



Pacific Mackerel Management

PFMC Agenda Item G.2

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Pacific mackerel are forage fish

- Major prey item for large fish (swordfish, marlins, sharks tunas), dolphins, sea lions, brown pelicans
- Brown pelican reproductive failures (USFWS Report, Agenda Item G.3)



- Stock assessment: “Past and present assessments of this stock indicate that since at least the late 1990s, abundance has remained at historically low levels (<150,000 mt).”

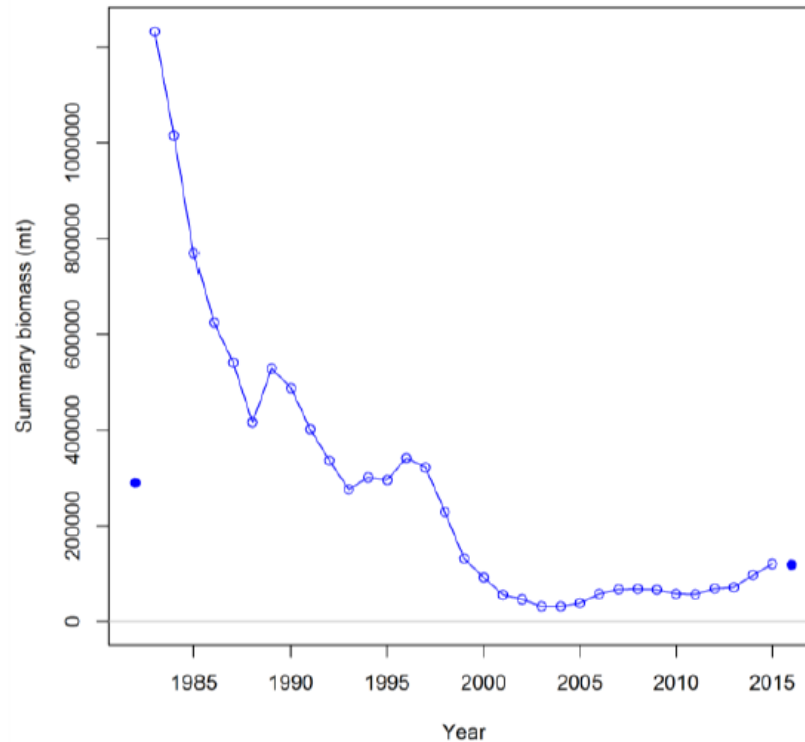
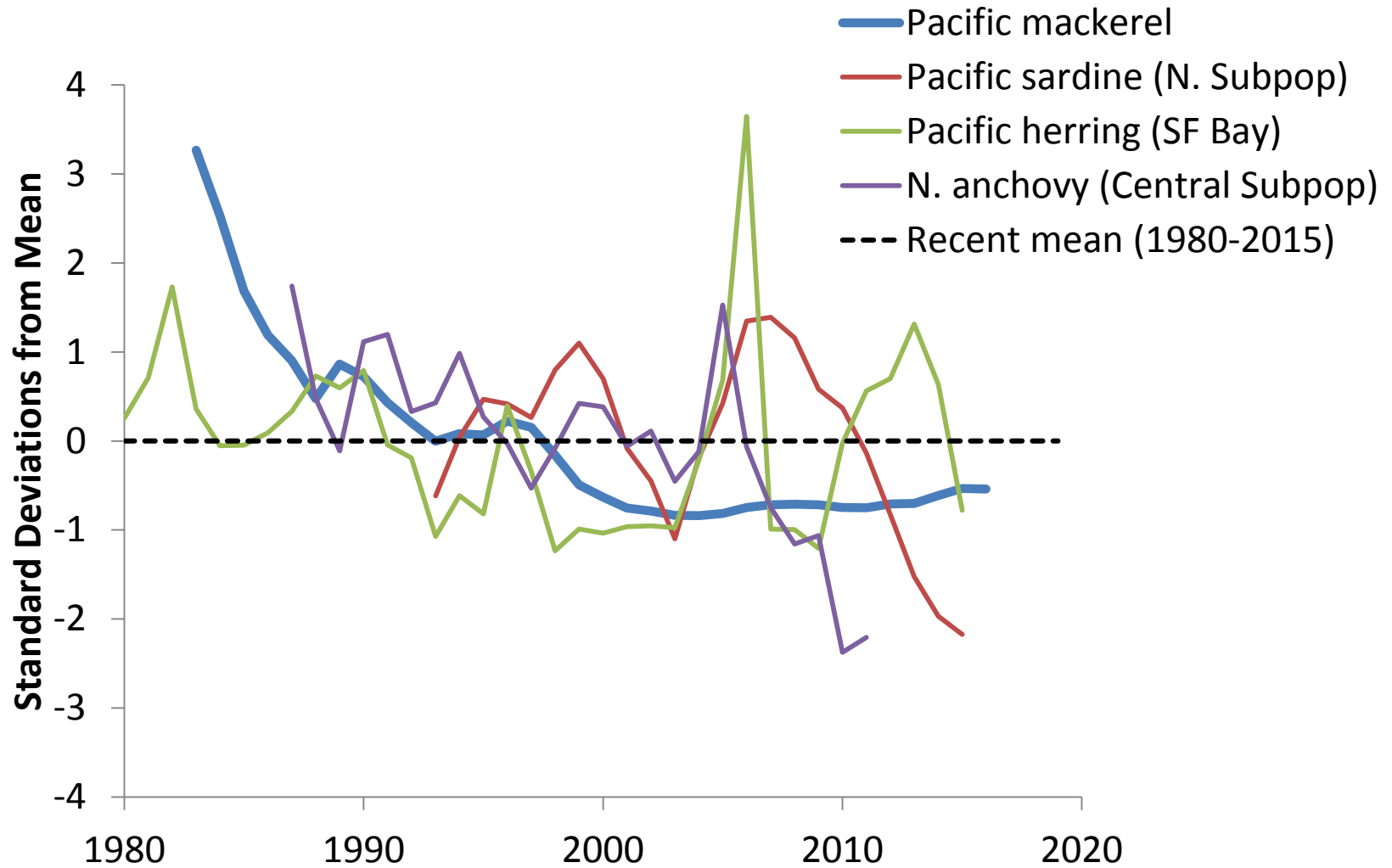


Figure ES-4. Estimated stock biomass (age 1+ fish, mt) time series for Pacific mackerel for model H3. Solid dots reflect estimate of virgin stock biomass and forecasted stock biomass in July 2016.

Major Uncertainties in Assessment

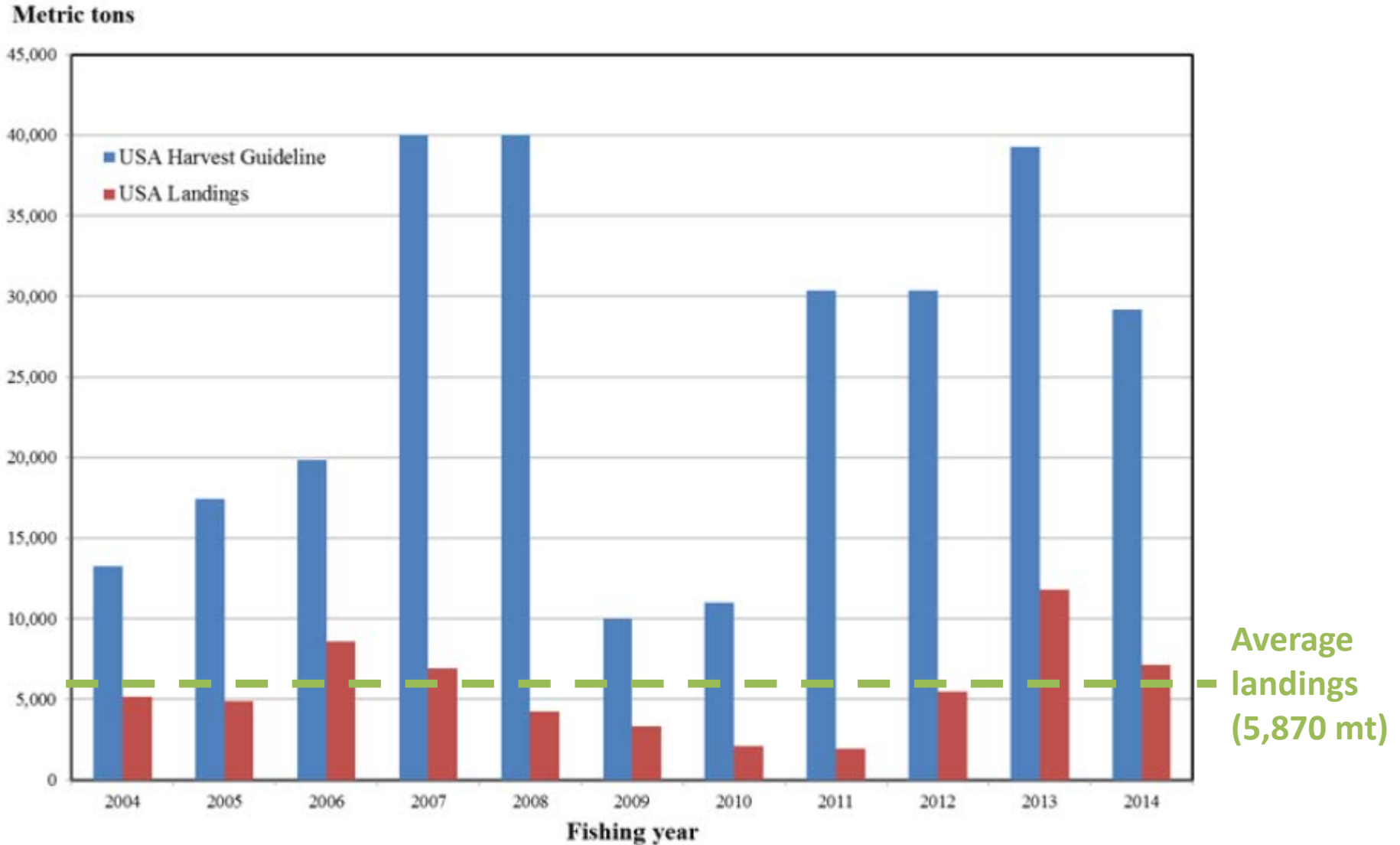
- Evidence of “model misspecification” (SSC)
- STAR panel did not endorse any models
- Category 2 sigma (0.72)
- Acoustic-trawl survey not included
 - “Potential” to be best index
- Relies on recreational logbook catch data

Abundance Indices for 4 West Coast Forage Fish

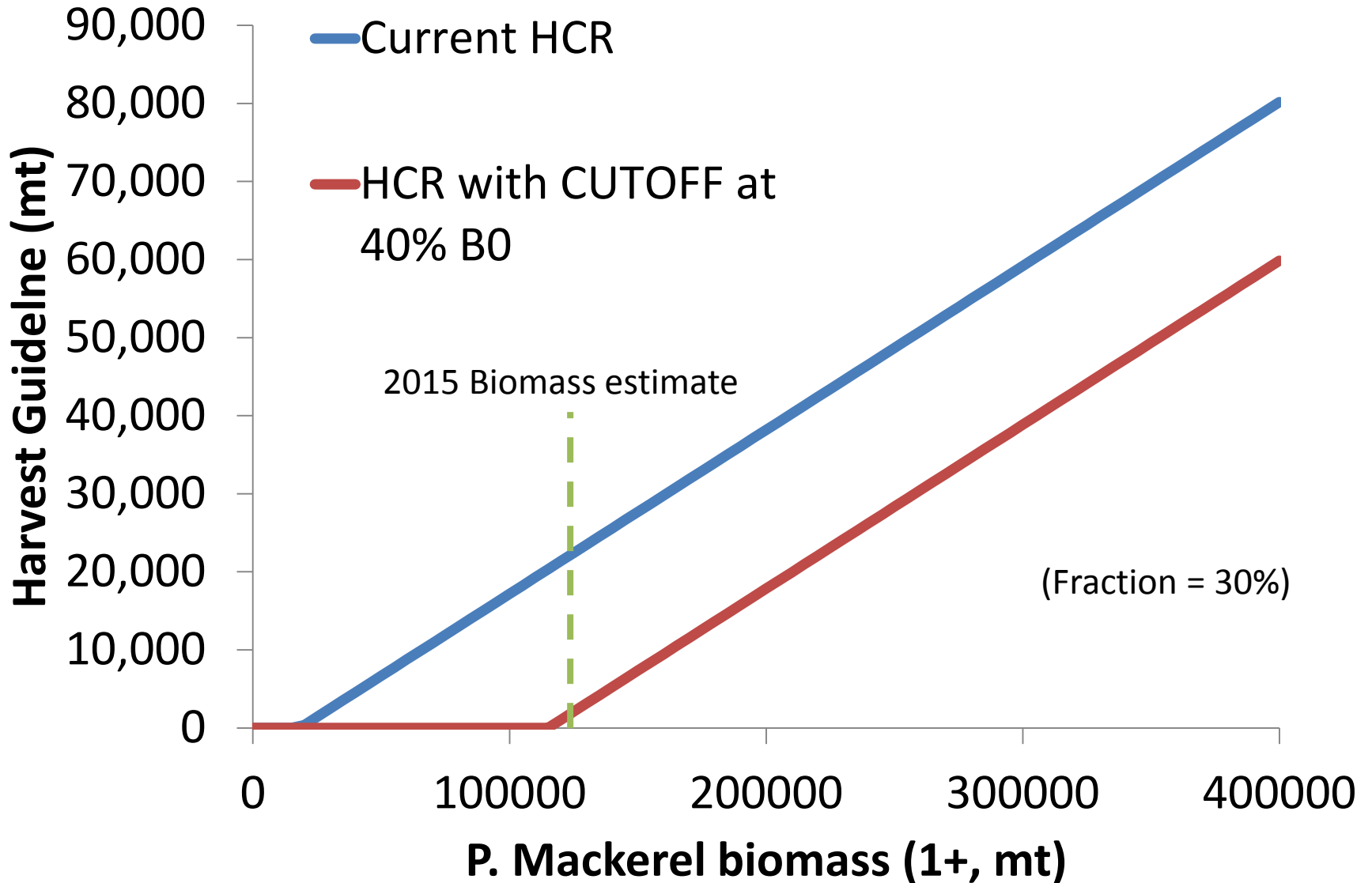


Sources: Pacific mackerel 2015 assessment, Pacific sardine 2015 assessment, CDFW 2015 SF Bay Herring assessment, Sydeman et al. 2015 spring CalCOFI larval anchovy abundance

U.S. Pacific Mackerel Landings Well Below Harvest Guideline



Pacific Mackerel Harvest Guideline



Summary

- Concerns
 - Pac.mackerel remains at historically low levels
 - Stock assessment is highly uncertain
 - U.S. catch consistently less than $\frac{1}{2}$ the HG
 - Inadequate forage in ecosystem
 - Current HCR relatively aggressive
- Immediate Precaution Warranted for 2015-16, 2016-17
 - Select a P^* of 10%
 - At Tier 2, this would be ABC $\sim 10,000$ mt
 - Or set ACT = 10,000 mt
- Prioritize Better Stock Assessment
 - Incorporate expanded ATM survey
 - Forage assemblage approach

