



Agenda Item G.3.b
Supplemental Public Comment PowerPoint
(Electronic Only)
June 2015

Comments on Northern Anchovy Management

Agenda Item G.3

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NMFS Report: Nov 2013



Potential schedule of CPS Stock Assessments

Species	Year					
	2014	2015	2016	2017	2018	2019
Pacific sardine	Full	Up	Full	Up	Full	Up
Other CPS (data preparation - STAR)	X	→	→	→	→	→
Pacific mackerel		Full	→	Pro	→	Full
Northern anchovy - Northern sub		Full	→	Pro	→	Full
Northern anchovy - Central sub			Full	→	Pro	→
Jack mackerel			Full	→	Pro	→
Market Squid	C	C	C	C	C	C
Full CPS Assemblage including Krill					?	?

LEGEND

Full ≡ Full assessment

Up ≡ Update assessment

Pro ≡ Projection assessment

C ≡ Catch assessment (CDFW)

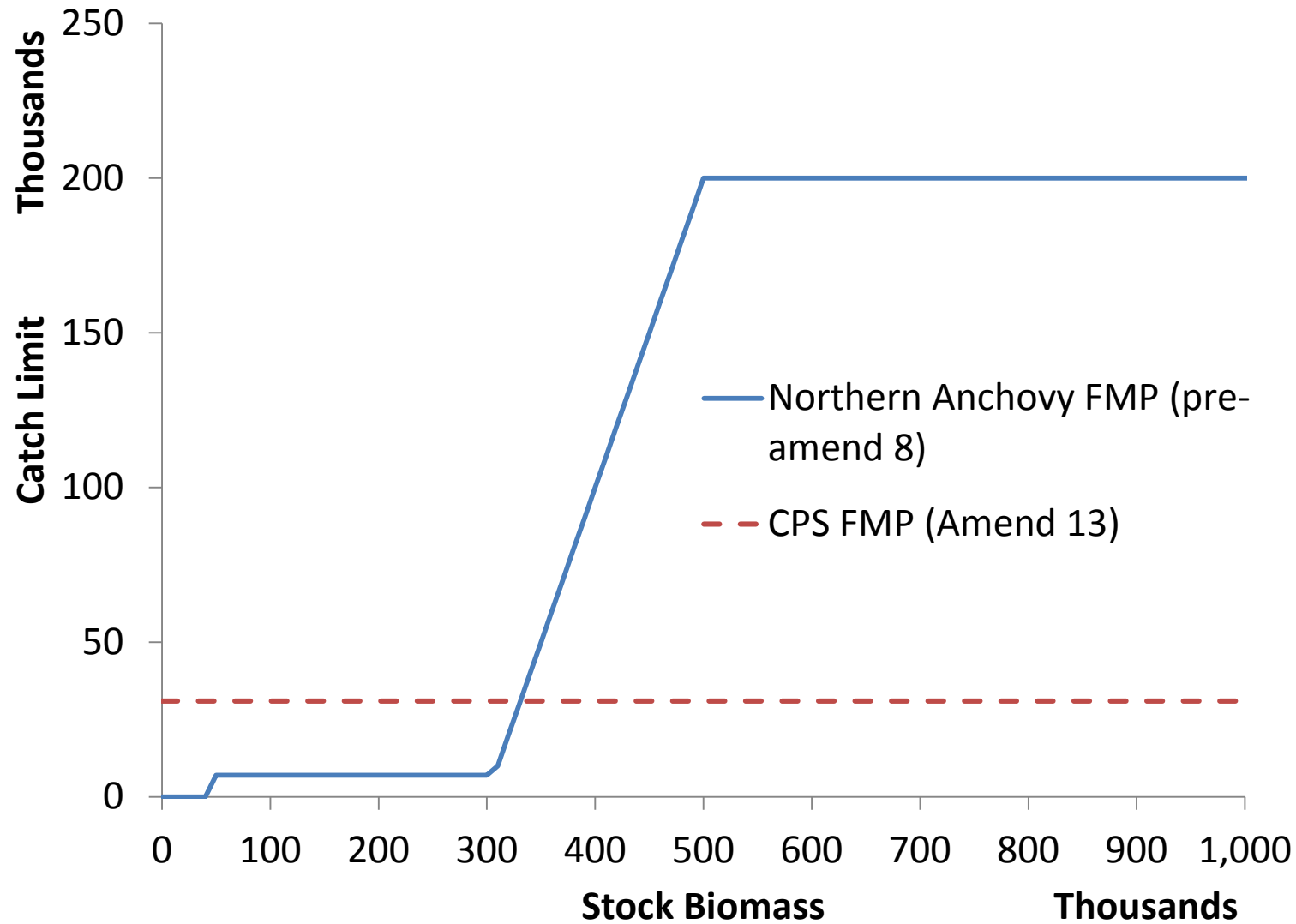
X ≡ To be conducted

→ ≡ Harvest advice based on previous assessment (Full, Up, or Pro)

Summary

- Concerns primarily with ***Central Subpopulation***
- Historically had well developed harvest control rule with high CUTOFF (300,000 mt) to maintain forage role, particularly brown pelicans
- “Monitored” status – higher catch at low levels
 - Stock data is stale
 - Lowest priority in management
- Specifications (OFL, ABC, ACL) too high given evidence of stock decline, insufficient prey

Harvest Rules for N. Anchovy Central Sub-population



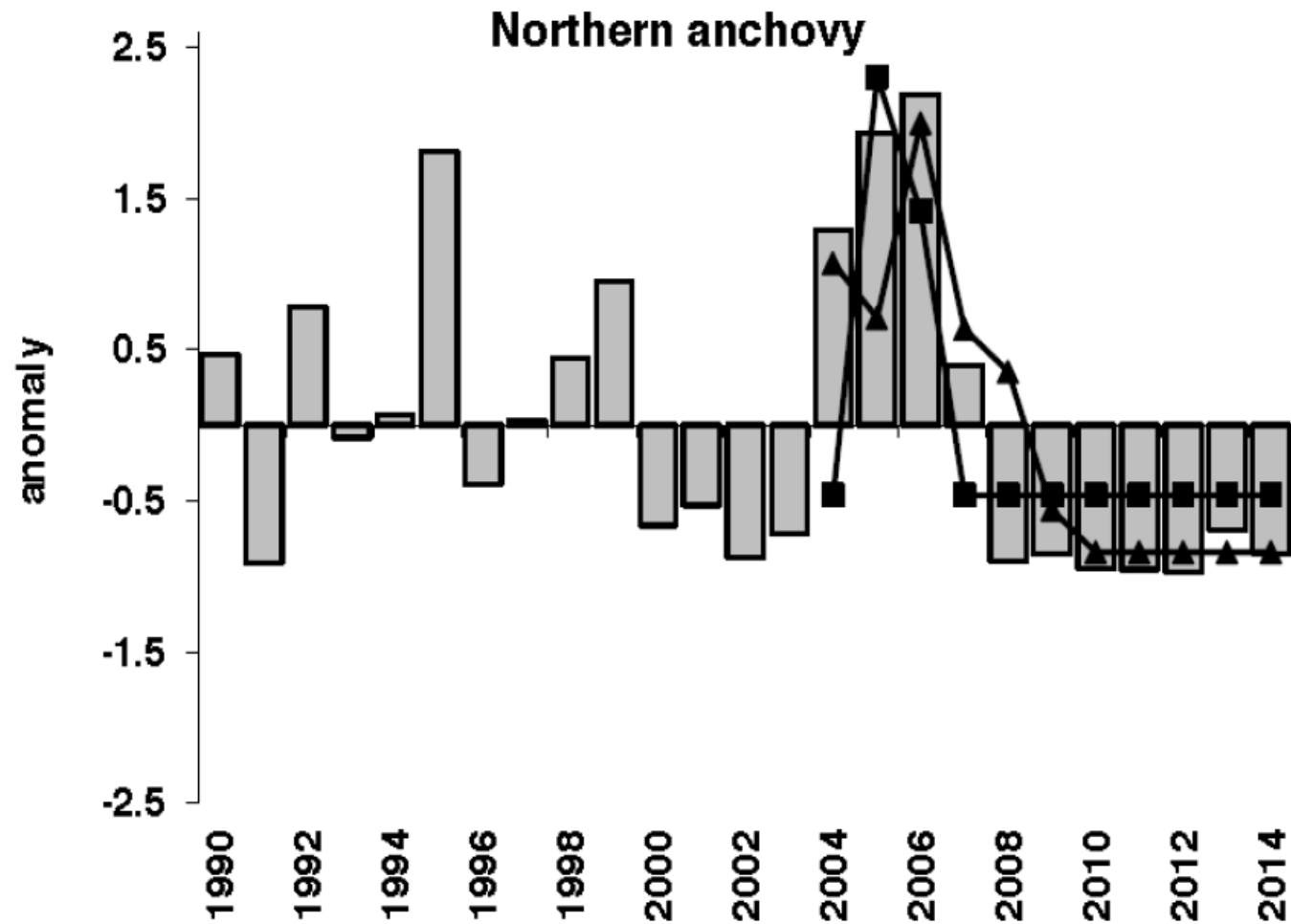


Figure 22. Long-term standardized anomalies of several of the most frequently encountered pelagic forage species from rockfish recruitment survey in the core (central California) region (1990-2014) and the southern and northern California survey areas (2004-14, excluding 2012 for the northern area).

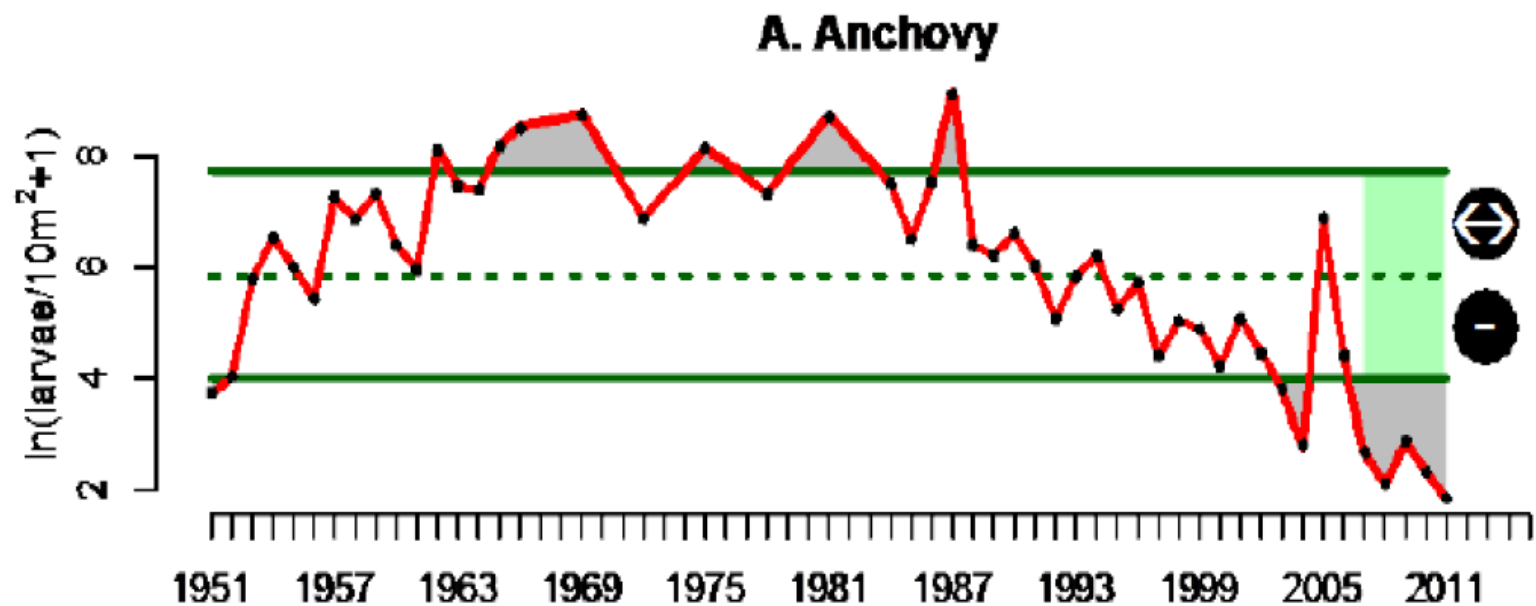


Figure C2. *Southern California Forage, CalCOFI.* Most time series are plotted in a standard format. Dark green horizontal lines show the mean (dotted) and ± 1.0 s.d. (solid line) of the full time series. The shaded green area is the last 5-years of the time series, which is analyzed to produce the symbols to the right of the plot. The upper symbol indicates whether the trend over the last 5-years increased, or decreased by more than 1.0 s.d., or was within one 1.0 s.d. of the long-term trend. The low symbol indicates whether the mean of the last 5 years was greater than (+), less than (-) or within (·) one s.d. of the long-term mean.

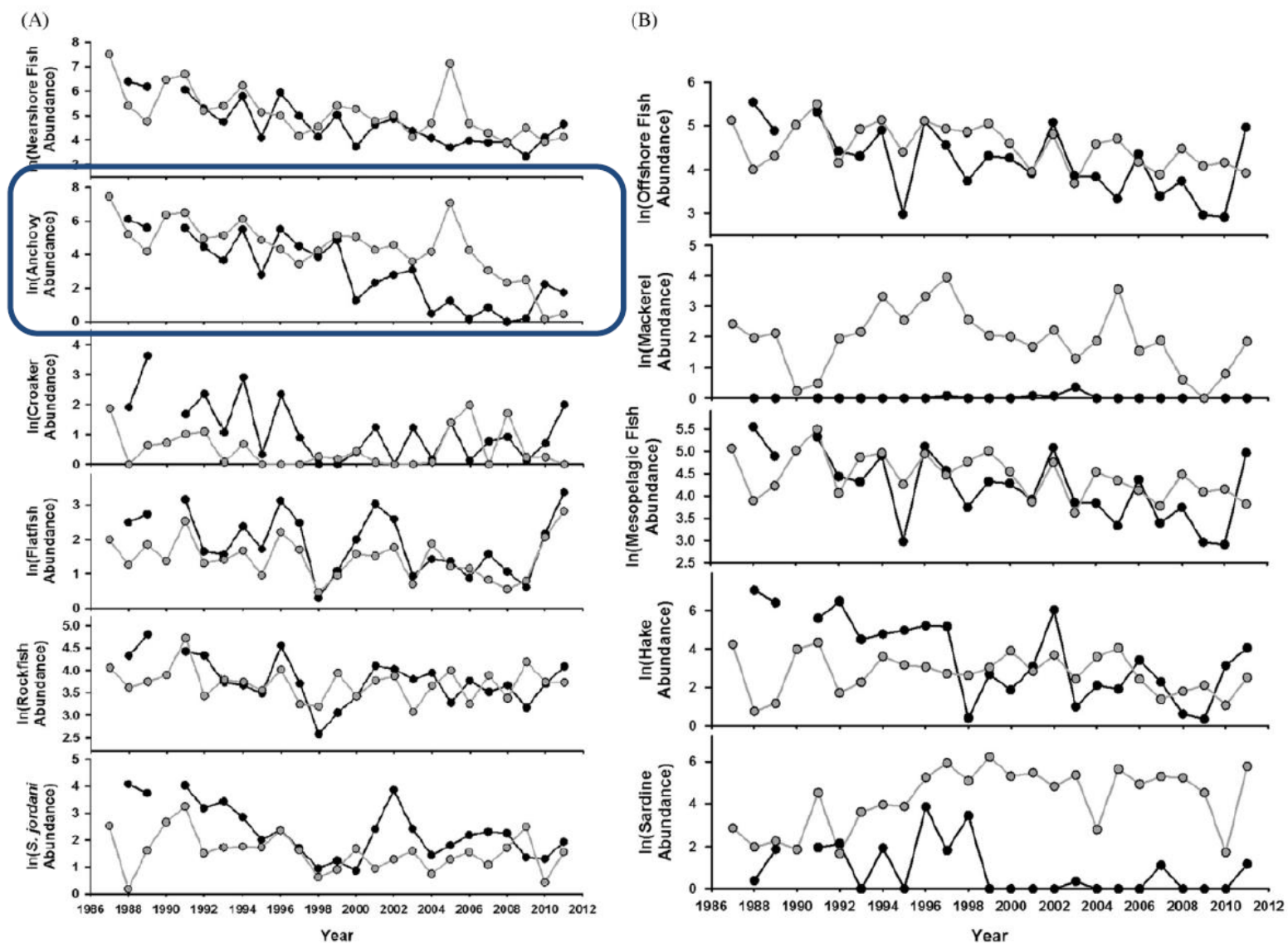
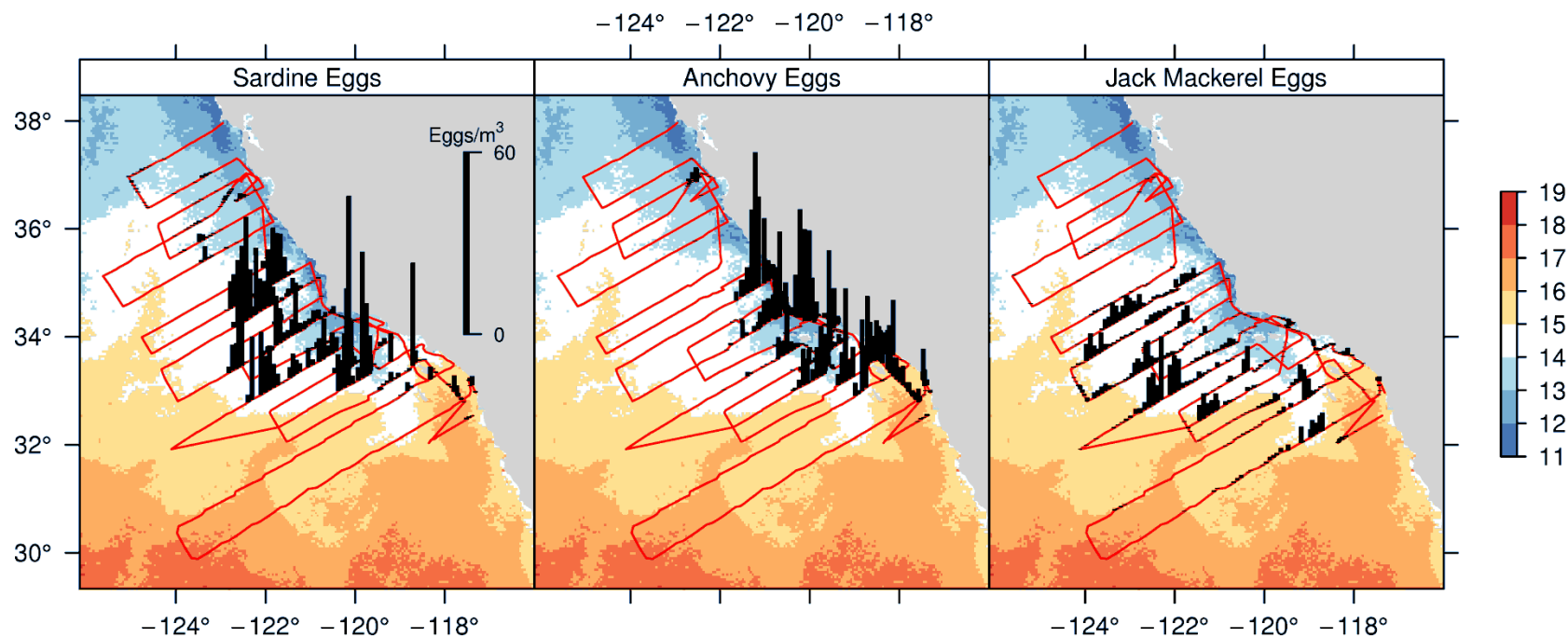


Fig. 4. Interannual variability in abundance of larval fish (ln(No. m⁻²), 1987–2011: (A) nearshore fish group and species (flatfish, anchovy, croakers, rockfish, and *S. jordanii*) and (B) offshore fish group and species (jack mackerel and mesopelagic fish), as well as hake and sardine, which were not grouped into either the nearshore or offshore fish categories. Black=winter and gray=spring.

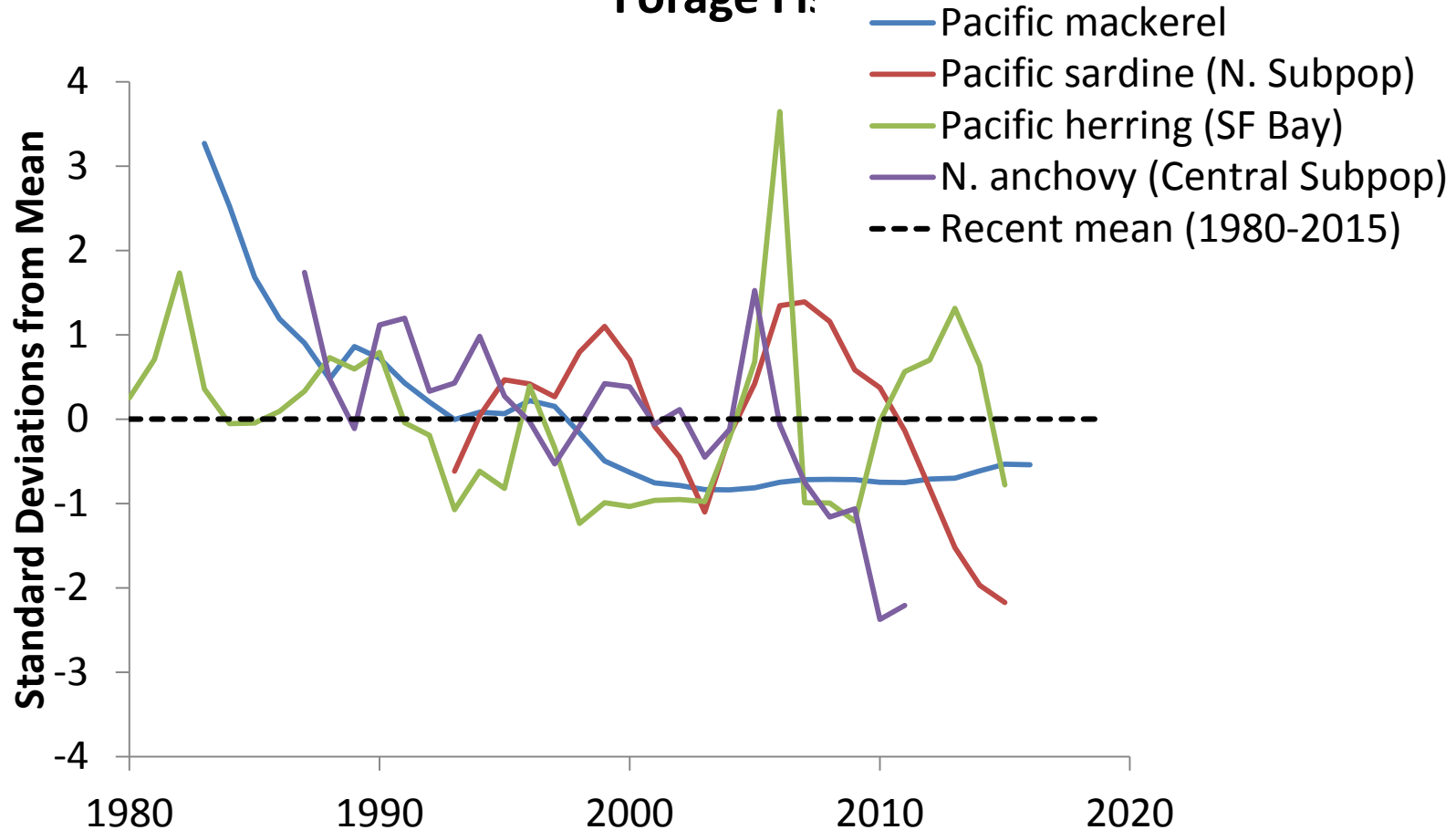
From Sydeman, W. et al. 2015. [Climate-ecosystem change off southern California: Time-dependent seabird predator-prey numerical responses](#). Deep Sea Research II: 112:158-170, Figure 4.

Anchovy Eggs during last peak (2005)

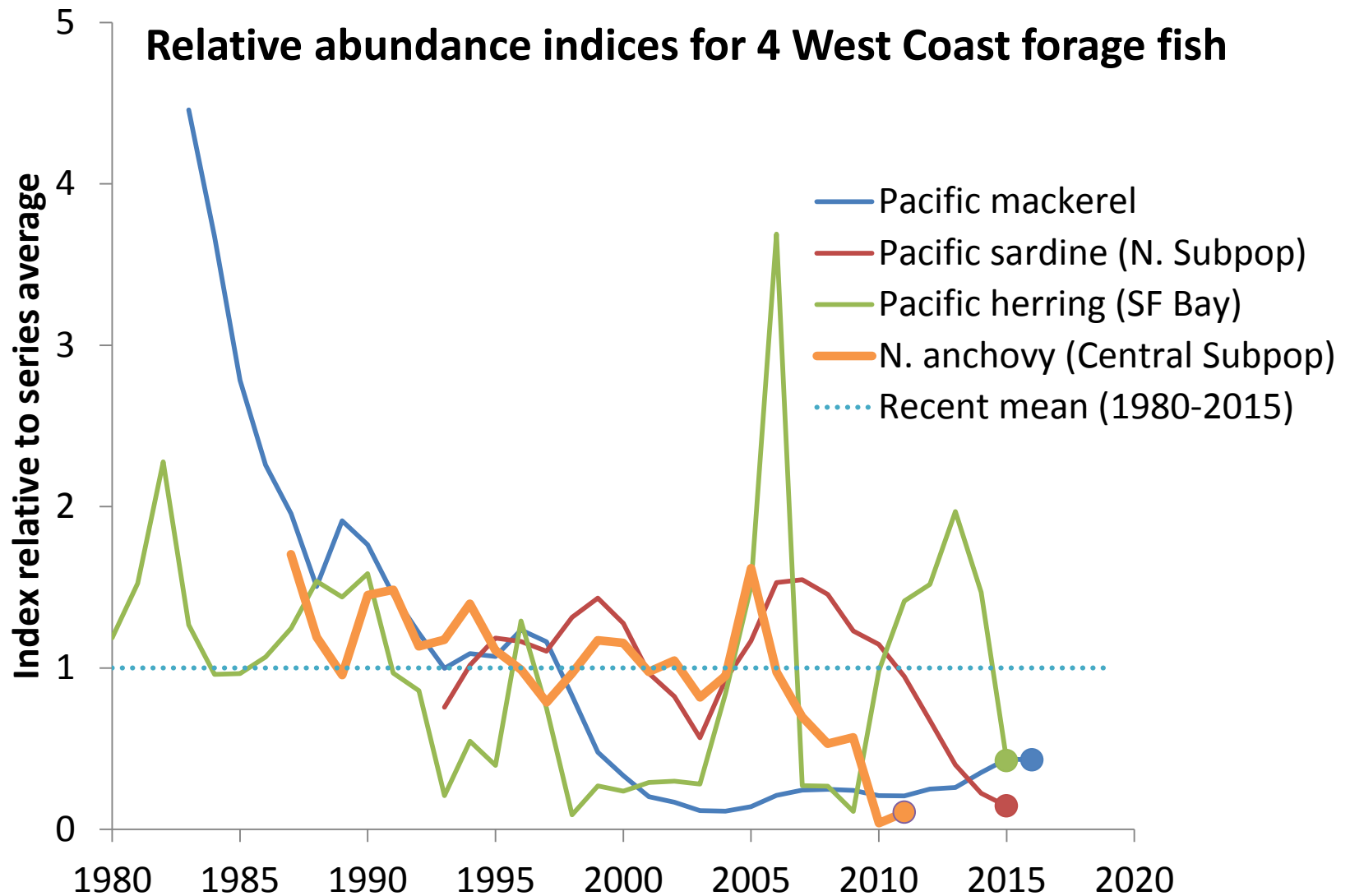
RV David Starr Jordan and RV New Horizon
28 March to 01 May 2005



Normalized Abundance Indices for 4 West Coast Forage Fish



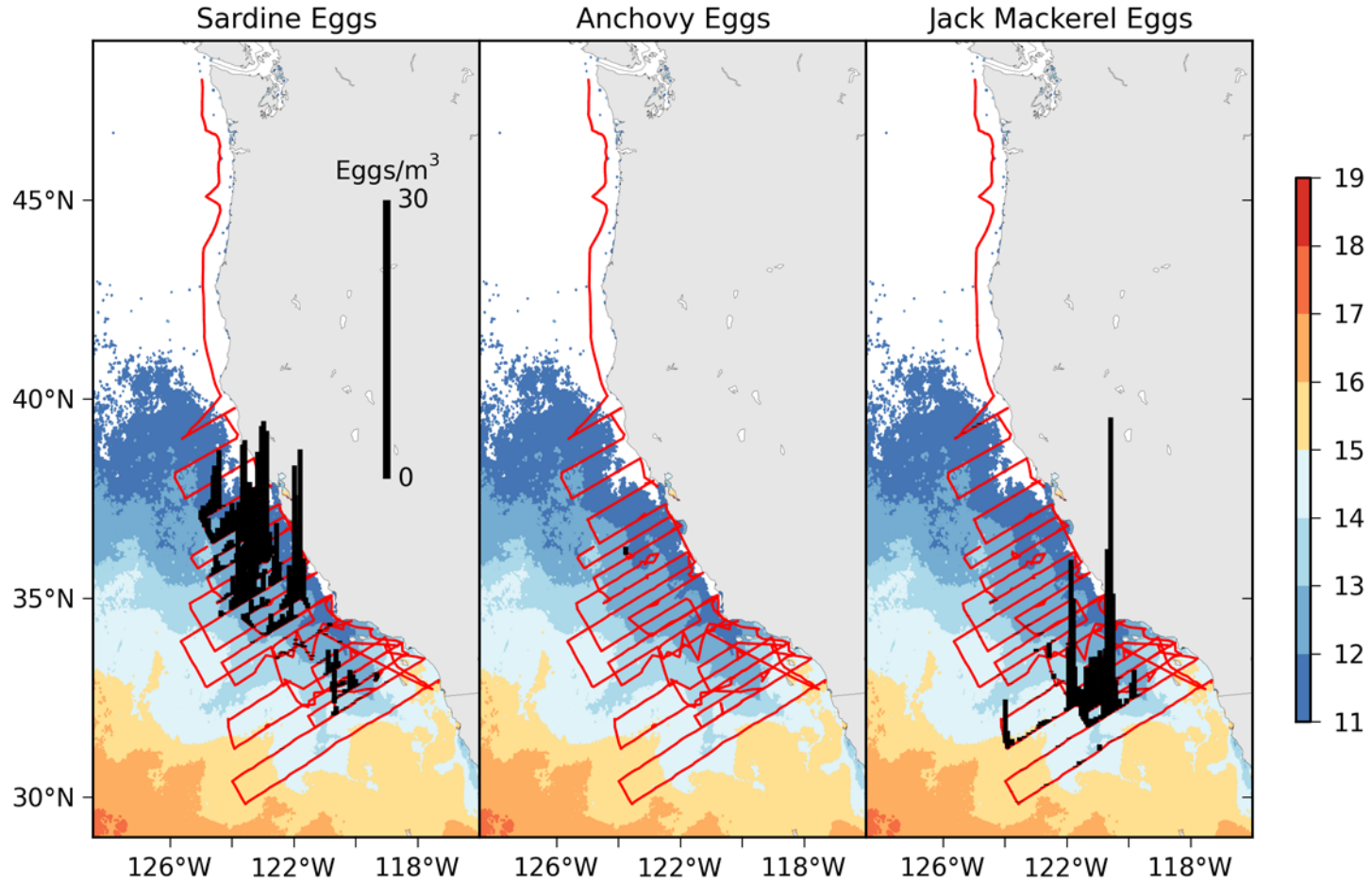
Sources: Pacific mackerel 2015 assessment, Pacific sardine 2015 assessment, CDFW 2015 SF Bay Herring assessment, Sydeman et al. 2015 spring CalCOFI larval anchovy abundance



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

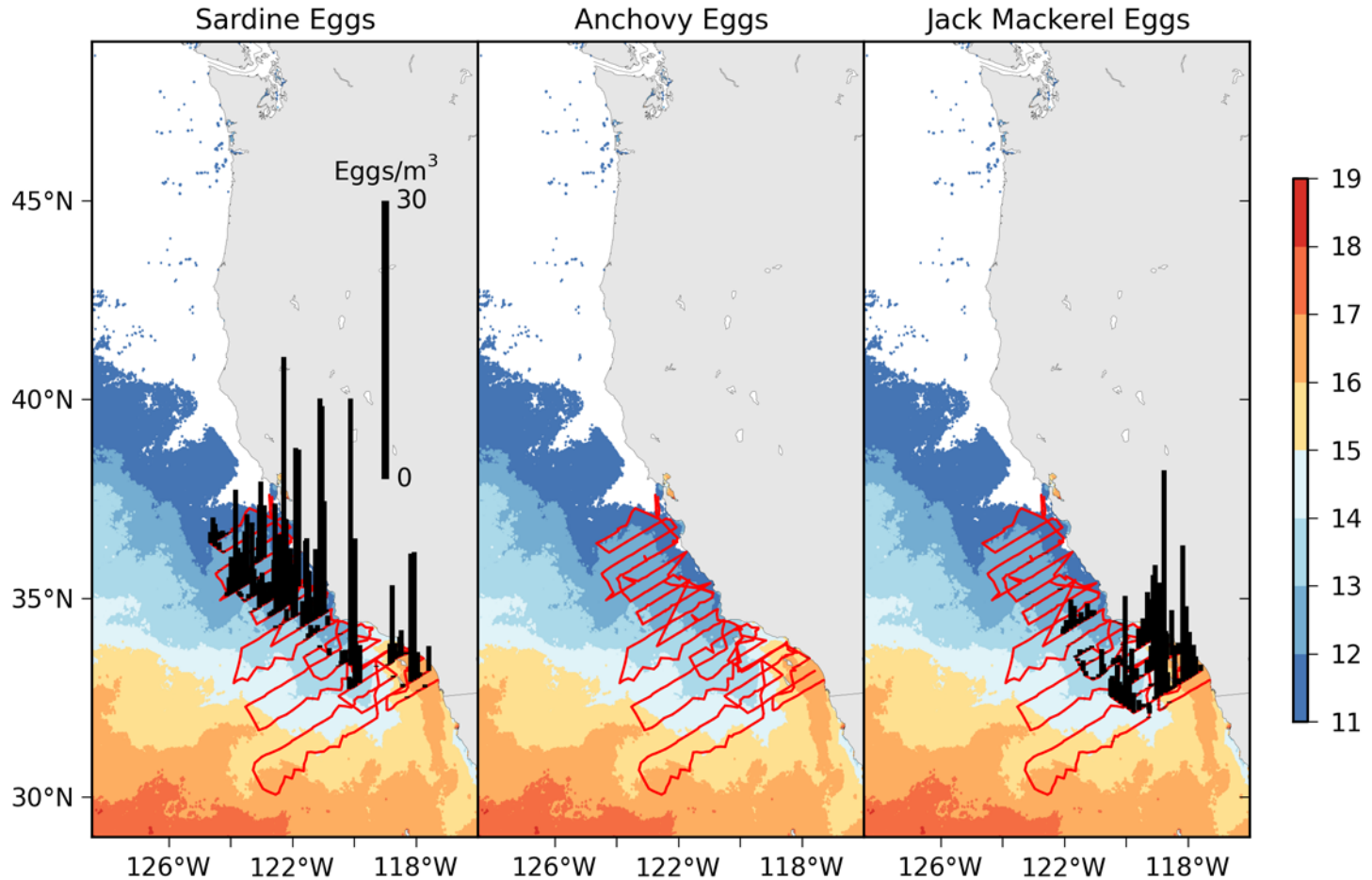
Anchovy Eggs in 2012

FSV Bell M. Shimada and FSV Ocean Starr
24 March to 28 April 2012



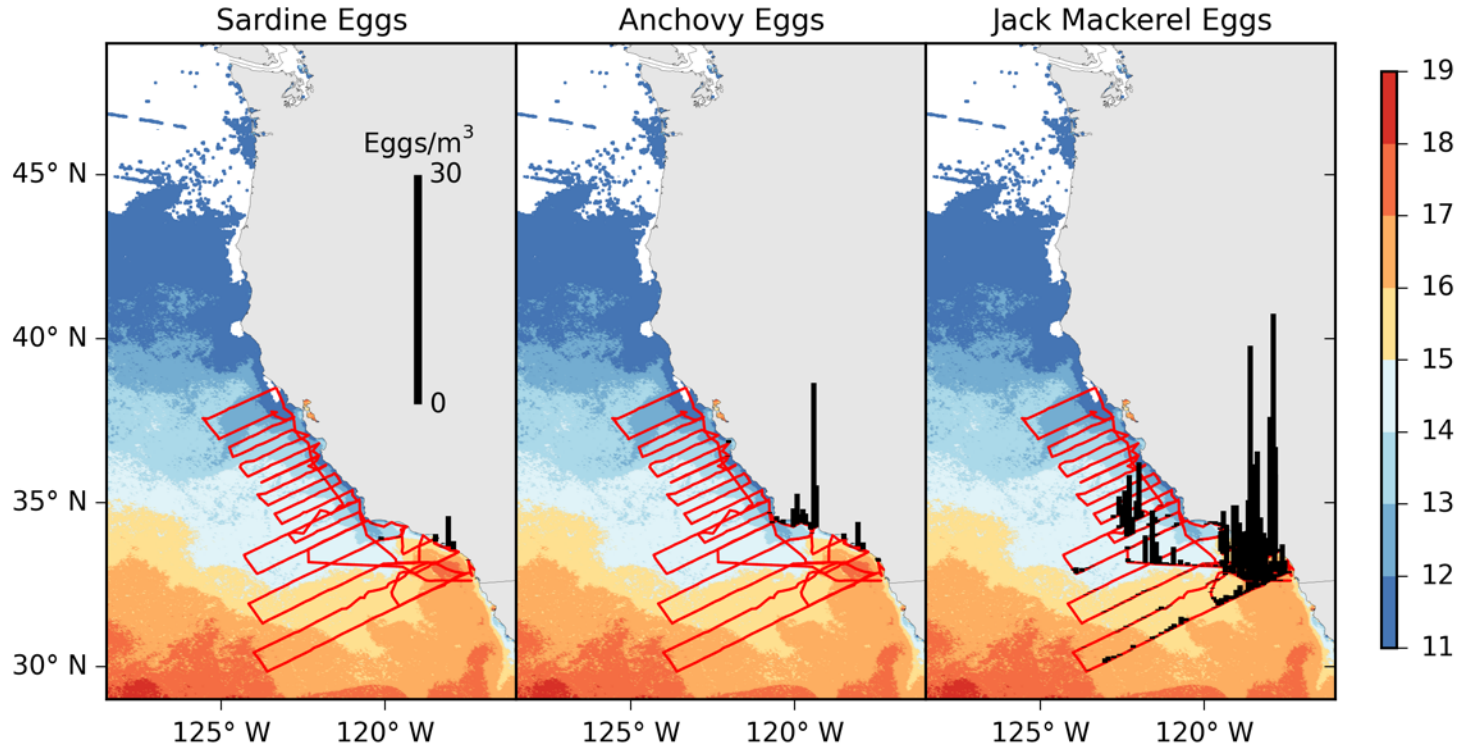
Anchovy Eggs in 2013

**FSV Bell M. Shimada and FSV Ocean Starr
06 April to 03 May 2013**



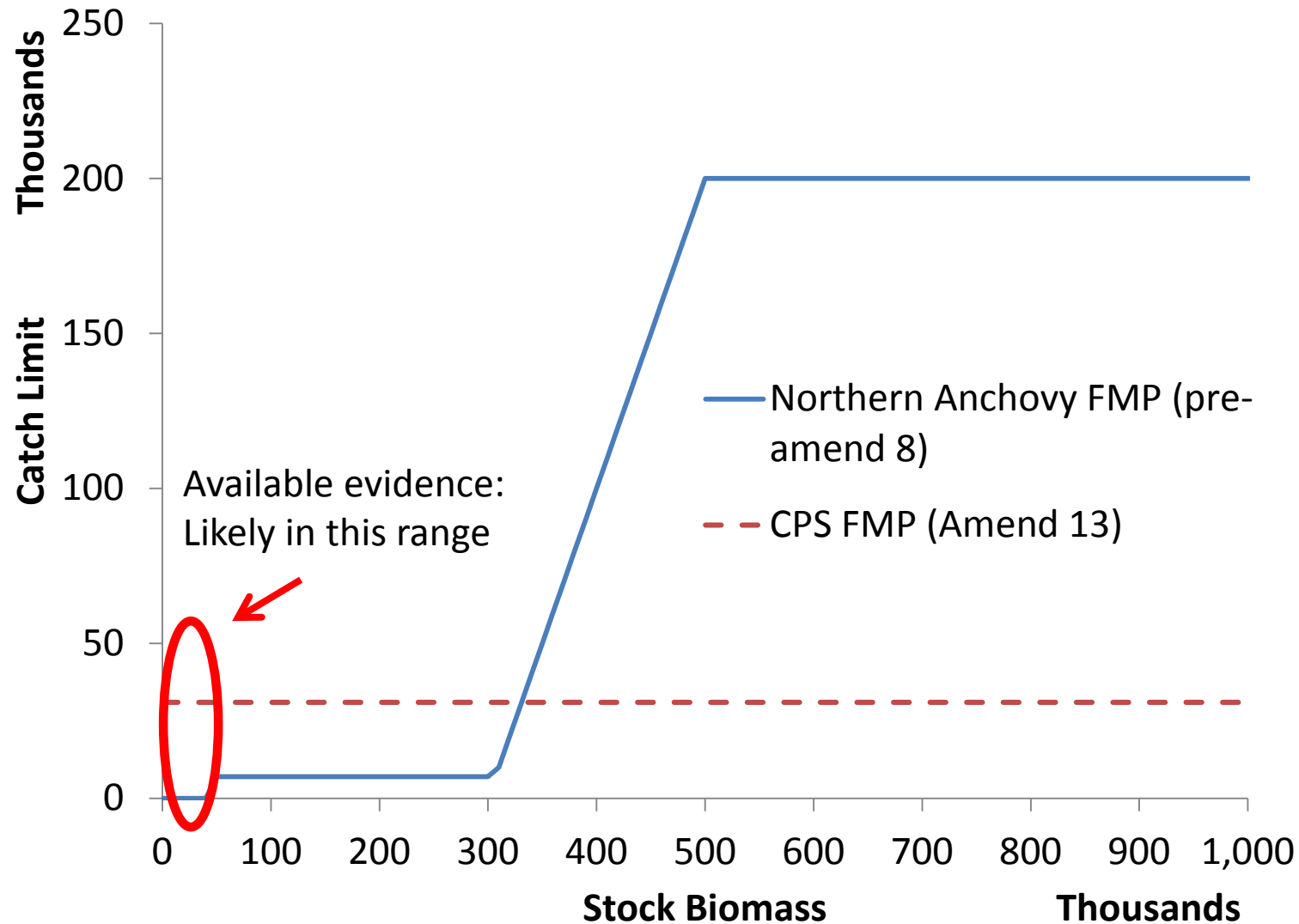
Anchovy Eggs in 2014

**FSV Bell M. Shimada and RV Ocean Starr
28 March to 06 May 2014**



Preliminary 2015 Survey Data: No Anchovy Eggs

Harvest Rules for N. Anchovy Central Sub-population



Current N. Anchovy Specifications Too High (Central Subpop)

- CPS FMP Amendment 13 used MSY estimate of 123,000 mt based on biomass $> 400,000$ mt
 - U.S. ABC = 25,000 tons
- If current biomass less than 100,000 mt, current ABC exceeds MSY
 - 0.75 buffer not big enough to prevent overfishing
- 10,400 mt landed in 2015 so far
- No reduction for Optimum Yield considerations

Stock concerns

- N. Anchovy are at historically low levels based on available abundance indices
- N. Anchovy abundance likely below MSST (50,000 mt)... “Overfished”
- Current ACL of 25,000 mt is likely above MSY levels at current biomass... “Overfishing”
- Entire CPS assemblage is in crisis low numbers, with reproductive failures in key species (brown pelicans, CA sea lions)

Summary of Requests

- Agendize immediate consideration of N. anchovy (Central) specs (OFL, ABC, ACL, ACT) based on recent abundance information
- Request NMFS make anchovy stock assessment a top priority for the CPS assemblage
- Develop/restore “active”, ecosystem-based N. anchovy Harvest Control Rule
- Future vision: assemblage approach for CPS assessments and harvest control rules