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A COMPENDIUM OF FISHERIES INDICATORS FOR TUNA STOCKS NOT ASSESSED IN 2016 (BET AND YFT)

WCPFC-SC12-2016/SA-WP-03

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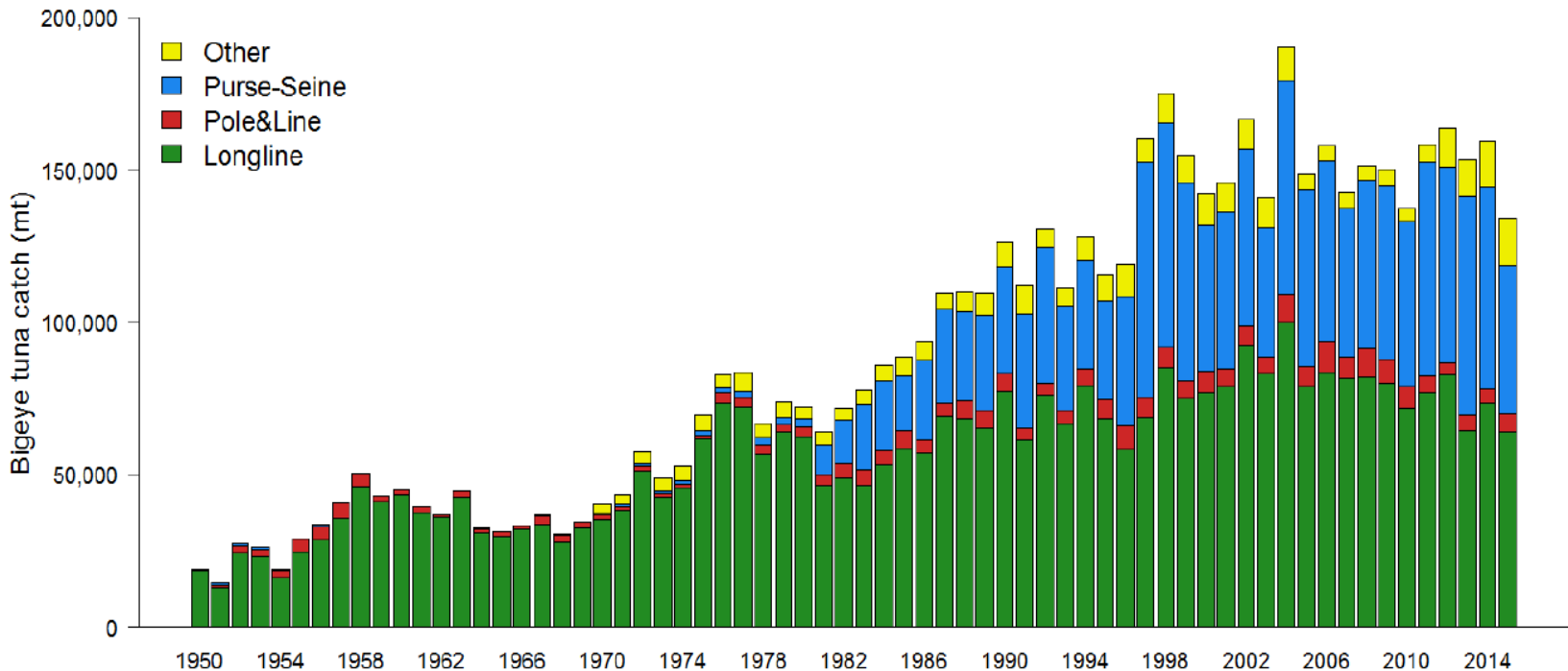
Overview

- BET and YFT not formally assessed in 2016 (nor was SP ALB but summarized in separate paper)
- Several typical indicators are reviewed
- Discussion of BET 2016 CPUE patterns

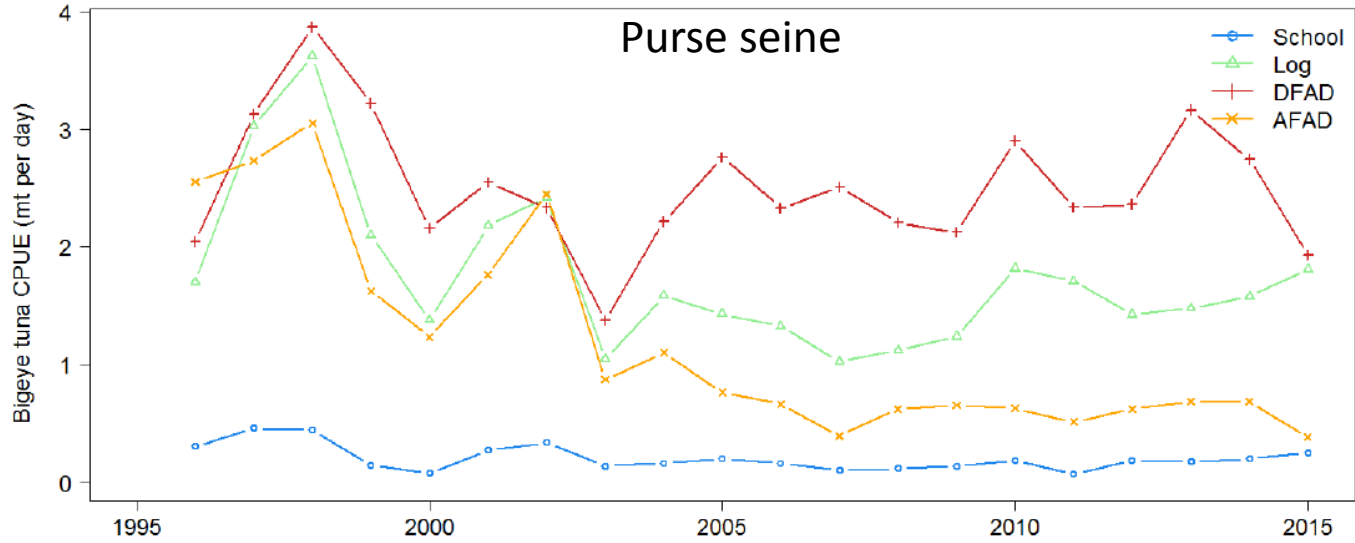
Bigeye tuna

Bigeye catch by gear

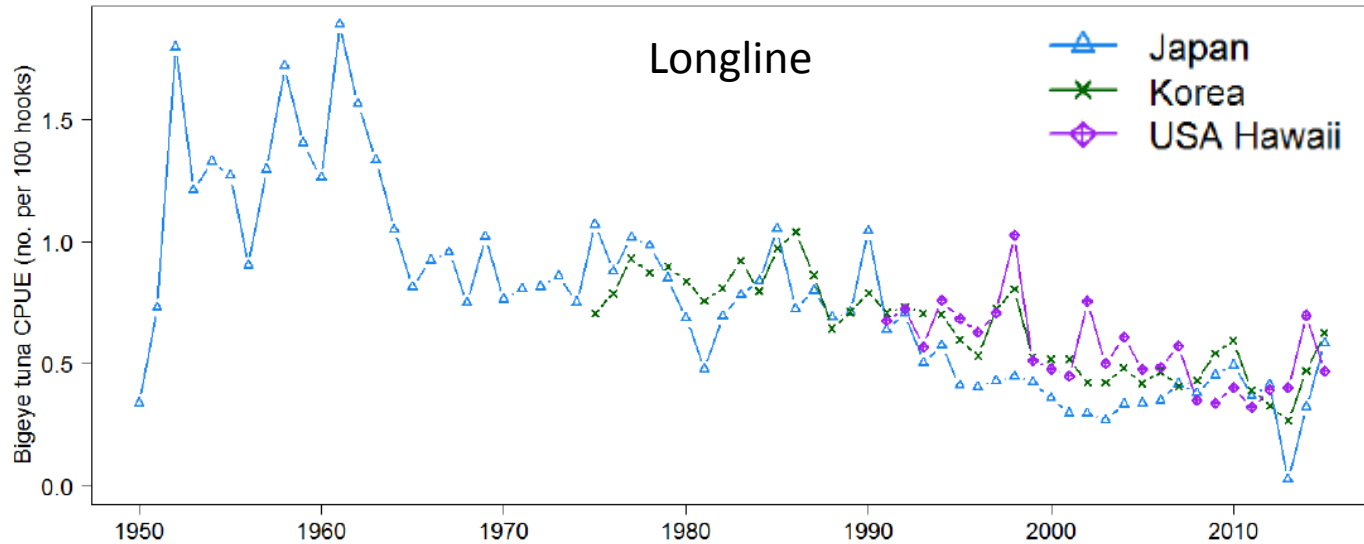
- Total BET catch decreased by 16% from 2014
 - PS down 26%, LL down 13%
 - PL up 20%, Other gear up 3%



Trends in Bigeye CPUE



Re 2010-14
Free: +50%
DFAD: -28%
AFAD: -39%

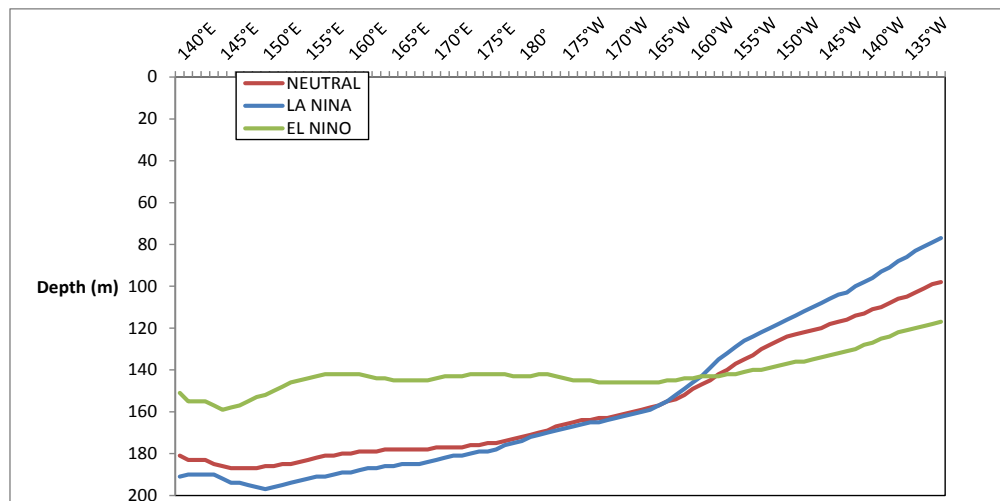


Re 2010-14
JP: +79%
KR: +52%
US HW: +7%

20N –
10S

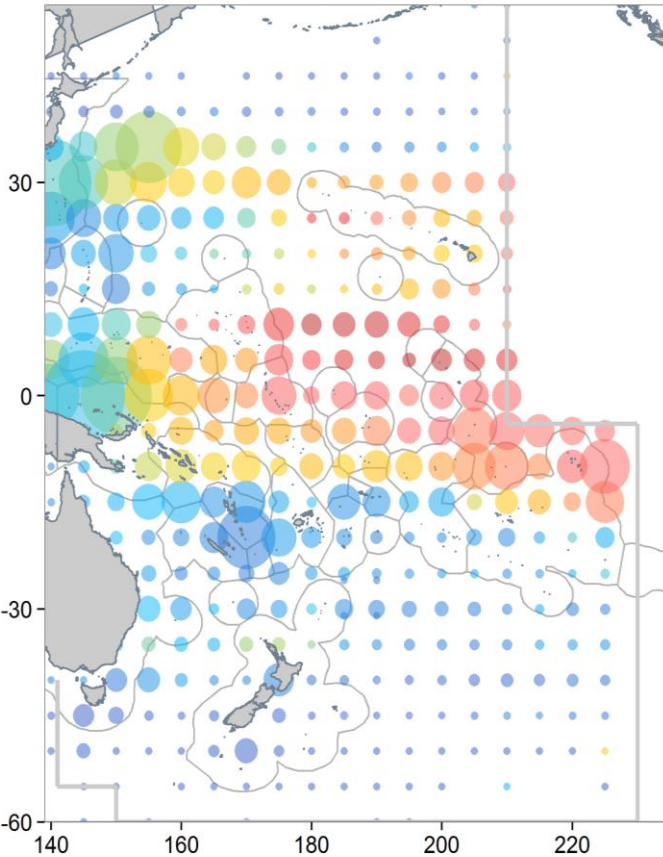
Why lower PS BET CPUE?

- Fishery centred further east due to El Niño – expected to see higher CPUE
- PS effort declined overall, esp for “key” fleets
- Changes in oceanography a possible explanation
 - Changes in 20°C thermocline likely affect catchability
 - EL Niño leads to deeper thermocline in east
 - Complex relationship requiring further study

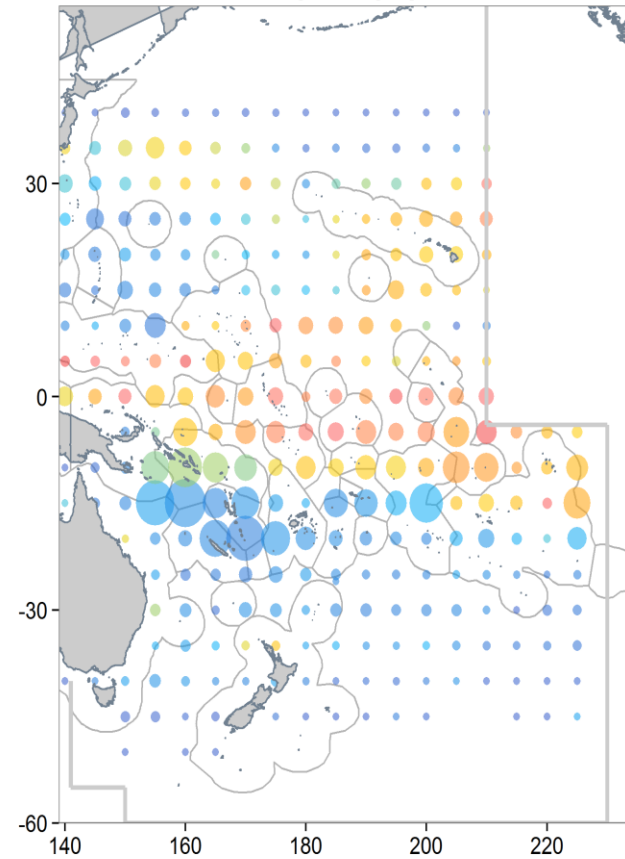


Spatial pattern of CPUE: LL

1950-2015

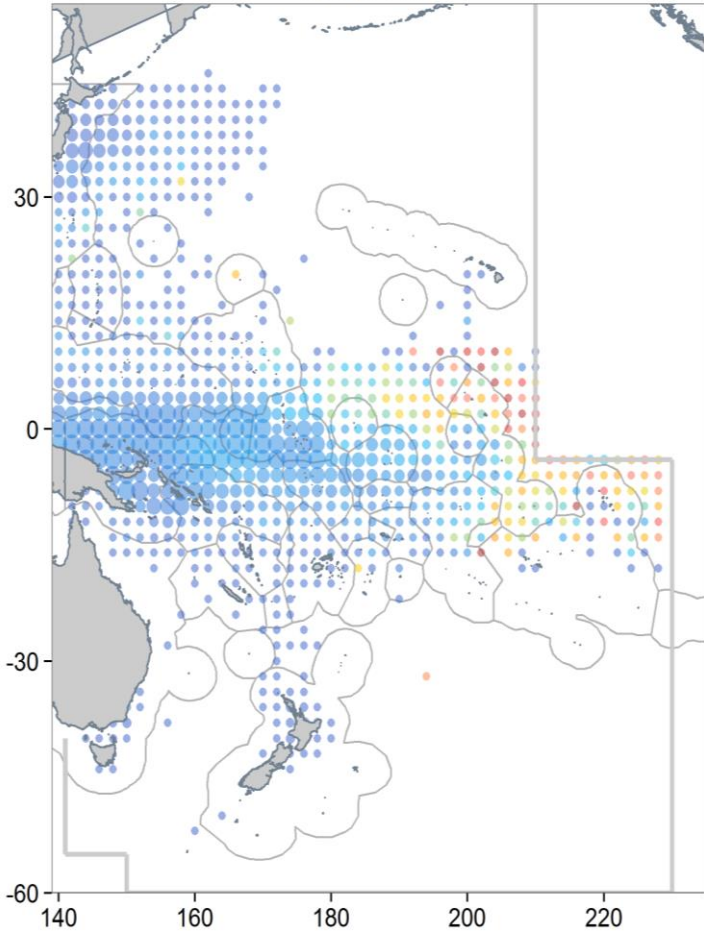


2011-2015

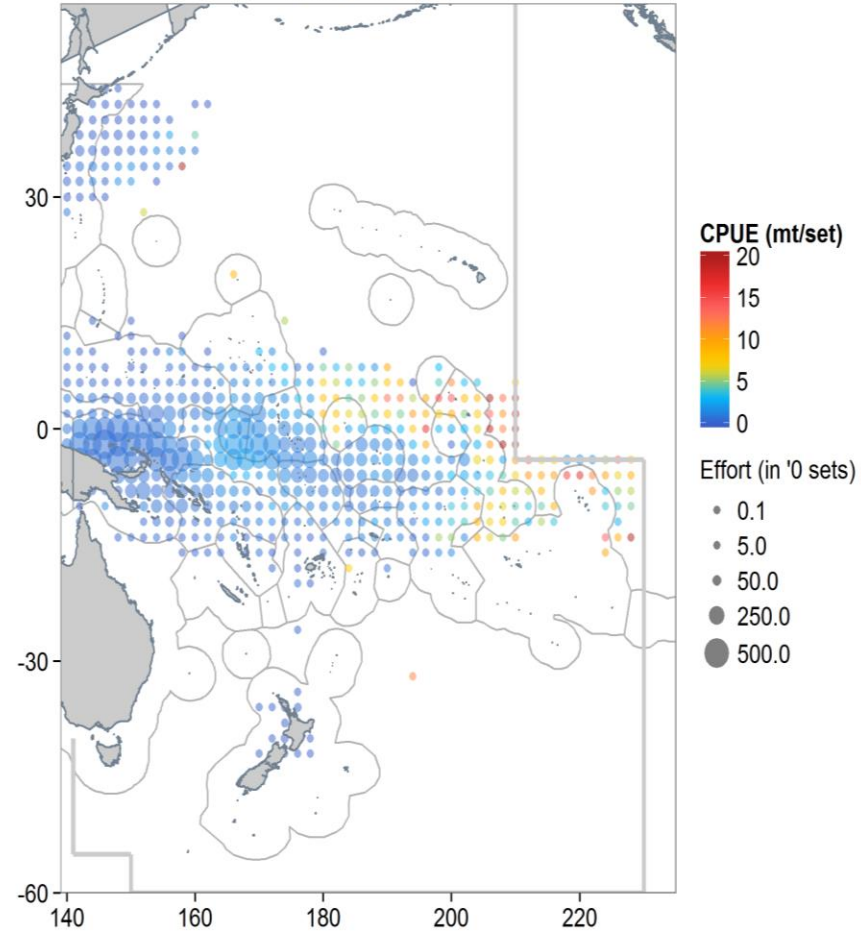


Spatial pattern of CPUE: PS

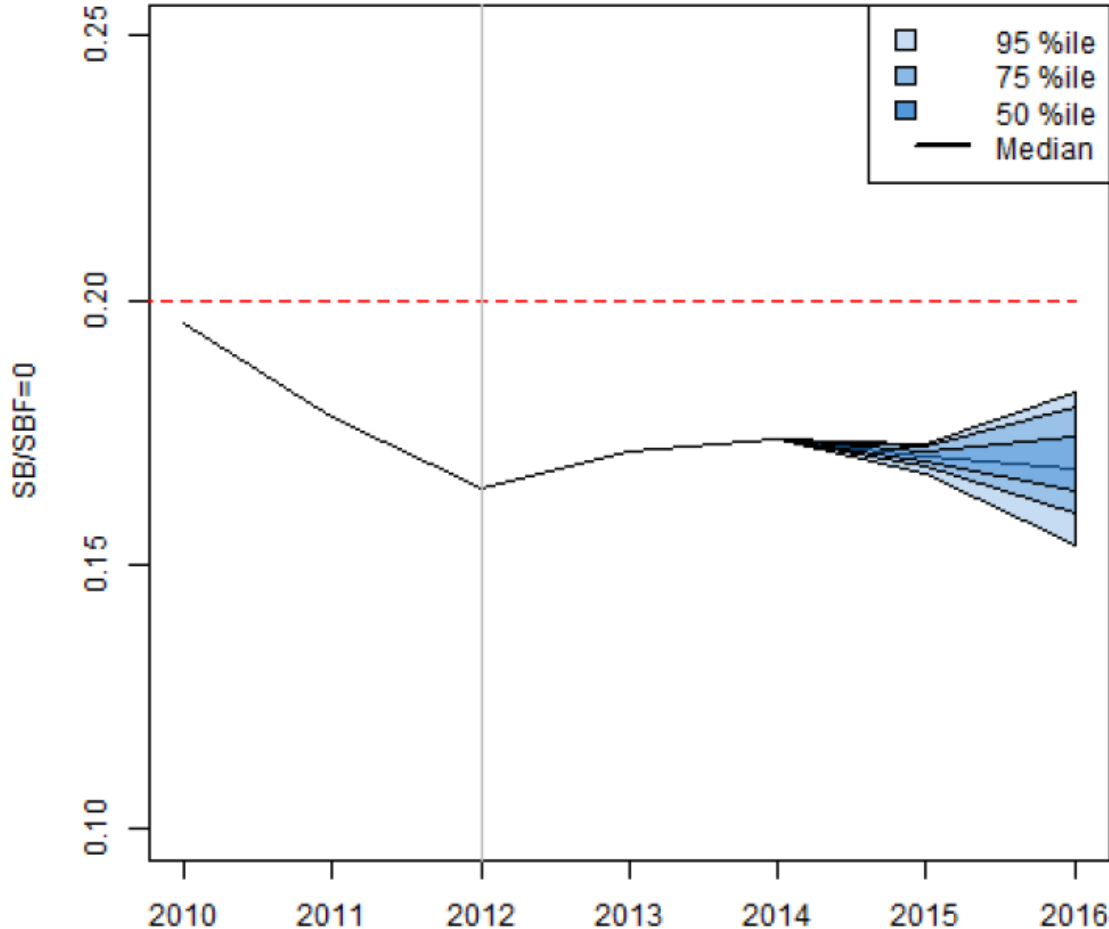
1995-2015



2011-2015



Bigeye stock projections



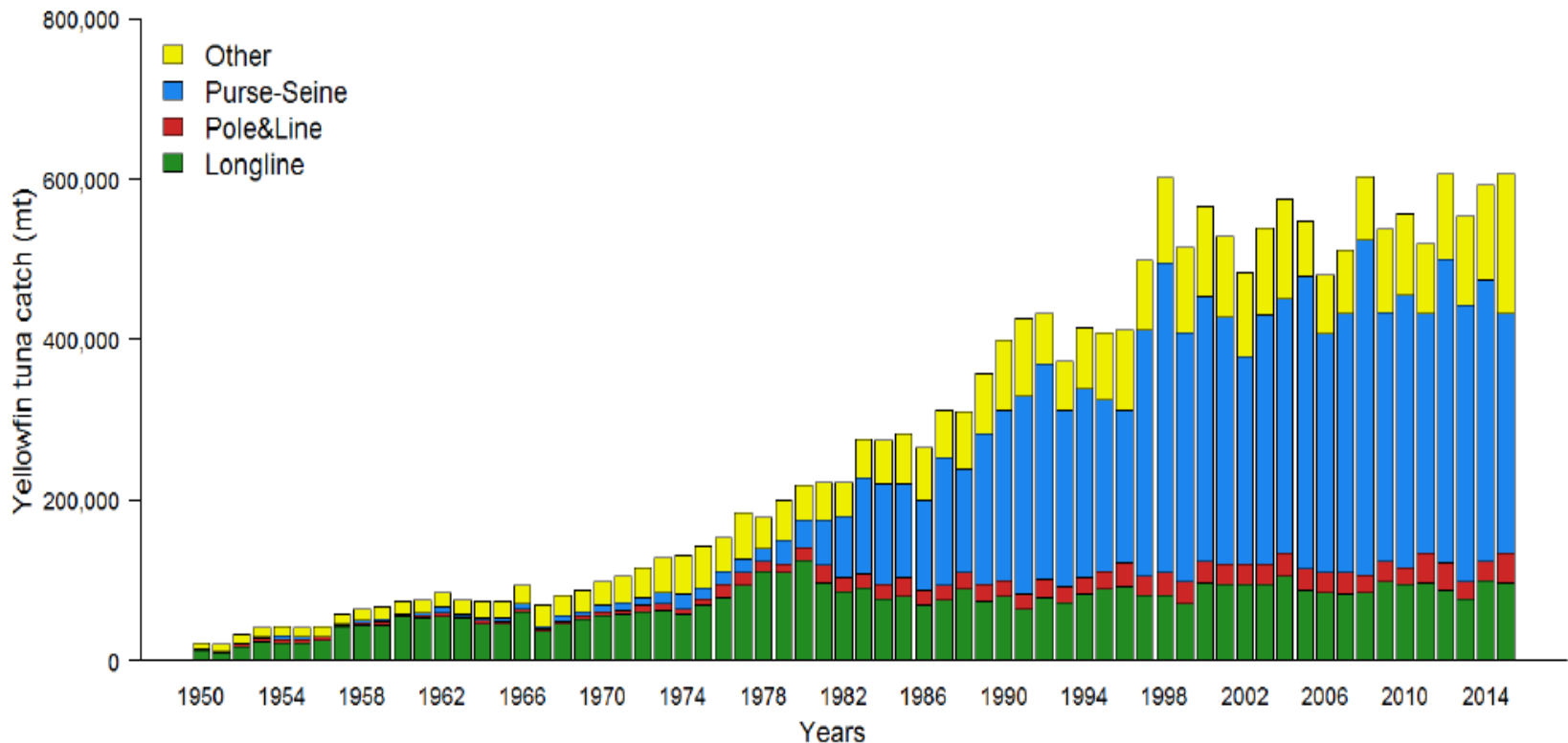
- No further decline in the bigeye stock was projected under recent conditions, *assuming recent estimated recruitments continue*
- $F_{2016}/F_{MSY} = 1.11$
- $SB_{2016}/SB_{F=0} = 0.17$

Yellowfin



Yellowfin tuna catch by gear

- Total YFT catch increased by 2% from 2014
 - PS down 15%, LL down 2%
 - PL up 51%, Other gear up 47



Trends in Yellowfin CPUE

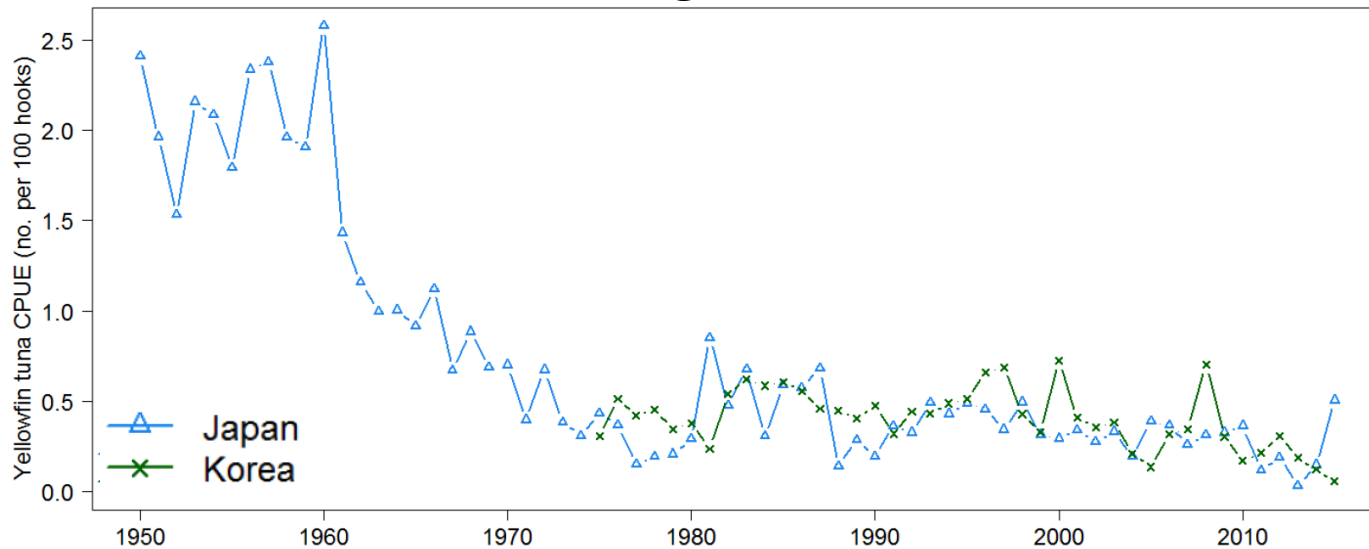


Purse seine



Re 2010-14
Free: -3%
DFAD: -17%
AFAD: +23%

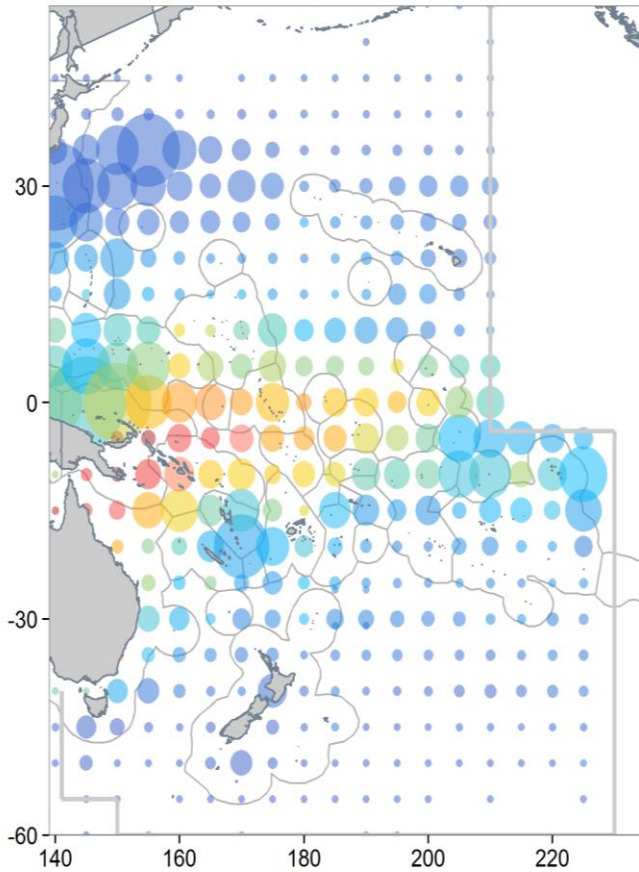
Longline



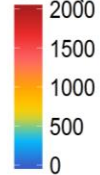
Re 2010-14
JP: +197%
KR: -72%

Spatial pattern of CPUE: LL

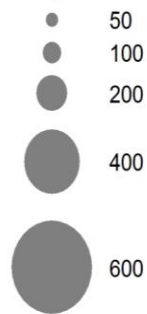
1950-2015



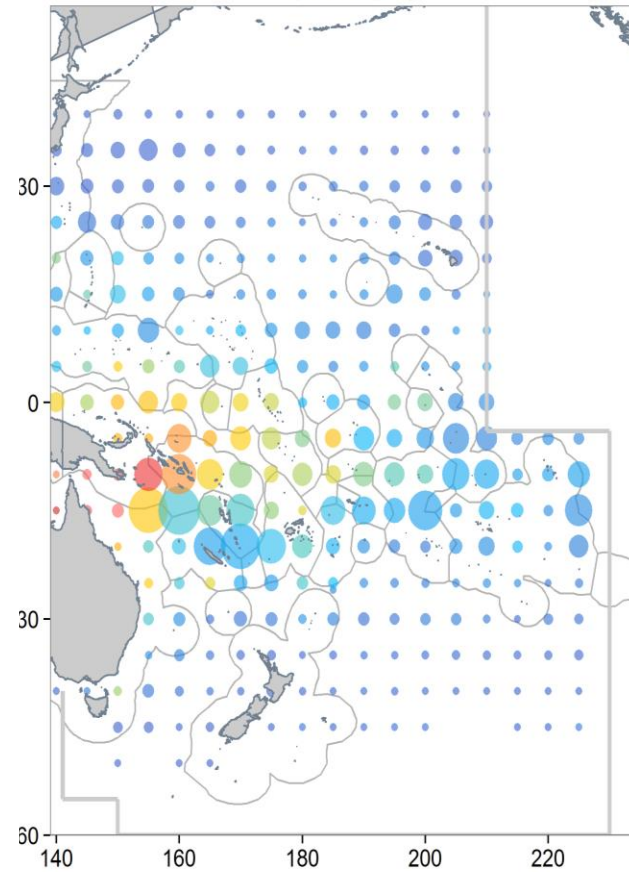
CPUE (no. per 100 hooks)



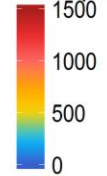
Effort (in 10^6 hooks)



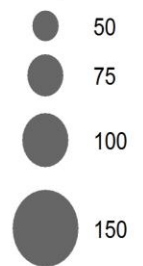
2011-2015



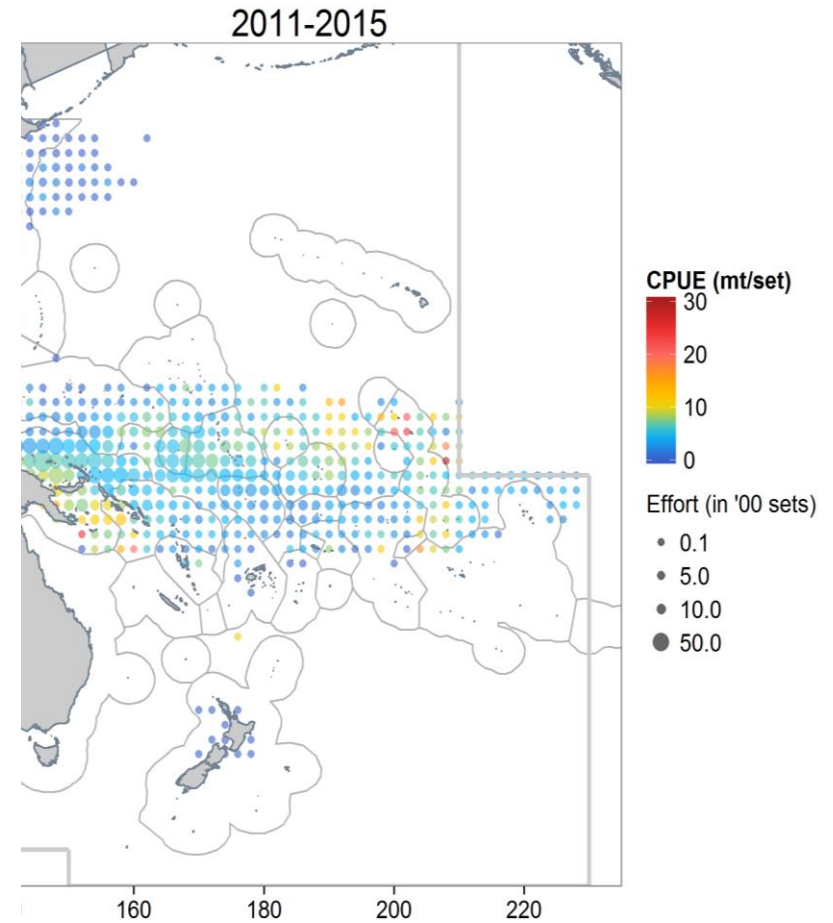
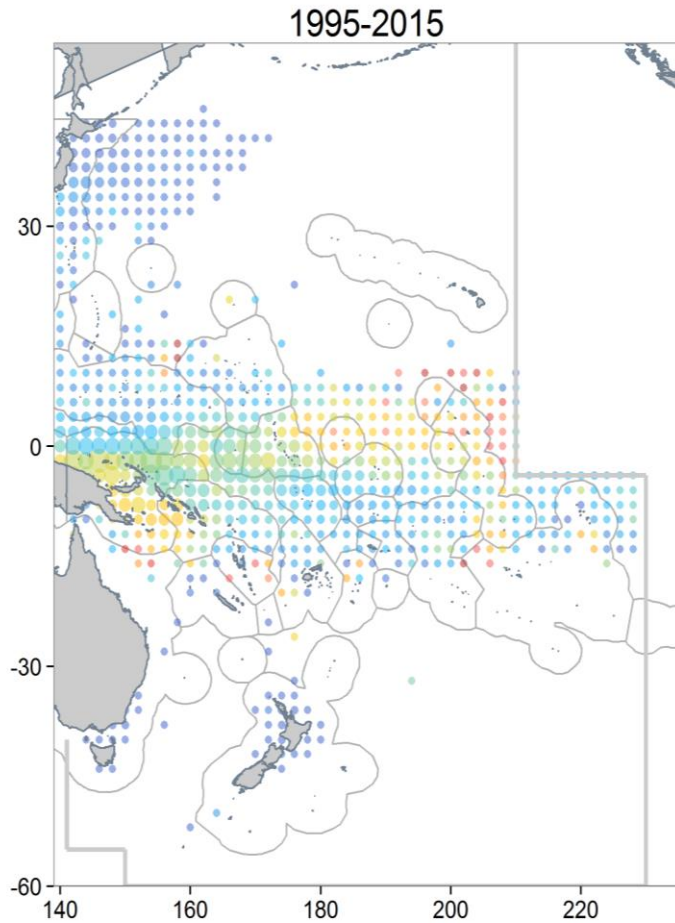
CPUE (no. per 100 hooks)



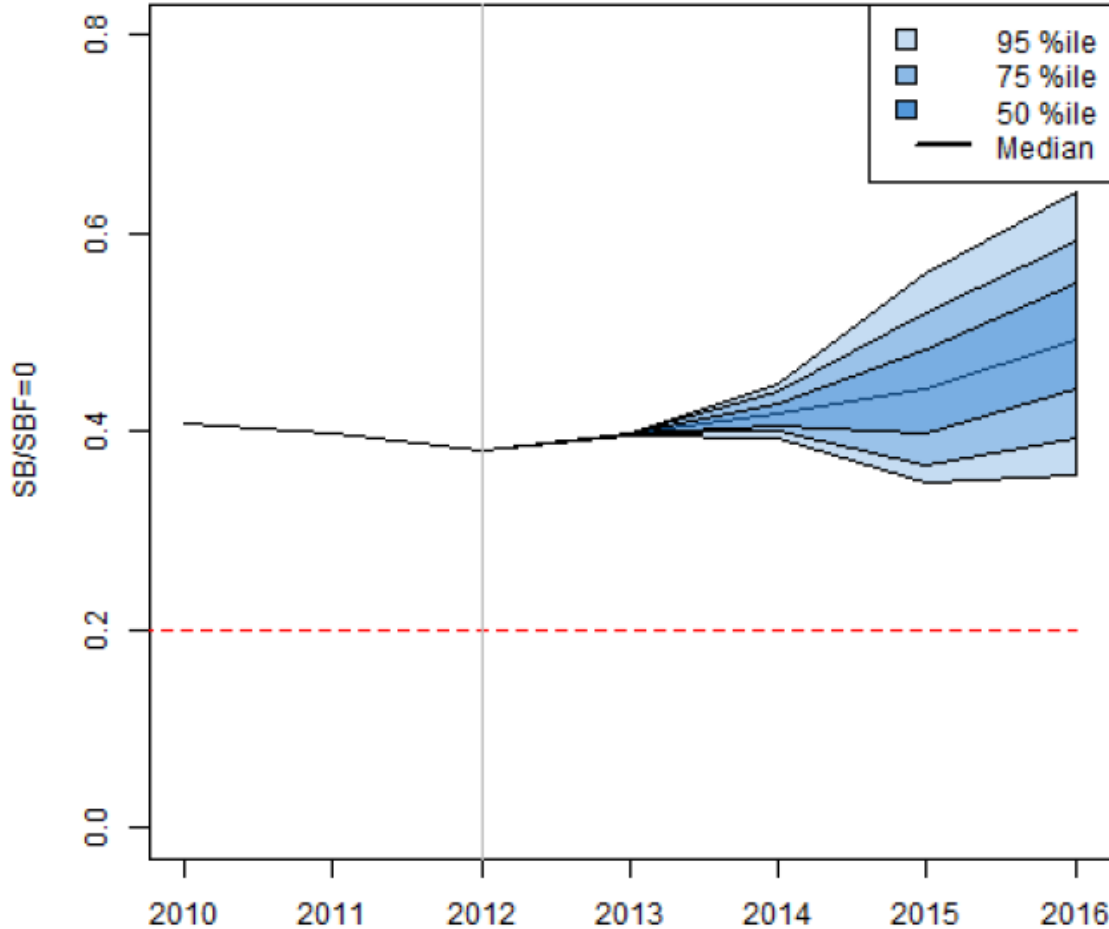
Effort (in 10^6 hooks)



Spatial pattern of CPUE: PS



Yellowfin stock projections



- The yellowfin stock was projected to increase under recent conditions, *assuming recent estimated recruitments continue*
- $F_{2016}/F_{MSY} = 0.80$
- $SB_{2016}/SB_{F=0} = 0.49$