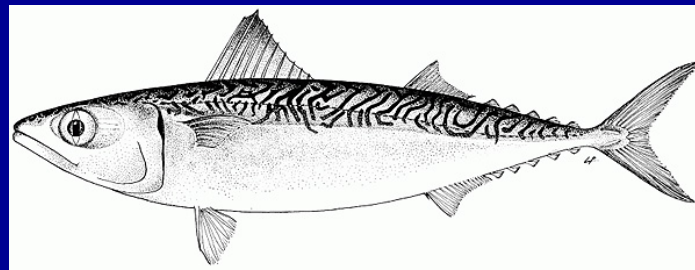


# Pacific Mackerel Stock Assessment For U.S. Management In The 2007-08 Fishing Season

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# *Background*



**Distribution**  
**Spawning Area**

**Fisheries**



# MANAGEMENT

- State of California Management 1978-1999:
  - Quotas based on population biomass (ages 1+),
  - No fishing when biomass <18,200 mt,
  - No quota restrictions when biomass >136,000 mt;
- Federal CPS Fishery Management Plan implemented Jan. 2000;
- No catch limitations by Mexico; min size=25.5 cm; limited entry
- No international management agreements

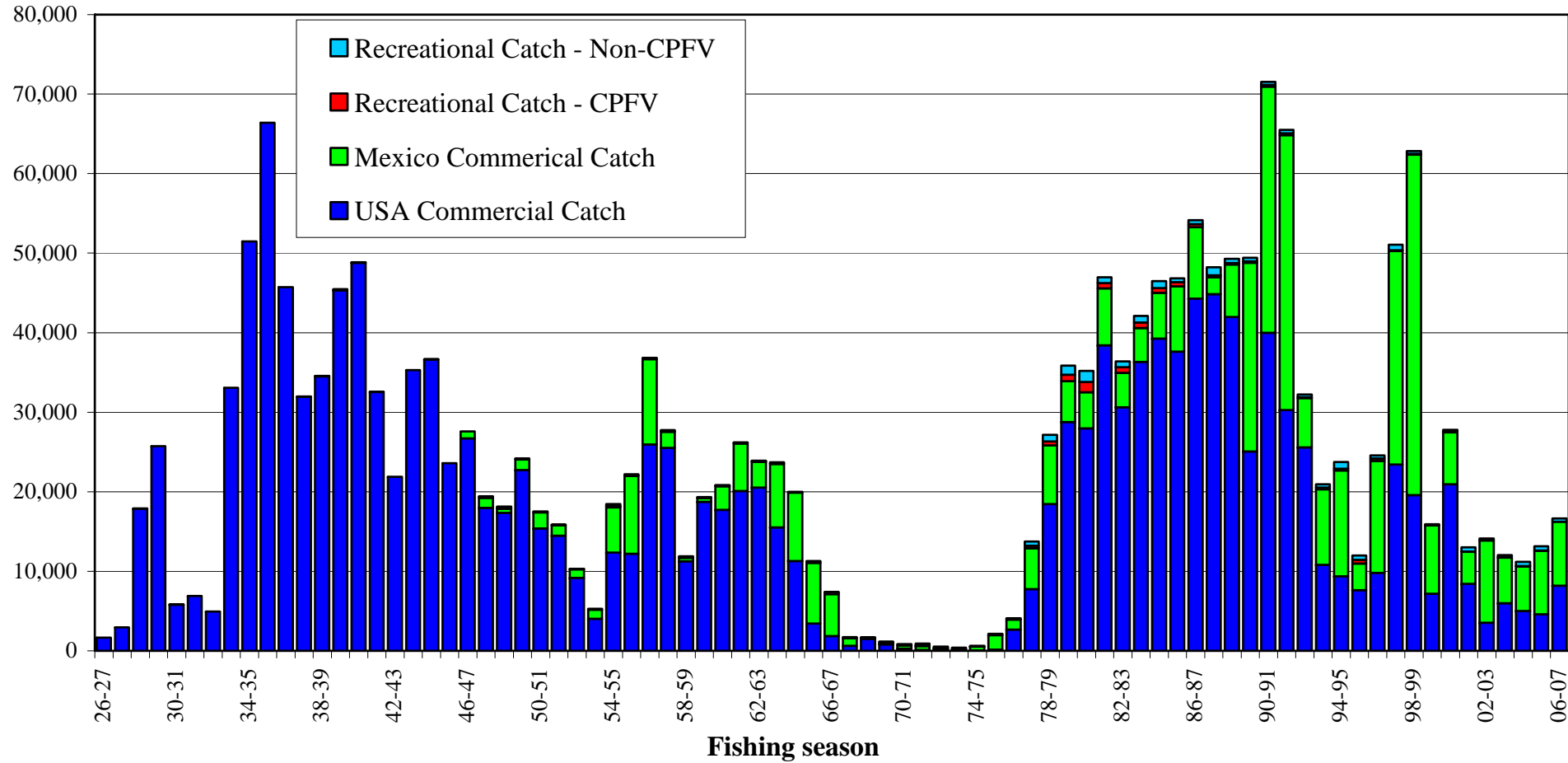
# *Landings*

- California commercial 1926-27 onward
- Mexico commercial 1946-47 onward
- California recreational 1926-27 onward
  - Private boats, shore modes
  - Commercial Passenger Fishing Vessel (CPFV)

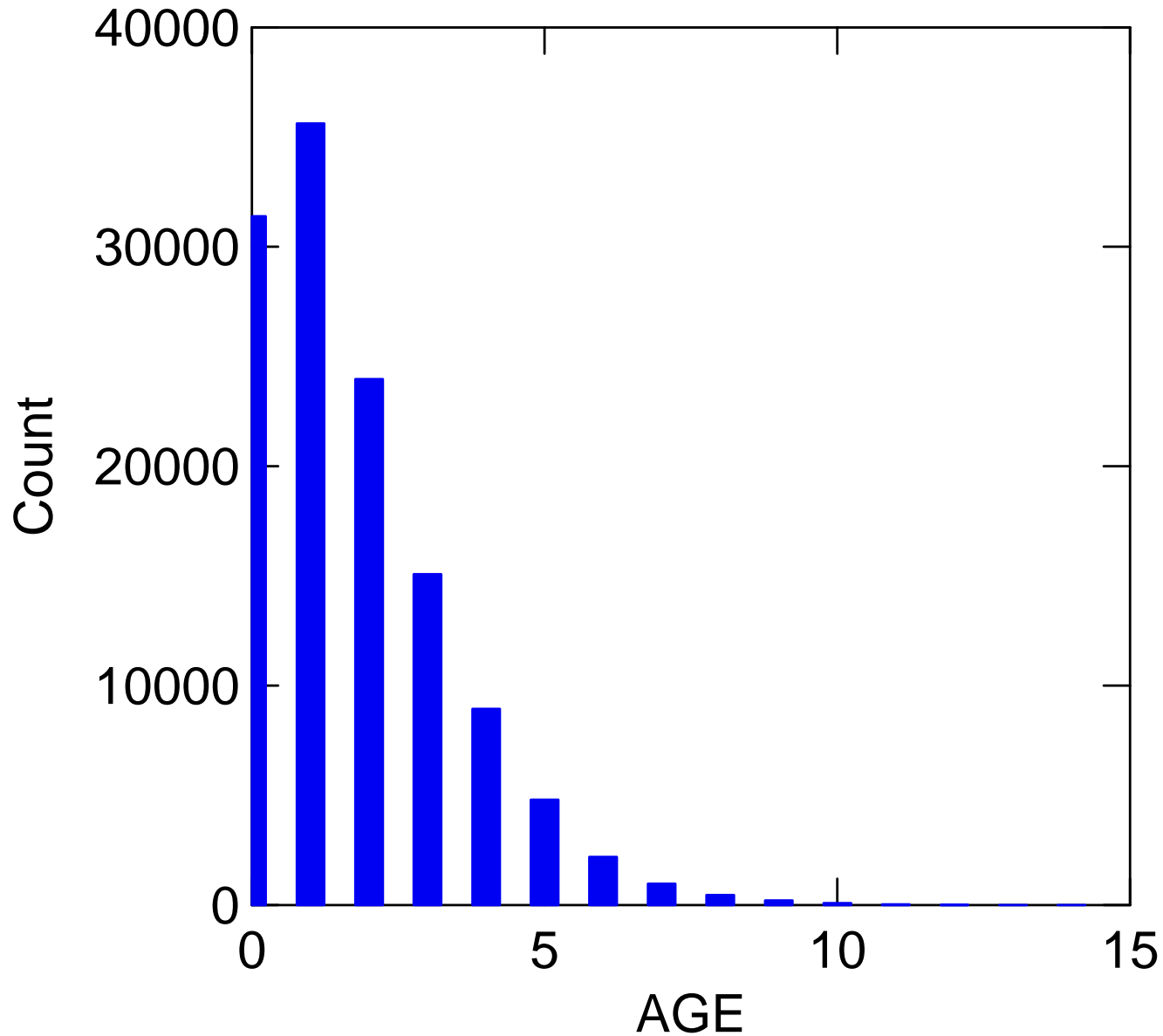


# Landings

Landings (mt)



# *Age Frequency (1939-2006)*

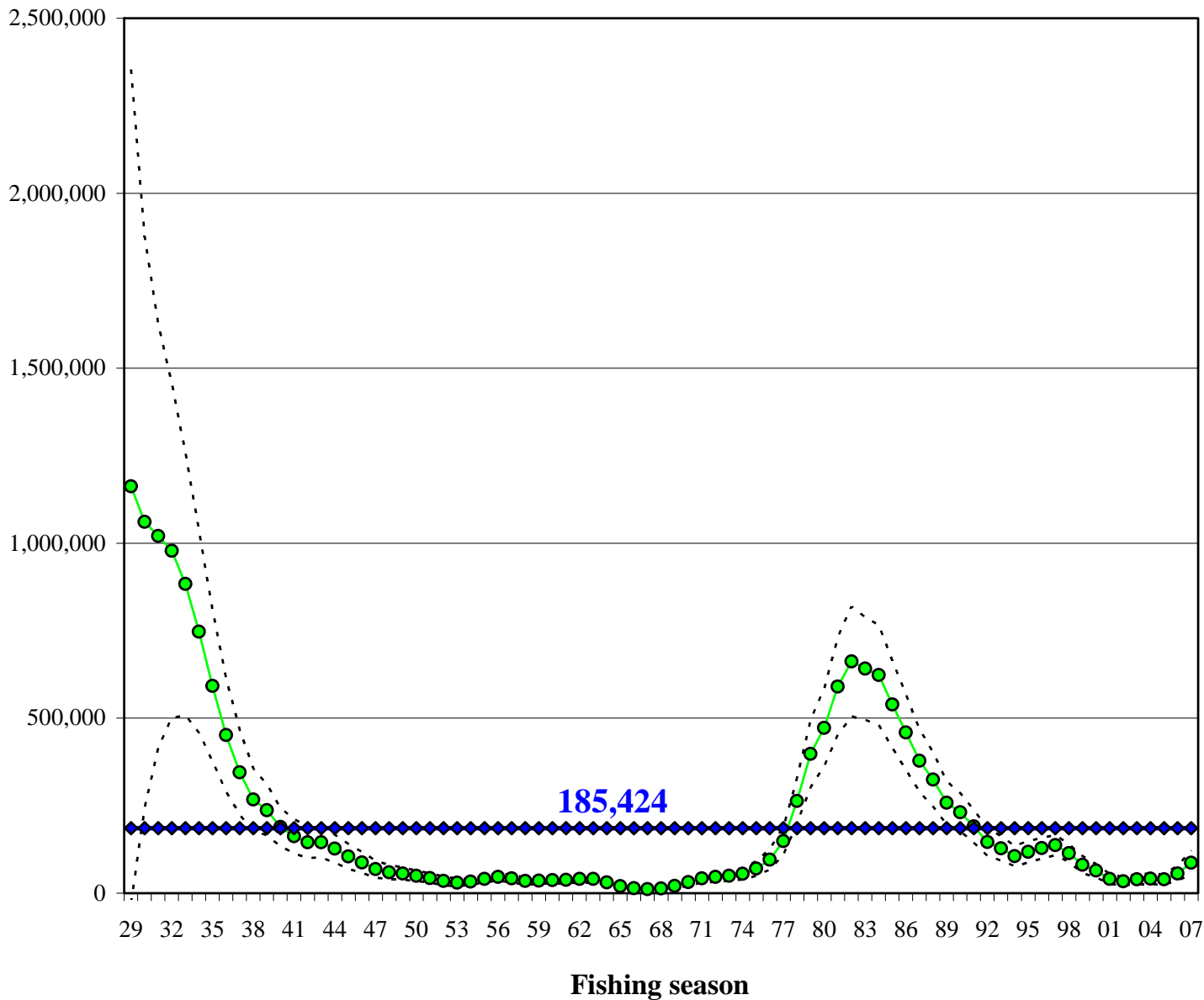


# *Assessment Model*

- *AGE-STRUCTURED ASSESSMENT PROGRAM  
(ASAP, Legault and Restrepo 1998)*
  
- *Major Change*
  - *2006 Sigma R: 0.25*
  
  - *2007 Sigma R: 0.70*

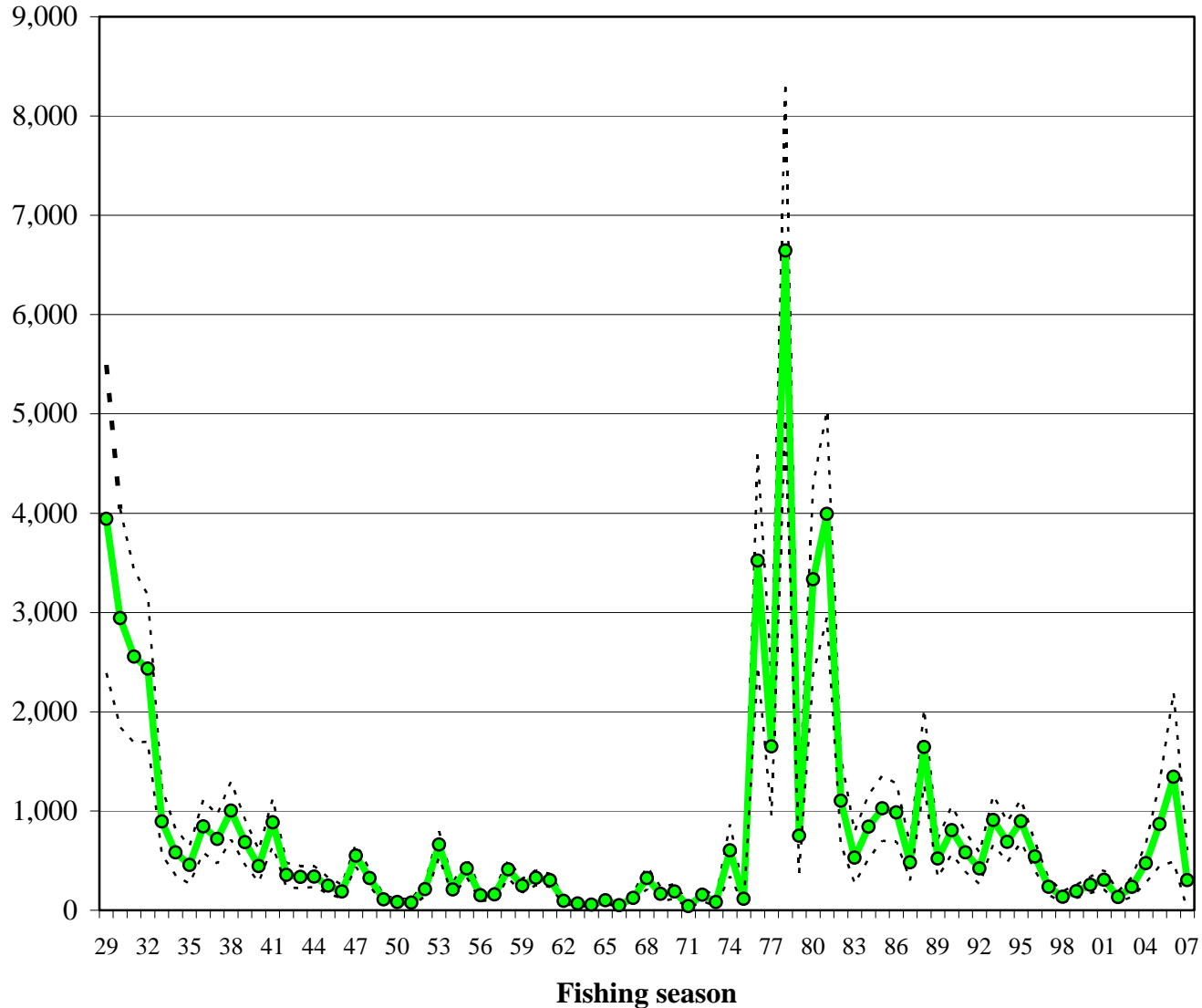
# *Spawning Stock Biomass*

*SSB (mt)*

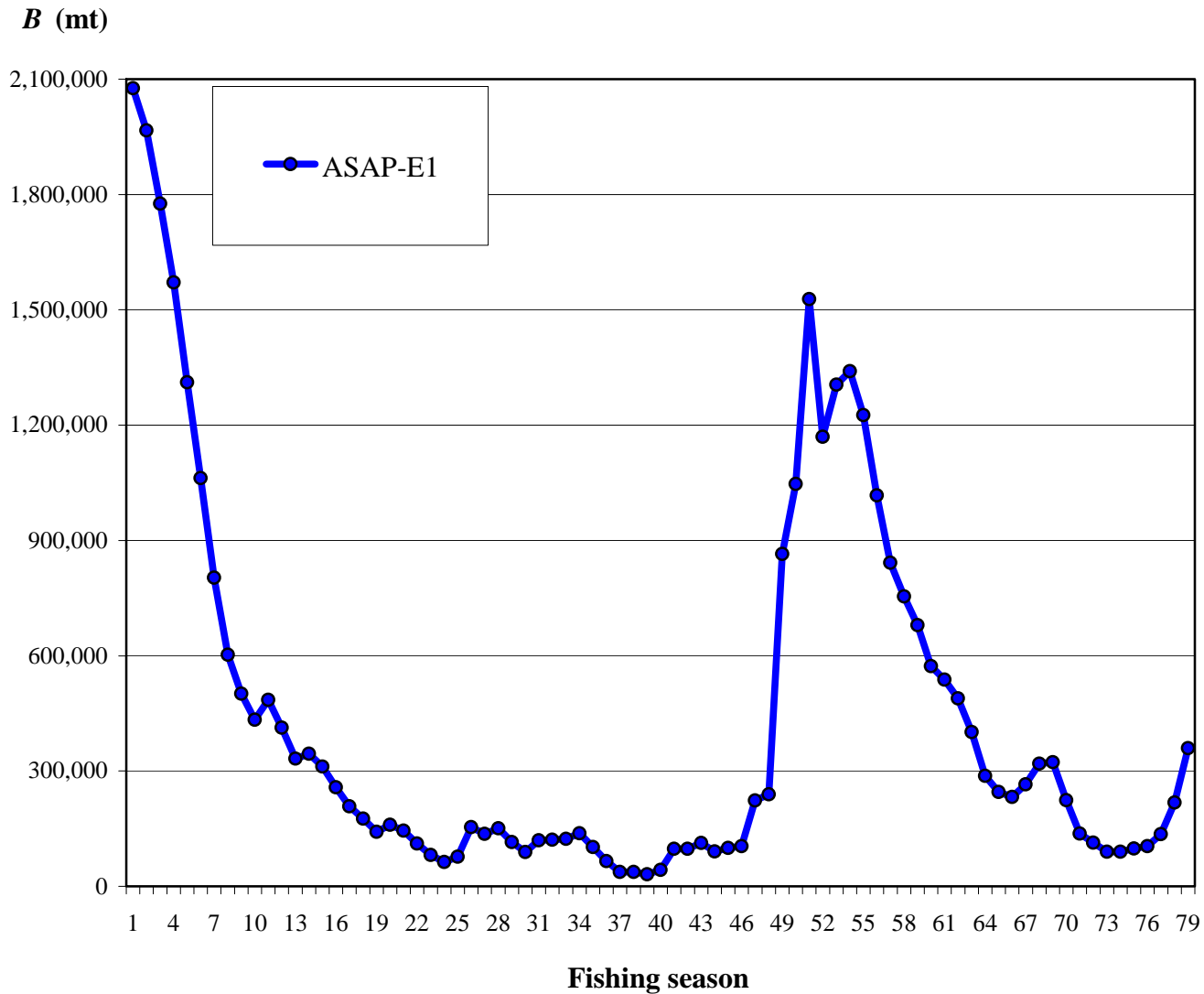


# *Abundance of Recruits (Age-0)*

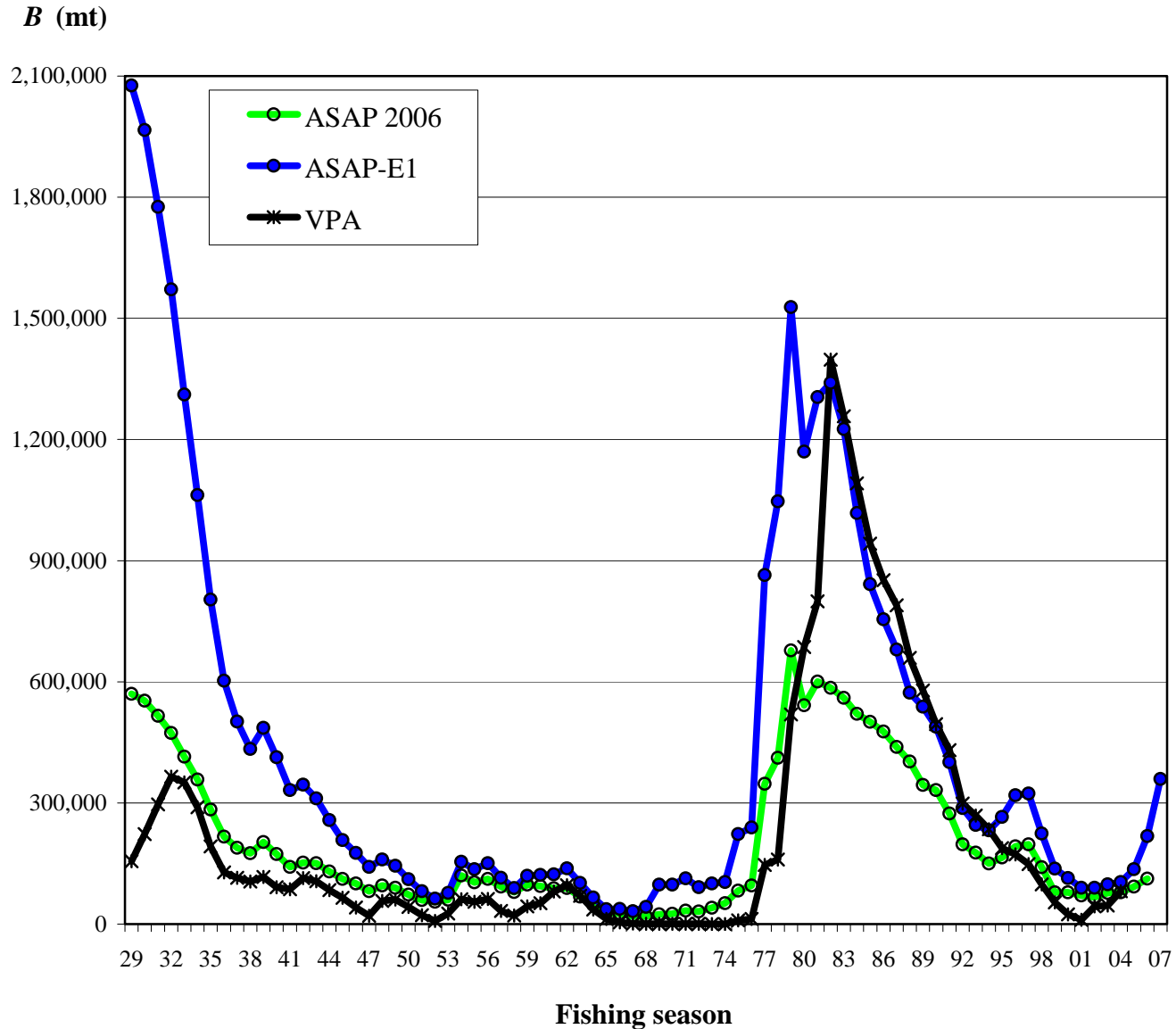
***R*** (millions of fish)



# *Age 1+ Biomass*



# Age 1+ Biomass

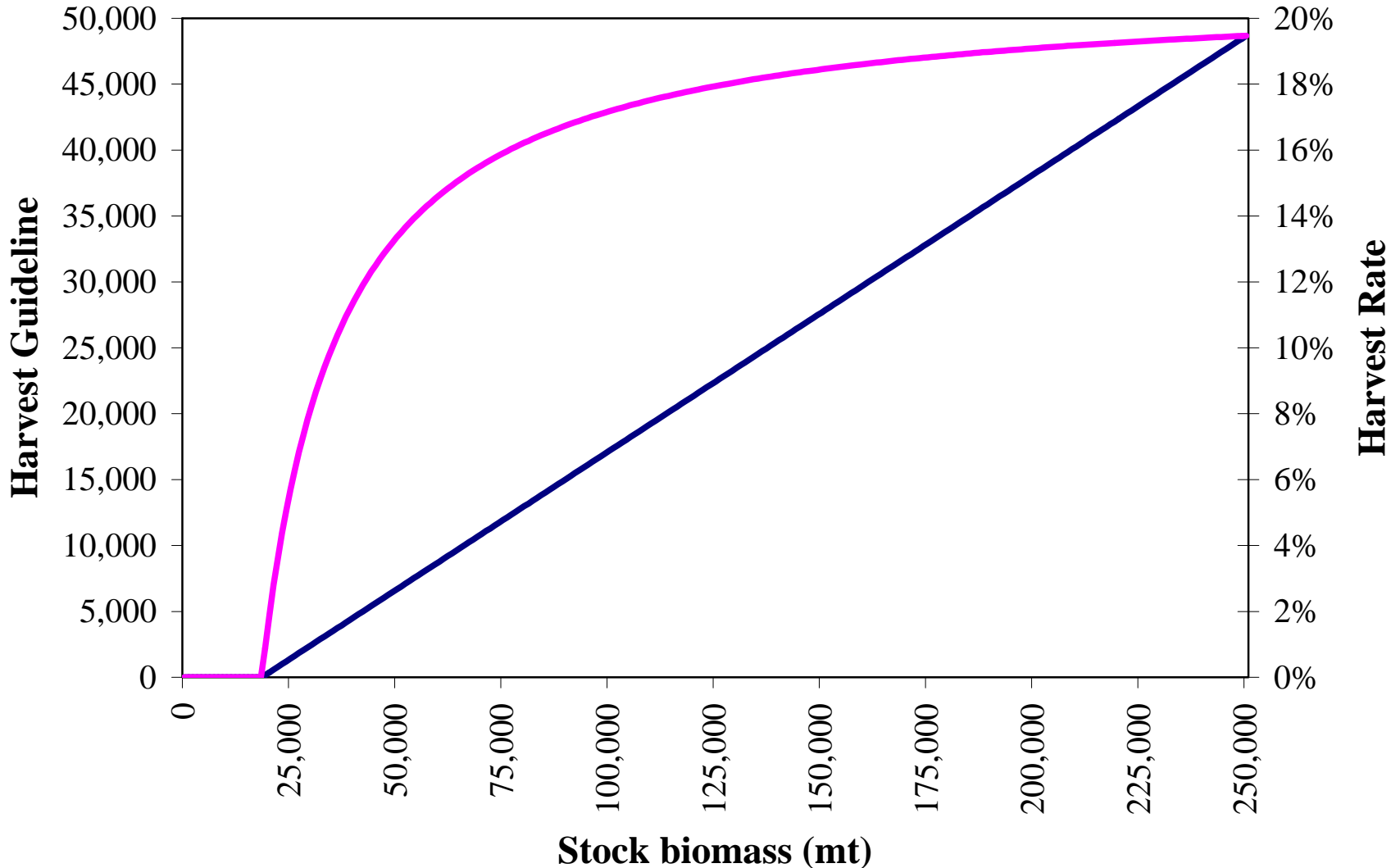


# MSY CONTROL RULE – FEDERAL FMP:

**Harvest Guideline = (Biomass<sub>1+</sub> – Cutoff) x Fraction x Distribution**

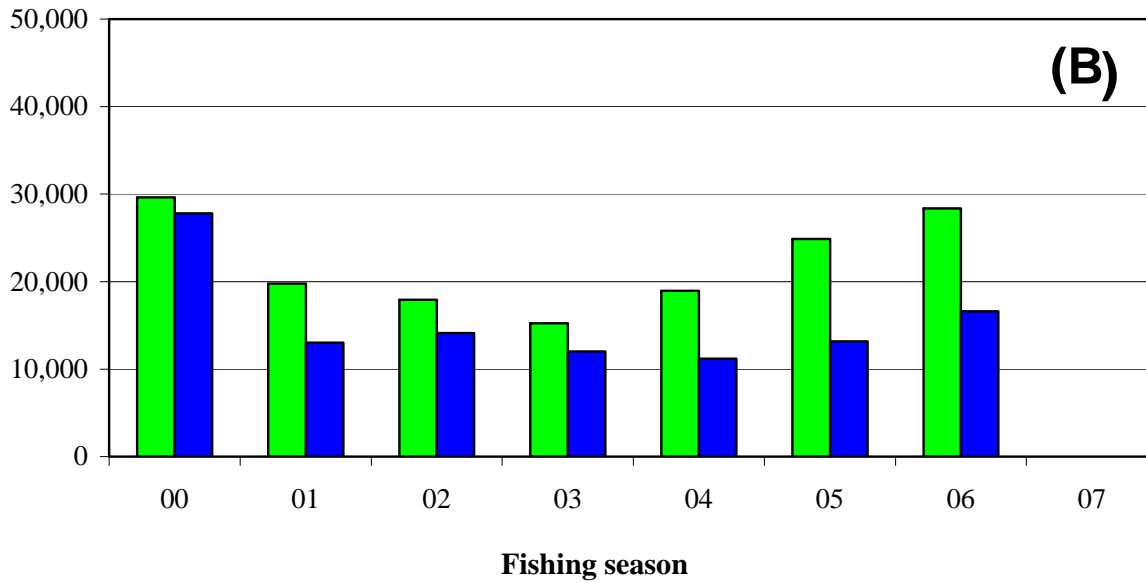
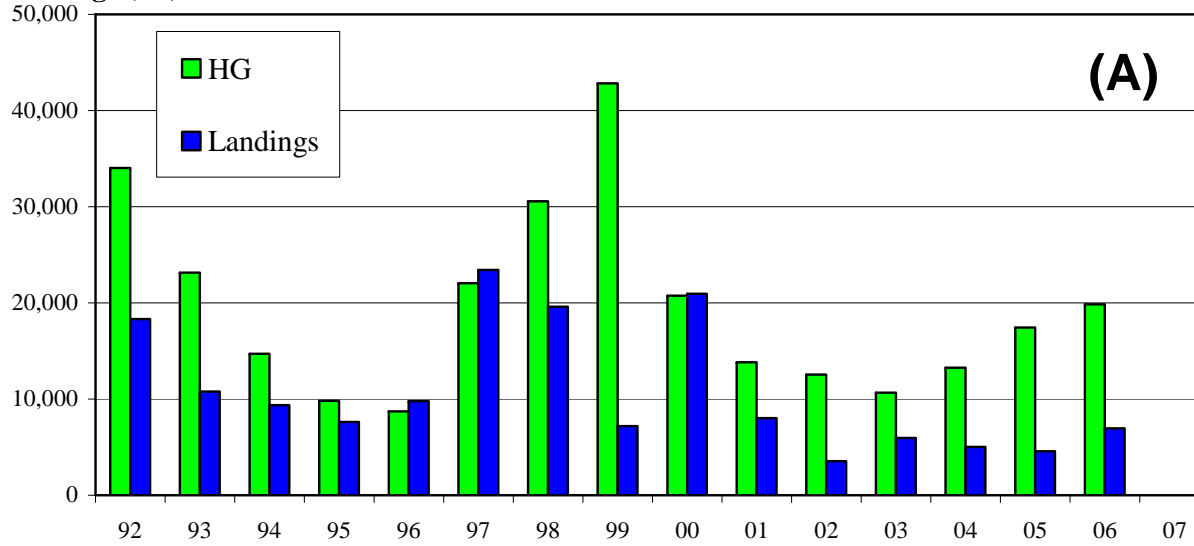
**Harvest Guideline = (Biomass<sub>1+</sub> – 18,200) x 0.30 x 0.70**

— Harvest Guideline — Harvest Rate



# *Landings and HGs*

Landings (mt)



Fishing season

# *Harvest Guideline ( $HARVEST_{07}$ ) for 2007-08*

$$HARVEST_{07} = (BIOMASS_{07} - CUTOFF) \bullet FRACTION \bullet DISTRIBUTION$$

$$HARVEST_{07} = (359,290 - 18,200) * 0.30 * 0.70$$

$$HARVEST_{07} = 71,629 \text{ mt}$$

# *Future Research and Data Needs*

- Continuation of effort to obtain from Mexico
  - Biological data
  - Fishery-independent survey data
  - CPFV logbook data from Mexico
- Re-examination of the MSY control rule for Pacific mackerel