Considering alternative constraints to the anchovy HCR

SWG-PEL Meeting

11th April 2018

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Anchovy Risk

- Selecting a risk level to match that of OMP-14 via an objective basis is messy

  (e.g. different risk definitions, changes to OM assumptions)

But:

- Anchovy resource currently in a good state and projected to remain so (in median terms)
- Current catches do not exceed TACs
- No change in variability about SR relationship

Anchovy Risk

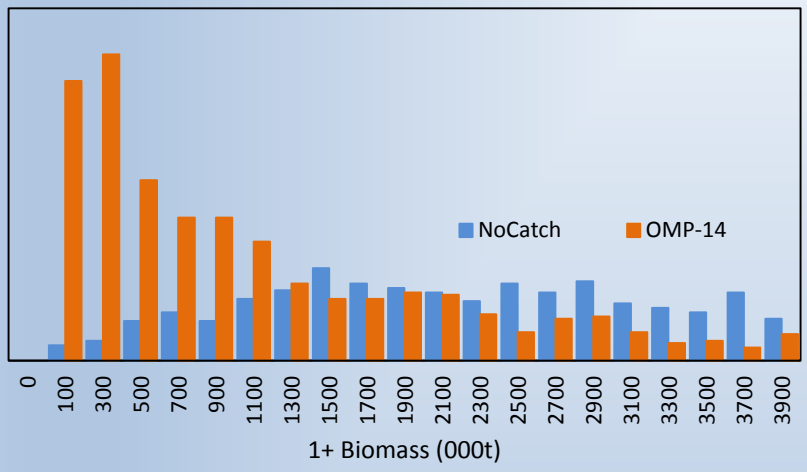
Proposal:

- Calculate the resultant risk to the anchovy resource under the anchovy OMP-14 HCR ($\propto = 0.889$).

Risk$_A$: the probability that the anchovy spawner biomass is below 25% of the 1996 spawner biomass over the projection period **= 0.082**

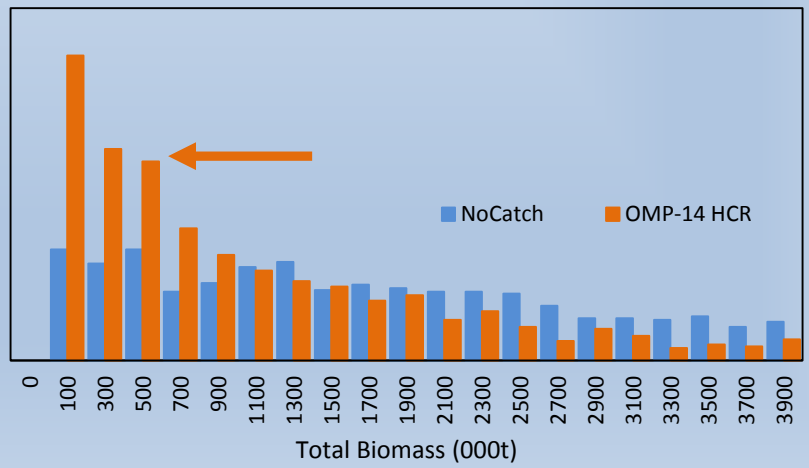
- Use that risk level (0.082) to tune a new anchovy HCR, noting the new rule is not expected to deviate much from the OMP-14 form

Anchovy Risk



Previous OM (data up to 2011)
OMP-14 anchovy HCR

New OM (data up to 2015)
OMP-14 anchovy HCR



Maximum Anchovy TAC

$$TAC_y^{1,A} = \alpha_{ns}\,\delta\,q\left(p + (1-p)\frac{B_{y-1}^{obs,A}}{\overline{B}_{Nov}^{A}}\right)$$

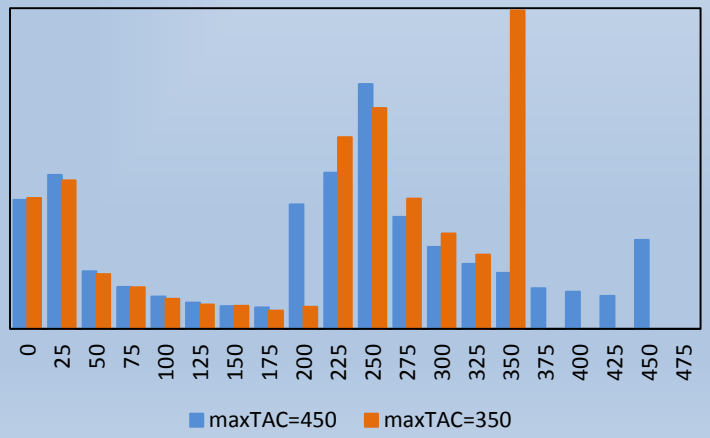
$$TAC_y^{2,A} = \alpha\,q\left(p\frac{N_{y-1,rec0}^{A}}{\overline{N}_{rec0}^{A}} + (1-p)\frac{B_{y-1,N}^{obs,A}}{\overline{B}_{Nov}^{A}}\right)$$

Scale-down factor: δ=0.85

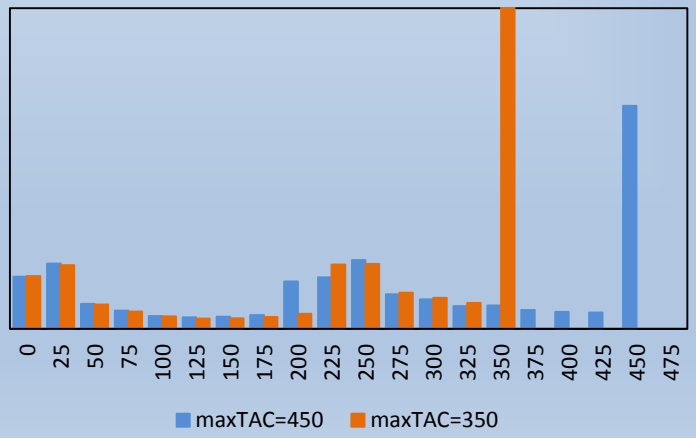
Maintaining the same $Risk_A$<0.082

C_{max}^{A} = 450 : $\propto$= 0.891 future C = 248 [0,450]

C_{max}^{A} = 350 : $\propto$= 0.943 future C = 248 [0,350]



Initial anchovy TAC



Final anchovy TAC

Scale-down factor

$$TAC_y^{1,A} = \alpha_{ns}\,\delta\,q\left(p + (1-p)\frac{B_{y-1}^{obs,A}}{\overline{B}_{Nov}^{A}}\right)$$

$$TAC_y^{2,A} = \alpha\,q\left(p\frac{N_{y-1,rec0}^{A}}{\overline{N}_{rec0}^{A}} + (1-p)\frac{B_{y-1,N}^{obs,A}}{\overline{B}_{Nov}^{A}}\right)$$

Historical Averages

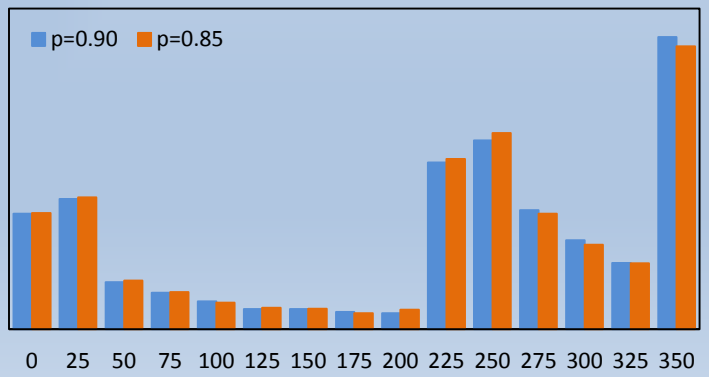
Maximum TAC: $C_{max}^{A} = 350$

Maintaining the same $Risk_A < 0.082$

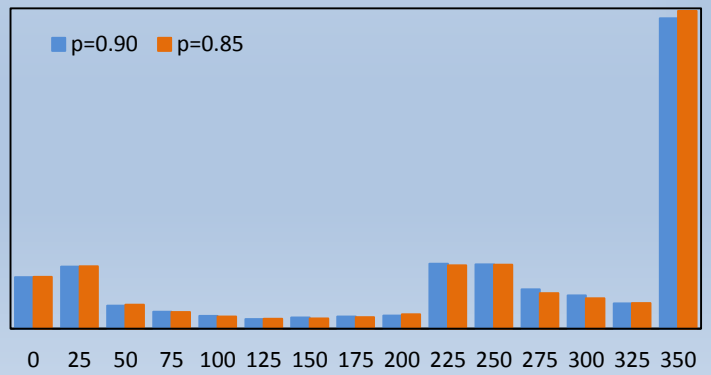
δ=0.85 : $\propto$= 0.943 future C = 248 [0,350]

δ =0.90 : $\propto$= 0.901 future C = 248 [0,350]

This makes a difference in 'middle range' biomass-recruitment scenarios i.e. outside the range of when the maximum TAC or two-tier threshold constraints impact TACs



Initial anchovy TAC



Final anchovy TAC