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


NOAA Fisheries
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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;


- 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)

- Recreational Catch - Non-CPFV
- Recreational Catch - CPFV
- Mexico Commercial Catch
- USA Commercial Catch

Fishing season

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)**

Fishing season

- 0
- 500,000
- 1,000,000
- 1,500,000
- 2,000,000
- 2,500,000

185,424
Abundance of Recruits (Age-0)
Age 1+ Biomass

$B$ (mt)

Fishing season

ASAP-E1
Age 1+ Biomass

B (mt)

- ASAP 2006
- ASAP-E1
- VPA

Fishing season
**MSY CONTROL RULE – FEDERAL FMP:**

Harvest Guideline = \((\text{Biomass}_{i+} - \text{Cutoff}) \times \text{Fraction} \times \text{Distribution}\)

Harvest Guideline = \((\text{Biomass}_{i+} - 18,200) \times 0.30 \times 0.70\)
Landings and HGs

(A) Landings (mt)

(B) Fishing season
Harvest Guideline \((\text{HARVEST}_{07})\) for 2007-08

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\text{HARVEST}_{07} = (\text{BIOMASS}_{07} - \text{CUTOFF}) \cdot \text{FRACTION} \cdot \text{DISTRIBUTION}
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\text{HARVEST}_{07} = (359,290 - 18,200) \cdot 0.30 \cdot 0.70
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\text{HARVEST}_{07} = 71,629 \text{ mt}
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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