

BEST ASSESSMENT vs MANAGEMENT PROCEDURE BASED MANAGEMENT PROs AND CONs

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I. THE TRADITIONAL AND MP APPROACHES.

MP = Management Procedure

Approach first developed in the Scientific Committee of the International Whaling Commission some 25 years ago for improved management of fisheries by taking proper account of uncertainties in line with the Precautionary Principle, as later endorsed by FAO.

What is the traditional approach used to make scientific recommendations for TACs for fisheries ?

- a) Assess resource to give abundance, productivity
- b) Apply Harvest Control Rule (HCR) to give a TAC
.... recommendation

What particular difficulties arise with the traditional approach ?

- a) Variability in “best” assessments (and hence TACs)
- b) Ignores longer term trade-offs
- c) Lengthy haggling
- d) What if “best” assessment is wrong ?
- e) Default decision: no change

What is an MP ?

- Formula for TAC recommendation
- Pre-specified inputs to formula

But isn't this the same as the traditional
approach ?

Almost, but not quite

So what's the difference ?

- a) Pre-specifications prevent haggling
- b) Simulation is used to check that formula works even if “best” assessment wrong

How is the MP formula chosen from amongst alternative candidates ?

- a) Compare simulated catch / risk / catch variability trade-offs for alternatives
- b) Check MP performance adequate for plausible variations on “best” assessments

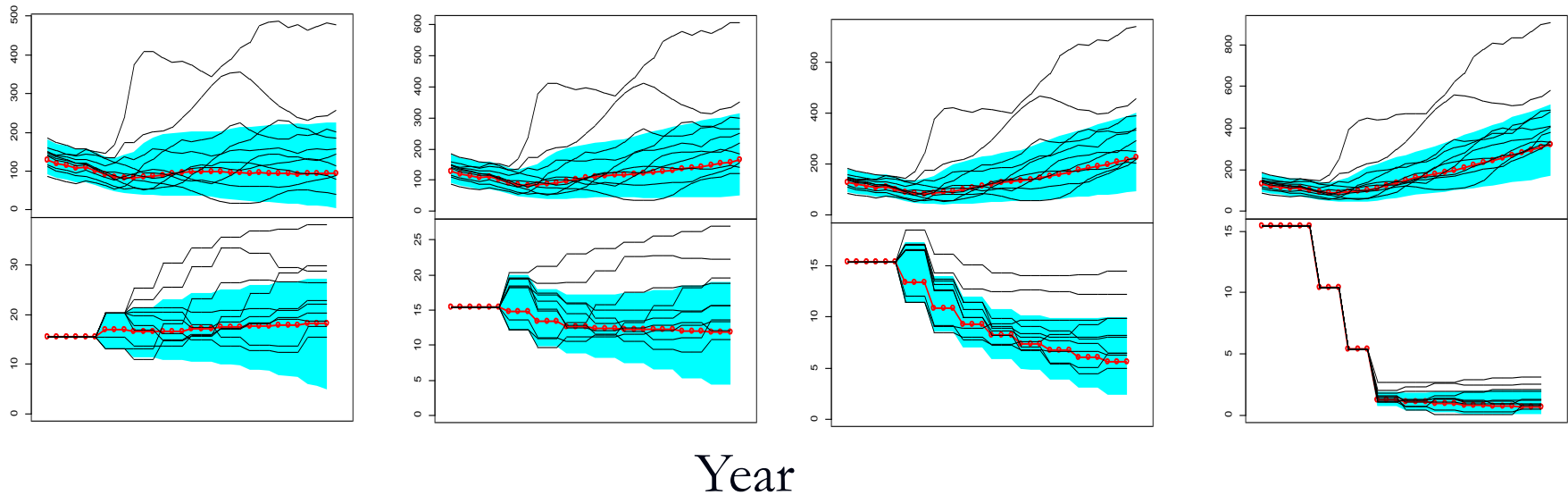
SOUTHERN BLUEFIN TUNA EXAMPLE

TRADE OFF

←
More catch

→
More recovery

Catch Biomass



Different HCR options

What are the advantages of the MP approach ?

- a) Less time haggling of little long term benefit
- b) Proper evaluation of risk
- c) Sound basis to impose limits on TAC variability
- d) Consistent with Precautionary Principle
- e) Provides framework for interactions with stakeholders, particularly re objectives
- f) Use haggling time saved towards more beneficial longer term research

What are the disadvantages of the MP approach ?

- a) Lengthy evaluation time
- b) Overly rigid framework (though 4-6 yearly revisions)

BUT

Provides default

When should scientists change the TAC recommendation from a MP?

New information / understanding shows real resource situation is outside range tested

A MP is like an auto-pilot

BUT

The real pilot remains to check that nothing unanticipated has occurred (i.e. often annual routine assessments continue)

How should managers react to MP-based scientific recommendations ?

- a) Treat as default (replacing “no change”)
- b) Require compelling reasons to change

II. SOME ASPECTS OF MP_s.

POPULATION MODEL-BASED *vs* EMPIRICAL

IWC: RMP – simple production model approach preferred over empirical approach

Primarily for lower catch variability

CCSBT: Selected MP was Fox production model-based plus empirical adjustments; preferred over purely empirical options (this was the first attempt)

Primarily for better learning about stock productivity

THE WAY FORWARDS

Move from simple to more complex population models once computer speeds increase sufficiently to accommodate fitting times needed in simulation testing

CURRENT TREND IN MANY MP IMPLEMENTATIONS

Model-based approaches being replaced by
Empirical ones

GOING BACKWARDS?

WHY?

IS BACKWARDS BETTER?

POPULATION MODEL POSITIVES

- Better representation gives More precise estimation
gives Less TAC variability
- Improved estimation of productivity over time (learning)

BUT

POPULATION MODEL NEGATIVES

- As data increase, simple models don't capture dynamics well
- Insufficiently sensitive to recent trends
- Can't check convergence of estimated model fits in trials

PREFER EMPIRICAL?

- Quicker computation of trial results
- Handle 'learning' by adjusting control parameters in 4-6 year reviews
- More transparent/easily understood by industry and managers; the way inputs impact outputs is clearer

III. IN CONCLUSION.

ARE MP_s A SUCCESS STORY?

- Where they have been applied, there is generally growing acceptance that they provide more security against maverick decisions and a better basis to plan.

BUT

- There has been a greater frequency of recourse to “Exceptional Circumstances” and MP revisions than foreseen
- The time saving has not been as great as hoped with the MSE processes taking a long time
- The approach is proving difficult to explain and initially sell to stakeholders

Thank you for your attention