Five Overarching Objectives

- Biological sustainability – identify stock conservation objectives
- Fishery (all directed fisheries) sustainability and stability – identify harvest minimum and acceptable variability
- Assurance of access – minimize probability of fishery closures
- Minimize bycatch mortality
- Serve consumer needs

Five Management Procedures

- Total mortality: Direct accounting by area for all sources of mortality in that area, including sublegals.
- Size limits: No size limit, current minimum size limit, 26 inches instead of 32, slot limits.
- Harvest strategies: 30:20 control rule, reference removal rate 21.5%/16.125%, coastwide and by area.
- National shares: catch limits by areas would be allocated rather than based on apportionment.
- Bycatch mitigation: Compensation among areas for bycatch in a particular area.

Table 1. Candidate goals and objectives for MSE process – May 2014

Goal	Objective	Performance Metric	Probability	Time frame	IPHC Staff Comments
Biological sustainability	Limit - the level of biomass below which no fishing can occur	1) Maintain a minimum of number of mature female halibut coast-wide (e.g., one million)	0.99	Each year	Number of females and spawning biomass can be equivalent, however this objective could also be evaluated with respect to average female size
		2) Maintain a minimum spawning stock biomass of 20% of the unfished biomass	0.95	Each year	Part of current harvest policy. The probability should be evaluated relative to recruitment variability and yield
Biological sustainability	Threshold - the level of biomass below which the harvest rate should decline	3) Maintain a minimum spawning stock biomass of 30% of the unfished biomass	0.75	Each year	See above.
Fishery sustainability and stability Assurance of access Serve consumer needs	Target Harvest Rate - harvest rate applied when biomass is above threshold level - Maintain median catch within ±10% of 1993-2012 average - Maintain average	4) Maintain directed fishing opportunity	0.95	Each year	Evaluate probability relative to recruitment variability and minimum annual variation in catch desired by industry. This needs a quantifiable unit in order to calculate a probability, e.g., maintain directed fishing opportunity of xx million pounds each year.

Goal	Objective	Performance Metric	Probability	Time frame	IPHC Staff Comments
	catch at >70% of historical 1993-2012 average				
		5) Maximize yield in each regulatory area	0.5	Each year	* See above. This performance metric is actually an objective and requires a specific value for calculating a probability.
			?	Within 5 years of implementation	* See above.
			0.9	Each year	* The absolute quantities for catch will be difficult to achieve. For example you may never be able to achieve 70% of the average catch in 90 out of 100 cases. In terms of assurance of access in 90 out of 100 cases, adjusting the % of the average catch may be necessary.
Fishery sustainability and stability	Harvest efficiency	Wastage in the longline fishery <10% of annual catch limit	0.75	Over a 5 year period	* The performance metric might be best expressed as the ratio of discards to retained, or sublegal:legal. Wastage is difficult to quantify due to assumptions about discard mortality rate and biases in the observer programs with partial coverage.

Goal	Objective	Performance Metric	Probability	Time frame	IPHC Staff Comments
Fishery sustainability and stability Assurance of access Serve consumer needs	Limit catch variability	6) Limit annual changes in TAC, coastwide and/or by Regulatory Area, to less than 15%	1	Each year	* This might be better described as a harvest control rule or procedure (akin to slow up fast down). The performance metric would be the average annual variability in catch. In this case the AAV <= 0.15 with a probability of 1 each year.
Biological sustainability	Risk tolerance and assessment uncertainty	When Limit < estimated biomass < Threshold, limit the probability of declines	0.05 – 0.5, depending on estimated stock status	10 years	* The performance metric here might better be expressed as the frequency that Blimit < estimated biomass <= threshold, and the desired probability of being in this window is on the order of 0.05-0.5 over a 10 year window.

* Many of the performance metrics are likely to interact with both conservation targets and harvest rate objectives, and their probabilities will be dependent on recruitment variation and desirable/acceptable economic standards of participants. Finding the balance of these competing objectives is the primary purpose of the MSE process.