Tab E, No. 5

Revision of the ABC Control Rule

SSC Recommendations

Background

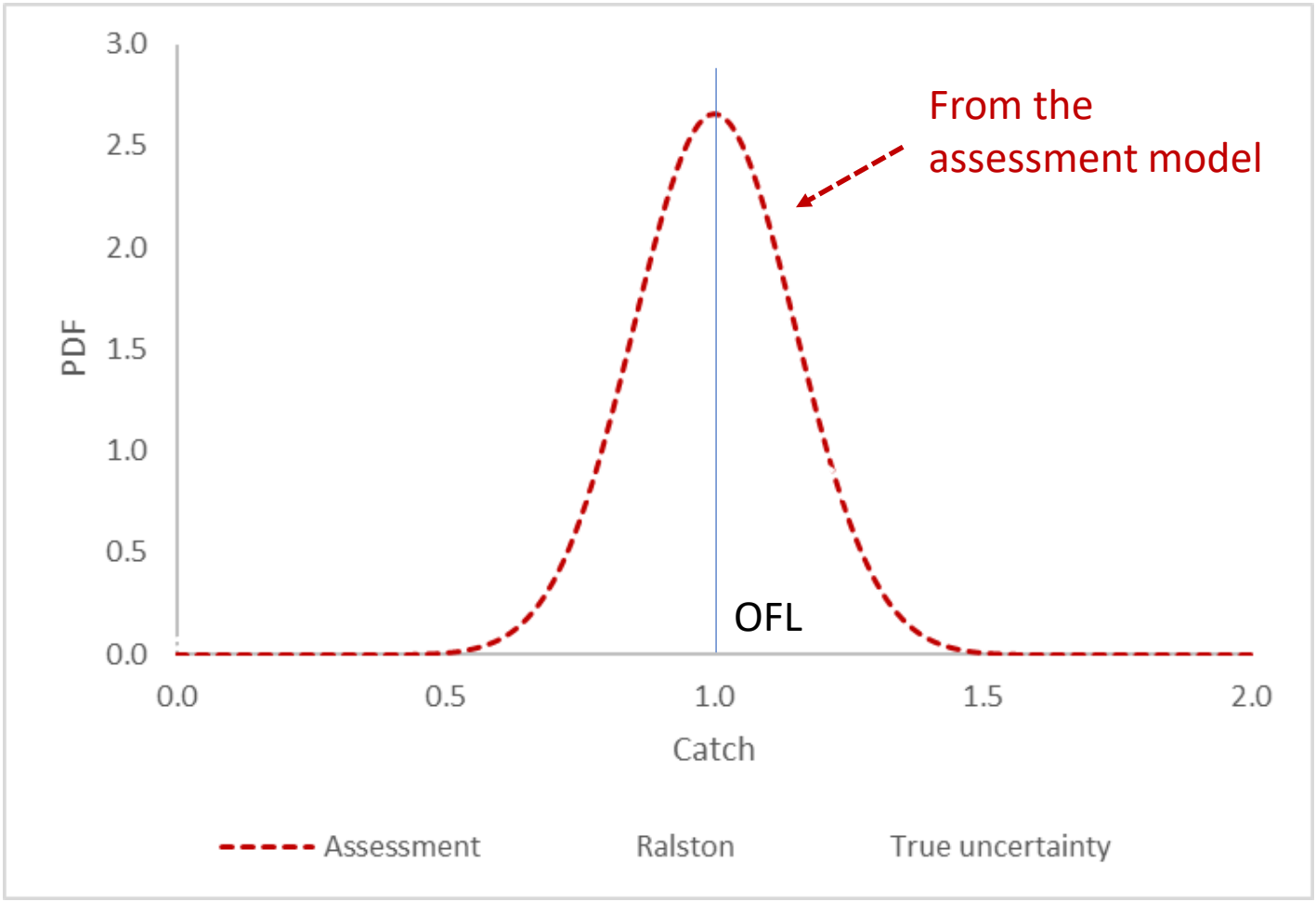
- The ABC control rule is used to create a buffer between OFL and ABC to reduce the risk of overfishing in the light of scientific uncertainty
- Requires characterization of scientific uncertainty (a science issue -> SSC) and definition of a risk policy (a management issue -> Council)
- ABC control rule is proposed by SSC but adopted by the Council

Aims of ABC Control Rule Revision

- Better characterize scientific uncertainty (most assessments underestimate scientific uncertainty and therefore, the true risk of overfishing at a given ABC)
- Clearly separate the characterization of scientific uncertainty from the risk policy (currently, the risk policy (P*) is modified depending on how well scientific uncertainty is characterized)
- Make the buffer dependent on stock abundance: greater buffer when stock abundance is low.

Characterization of Uncertainty

PDF of OFL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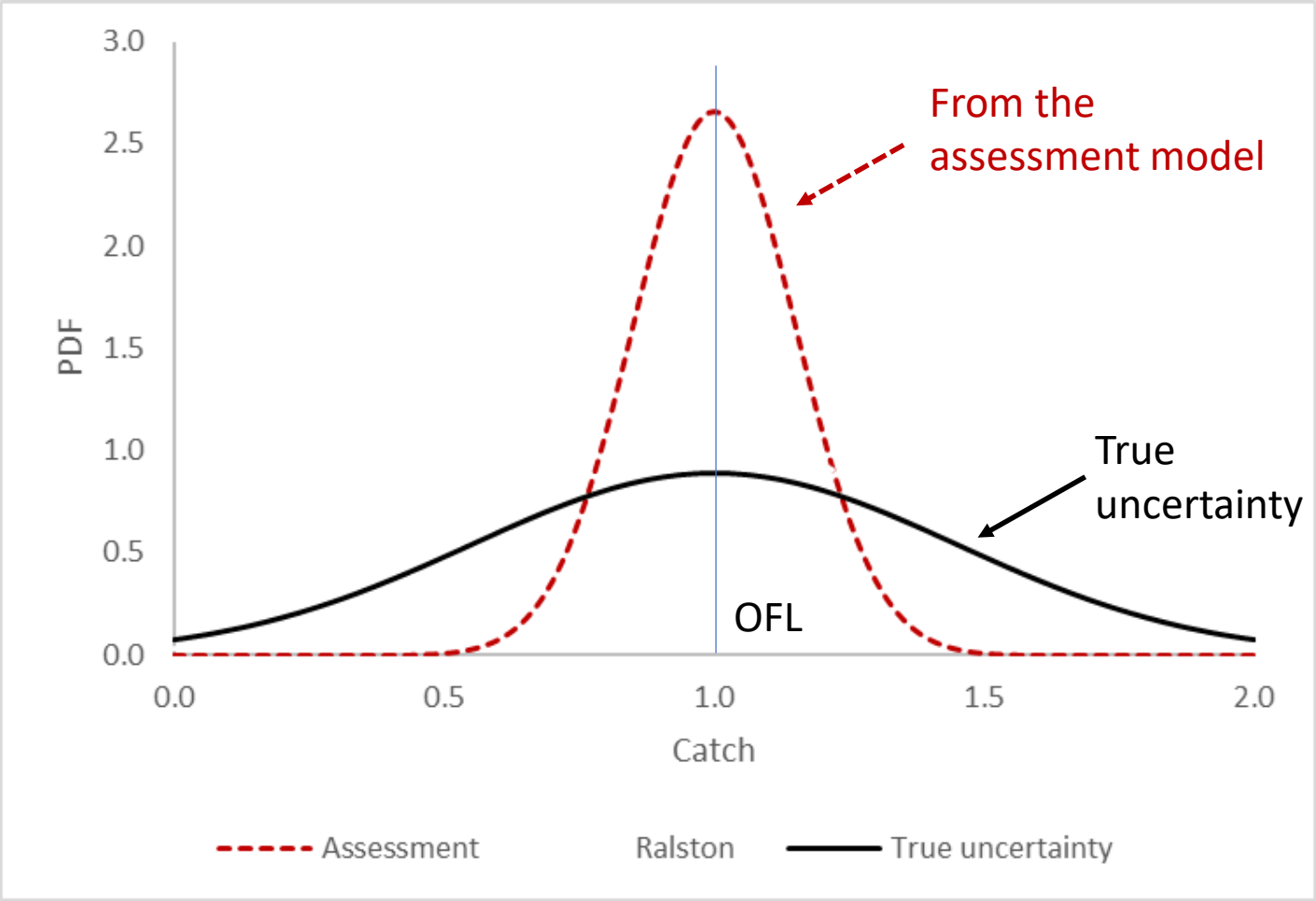
Catch
Assessment
Ralston
True uncertainty

PDF of OFL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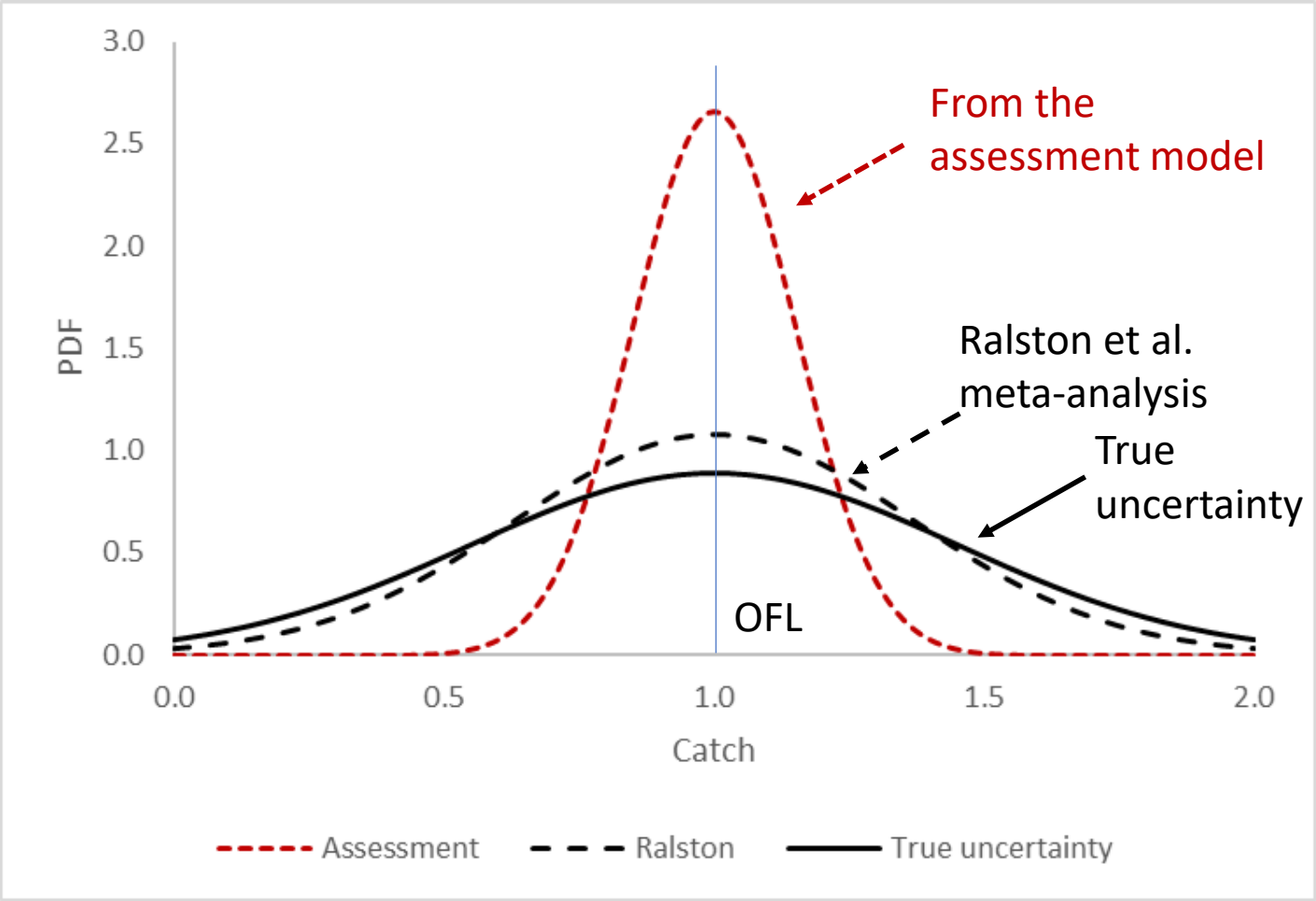
Catch
From the assessment model
True uncertainty
OFL
Assessment
Ralston
True uncertainty

PDF of OFL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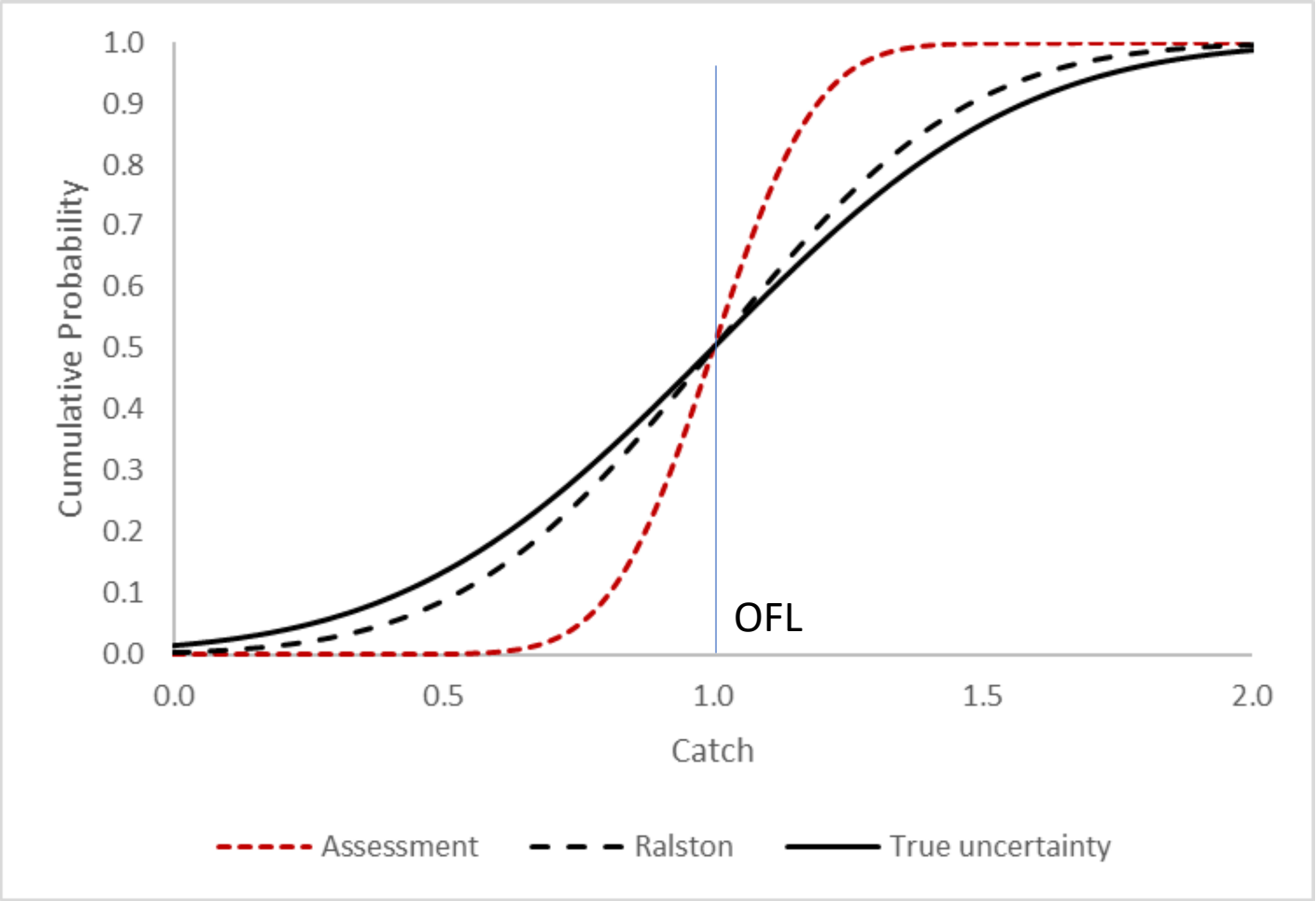
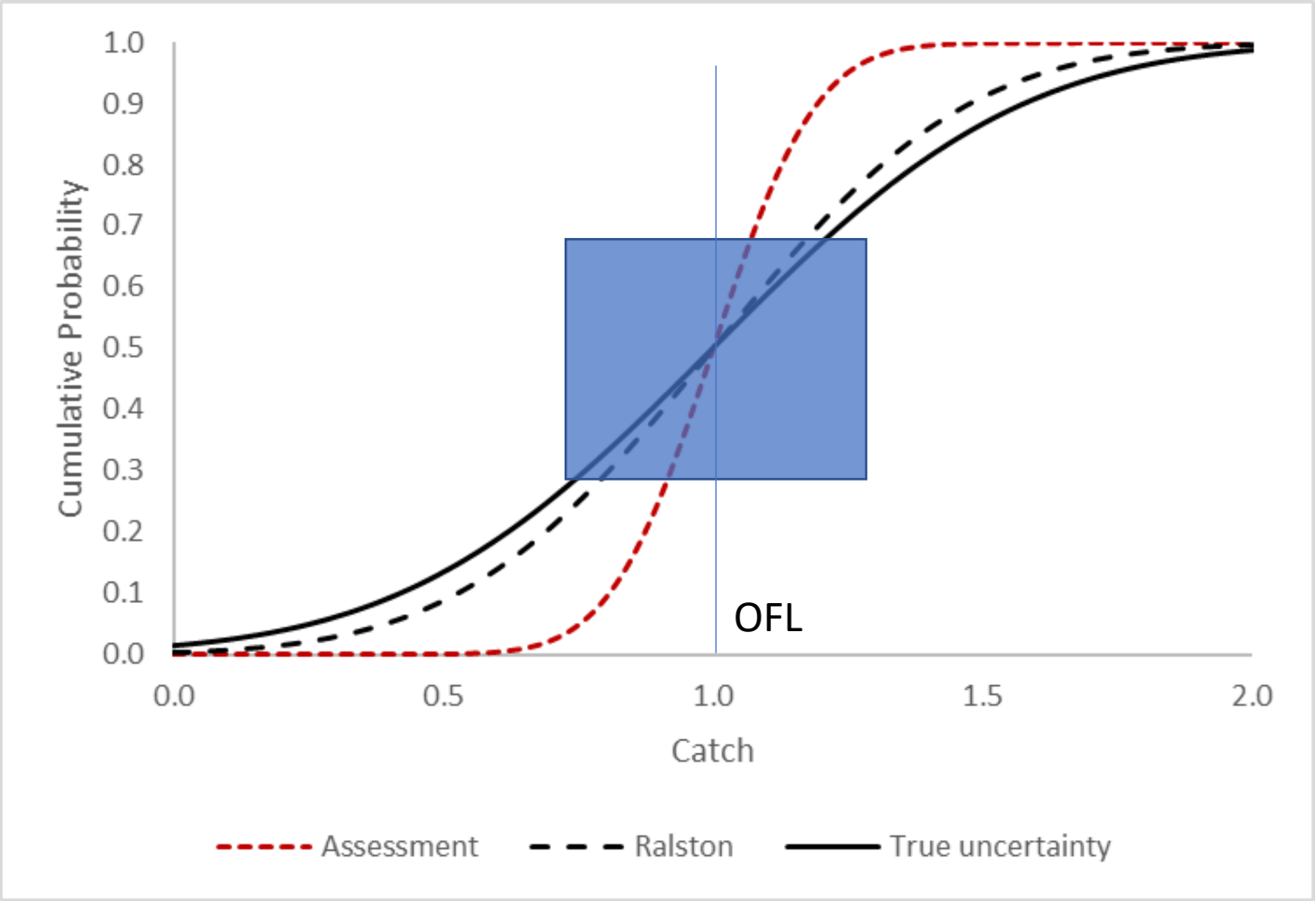
Catch
From the assessment model
Ralston et al. meta-analysis
True uncertainty
OFL
Assessment
Ralston
True uncertainty

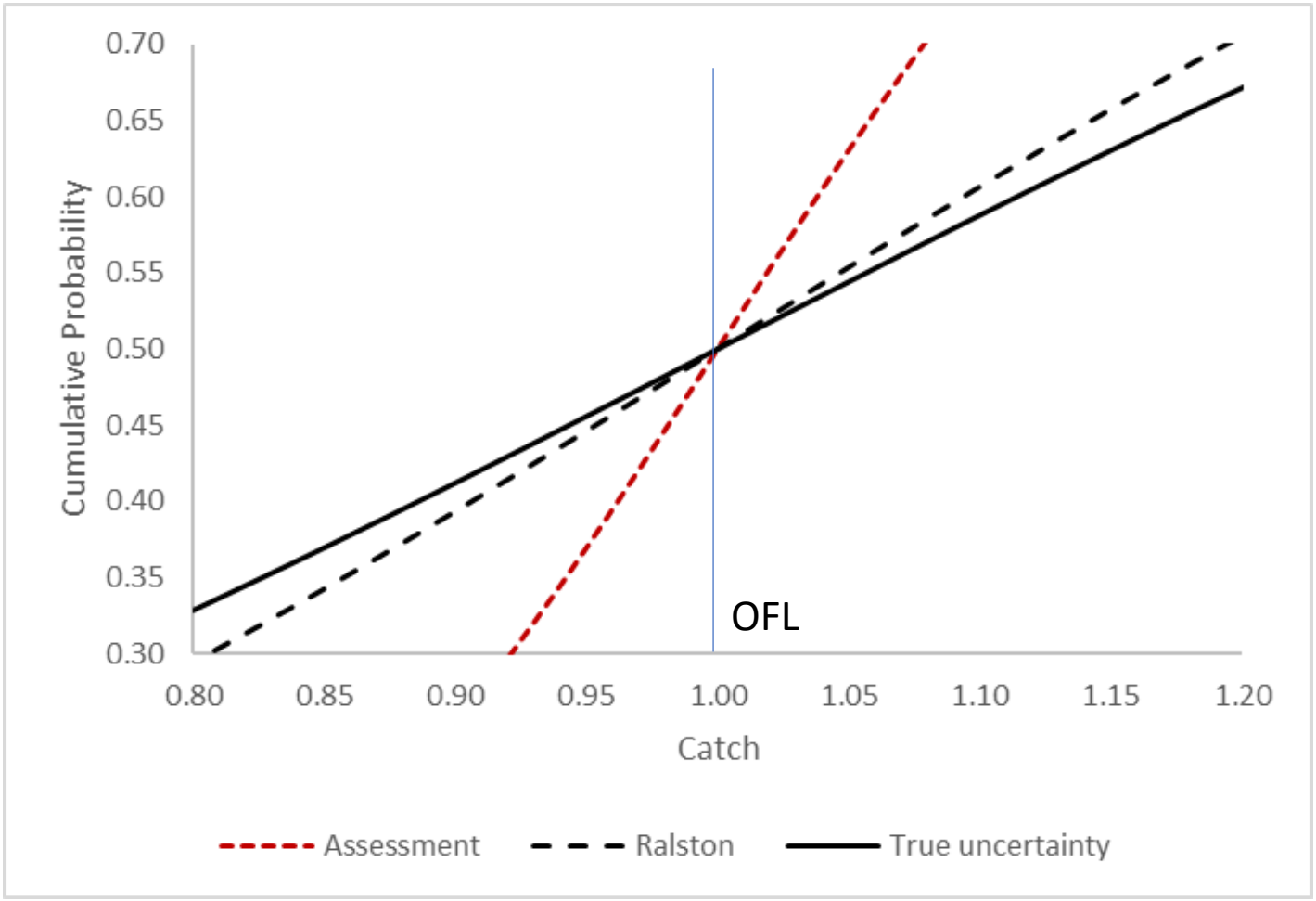
Probability of overfishing



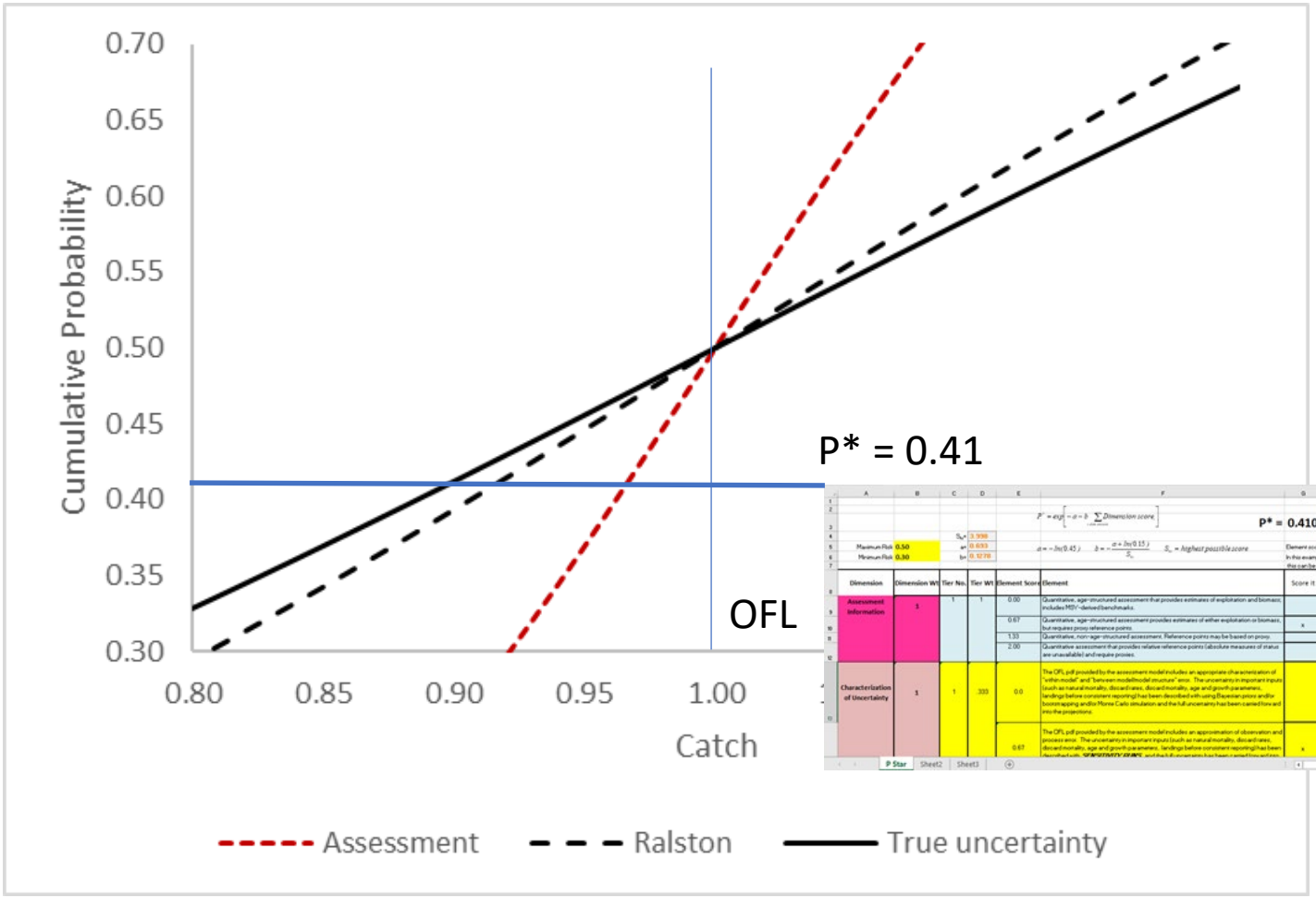
Probability of overfishing



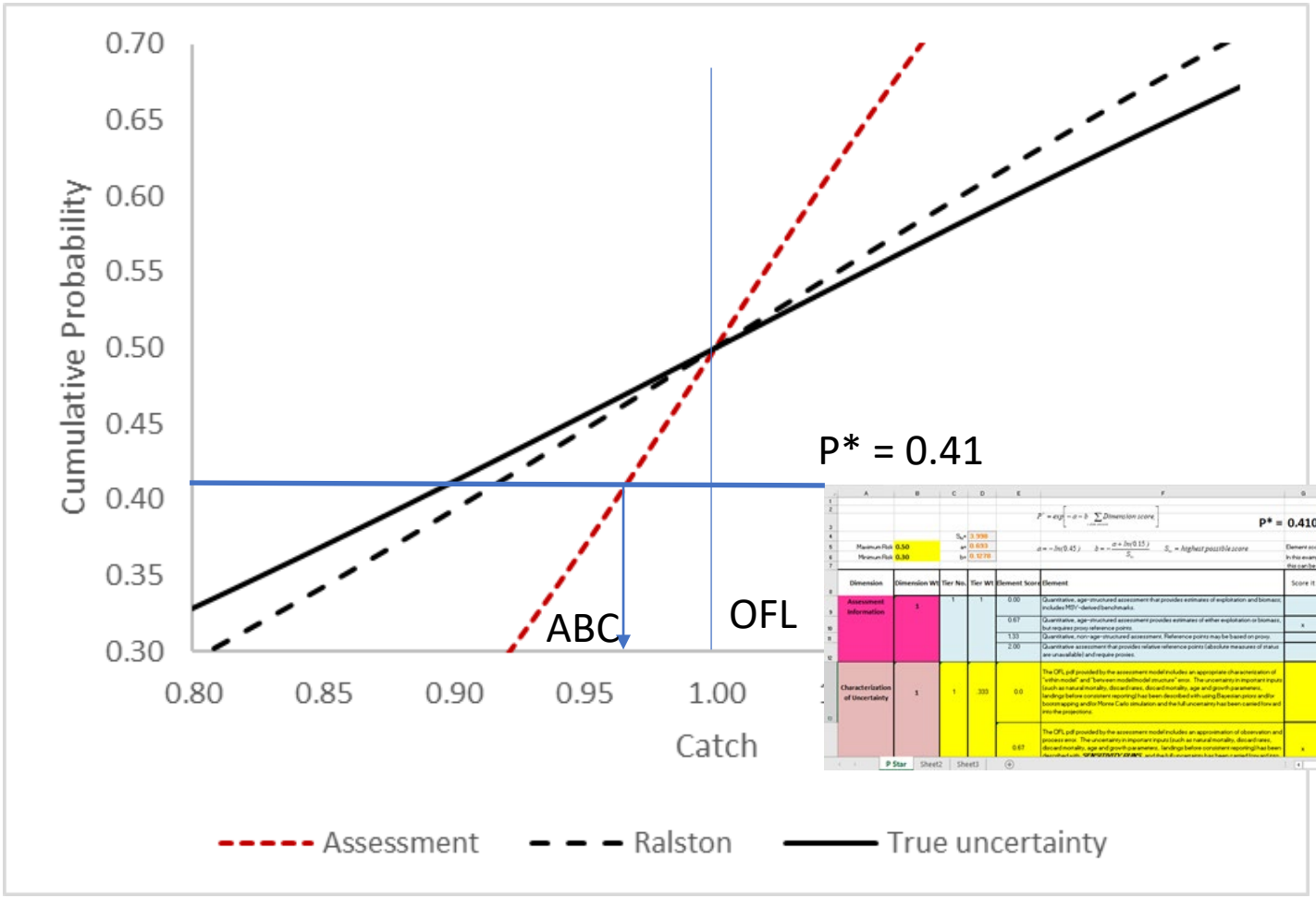
Probability of overfishing



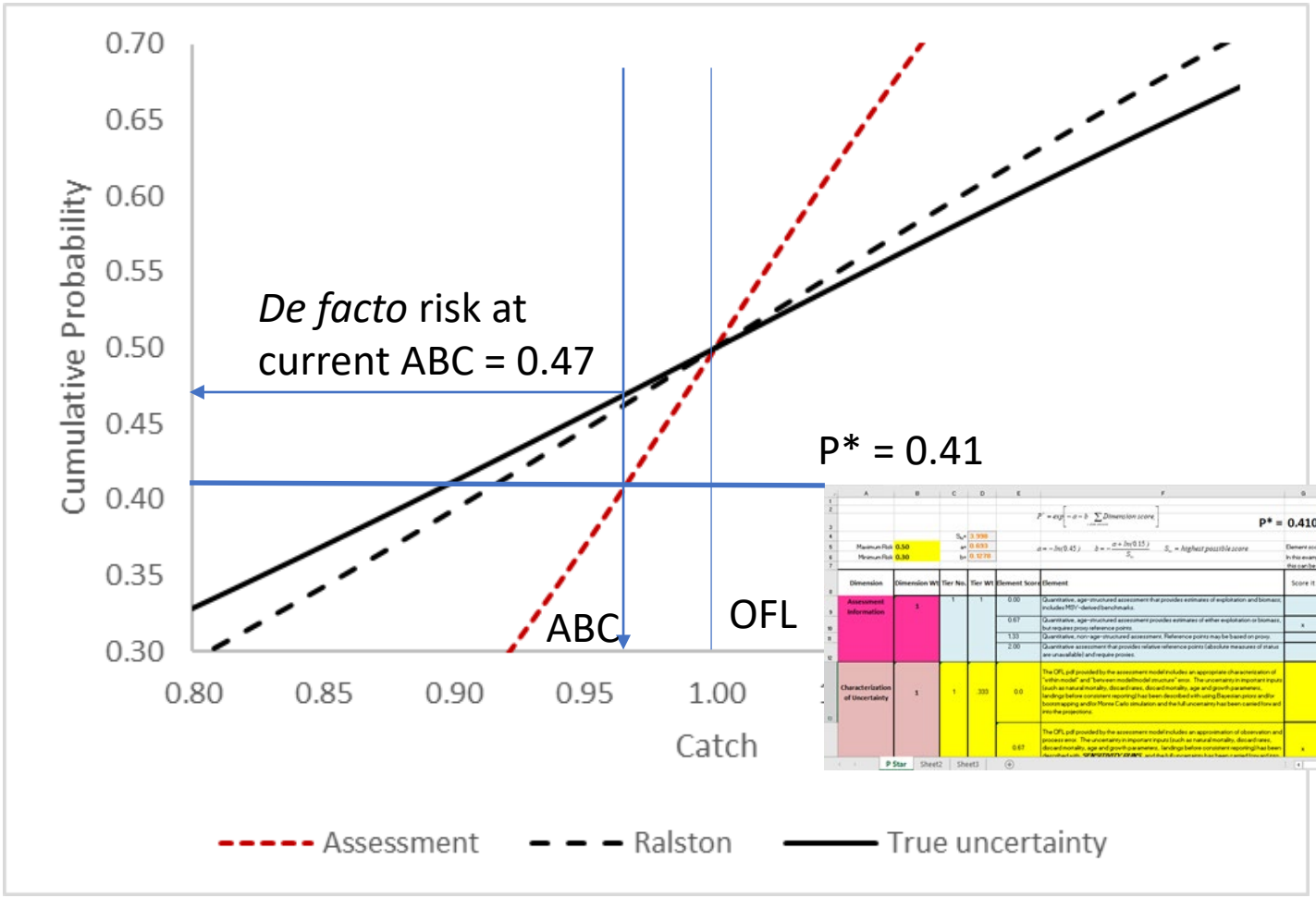
Applying current ABC control rule



Applying current ABC control rule



Applying current ABC control rule



SSC Discussion and Determination re. Ralston Method vs. Alternatives

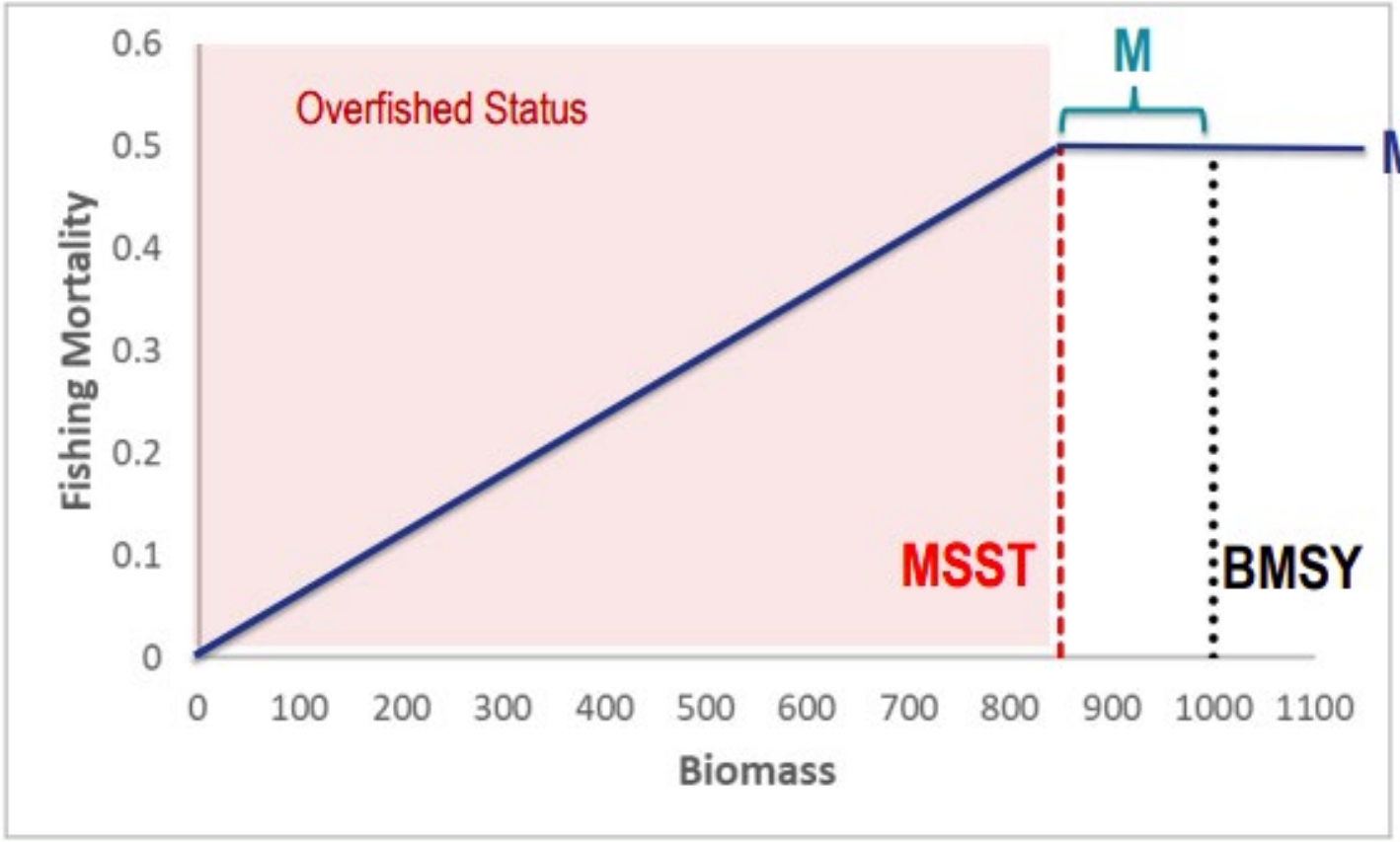
- The SSC is interested in the Ralston method (using a default minimum uncertainty derived from a meta-analysis of stock assessments)
- The SSC also recommends further exploration of other, conceptually different approaches such as F-multipliers (i.e., Restrepo et. al)

Harvest Control Rule (HCR)

(how buffer changes with stock abundance)

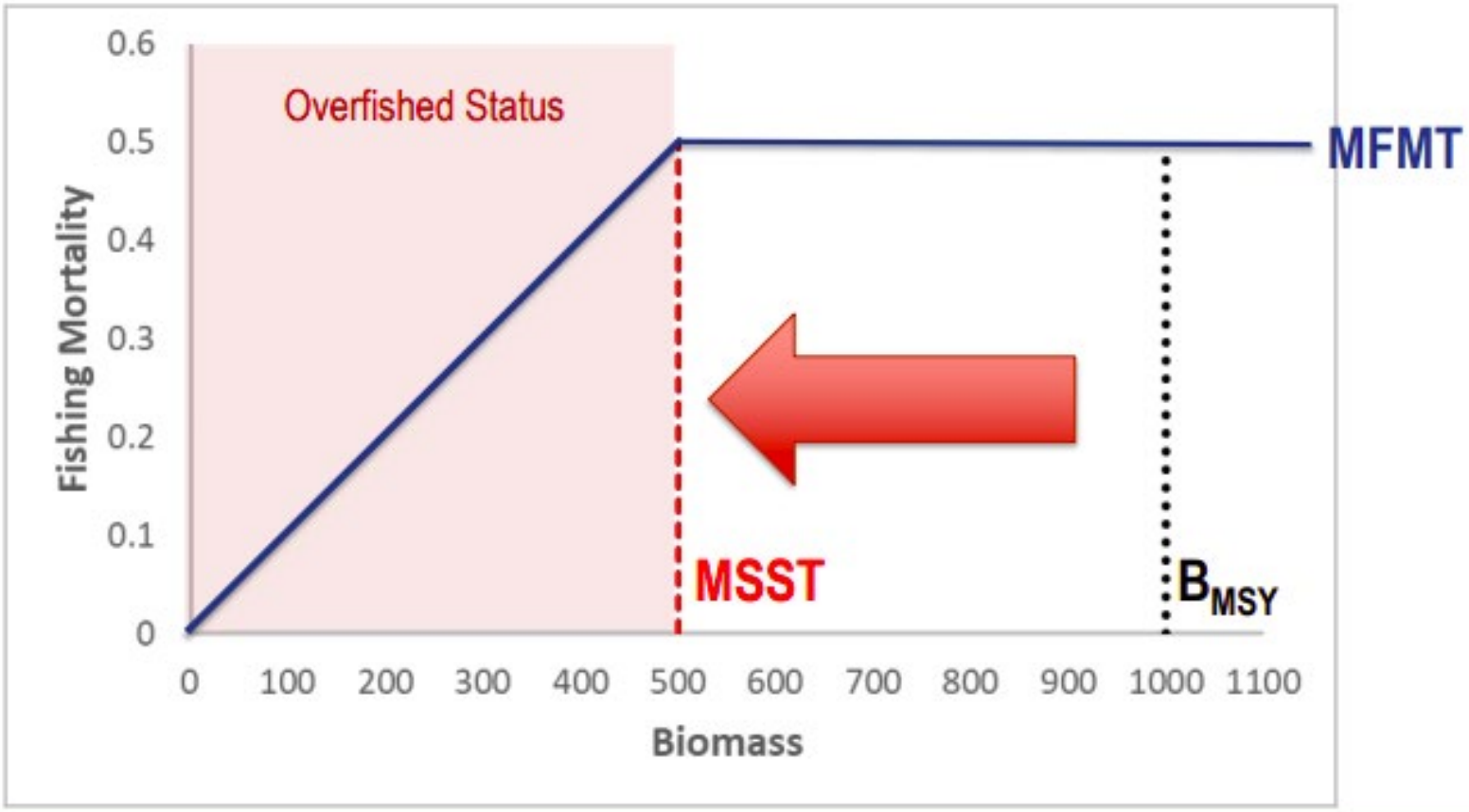
ABC Control Rule: General Guidance

- The ABC control rule should consider reducing fishing mortality (MFMT) as stock size declines. Previously, MSST was based on M. Rebuilding plans were required when $B < (1-M)*B_{MSY}$.



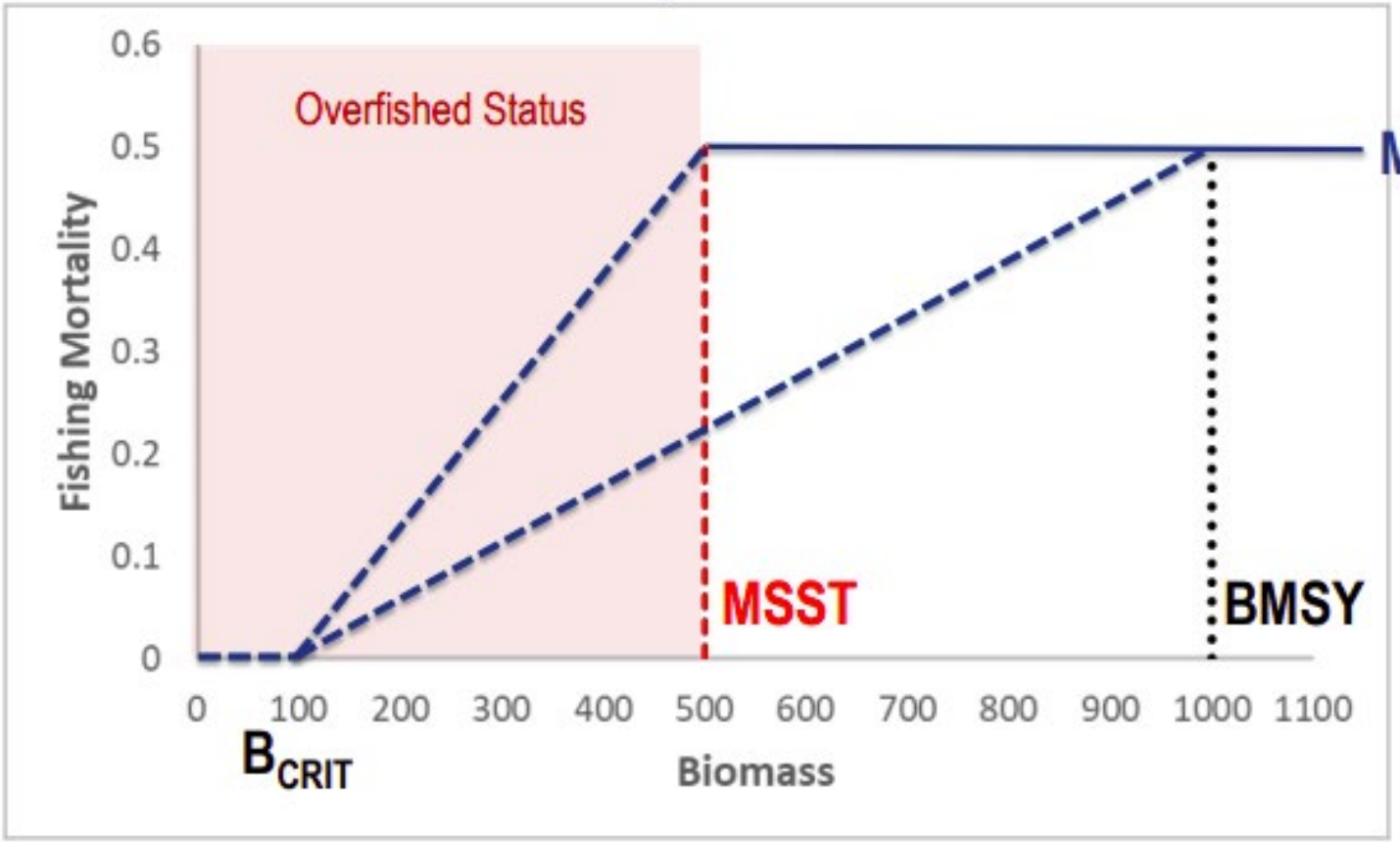
ABC Control Rule: General Guidance

- MSST now often set to 50%B_{MSY}. Stock is reduced well below the level that produces MSY before reducing F. Can require large reductions in F (and catch) and long rebuilding plans.



ABC Control Rule: General Guidance

- To reduce the likelihood of long and/or harsh rebuilding plans The SSC could consider reducing F when B<BMSY. The SSC could also impose a B_{CRIT} to reduce F to zero at some level of depletion



SSC Discussion and Determination re: the Harvest Control Rule (HCR)

- The SSC is interested in exploring a range of options for the HCR
- Overall, the SSC favors simplicity and robustness (not too many hinge points or opportunities to 'tweak' the rule)

SSC requests re: information to help evaluate the performance of alternative ABC control rules

- Past performance of existing rule
- Past performance of deviations from existing rule (e.g. us of F_{OY} proxy F-multiplier)
- Simulation performance of potential alternative rules
- Implications of alternative rules for ABCs of Gulf stocks

SSC discussion re: information to help the Council consider its risk policy (part of ABC control rule)

- Risk of overfishing vs. fishing opportunities forgone
- Costs of overharvesting to stocks and stakeholders
- Consideration of phase-in of changes in catch limits
- Social considerations and management buy-in