

**FY 2013 -2015
Groundfish ABCs**
 Scientific and Statistical Committee
 January 23, 2013

General Comments

- Basis for catch advice are projections based on the most recent benchmark assessment
- Projections use biological assumptions approved by SARC review panel
- Bridge year catch assumptions developed by PDT/NERO
- ***Generally, projections predict more rapid stock growth than is later realized***

GOM Cod

I. Stock status

Last assessment/terminal year: 2012/20110 (SARC 55 benchmark)
 Assessment Model: ASAP
 Status Determination Criteria: SSB_{MSY} 54,743 mt or 80,200 mt/ $F_{40\%}=0.18$
 Assessment Results: 18% or 13% of SSB_{MSY} / 5 times F_{MSY}
 Overfished/overfishing status: Overfished/overfishing occurring
 Rebuilding plan: TBD (update planned for FY 2014)

Gulf of Maine Cod

- OFL and ABCs for 2013 – 2015
- Rebuilding plan will be revisited later this year, new plan implemented in 2014
- ABC based on default ABC control rule
- Situation complicated by two assessment models, one Fmsy proxy, and three (four?) ways to perform projections
- Two projections used: base case and Mramp 0.4

75% of Fmsy:		0.135				Model					
F _{MSY} :		0.18		Base Case			Mramp 0.4				
Model/Projection Approach	Year	Catch	SSB('000 mt)	F	Rebuild Date	SSB('000 mt)	F	Rebuild Date			
Base Case M=0.2	2013	1,249	9.40	0.135	2022	6.834	0.211	never to 0.2 BRPS			
	2014	1,503	12.14	0.135		8.431	0.236				
	2015	2,030	16.87	0.135		11.402	0.231				
Mramp 0.4	2013	822	9.49	0.087	2020	6.929	0.135	never to 0.2 BRPS			
	2014	935	12.65	0.079		8.873	0.135				
	2015	1,313	17.97	0.080		12.263	0.135				

- Do not believe catch advice should rely on a single projection/model
- Projections have predicted more rapid stock growth than later realized
- Consider constant catch approach

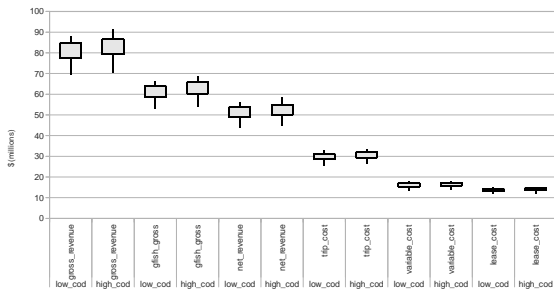
75% of Fmsy:		0.135				Model							
F _{MSY} :		0.18		Base Case				Mramp 0.4					
Model/Projection Approach	Year	Catch	SSB('000 mt)	F	Prob F>F _{MSY}	Prob SSB< 1/2 SSB _{MSY}	SSB('000 mt)	F	Prob F>F _{MSY}	Prob SSB< 1/2 SSB _{MSY}			
Constant Catch 1,249 mt	2013	1,249	9.40	0.135	0.197	1	6.84	0.211	0.68	1			
	2014	1,249	12.19	0.111	0.082	1	8.50	0.193	0.583	1			
	2015	1,249	17.26	0.08	0.004	0.977	11.75	0.135	0.094	1			
Constant Catch 1,550 mt	2013	1,550	9.34	0.17	0.42	100	6.77	0.267	0.891	1			
	2014	1,550	11.86	0.143	0.232	100	8.21	0.252	0.867	1			
	2015	1,550	16.63	0.104	0.035	0.982	11.26	0.178	0.48	1			

- Both alternatives end overfishing in 2013 under the base case model
- Both alternatives reduce 'projection risk'
- Some differences in effect on gross/net revenues
- PDT recommends 1,249 mt

Economic Impacts

- Difference in groundfish fishing revenues:
 - \$1.4 million (out of \$61-63 million)
 - Primarily due to increased cod landings, but also increases in plaice, pollock, white hake, CC/GOM yellowtail flounder
 - 2-3% difference
- Difference in total revenues on groundfish trips:
 - \$1.6 million (out of \$81-83 million)

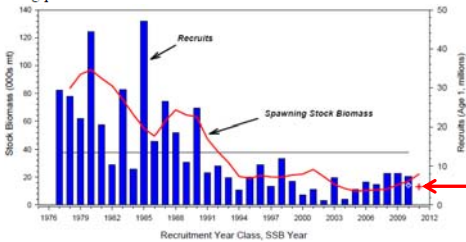
Range of Economic Impacts



GB Cod

I. Stock status

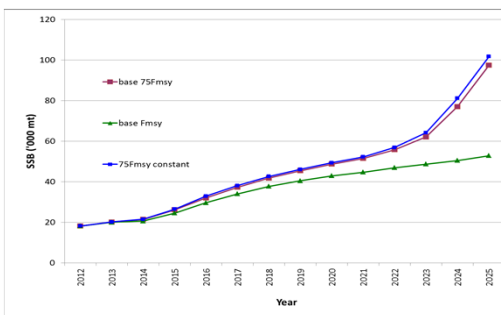
Last assessment/terminal year: 2012/2011 (SARC 55 benchmark)
 Assessment Model: ASAP
 Status Determination Criteria: $SSB_{MSY} 186,535 \text{ mt} / F_{40\%}=0.18$
 Assessment Results: 7% of SSB_{MSY} /2.4 times F_{MSY} (retro adjusted)
 Overfished/overfishing status: Overfished/overfishing
 Rebuilding plan: 2026



GB Cod

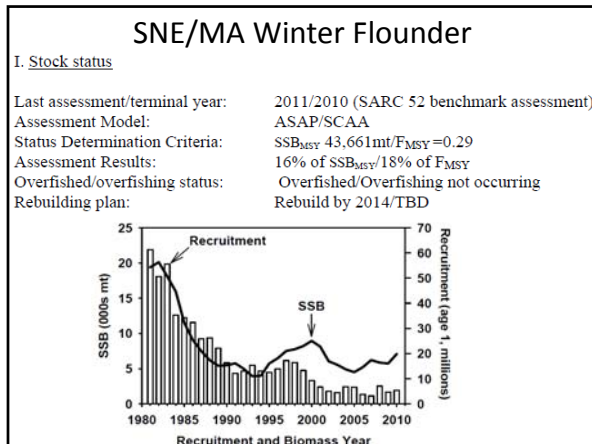
- SARC recommended against determining Frebuild
- 75 pct FMSY may not achieve rebuilding goals, but used for short-term catch advice
- Stock is in poor condition and has seen little recent recruitment

Projected Trajectory

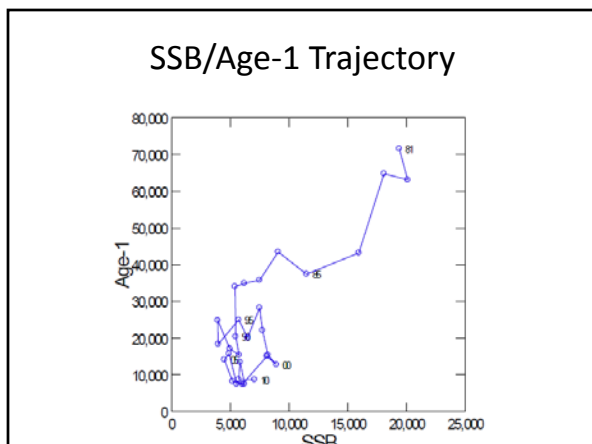


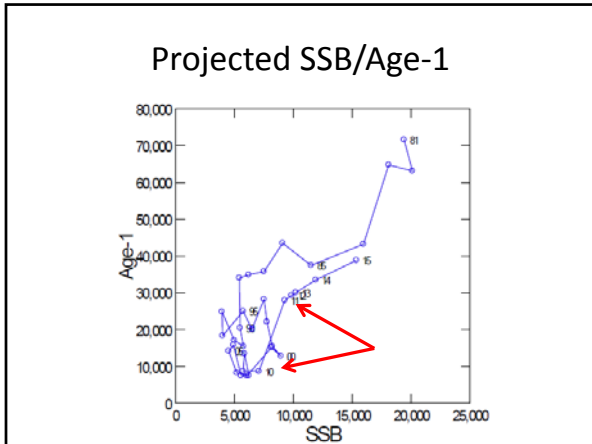
75% of Fmsy:	0.135	Model					
Fmsy:	0.18	Year	Catch ('000 mt)	SSB	F	Prob F> FMSY	Prob SSB< ½ SSB _{FMSY}
75 pct FMSY	2013	2,506	20.19	0.135	0.167	1.000	
	2014	2,732	21.50	0.135	0.190	1.000	
	2015	3,172	26.18	0.135	0.177	1.000	
PDT Recommended Constant 2,506	2013	2,506	20.19	0.135	0.167	1.000	
	2014	2,506	21.55	0.123	0.123	1.000	
	2015	2,506	26.53	0.104	0.039	1.000	

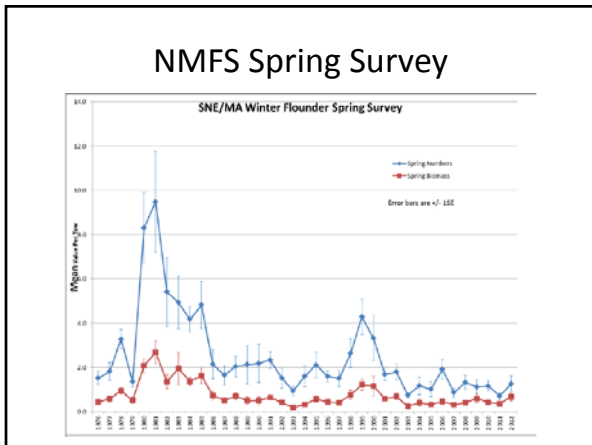
- Projections have predicted more rapid stock growth than later realized
- Consider constant catch approach
- PDT recommended 2,506 mt

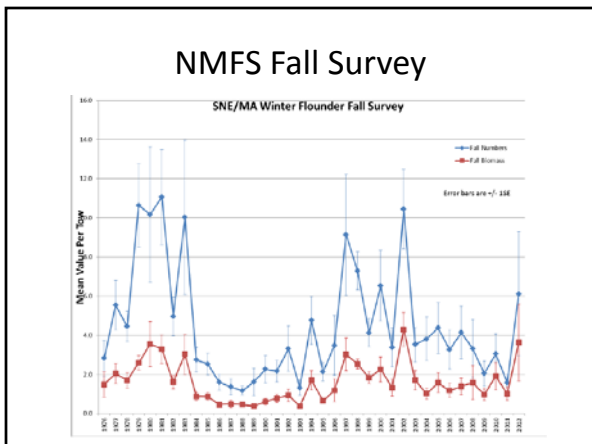


- ### SNE/MA Winter Flounder
- Present ABC based on “as low an F as possible” ($\sim F=0.07$) and no retention allowed
 - Considering change in management strategy: allow fishermen to land this stock
 - Rebuilding program may be revised: ending year 2023/median probability, with flexibility on short-term catch advice
 - Change in strategy may hinge on “enough catch”

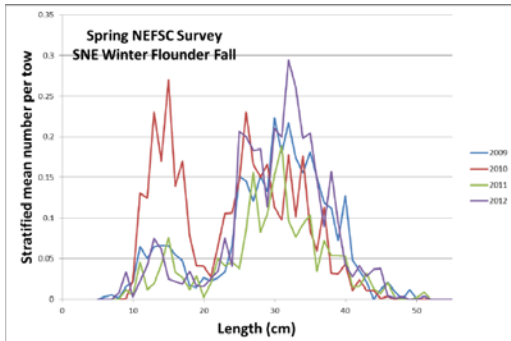




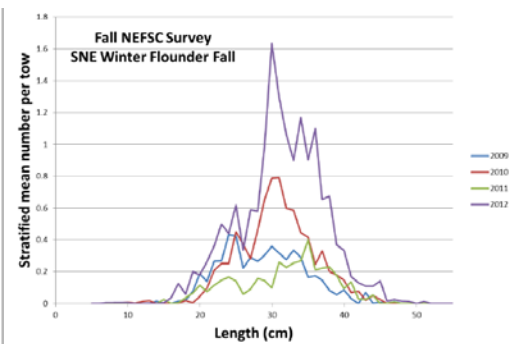




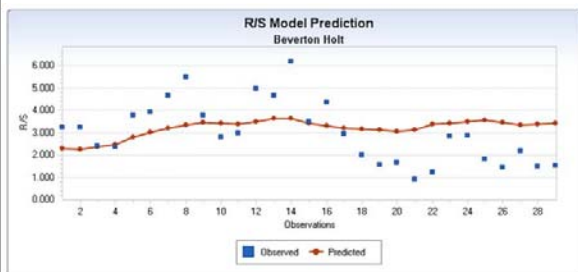
Spring Survey L-F



Fall Survey L-F

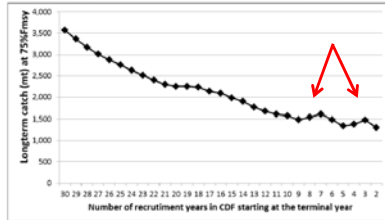


R/S Observed - Predicted



Recruitment CDF Exploration

Recent recruitment would support MSY of about half the long-term recruitment



75% of Fmsy:		0.218		Model					
F _{MSY} :		0.29		BH Recruitment			Alternate Recruitment (1999 – 2010 CDF)		
Model/Projection Approach	Year	ABC	SSB('000 mt)	F	Rebuild Year	SSB('000 mt)	F	Rebuild Year	
Frebuild 2023	2013	1,716	10,503	0.175	2023	10,197	0.193	Never (N/A)	
	2014	2,108	12,371	0.175		9,752	0.254		
	2015	2,729	15,569	0.175		8,876	0.362		

- Alternate recruitment is a sensitivity only and was not approved at SARC
- Long-term history suggest caution may be appropriate

Constant Catch Approach

		Model								
		BH Recruitment			Alternate recruitment					
	Year	ABC	SSB('000 mt)	F	Prob SSB- % SSBMSY	Prob F- F _{MSY}	SSB('000 mt)	F	Prob SSB- % SSBMSY	Prob F- F _{MSY}
Constant Catch 2,000 mt	2013	2,000	10,450	0.206	1.000	0.000	10,139	0.227	1.000	0.002
	2014	2,000	12,150	0.168	0.994	0.001	9,522	0.246	1.000	0.005
	2015	2,000	15,567	0.127	0.897	0.000	8,898	0.259	1.000	0.212
Constant Catch 1,676 mt	2013	1,676	10,503	0.175	1.000	0.000	10,205	0.188	1.000	0.000
	2014	1,676	12,442	0.141	0.994	0.000	9,875	0.197	1.000	0.000
	2015	1,676	16,087	0.105	0.879	0.000	9,504	0.202	1.000	0.001

- 2000 mt: Frebuild for 2016 – 2023 almost identical to Frebuild 2013 – 2023
- 1,676 mt: Catch similar to expected long-term yield if recruitment does not improve from recent values
- Is this “enough catch”? Unclear
