Evaluation of the declining catch per set in the purse-seine fishery on floating OBJECTS IN the eastern pacific ocean

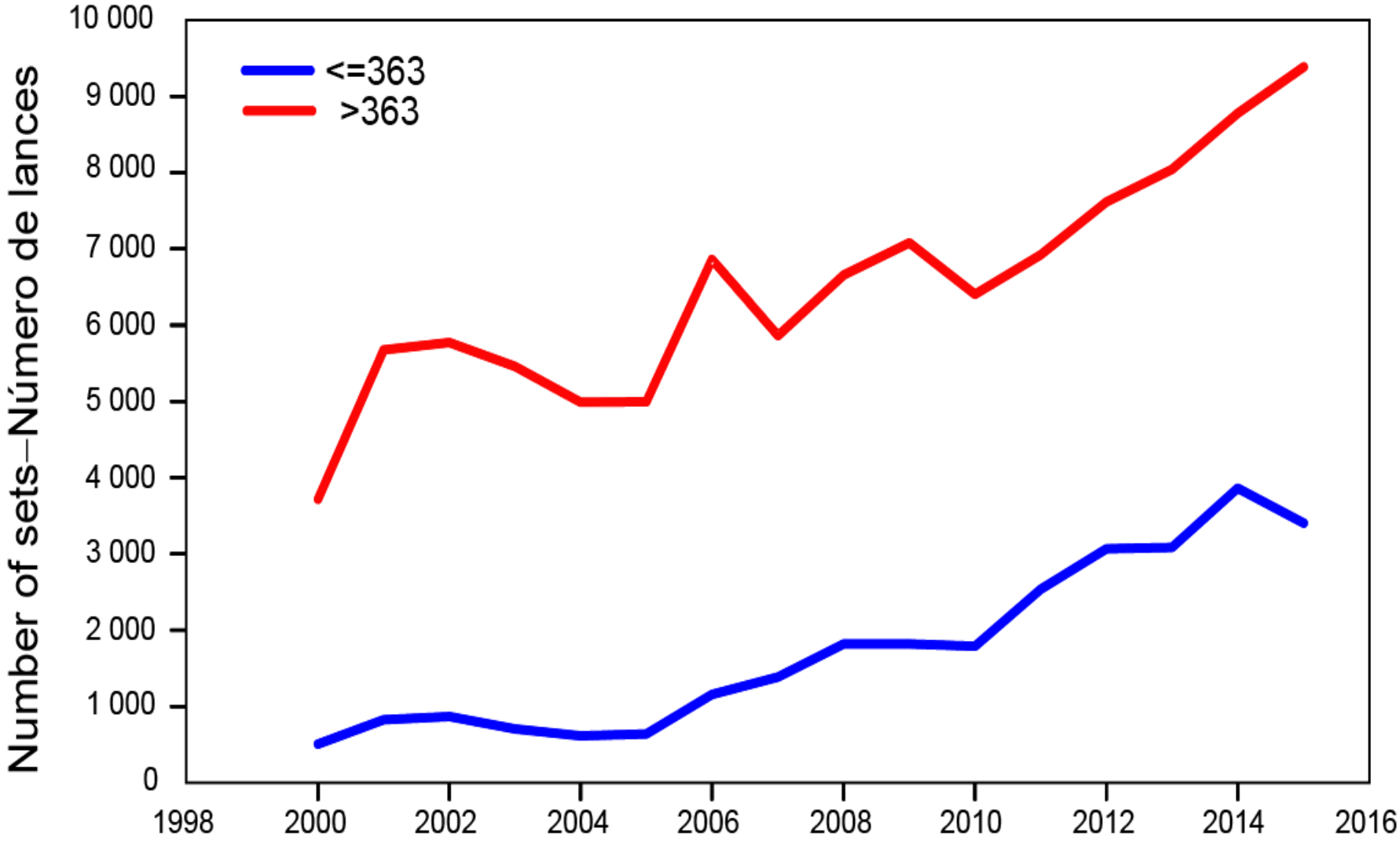
Issue

- There is concern over the increasing effort in the FADs fishery and its correlation with reduced catch per set for all three major tropical tuna species (bigeye, yellowfin, and skipjack), particularly bigeye.

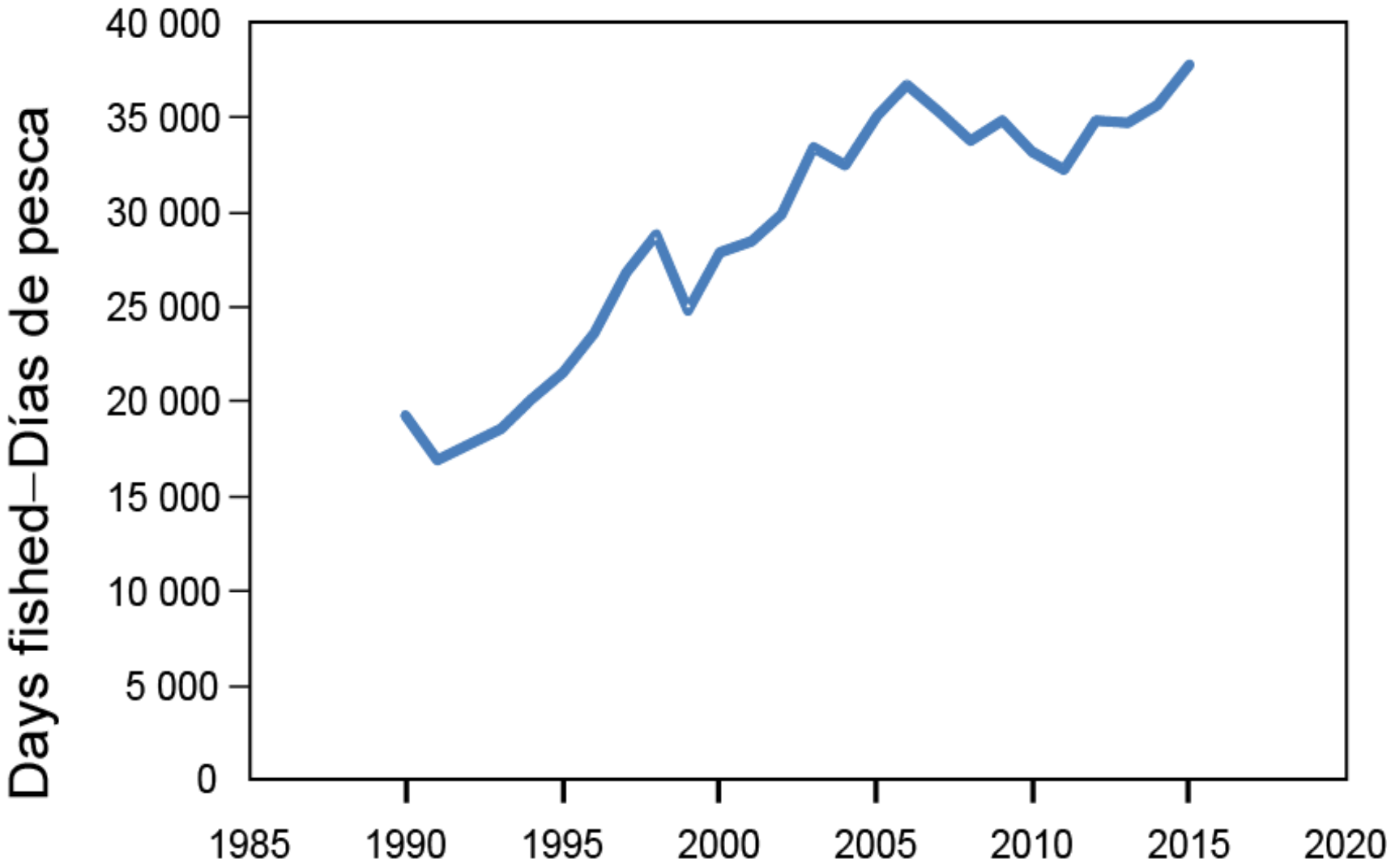
Hypotheses

- H1: Declining abundance
- H2: Declining number of tuna per FAD as the number of FADs increases, because the tuna disperse themselves among FADs
- H3: Change of targeting practices (*e.g*. a shift to skipjack, avoiding bigeye)

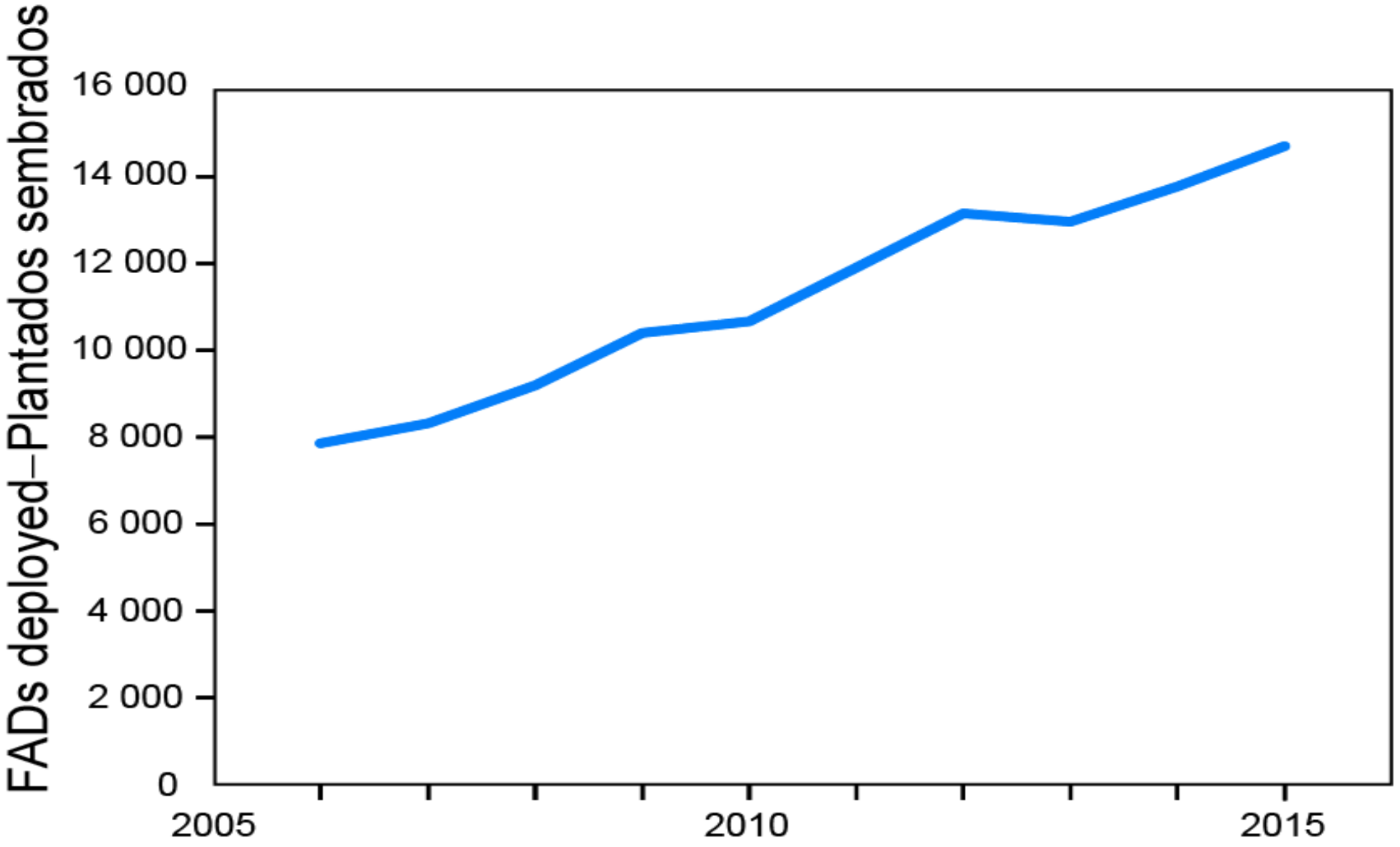
Number of sets



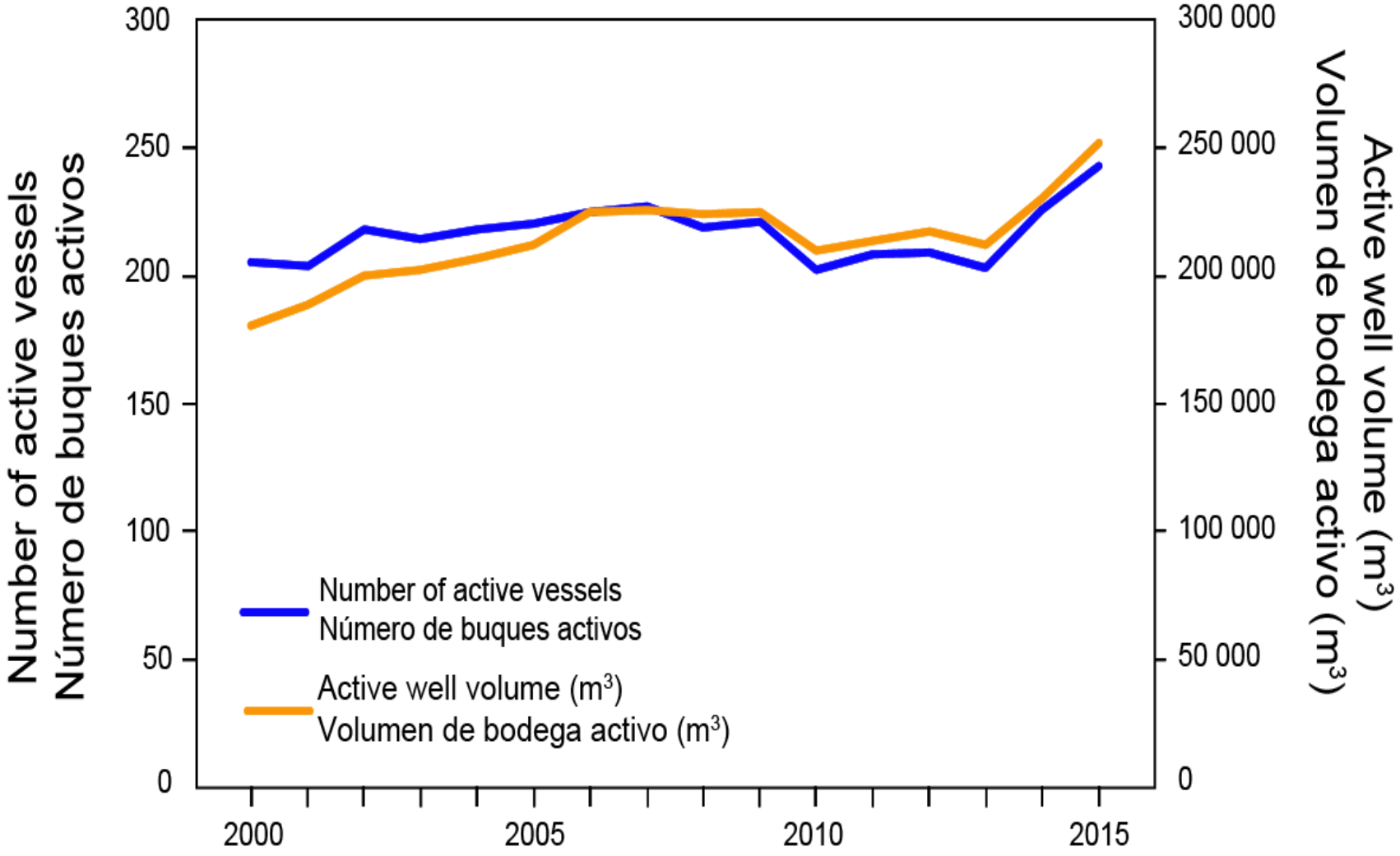
Days fished

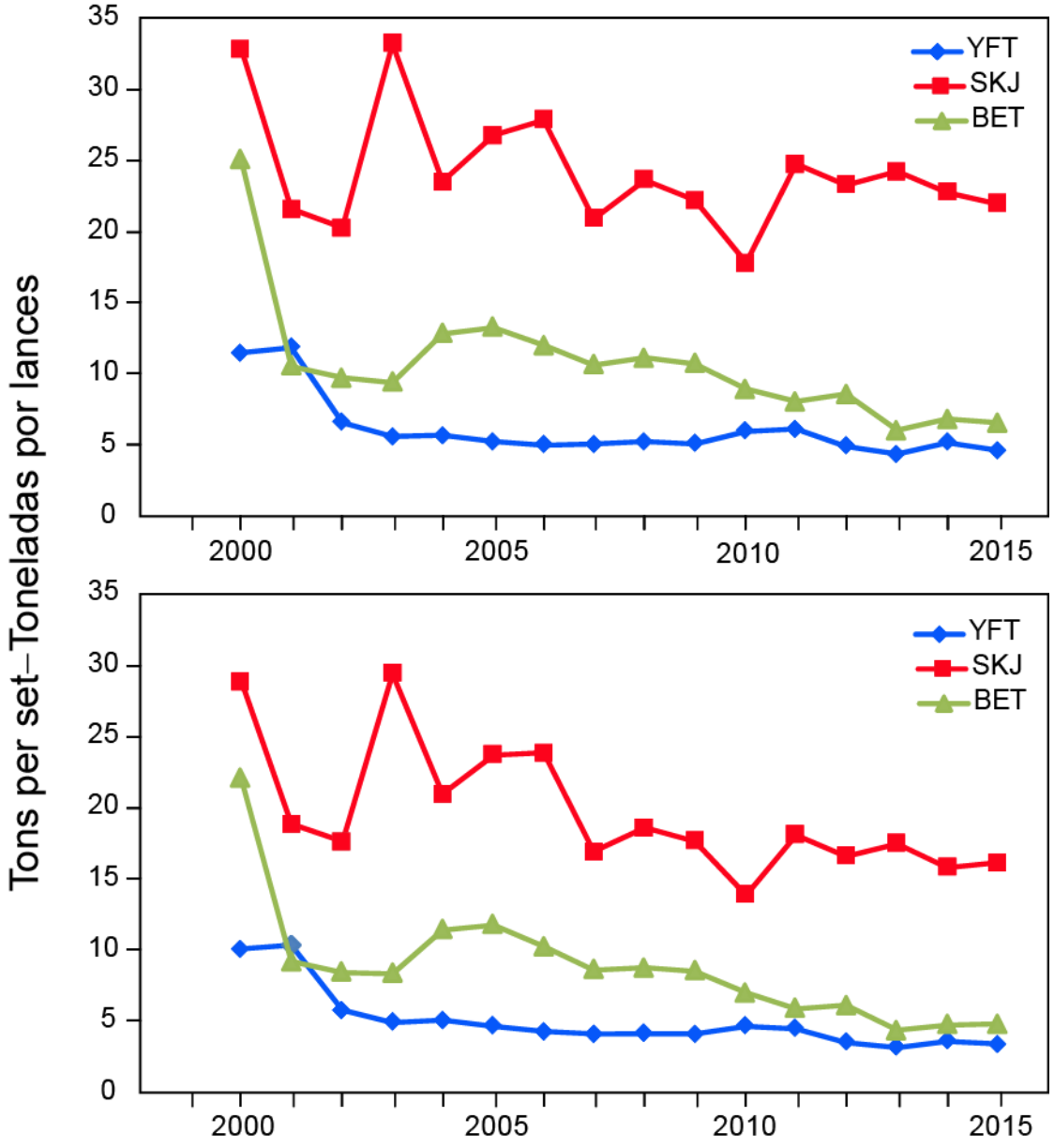

Days fished–Días de pesca
40 000
35 000
30 000
25 000
20 000
15 000
10 000
5 000
0
1985
1990
1995
2000
2005
2010
2015
2020

FADs deployed

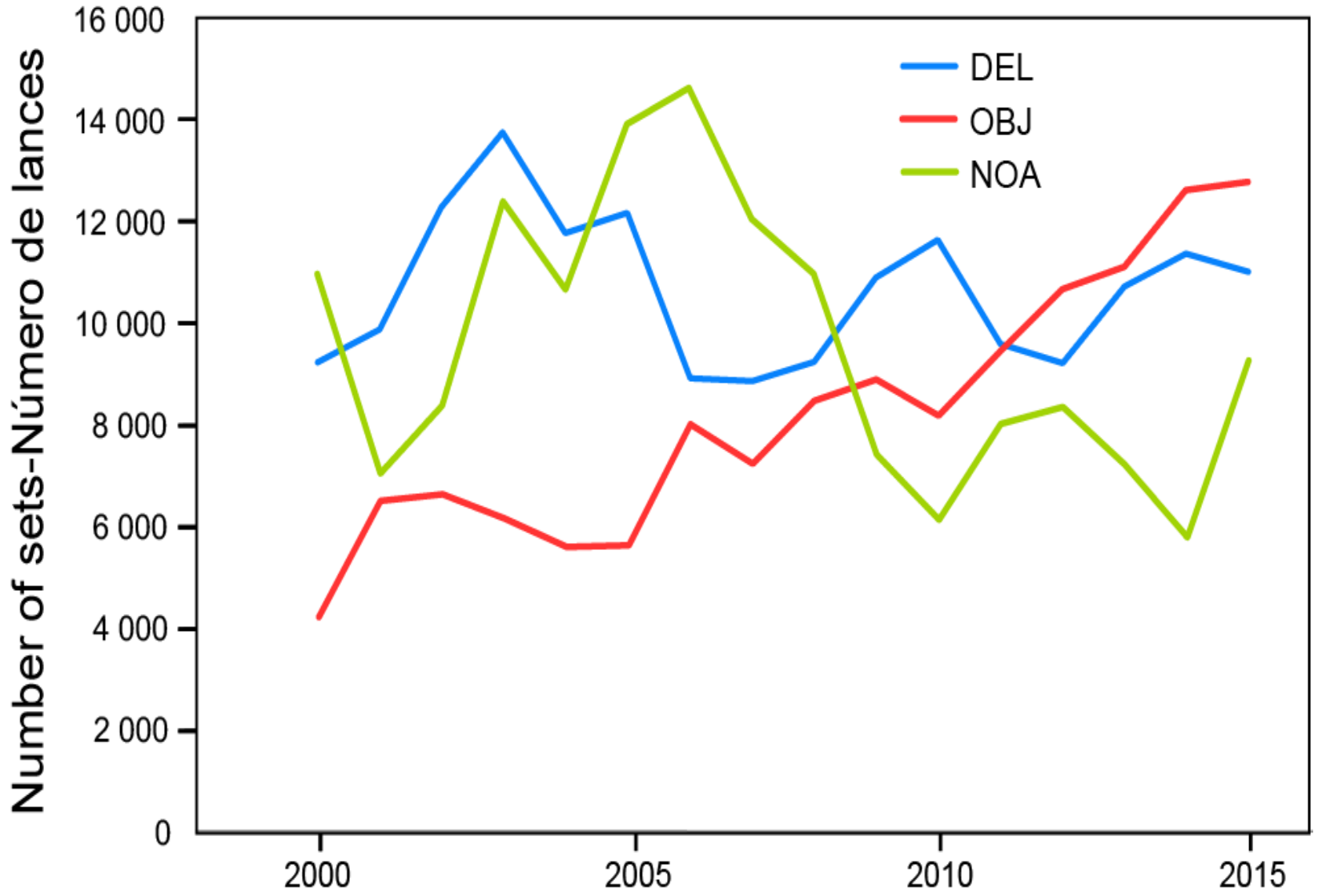


Vessels and capacity

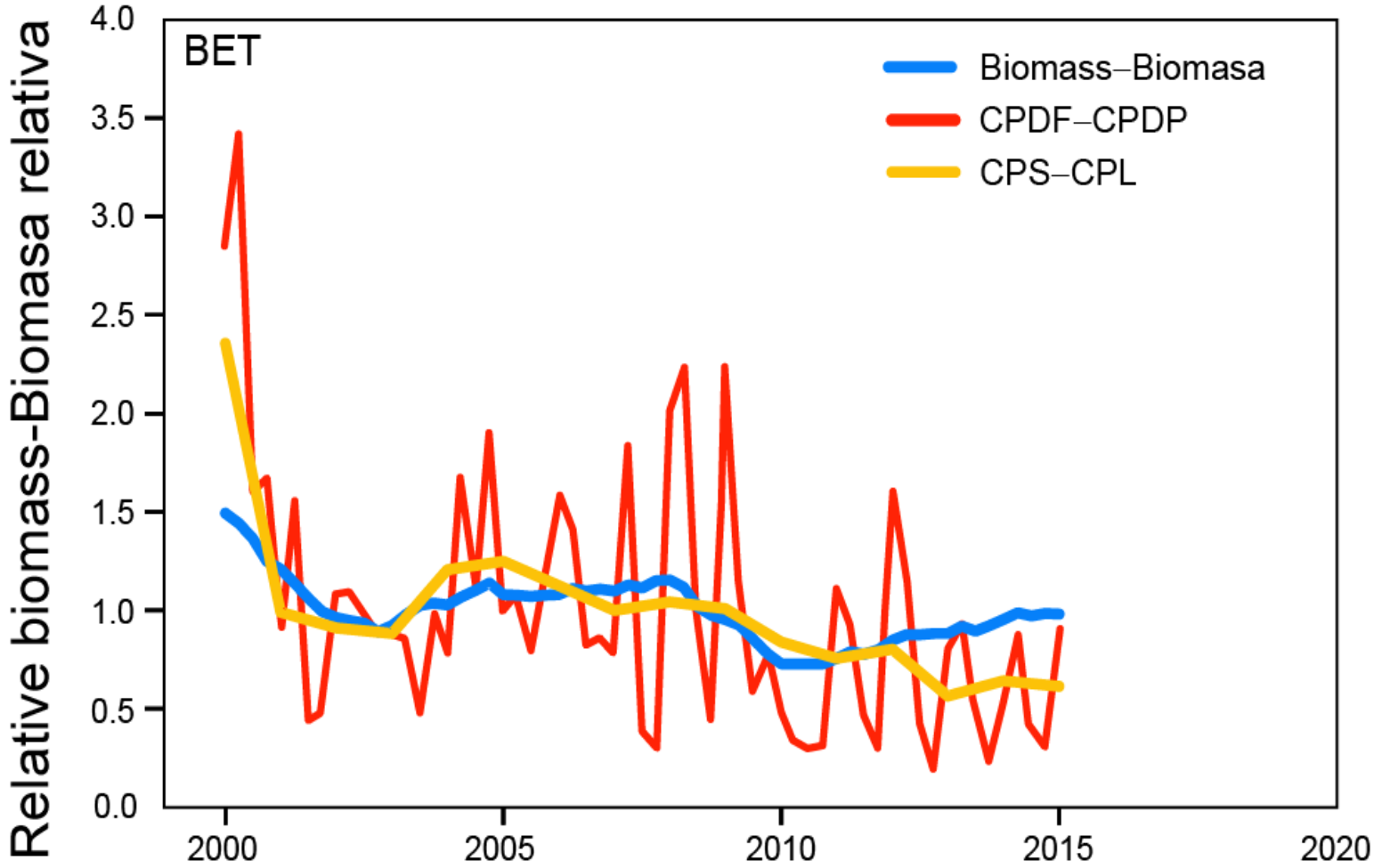



Tons per set–Toneladas por lances
35
30
25
20
15
10
5
0
2000
2005
2010
2015
YFT
SKJ
BET
35
30
25
20
15
10
5
0
2000
2005
2010
2015
YFT
SKJ
BET

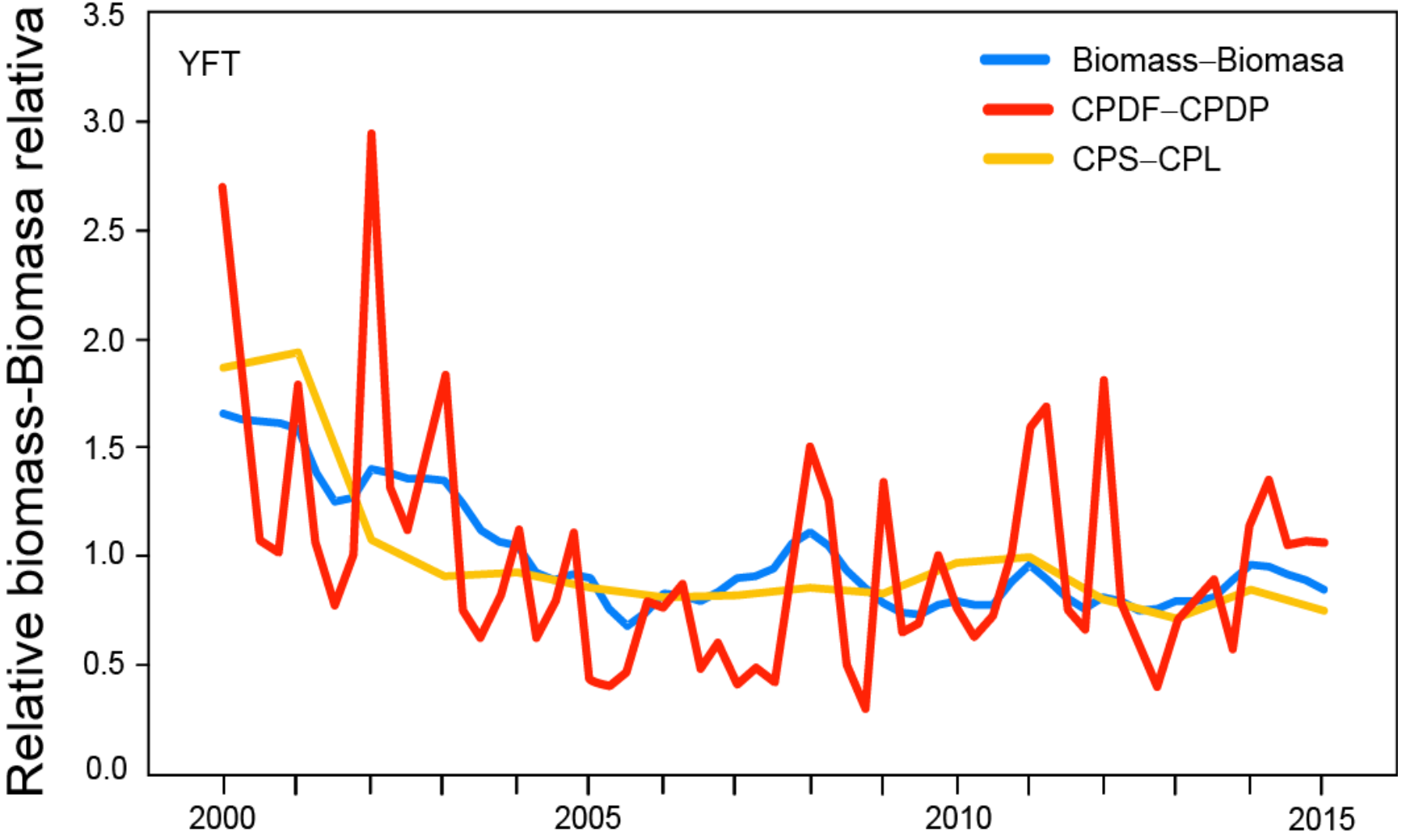
Number of sets by set type



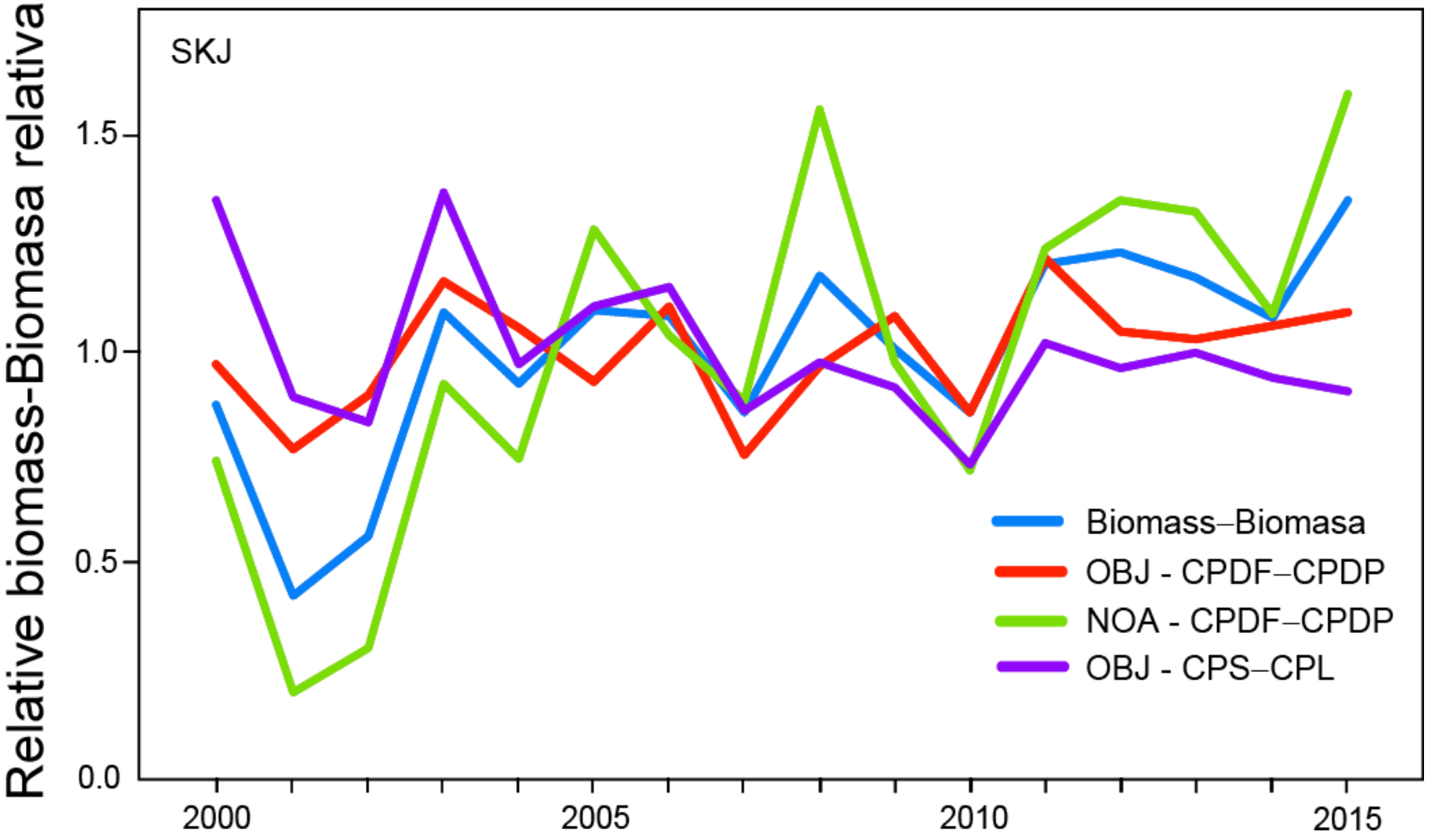
Bigeye assessment



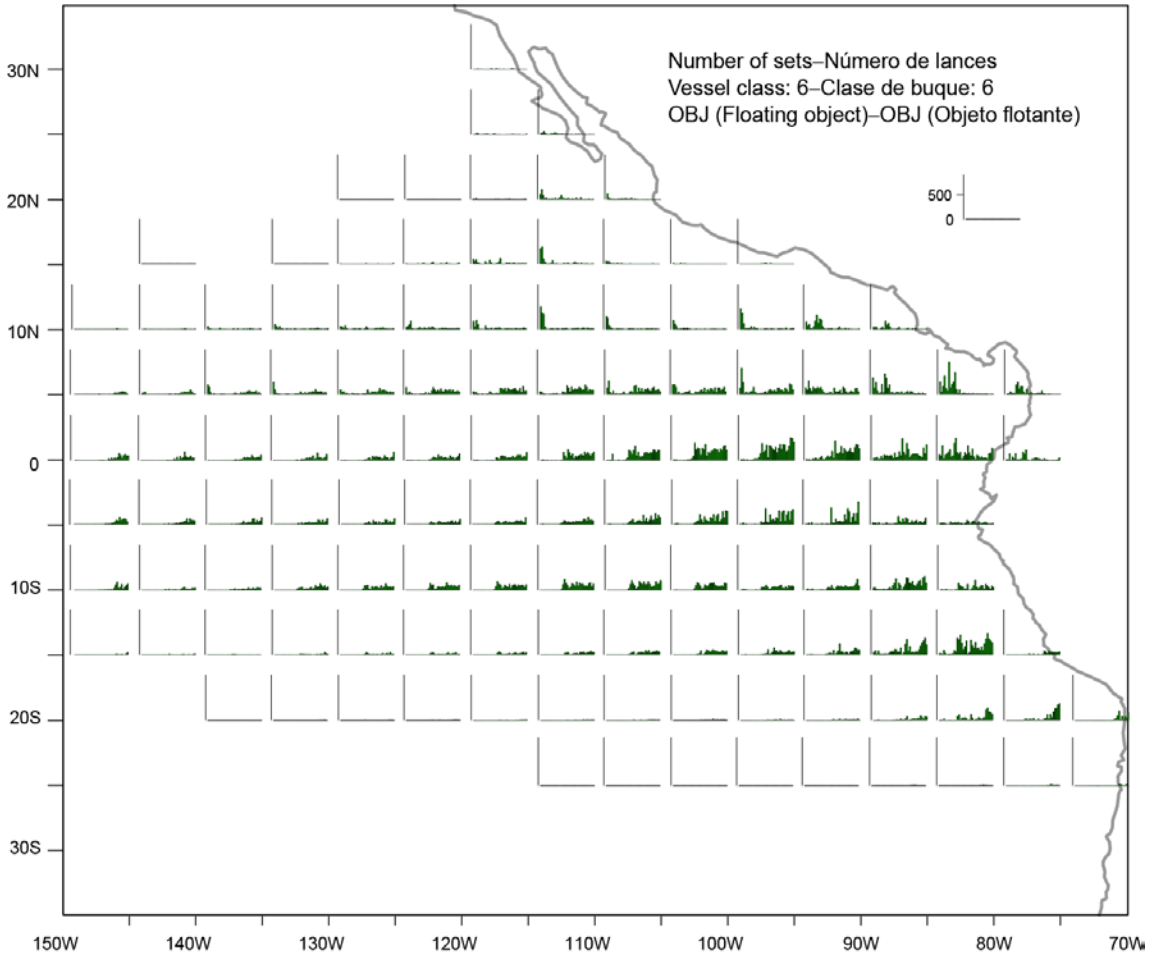
Yellowfin assessment



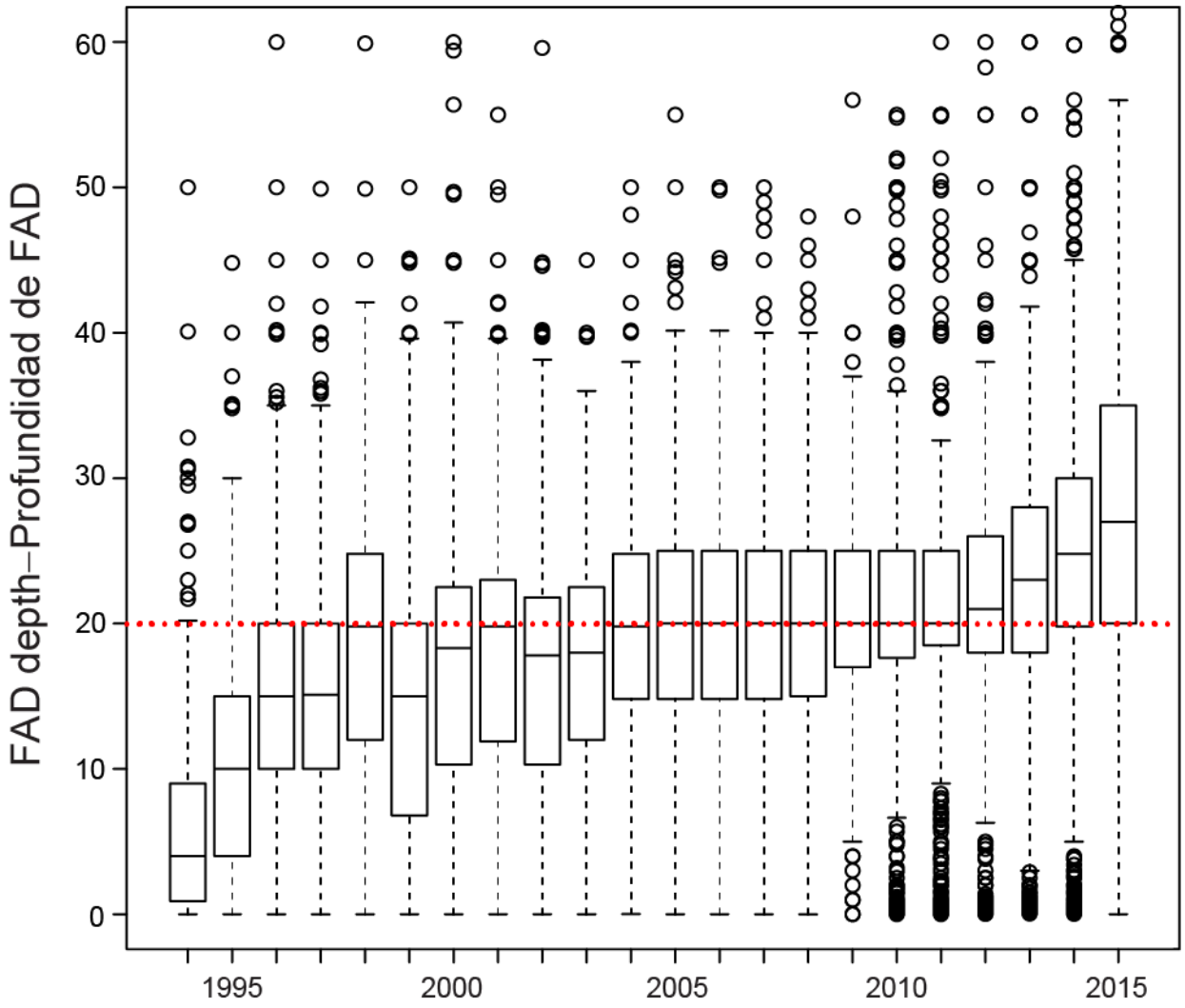
Skipjack indicators



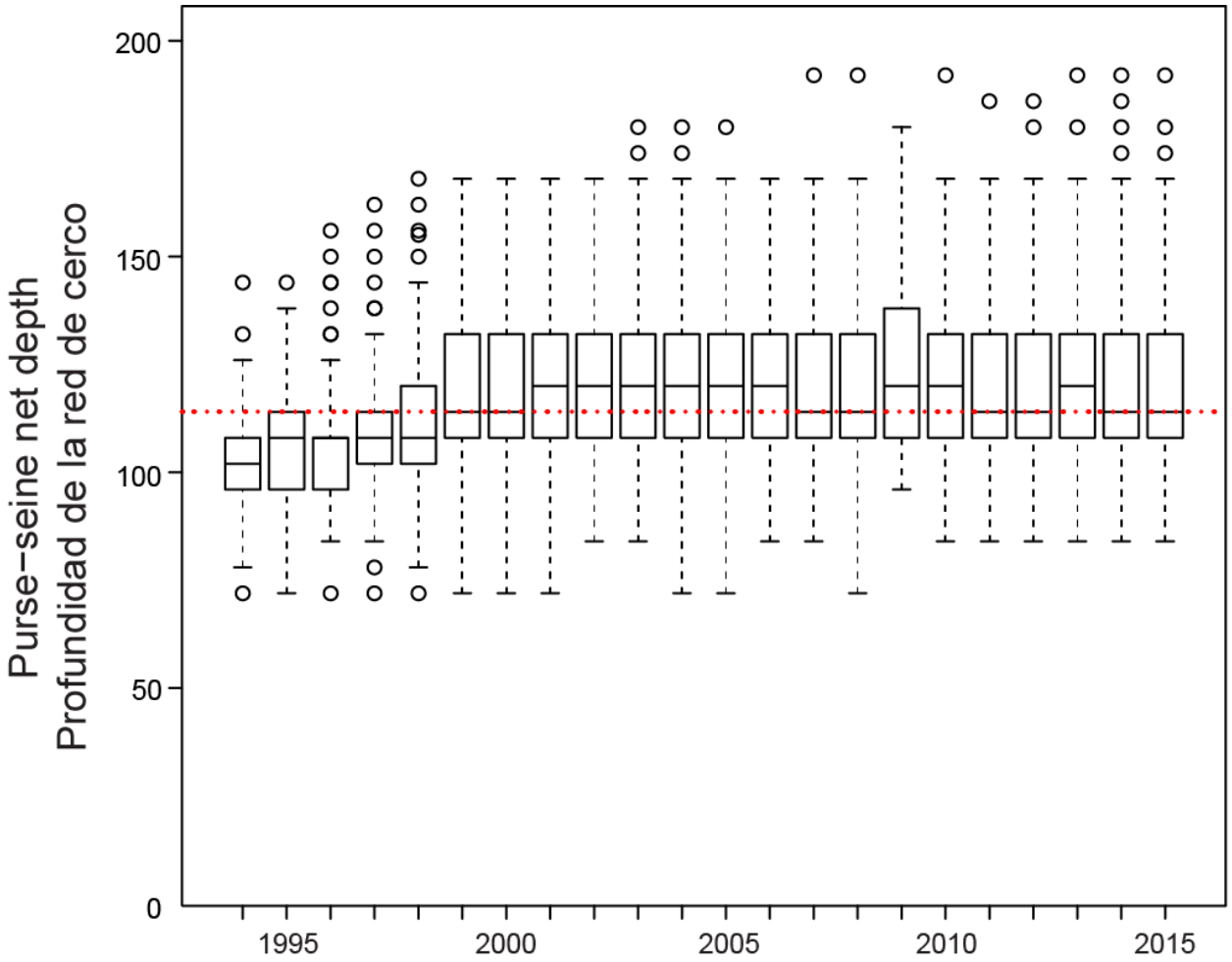
Spatial distribution of effort



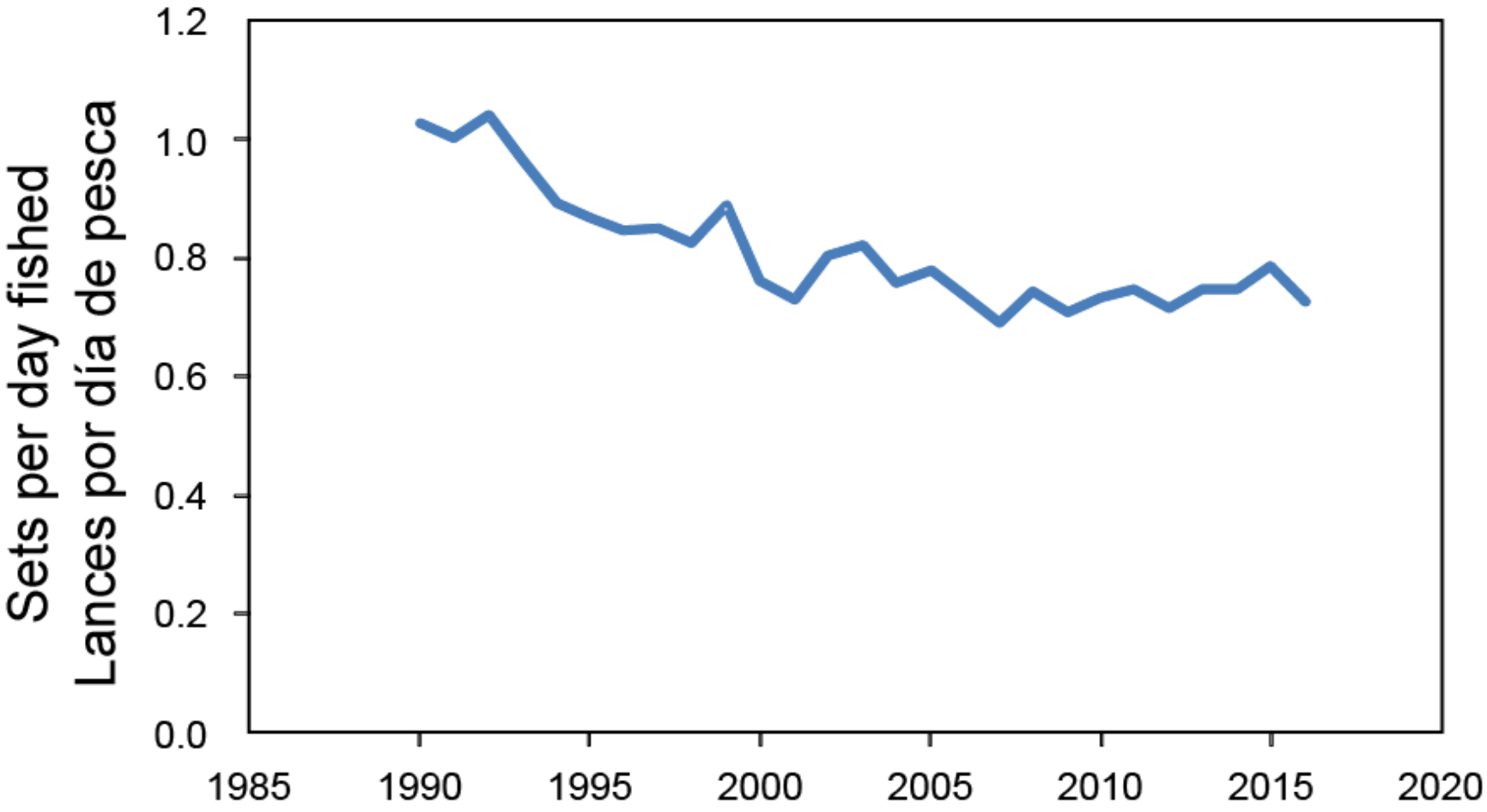
FAD webbing depth



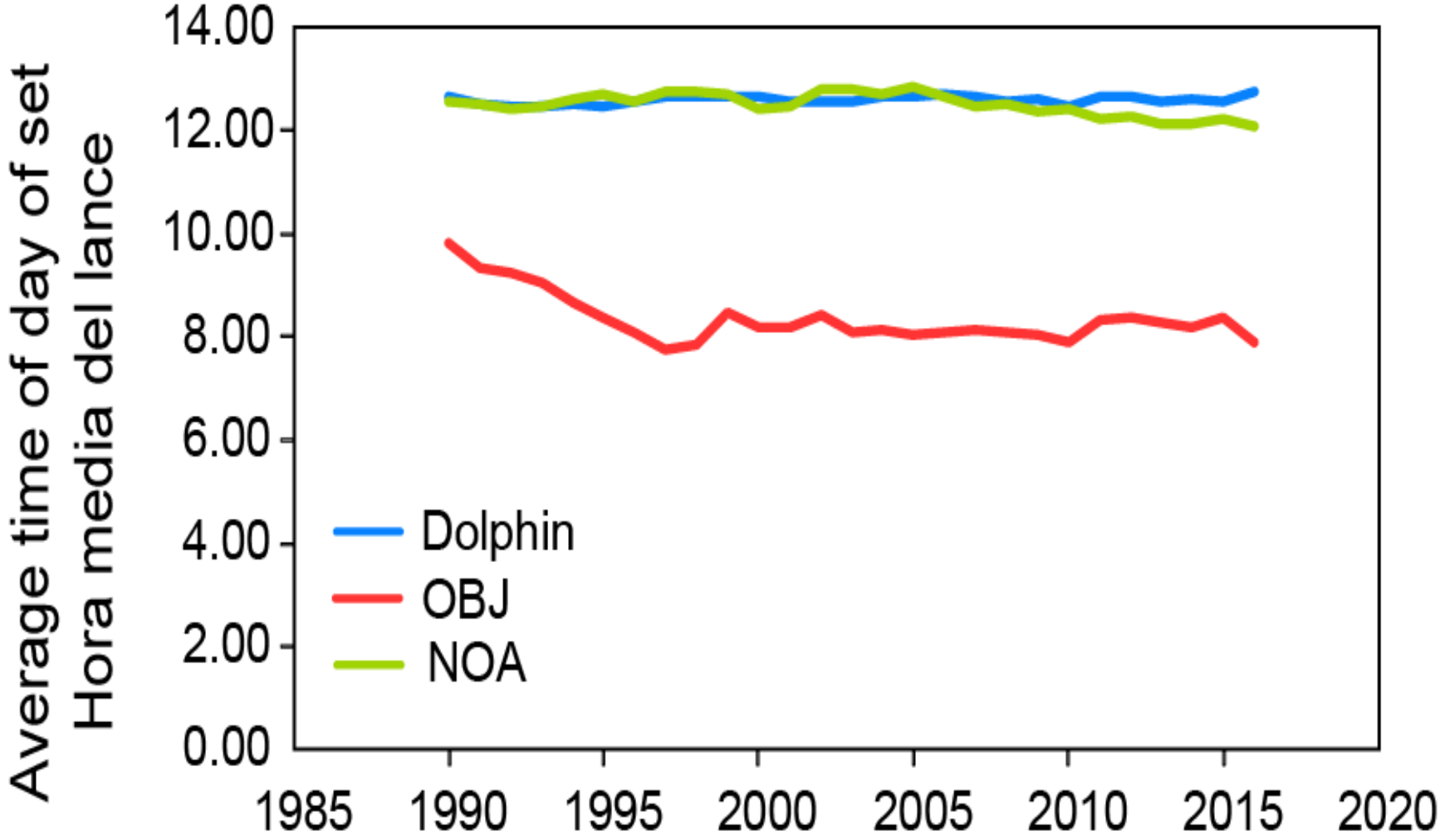
Purse seine net depth



Sets per day fished



Time of day of set



Conclusions

- There does not appear to be any evidence supporting any one of the three hypotheses over the others.
- Reduction in catch per set is unlikely to be due to changes in the spatial distribution of the fleet, increased FAD webbing depth, or increased purse-seine net depth.
- The stock assessment does not estimate an impact of the increased number of FAD sets on the bigeye population.
- Monitoring of the increased number of FAD sets and the reduction in catch per set should continue because there is uncertainty in the stock assessment estimates.
- The most important piece of data is a measure of the number of FADs that are deployed in a particular area at a given time. This will probably require an identification system for FADs so that they can be accounted for.