

ASSESSMENT OF THE PACIFIC SARDINE (*Sardinops sagax caerulea*) POPULATION FOR U.S. MANAGEMENT IN 2007

by

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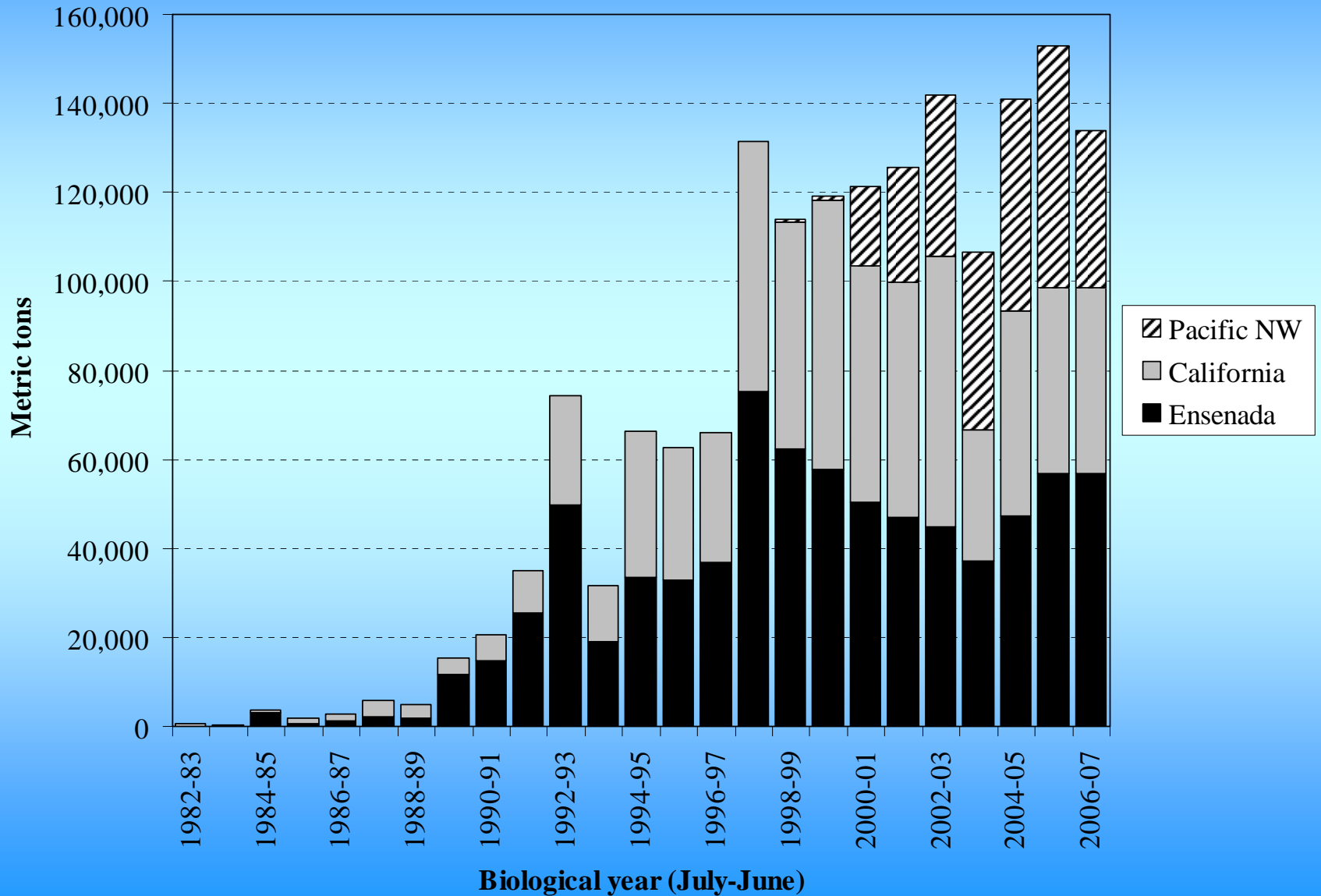
Jake Schweigert

2006 Stock Assessment Update

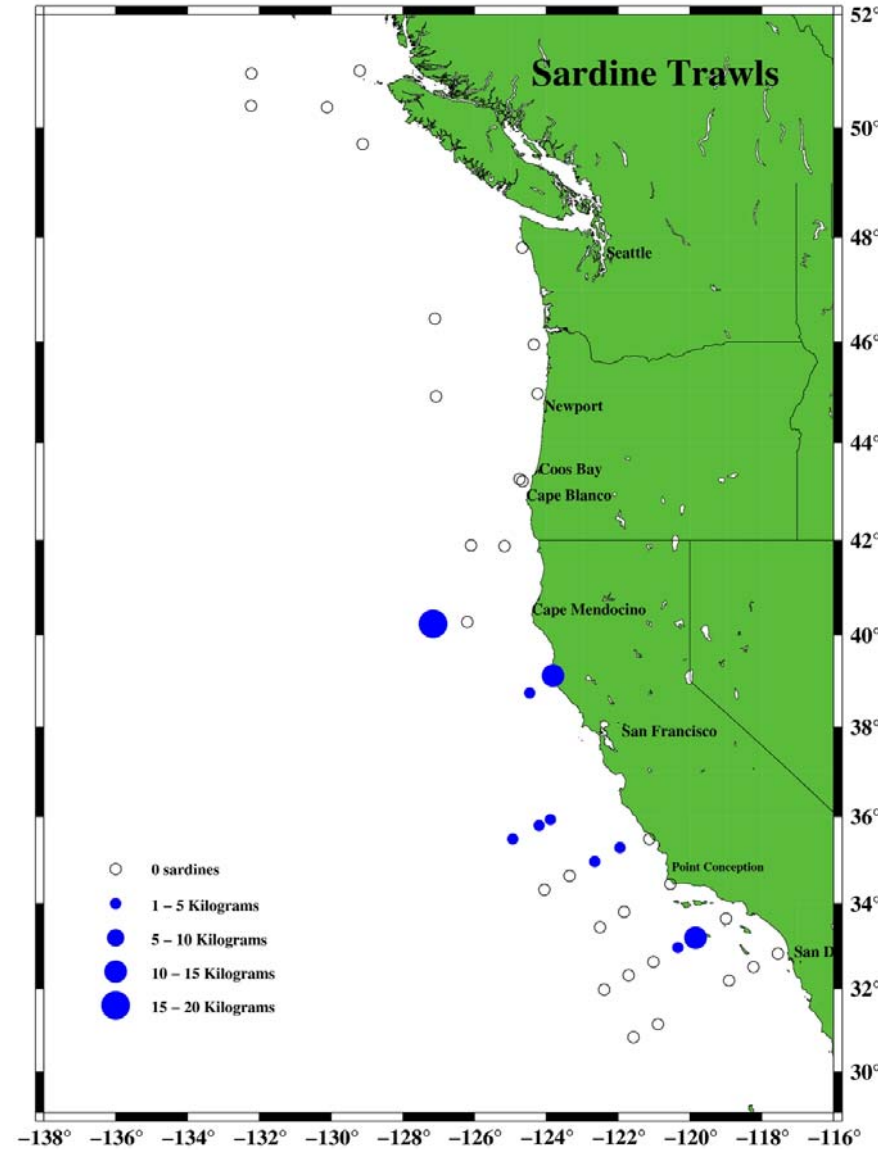
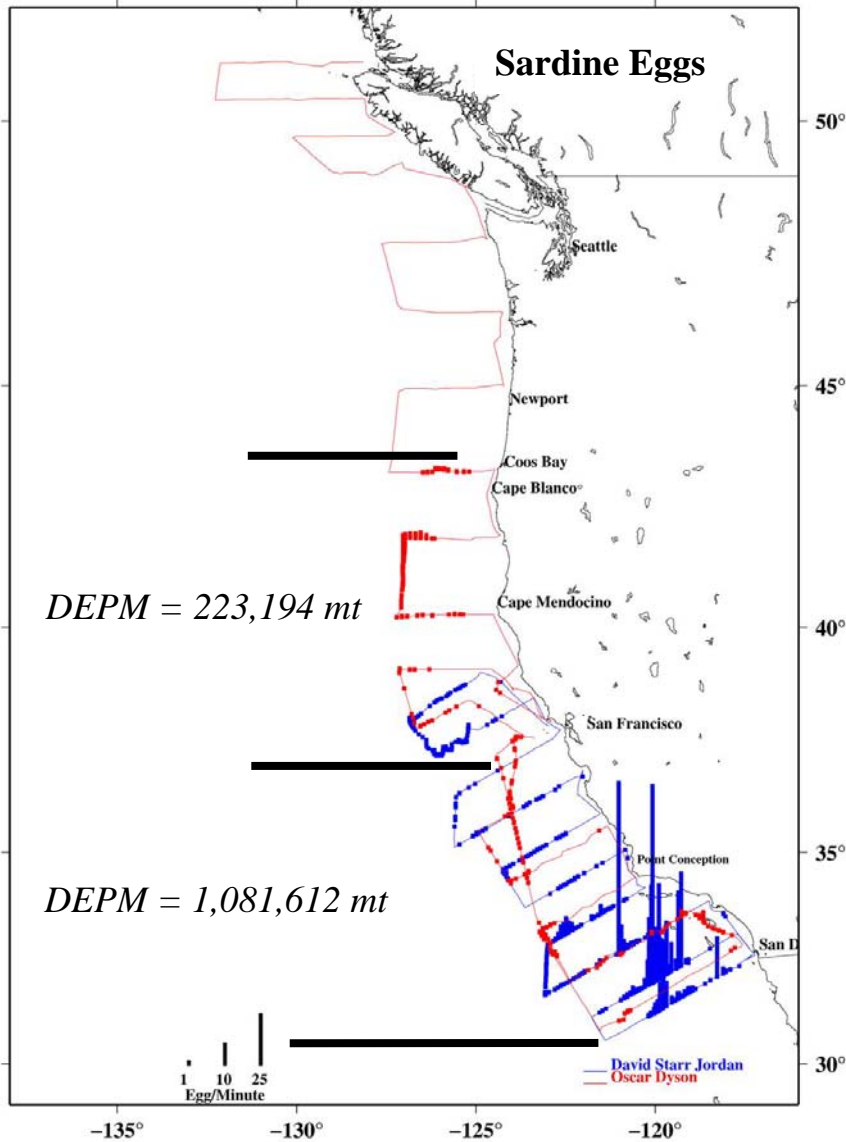
- Changes from 2005 -

- **Three Fisheries:**
 - **Ensenada, California, and Pacific Northwest**
 - *New landings and port samples from CA & NW for 2005-06;*
 - *New Ensenada landings for 2005.*
- **Two Indices of Abundance (Central & Southern CA):**
 - **Annual egg production surveys (DEPM estimates of SSB)**
 - *New estimate from April 2006 survey.*
 - **Aerial spotter survey (pre-adults; no new data in 2006)**
- **Environmental Data:**
 - **SST at Scripps Pier (La Jolla)**
 - *Three-year running average through June 2006.*

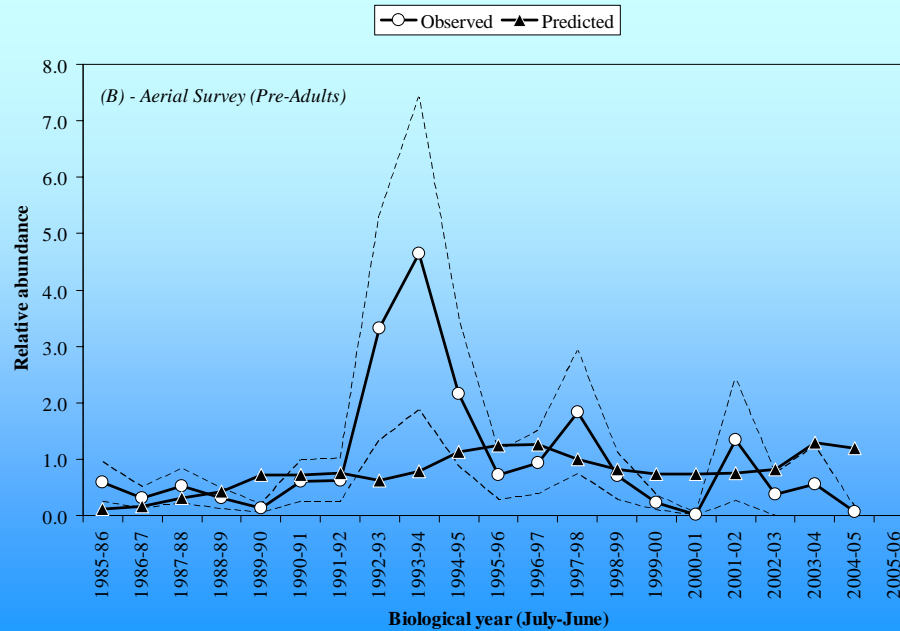
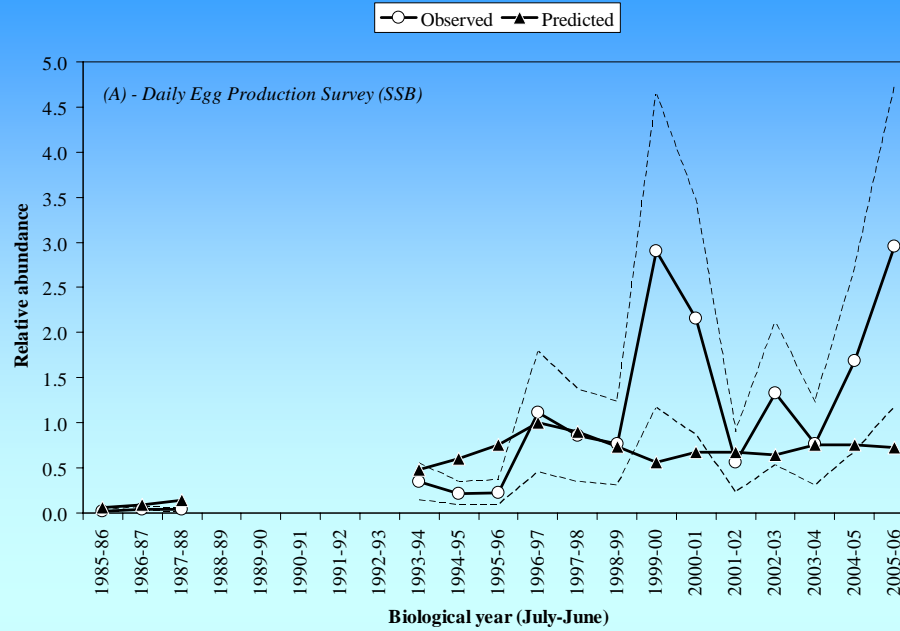
Landings by Fishery



Sardine Survey – Apr-May, 2006

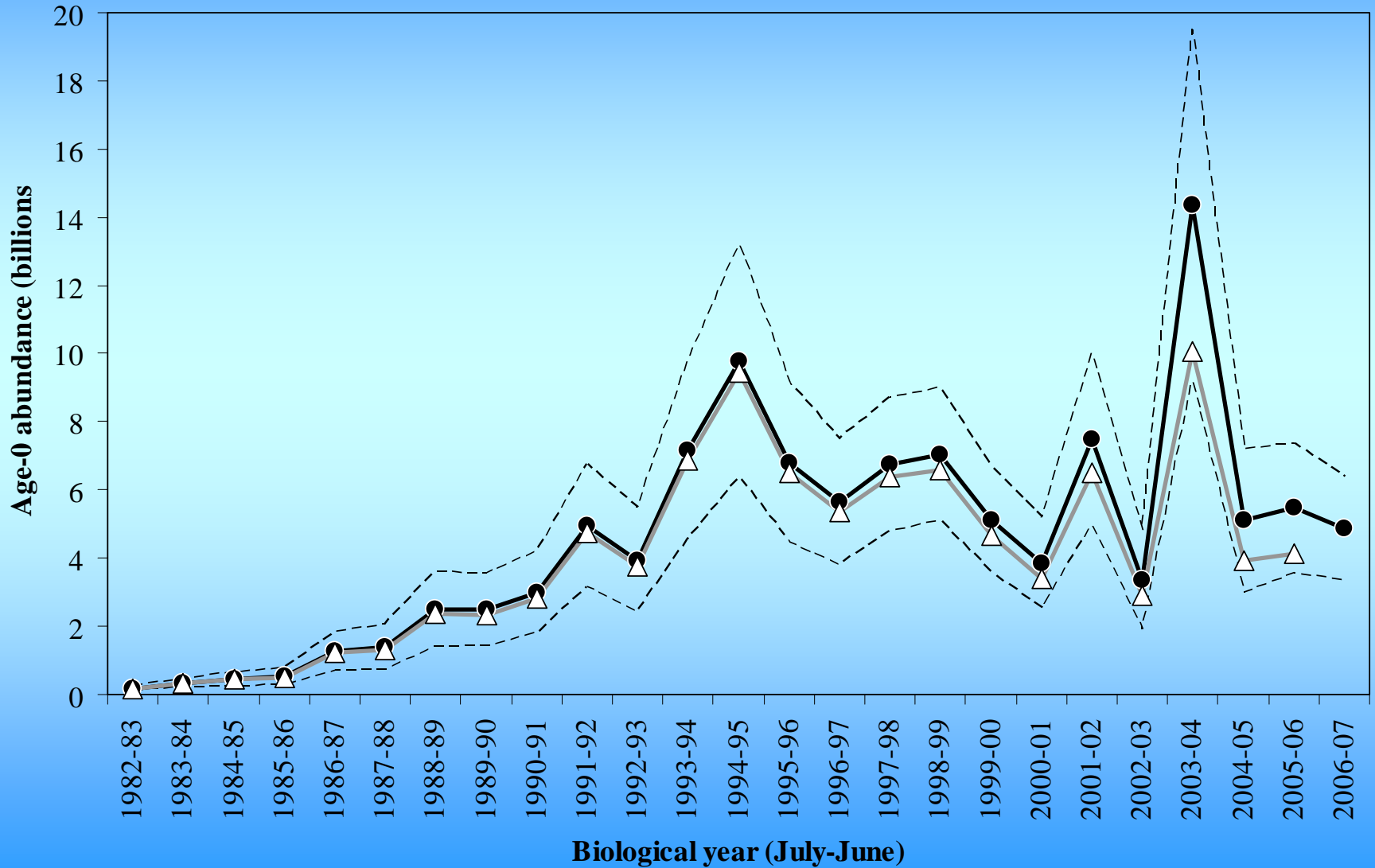


Model Fits to Survey Data

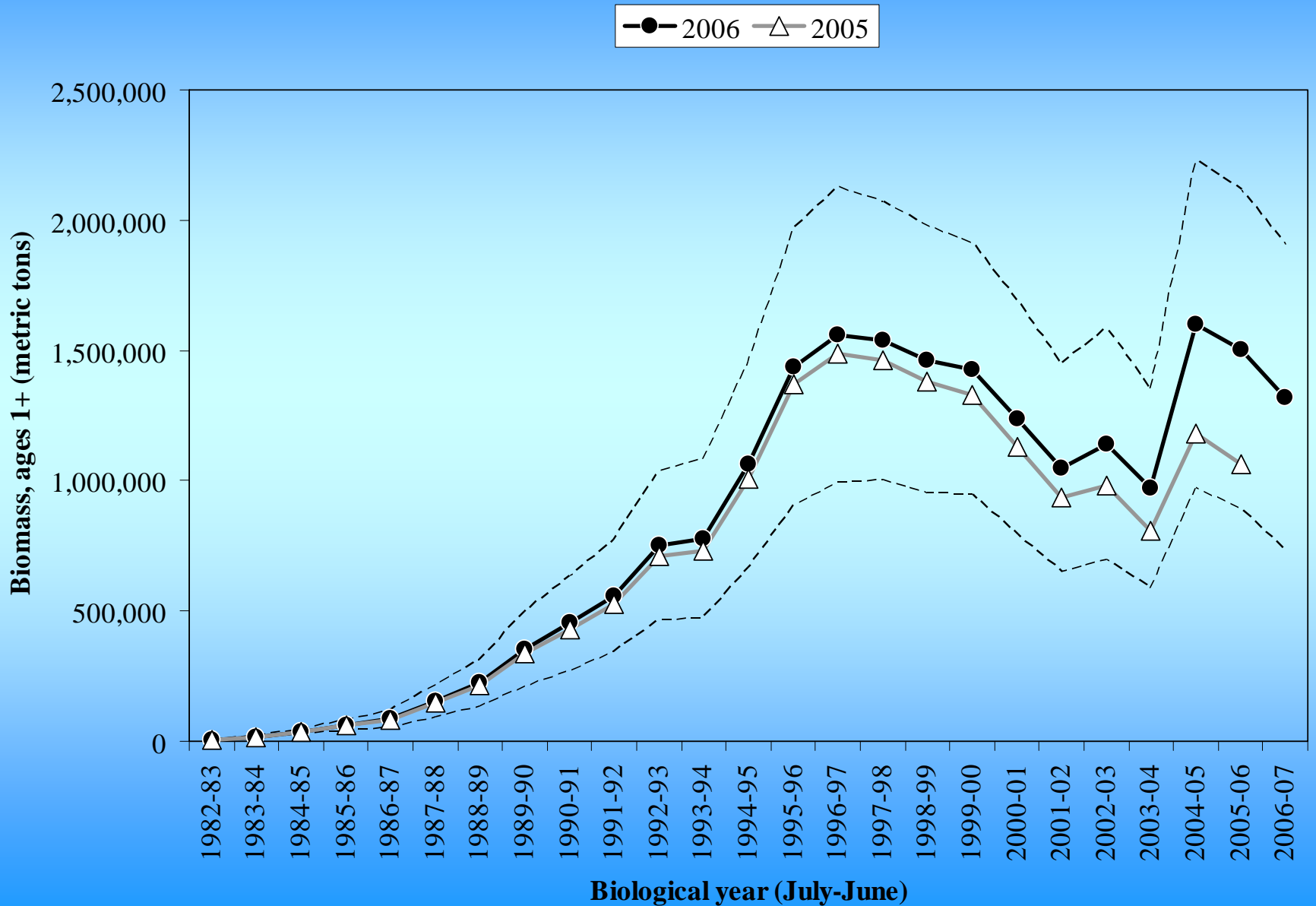


Recruitment

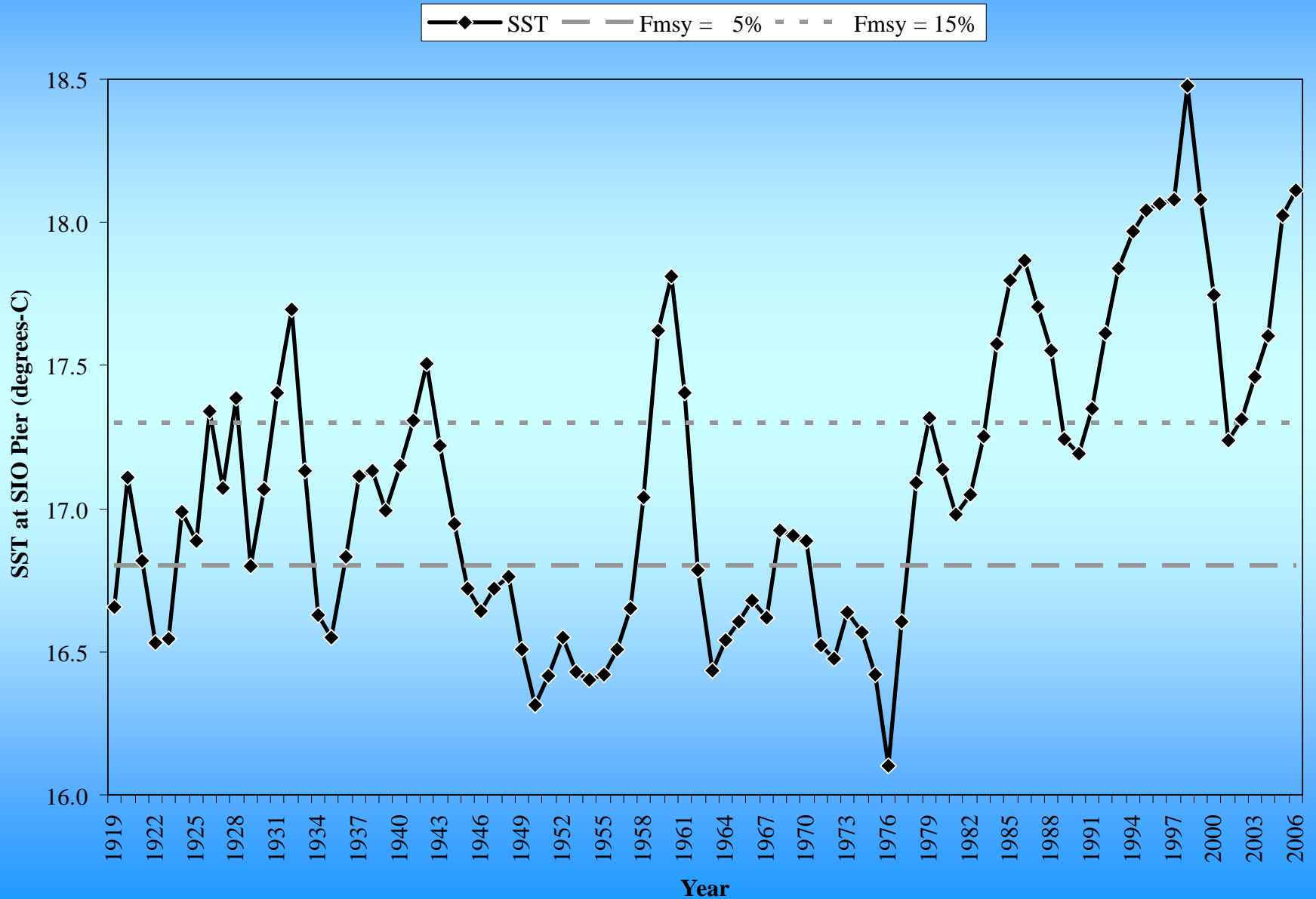
● 2006 △ 2005



Stock Biomass (age 1+)



Sea Surface Temperature at SIO Pier



U.S. Harvest Guideline Recommended for 2007

$$\text{HG}_{2007} = (\text{Biomass}_{\text{July 2006}} - \text{Cutoff}) \cdot \text{Fraction} \cdot \text{Distribution}$$

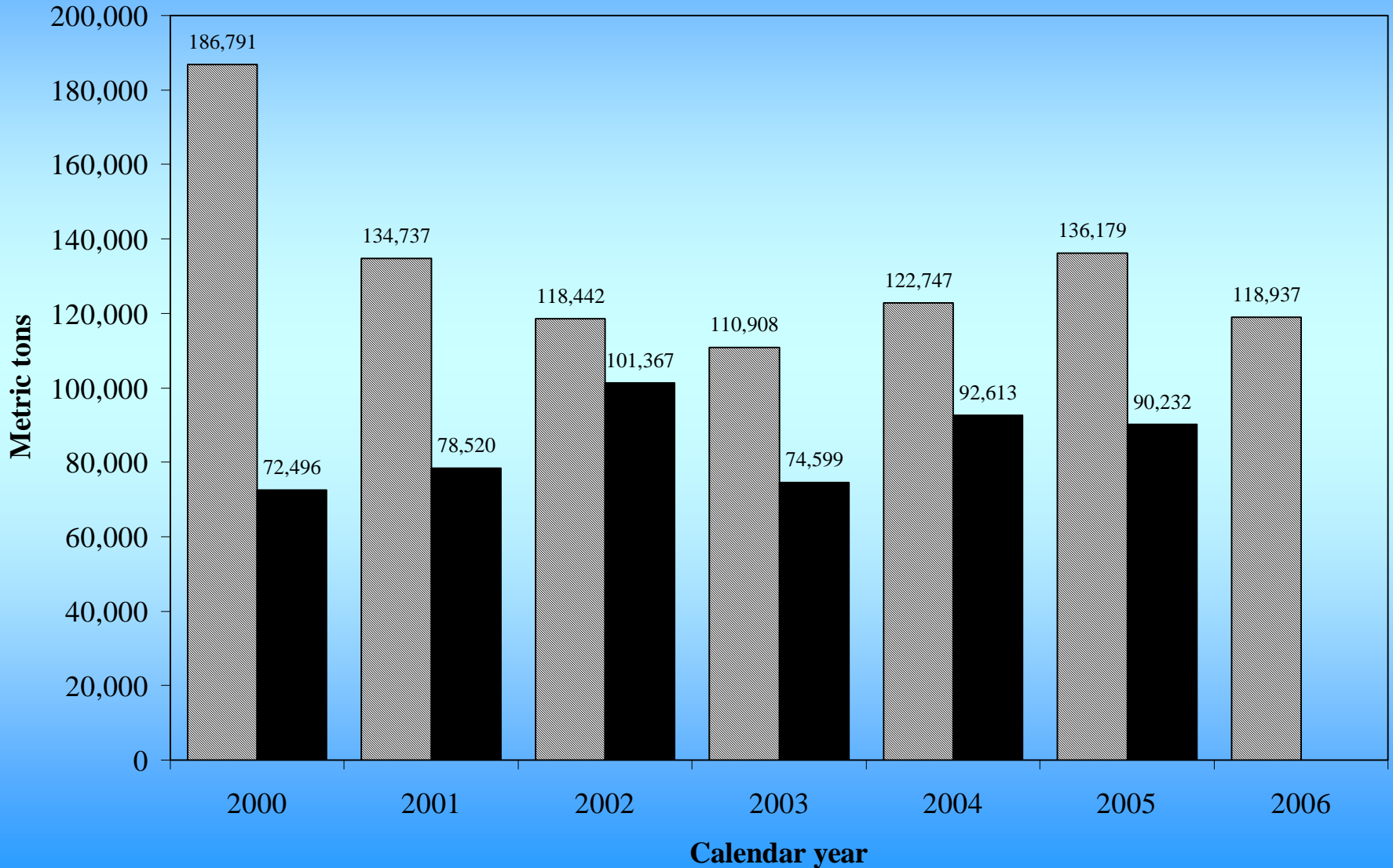
$$\text{HG}_{2007} = (1,319,072 - 150,000) \cdot 0.15 \cdot 0.87$$

$$\text{HG}_{2007} = \mathbf{152,564 \text{ mt}}$$

- 28% higher than 2006 HG
- 51,197 mt higher than peak U.S. harvest (2002)

U.S. Harvest Guidelines and Landings

■ U.S. Harvest Guideline ■ U.S. Landings



Assessment Plans for 2007

- **MEXUS-Pacifico Sardine Stock Assessment Workshop:**
 - NMFS & INP collaboration
 - March 5-9, 2007 in Mazatlan or La Paz

- **Pacific sardine STAR Panel, Sep 19-21, 2007 (SWFSC):**
 - testing new sardine model in SS2;
 - extend historical catch, length/age comps back to 1919;
 - test sensitivity to stock structure hypotheses;
 - fully utilize data collected from coast-wide and NW surveys;
 - develop indices from historical surveys (CalCOFI ichthyoplankton & CDFG pelagic ‘sea surveys’);
 - re-incorporate environmental covariate in S-R model.