Recent ISC activities on Management Strategy Evaluation (MSE)

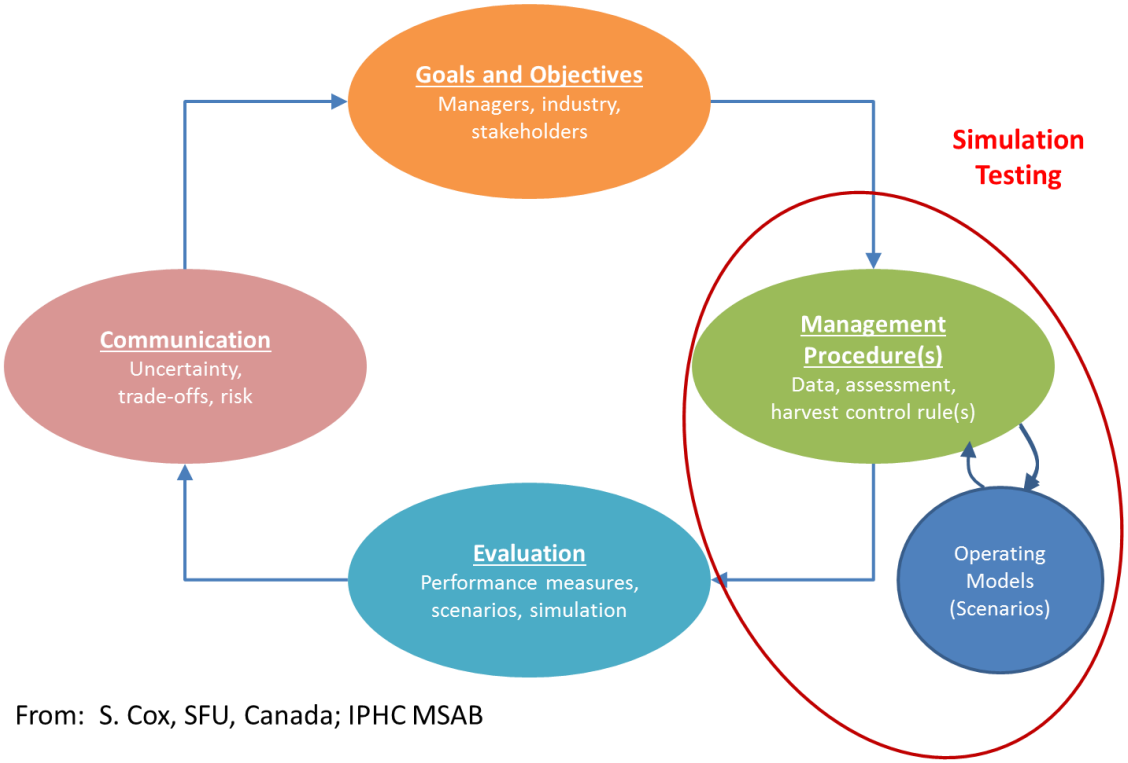
12th Regular Session of the Scientific Committee

3-11 August 2016
Bali, Indonesia

Outline

- MSE Process
- Timeline to Date
- ISC Activities
- Next Steps

MSE Process Review



From: S. Cox, SFU, Canada; IPHC MSAB

- Four components, starting with objectives
- Continuous process of simulation testing, evaluating, and communicating results to managers/stakeholders
- Simulation results used to update/revise objectives for stock
- Simulation testing does not project future states of the stock for management advice (as in an assessment). It is used to capture range of variability in system.
- Longer simulation period is better.

MSE Historical Timeline

1. USA submits proposal to 87th meeting of IATTC (July 2014) for MSE on north Pacific albacore (NPALB); withdrawn prior to discussion
2. ISC agrees that MSE is useful process for species WGs and that NPALB would be a good candidate (July 2014)
3. NC10 (Sept 2014) adopts management framework for NPALB and tasks ALBWG with conducting analyses to determine a target reference point (TRP) for this stock
4. ALBWG concludes that an MSE process is appropriate framework for TRP analysis
5. CMM 20140-06 approved; harvest strategy for key fisheries and stocks, including north Pacific albacore. Establishes MSE as important element.
6. ISC and Japan sponsor 1st MSE workshop in Yokohama, April 2015; introduces topic to managers, stakeholders, scientists
7. ALBWG develops an MSE implementation plan (April 2015); approved by ISC (July 2015)
8. ISC reports on 1st MSE workshop and ALBWG MSE planning to NC11 (Sept 2015) and requests preliminary ideas for objectives
9. Preliminary ideas for objectives collated at WCPFC 12, Bali (Dec 2015)
10. ISC and Japan sponsor 2nd MSE workshop in Yokohama, May 2016; develops proposed management objectives and performance criteria

NPALB MSE Process (April 2015)

- ALBWG does not have capacity to conduct MSE and stock assessment processes simultaneously
- Two track process followed:
  1. Staffing of MSE analysis position by member country, and
  2. ALBWG leads initial engagement process with managers/stakeholders to identify management objectives, performance criteria, etc., while MSE position is staffed
- Developed template for NC11 (Sept 2015) to solicit ideas for objectives from NC members; ideas collated and feedback provided by ALBWG Chair at WCPFC12 in Bali (Dec 2015)

NPALB MSE Process

- ALBWG scientists are now focusing on upcoming stock assessment in April 2017
- USA is currently staffing MSE analyst position; expected to be in place in fall 2016
- MSE analyst will develop work plan to lead engagement with managers/stakeholders to obtain additional input for MSE process

ISC MSE ACTIVITIES - Workshops

- **1st ISC Workshop on MSE with managers, 16-17 April 2015**
  - Goals: Introduce topic, concepts, roles, & benefits to managers, stakeholders and scientists
  - 71 participants, including fishery managers, stakeholders and scientists
  - 10 presentations were well received and informative; available on ISC website at: http://isc.fra.go.jp/reports/isc_mse_workshop.html
  - Agreement that regular workshops on MSE would be beneficial to stimulate continued dialogue, education, and information transfer
- **2nd ISC Workshop on MSE with managers, 24-25 May 2016**
  - Goals: Develop management objectives and performance criteria that can be used in initial MSE evaluations
  - 24 participants, including managers, industry stakeholders, and scientists
  - Set of 6 management objectives proposed (5 by participants, 1 by ALBWG to facilitate TRP analyses)
  - Performance metrics for each MO proposed by ALBWG as requested by participants
  - Trouble with concept of acceptable risk & how operationalized. Further engagement with managers/stakeholders needed to continue education on MSE and to develop additional components for simulation testing and evaluation
  - See Attachment 5 in Annex 8 of ISC16 Plenary Report

Proposed Management Objectives for NPALB MSE

Objective	Quantity	Performance Indicators
1. Maintain SSB above LRP	• 20%SSB0 F=0 • 14%SSB0 F=0 • SSB0.5R0, h=0.75	• SSBcurrent/LRP
2. Maintain total biomass, with reasonable variability, around the average depletion level in the recent 10 years of the latest stock assessment	• B is estimated as average depletion level for final 10 yr in 2017 assessment • Variability is estimated from historical period (1996-2015)	• Median depletion current year /Depletion(10 yr avg) • Historical CV (1966-2014)/Current depletion CV (over 30 years)
3. Maintain harvest ratios by fishery (fraction of SSB harvested) at current average	• Current average ratio last 10 years in 2017 assessment • Reasonable variability is CV estimate from fishing intensity plot (late 1990s to present)	• Median current harvest ratio (1-SPR)i/Average 1-SPR (10 years)i, where i = fishery • Historical CV/current CV (over 30 years)
4. Maintain catches by fishery above average historical catch	• Average catch by fishery, 1981-2010	• Current total catch/average historical catch • Current median catch/historical median (by fishery) • Historical CV of catch/ Current CV of catch (by fishery)
5. Limit the magnitude of change to effort or catch to < 15% at any time due to management actions by fishery		• % change due to HCR between years • % years change due to HCR < 15% within a run
6. Maintain F at the target value with reasonable variabiility [proposed by ALBWG]	• Various potential target values suggested by NC • Variability around target value, estimated from historical period	• Ftarget/Fcurrent
I. Maximize economic returns of existing fisheries (Place holder – more development required) II. Maintain interests of artisanal, subsistence and small-scale fishers, including limiting the regulatory impact on these fisheries (Placeholder – more development required)		

NPALB MSE Progress

- IATTC Secretariat recommended that Commission adopt proposed objectives at 90th meeting in June (IATTC-90-04d (REV)
- ISC reviewed objectives at 16th Plenary session in Sapporo and approved them for discussion at NC12
- Management objectives are the basis for evaluating performance of different management procedures
- Objectives represent things about the stock/fisheries that are important to managers/stakeholders
- Not committed to proposed objectives; set is expected to be revised/changed as information from simulation testing is evaluated. Normal part of MSE process

Next Steps

- USA is staffing an MSE analyst position and expects to be complete in fall 2016 (individual has been identified)
- MSE analyst will be a member of the ALBWG and will be the lead on the MSE process with assistance from the ALBWG Chair
- MSE analyst will participate in the 2016-17 NPALB stock assessment process to familiarize analyst with key biological information, uncertainties identified by the ALBWG, and fishery dynamics
- MSE analyst will prepare a work plan to: (1) engage managers/stakeholders to obtain input on acceptable risk for objectives, harvest control rules, management procedures, and important uncertainties, and (2) develop operating model(s) for simulation testing.
- Analyst is expected to need about one (1) year to produce a work plan and begin manager/stakeholder engagement
- ALBWG Chair (J. Holmes) will discuss 2nd ISC MSE workshop outputs (objectives, performance measures) at NC12 in Fukuoka (Sept 2016)

Questions?