Materials（Fishery Data）

- Catch Data in Weight：Kanagawa, Tokyo, Chiba（By Gear）

- Fisher Collaboration Data：Bottom Trawl（CPUE、3 Size Class）
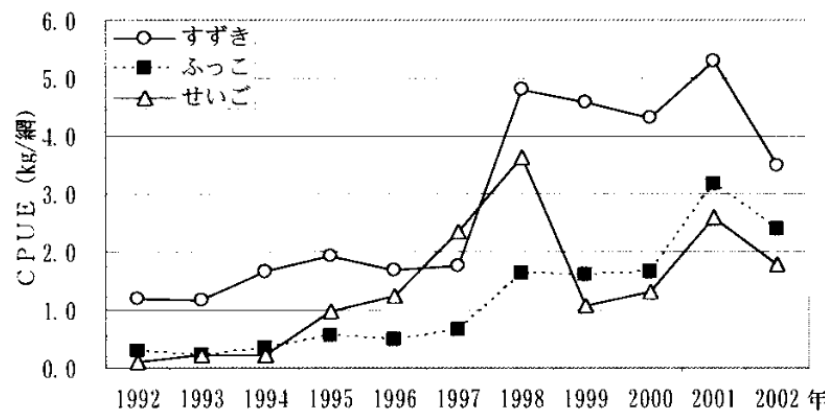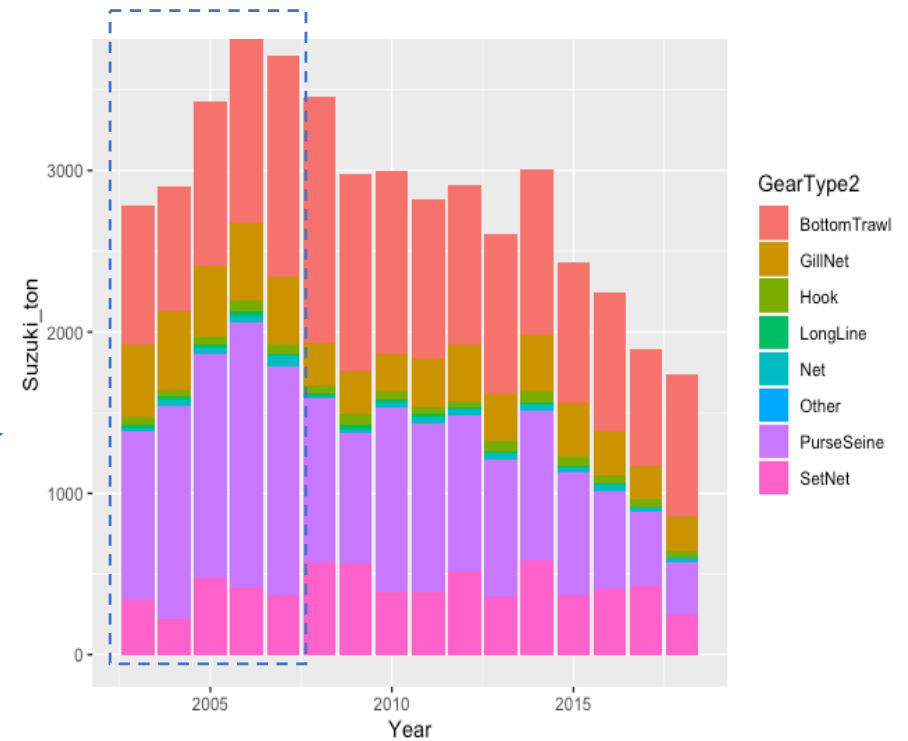
- Private Fishing Company Data：Chiba（Size Structure）
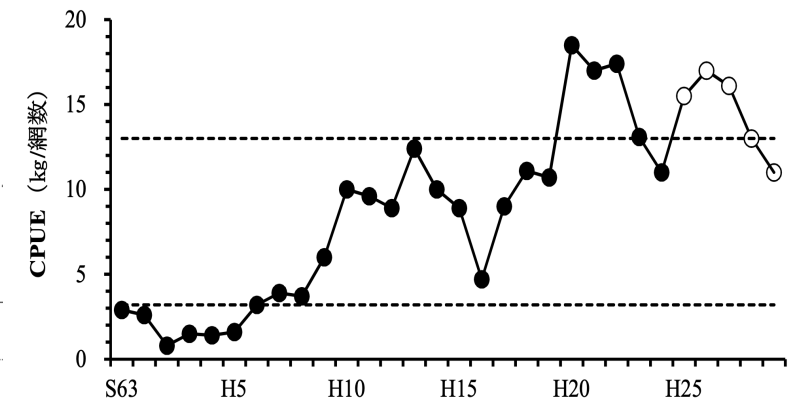
図２　1992年〜2002年における標本船のスズキの年別銘柄別CPUEの推移　　(加藤 & 池上 2004)

図33　東京湾における小型機船底びき網標本船によるCPUE（１投網あたり漁獲量）の推移（スズキ）

千葉県沿岸重要水産資源平成３０年度資源評価

Materials
（Life history parameter）

- Von Bertalanffy Growth Curve (Jiang et al. 2018)

  Linf = 67.02cm (SL)
  K = 0.302
  t_0 = 0.108

- Estimated Maturity age from size (Jiang et al. 2018)
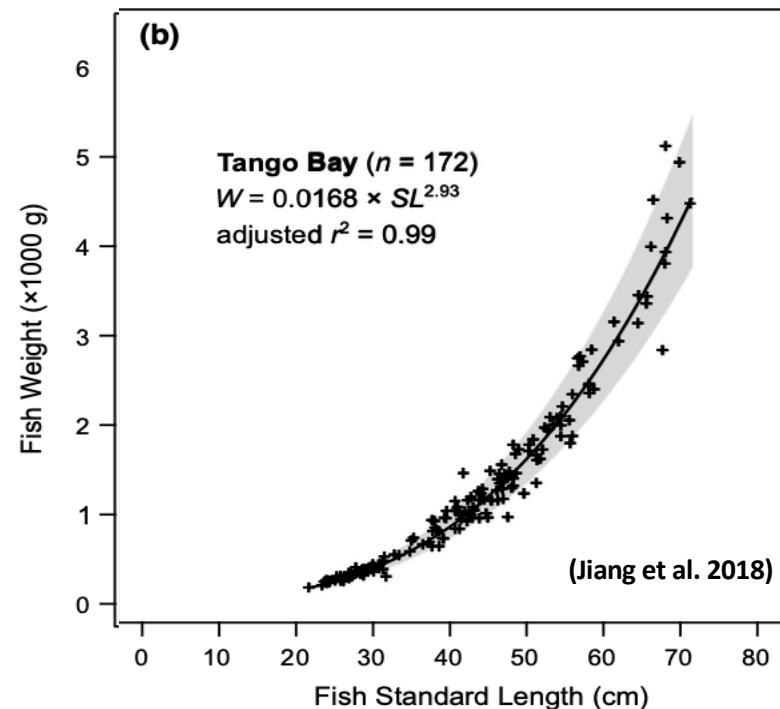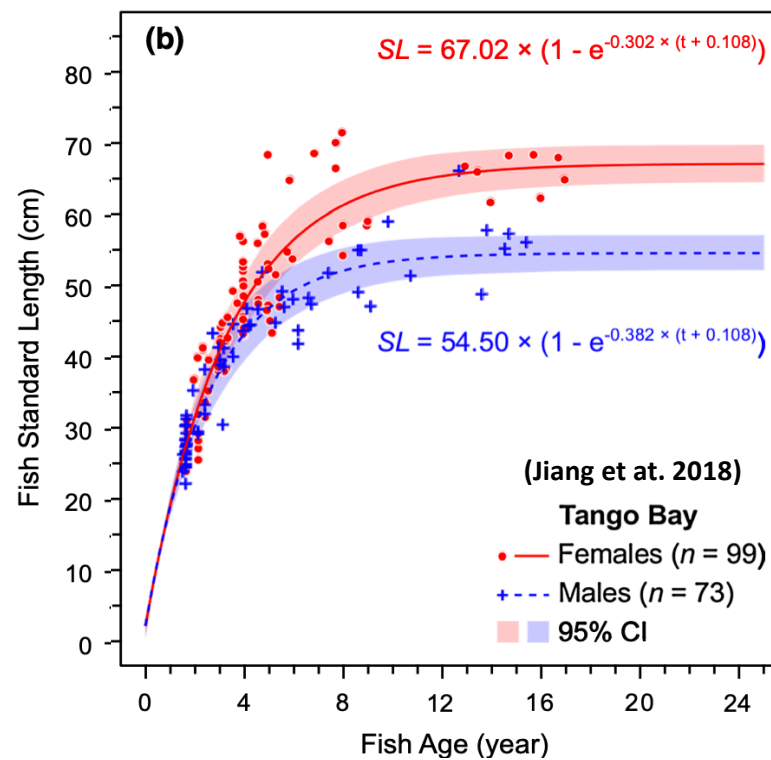 Male （2～3 yr）35.6 cm
  Female （3～4 yr）44.2 cm
  Final Lm = 44.2cm (3.5 yrs)

- Length-weight curve (Jiang et al. 2018)

- Natural Mortality
  M=0.29 (FishBase Life History Wizard)

(b)

$SL = 67.02 \times (1 - e^{-0.302 \times (t + 0.108)})$

$SL = 54.50 \times (1 - e^{-0.382 \times (t + 0.108)})$

(Jiang et at. 2018)
Tango Bay
• ── Females (n = 99)
+ --- Males (n = 73)
▮ 95% CI

Fish Standard Length (cm)

Fish Age (year)

(b)

Tango Bay (n = 172)
$W = 0.0168 \times SL^{2.93}$
adjusted r^2 = 0.99

(Jiang et al. 2018)

Fish Weight (×1000 g)
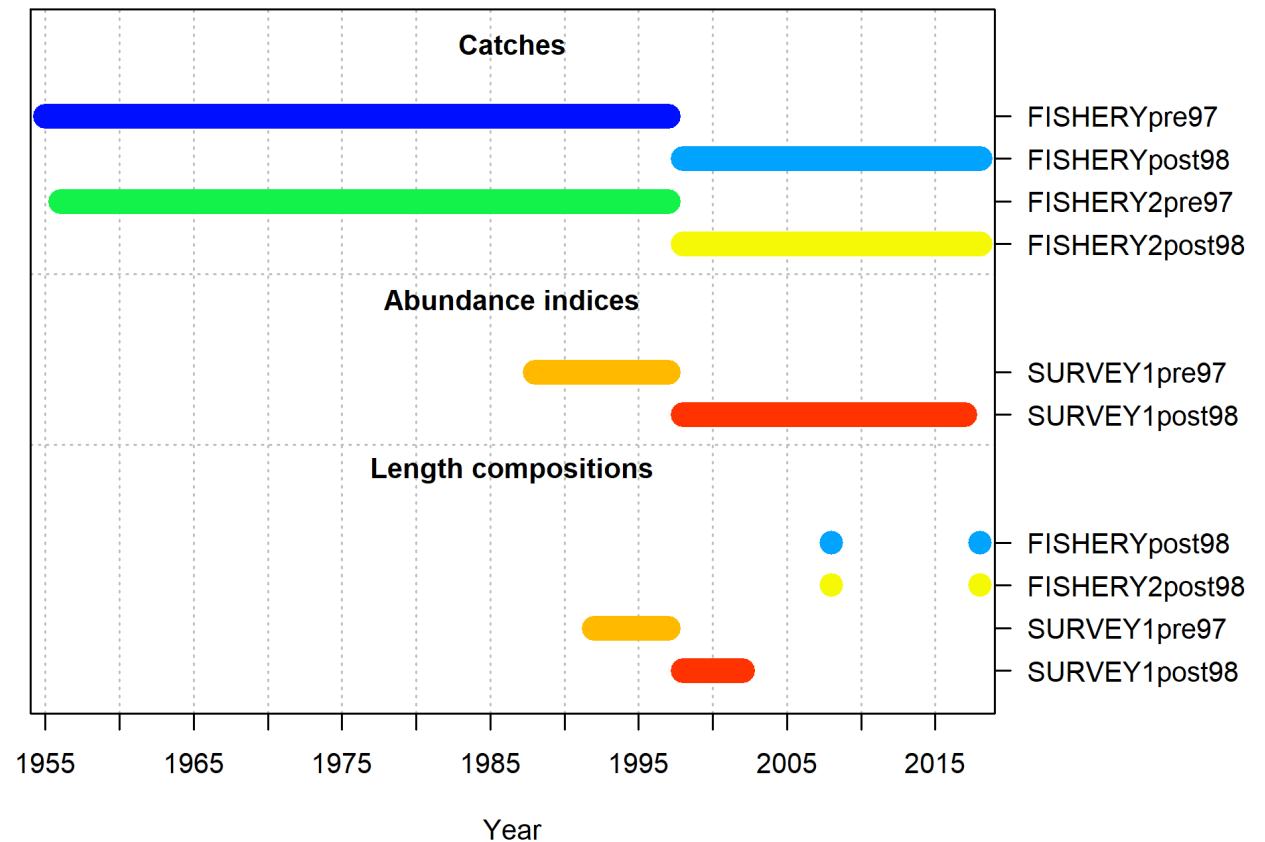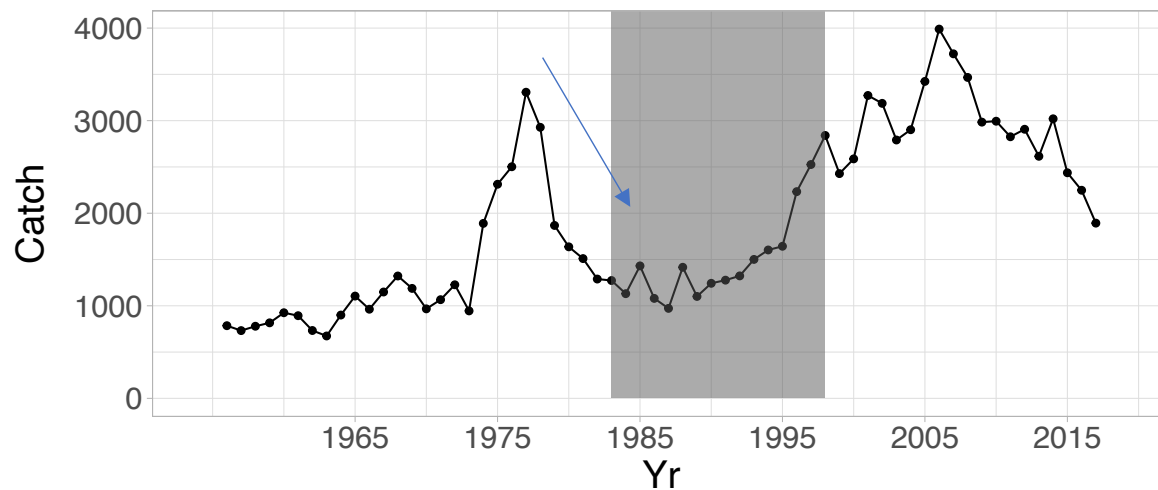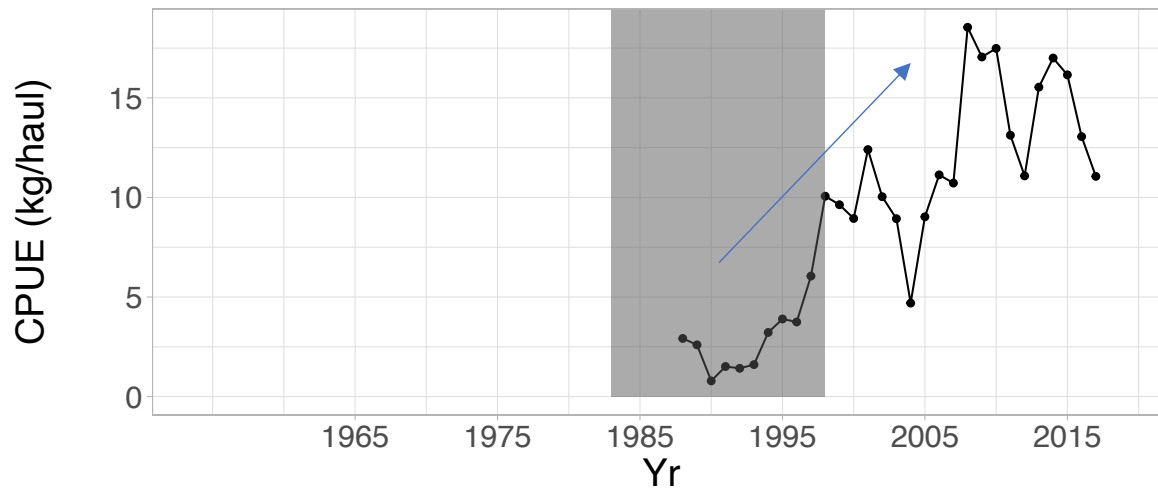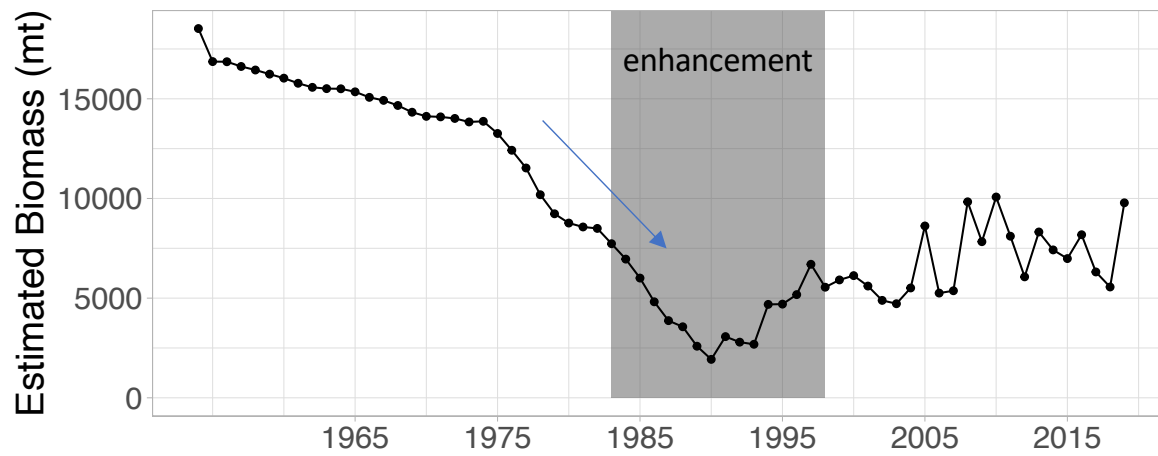
Fish Standard Length (cm)

Data Prep

- Split the data into two fleets (pre-97 and post-97)

- Convert the CPUE by size into number of catches to create legth composition data

Model

- Stock Synthesis 3.30

- Model Assumption
  - Target fish changes around 1997
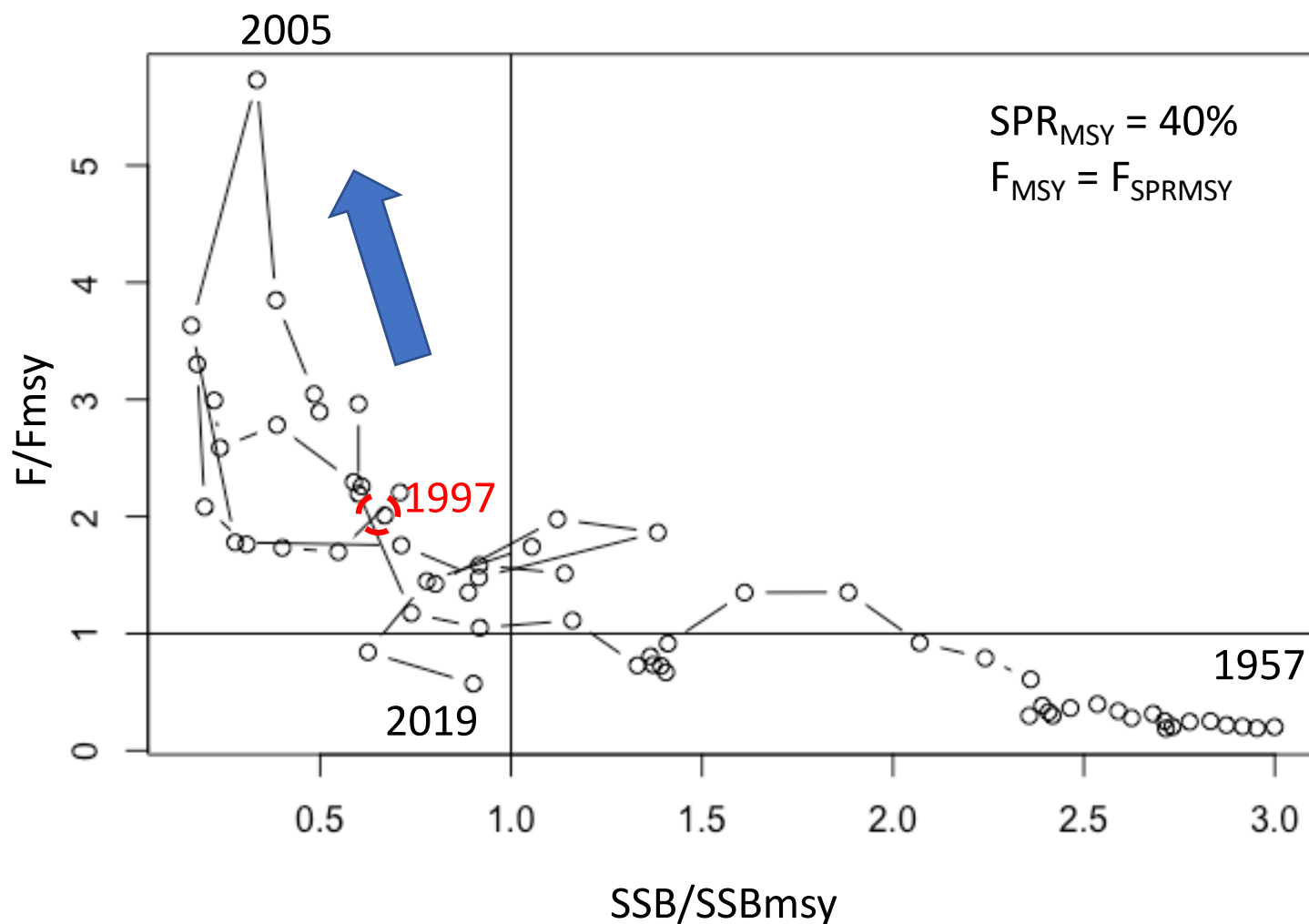 - Closed population within Tokyo Bay

Only fcatch data from 1957 to 1983 so the model estimates low recruitment when the catch declines after 1977.漁

Once CPUE data is available, we allowed higher recruitment deviation. The CPUE increases around catch data thus

Result

$SPR_{MSY} = 40\%$

$F_{MSY} = F_{SPRMSY}$
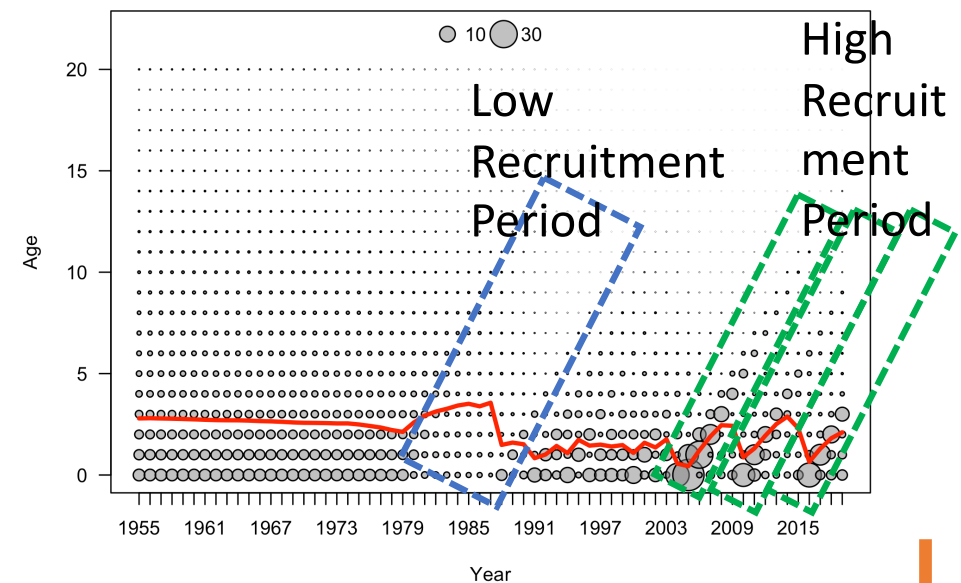
The fishing mortality did increase from 1997 when it started targeting Sea Bass up to 2005. However, the fishing pressure seems to have declined afterwards and SSB have been recovering since then. Furthermore, the fishery have not exceeded Fmsy in the last three years.

Some thoughts

- Tokyo Bay population is not really closed and thus the population is effected by the outside stock trend

- The life span of Lateolabrax japonicus seems to be around 16 ~24 which could be consider to be intermediate life-history strategy species (King and McFarlane 2003). Since they can wait out the unfavorable conditions, the population might have a regime pattern