

# **Council Staff Report:** **Application of the SSC's ABC** **Control Rule for Multispecies Stocks**

**Jamie M. Cournane, PhD**  
***NEFMC Staff***  
***Groundfish Plan Coordinator***

**SSC**  
**Meeting**  
***June 2, 2016***



# ABC Control Rules

These ABC control rules will be used in the absence of better information that may allow a more explicit determination of scientific uncertainty for a stock or stocks. If such information is available - that is, if scientific uncertainty can be characterized in a more accurate fashion-- it can be used by the SSC to determine ABCs, these ABC control rules can be modified in a future Council action (an amendment, framework, or specification package):

- a) ABC should be determined as the catch associated with 75% of  $F_{MSY}$ .
- b) If fishing at 75% of  $F_{MSY}$  does not achieve the mandated rebuilding requirements for overfished stocks, ABC should be determined as the catch associated with the fishing mortality that meets rebuilding requirements ( $F_{rebuild}$ ).
- c) For stocks that cannot rebuild to  $B_{MSY}$  in the specified rebuilding period, even with no fishing, the ABC should be based on incidental bycatch, including a reduction in bycatch rate (i.e., the proportion of the stock caught as bycatch).
- d) Interim ABCs should be determined for stocks with unknown status according to case-by-case recommendations from the SSC.

Stock		Most recent control rule	*Prior to the 2015 Assessments
GB cod		75%Fmsy constant	
GOM cod		pseudo 75%Fmsy constant (3 projections)	
GB Haddock		75%Fmsy	
GOM Haddock		75%Fmsy	
GB Yellowtail Flounder		75%Fmsy constant no projection	
SNE Yellowtail Flounder		long term 75%Fmsy constant	
CC/GOM Yellowtail Flounder		75%Fmsy constant	
Plaice		75%Fmsy	
Witch Flounder		Frebuild constant	
GB Winter Flounder		Frebuild	
GOM Winter Flounder		75%Fmsy constant no projection	
SNE/MA Winter Flounder		long term 75%Fmsy constant, different recruitment	
Redfish		75%Fmsy	
White Hake		75%Fmsy	
Pollock		75%Fmsy constant	
Northern Windowpane Flounder		75%Fmsy constant no projection	
Southern Windowpane Flounder		75%Fmsy constant no projection	
Ocean Pout		75%Fmsy constant no projection	
Halibut		Frebuild	
Wolffish		75%Fmsy constant no projection	

	7	75%Fmsy or Frebuild
	5	75%Fmsy or Frebuild and held constant
	6	75%Fmsy and held constant, no accepted projection
	2	Long term 75% Fmsy

## Rebuilding

### Rebuild

stock	End date	probability
GB cod	2026	50%
GOM cod	2024	50%
GB Haddock	rebuilt	
GOM Haddock	rebuilt	
GB Yellowtail Flounder	2032	50%
SNE Yellowtail Flounder	NA	
CC/GOM Yellowtail Flounder	2023	50%
Plaice	2024	50%
Witch Flounder	2017	75%
GB Winter Flounder	2017	75%
GOM Winter Flounder	NA	
SNE/MA Winter Flounder	2023	50%
Redfish	rebuilt	
White Hake	2014	50%
Pollock	rebuilt	
Northern Windowpane Flounder	2017	50%
Southern Windowpane Flounder	rebuilt	
Ocean Pout	2014	50%
Halibut	2056	50%
Wolffish	undefined	

4	overfished but no projection
5	rebuilt
7	difficult to rebuild by end date
2	on schedule (not bound by Frebuild)
2	unknown status

# Assessment Terminal Year

B = benchmark

U = update

Stock	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
GB cod	B			U	B			U		U
GOM cod	B			B	B		U	U		U
GB Haddock	B			U				U		U
GOM Haddock	B			U			B	U		U
GB Yellowtail Flounder	B	U	U	U	U	U	B	U	U	U
SNE Yellowtail Flounder	B				B			U		U
CC/GOM Yellowtail Flounder	B			U				U		U
Plaice	B			U				U		U
Witch Flounder	B			U				U	B	U
GB Winter Flounder	B			B			U	U		U
GOM Winter Flounder	B			B			U	U		U
SNE/MA Winter Flounder	B			B				U		U
Redfish	B			U				U		U
White Hake	B				B			U		U
Pollock	B		B				U	U		U
Northern Windowpane Flounder	B			U				U		U
Southern Windowpane Flounder	B			U				U		U
Ocean Pout	B			U				U		U
Halibut	B			U				U		U
Wolffish	B			U				U		U

overfishing	13	1	1	7	3	1	1	5
not overfishing	7		1	10	2		4	12
unknown							1	3

GARM 3 projection (2 year catch assumption) to estimate ABCs 2010-2012

13 stock op-2012 (2 year catch assumption) to estimate ABCs 2013-2015

1A = 75%FMSY    1B = 75%FMSY held constant    1C = 75%FMSY held constant different assumption

2A = Frebuild    2B = Frebuild held constant

3 = No projection 75%Fmsy

4 = Other

Stock	GARM3 (t-yr = 2007)			op-2012 (t-yr = 2010)			op-2015 (t-yr = 2014)		
	2010	2011	2012	2013	2014	2015	2016	2017	2018
GB cod	1A	1A	1A	1B	1B	1B	3	3	3
GOM cod	1A	1A	4	4	4	1C	1C	1C	1C
GB Haddock	1A	1A	1A	1A	1A	1A	1C	1C	1C
GOM Haddock	1A	1A	1A	1A	1A	1A	1A	1A	1A
GB Yellowtail Flounder	4	4	4	4	4	4	4	4	
SNE Yellowtail Flounder	2A	2A	2A	1C	1C	1C	4	4	4
CC/GOM Yellowtail Flounder	1A	1A	1A	1B	1B	1B	1B	1B	1B
Plaice	1A	1A	1A	1A	1A	1A	1A	1A	1A
Witch Flounder	1A	1A	1A	2B	2B	2B	4	4	4
GB Winter Flounder	1A	1A	1A	1A	1A	1A	1B	1B	1B
GOM Winter Flounder	4	3	3	3	3	3	3	3	3
SNE/MA Winter Flounder	4	4	4	1C	1C	1C	1B	1B	1B
Redfish	1A	1A	1A	1A	1A	1A	1A	1A	1A
White Hake	2A	2A	2A	1A	1A	1A	1A	1A	1A
Pollock	1A	1A	1A	1A	1A	1B	1B	1B	1B
Northern Windowpane Flounder	3	3	3	3	3	3	3	3	3
Southern Windowpane Flounder	3	3	3	3	3	3	3	3	3
Ocean Pout	3	3	3	3	3	3	3	3	3
Halibut	2A	2A	2A	2A	2A	2A	3	3	3
Wolffish	3	3	3	3	3	3	3	3	3

GARM 3 projection (2 year catch assumption) to estimate ABCs 2010-2012

13 stock op-2012 (2 year catch assumption) to estimate ABCs 2013-2015

20 stock op-2015 (1 year catch assumption) to estimate ABCs 2016-2018

	= control rule (75%Fmsy or Frebuild)
	= control rule (held constant or held constant with different projection assumption)
	= other (not based on 75%Fmsy or Frebuild)

# Long-Term Performance of Projections

- Projections used to set future catches and plan rebuilding strategies do not perform well (projected catch does not result in the desired fishing mortality, and stock growth does not occur as expected).
- In 2011 the NEFSC augmented the PDT to examine an alternative to using updated assessments for setting FY 2012 – 2014 ABCs. Simulation analyses showed that projections tend to be biased high – that is, they over-estimated stock growth and future catches.