

STATUS OF SKIPJACK TUNA IN THE EASTERN PACIFIC OCEAN IN 2014



Assessments

- A. Fishery and biological indicators;
- B. Analysis of tag data;
- C. A length-structured stock assessment model;
- D. Age-Structured Catch-at-Length Analysis (A-SCALA);
- E. A Spatial Ecosystem and Population Dynamic Model (SEAPODYM).

Only the indicator approach has been updated



Results

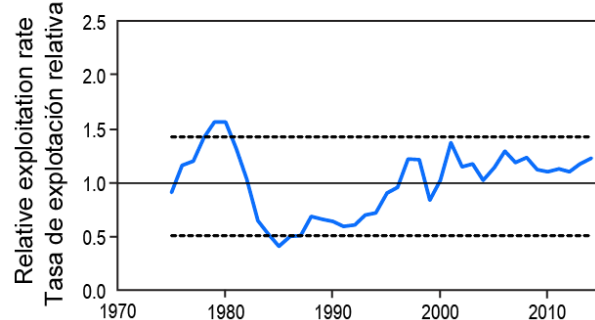
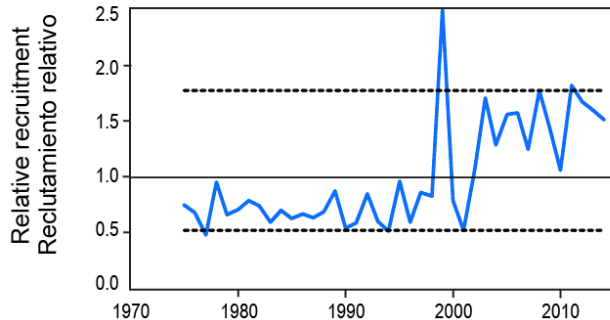
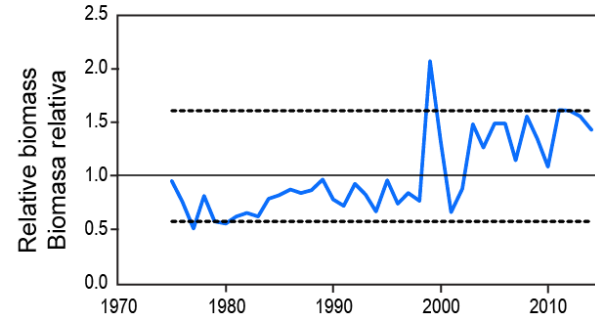
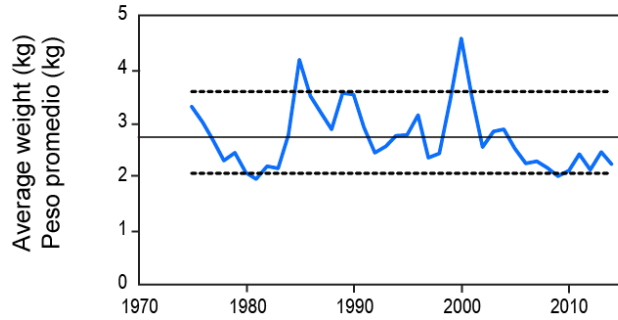
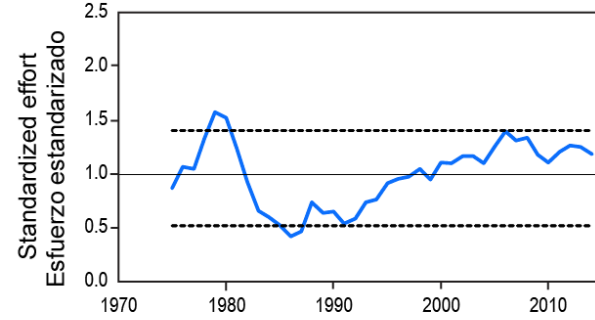
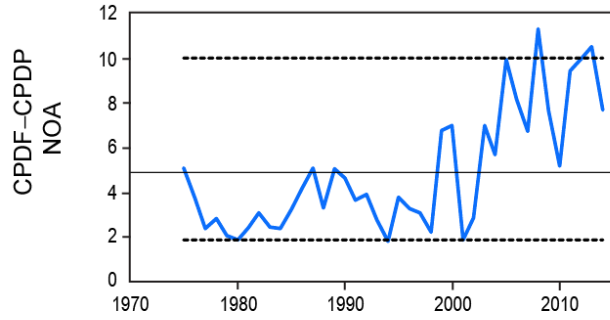
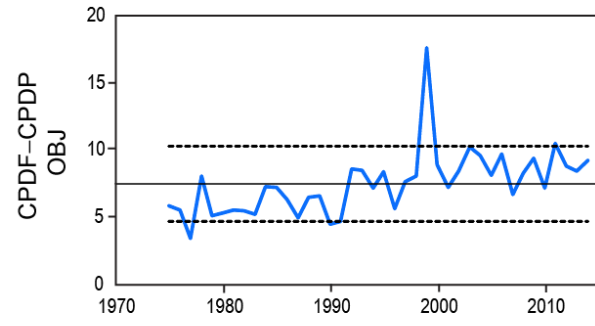
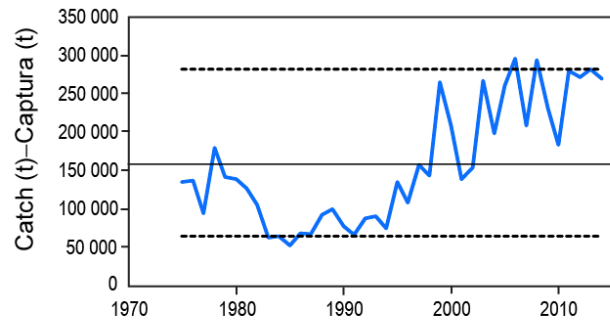
- Biomass, recruitment, and fishing mortality are estimated to be highly variable over time.
- The estimates are uncertain and differ among the alternative assessment methods.
- SEAPODYM estimates annual biomass of skipjack 30cm or larger cycling between 1,800,000 t and 2,350,000 t from 1998 to 2008, but the quality of these estimates has yet to be determined.
- Previous assessments using a catch-at-length analysis (A-SCALA) to assess skipjack tuna in the EPO were considered preliminary
- Maximum yields are achieved with infinite fishing mortality because the critical weight is less than the average weight at recruitment to the fishery. However, this is uncertain because of uncertainties in the estimates of natural mortality and growth.



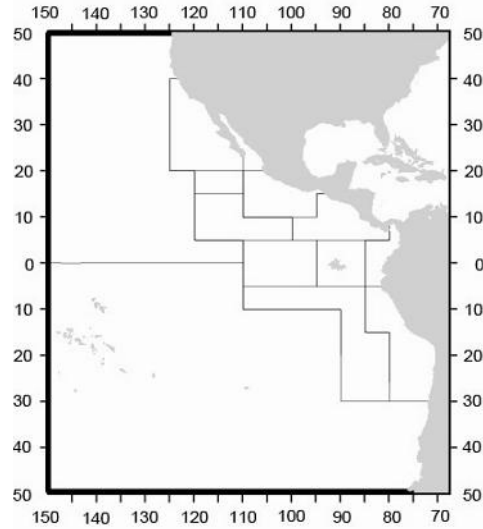
Indicators

- No traditional reference points are available for skipjack tuna in the EPO.
- Consequently, indicators and reference levels have been used to evaluate the status of the stock.

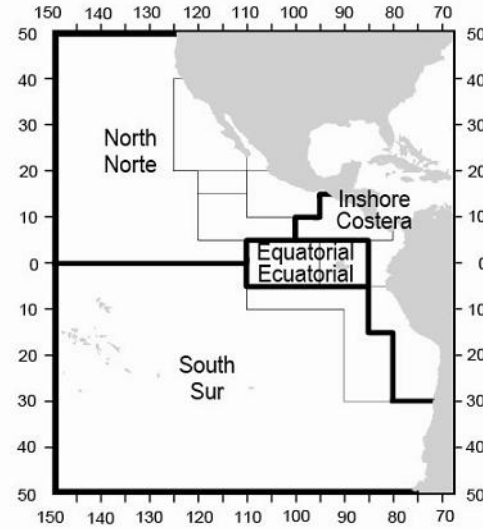




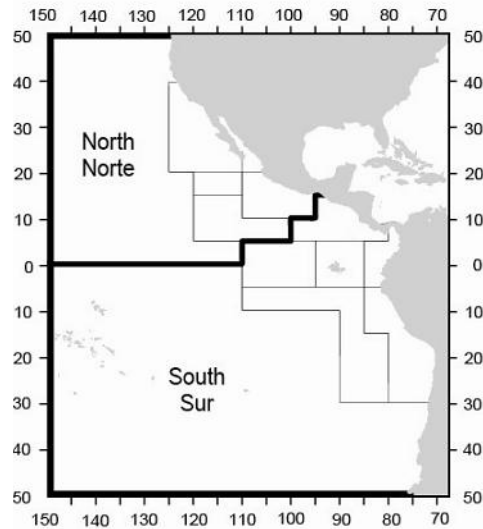
Unassociated - Bigeye, bluefin
 Dolphin - Bigeye, skipjack
 Pole-and-line vessels - All species
 No asociado - Patudo y aleta azul
 Delfín - Patudo y barrilete
 Barcos cañeros - Todas especies



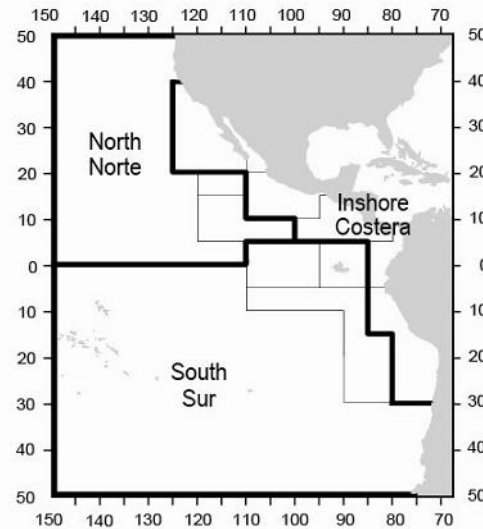
Floating objects - All species
 Objetos flotantes - Todas especies

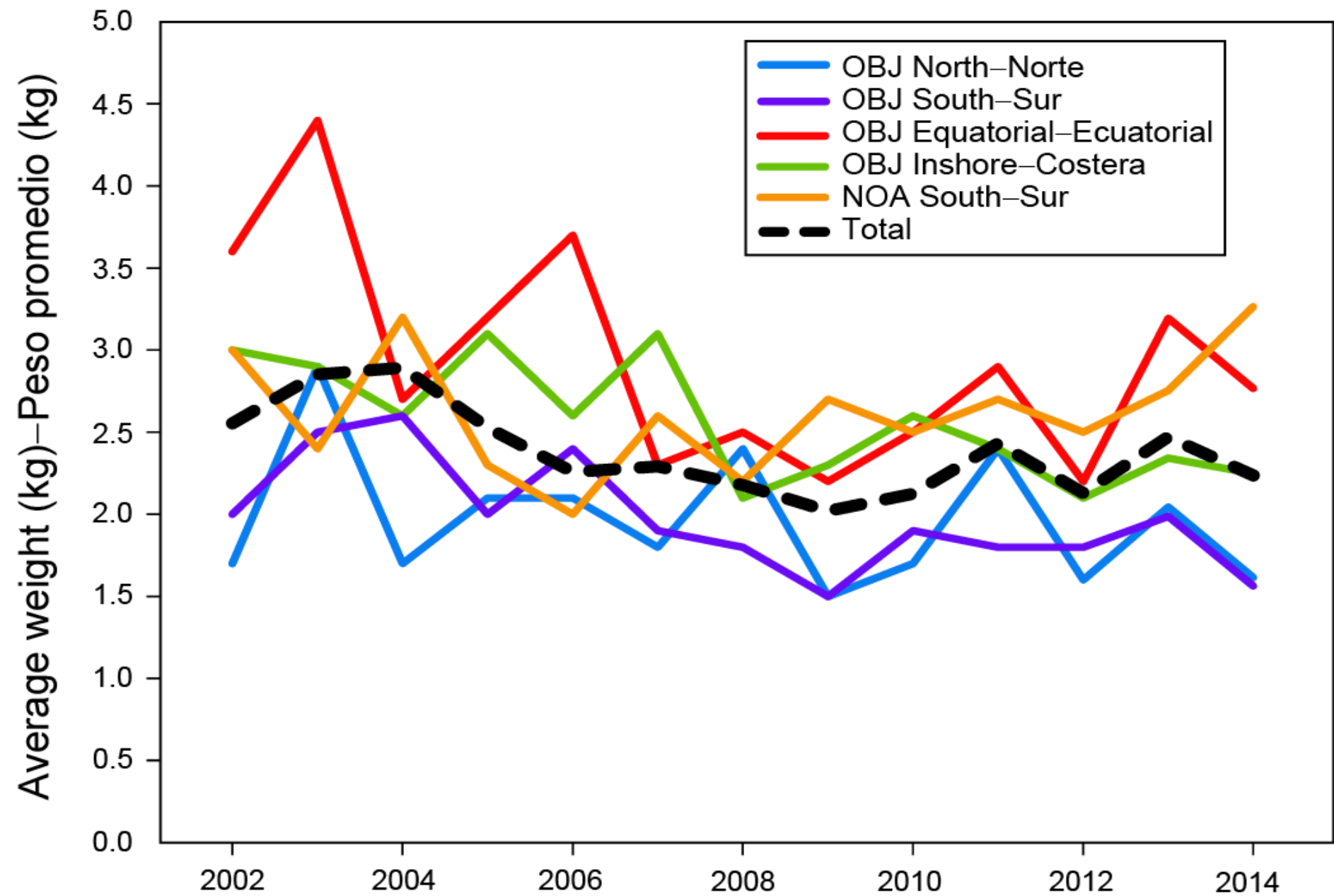


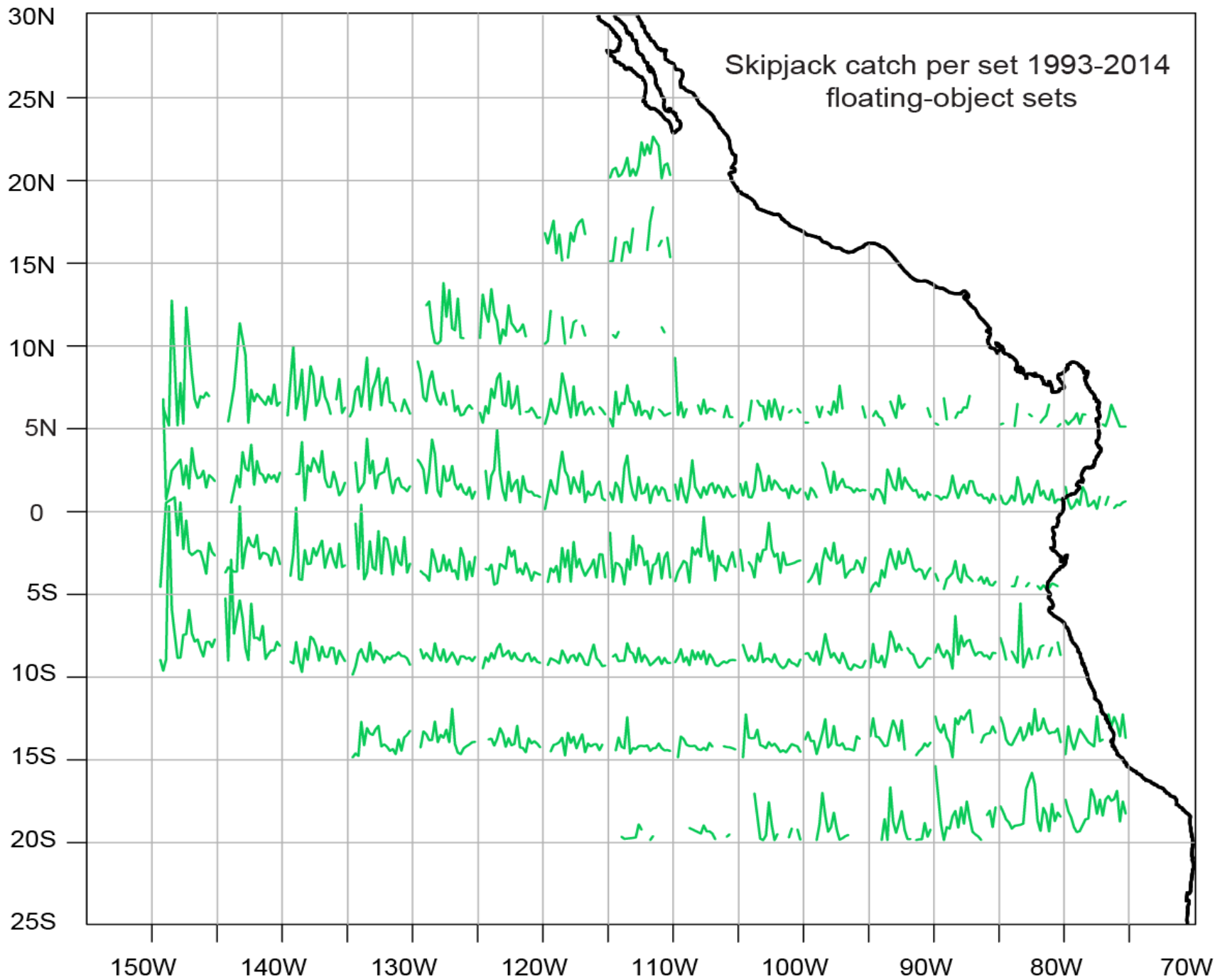
Unassociated - Skipjack, yellowfin
 No asociado - Barrilete y aleta amarilla



Dolphins - Yellowfin
 Delfín - Aleta amarilla







Status inferred from productivity susceptibility analysis (PSA)

- Skipjack has substantially higher productivity than bigeye tuna.
- Biomass and fishing mortality corresponding to MSY are, respectively, negatively and positively related to productivity.
- Skipjack and bigeye have about the same susceptibility, which is related to fishing mortality,
- The status of skipjack can be inferred from the status of bigeye.
- The current assessment of bigeye tuna estimates that the fishing mortality is less than F_{MSY} ; therefore, the fishing mortality for skipjack should also be less than F_{MSY} .
- Since effort and skipjack biomass have been relatively constant over the past 10 years, this also implies that skipjack biomass is above B_{MSY} .



Conclusions

- There is uncertainty about the status of skipjack tuna in the EPO.
- There may to be differences in the status of the stock among regions.
- There is no evidence that indicates a credible risk to the skipjack stock(s).
- No additional management action is needed above and beyond that implemented for the conservation of bigeye tuna.

