9.3 Highly Migratory Species (HMS) Assessment

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Topics

1. HMS assessment process
2. HMS biological, data and model complexity
3. Strengths, Challenges and Strategies
4. SWFSC Strategies

Assessment Process

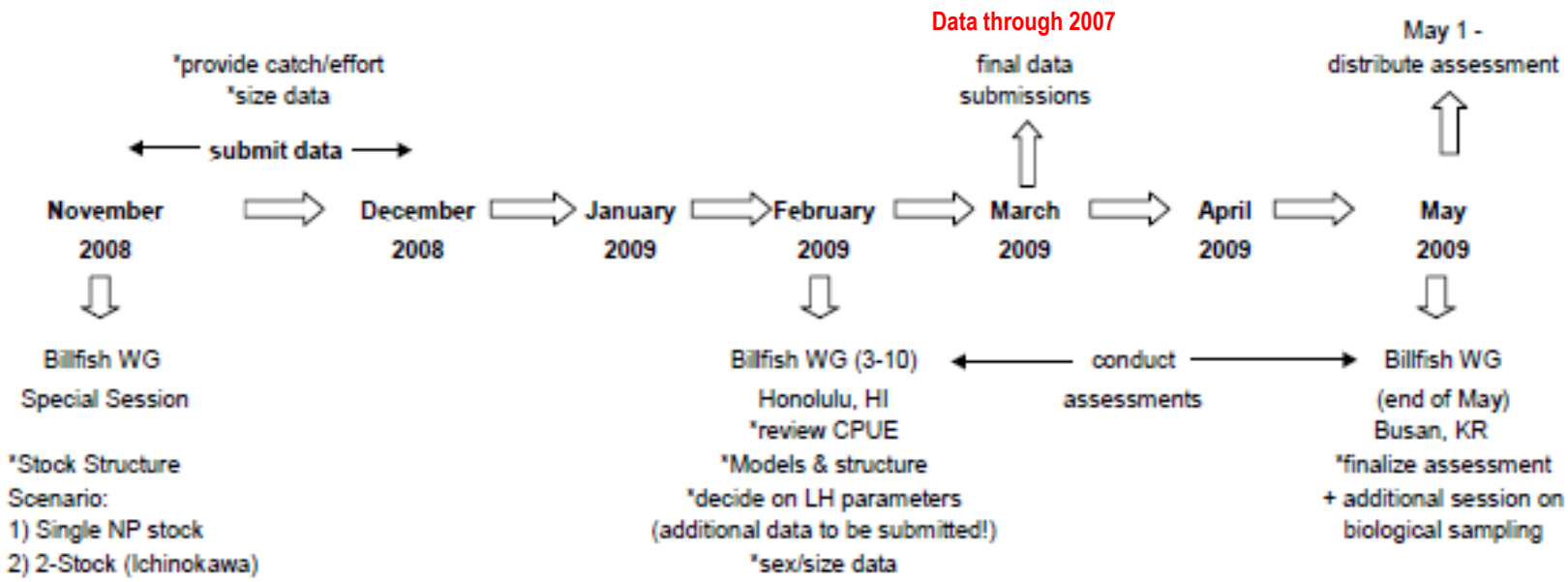
HMS assessments conducted by several different science providers (ISC, IATTC, SPC)

ISC has no formal process of benchmark vs. update

ISC moving to providing new assessments every 3 years

ISC Assessments done in a consensus forum

ISC Assessment Timeline



HMSpecies Assessed by NOAA

Tunas	Billfishes	Sharks
Albacore tuna	Swordfish	Blue shark
Bluefin tuna	Striped Marlin	Mako shark
	Blue Marlin	Thresher shark
		White shark

ISC
ISC but not completed
Non-ISC
Non-ISC Biological review

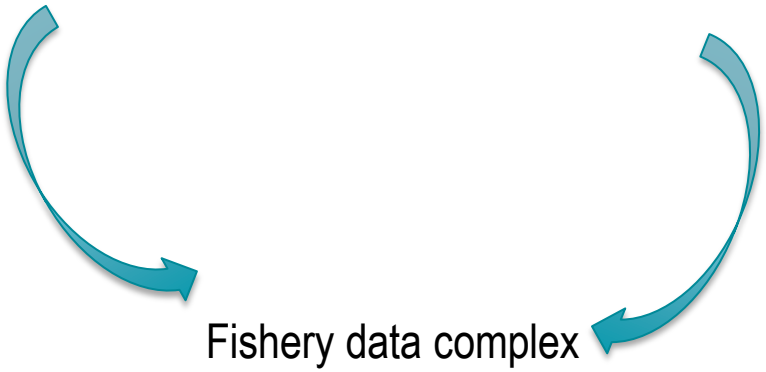
HMS are complex biologically with complex fisheries

<u>Biological</u>

Large spatial boundaries
Lifehistory and movement complex

<u>Fisheries</u>

Many nations fishing
Many gears and targets
All fishery dependent



Fishery data complex

Species groupings

Tunas - Good catches, targeted species composition data, strong CPUE and complete life history

Age-structured models

Billfishes - Reasonable catches, somewhat targeted species composition data, moderate CPUE and mostly complete life history

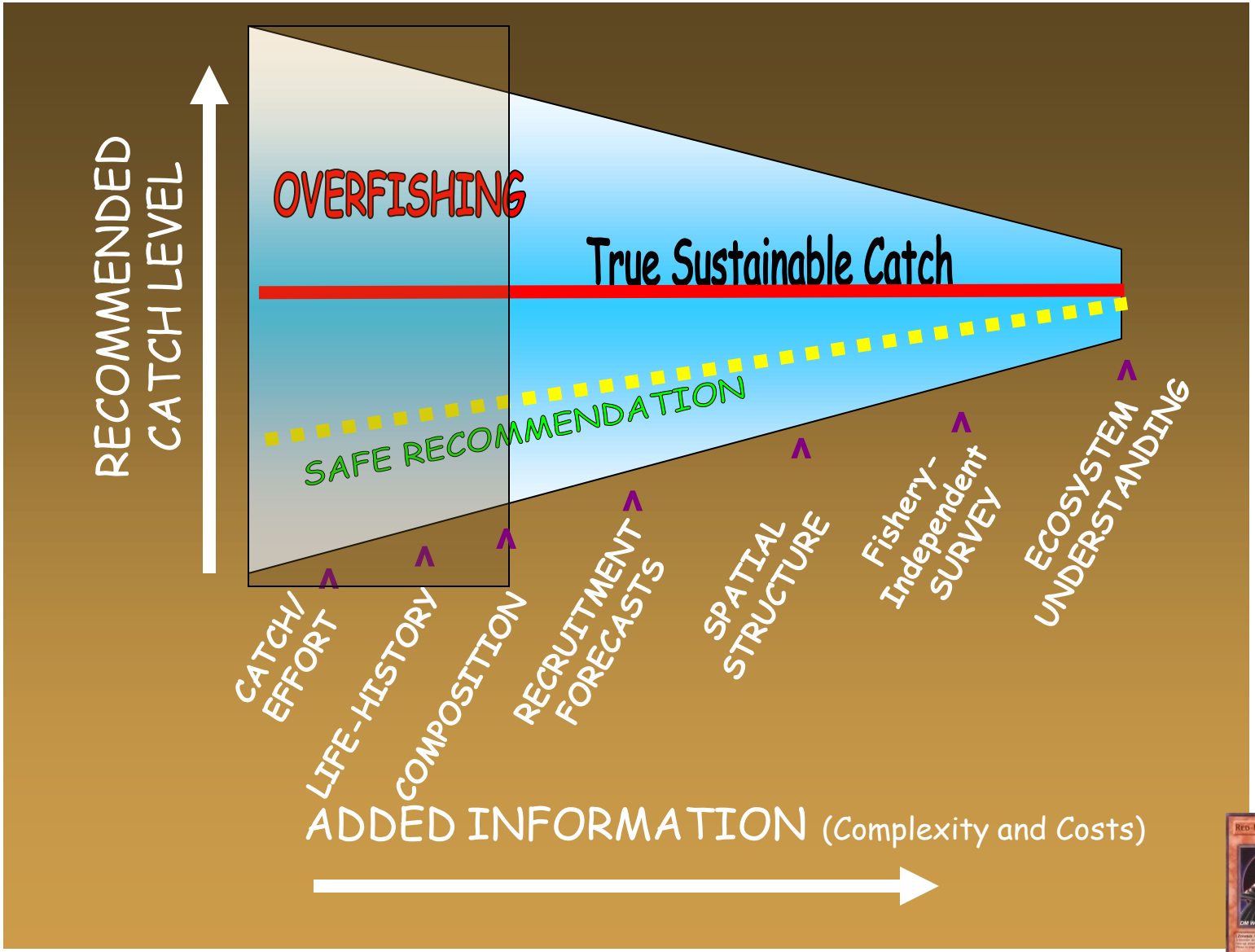
Models mostly age-structured models but with biomass dynamics

Sharks - incomplete catches, somewhat targeted species some composition data, CPUE and mostly complete- incomplete life history

Just starting- biomass dynamics models

Others - problematic

Where does HMS sit



Strengths

Large-spatial scale data are being collected and used.
Cooperation among nations to assess status is generally pretty good
A range of models are being used for assessing stocks

Challenges

Complex biology and life history and fisheries defies common model assumptions
All data is fishery dependent (especially for indices of abundance)
Unaccounted catch

Strategies

Capacity building and data sharing
Improvement in life history and biological understanding
Development of alternative models for “other” categories

Strategies-SWFSC

Somewhat Easy

Better population/stock structure- something important but often overlooked and SWFSC technically good at it

Improved lifehistory- important to move to age structured modeling (age/growth, M etc)- SWFSC developing technical expertise for this

Not so Easy

Improve the recording of catch- especially of foreign fleets and non-targeted species

Understand movement- Spatially explicit models

Improve reliability of indices of abundance- Alternative analytical methods or new survey methods

Understanding the role of “Environment”- improve data streams and forecasting.