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FISHERIES
SWFSC-FRD

K.T. Hill, P.R. Crone, J.P. Zwolinski
Fisheries Resources Division
SWFSC, La Jolla, CA 92037, USA

Assessment of the Pacific Sardine Resource in 2017 for USA Management in 2017-18



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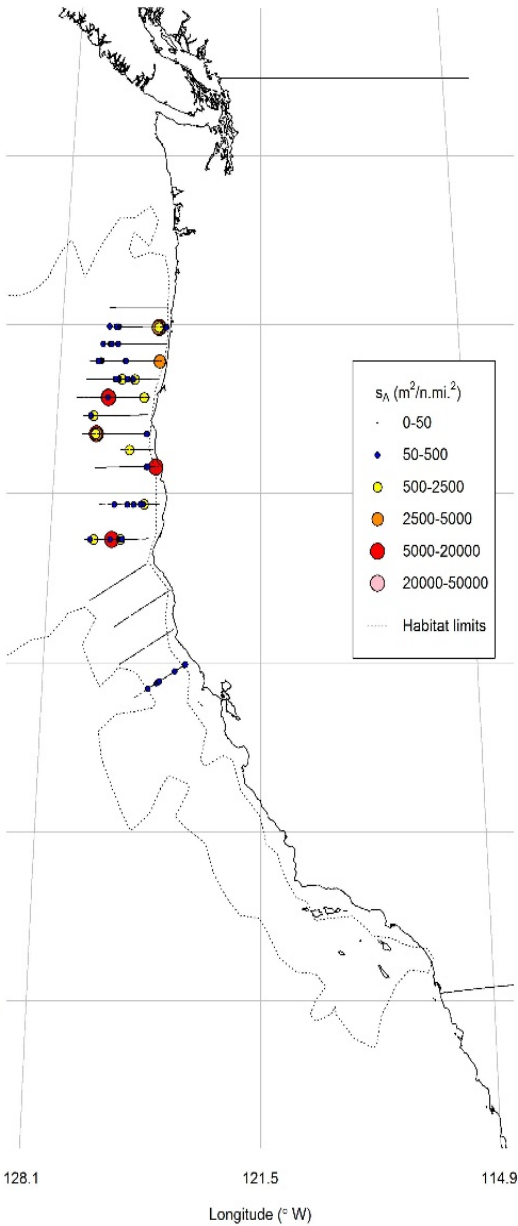
Previous vs. Current Assessment Model (Report Table 10)

- Goal: Develop a parsimonious model based on best available data and reasonable assumptions/estimators
 - Data sources prioritized outside the model and parameterizations simplified inside the model
 - Important management quantities from ongoing model should be *relatively* robust and precise

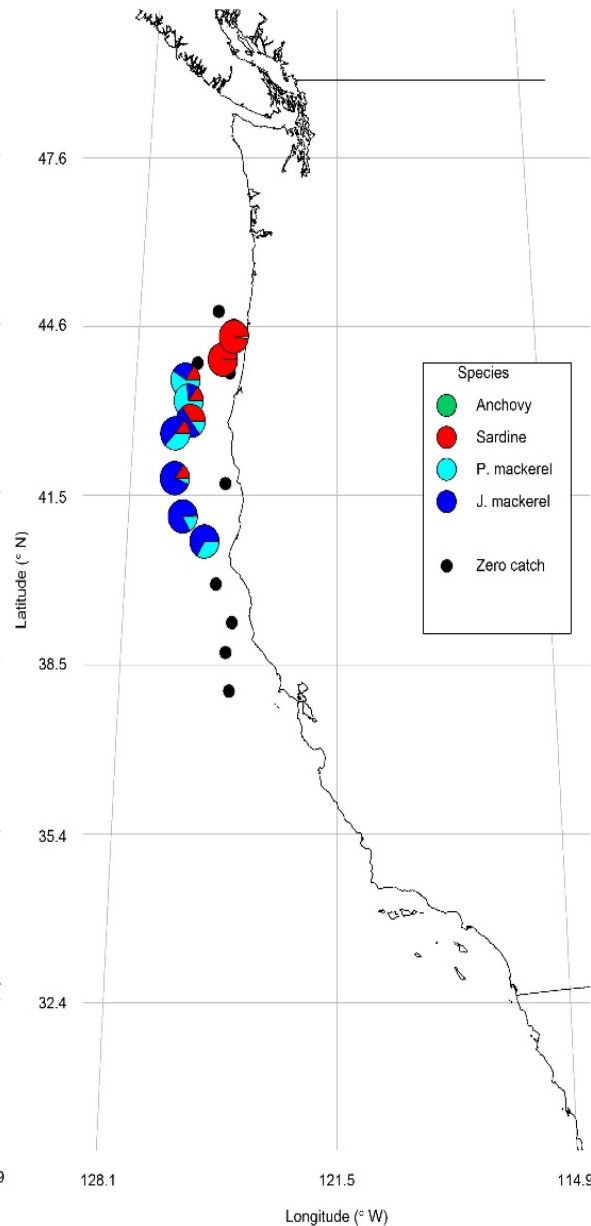
Model attributes	Models	
	T (2016)	ALT (2017)
Time period	1993-16	2005-17
Surveys (Indices)	Acoustic-trawl (AT), Eggs-larvae (DEPM, TEP)	Acoustic-trawl (AT)
Fleets	MEXCAL_S1, MEXCAL_S2, PNW	Same fleets; live bait landings added
Longevity and M	15 yrs; $M=0.4$	10 yrs; $M=0.6$
Stock-recruitment	Beverton-Holt: steepness fixed ($h=0.80$)	Beverton-Holt: steepness estimated ($h=0.36$)
Growth	Estimated internally (Conditional age@length data)	Estimated externally (empirical weight-at-age)
Selectivity (General)	Length comps and length-based selectivity	Age comps and age-based selectivity
Selectivity (Surveys)	AT (asymptotic); DEPM/TEP (SSB)	AT (ages 1+ fully selected)
Selectivity (Fisheries)	MEXCAL_S1-S2 (double-norm.); PNW (asymptotic)	MEXCAL_S1-S2 (age-spec. rand. walk); PNW (asymptotic)
Catchability (Q)	AT (Fixed: $Q=1.0$), DEPM/TEP est.	AT (Estimated $Q=1.1$)

AT Spring 2016

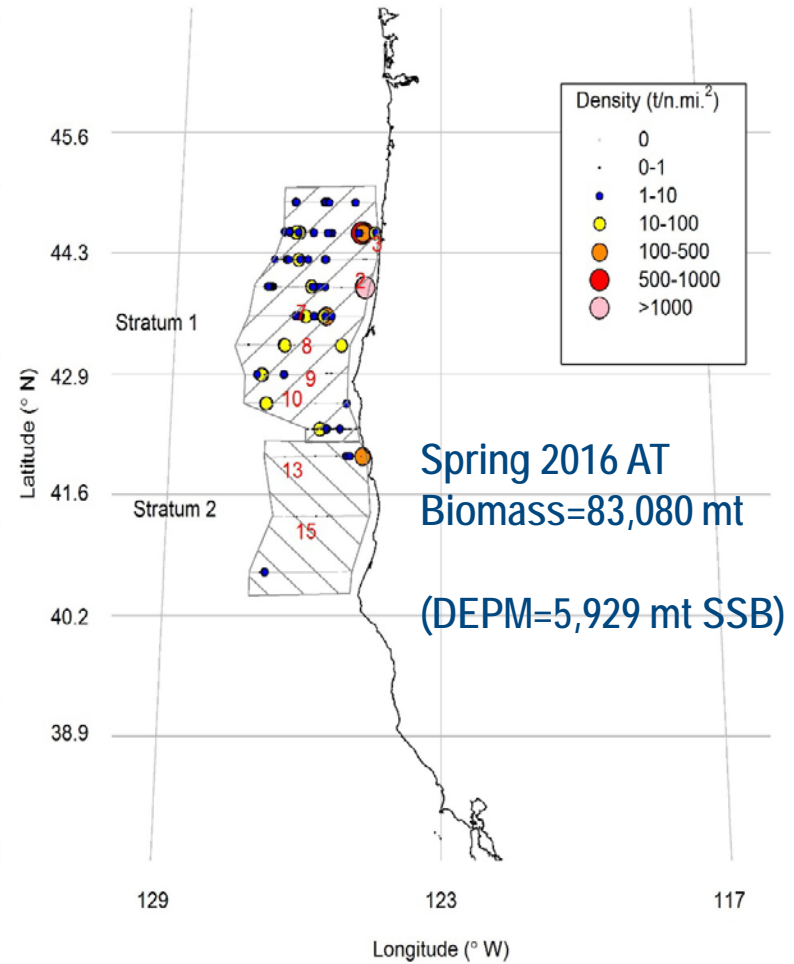
CPS backscatter



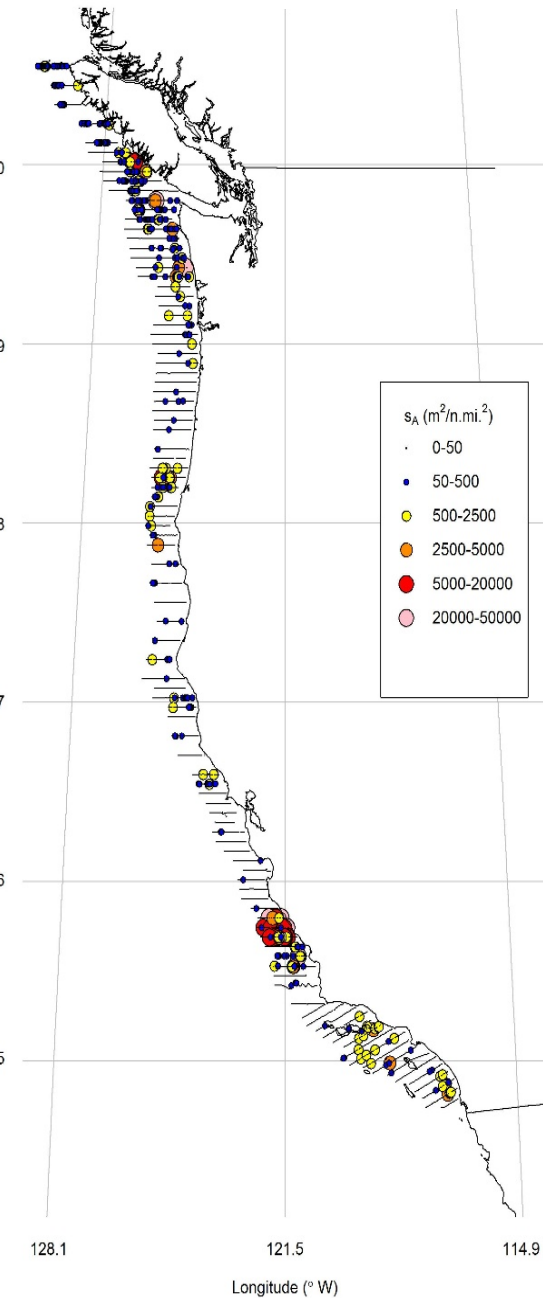
Trawl proportions



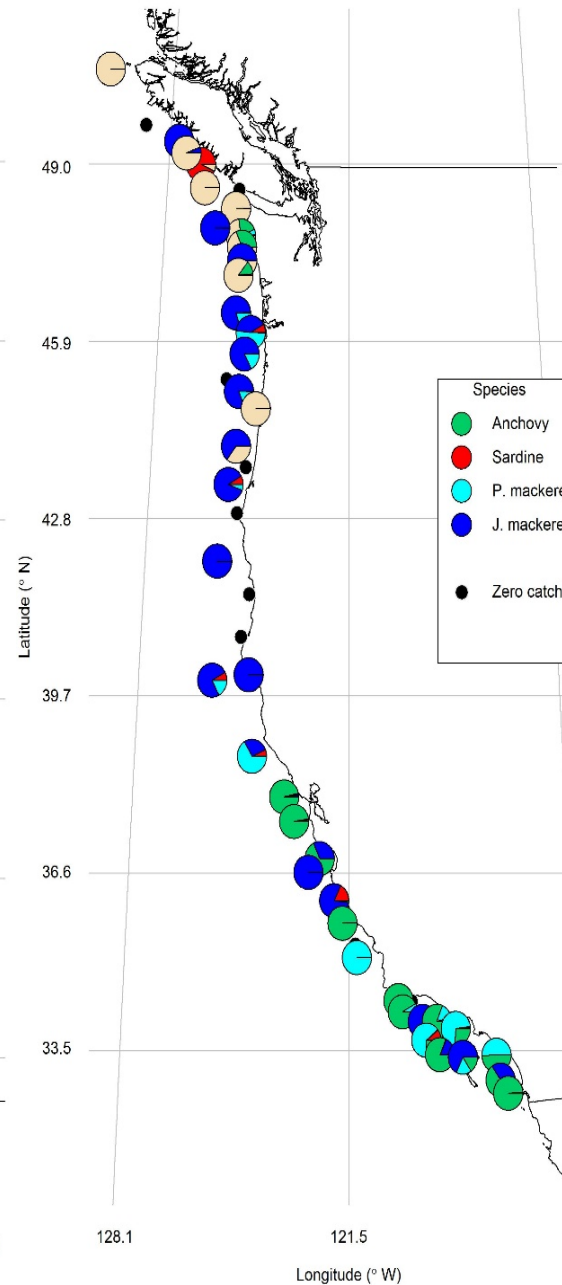
Sardine density



CPS backscatter

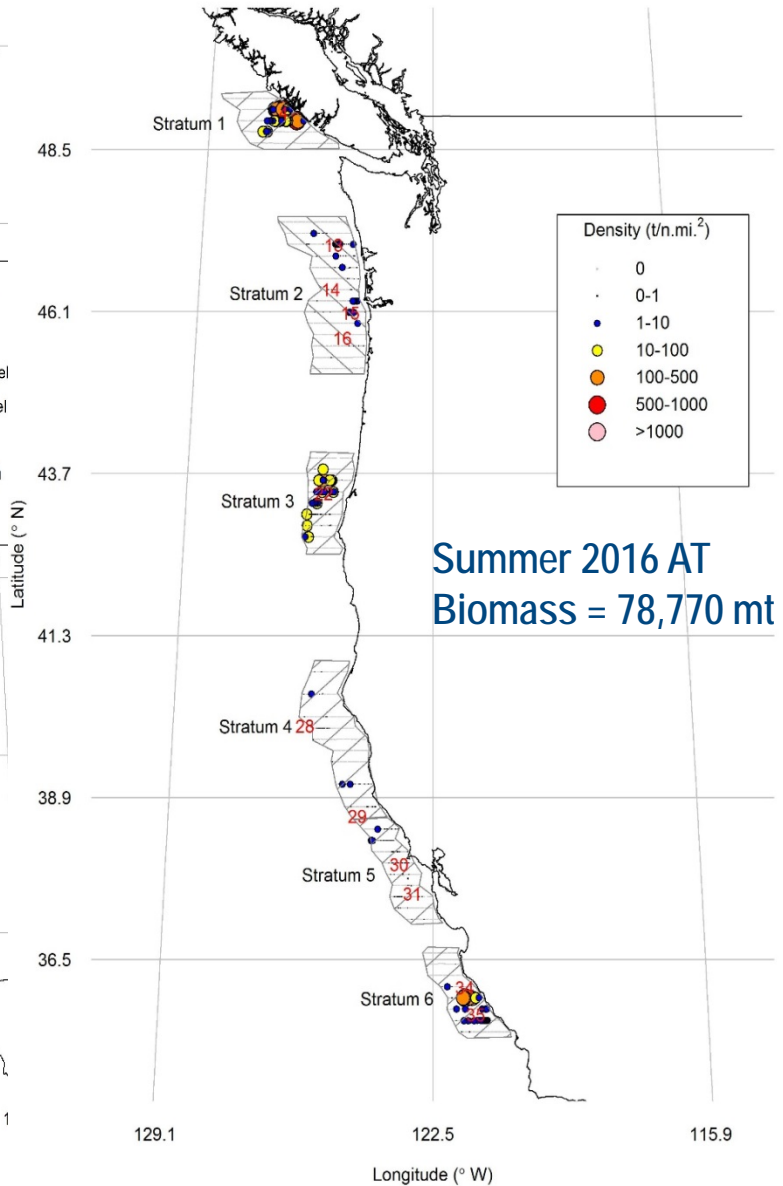


Trawl proportions

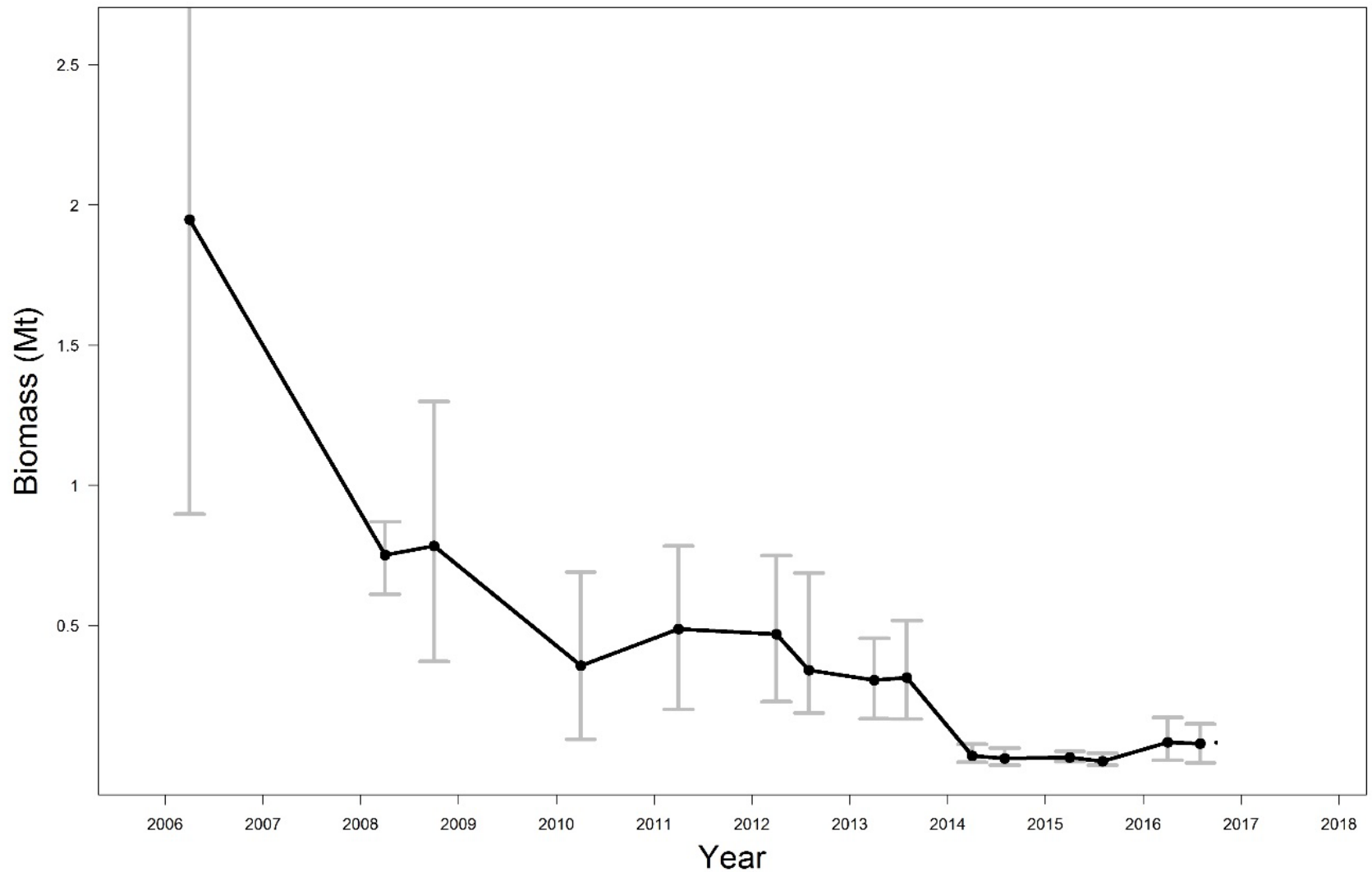


AT Summer 2016

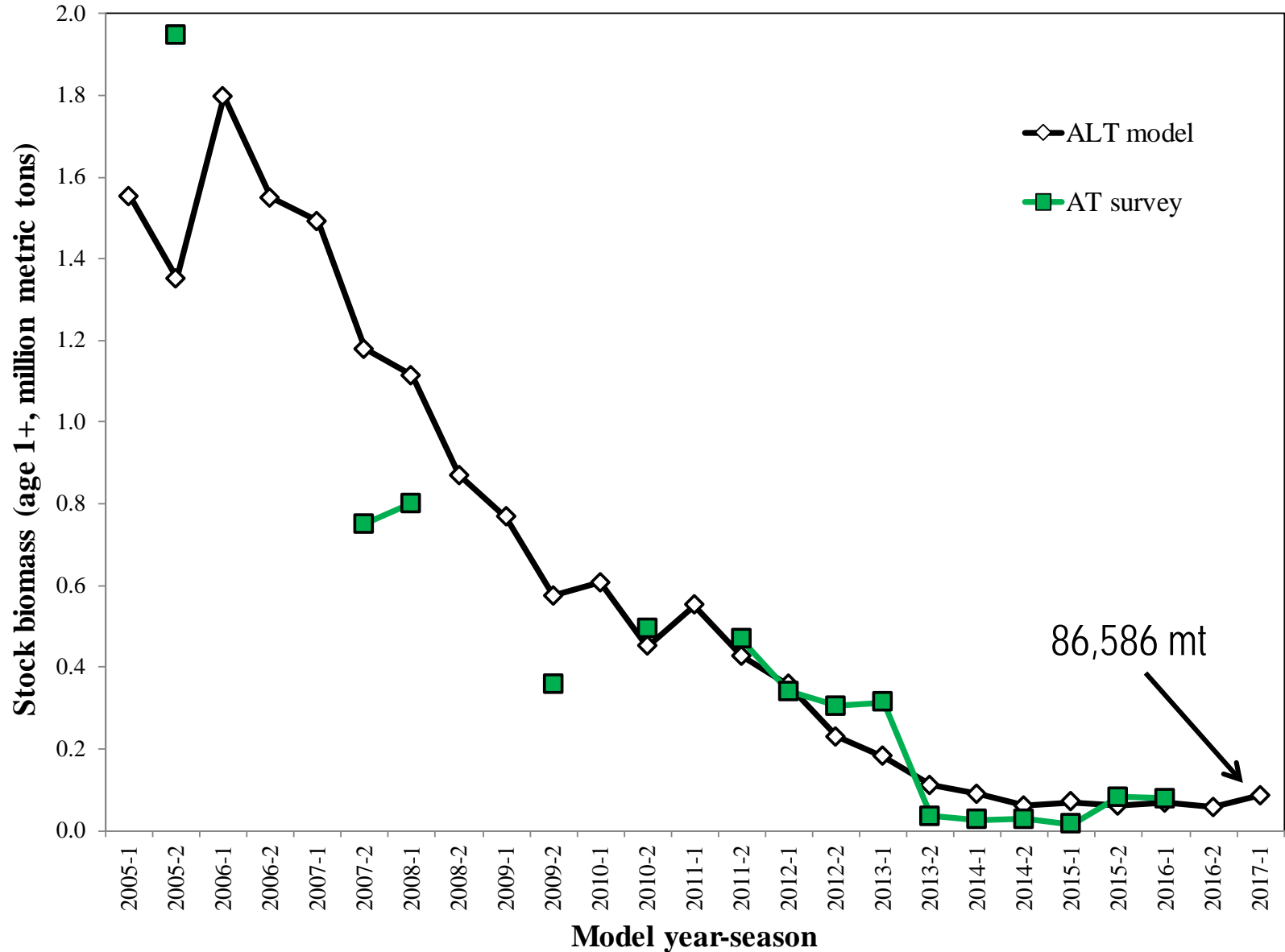
Sardine density



Acoustic-Trawl Survey Time Series



Stock Biomass Time Series



Stock Biomass Time Series – Assessments Since 2014

