**Comisión Interamericana del Atún Tropical**
**Inter-American Tropical Tuna Commission**
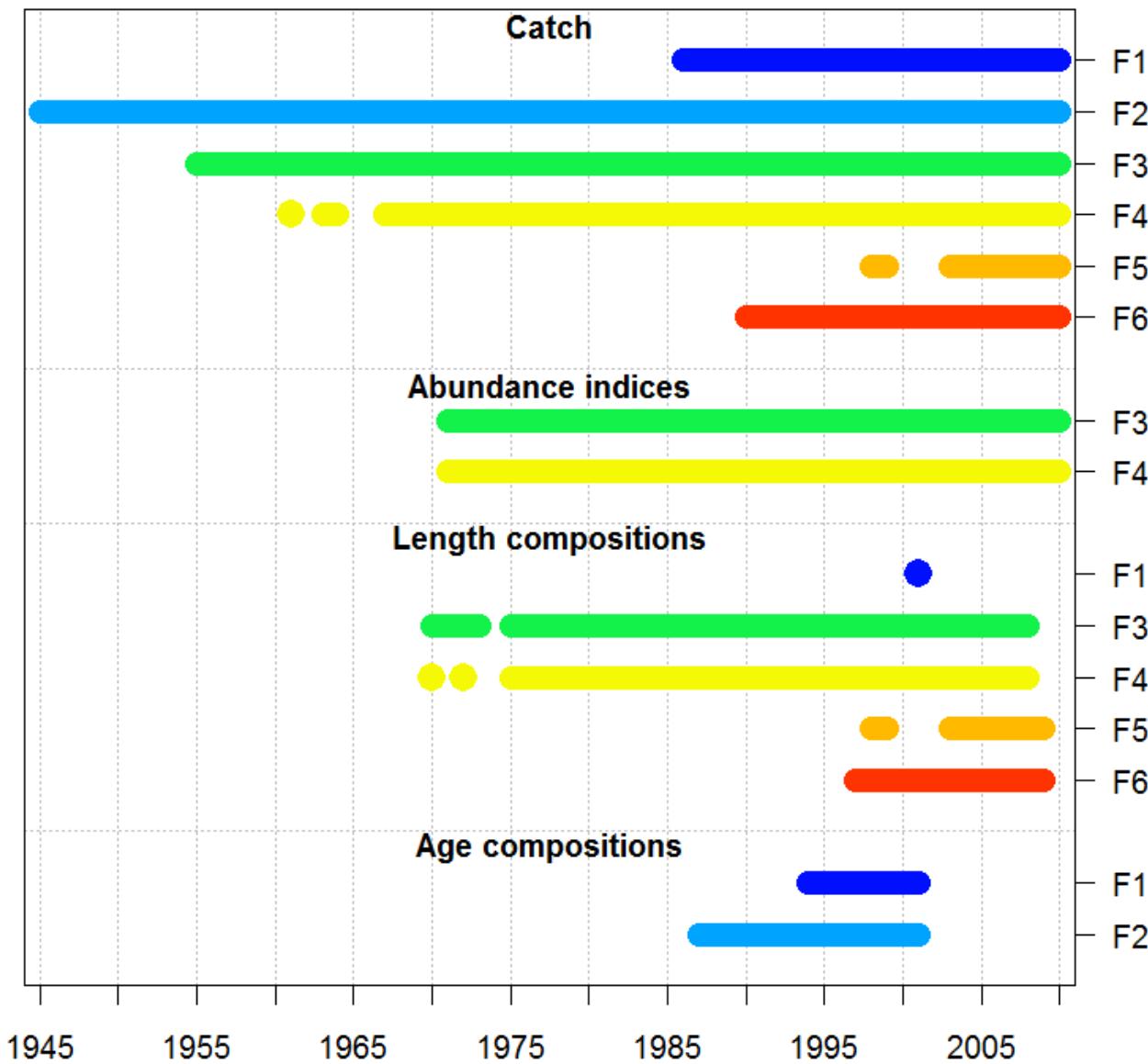
Swordfish
2010

Key Conclusions
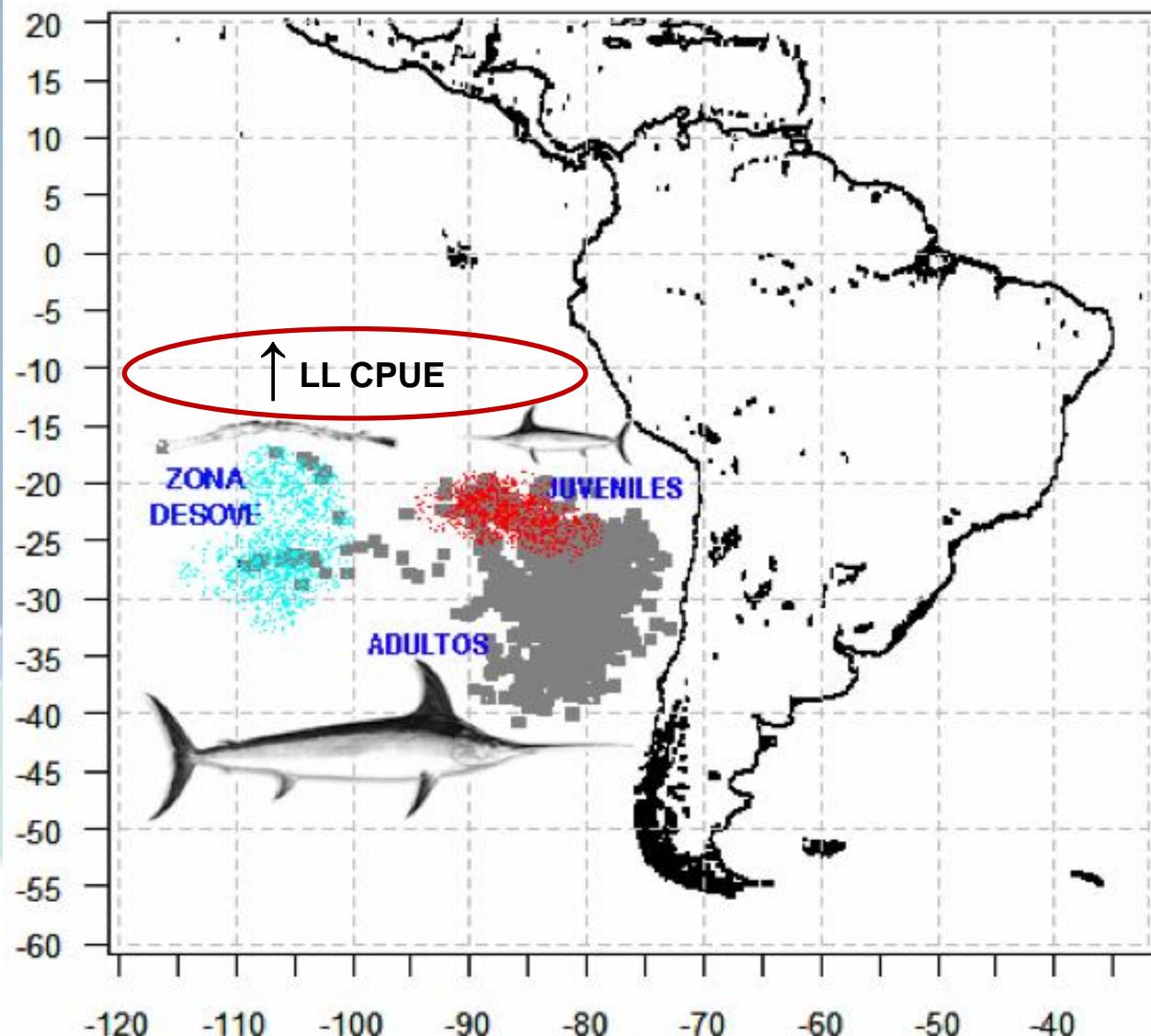
1. **Not experiencing overfishing & not overfished**

2. **SBR ~ 1.45**

3. **Recent catch ~ 14,300; MSY ~ 25,000**

4. **Recent high recruitments (2007 – 2010)**

5. **Projections**

   a. **Assume: Current Eff & Ave Recruits**

   b. **Results:**

   a. **Decreasing catch rates**

      b. **Decreasing catch**
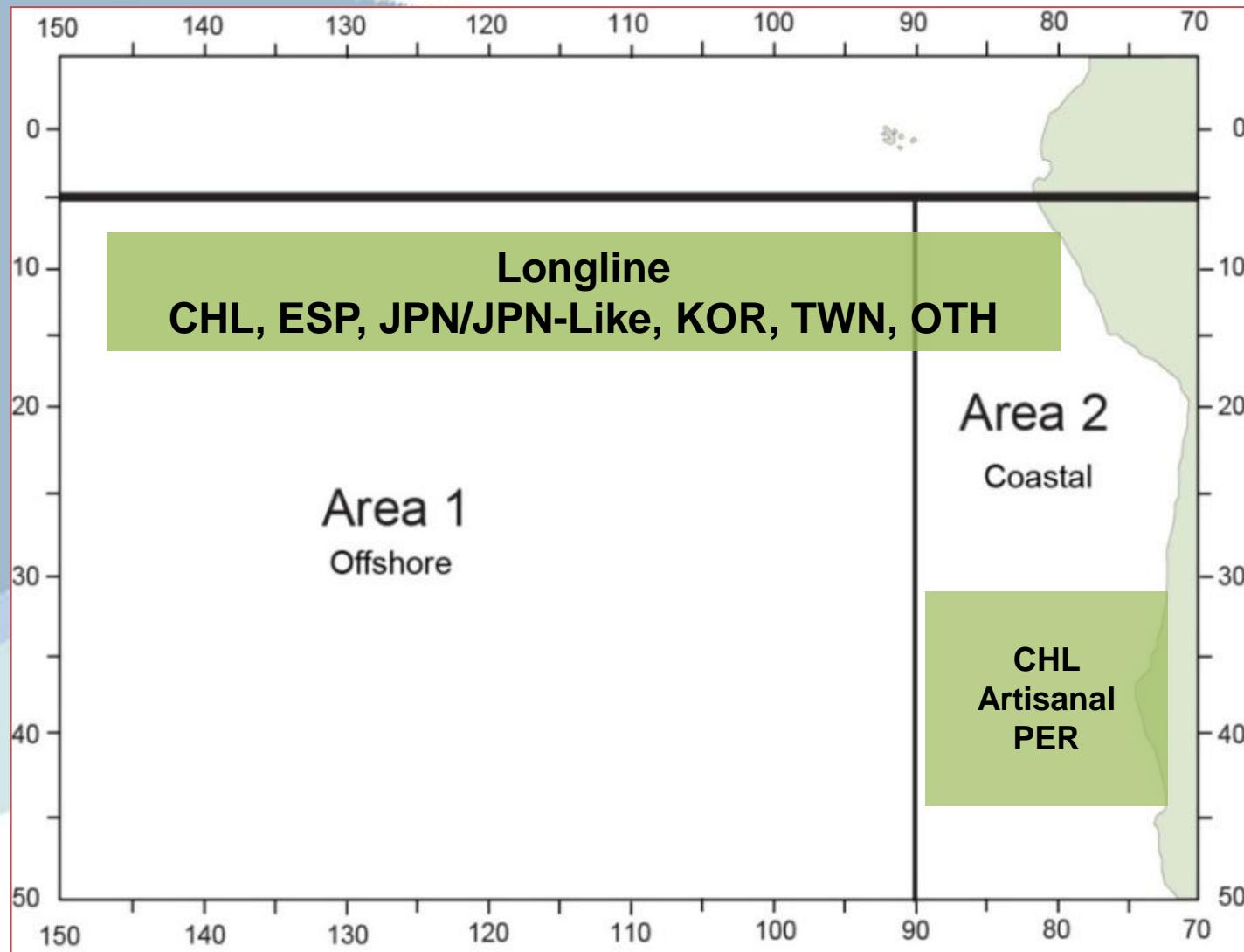
Available Data

Distribution by Life-stage

Assessment Area Structure
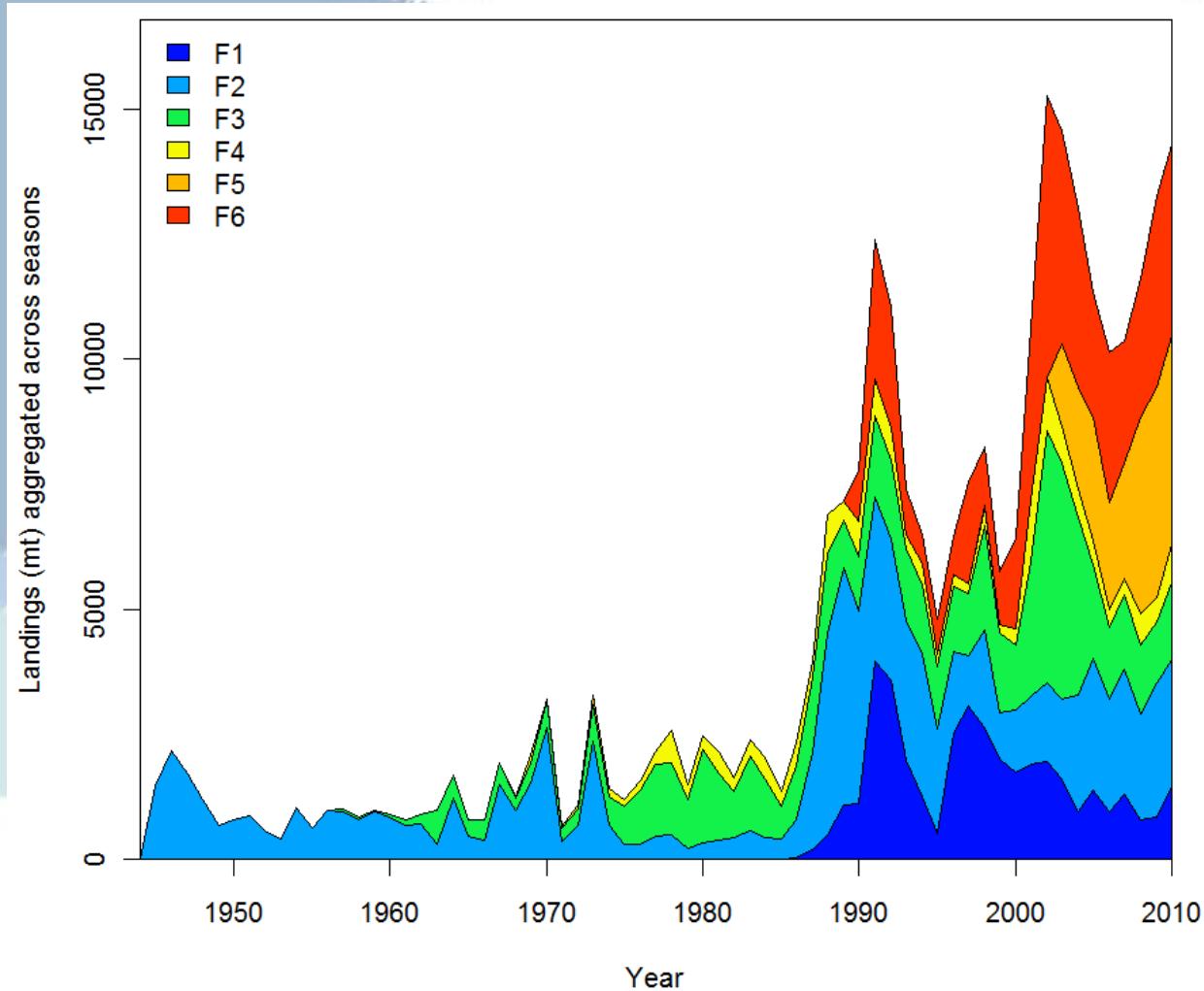
Catch by Fishery

Longline

Chile
- **F1 – Offshore**
- **F2 – Coast**

Japan + Oth
- **F3 – Offshore F4**
- **- Coastal**

Spain
- **F5 – Offshore**
- **F6 – Coastal**
    - **Pre-2000**
    - **Post-1999**
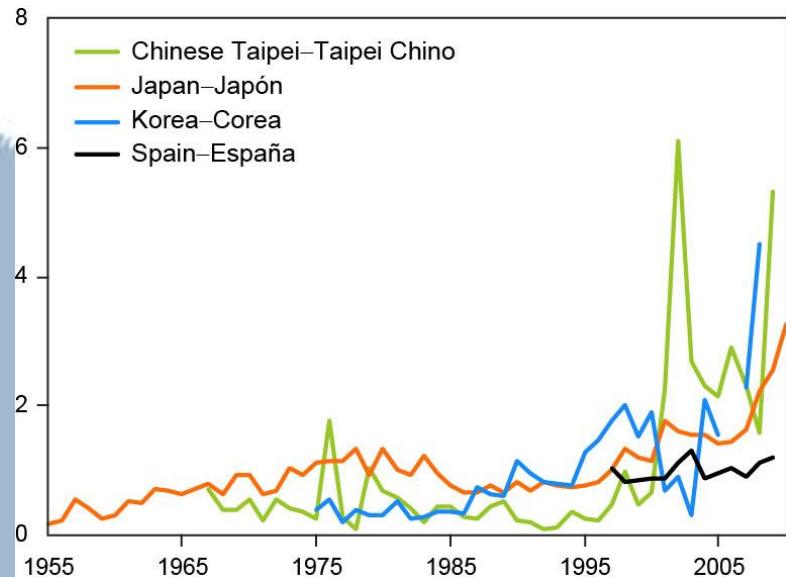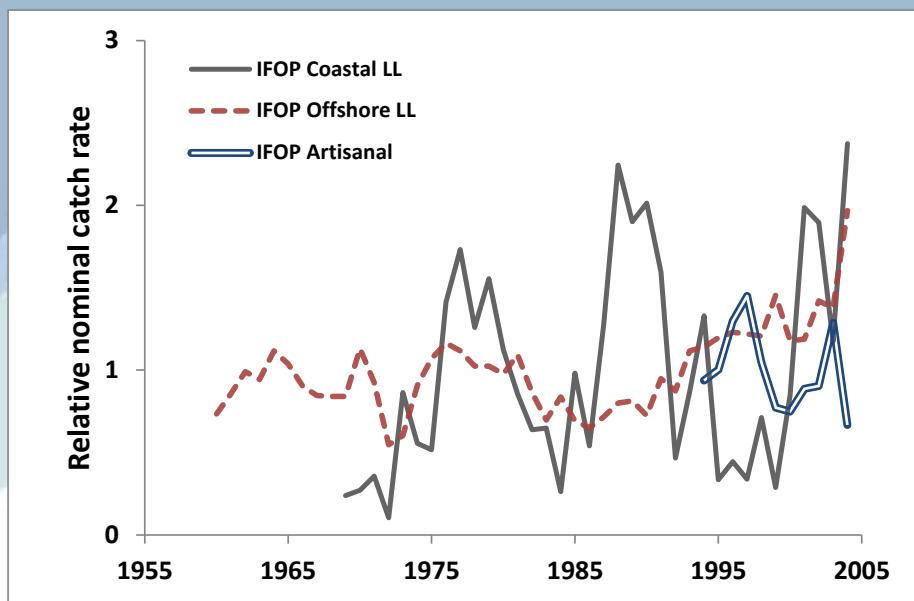
SS 3.20b Model Structure

|	
Time Period	1945 – 2010
Two genders	No hermaphrodites
Seasonal	Spawning Qtr 1 & 2
One area	Offshore + Coastal Fisheries
Natural mortality (M)	0.4
S-R	BH, h = 1.0
Growth	von B w/fixed K & L_{inf} by gender
Length at Age 1	Fixed by Gender
CV of Length at Age	Fixed = 1.0
Max Age (accumulator)	15 years
Indices of Abundance	F3 & F4 (CVs fixed = 0.2)
Selectivities	F3, F4, F5 & F6 dome shaped
	F1 & F2 asymptotic
	F6 time blocks < 2000 & > 1999
Non-seasonal data	Assigned to Qtr 2

Catch Rates

Nominal Catch Rates
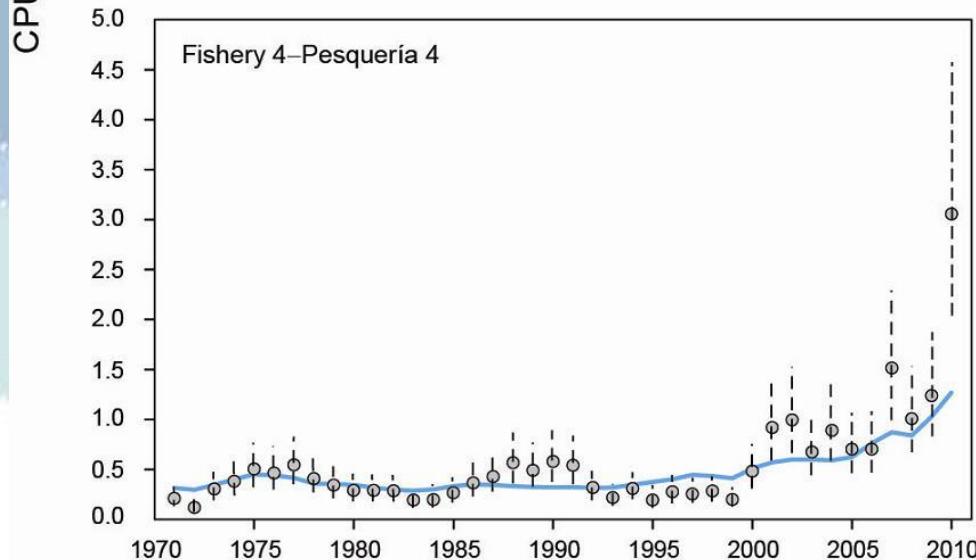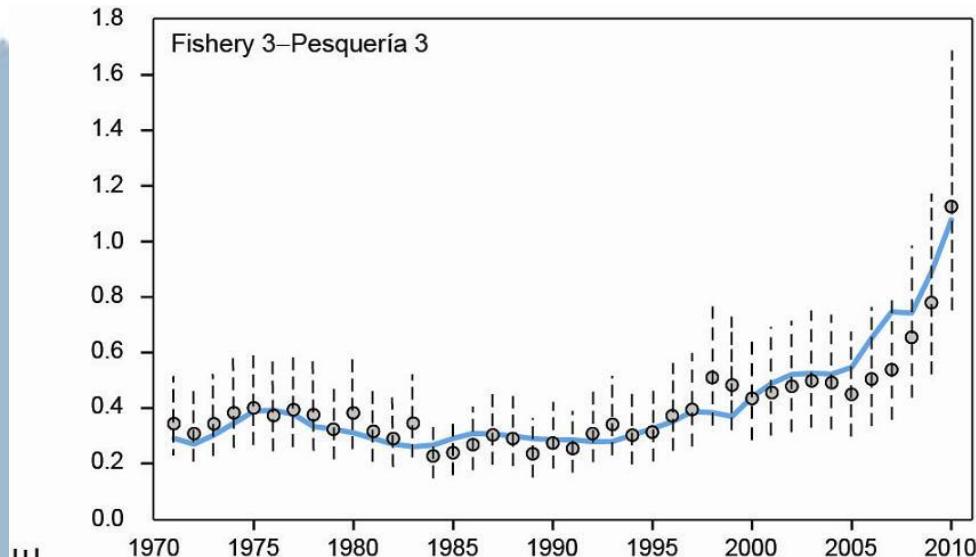
**Not used to fit model**
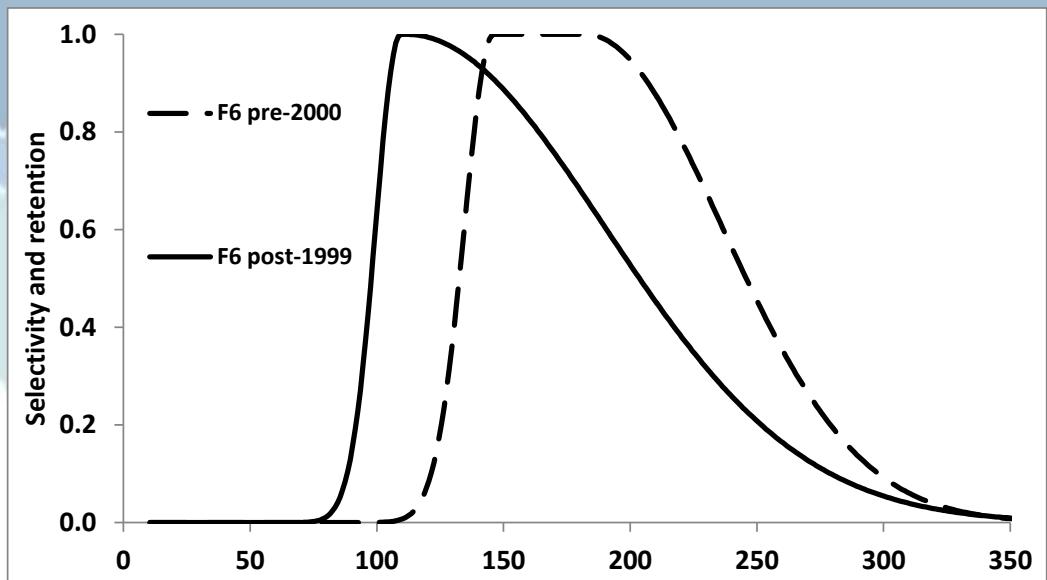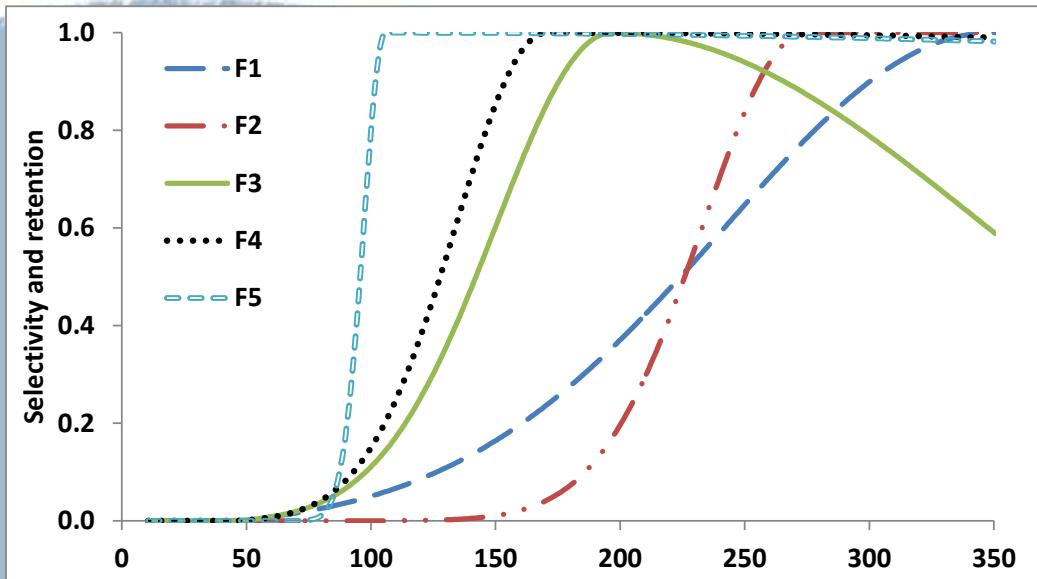
# Fitted CPUE: Standardized JPN LL

Offshore
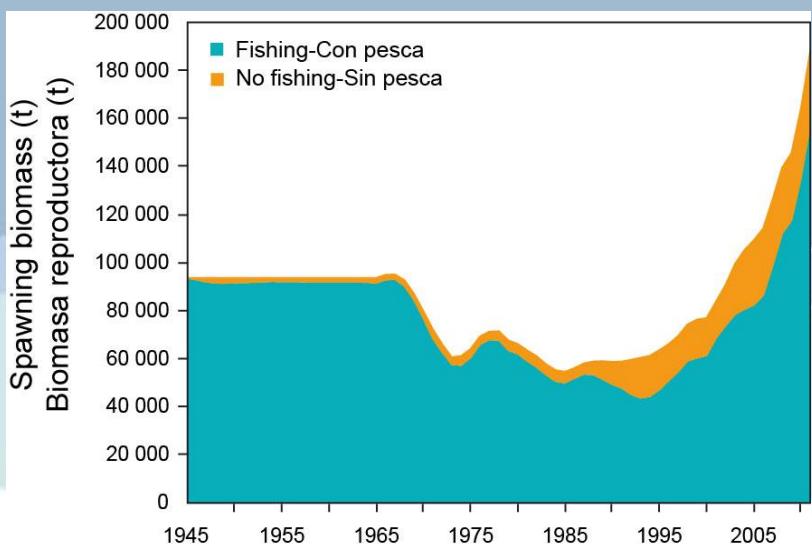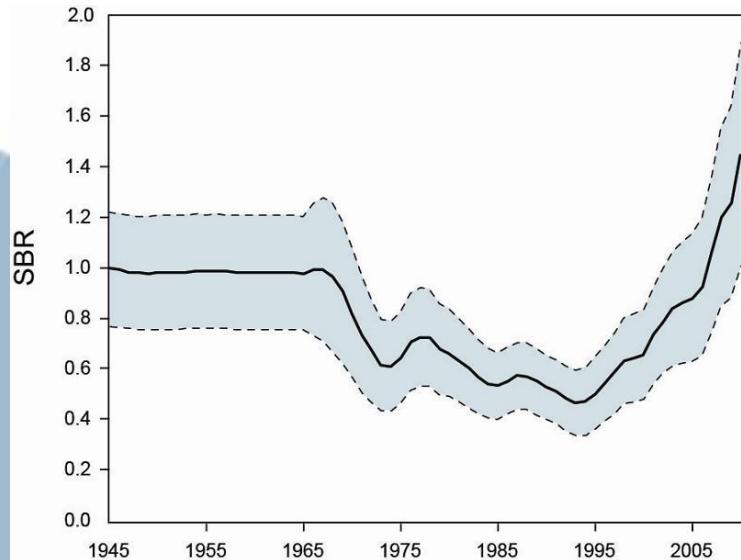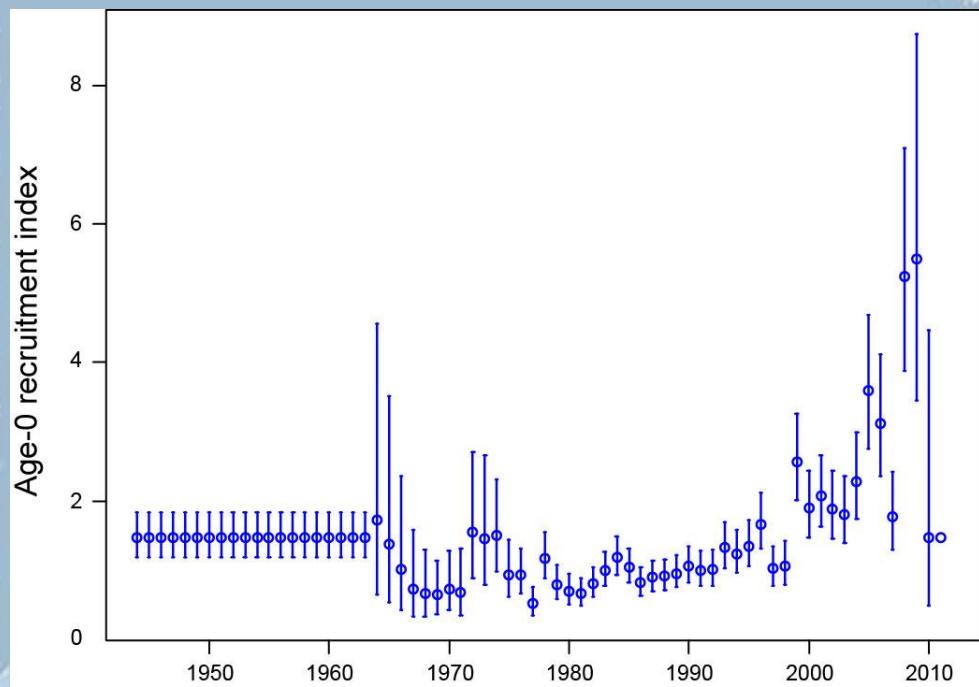
Coastal
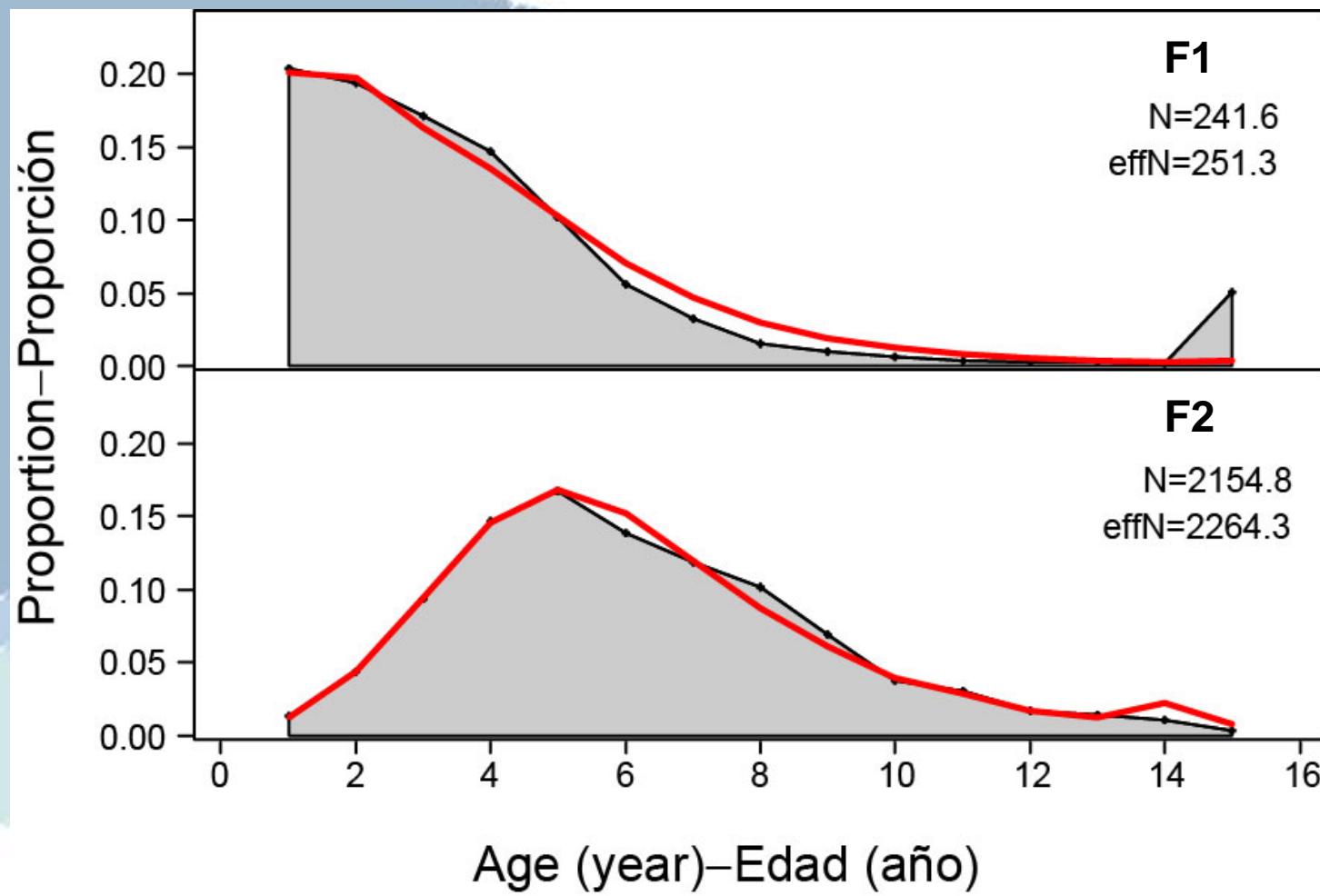
Model fit: Selectivities
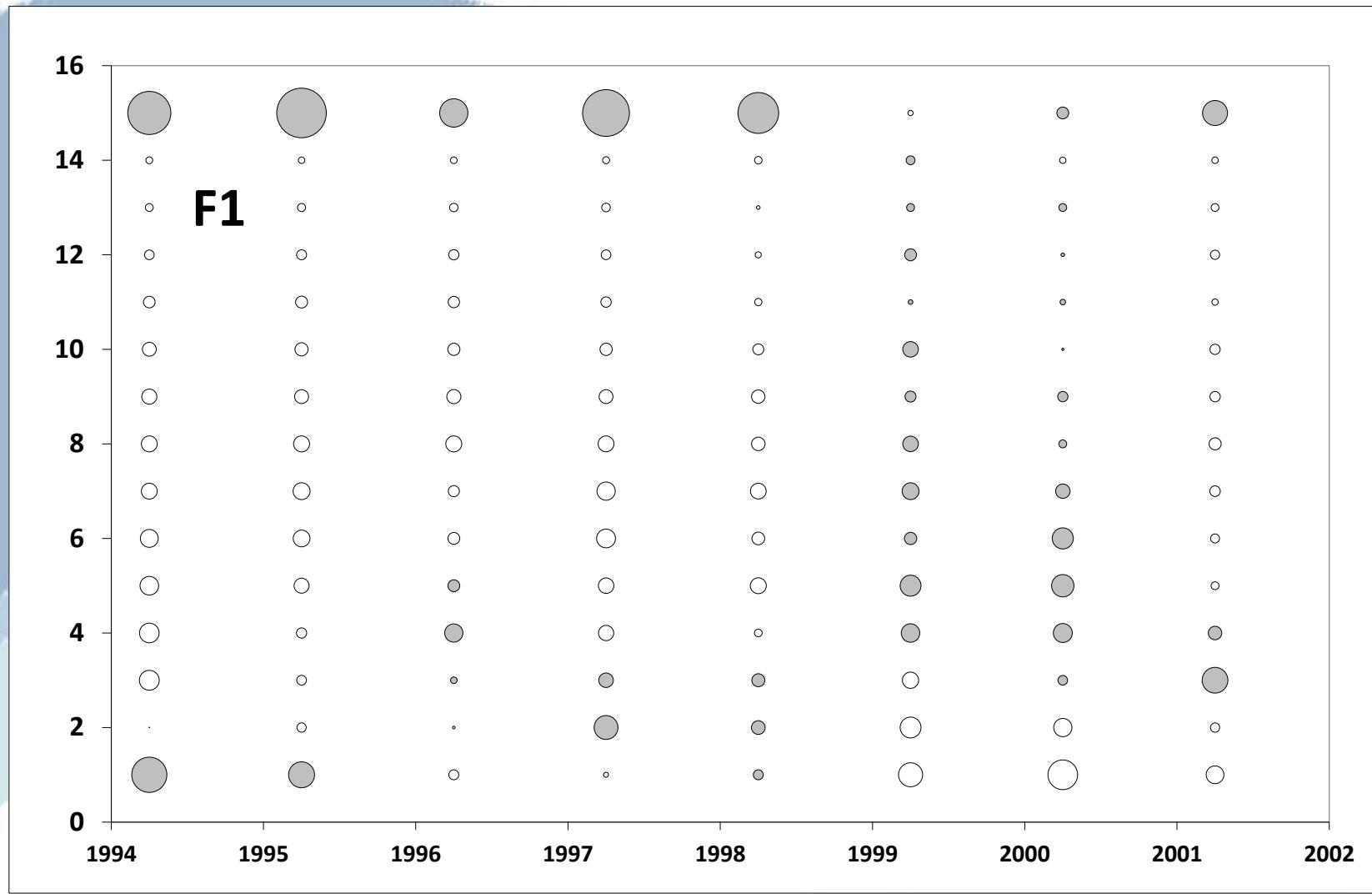
Spawning and Recruitment
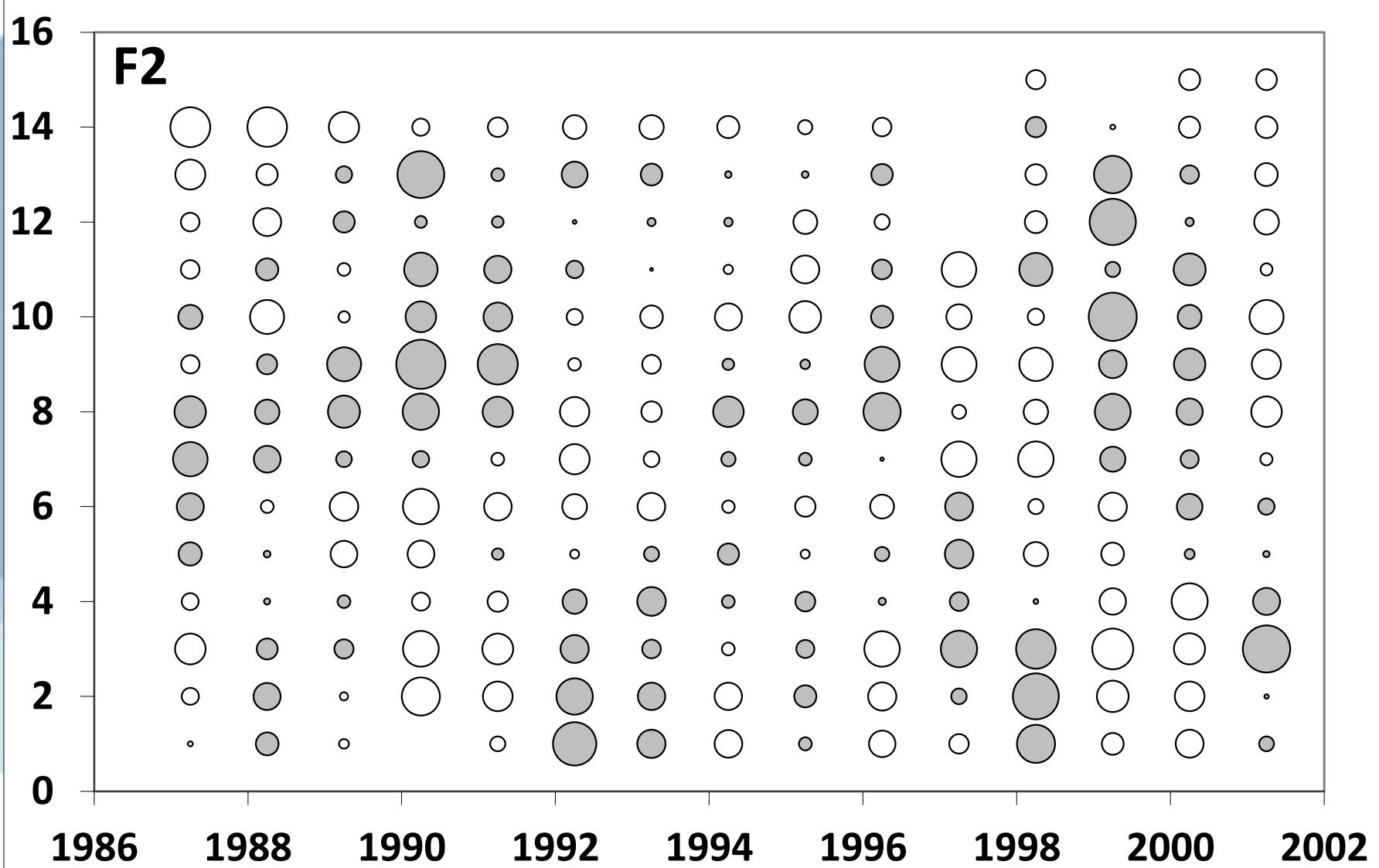
Fit to Age-frequency
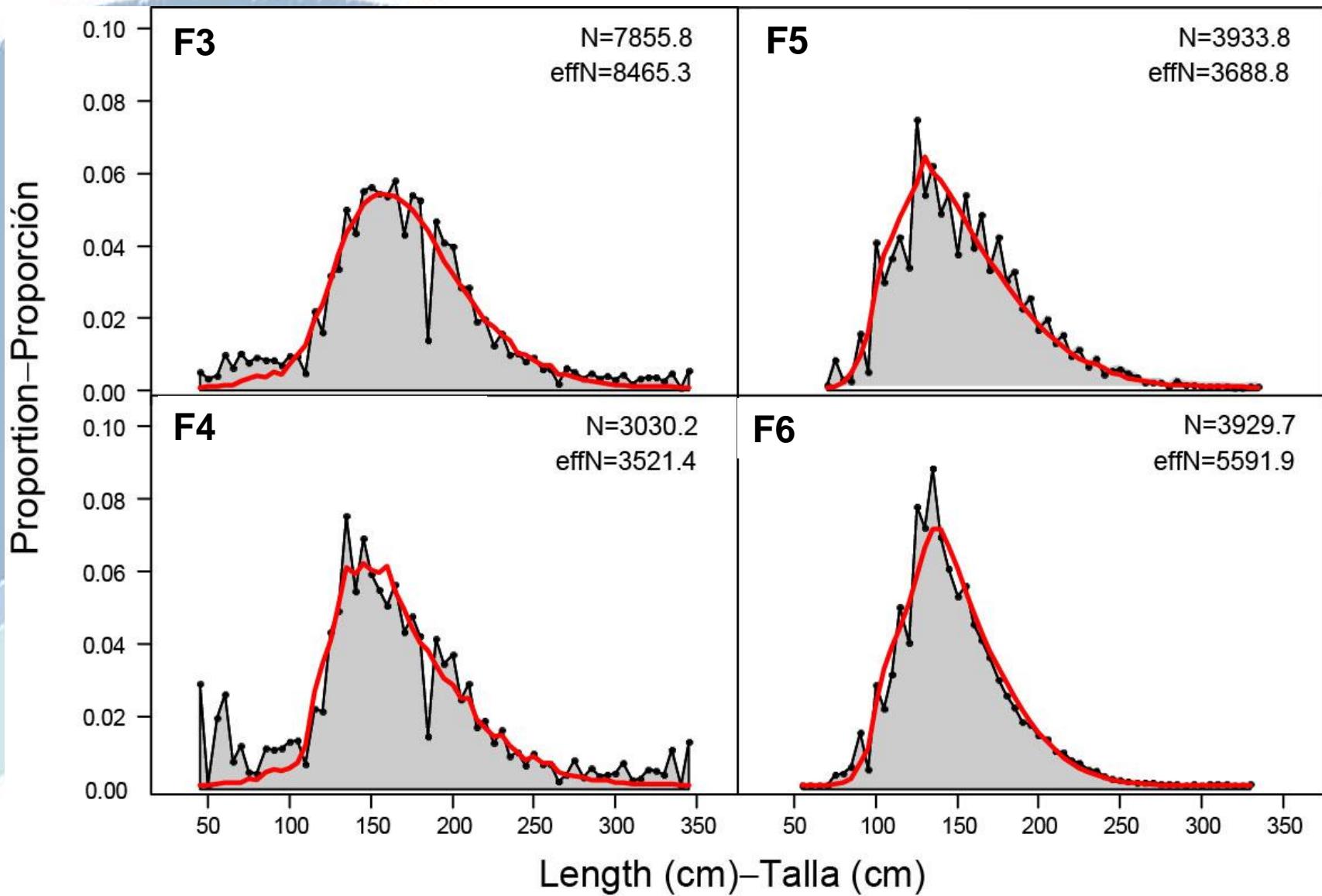
Age-frequency Residuals
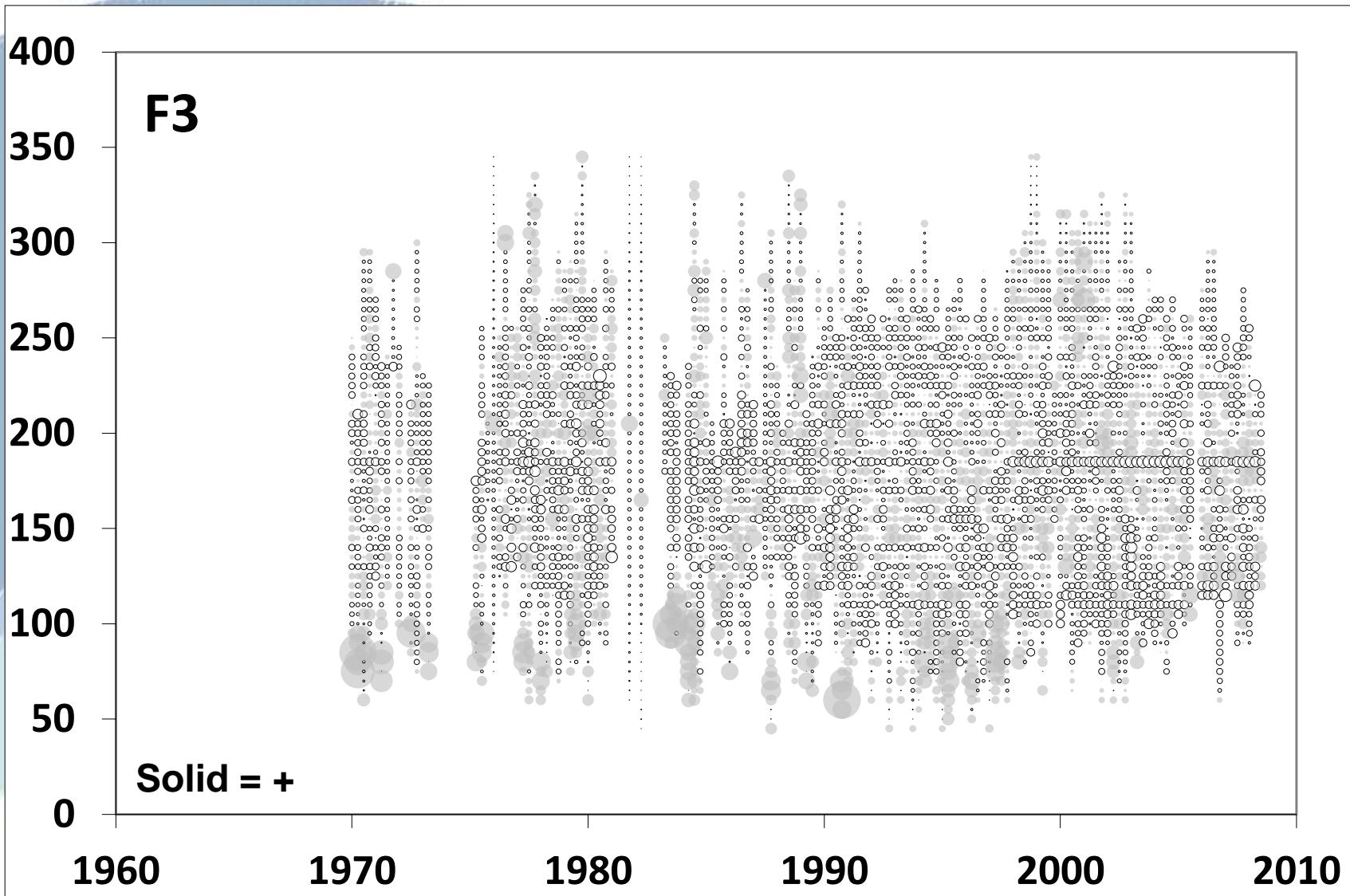
# Age-frequency Residuals
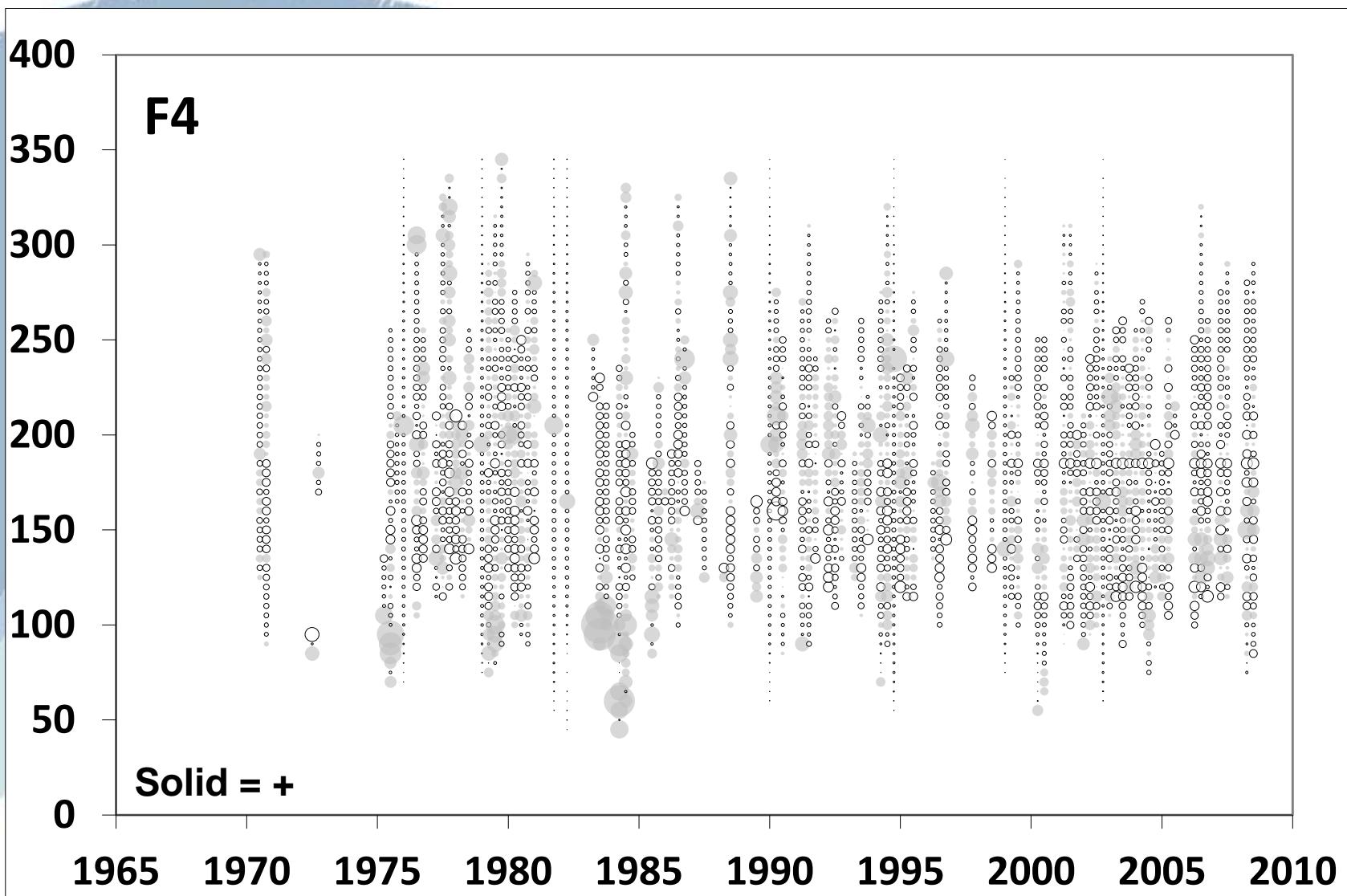
Fit to Length-frequency
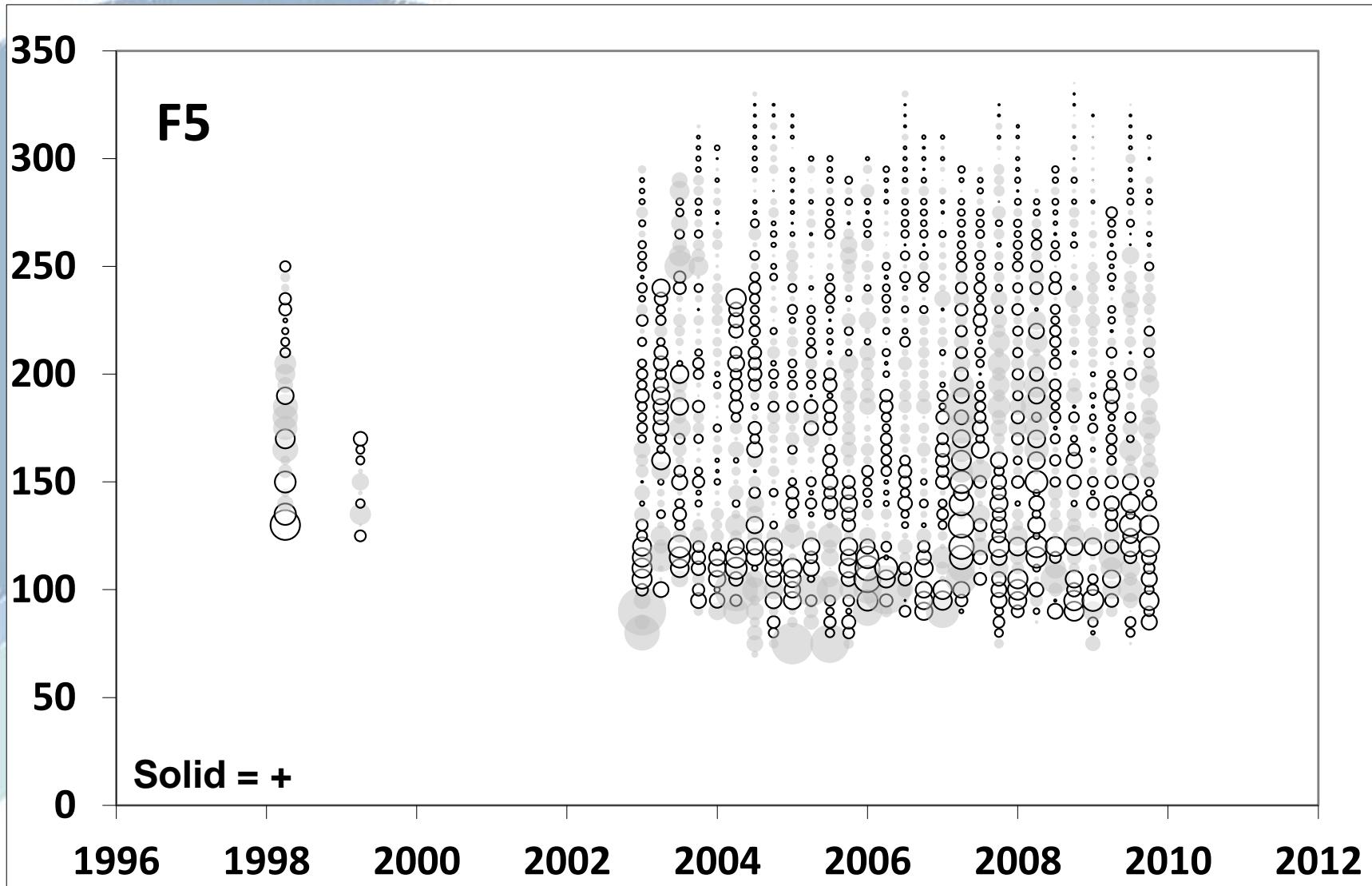
Length-frequency Residuals
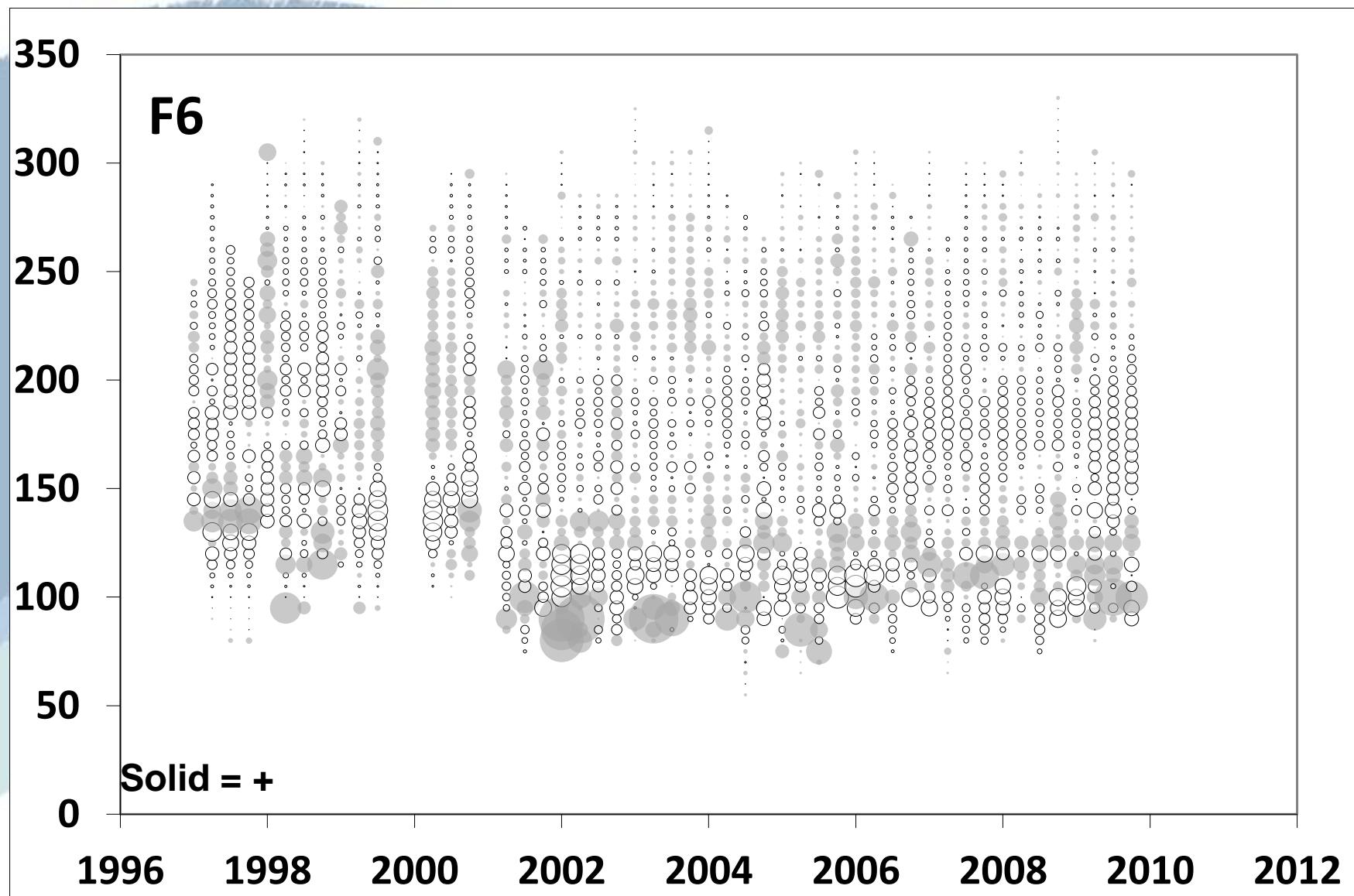
F3

Solid = +

Length-frequency Residuals

**F4**

Solid = +

Length-frequency Residuals

F5

Solid = +

# Length-frequency Residuals

F6

Solid = +
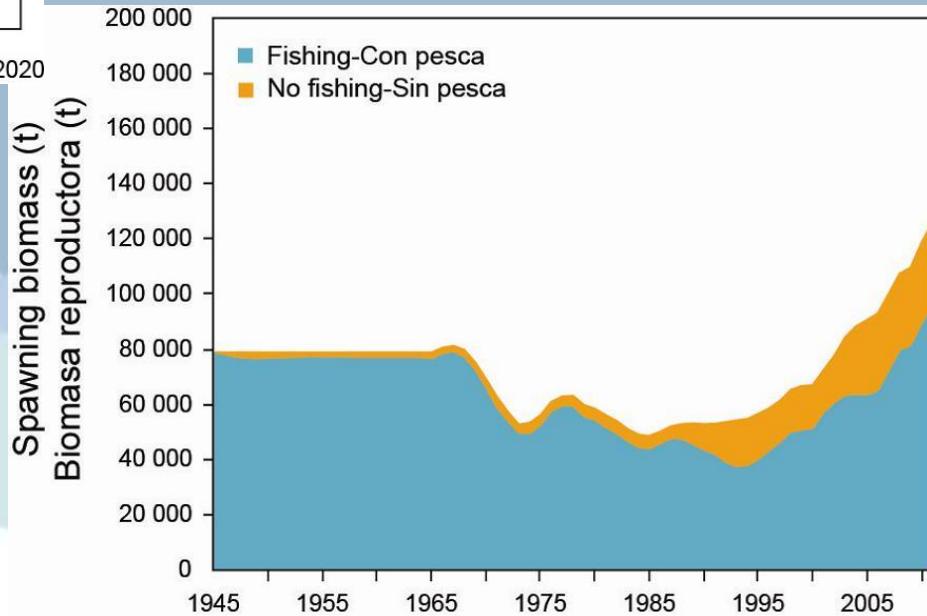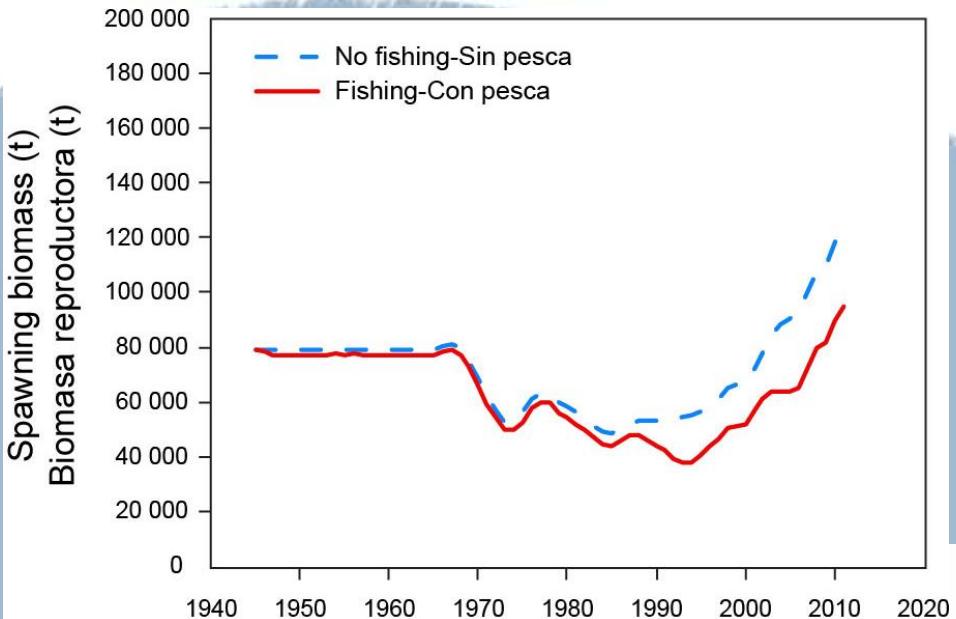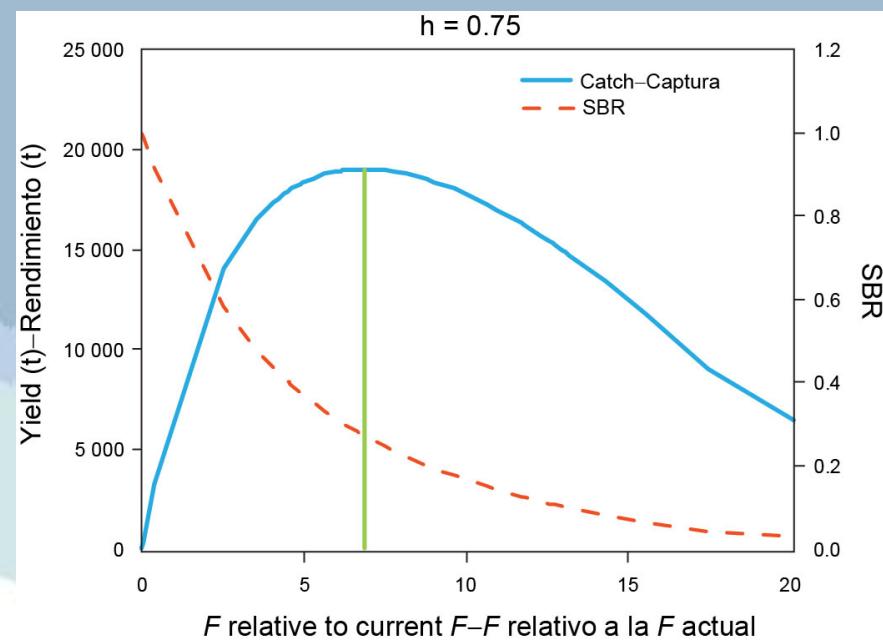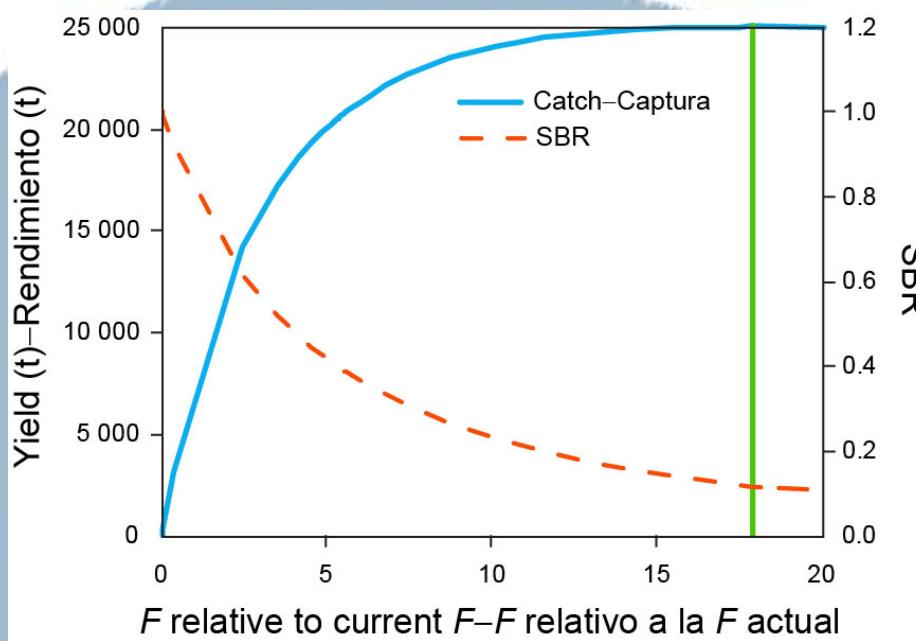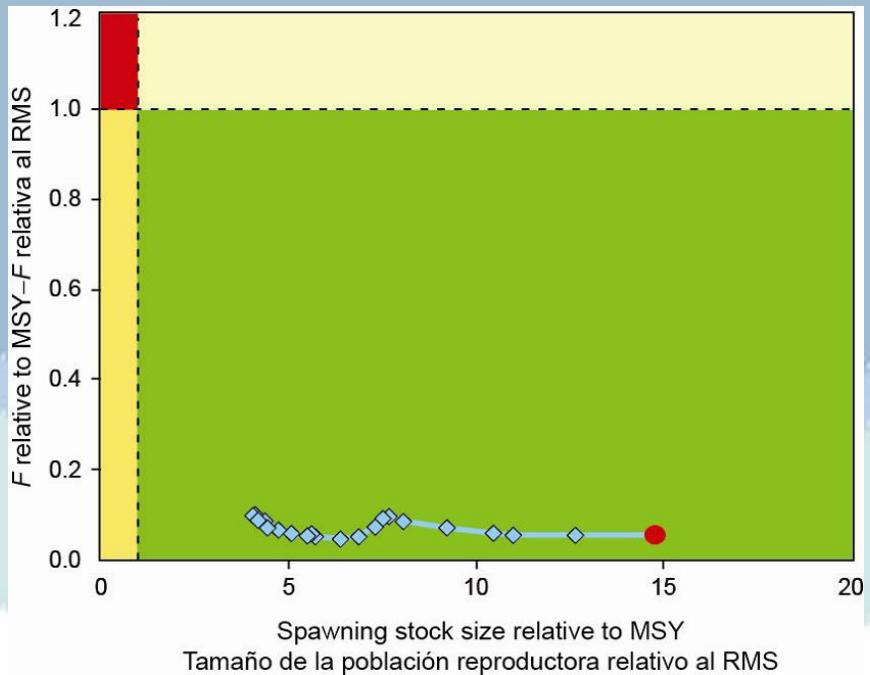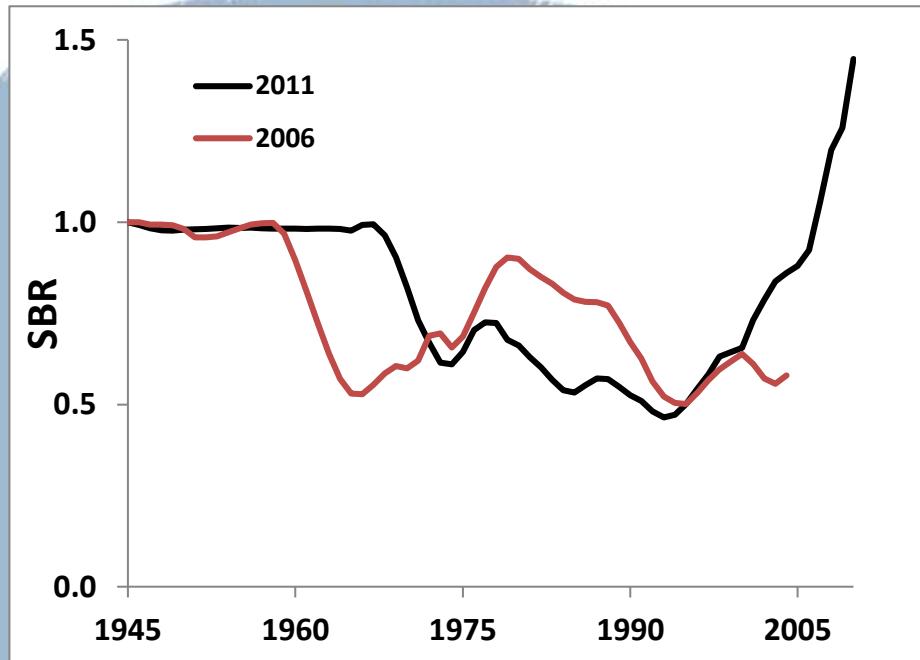
Fit without Recent CPUE

Yield & SBR vs. F-multiplier
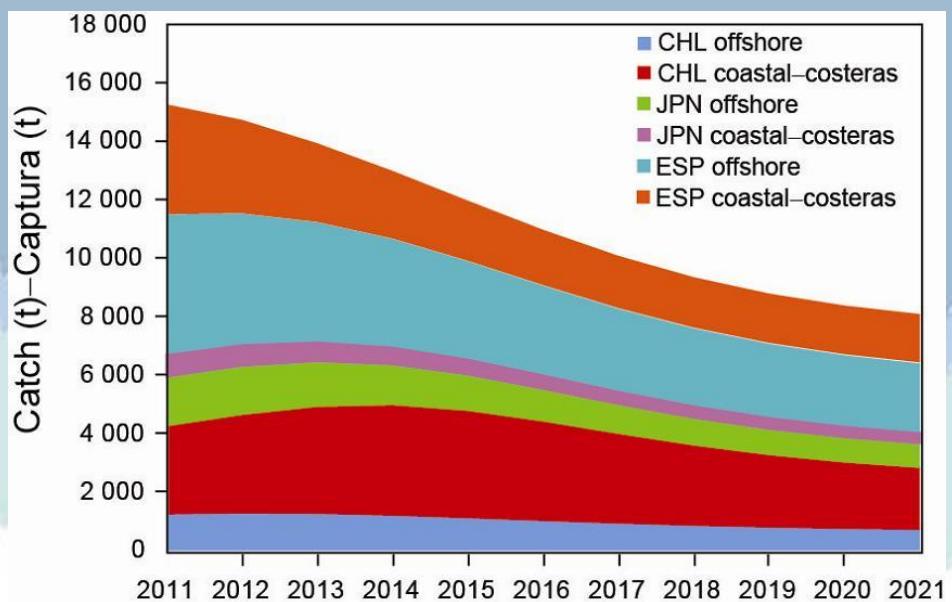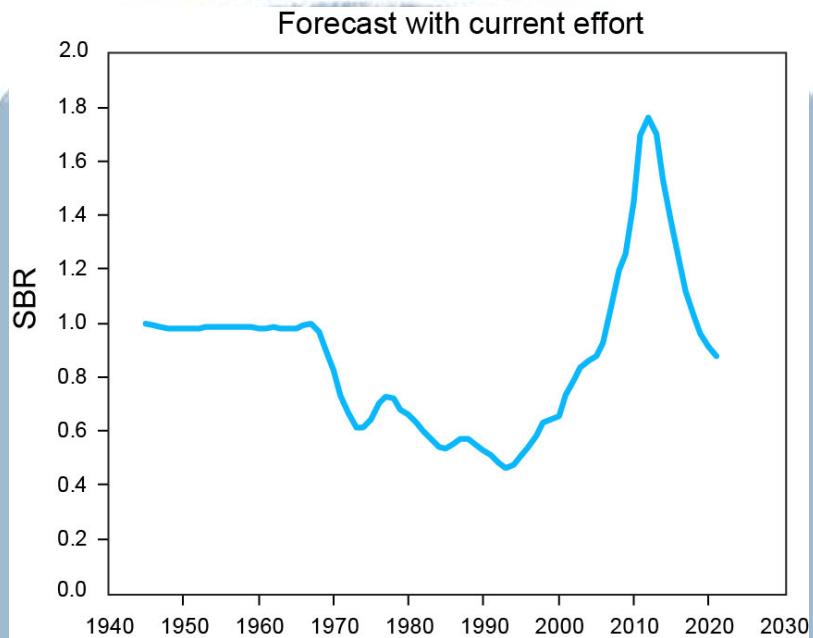
SBRs & Current Kobe

MSY-based Parameters

Estimate – Estimación	Assessment – Evaluación	$h = 0.75$	2007-2010 cpue excluded
MSY	25,044	19,029	21,046
B_{MSY}	40,782	72,717	34,111
S_{MSY}	10,705	26,772	8,920
B_{MSY}/B_0	0.20	0.34	0.20
S_{MSY}/S_0	0.11	0.27	0.11
C_{RECENT}/MSY	0.57	0.75	0.68
B_{RECENT}/B_{MSY}	10.40	5.14	6.40
S_{RECENT}/S_{MSY}	14.76	5.99	10.68
F_{mult}	17.92	6.86	11.67

The Next 10 Years

Forecast with current effort

2010 Swordfish

Questions?