D-1 Halibut Abundance Based Management
Council Motion
April 8, 2018

The Council initiates analysis of the following alternatives (No changes have been made to the purpose and need statement).

Alternative 1: No action

Alternative 2: Index trawl PSC to EBS trawl survey biomass. Index longline PSC to setline survey biomass.

Alternative 3 (former ABM 4): Index trawl gear PSC and fixed gear PSC to both EBS trawl survey (primary index for trawl, secondary index for longline) and setline survey (primary index for longline, secondary index for trawl). The secondary index modifies a multiplier on the starting point of the control rule when the secondary index is in a "high state" or a "low state" (e.g., the PSC is multiplied by 1.1 when the secondary index is at a "high" value and by 0.9 when the secondary index is a "low" value).

Alternative 4 (former ABM 4): Index trawl gear PSC and fixed gear PSC to both EBS trawl survey (primary index for trawl, secondary index for longline) and setline survey (primary index for longline, secondary index for trawl). The secondary index modifies the multiplier on the final PSC limit after the primary index is applied when the secondary index is in a "high state" or a "low state" (e.g., the PSC is multiplied by 1.1 when the secondary index is at a "high" value and by 0.9 when the secondary index is at a "low" value).

For each alternative above the slope of the control rule is fixed at a value of 1.0

The following elements and options are exclusive to alternatives 2-4
Element 1 – PSC limit responsiveness to abundance changes
Option 1: PSC limit varies no more than 5% per year
Option 2: PSC limit varies no more than 15% per year
Option 3: PSC limit varies no more than 25% per year

Element 2 – Starting point for PSC limit
Option 1. 10% below 2016 PSC use (2,119 t)
Option 2. 2017 use (1,958 t)
Option 3. Average of 2016 PSC use and limit (2,935 t)
Option 4. 2016 PSC limit (3,515 t)

Element 3 - Maximum PSC limit (ceiling)
Option 1. 2016 PSC limit (3,515 t)
Option 2. 2015 PSC limit (4,426 t)
Option 3. No ceiling

Element 4 - Minimum PSC limit (floor)
Option 1. No floor (PSC goes to 0)
Option 2. 2016 use (2,354 t)
Option 3. ½ of 2016 PSC limit (1,758)
Option 4. PSC limit is zero at IPHC 20% Coastwide stock status (or proxy)

Element 5 – High and low values for secondary index (Only applies to Alternatives 3 and 4)
Option 1. High = 2nd highest value of time series, Low = 2nd lowest value of time series
Option 2. Index is 25% below or above average
Option 3. Index is above or below average

Element 6 – Multiplier for secondary index (only applies to Alternative 3 and 4)
Option 1. High = range of 1.1 to 1.5
Option 2. Low = range of 0.5 to 0.9
Option 3. Other high, medium and low ranges to be selected between 0.5 and 1.5

Alternative 5: Index fixed gear PSC to combination of IPHC Area 4 all sizes survey and EBS shelf trawl survey. BSAI fixed gear PSC limit is presented in a look-up table based on halibut abundance from the IPHC Area 4 setline survey and the EBS trawl survey.

The following elements are exclusive to Alternative 5
Element 1 – PSC limit responsiveness to abundance changes
A reduction (options 25-50%) in the EBS halibut index for either survey triggers a reduction from the existing cap to the floor. Also, SB 20 coastwide halibut control rule (or proxy) triggers going to the floor (independent of the two surveys).

Element 2. Starting Point
Option 1. 2016 limit (710 mt)
Option 2. 10% below 2016 limit (639 mt)
Option 3. 20% below 2016 limit (568 mt)
Option 4: 2016 PSC use (205 mt).

Element 3. Maximum PSC limit (ceiling)
Option 1. 2015 PSC limit (833 mt)
Option 2. 2016 PSC limit (710 mt)
Option 3. Option 3. No ceiling

Element 4. Minimum PSC limit (floor)
Option 1. 2002-2016 avg. PSC use = 462 mt
Option 2. 50% of 2016 PSC limit = 355 mt
Option 3. PSC limit is zero at SB 20% Coastwide stock status (or proxy)

In this analysis, the Council also tasks staff to evaluate the following items, and other comments from the SSC as practicable:

- *Time series of the indices used*. Provide the Council biological considerations for selecting the baseline years for the index, as described by the SSC.
- *Index values for high, medium and low*. In Alternatives 3 and 4 a secondary index may modify the PSC limit based on the secondary index being high, medium or low. The Council request a biological basis for determining when an index is high or low, as well as guidance on how to the response associated with each value.
- *Alternative PSC limits*. A small number of fixed PSC values should be included in the analysis to allow investigation of the performance of ABM alternatives relative to differences in the scale of the starting points, as outlined by the SSC.
- Evaluate using a 3-5 year rolling average of PSC limits, as described by the SSC.
- Consider how to allocate CDQ PSC between fixed gear and trawl gear.
- Describe the steps and process that produces the EBS trawl IPHC survey index values.

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The Council is interested in evaluating a PSC performance standard associated with O26 halibut. Preliminary understanding of O26 data suggests there may be limitations in the data available to establish a performance standard. The Council tasks staff to work with NMFS and the Observer Program to provide a white paper describing the available O26/U26 halibut abundance and mortality data, and any sources of bias. This paper should identify the amount (weight and numbers) of O26 halibut mortality in the Bering Sea. The paper should also include a description of sampling protocols in the halibut deck sorting EFP, the effect deck sorting may have on the number and weight of halibut mortality, and any anomalies with existing data.

In addition, the Council requests this paper develop O26 performance standard options and evaluate the ability to achieve the objectives of this action. Staff should identify biological linkages or correlations between data sources of O26 halibut abundance and mortality.