



SSC Gulf of Maine Cod Report to NEFMC

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Scientific and Statistical Committee
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Portsmouth, NH

Request to SSC

- Review Gulf of Maine (GOM) cod assessment and become familiar with its assumptions and results
- Identify information that may influence interpretation of the assessment results
- Review a range of catch levels provided by Groundfish Plan Development Team (PDT)
- Review PDT methods for estimating economic impacts of GOM cod catch levels

TOR 1 (Review)

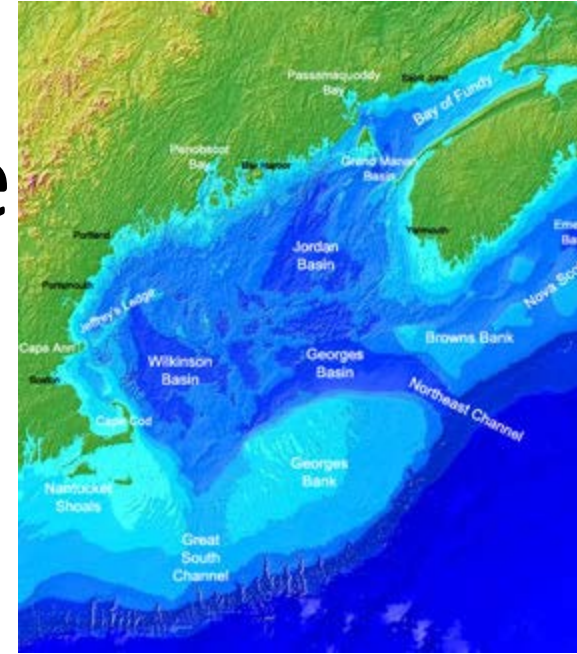
- Abundant material
 - Prepublication versions of assessment and assessment summary
 - SARC summary and 3 CIE reports
 - Numerous additional documents (listed in report)
 - Presentation by Mike Palmer (NEFSC)

TOR 2 (Influence Interpretation)

- SSC consensus on 4 topics warranting further investigation
 - Stock structure (including spatial aspects)
 - Change from MRFSS to MRIP
 - Discard mortality rate
 - Catch per unit effort (CPUE)
- SSC formed two work groups
 - Stock structure
 - Stock assessment (MRIP, discard mortality, CPUE)
 - Request guidance from Council on how to proceed

Spatial Structure

- Requires significant resources
 - NRCC scheduled for 2014
- Four management units
- Broad range of behavioral and ecosystem processes (habitat, oceanography, climate, predator and prey fields, etc.)
- Data availability, transition to EBFM, impacts on other stocks caught in the multispecies fishery, and management costs



MRIP, Discard Mortality Rate, CPUE

- Full evaluation of MRFSS to MRIP requires information not currently available
 - Sensitivity analysis demonstrated stock status does not change
- Stock status determination unchanged for full range of discard mortality rates (0-100%)
- Impact of both MRIP and discard mortality rate on projections was not presented
- SSC agreed CPUE should be examined
 - Some members thought it could be used as index of abundance
 - Other members disagreed, but thought it could be used as a measure of fishery performance over time or as an indication of spatial structure

TOR 3 (PDT Catch Projections)

- SSC agreed with assumed 2011 catch
 - At SARC assumed equal to 2010 value (11,392 mt)
 - PDT estimated 7,750 mt
- PDT projections seem appropriate given available information, but concerns from TOR 2 have potential to change conclusions
- SSC supported PDT approach of defining risk to GOM cod stock as probability of SSB declining below lowest observed value in time series
- Augmented PDT demonstrated projections are often optimistic
- Recent survey observations indicate recent low recruitment, which also make the projections optimistic

	F=0	75%Fmsy	Fmsy	Constant Catch			Jan-1 B	Jan-1 B
				2 years	3 years	4 years	10% inc	Same 2014
<i>Catch (calendar year, 1000 mt)</i>								
2011	7.75	7.75	7.75	7.75	7.75	7.75	7.75	7.75
2012	0	1.462	1.915	2.7	3.55	4.3	6.339	7.779
2013	0	2.197	2.796	2.7	3.55	4.3	7.075	8.302
2014	0	3.218	4.009	3.885	3.55	4.3	2.315	1.803
2015	0	4.233	5.167	5.074	4.791	4.3	3.535	3.011
2016	0	5.170	6.200	6.111	5.845	5.468	4.774	4.289
<i>Fishing Mortality Rate</i>								
2011	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
2012	0	0.15	0.2	0.292	0.398	0.499	0.82	1.1
2013	0	0.15	0.2	0.2	0.292	0.385	0.87	1.3
2014	0	0.15	0.2	0.2	0.2	0.268	0.2	0.2
2015	0	0.15	0.2	0.2	0.2	0.2	0.2	0.2
2016	0	0.15	0.2	0.2	0.2	0.2	0.2	0.2
<i>Spawning Stock Biomass</i>								
2011	9.478	9.478	9.478	9.478	9.478	9.478	9.478	9.478
2012	10.121	9.844	9.754	9.593	9.411	9.239	8.687	8.265
2013	16.651	14.892	14.357	13.664	12.723	11.888	9.342	7.725
2014	25.839	21.499	20.292	19.644	18.023	16.393	11.745	9.219
2015	36.742	28.442	26.243	25.745	24.237	21.942	17.634	14.999
2016	49.019	35.350	31.969	31.426	29.968	27.840	23.819	21.256
<i>Probability SSB > 7,300 mt</i>								
2011	0.811	0.811	0.811	0.811	0.811	0.811	0.811	0.811
2012	0.817	0.801	0.794	0.766	0.755	0.736	0.710	0.660
2013	0.997	0.992	0.990	0.952	0.921	0.881	0.869	0.617
2014	1	1	1	0.996	0.981	0.960	0.989	0.897
2015	1	1	1	0.990	0.992	0.974	1	0.998
2016	1	1	1	1	0.998	0.981	1	1

TOR 4 (Economic impacts)

- SSC supported PDT approach for predicting fleet response and impacts of large cuts in quota
- SSC urges further development of model
 - Spatial dimensions
 - Where is fishing effort likely to redistribute
 - Impacts on other stocks
- SSC recommends further analyses of group patterns to provide insights into fleet diversity and policy options being considered by the Council