

Can integrated assessments reconcile stakeholder conflicts in marine fisheries management?

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Consensus?

stakeholders

managers



scientists



Biological model: cod



Socio-econ model: cod

Employment-effort
relationship, costs &
revenues

Biological model: capelin



Socio-econ model: capelin

Employment-effort
relationship, costs &
revenues

Yield Conservation

Employment Profit

Yield Conservation

Employment Profit



Stakeholder preferences

Utility components →	YIELD	EMPLOYMENT	PROFIT	STOCK LEVEL (spawning stock biomass)
Stakeholders ↙				
FISHERMEN "industrial"	0.3	0	0.7	0
"artisanal"	0.5	0.1	0.1	0.3
SOCIETY "employment-oriented"	0.2	0.5	0	0.3
"profit-oriented"	0.2	0	0.6	0.2
CONSERVATIONISTS	0.1	0.2	0.2	0.5

assumption: stakeholder group consensus



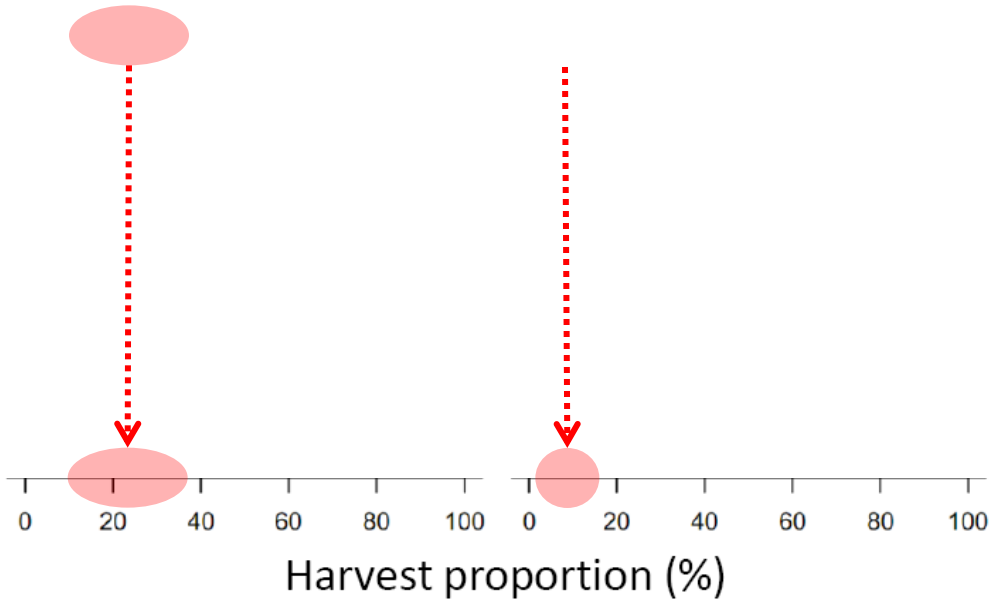
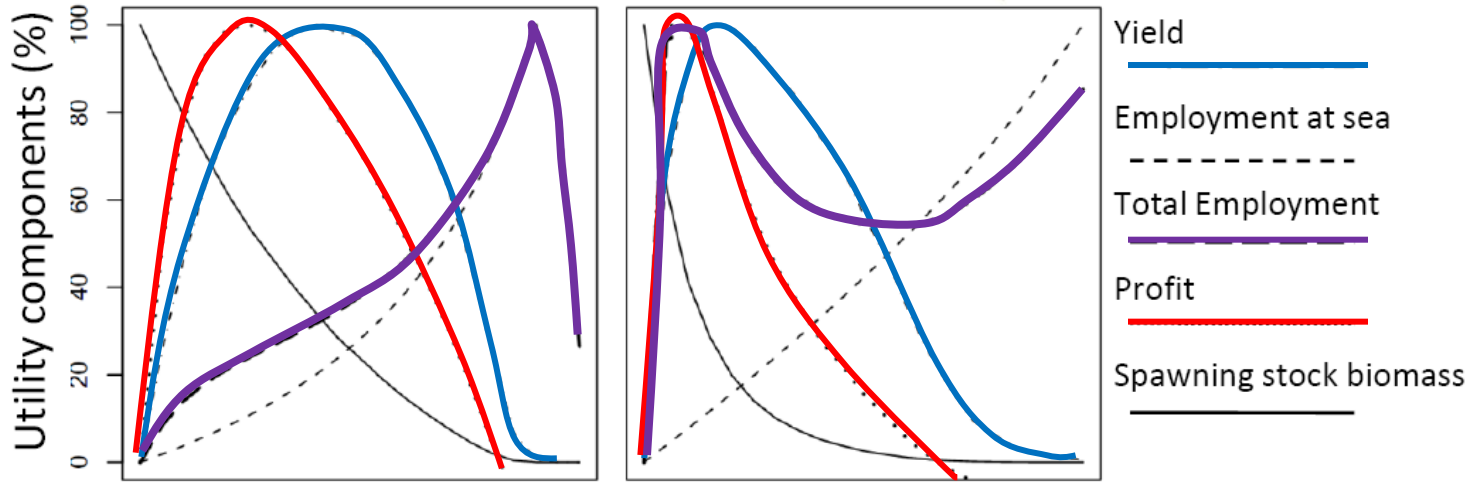
Quantifying stakeholder utilities



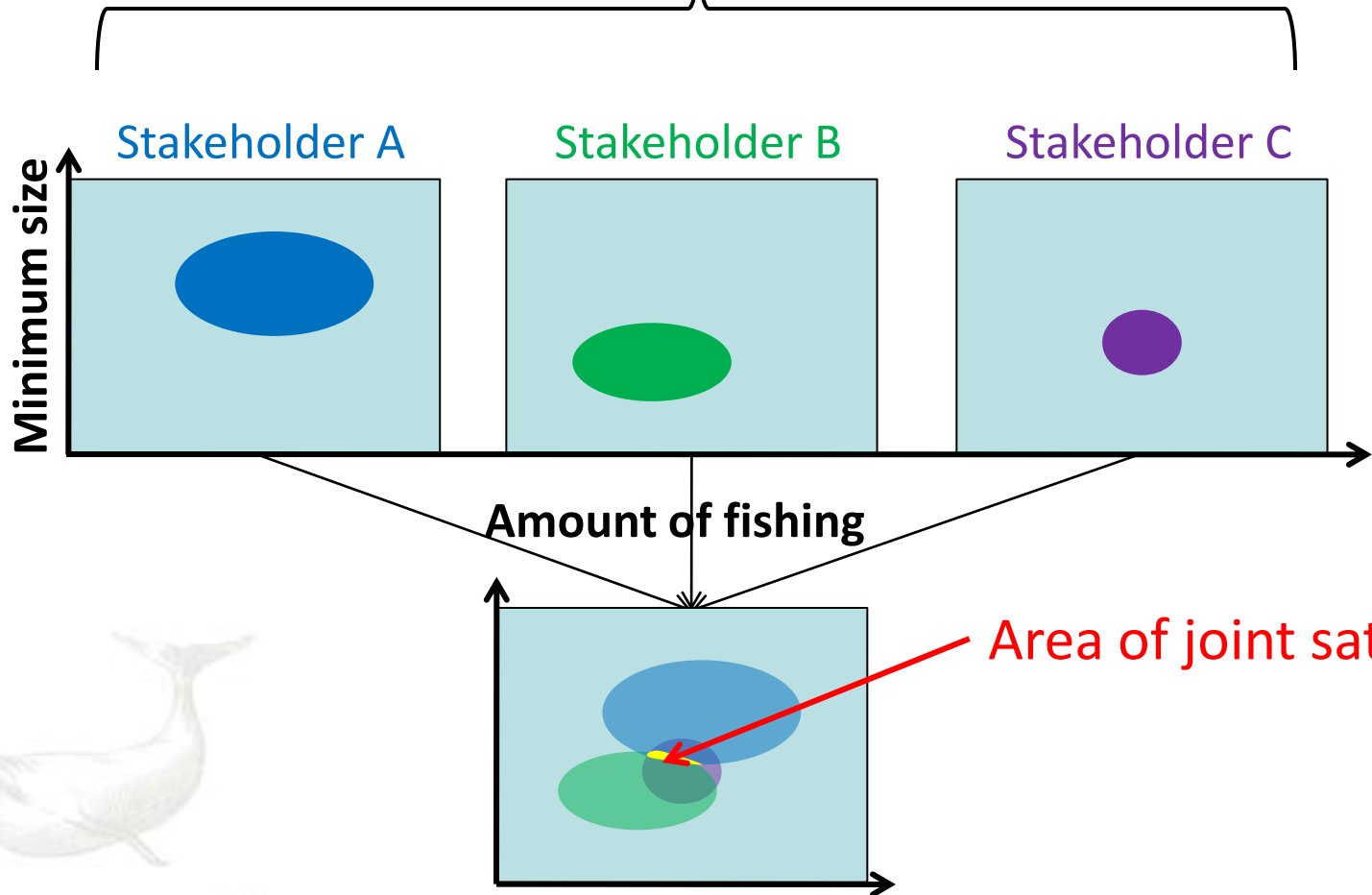
Capelin



Cod



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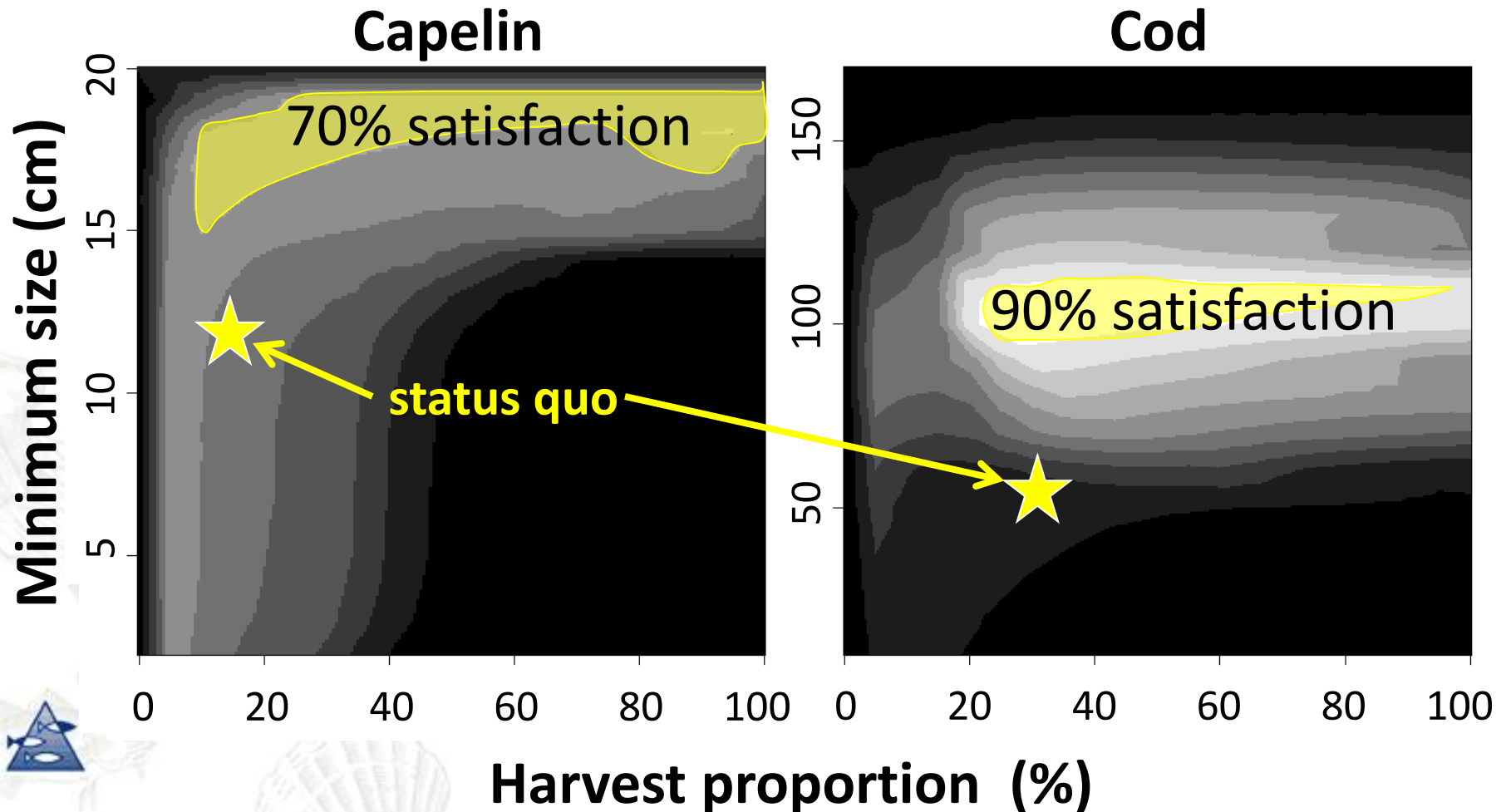


Use preference table to map the best scenarios for each stakeholder

Mapping the Zone of Consensus

2 control options: min size & F

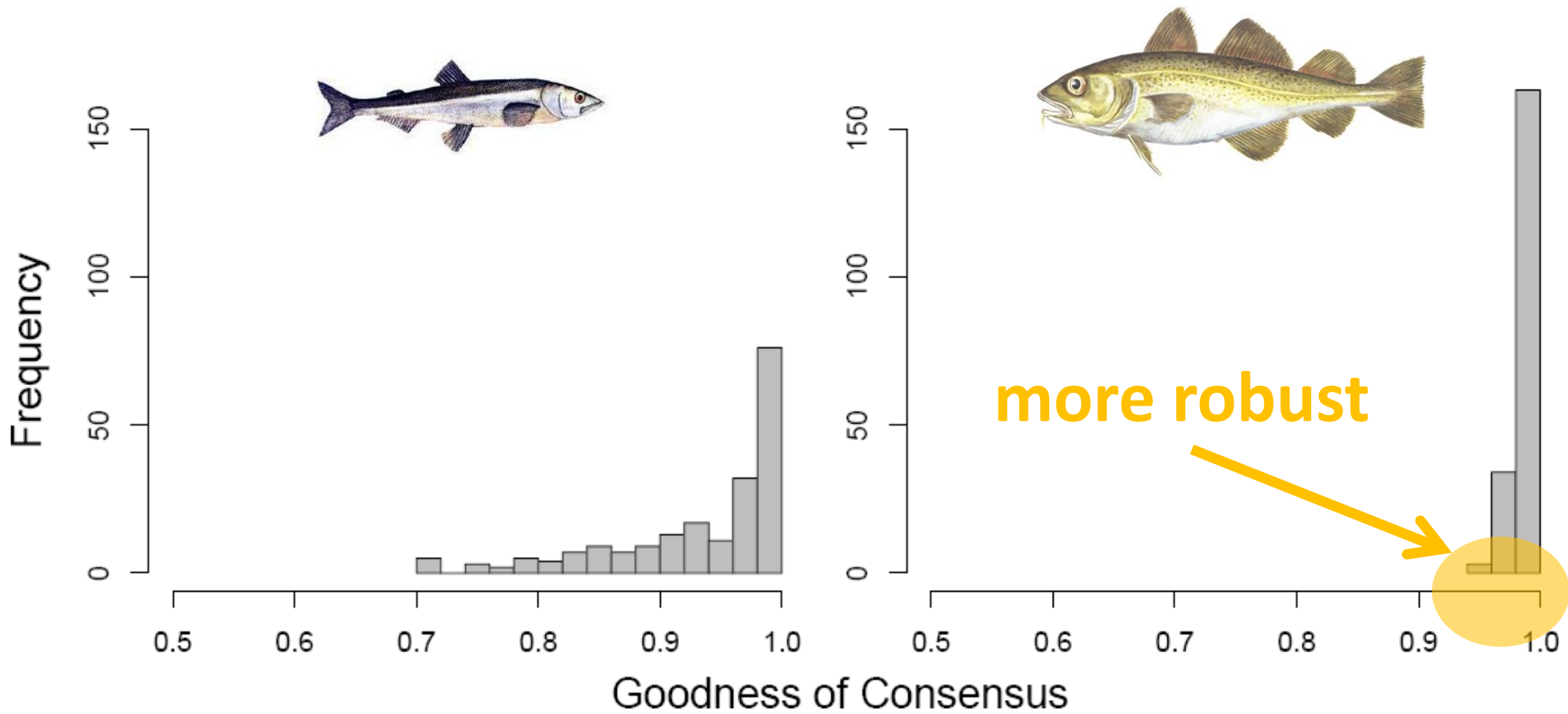
Control parameters that allow for high satisfaction are candidates for a consensus solution



How robust is the “consensus”?



30% Stakeholder Uncertainty



Take home messages

1. Stakeholder conflicts may not be so conflicting as thought
 - our modelled cod has more robust consensus than capelin
2. Quantification of stakeholder obj/pref leads to clarification of mgmt consequences
 - room for "revaluation" of objectives for an integrated solution (M.P. Follett)
3. Integrating biological & socio-economic assessments sheds light on utilities that matter to society



Context helps form system linkages

