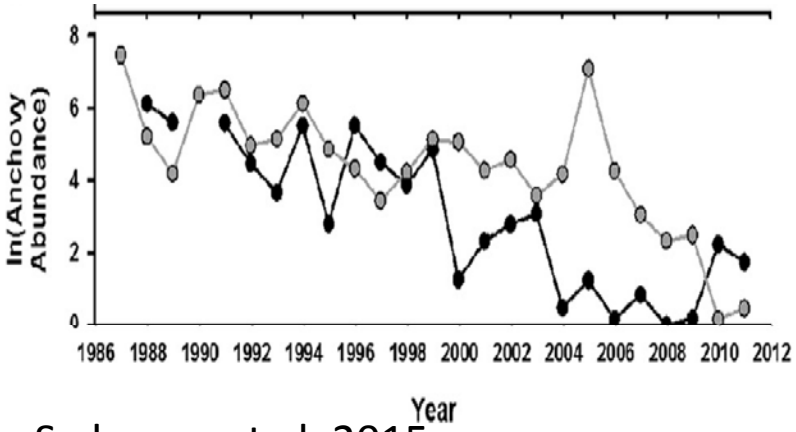
"Any adverse or significant change in the biological characteristics of a species (age composition, size composition, age at maturity, or recruitment) is discovered."

- Northern shift, outside S. California Bight
- El Nino conditions occurring + warm water blob – normally a bad sign for anchovy
- Climate change
- Truncated age structure: Very low adults or eggs; only YOY

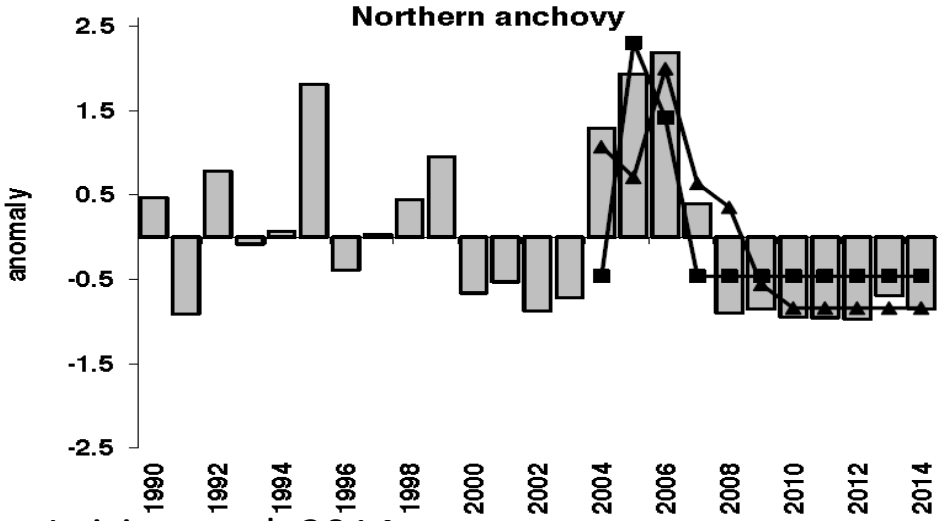


No estimates of biomass associated with YOY
This is not spawning biomass
Significance unclear, proceed with caution

Northern Anchovy Available Science



Sydeman et al. 2015

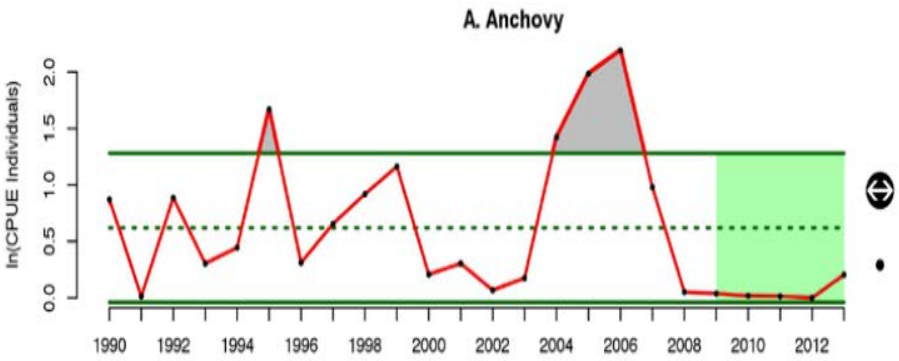


Leising et al. 2014.

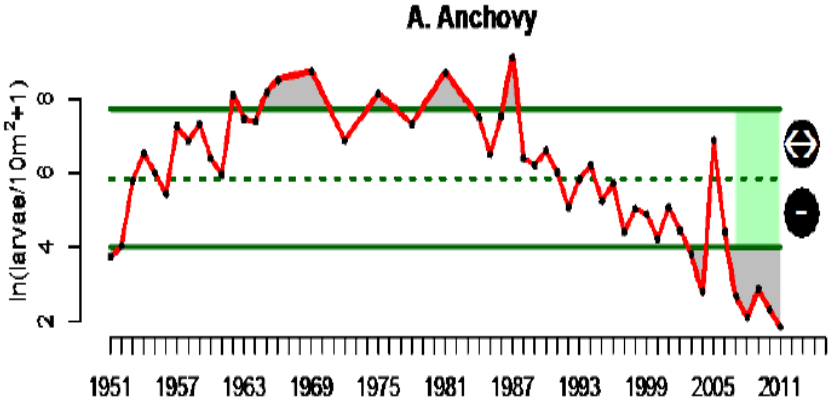
http://www.calcofi.org/publications/calcofireports/v55/Vol_55_SOTCC_51-87.pdf

NMFS State of CA Current (IEA)

Central CA



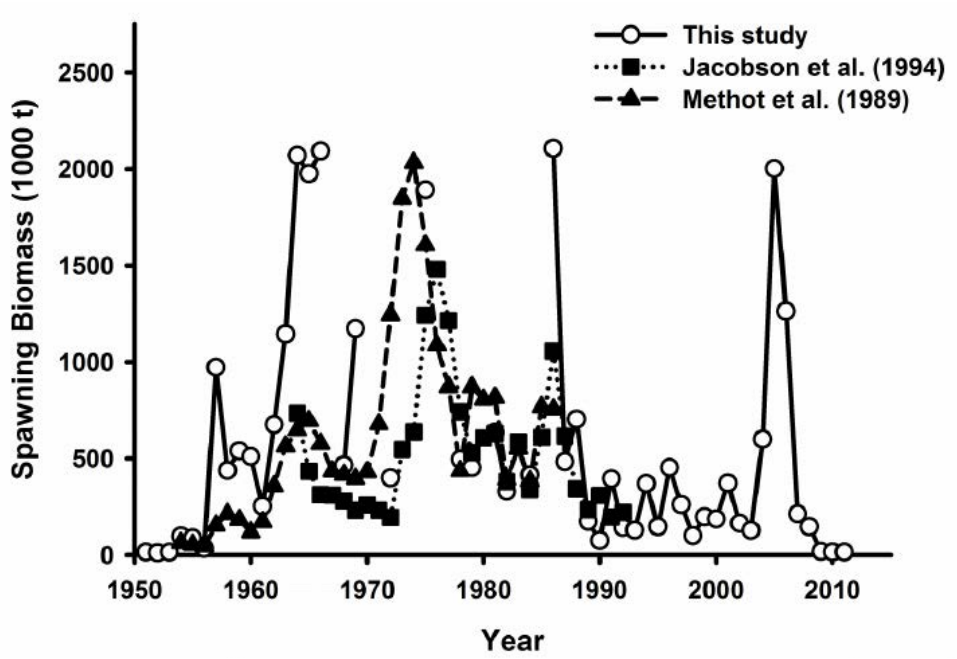
Southern CA

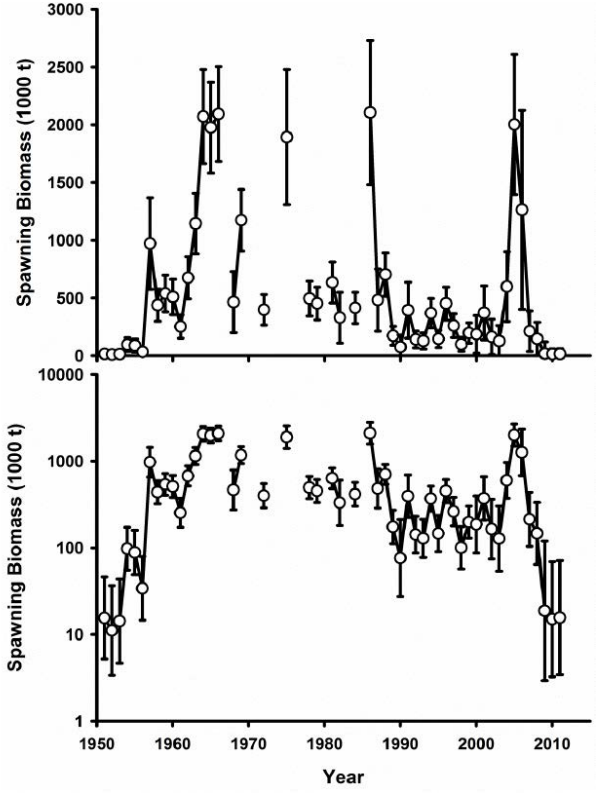


"Larval anchovy abundance continued a declining trend over the last thirty years to the lowest abundance since 1951"

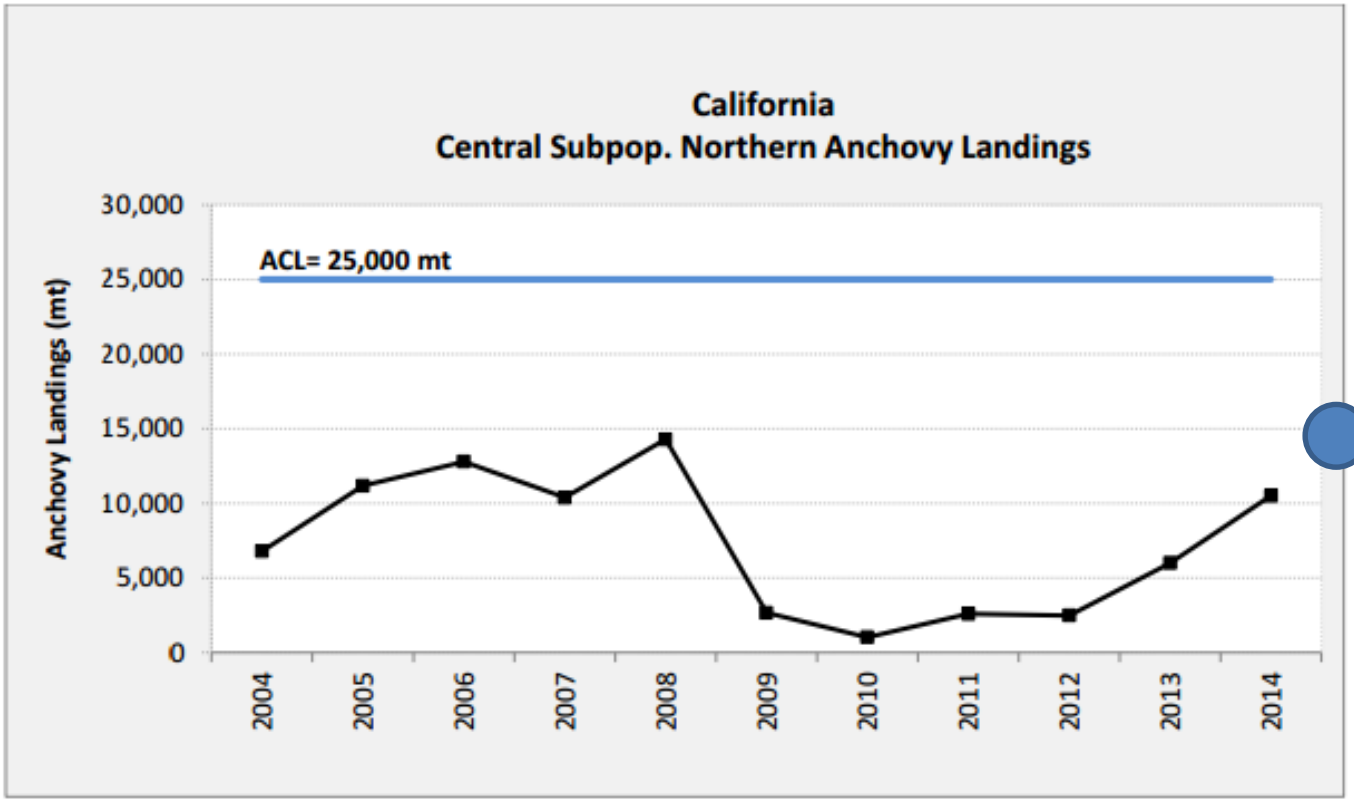
Best Available Biomass Estimate

- MacCall et al., in press: “Recent collapse of northern anchovy biomass off California”
- Has now been peer reviewed and officially accepted for publication in *Fisheries Research*
- “Anchovy biomasses estimated for 2009-2011 are the lowest seen in 60 years… **below 20,000 mt**”; 3% of average biomass from 1951-2011
- Based on egg surveys conducted since 2011, “there has been no substantial recovery of the anchovy population as of 2015.”
- These are the only biomass abundance estimates available





Landings Increasing

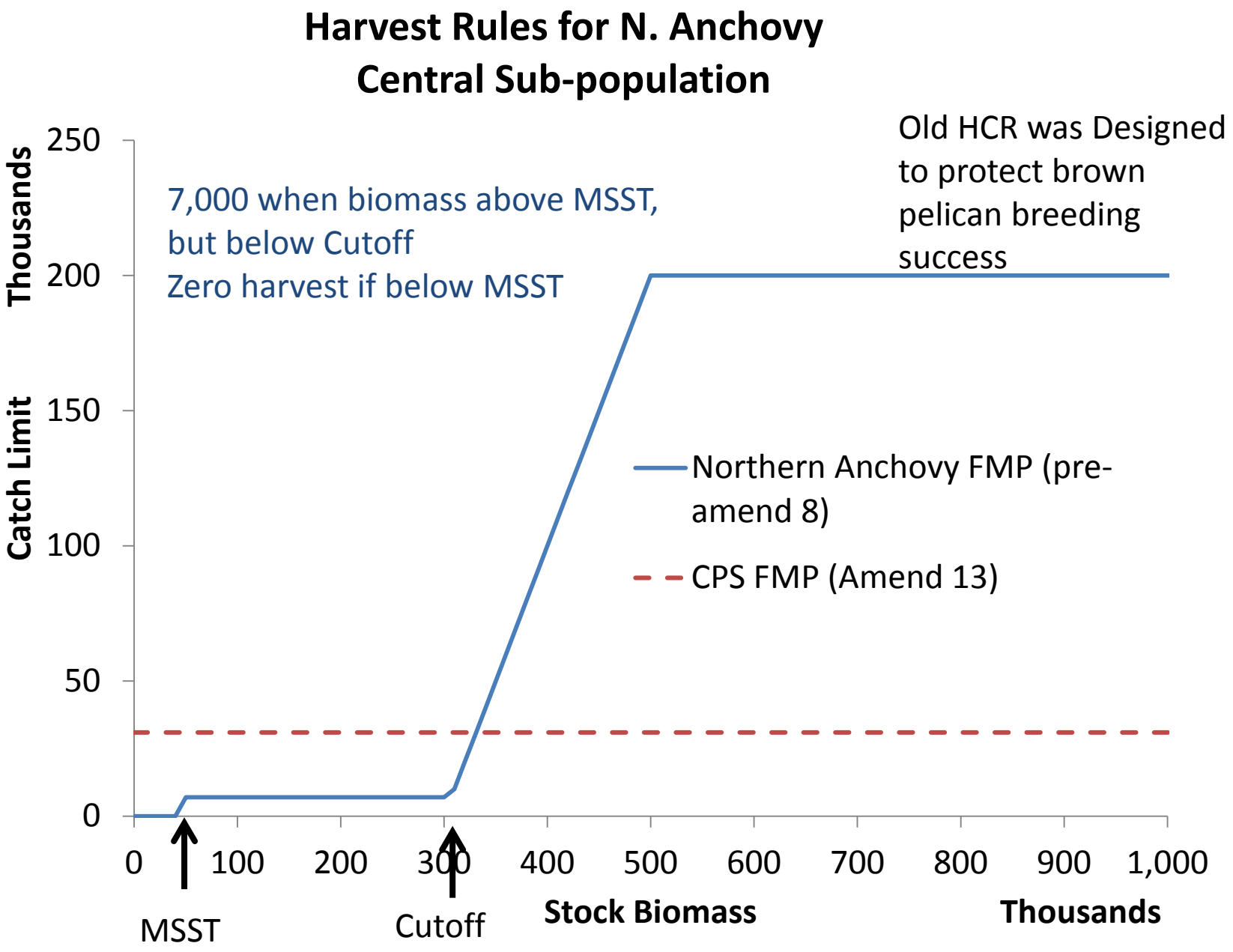


2015 to date (>14,300 mt, CDFW)

Figure 1. California Landings of Central Subpopulation Northern Anchovy 2004 – 2014; with the ACL of 25,000 mt.

"An overfishing condition appears to be imminent or likely within two years."

Northern Anchovy Central Subpopulation Management Parameters			
MSST (overfished threshold)	50,000 mt		
F_{MSY} Rate (Conrad 1991, CPS FMP)	16.8%		
ABC/OFL	25%		
U.S. DISTRIBUTION	82%		
	Current Management (Conrad 1991/ CPS FMP 1998, 2011)(metric tons)	MacCall et al. 2015 (metric tons)	
BIOMASS (B)	733,000	20,000	
MSY and OFL	123,000	3,360	
ABC	31,000	840	
U.S. ABC	25,000	689	
2015 Landings		14,300	
Landings/OFL		**417%**	**(overfishing if > than 100%)**
B/MSST		**40%**	**(overfished if < than 100%)**


Harvest Rules for N. Anchovy
Central Sub-population
Old HCR was Designed to protect brown pelican breeding success
7,000 when biomass above MSST, but below Cutoff
Zero harvest if below MSST
Northern Anchovy FMP (pre-amend 8)
CPS FMP (Amend 13)
Catch Limit
Thousands
250
200
150
100
50
0
0
100
200
300
400
500
600
700
800
900
1,000
MSST
Cutoff
Stock Biomass
Thousands

Current Catch Limits Are Too High

- CPS FMP Amendment 13 uses MSY estimate of 123,000 mt based on biomass of 733,000 mt
- The current MacCall et al. (in press) estimate is 97-99% lower
- 75% buffer not big enough to prevent overfishing

- Even if current biomass is 5x higher (100,000 mt), current ABC would exceed MSY
  - U.S. ABC = 25,000 tons
  - Insufficient precaution given clear indications of collapse

- 14,300 mt landed in 2015 so far

- No reduction below ABC for Optimum Yield considerations

- No Cutoff in place

- The sustained collapse in anchovy biomass since 2009 provides compelling evidence that current fishing rates are jeopardizing the capacity of the stock to produce MSY over the long term.

- Current catch levels in the northern anchovy fishery exceed both the statutory definition of overfishing and management reference points to determine overfishing, as updated by the best available data.

- Stock clearly below historic CUTOFF (300,000 mt)
- Likely below MSST (50,000 mt)

Adverse changes in availability of CPS for dependent predators and in the status of multiple dependent species has been discovered

- Major CA sea lion mortality event since 2013
  - NOAA: 90% of sea lion pups did not survive to weaning age
  - Lack of available sardines and anchovies is primary cause
- Brown pelican reproductive failures since 2010
- Biggest known common murre die-off ever in California in 2015
- Brandt's cormorant population has declined by two thirds since 2007 due to anchovy decline
- California least terns crashing at coastal sites in 2015 due to lack of anchovies
- Recent concerns over humpback whales in Monterey Bay

U.S.

Survey says California brown pelican breeding population has plunged drastically

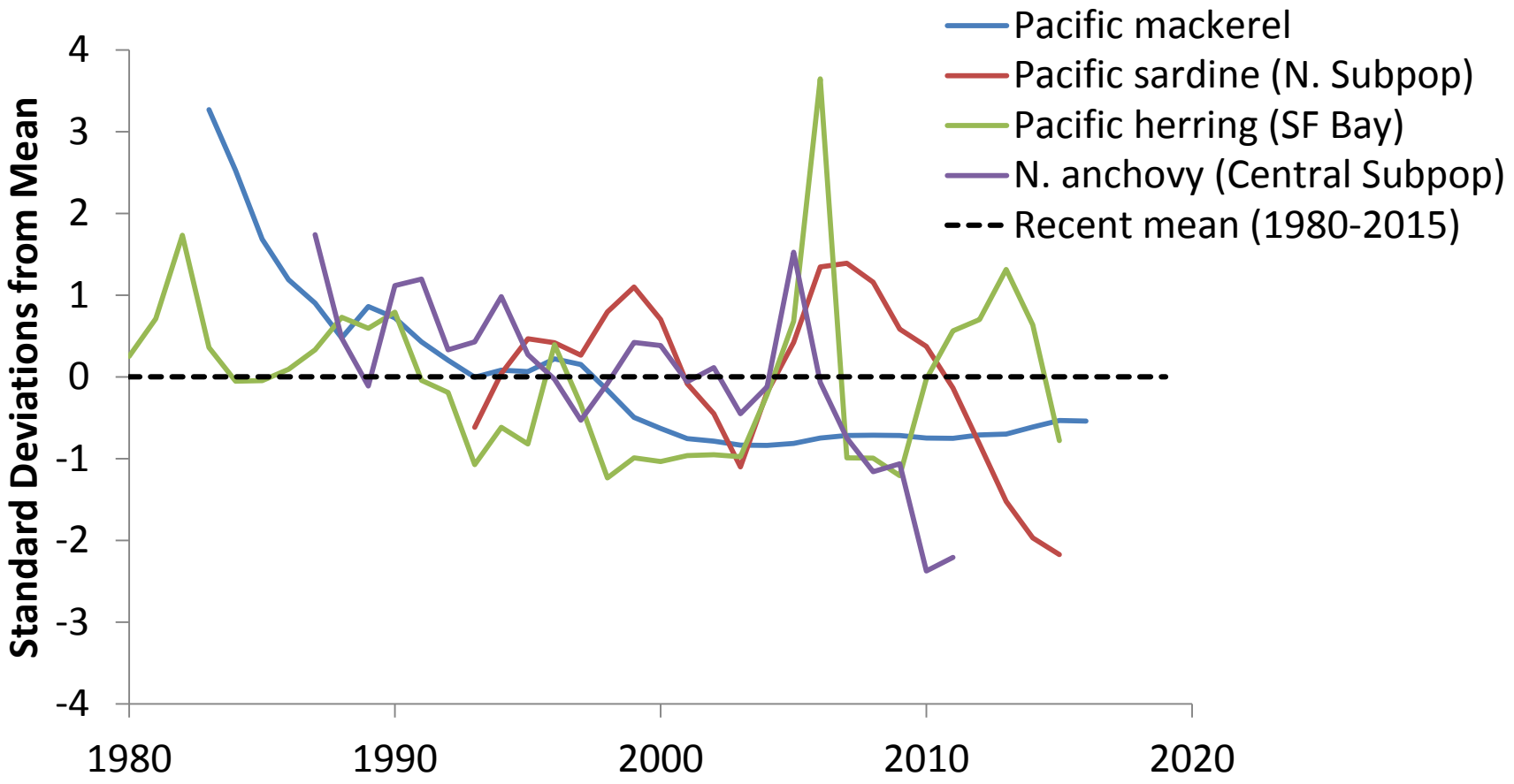
Published June 02, 2

Starving Sea Lions Washing Ashore by the Hundreds

By JACK HEALY MARCH 12, 2015

Rescued sea lions recuperated at the Pacific Marine Mammal Center in Laguna Beach, Calif., last month. In a normal January, animal rescuers will find about 20

Normalized Abundance Indices for 4 West Coast Forage Fish



Sources: Pacific mackerel 2015 assessment, Pacific sardine 2015 assessment, CDFW 2015 SF Bay Herring assessment, Sydeman et al. (2015) spring CalCOFI larval anchovy abundance

The Council and NMFS Can and Should Act Quickly

The CPS FMP "Point-of-Concern" framework "provides the Council authority to act based solely on a point-of-concern. Thus, the Council may act quickly and directly to address resource conservation or ecological issues."

However, not necessary to schedule possible action for March 2016

Achieving Optimum Yield

- Move toward Ecosystem-Based harvest control rule – Active Management
- Establish CUTOFF to safeguard stock and predators
- Account for ecological, social, economic factors
- Use updated information from upcoming stock assessment

Summary of Requests

- Full N. Anchovy assessment a top immediate priority
- Schedule consideration of interim management safeguards for March 2016
  - Point of Concern Framework
  - Base on best available data
- Move toward ecosystem-based Harvest Control Rule
- Move toward actively managed CPS “assemblage”