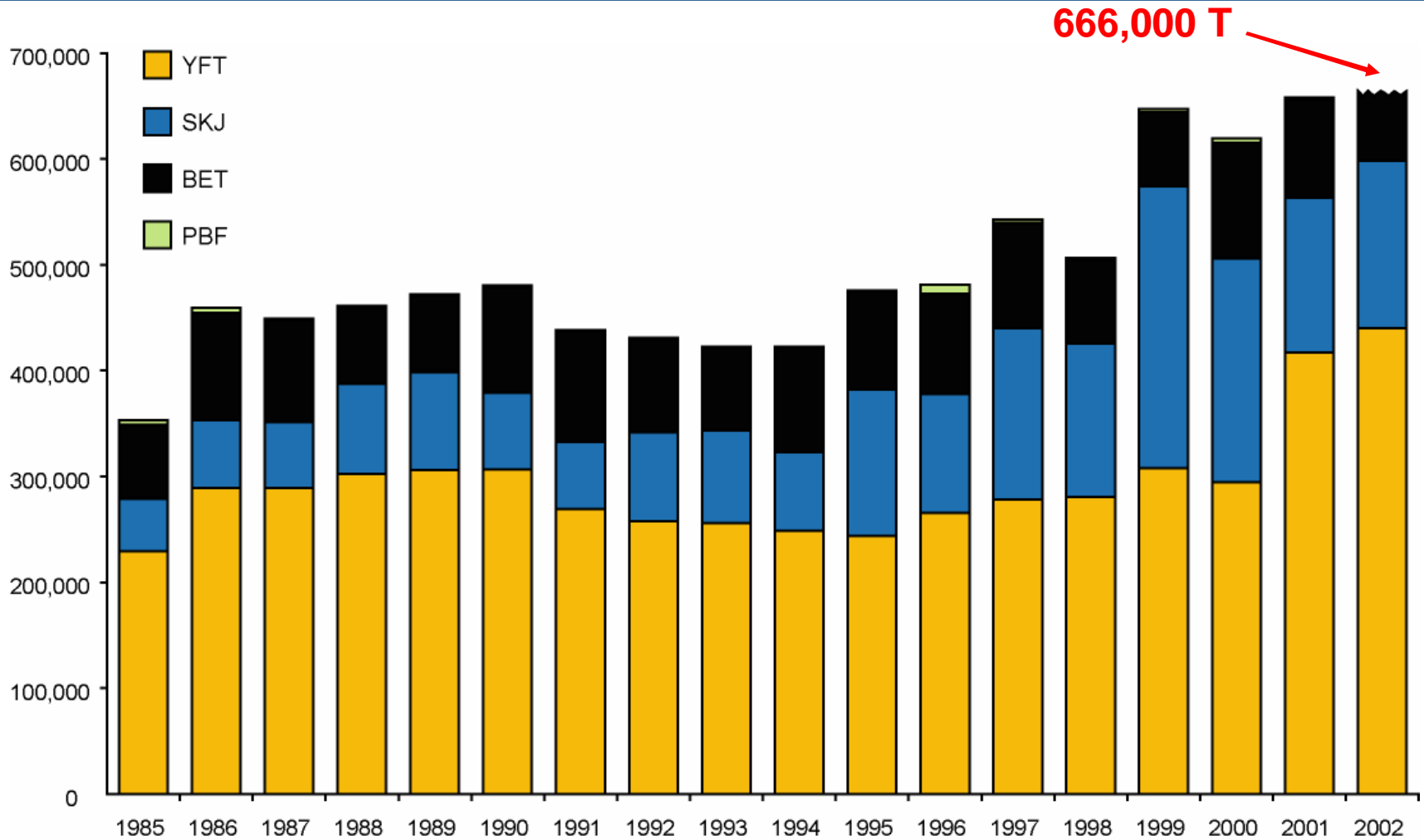


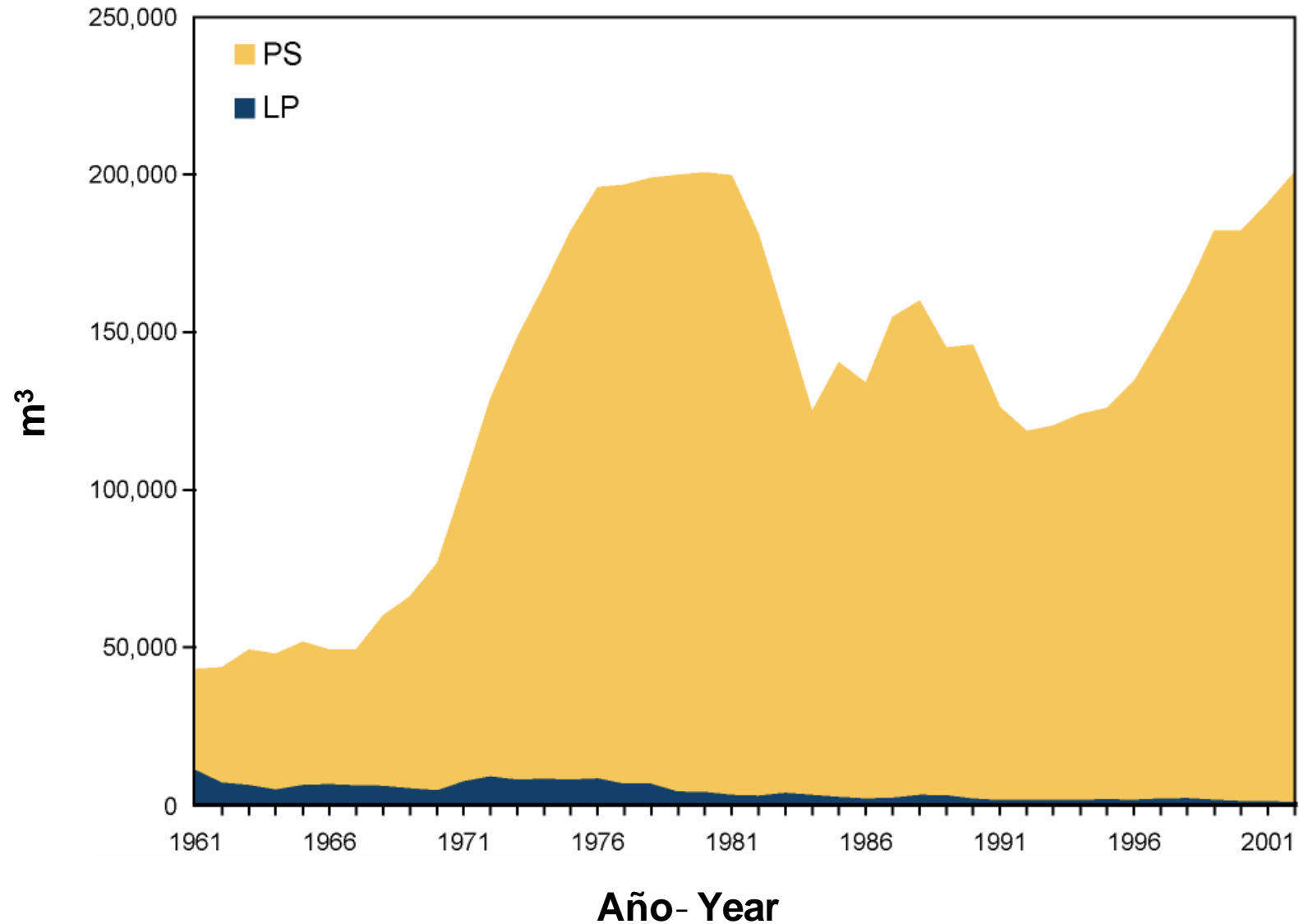
Captura superficial y palangrera en el OPO

EPO surface and longline catches



Capacidad acumulativa en el mar

Cumulative capacity at sea

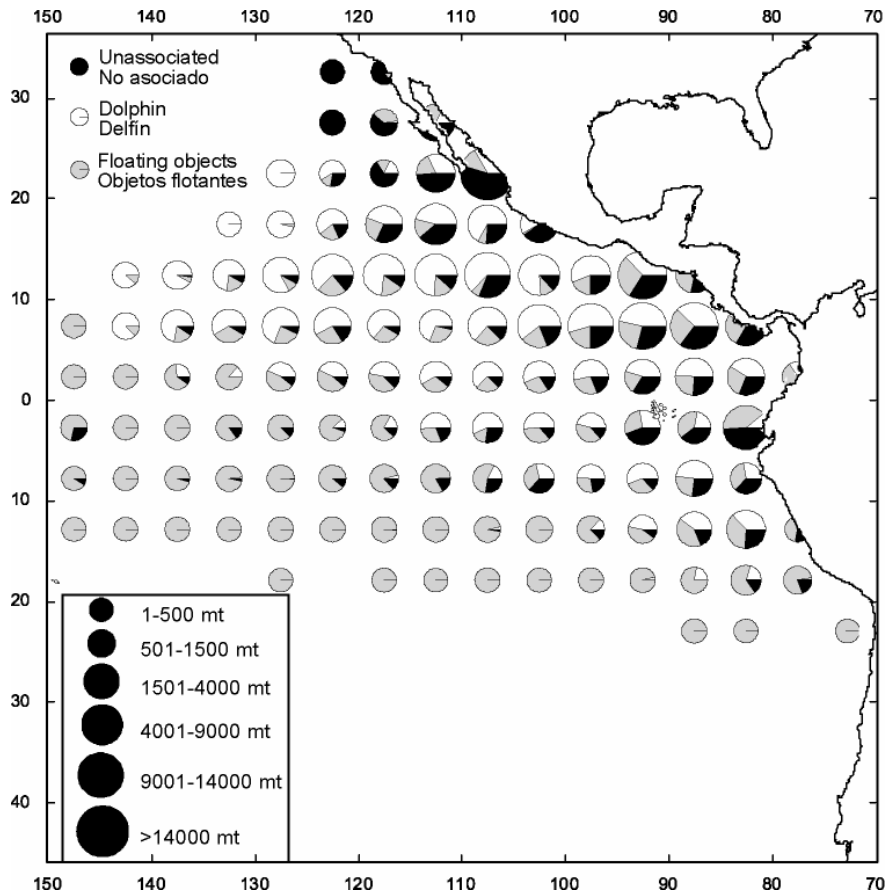


Atún aleta amarilla – Yellowing tuna

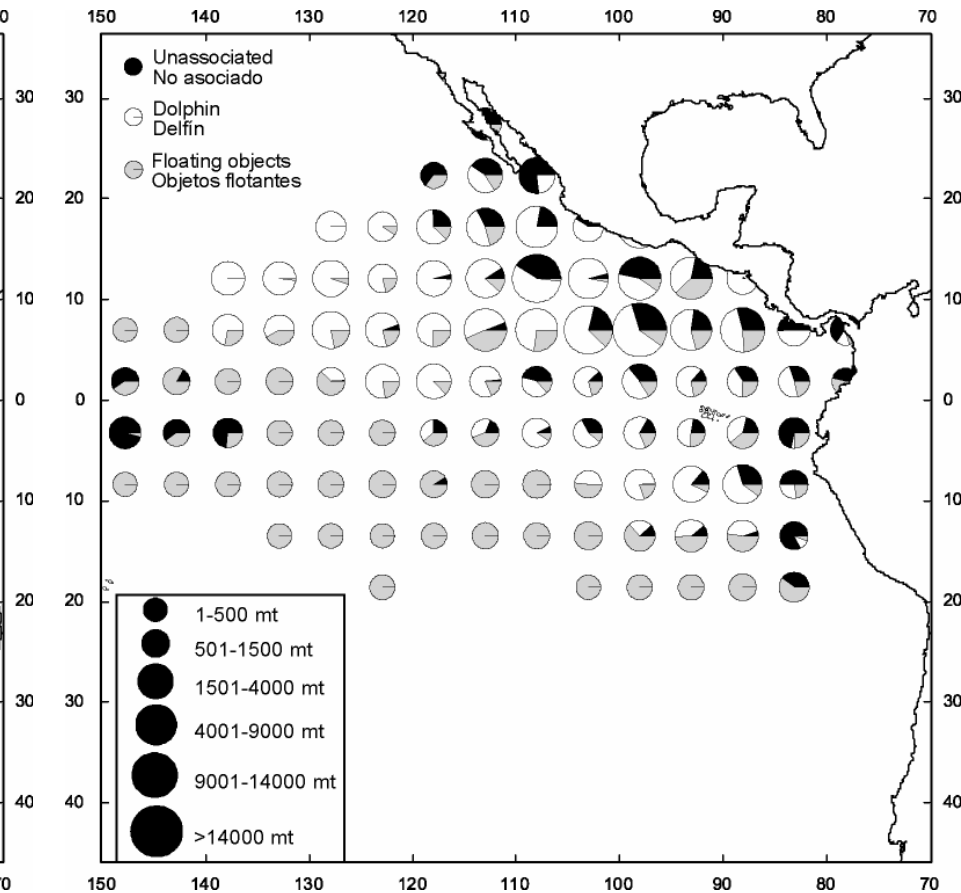
Capturas en bitácora – Catch logged

Prom – Ave 1987-2001

2002



268,000 T – mt
(219,000 a – to 396,000)



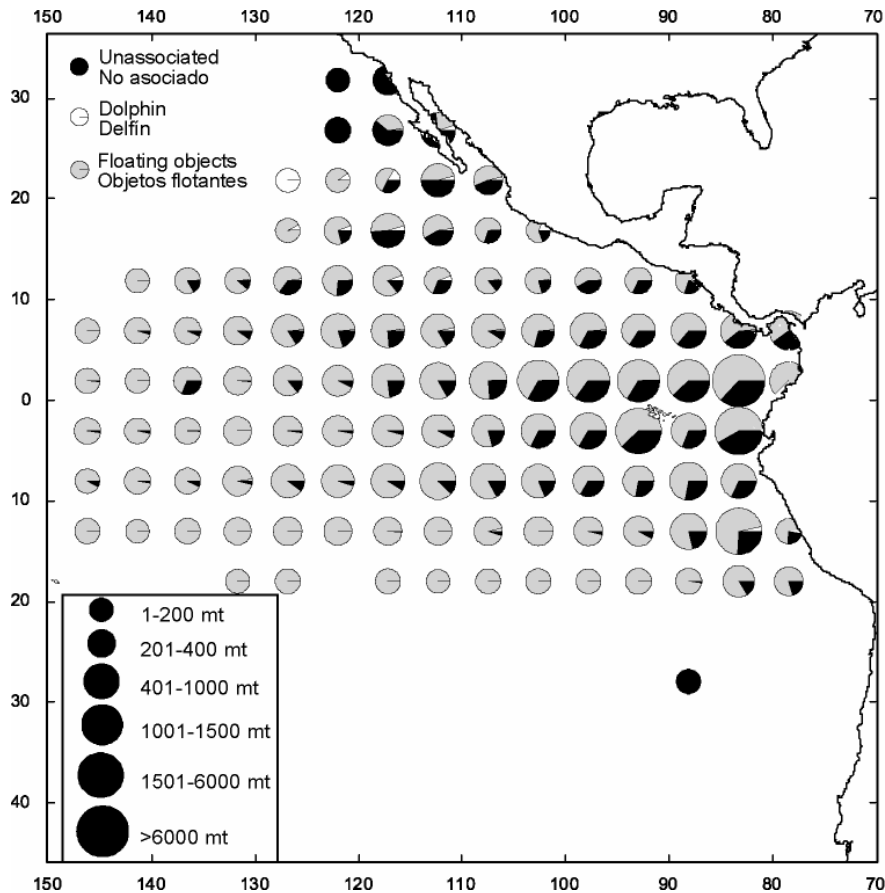
419,000 t – mt
56% mayor – higher



Atún barrilete – Skipjack tuna

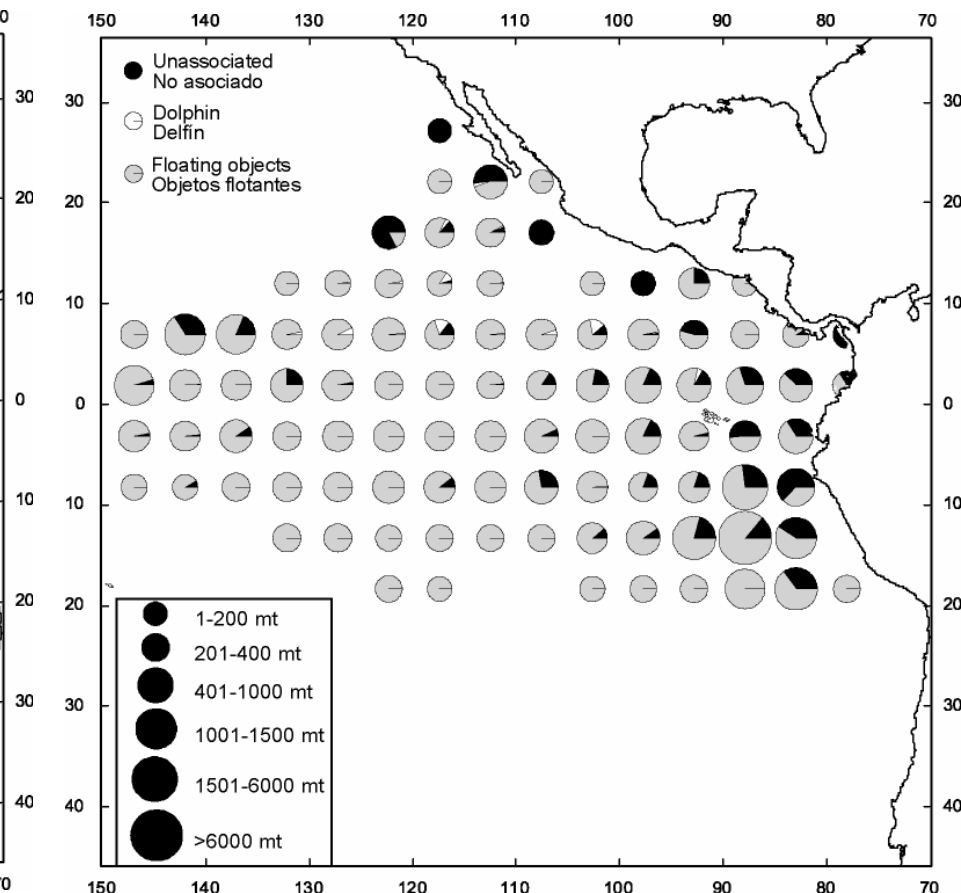
Capturas en bitácora – Catch logged

Prom – Ave 1987-2001



120,000 T – mt
(62,000 a – to 266,000)

2002



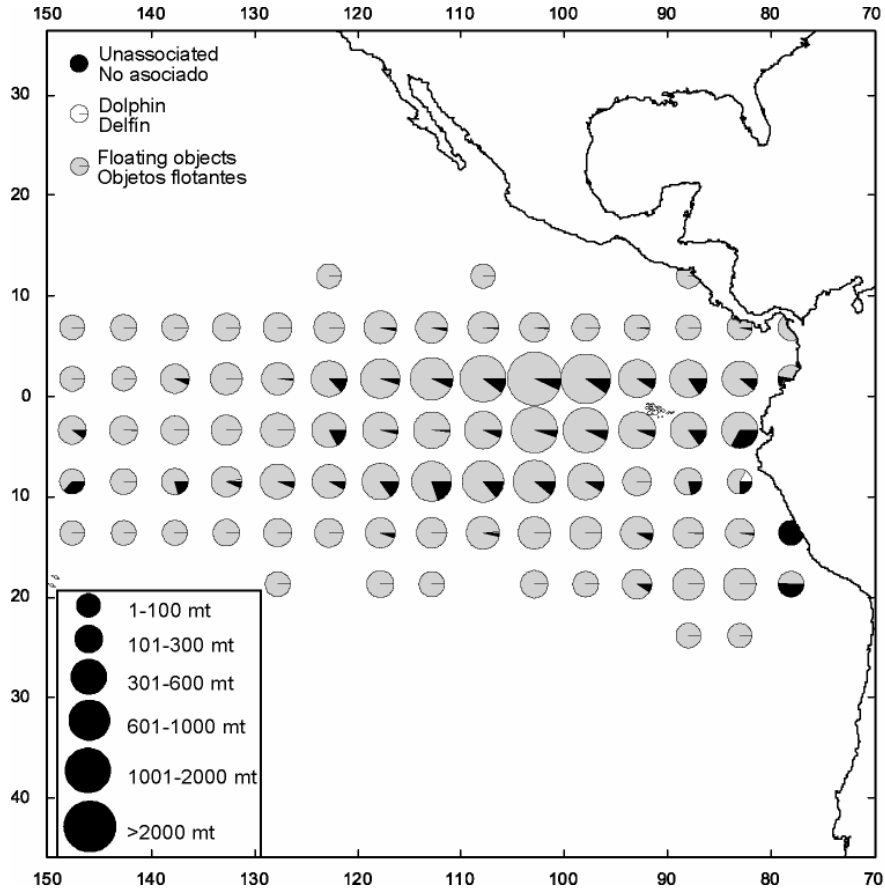
158,000 T – mt
32% mayor – higher



Atún patudo – Bigeye tuna

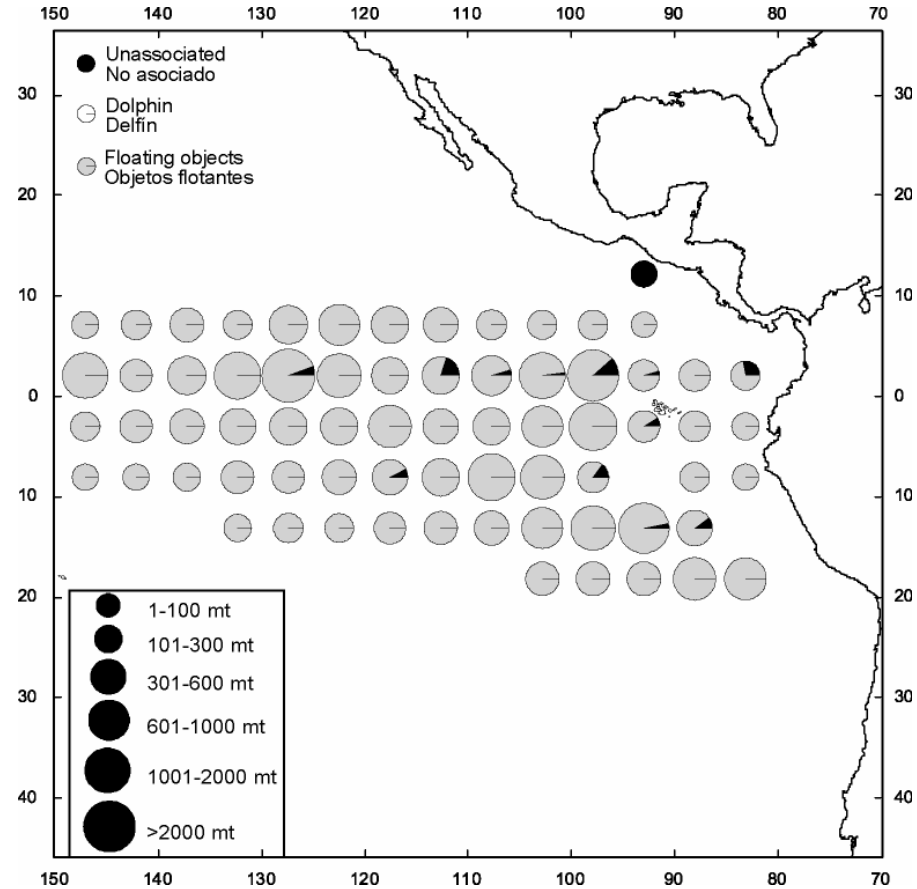
Capturas en bitácora – Catch logged

Prom – Ave 1987-2001



44,000 T – mt
(29,000 a – to 70,000)

2002

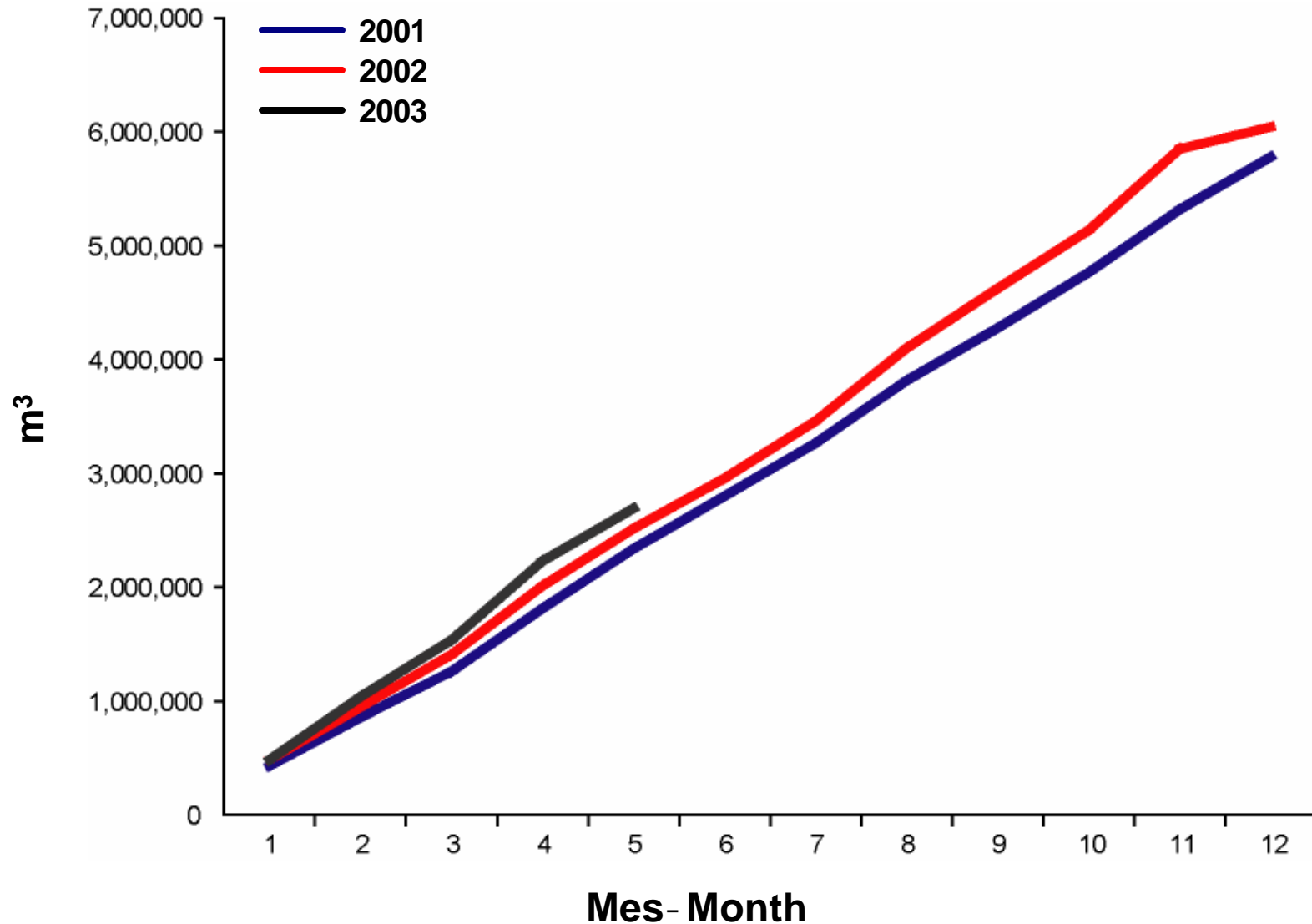


35,000 T – mt
21% menor – lower



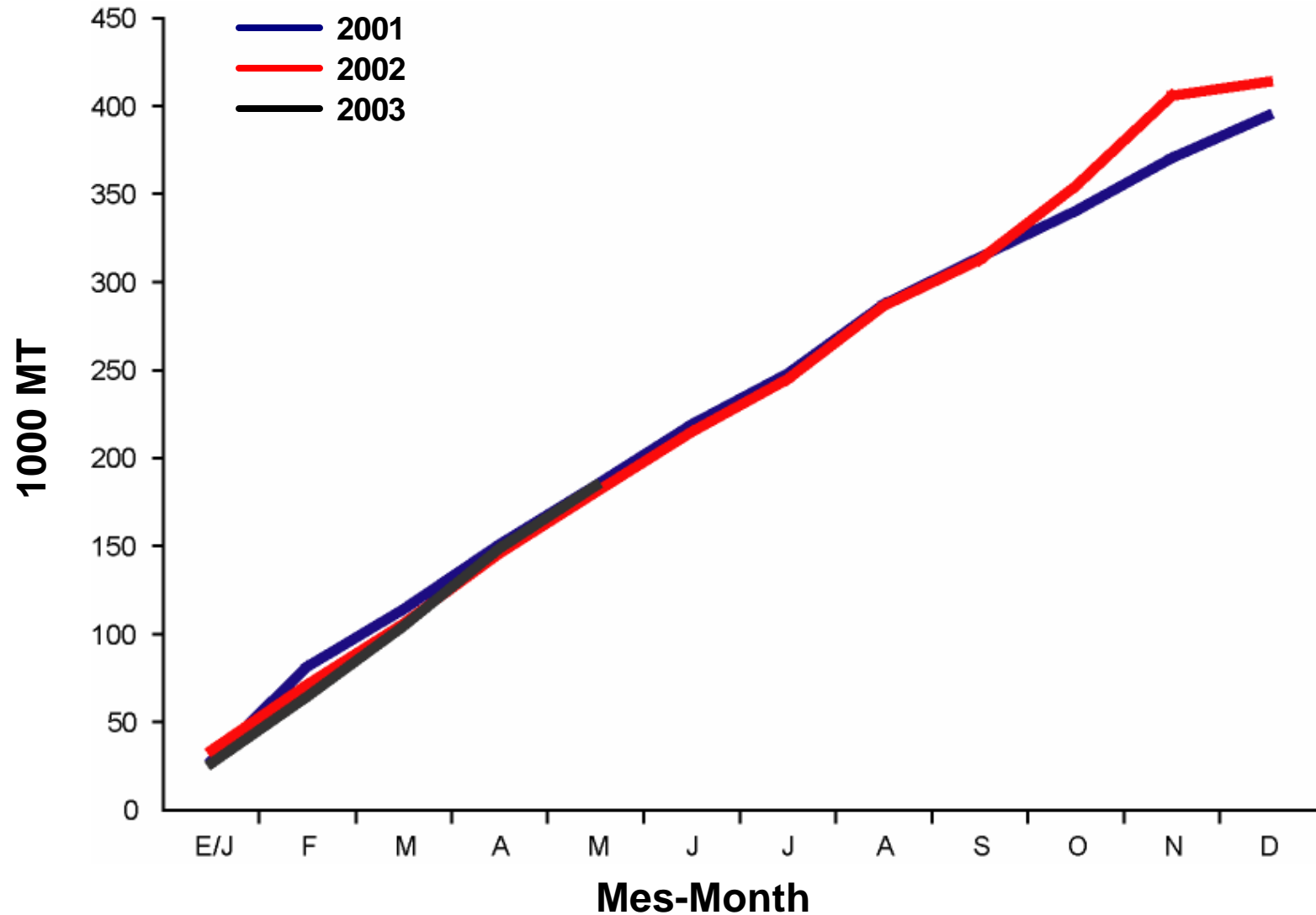
Capacidad acumulativa en el mar

Cumulative capacity at sea



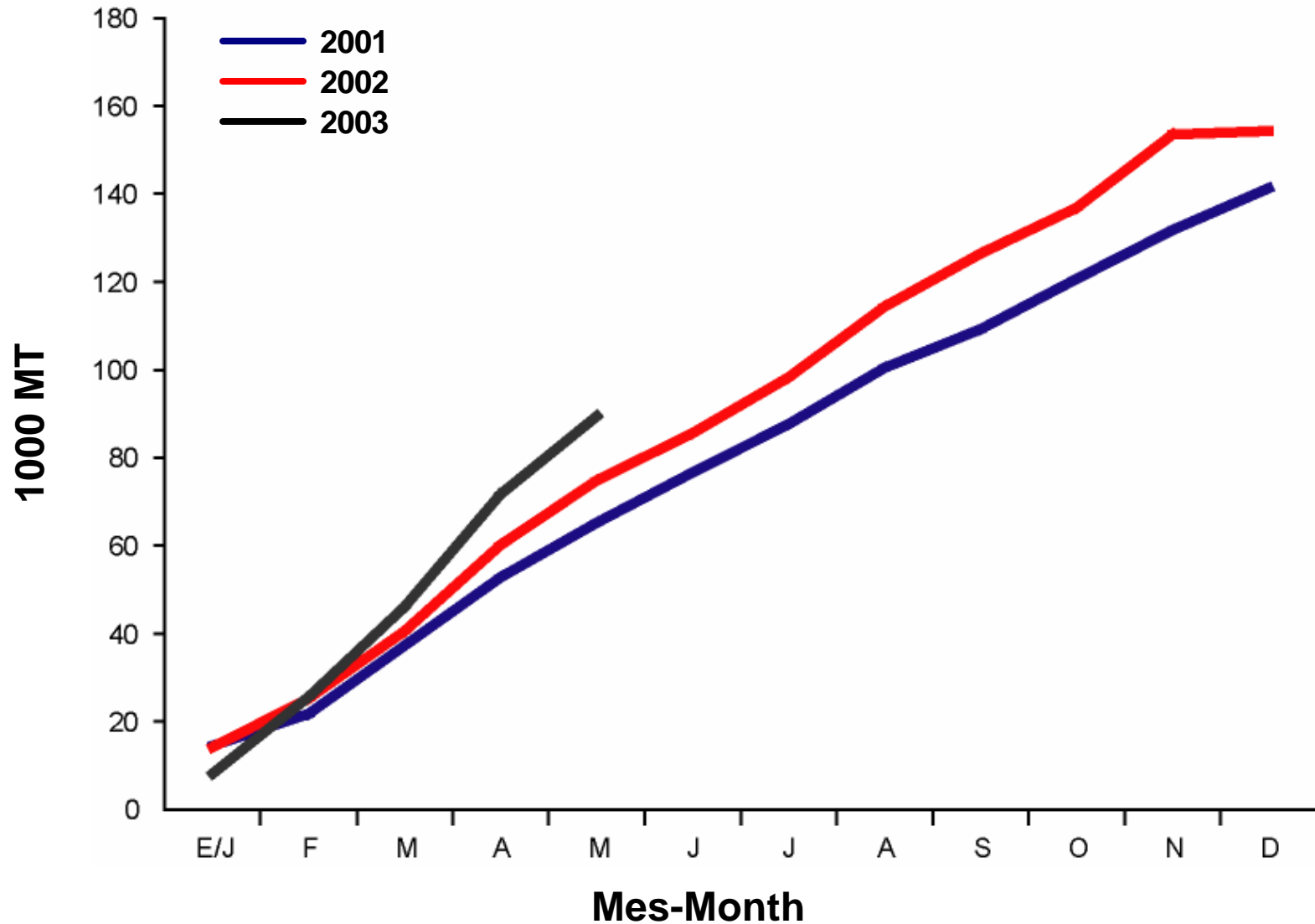
Captura acumulativa de YFT

Cumulative catch of YFT



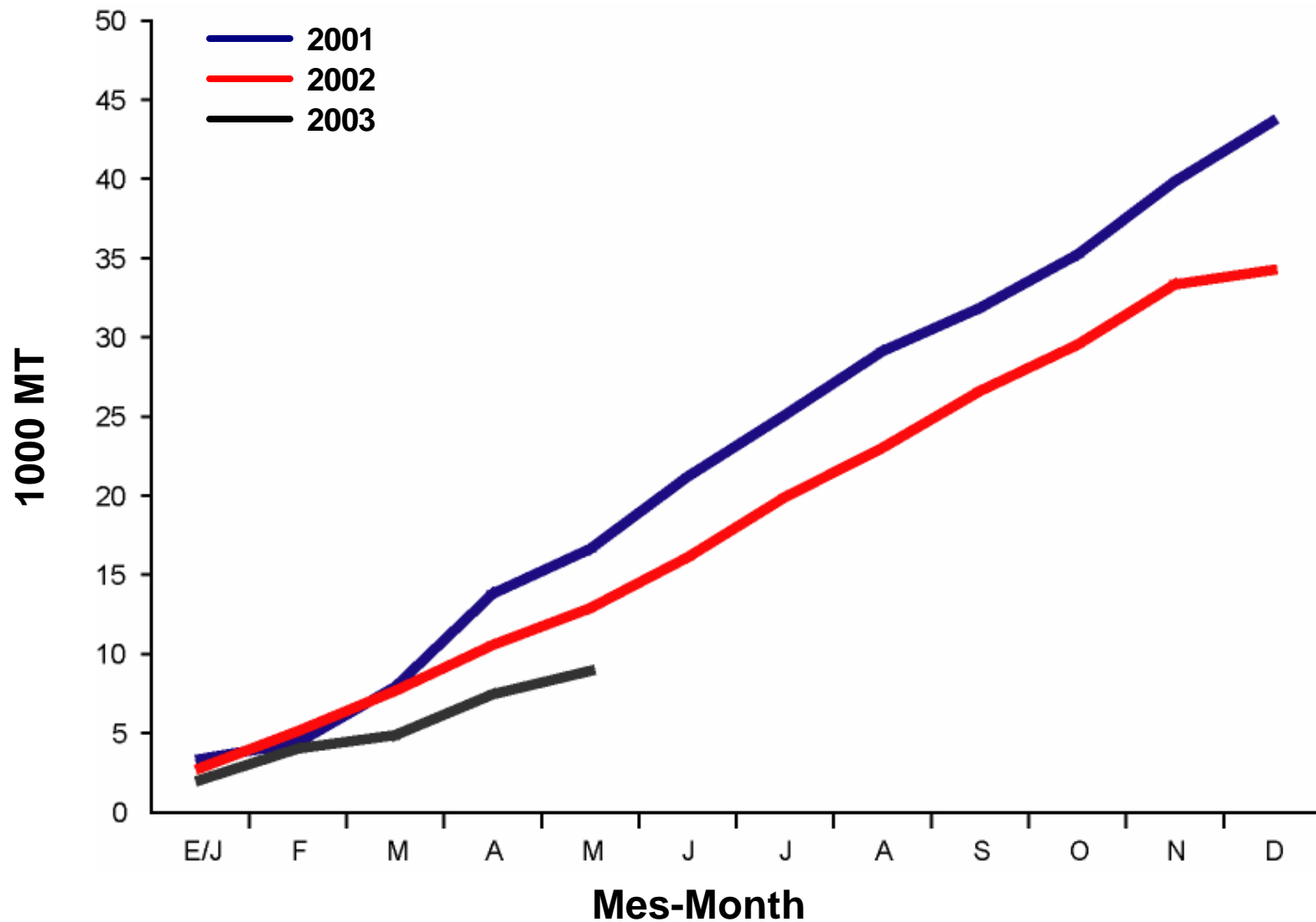
Captura acumulativa de SKJ

Cumulative catch of SKJ

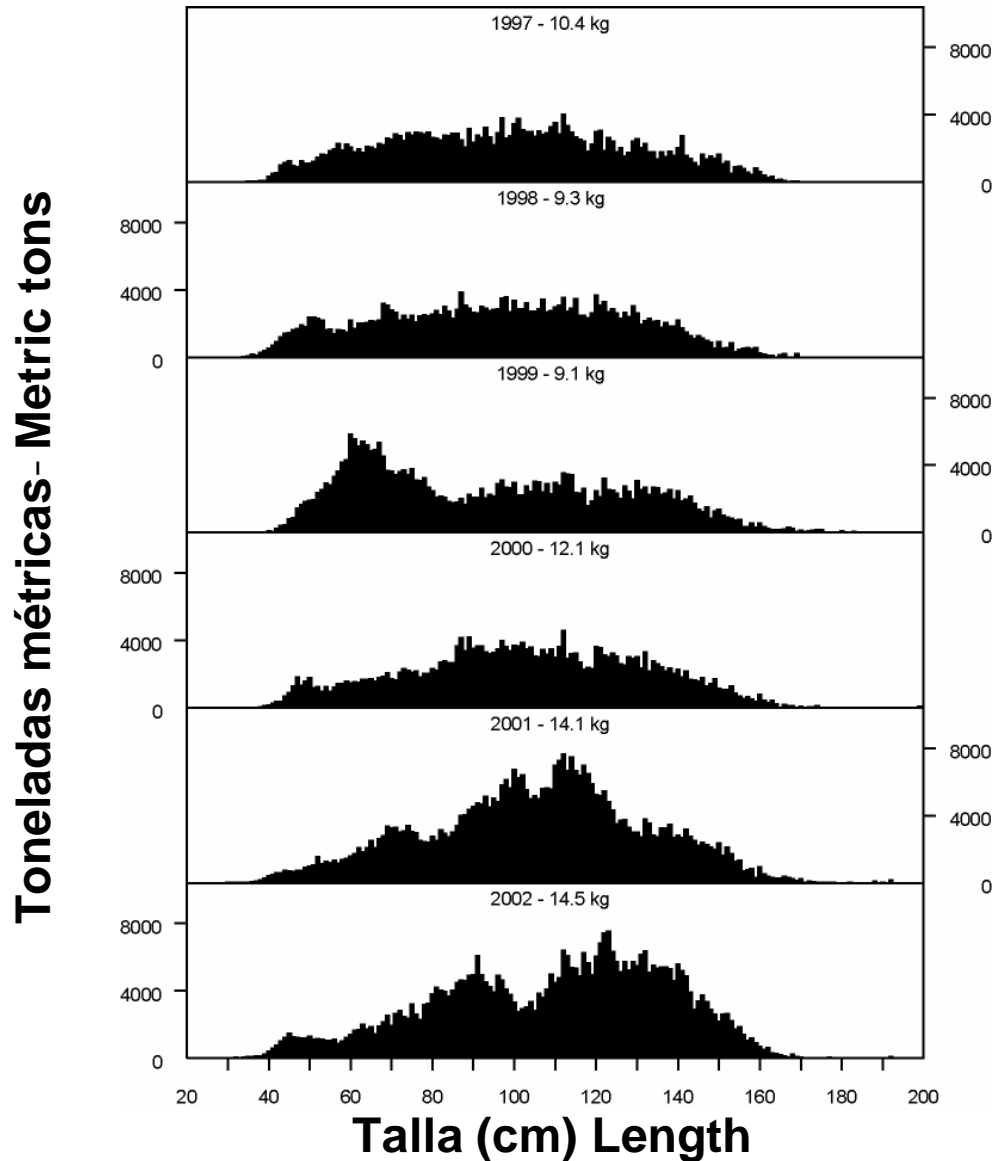


Captura acumulativa de BET

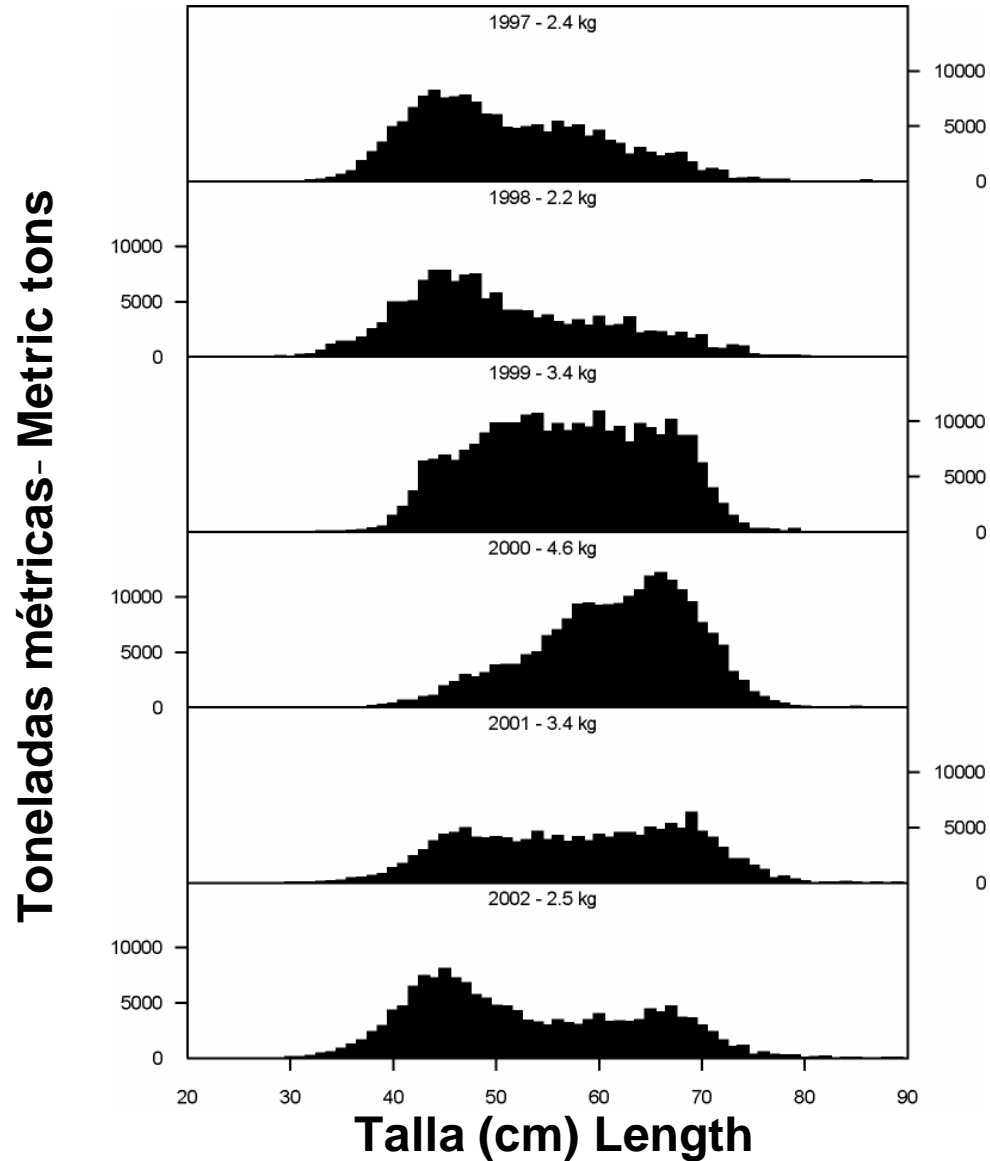
Cumulative catch of BET



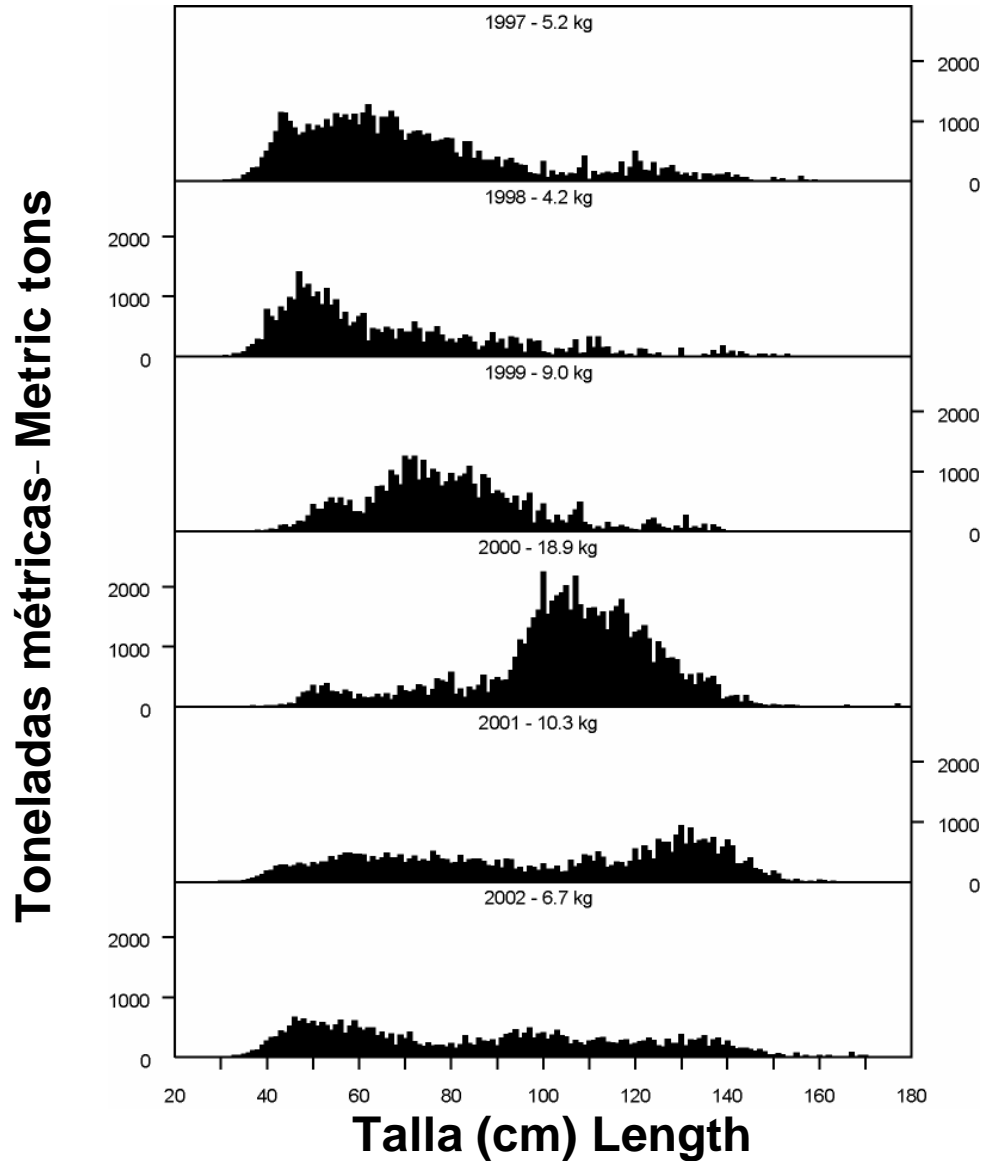
Atún aleta amarilla- Yellowfin tuna



Atún barrilete - Skipjack tuna

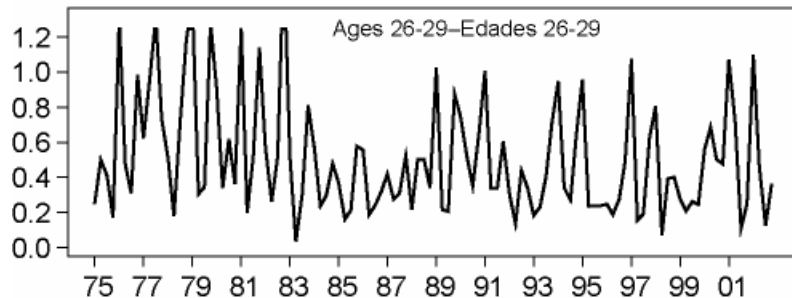
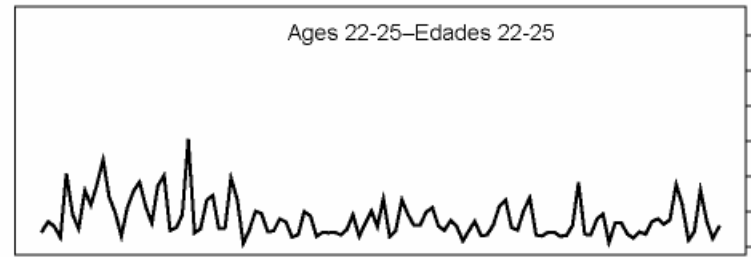
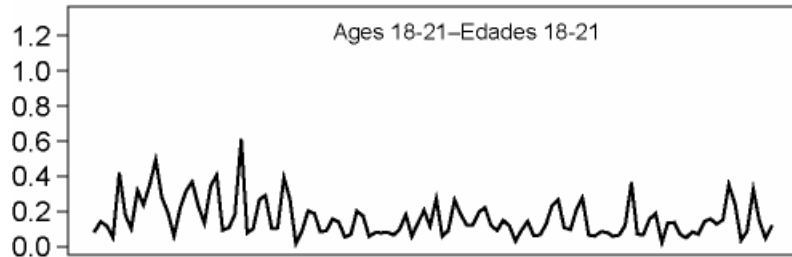
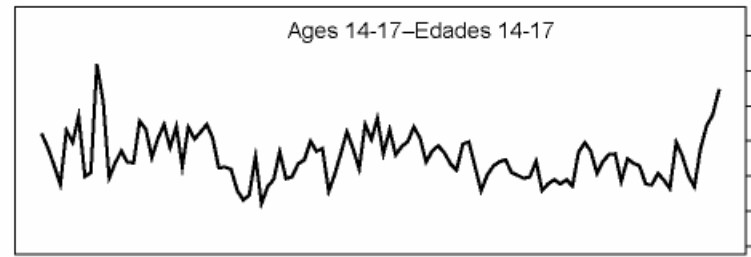
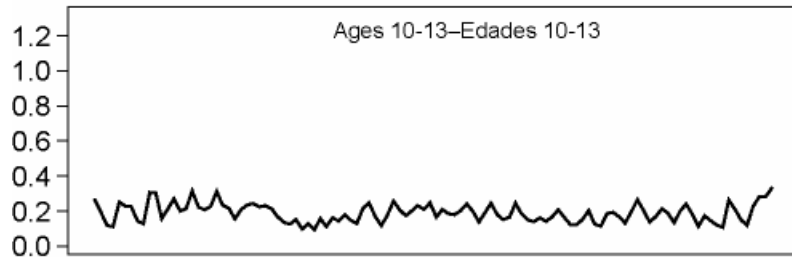
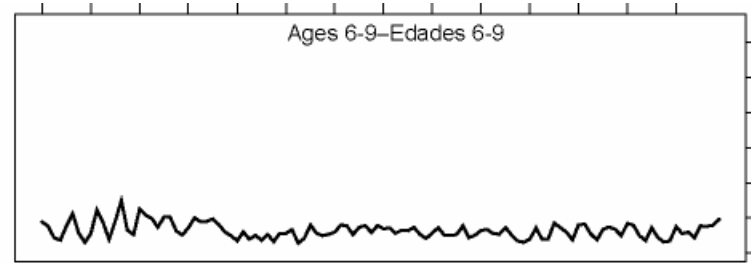
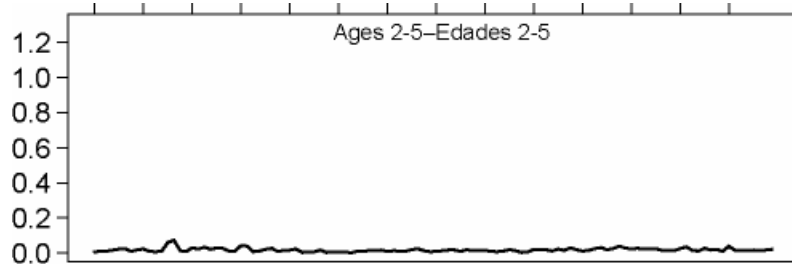


Atún patudo- Bigeye tuna

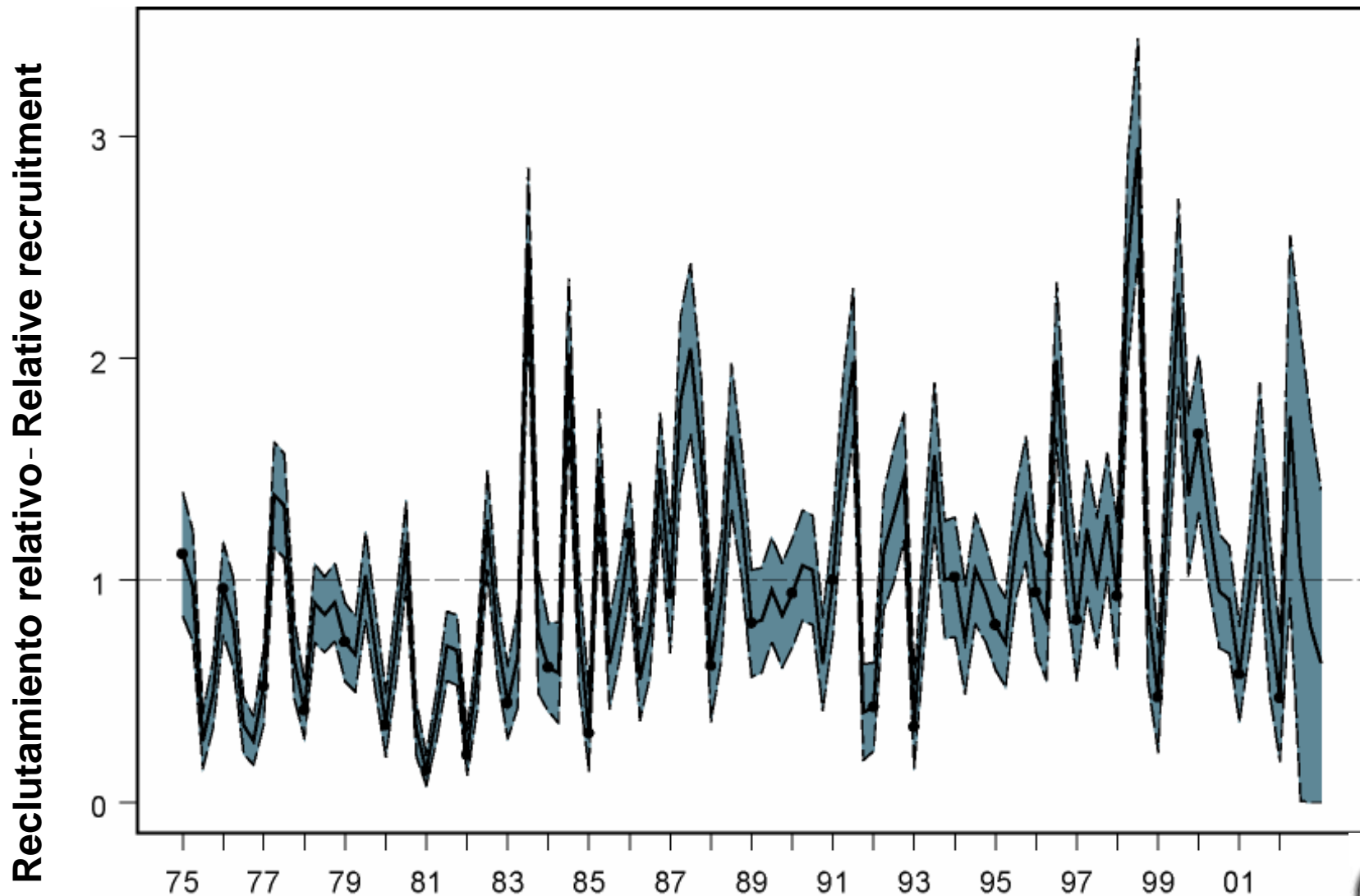


Atún aleta amarilla- Yellowfin tuna

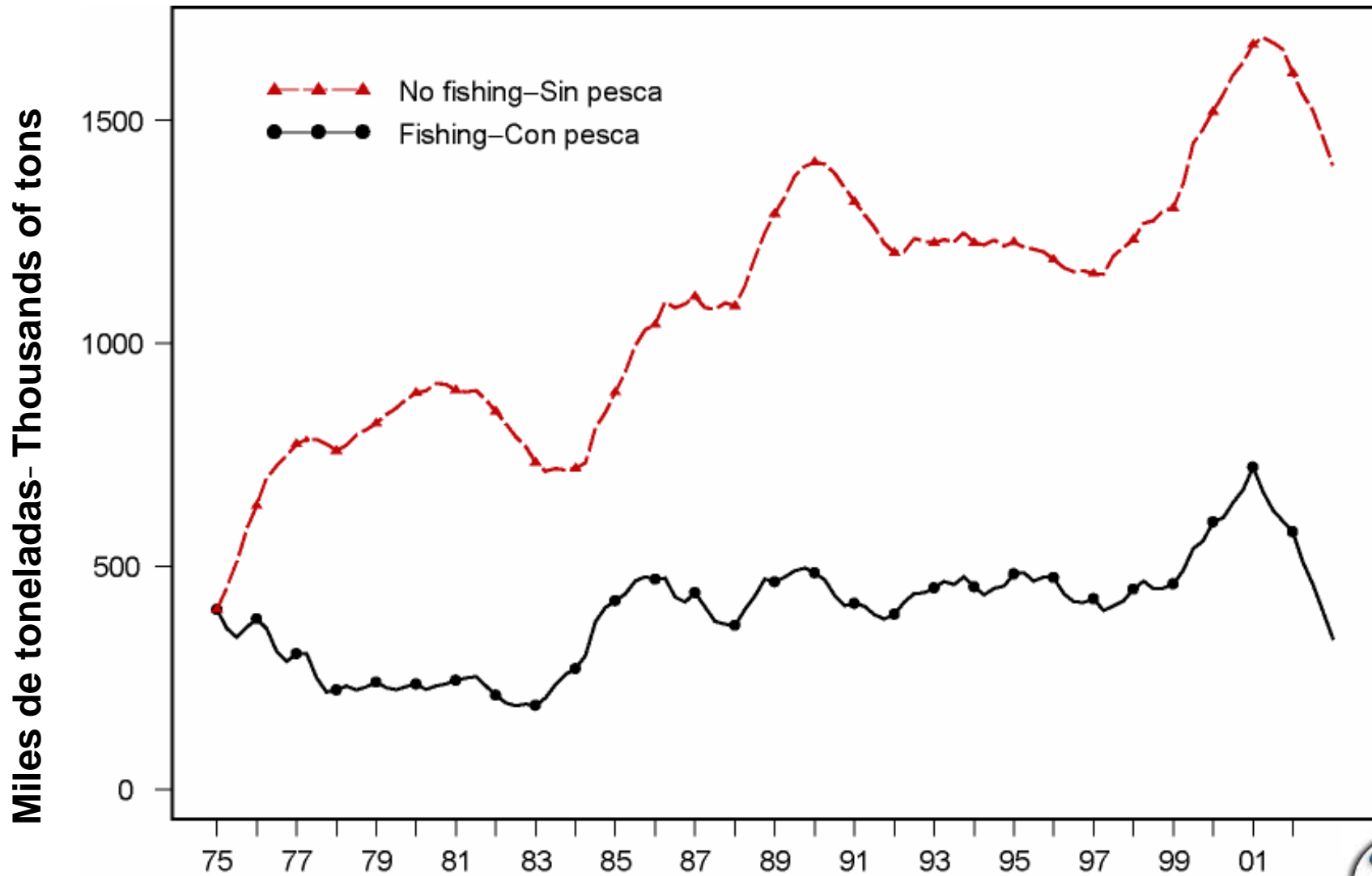
Promedio de F_{total} - Average total F



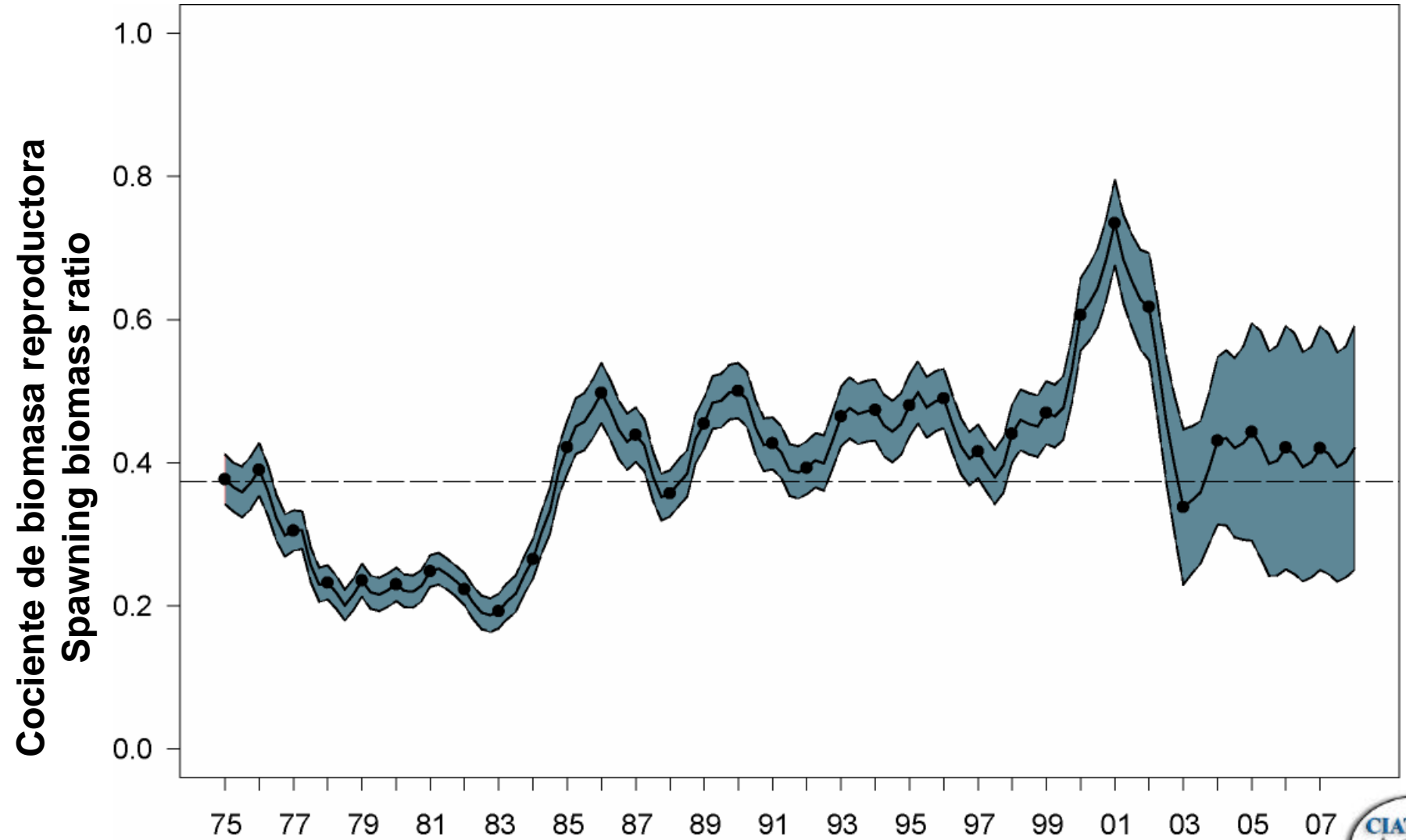
Atún aleta amarilla- Yellowfin tuna



Atún aleta amarilla- Yellowfin tuna

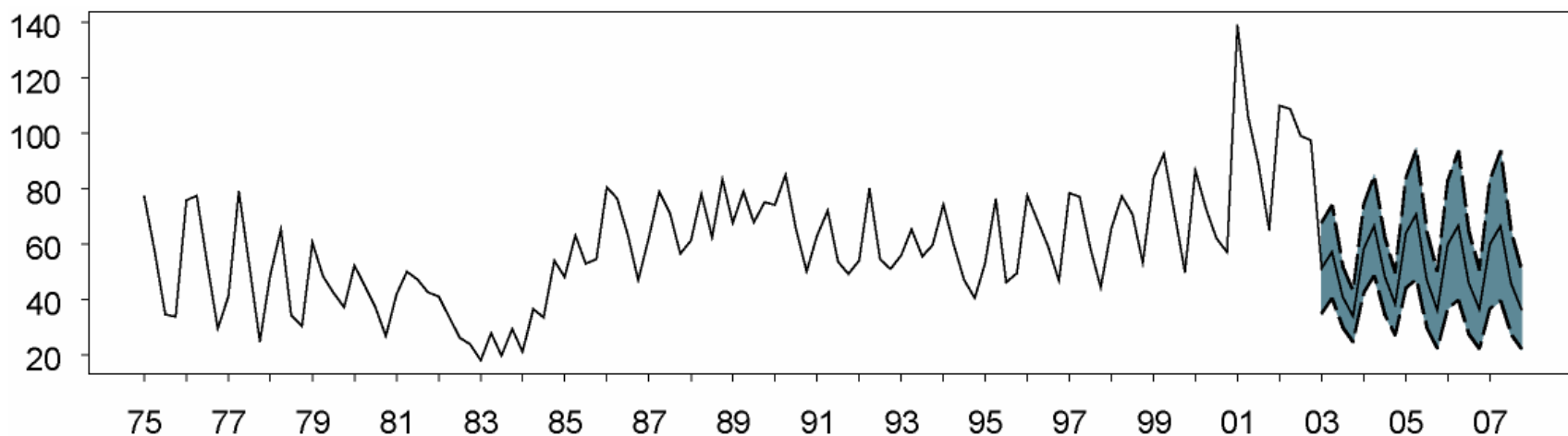


Atún aleta amarilla- Yellowfin tuna

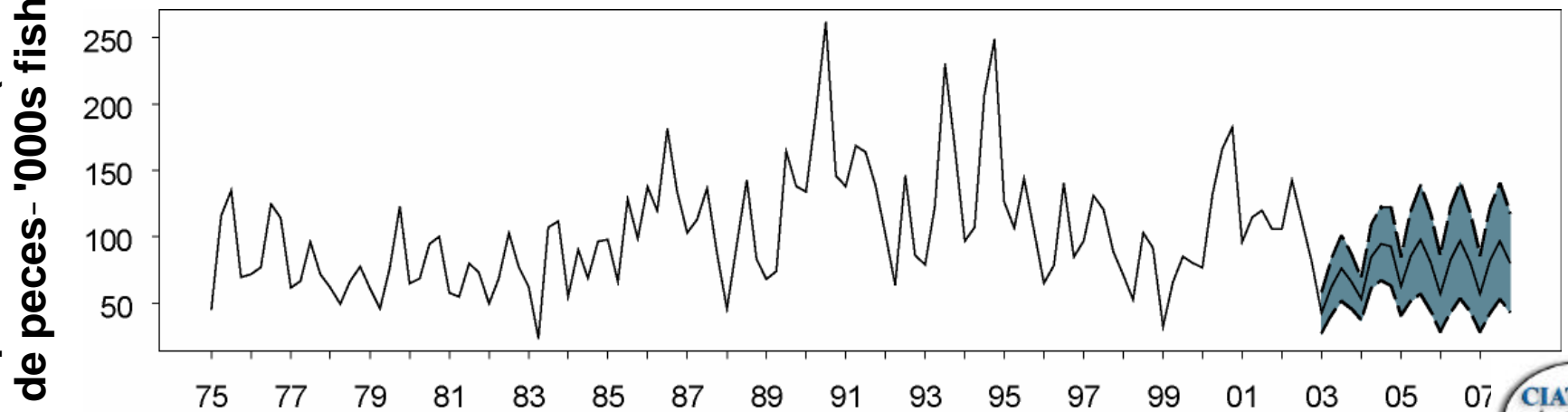


Atún aleta amarilla - Yellowfin tuna

Captura cerquera predicha- Predicted purse seine catches

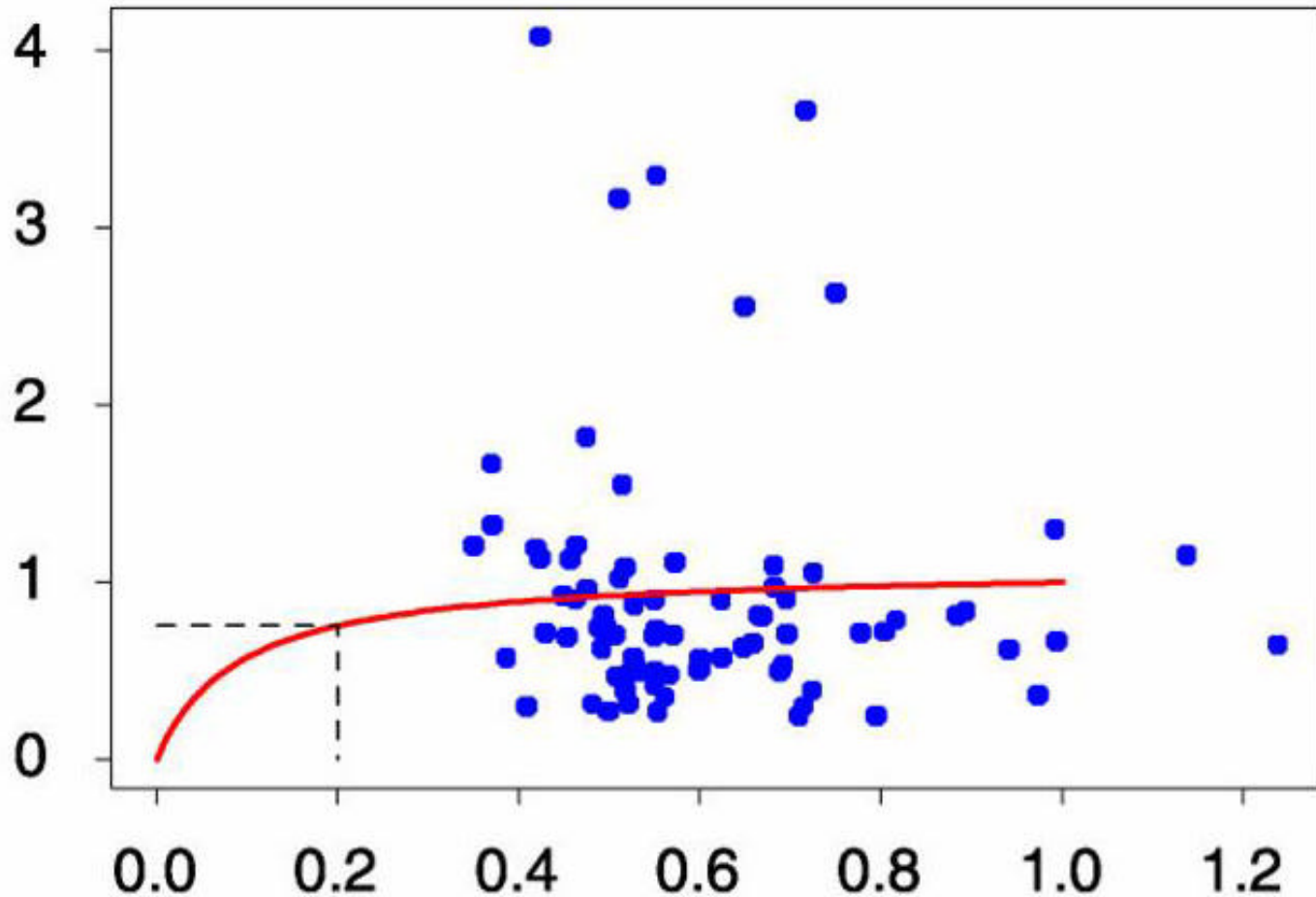


Captura palangrera predicha- Predicted longline catches



Reclutamiento – Variables explicatorias

Recruitment – Explanatory Variables

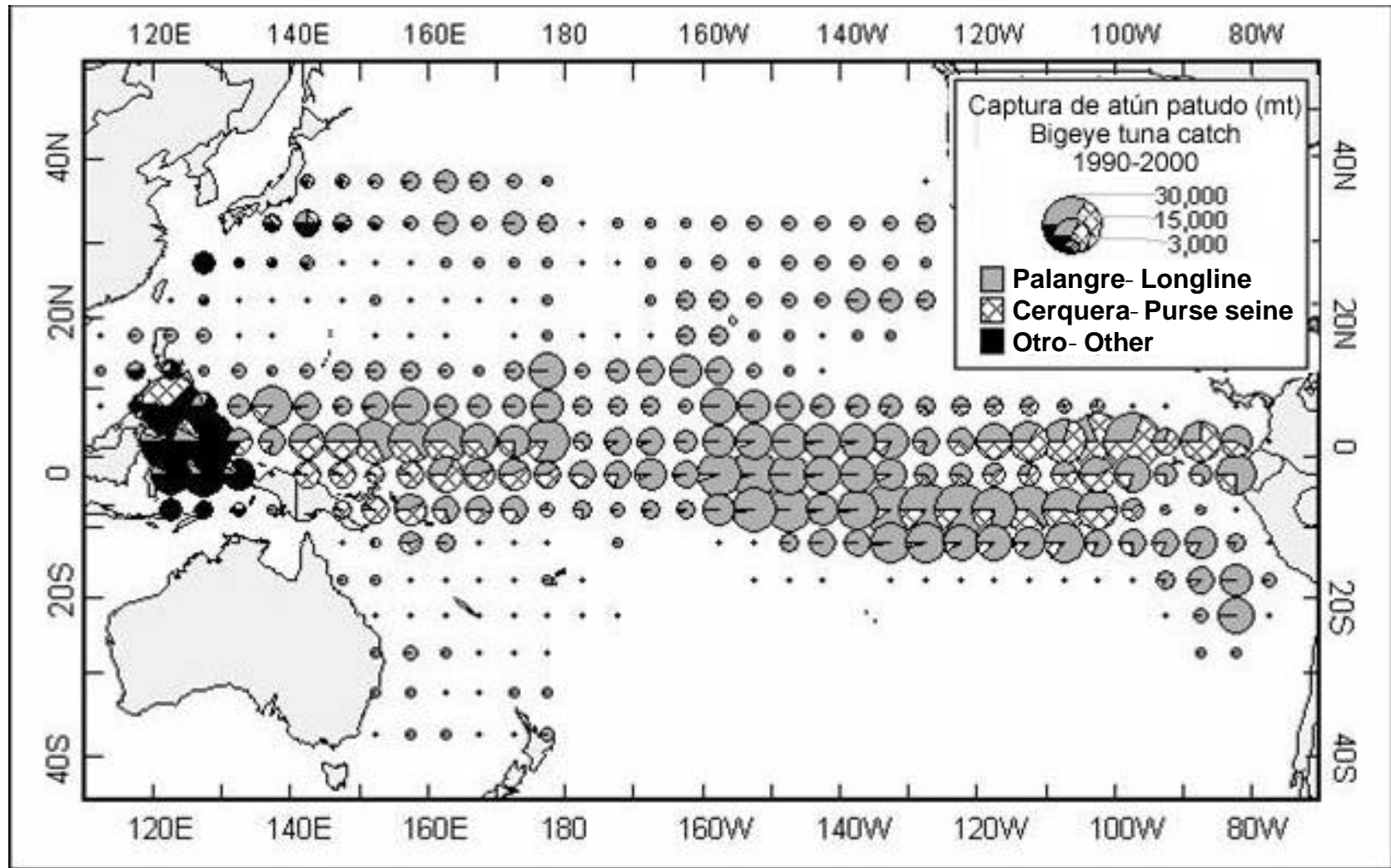


BIOMASA RELATIVA DE REPRODUCTORES
RELATIVE SPAWNING BIOMASS



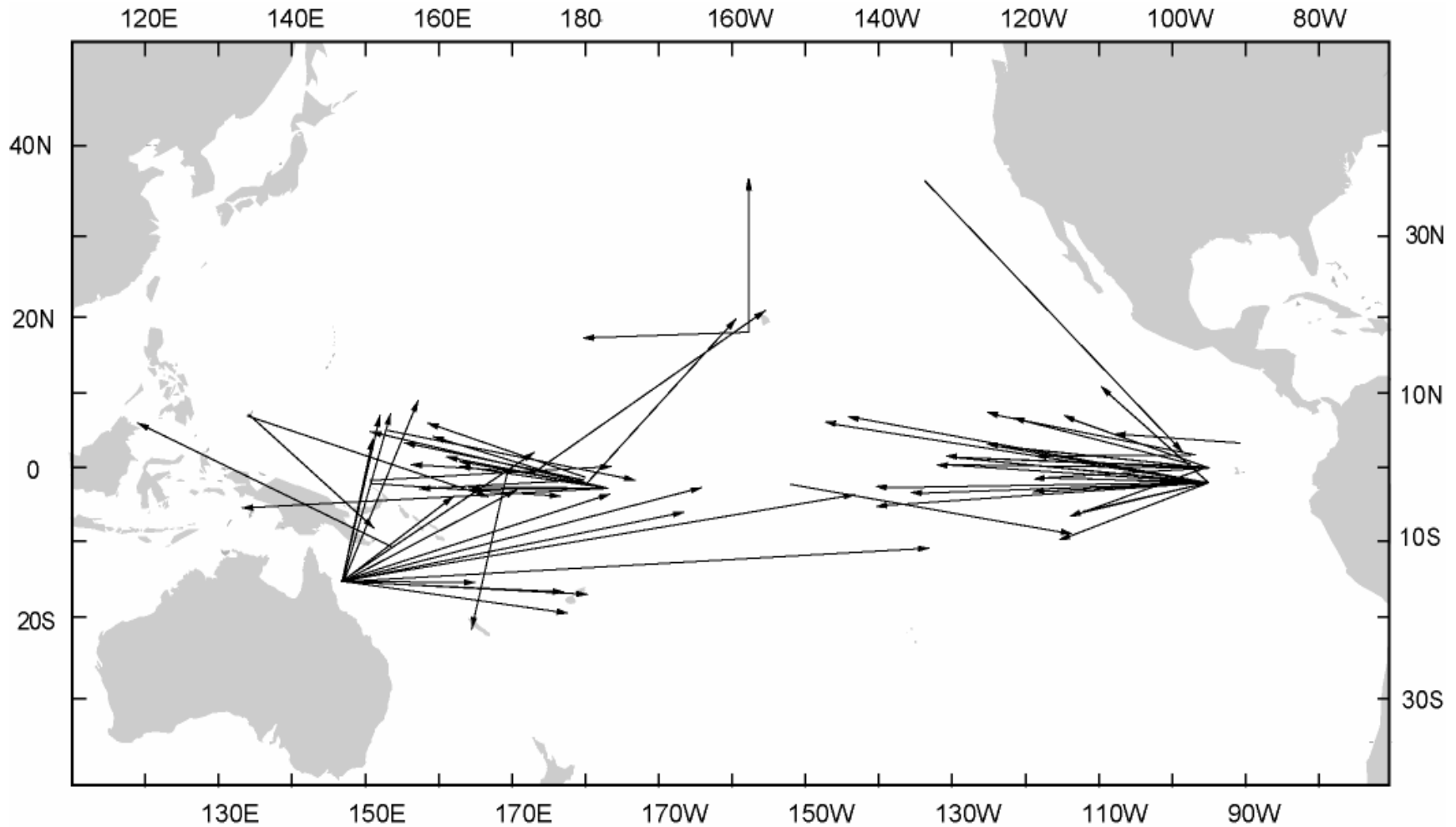
Capturas de patudo 1990-2000

Bigeye catches 1990-2000



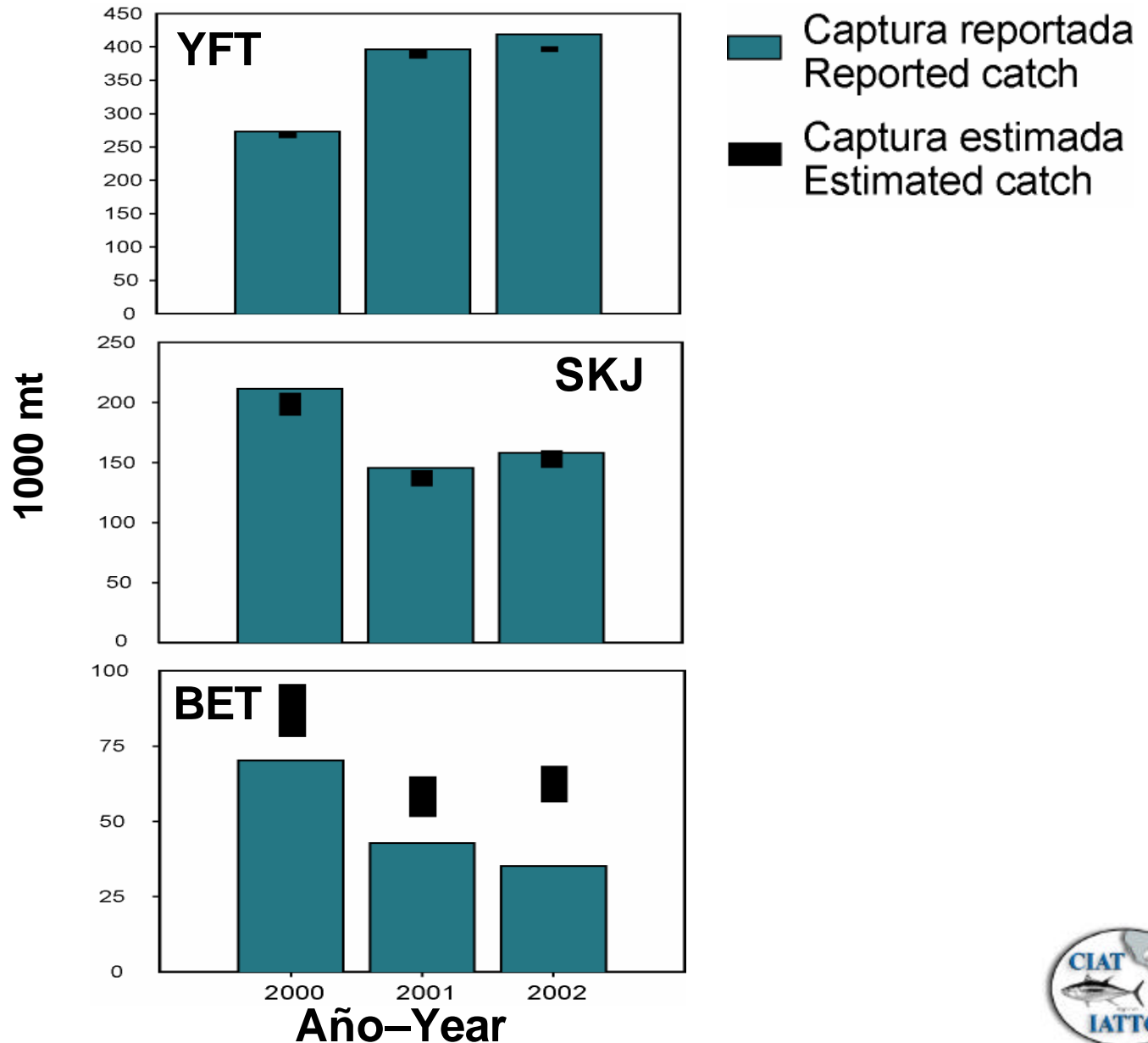
Desplazamiento de patudo más allá de las 1000 mn

Bigeye tuna movements in excess of 1000 nm



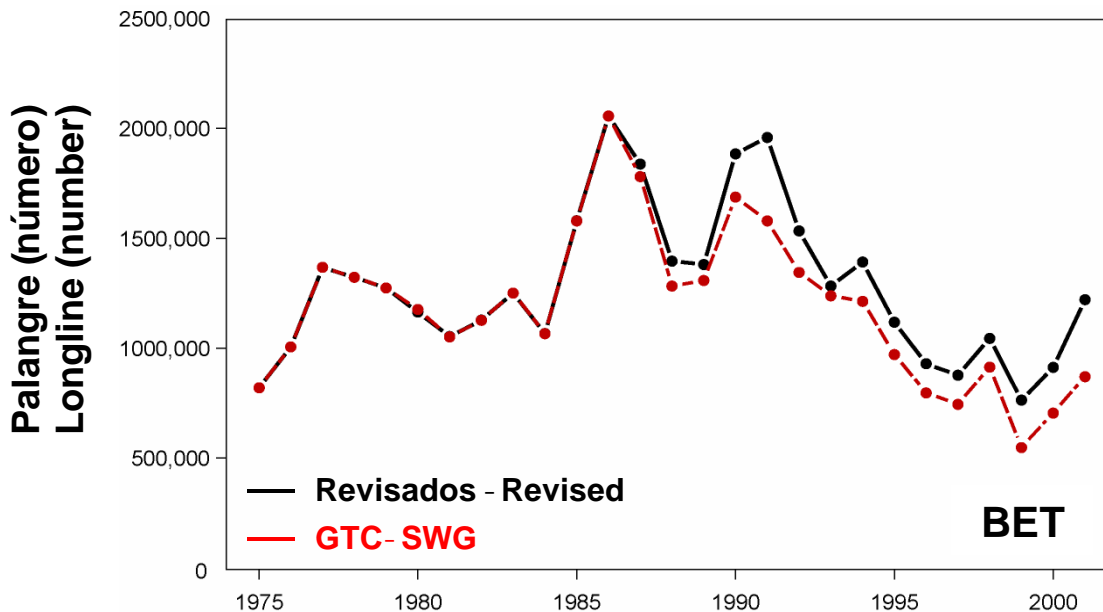
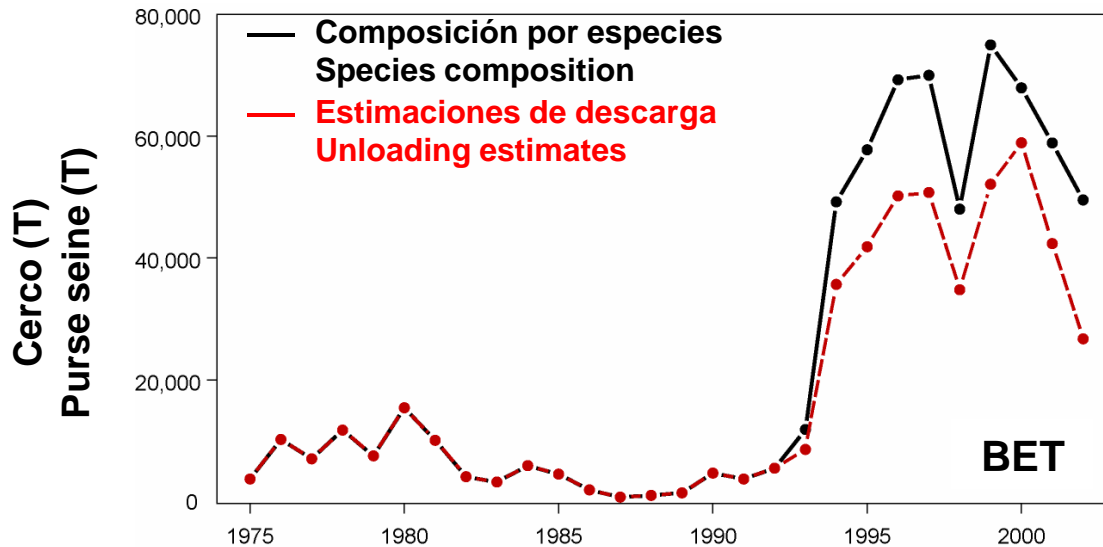
Capturas reportada y estimadas en 2000-2002

Reported and estimated catches in 2000-2002



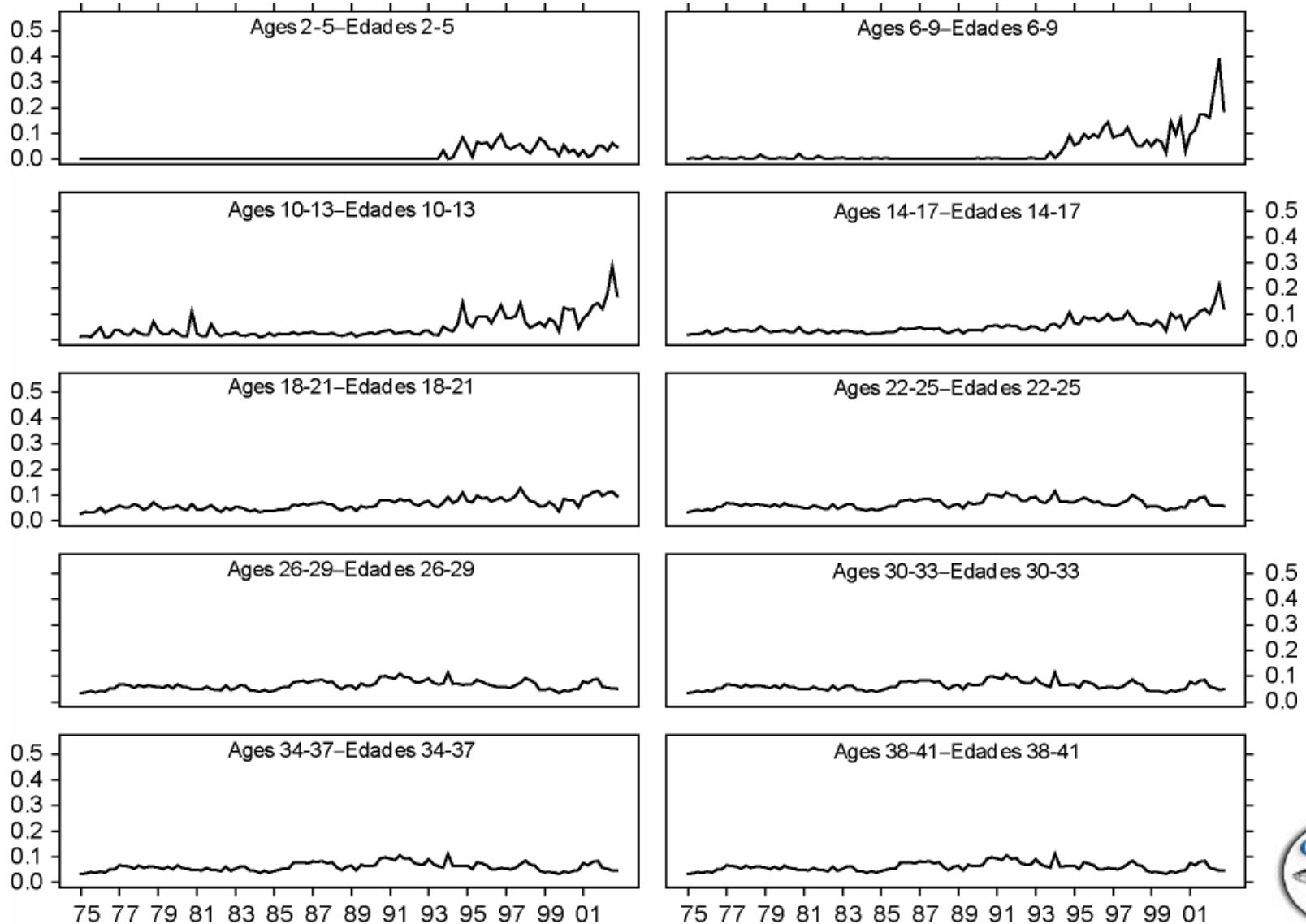
Captura estimada de patudo

Estimated catch of bigeye

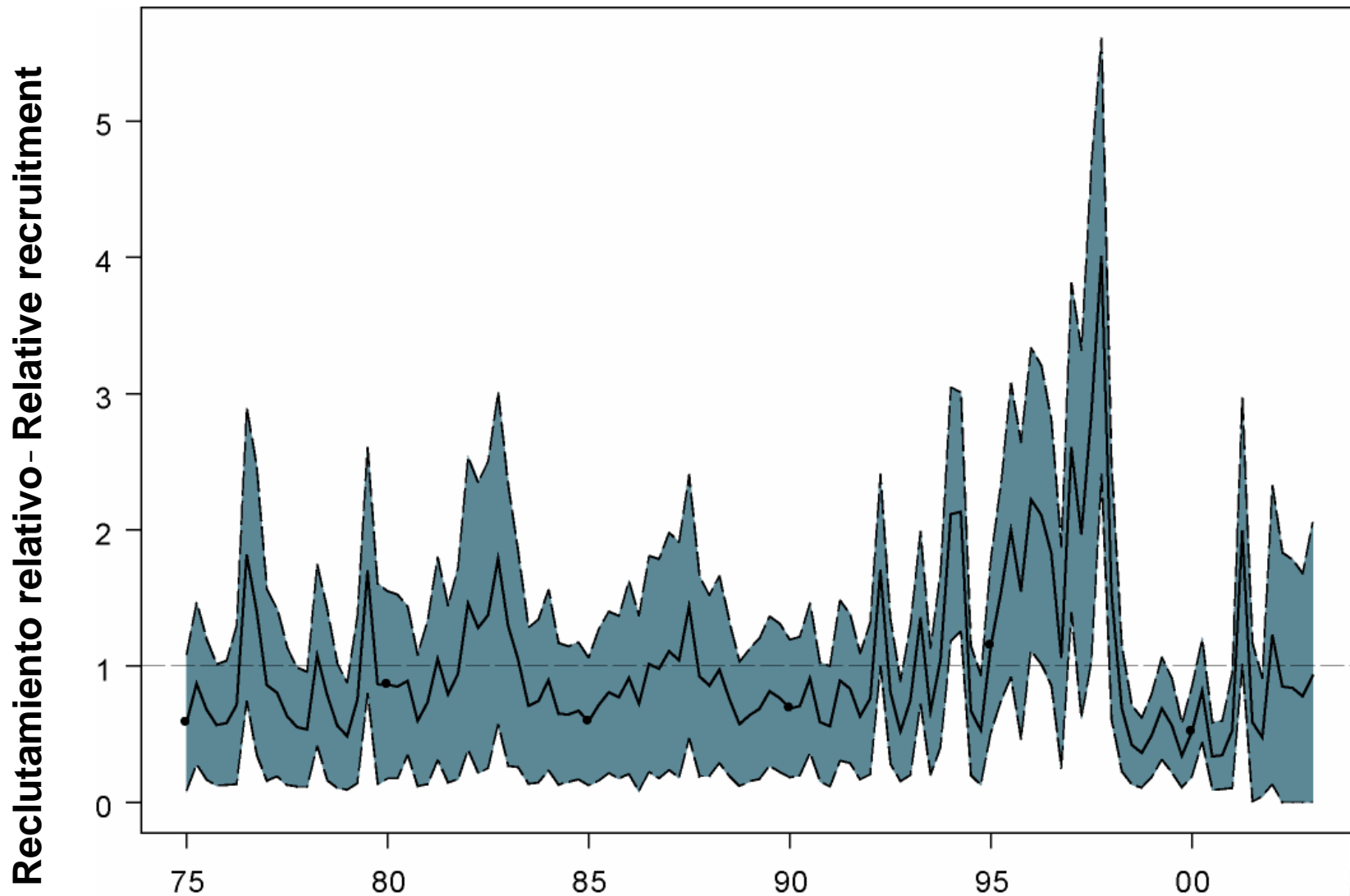


Atún patudo- Bigeye tuna

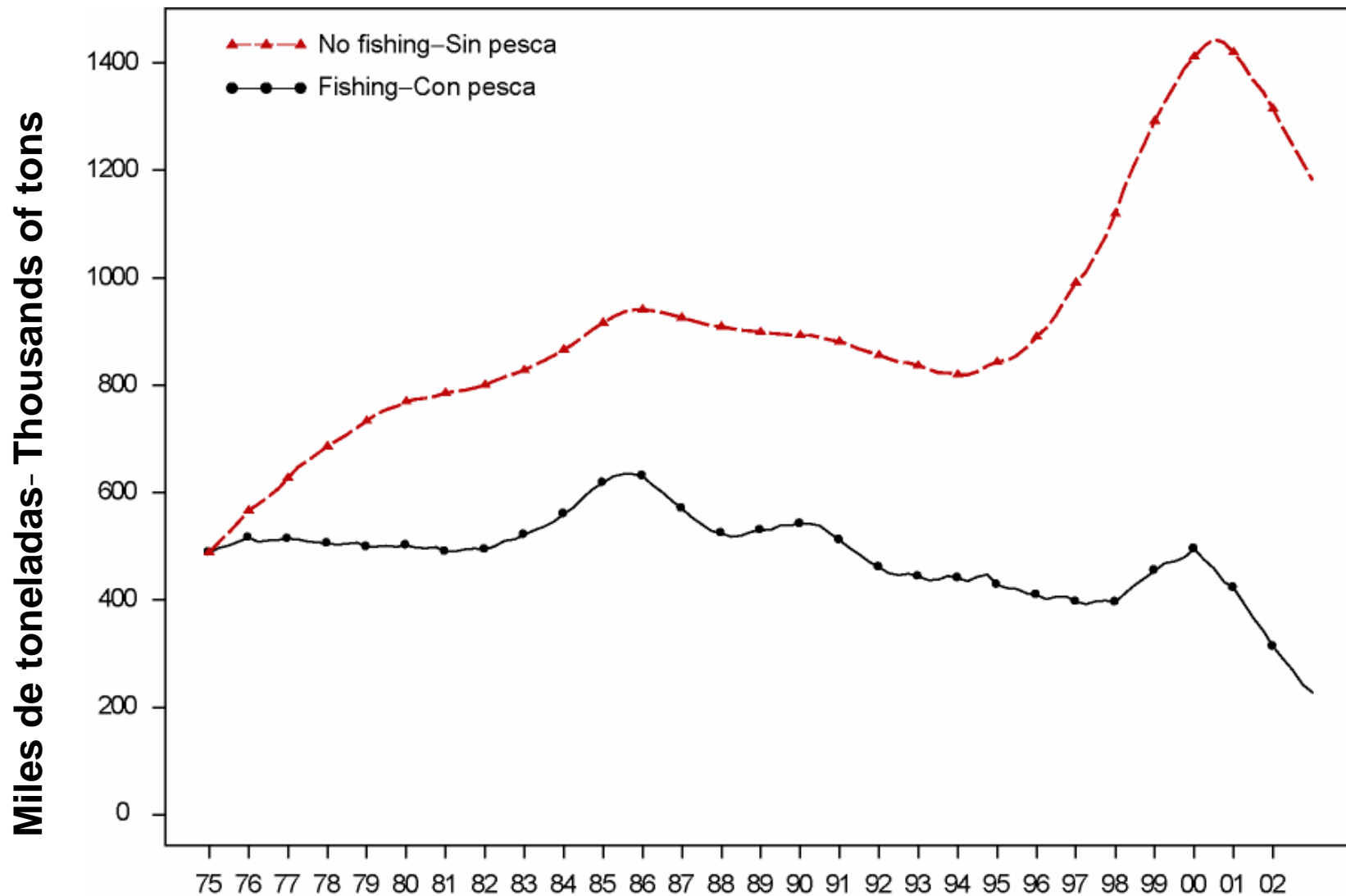
Promedio de F_{total} - Average total F



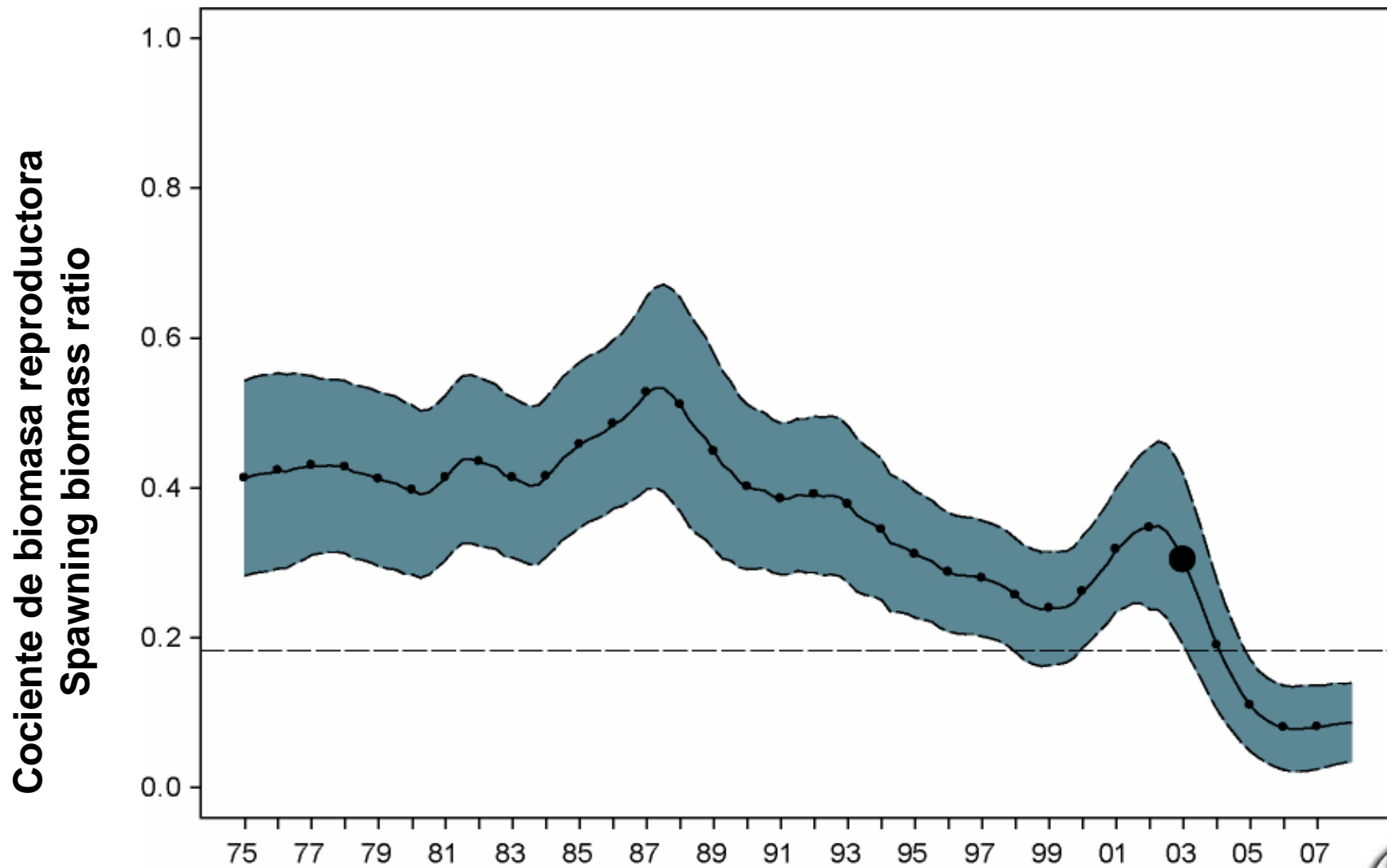
Atún patudo- Bigeye tuna



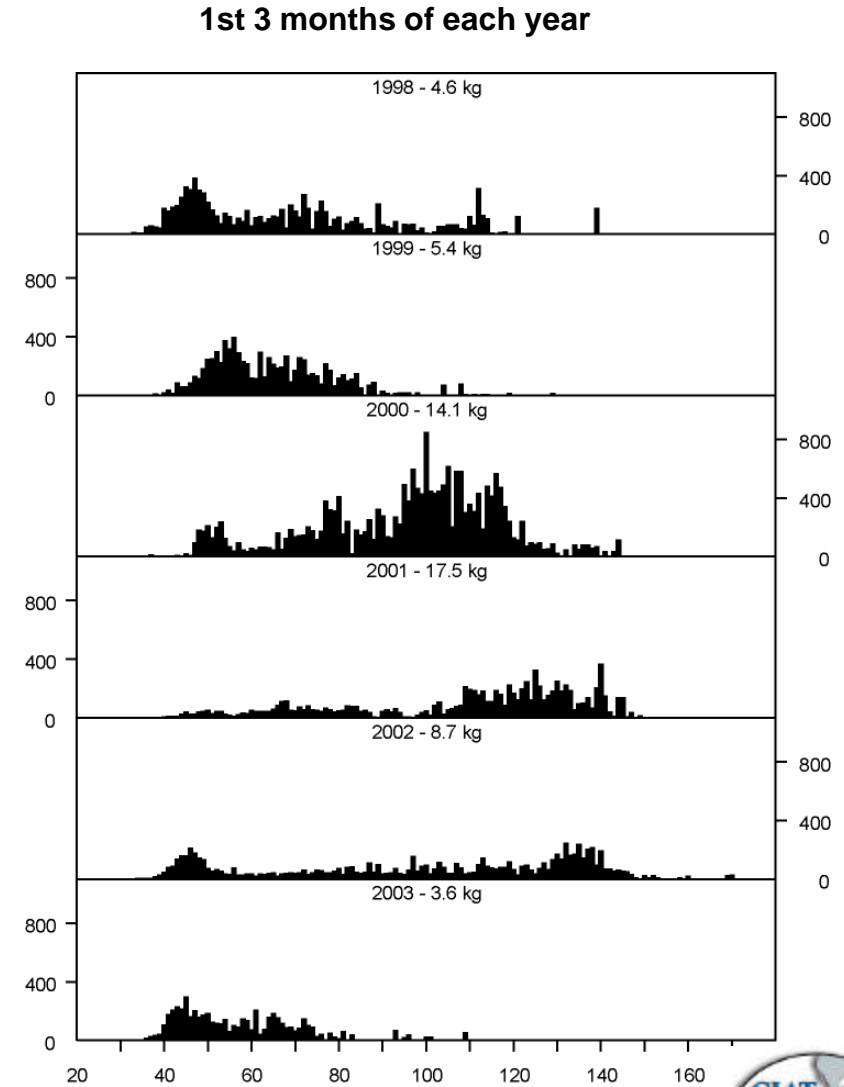
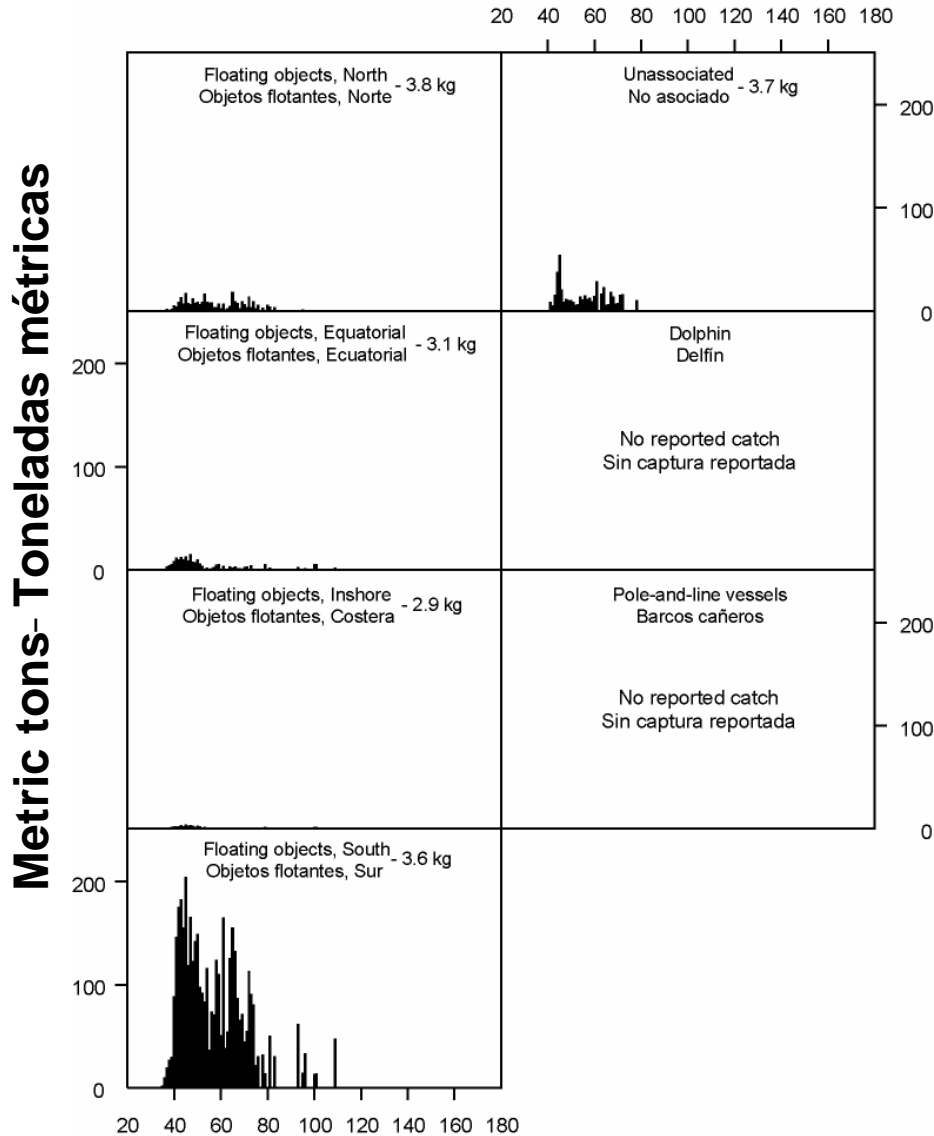
Atún patudo- Bigeye tuna



Atún patudo- Bigeye tuna



Atún patudo- Bigeye tuna

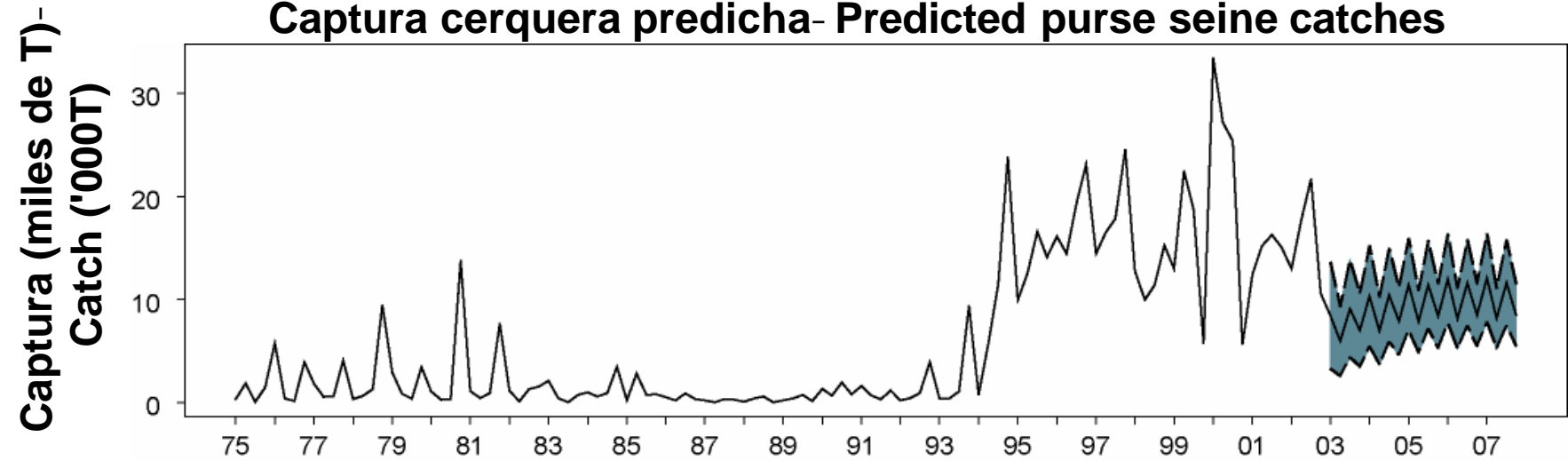


Talla (cm) Length

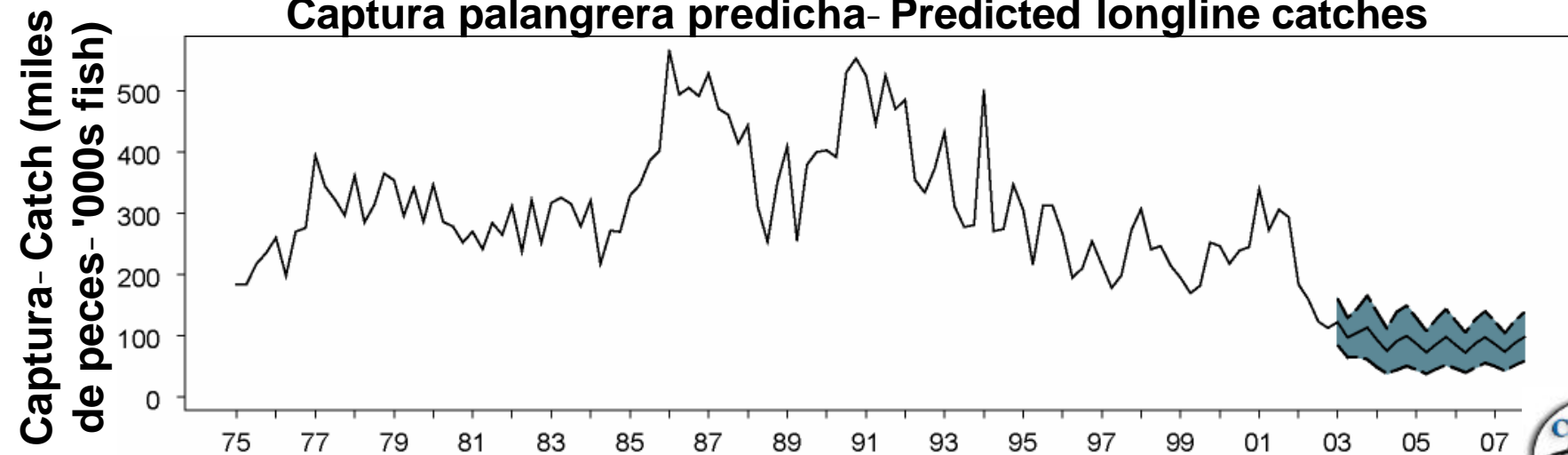


Atún patudo- Bigeye tuna

Captura cerquera predicha- Predicted purse seine catches



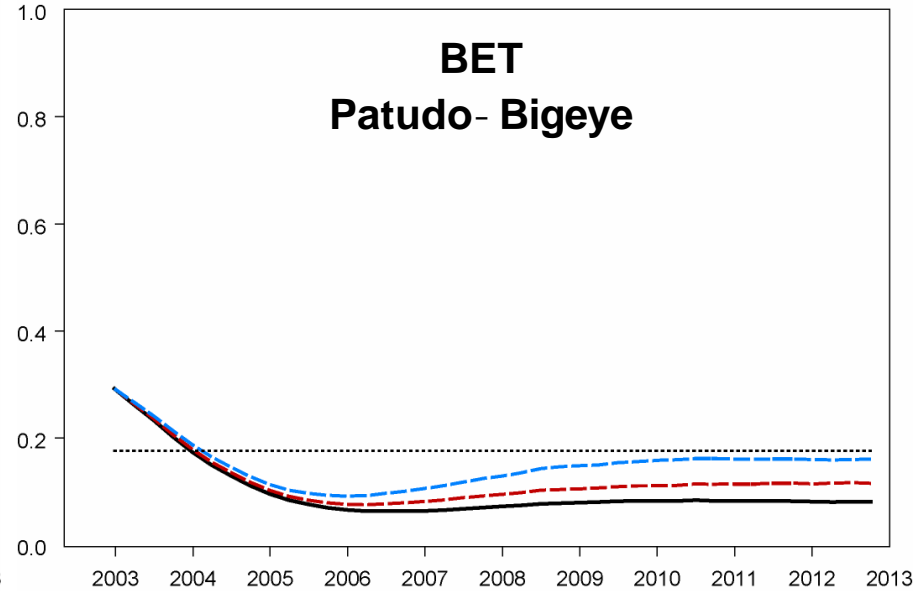
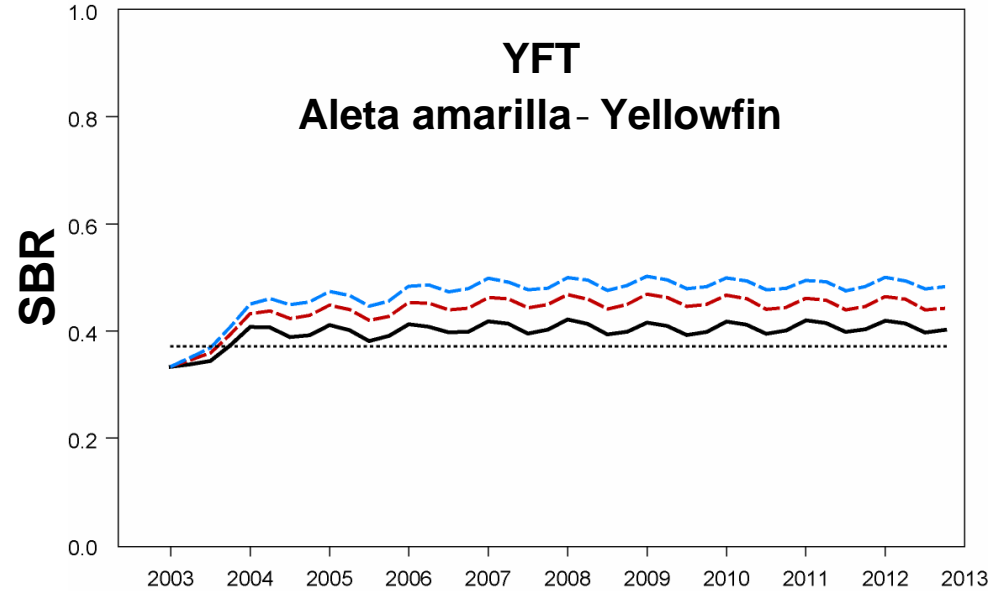
Captura palangrera predicha- Predicted longline catches



Simulación de los efectos de medidas de ordenación

Simulation of the effects of management measures

- Sin restricción- Unrestricted
- - - Restricción A- Restricted A
- - - Restricción B- Restricted B



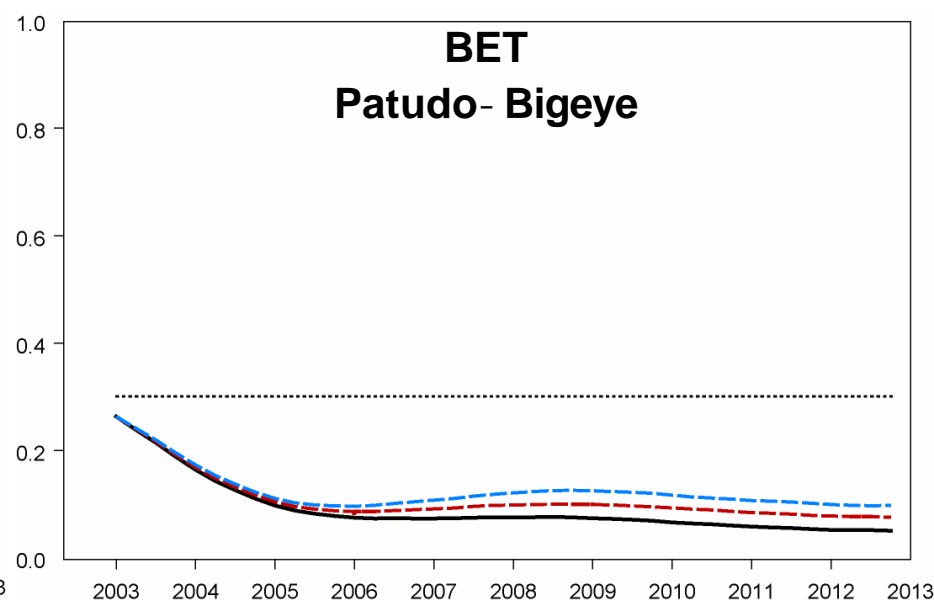
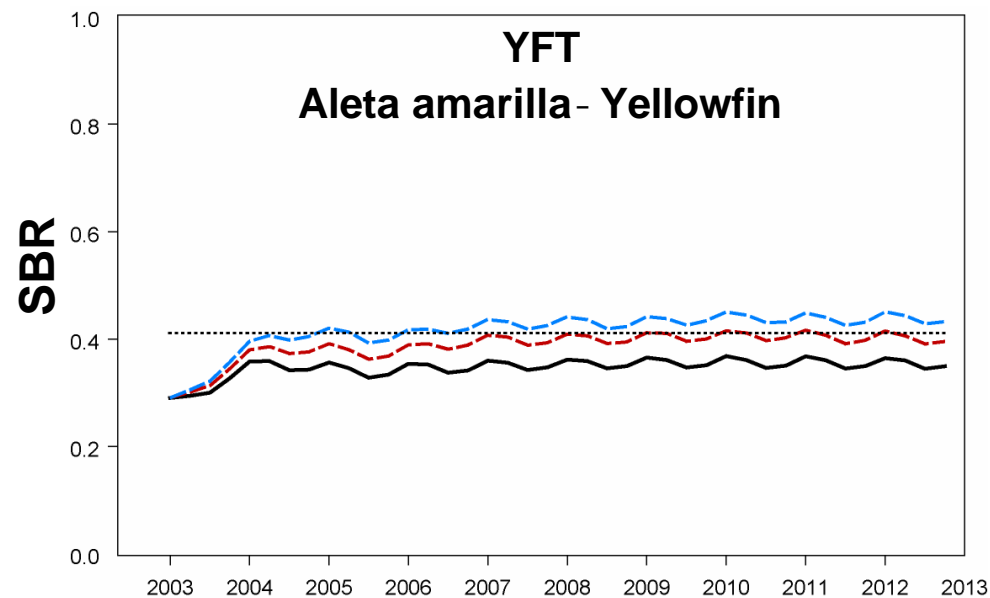
Simulación de los efectos de medidas de ordenación

Sensibilidad población-reclutamiento

Simulation of the effects of management measures

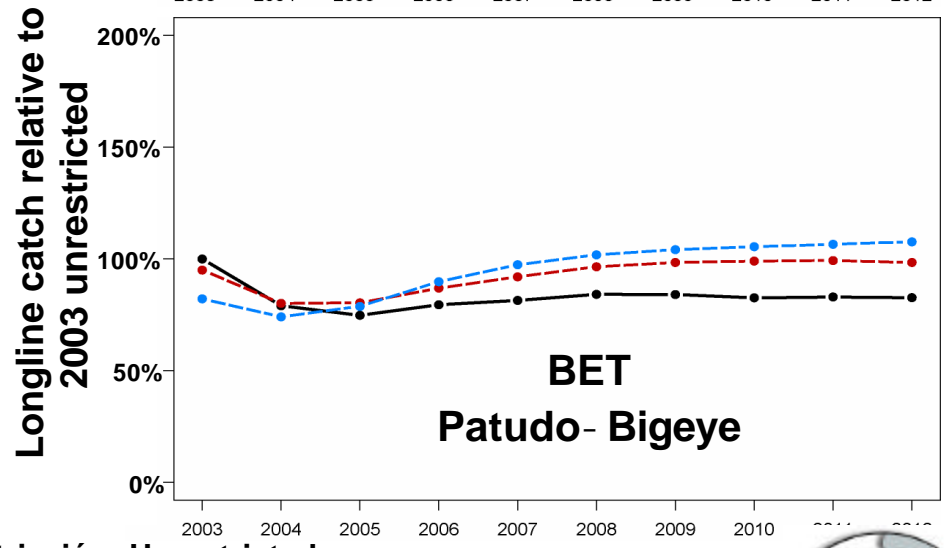
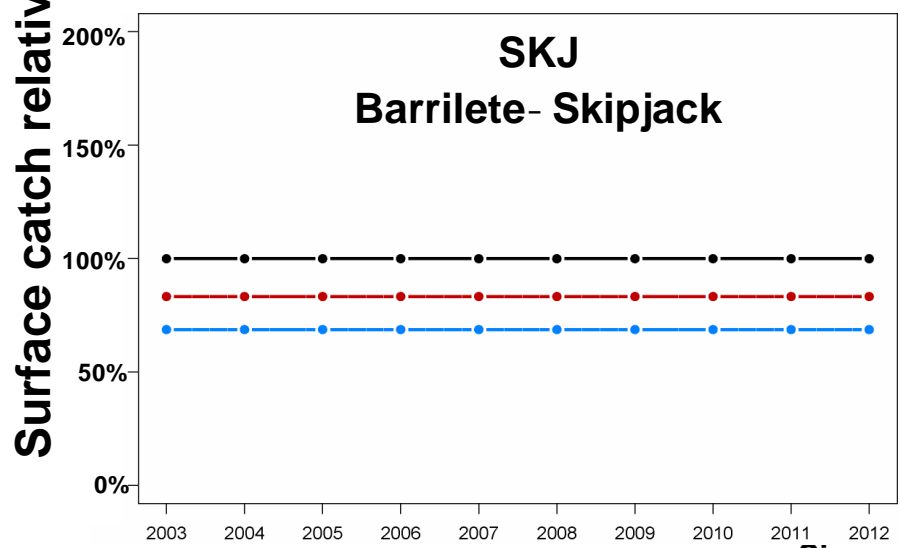
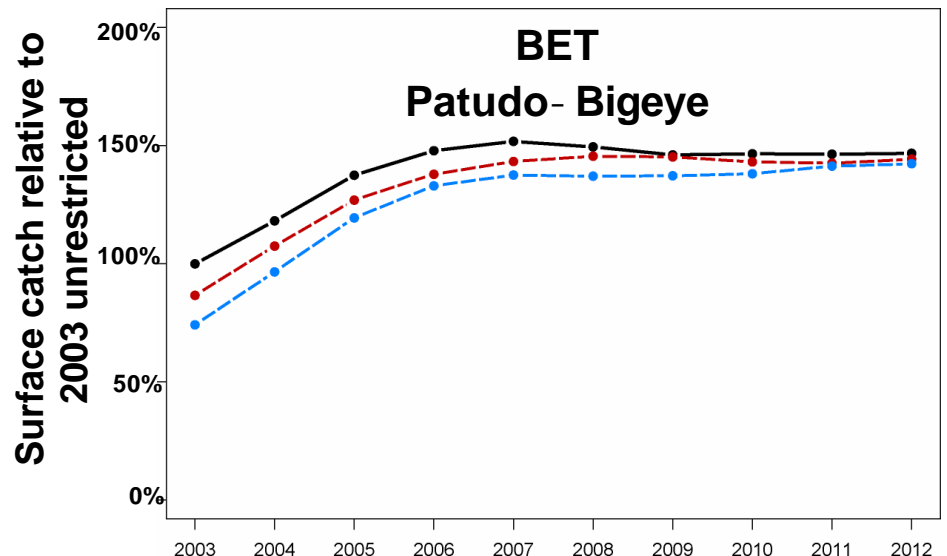
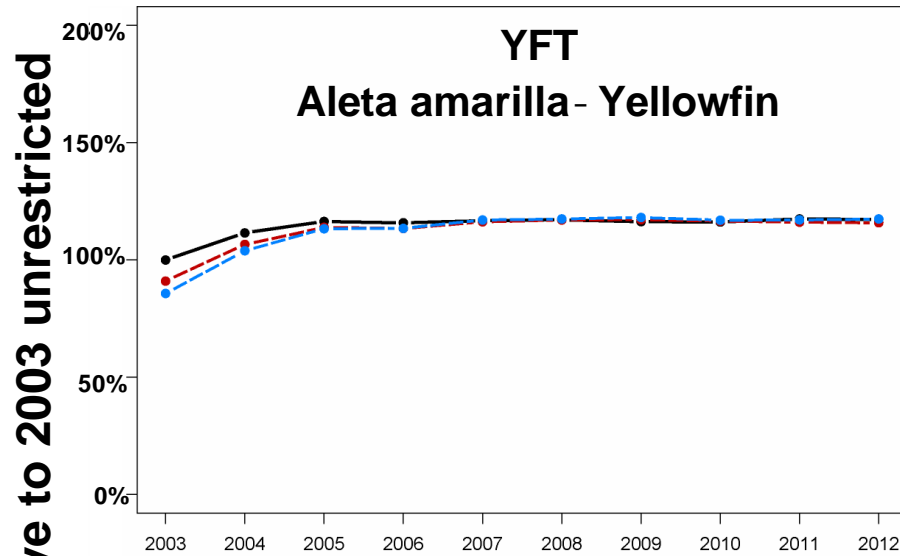
Stock-recruitment sensitivity

- Sin restricción- Unrestricted
- - - Restricción A- Restricted A
- - - Restricción B- Restricted B



Simulación de los efectos de medidas de ordenación

Simulation of the effects of management measures



Sin restricción- Unrestricted
 Restricción A- Restricted A
 Restricción B- Restricted B

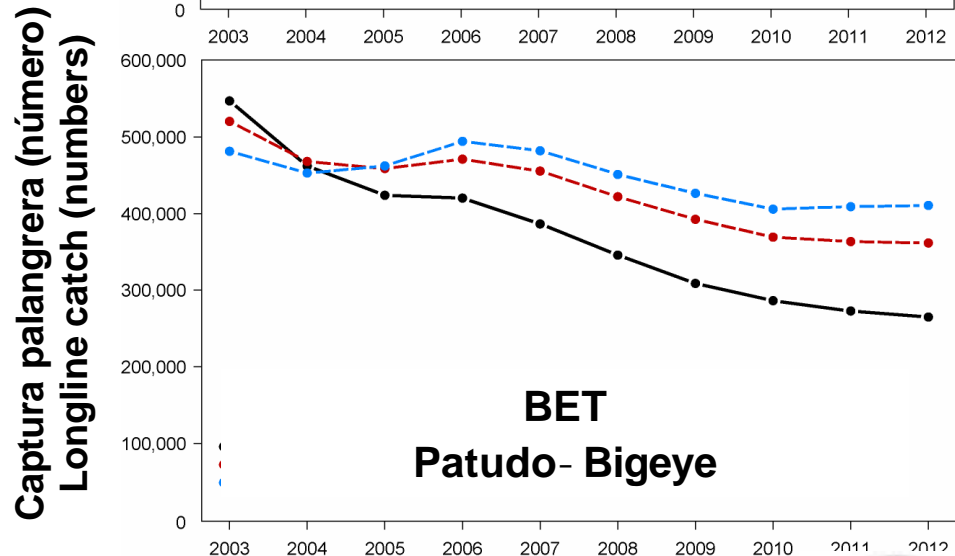
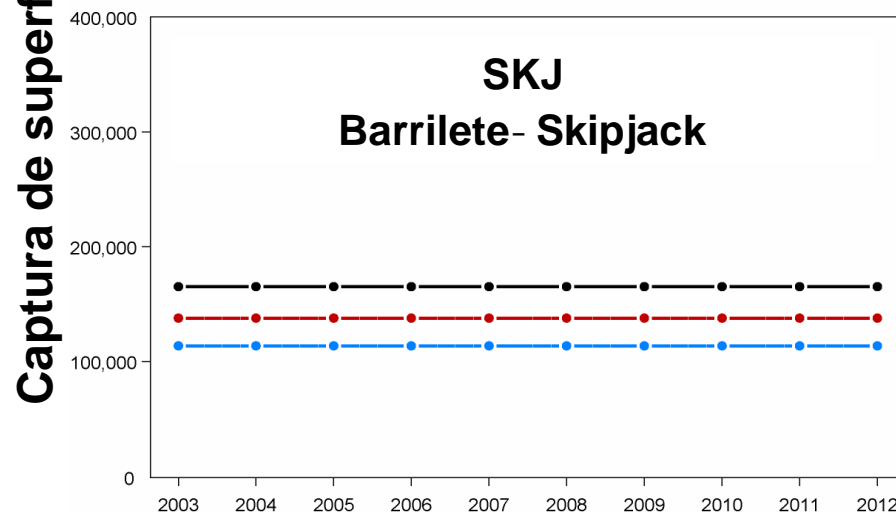
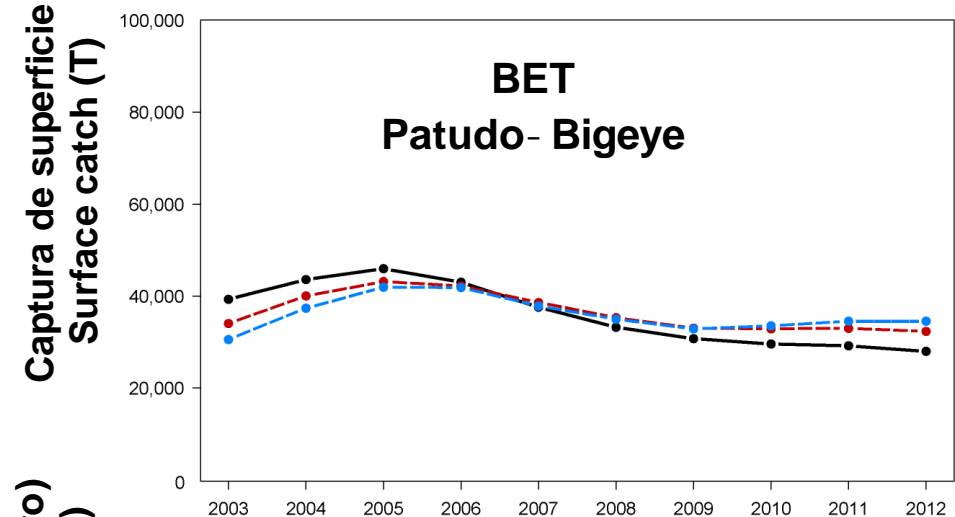
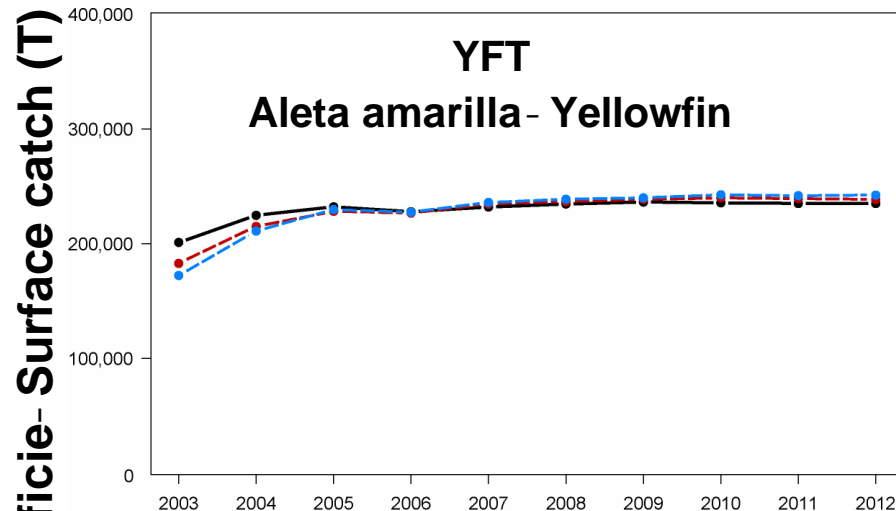


Simulación de los efectos de medidas de ordenación

Sensibilidad población-reclutamiento

Simulation of the effects of management measures

Stock-recruitment sensitivity



— Sin restricción- Unrestricted
 — Restricción A- Restricted A
 — Restricción B- Restricted B



Artículo publicado en *Nature* – *Nature* article (Myers & Worm)

- Expertos en la evaluación de poblaciones de atunes de agencias internacionales consideran el estudio inexacto
- Se ignoraron los comentarios de expertos
- No presenta datos de captura (disminuciones no consistentes con la dinámica de capturas y poblaciones)
- No presenta datos de especies individuales (resultados diferentes para especies individuales)
- Datos del Pacífico solamente para el sur de 10°S
- Información del Pacífico determinado principalmente por atún aleta azul del sur y atún albacora
 - aleta azul del sur ha sido sobreexplotado
 - cambios en especies objetivo redujeron capturas de albacora
- Resultados no reflejan la condición de atunes aleta amarilla, patudo o barrilete en el OPO

- Tuna stock assessment experts from international agencies consider the study flawed
- Experts comments were ignored
- Catch data not presented (the declines are not consistent with catch and population dynamics)
- Data for individual species not presented (results differ for individual species)
- Data from Pacific only for south of 10S
- Pacific are mainly determined by southern bluefin tuna and albacore tuna
 - southern bluefin has been over exploited
 - changes in targeting reduced the catches of albacore
- Results do not reflect of the status of yellowfin, bigeye or skipjack tuna in the EPO.



