

**Gulf of Maine Cod
Example Catch Levels
2012 - 2014**

Groundfish Plan Development Team
Science and Statistical Committee
Meeting
January 25, 2012

Catch Scenarios Based On Calendar Year

- 1) $F=0$
- 2) 75% of FMSY
- 3) FMSY
- 4) “Constant” catch that ends overfishing in 2, 3 or 4 years
- 5) Catch that allows the current stock (2012 January 1 biomass) to grow ~10 pct annually from 2012 – 2014. *Note difference from TORs.*
- 6) Catch that maintains current stock size (2012 January 1 biomass) through 2013.

Projection Assumptions

- SARC 53 GOM cod assessment
 - All biological parameters (weights-at-age, selectivity, recruitment, etc.) from assessment
 - One sensitivity run with a different recruit assumption
- 2011 Catch: estimated in NERO catch monitoring and MRFSS data
- Calendar year/fishing year differences

2011 Catch

- SARC 53 assumption: 11,392 mt (same as 2010)
- PDT: 7,750 mt
 - Commercial sector and common pool: 4,500 mt
 - Recreational: 3,000 mt
 - Other: 250 mt
 - Total **7,750 mt**

Calendar Year – Fishing Year (1)

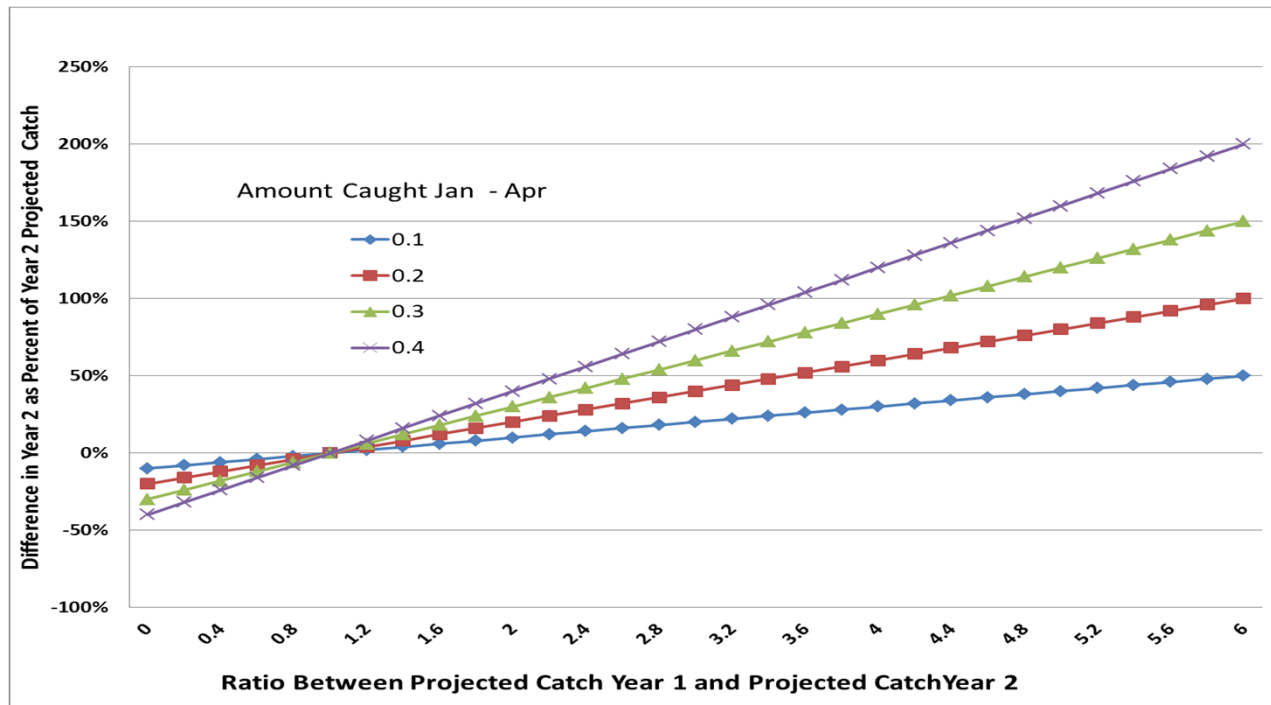
Assessment/ Projection Year																				
Fishing Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr				

- Mortality measured on a calendar year basis; catches apply to fishing year
- FY catch will likely be different than desired CY catch
- If proportion of Jan-Apr catch is known and assumed constant then expected difference will be:

Jan-Apr % X (Proj. Catch Year 1 – Proj. Catch Year2)

Calendar Year – Fishing Year (2)

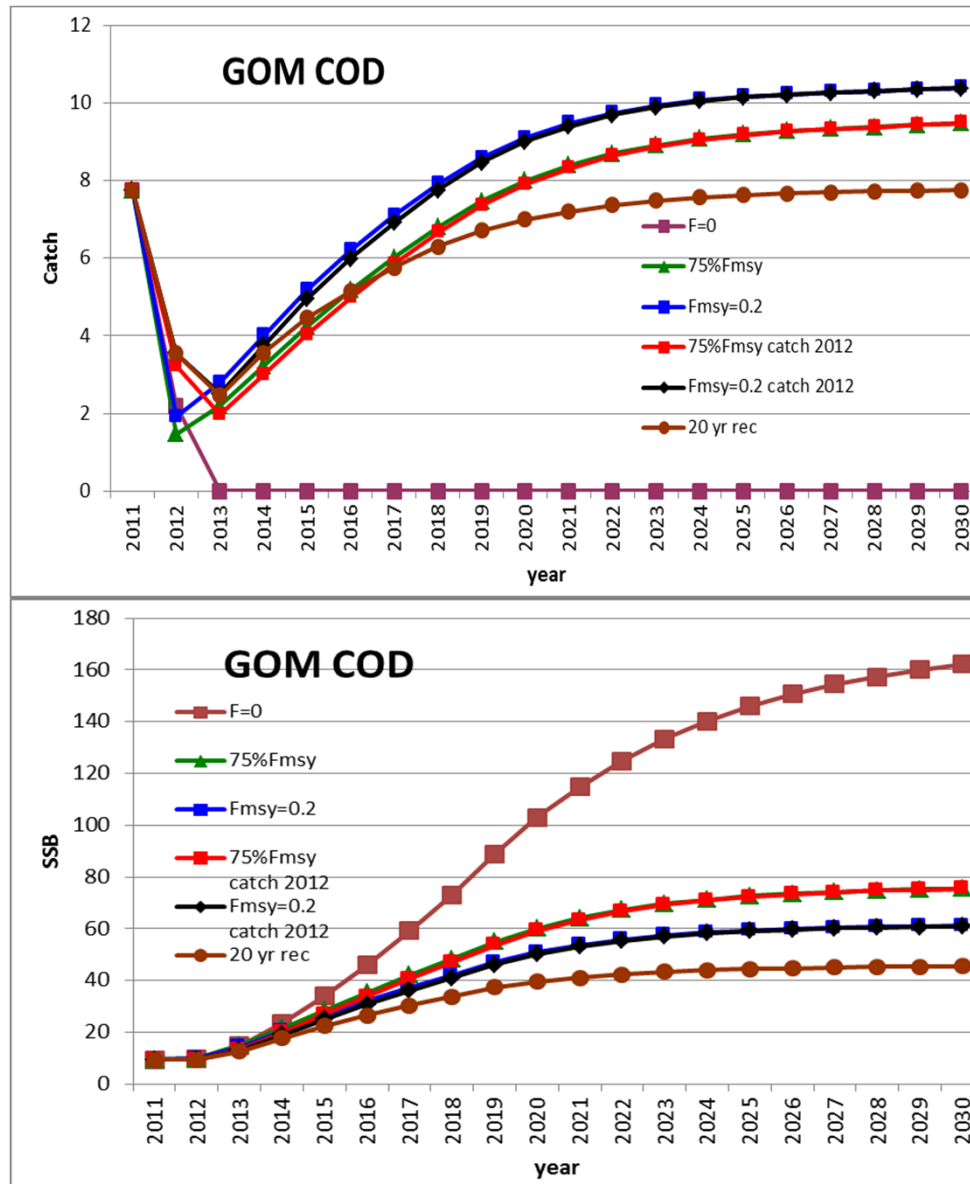
- Difference may be important when there are large changes in catch levels
- Can't change the past: FY 2011 catch levels already set, leading to possible overage in CY 2012



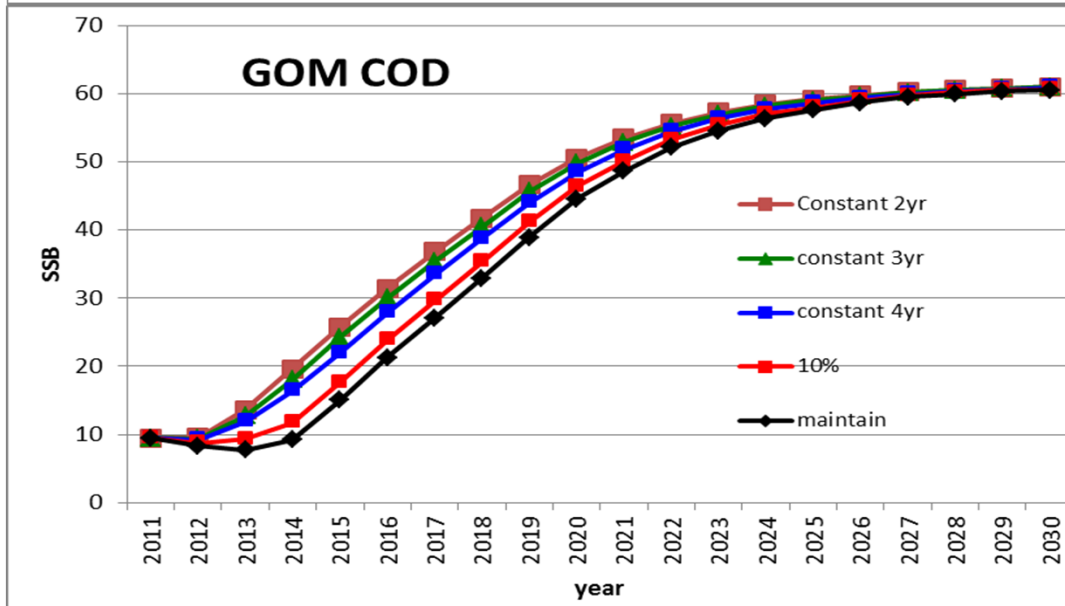
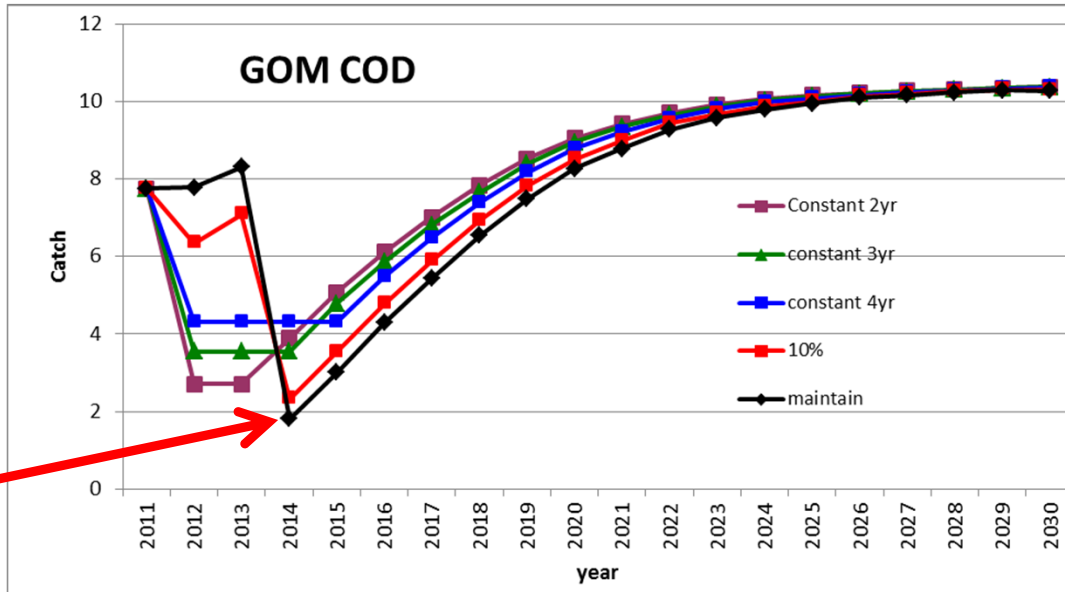
Outputs

- Projected catches for the calendar year
- Projected stock size (SSB)
- Fishing mortality
- Probability SSB will decline below 7,300 mt (proxy for risk of stock collapse)
- Fishing year catches

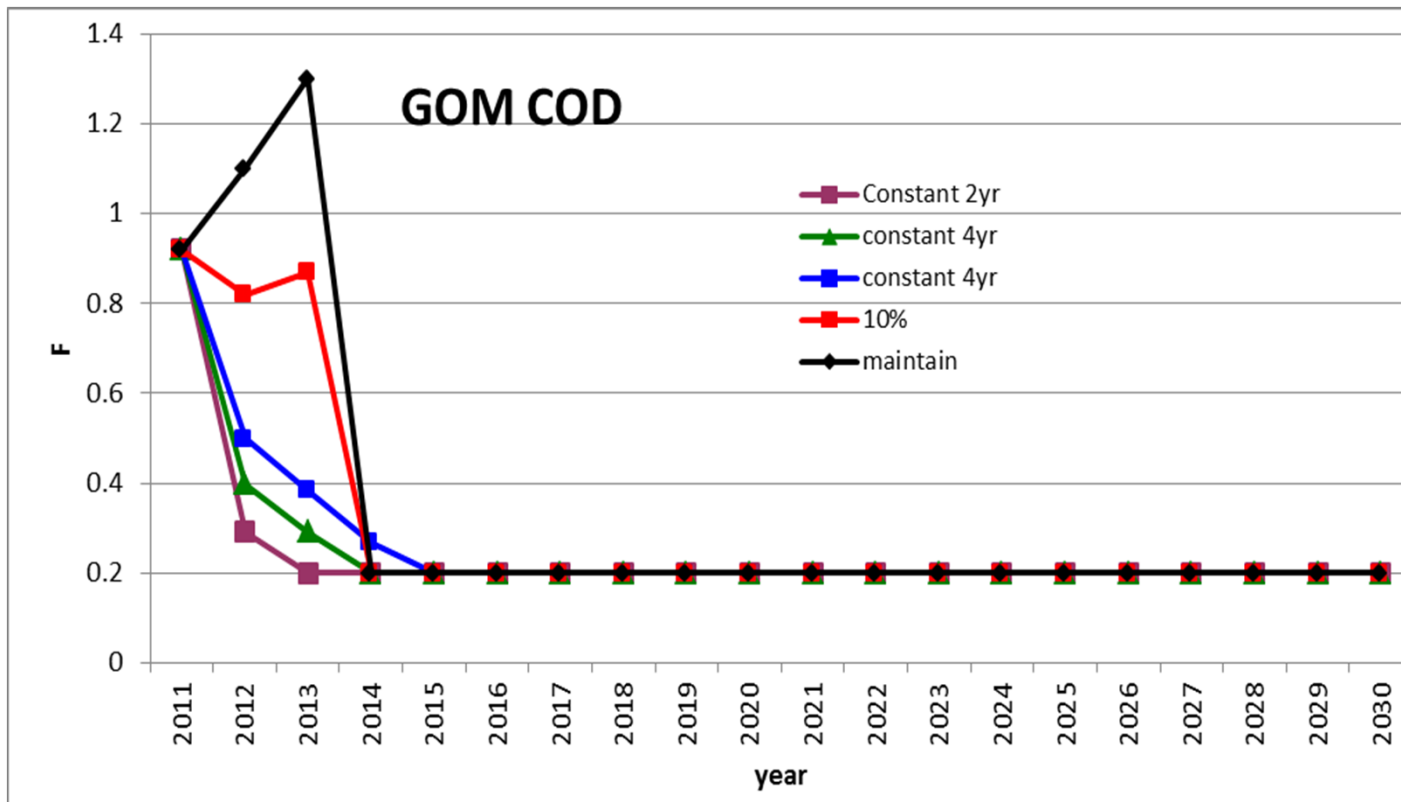
F-Based Strategies



Catch/Biomass Scenarios



Catch/Biomass - Mortality

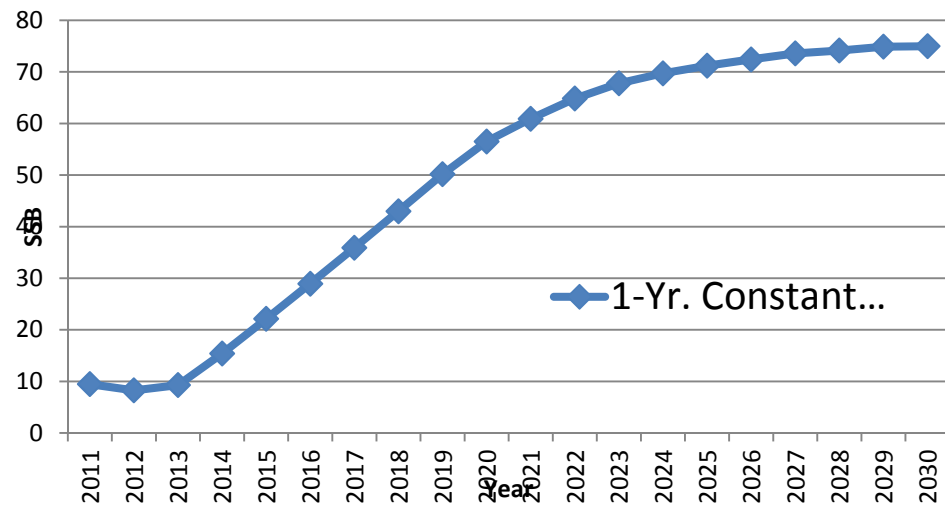
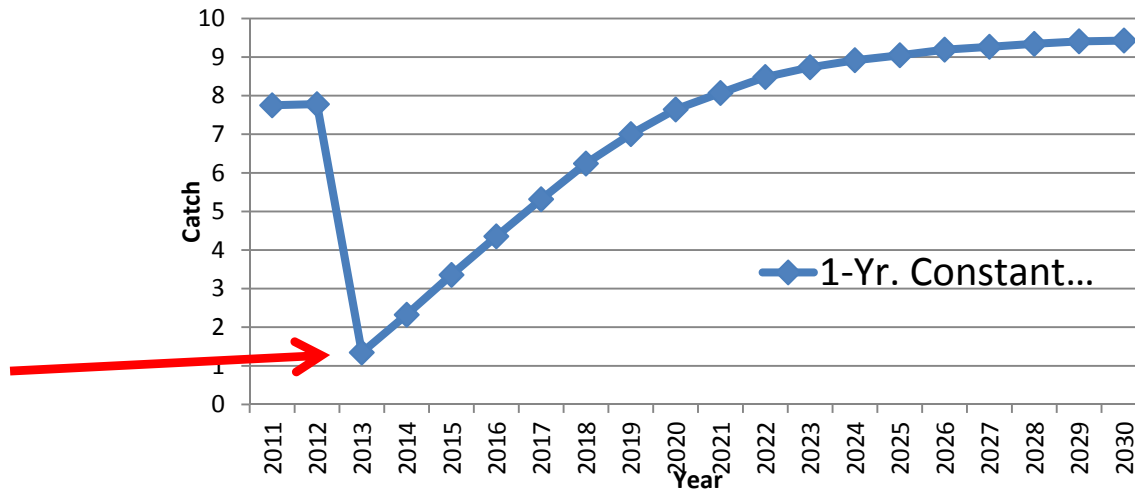


Probability of SSB > 7,300 mt

Year	75% FMSY Adjusted	FMSY Adjusted	Catch Constant 2yr	Catch constant 3yr	Catch constant 4yr	Increase Jan 1 Biomass 10% to 2014	Maintain Jan 1 Biomass to 2014
2011	0.811	0.811	0.811	0.811	0.811	0.811	0.811
2012	0.758	0.755	0.766	0.755	0.736	0.710	0.660
2013	0.947	0.935	0.952	0.921	0.881	0.869	0.617
2014	0.99	0.998	0.996	0.981	0.960	0.989	0.897
2015	1	1	0.99	0.992	0.974	1	0.998
2016	1	1	1	0.998	0.981	1	1
2017	1	1	1	1	0.993	1	1

Extra Projection

Constant Biomass and 75% of FMSY



Questions?