Transboundary Management Guidance Committee

Guidance Document 2013/01   #13

The Transboundary Management Guidance Committee (TMGC), established in 2000, is a government – industry committee composed of representatives from Canada and the United States. The Committee's purpose is to develop guidance in the form of harvest strategies, resource sharing and management processes for Canadian and US management authorities for the cod, haddock and yellowtail flounder transboundary resources on Georges Bank. This document is a summary of the basis of the TMGC's guidance to both countries for the 2014 fishing year (calendar year for Canada; May 1, 2014 to April 30, 2015 for the USA). Pertinent reference documents and consultations used in the TMGC deliberations are listed at the end of this document.

Since inception, the TMGC has successfully coordinated management of three trans-boundary groundfish resources. Annual harvest levels have been established, consistent with the legal and policy requirements of both countries. The benefits of this approach are worth noting: fishing mortality rates for the three management units considered by the TMGC have been reduced and Eastern Georges Bank haddock has been at record high abundance.

In January of 2011, the International Fisheries Clarification Act (Act) was signed into law in the U.S. The Act recognizes the U.S./Canada Transboundary Resources Sharing Understanding, and provides the US with flexibility in the rebuilding period and catch level requirements for Georges Bank yellowtail flounder under the Magnuson-Stevens Fishery Conservation and Management Act.

Eastern Georges Bank Cod [5Zjm; 551, 552, 561, 562]

Guidance

The TMGC concluded that the most appropriate combined Canada/USA TAC for Eastern Georges Bank cod for the 2014 fishing year is 700 mt. In keeping with the harvest strategy for this stock, TMGC sought to keep fishing mortality low and promote stock rebuilding. A 2014 TAC of 700 mt corresponds to an expected fishing mortality of 0.06 and is expected to result in biomass increase of close to 10%. Fref should be reviewed in light of the adoption of a new assessment model. The annual allocation shares between countries for 2014 are based on a combination of historical catches (10% weighting) and resource distribution based on trawl surveys (90% weighting). Combining these factors entitles the USA to 22% and Canada to 78% of the TAC, resulting in a national quota of 154 mt for the USA and 546 mt for Canada.
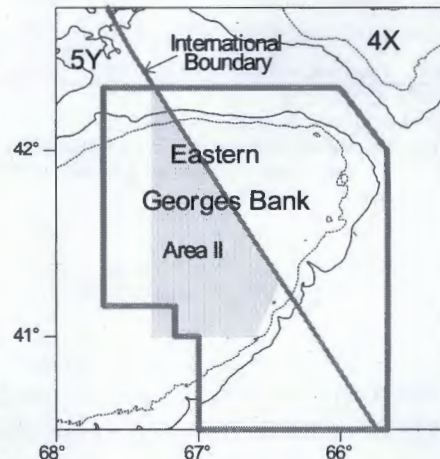
Harvest Strategy & Reference Points

The strategy is to maintain a low to neutral risk of exceeding the fishing mortality limit reference, $F_{ref}=0.18$. When stock conditions are poor, fishing mortality rates should be further reduced to promote rebuilding.

Based on the model change during the 2013 benchmark meeting, TRAC recommended that the appropriateness of the Fref be reevaluated. A value of F=0.11 was used to provide catch advice for 2014.

Fishery Exploitation

Catches, Biomass (thousands mt); Recruits (millions)

		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	Avg1	Min1	Max1
Canada9	Quota	1	0.7	1.3	1.4	1.6	1.2	1	0.9	0.5	0.5			
	Catch	1.3	0.9	1.4	1.2	1.5	1.2	0.8	0.7	0.5		5.8	0.7	17.9
	Landed	1.1	0.6	1.1	1.1	1.4	1	0.7	0.7	0.4		5.8	0.6	17.8
	Discard	0.1	0.2	0.3	0.1	0.1	0.2	0.1	<0.1	<0.1		0.1	<0.1	0.5
USA9	Quota2	0.3	0.3	0.4	0.5	0.7	0.5	0.3	0.2	0.2	0.1			
	Catch2	0.2	0.2	0.3	0.3	0.5	0.5	0.3	0.2	<0.1				
	Landed	1	0.2	0.1	0.2	0.2	0.4	0.4	0.3	0.1		3.5	0.1	10.6
	Discard	0.1	0.3	0.1	0.4	<0.1	0.2	0.1	<0.1	<0.1		<0.1	<0.1	0.3
Total9	Quota	1.3	1	1.7	1.9	2.3	1.7	1.3	1.1	0.7	0.6			
	Catch	2.3	1.3	1.7	1.8	1.8	1.9	1.3	1	0.6		9.5	1	26
	Catch3,4	1.5	1.1	1.7	1.5	2	1.7	1.1	0.9	0.5				
From "M 0.8" model														
	Adult Biomass5	10	5.83	7.19	7.48	8.31	10	9.12	7.55	7.7	11.2	26.5	6	59.7
	Age 1 Recruits	4.1	1.3	2.7	2.2	1.4	1.2	2.0	6.4	1.7		6.0	0.6	24.1
	Fishing mortality6	0.37	0.23	0.36	0.28	0.22	0.18	0.16	0.14	0.07	0.36	0.07	0.66
	Exploitation Rate7	30%	18%	27%	22%	15%	10%	14%	16%	7%		26%	7%	44%
	Exploitation Rate8	23%	18%	21%	22%	21%	23%	15%	6%	3%		24%	3%	43%

[1] 1978 – 2012
[2] for fishing year from May 1 – April 30
[3] for Canadian calendar year and USA fishing year May 1-April 30
[4] sum of Canadian landed, Canadian Discard, and USA Catch (includes discards)
[5] Jan 1 ages 3+
[6] ages 4-9
[7] ages 4-5
[8] ages 6-9
[9] unless otherwise noted, all values reported are for calendar year

Combined Canada/USA catches averaged 17,198 mt between 1978 and 1993, peaking at 26,463 mt in 1982. Catches declined to 1,683 mt in 1995, then fluctuated at about 3,000 mt until 2004, subsequently declining. Catches in 2012 were 614 mt, including 128 mt of discards.

State of Resource

Evaluation of the state of the resource was based on results from an age structured analytical assessment (VPA), which used fishery catch statistics and sampling for size and age composition of the catch for 1978 to 2012 (including discards). The VPA was calibrated to trends in abundance from three bottom trawl survey series: NMFS spring, NMFS fall, and DFO.

The consensus during the benchmark assessment review in 2013 was to provide advice based on a VPA "M 0.8" model. Natural mortality (M) was fixed at 0.2 except for ages 6+ in years after 1994, where it was set at 0.8.

There is a strong retrospective bias in SSB and F from the 2013 assessment (VPA "M 0.8") which is caused by the substantial reduction in the estimated size of the 2003 year class. Sensitivity analyses suggest that this low estimate of the 2003 year class may be an outlier. While model results are not reliable for population trends, estimation of this year class had little impact on terminal year stock size and catch advice. The adult biomass, recruitment, and fishing mortality estimates presented below were from the VPA "M 0.8" model.

The estimated adult population biomass (ages 3+) at the beginning of 2013 was 11,160 mt, among the lowest values in the time series.

Recruitment at age 1 has been low in recent years. The initial estimate of the 2010 year class is the highest value since 1990 based on the 2013 assessment. Recruitment indices for the 2012 year class from the bottom trawl surveys are low.

Fishing mortality (population weighted average of ages 4-9) was high prior to 1994 and declined in 1995 due to restrictive management measures. Fishing mortality in 2012 was estimated to be 0.07.

Productivity

The population age structure displays a very low proportion of ages 7+ compared to the 1980s. Condition has been stable in the past but has started to decline in recent years. Resource productivity is currently very poor due to low recent recruitment and low size at age compared to the 1980s. The current biomass is at a level where only low recruitment has been observed.

2014 Catch Risk Assessment

This outlook is provided in terms of consequences with respect to the harvest reference points for alternative catch quotas in 2014. At the 2013 cod benchmark meeting, it was agreed that the current F_{ref}=0.18 was inconsistent with the VPA "M 0.8" model given that it was derived based on models with an M=0.2. Although no consensus was reached as to what an appropriate F_{ref} would be for the VPA "M 0.8" model, it was agreed that it should be lower. The TRAC agreed that projections would be run at the current F_{ref} of 0.18 and at a value less than the F_{ref}. The sensitivity value of F=0.11 was used for the second projection analysis.

For projections, catch in 2013 was assumed to be equal to the 600 mt quota, and F=0.18 or F=0.11 in 2014. While the 2008-2012 geometric mean of recruitment at age 1 was used for 2013-2015 projections, the initial indication of the 2012 year class is very weak; the biomass projection in 2015 could be optimistic.

2014 Catch (mt)

Probability of exceeding target F in 2014	0.25	0.5	0.75
"M 0.8"(F =0.11)	1,075 mt	1,225 mt	1,425mt

Neutral risk (50%) that biomass will not increase by:	0%	10%
"M 0.8"	2,075 mt	600 mt

Considering F_{ref}=0.18 is not consistent with the assessment VPA "M 0.8" model, TRAC recommends basing catch advice on F lower than F_{ref}.

A consequence analysis to understand the risks associated with assumptions of the VPA "M 0.8" and ASAP "M 0.2" models (reviewed at the 2013 benchmark) was examined. This consequence analysis estimated the projected catch at F_{ref} and F=0.11 as if each model represented the true state of the resource and examined the consequences to expected biomass under alternative model assumptions. Of note, a catch of 700 mt in 2014 would result in exceeding Fref=0.18 in the ASAP "M 0.2" model used as a consequence analysis.

			VPA 0.8	ASAP
Catch 2012			613 mt	613 mt
Quota 2013			600 mt	600 mt
2012 biomass (3+)			7700 mt	2091 mt
2013 biomass (3+)			11160 mt	NA
CATCH				
1225	2014 F		0.11	0.40
(VPA F=0.11)	2015 Biomass		14018	4153
	% inc B from 2014		6%	-0.42%
700 mt	2014 F		0.06	0.21
	2015 Biomass		14556	4695
	% inc B from 2014		9.6%	12.6%
601	2014 F		0.05	0.18
(ASAP F=0.18)	2015 Biomass		14646	4794
	% inc B from 2014		10.0%	15.0%

Special Considerations

All assessment results indicate that low catches are needed to promote rebuilding.

In July 2013 the minimum size was reduced from 22 inches (55.9 cm) total length to 19 inches (49.3 cm) for the US fishery, which is expected to result in reduced discards and a possible change in partial recruitment for the youngest ages.

At the 2013 cod benchmark meeting, it was agreed that the current $F_{ref}=0.18$ was inconsistent with the VPA "M 0.8" model given that it was derived based on models with an M=0.2. Although no consensus was reached as to what an appropriate F_{ref} would be for the VPA "M 0.8" model, it was agreed that it should be lower. During the June TRAC assessment, projections were run at the current F_{ref} of 0.18 and at F=0.11. Further investigation will be required to determine an appropriate recommendation for an exploitation rate for the benchmark model.

Previous years' assessments indicated that fishing mortality remained at or above Fref=0.18. The new model used this year provides a different perception of stock size and suggests fishing mortality may be below Fref. Considering this is the first year the model has been used, these results should be interpreted with caution.

Eastern Georges Bank Haddock [5Zjm; 551, 552, 561, 562]

Guidance

The TMGC concluded that the most appropriate combined Canada/USA TAC for Eastern Georges Bank haddock for the 2014 fishing year is 27,000 mt, representing a low risk (25%) of exceeding F_{ref} of 0.26. This is an increase from the 2013 TAC to account for the recruitment of the outstanding 2010 year class into the fishery. The lower than neutral risk of exceeding F_{ref} was chosen because of the uncertainty associated with the growth of this large year class, and the expected contribution to the 2014 catch. The stock size is expected to remain very high for the next two years. The annual allocation shares between countries for 2014 are based on a combination of historical catches (10% weighting) and resource distribution based on trawl surveys (90% weighting). Combining these factors entitles the USA to 39% and Canada to 61% of the TAC, resulting in a national quota of 10,530 mt for the USA and 16,470 mt for Canada.
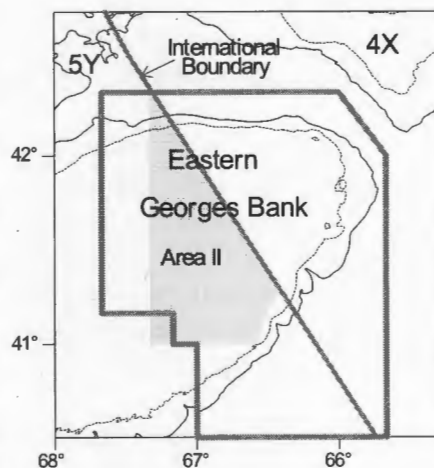
Harvest Strategy & Reference Points

The strategy is to maintain a low to neutral risk of exceeding the fishing mortality limit reference, $F_{ref}=0.26$. When stock conditions are poor, fishing mortality rates should be further reduced to promote rebuilding.

Fishery Exploitation

Catches, Biomass (thousands mt); Recruits (millions)

		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	Avg[1]	Min[1]	Max[1]
Canada[8]	Quota	9.9	15.4	14.5	12.7	15.0	18.9	17.6	12.5	9.1	6.4			
	Landed	9.7	14.5	12.0	11.9	14.8	17.6	16.6	11.2	5.0		5.6	0.5	17.6
	Discard	0.1	<0.0	0.1	0.1	<0.0	0.1	<0.0	<0.0	<0.0		0.1	<0.0	0.2
USA[8]	Quota[2]	5.1	7.6	7.5	6.3	8.1	11.1	12.0	9.5	6.9	4.0			
	Catch[2]	1.1	0.6	0.7	0.3	1.6	1.6	1.8	1.1	0.4				
	Landed	1.8	0.6	0.3	0.3	1.1	2.2	2.2	1.3	0.4		2.0	<0.0	9.1
	Discard	0.2	0.1	0.3	0.3	0.1	0.1	0.0	0.1	0.1		0.6	0.0	7.6
Total[8]	Quota[3]	15.0	23.0	22.0	19.0	23.0	30.0	29.6	22.0	16.0	10.4			
	Catch[3,4]	10.9	15.1	12.7	12.3	17.1	17.6	18.4	12.3	5.1				
	Catch	11.9	15.3	12.6	12.5	16.0	19.9	18.8	12.7	5.6		8.2	2.1	23.3
Adult Biomass[5]		79.0	59.9	123.3	150.9	151.3	159.9	124.9	89.1	62.7	183.6	51.2	4.9[6]	183.6[6]
Age 1 Recruits		306.7	7.1	16.2	5.4	6.4	3.5	4.7	474.3	73.9	15.3	33.4[6]	0.62	474.3[6]
Fishing mortality[7]		0.28	0.26	0.26	0.14	0.09	0.13	0.17	0.15	0.16		0.29	0.09	0.57
Exploitation Rate[7]		22%	21%	21%	12%	8%	11%	14%	13%	13%		22%	8%	40%

[1] 1969 – 2012
[2] for fishing year from May 1st – April 30th
[3] for Canadian calendar year and USA fishing year May 1st – April 30th

[4]sum of Canadian Landed, Canadian Discard, and USA Catch (includes discards)
[5]January 1st ages 3+
[6]1931 – 1955, 1969 – 2013
[7]ages 4-8 for 1969 – 2002; ages 5-8 for 2003 – 2012
[8] unless otherwise noted, all values reported are for calendar year

The **combined Canada/USA fishery catch** (landings + discards) in 2012 was dominated by the 2003 year class (age 9) by numbers and weight. Both the Canadian and the USA fisheries were adequately sampled to determine length composition of the catch.

State of Resource

Retrospective analyses were conducted to detect any tendency to consistently overestimate or underestimate fishing mortality, biomass and recruitment relative to the terminal year estimates. The current stock assessment does not display a retrospective bias.

Fishing mortality was below F_{ref} = 0.26 during 1995 to 2003, above or near F_{ref} in 2004 to 2006, but has subsequently been below F_{ref} and was 0.16 in 2012 (80% confidence interval: 0.14 – 0.20).

Adult population biomass (ages 3+) increased from near a historical low of 10,300 mt in 1993 to 83,900 mt in 2003. Adult biomass decreased to 59,900 mt in 2005 and subsequently increased to 159,900 mt in 2009, higher than the 1931-1955 maximum biomass of about 90,000 mt. At the beginning of 2013, the adult biomass increased to 183,600 mt (80% confidence interval: 146,700 mt – 249,300 mt). The tripling of the adult biomass after 2005 was due to the exceptionally strong 2003 year class, currently estimated at 307 million age 1 fish.

The current estimate for the 2010 year class is 474 million age 1 fish, which would make it the largest cohort in the assessment time series: 1931-1955 and 1969-2012. The preliminary estimate for the 2012 year class is 15 million age 1 fish. Except for the strong 2000 and 2011 year classes and the exceptionally strong 2003 and 2010 year classes, recruitment has fluctuated between 2.1 and 28.8 million since 1990.

Productivity

The probability of higher recruitment is increased at larger stock size. Stock size has been high since 2001. The population age structure displays a broad representation of age groups, reflecting improving recruitment and lower exploitation since 1995. There has been a general decline in weights at age since the late 1990s. The condition factor of haddock in the last decade has generally been below the series average. The 2003 year class appears to have reached its maximum growth potential.

2014 Catch Risk Assessment

Risk of exceeding Fref	25% (risk averse)	50% (risk neutral)	75% (risk prone)
2014 Catch	27,000 mt	31,500 mt	37,500 mt

A combined Canada/USA catch in 2014 of 27,000 mt results in a low risk (25%) that the 2014 fishing mortality rate will exceed F_{ref}. The 2014 3+ biomass is projected to be the

largest in the time series at 245,500 mt, due to the contribution from the outstanding 2010 and strong 2011 year classes. The 9+ age group (9%), of which the 2003 year class is the main component, and the 2010 year class (83%) are expected to constitute the majority of the 2014 catch biomass. The 3+ biomass at the beginning of 2015 is projected to remain similar to 2014.

Special Considerations

Although the fishing mortality reference is based on a PR of 1 for older ages, the benchmark model indicates a PR of 0.3 for the 9+ age group. Several corroborating factors influenced the decision to use the lower PR produced by the model, e.g. the predicted versus observed 2011 catch at age supports the use of the lower PR.

Although currently the 2013 haddock quota is projected to be above F_{ref}, it is unlikely that the 2013 quota will be caught due to restrictive quotas on other species.

In July 2013 the minimum size was reduced from 18 inches (45.7 cm) total length to 16 inches (40.6 cm) for the US fishery, which is expected to result in reduced discards and a possible change in PR for the youngest ages.

Georges Bank Yellowtail Flounder [5Zhjmn; 522,525, 551, 552, 561, 562]

Guidance

The TMGC concluded that the most appropriate combined Canada/USA TAC for Georges Bank yellowtail for the 2014 fishing year is 400 mt. The uncertainties in the assessment make it difficult to reliably estimate the probability of exceeding the F_{ref} using the standard risk analysis. However, the TMGC agrees with the TRAC conclusion that stock conditions are poor. As a result, the TMGC focused on reducing catches from the 2013 quota and promoting stock rebuilding. A 2014 quota of 400 mt is a 20-percent reduction from the 2013 quota, and is projected to increase biomass.
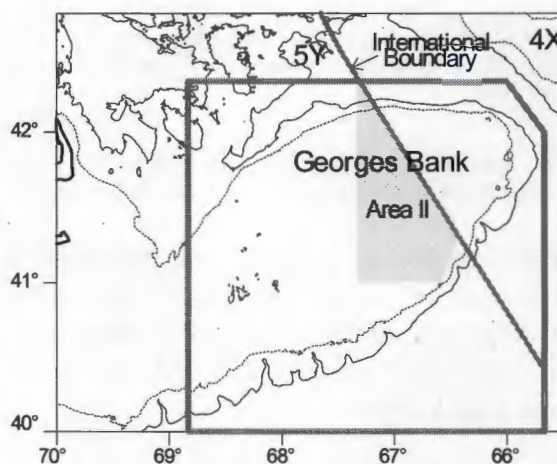
The annual allocation shares between countries for 2013 are based on a combination of historical catches (10% weighting) and resource distribution based on trawl surveys (90% weighting). Combining these factors entitles the USA to 82% and Canada to 18% of the TAC, resulting in a national quota of 328 mt for the USA and 72 mt for Canada.

Harvest Strategy & Reference Points

The strategy is to maintain a low to neutral risk of exceeding the fishing mortality limit reference, $F_{ref}=0.25$. When stock conditions are poor, fishing mortality rates should be further reduced to promote rebuilding.

Fishery Exploitation

Catches, Biomass (thousands mt); Recruits (millions)

		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	Avg[1]	Min[1]	Max[1]
Canada[9]	Quota	1.9	1.7	0.9	0.4	0.6	0.5	0.8[8]	1.2	0.6	0.3			
	Landed	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		0.5	<0.1	2.9
	Discard	0.4	0.2	0.5	0.1	0.1	0.1	0.2	<0.1	<0.1		0.5	<0.1	0.8
USA[9]	Quota[2]	6.0	4.3	2.1	0.9	1.9	1.6	1.2[8]	1.5	0.6	0.2			
	Catch[2]	5.9	3.8	1.9	1.0	1.6	1.8	1.1	1.1	0.5				
	Landed	5.8	3.2	1.2	1.1	0.7	1.0	0.7	0.9	0.4		4.3	0.4	15.9
	Discard	0.5	0.4	0.4	0.5	0.4	0.7	0.3	0.2	0.2		0.6	<0.1	3.0
Total[9]	Quota[3]	7.9	6.0	3.0	1.3	2.5	2.1	2.0[8]	2.7	1.2	0.5			
	Catch[3]	6.4	4.1	2.5	1.1	1.7	1.9	1.3	1.1	0.6				
	Catch[4]	6.8	3.9	2.1	1.7	1.5	1.8	1.2	1.2	0.7		5.8	0.7	17.2
Split Series VPA (no rho adjustment applied)														
	Adult Biomass[5]	8.5	4.0	2.4	2.4	3.1	3.3	2.9	3.1	2.6	2.5	6.6[6]	2.0[6]	26.2[6]
	SSB	5.4	3.2	2.3	2.7	3.2	3.2	3.0	3.0	2.6		6.5	2.2	22.2
	Age 1 Recruits	6.8	8.5	10.1	6.2	5.4	5.7	2.9	2.3	2.3		18.9	2.3	70.6

Fishing mortality[7]	1.94	1.39	1.54	1.05	0.57	0.83	0.73	0.60	0.32		1.02	0.32	1.94
Exploitation Rate[7]	80%	70%	73%	60%	40%	52%	47%	42%	25%		59%	25%	80%

[1] 1973 – 2012
[2] for fishing year May 1 – April 30
[3] for Canadian calendar year and USA fishing year May 1 – April 30
[4] sum of Canadian Landed, Canadian Discard, and USA Catch (includes discards)
[5] Jan-1 age 3+
[6] 1973 - 2013
[7] age 4+
[8] quotas not jointly determined; established individually by each country
[9] unless otherwise noted, all values reported are for calendar year

Total catches of Georges Bank yellowtail flounder peaked at about 21,000 mt in both 1969 and 1970. The combined Canada/USA catch increased from 1995 through 2001, averaged 6,300 mt during 2002-2004, but declined to 722 mt in 2012 due to restrictive management measures. The 2012 catch was the first time since 1940 that catch has been less than 1,000 mt.

State of Resource

The Split Series VPA, which splits the survey indices between 1994 and 1995, was used for the stock assessment. The Split Series stock assessment exhibits strong retrospective bias in SSB and F which results in decreases in SSB and increases in F compared to the results of previous assessments. A retrospective adjustment (denoted rho adjustment) based on the observed retrospective bias was applied to the terminal year estimates for both status determination and provision of catch advice.

Fishing mortality for fully recruited ages 4+ is estimated to be above the reference point of $F_{ref} = 0.25$ for the entire assessment time series.

Adult population biomass (age 3+) at the start of 2013 and spawning stock biomass in 2012 are both estimated to be the lowest values in their time series when the rho adjustment is applied.

Recruitment of the three most recent cohorts is estimated to be the lowest in the time series.

Productivity
Truncated age structure and low recent recruitment indicate current resource productivity is lower than historical levels. Growth has recently been variable without trend and condition (weight at length) has improved from last year, although still below the long-term average.

2014 Catch Risk Assessment
For the past ten years, catches have generally been below the quotas, which were set with the intent to increase the population abundance; however, survey trends do not indicate that this expected increase in population abundance occurred. Total mortality rates estimated from the surveys have remained high. Due to the significant uncertainties of the

assessment model, the 2014 catch advice provided from the model results should be viewed as an upper bound instead of a target. The TRAC advised that 2014 catches well below 500 mt are likely needed to achieve the harvest strategy.

Although not to be considered as absolutes, the rho adjusted projections suggest that a 2014 quota of less than 200 mt would be required to achieve a high probability that F in 2014 will be less than F_{ref}. To achieve high probability that adult biomass will increase from 2014 to 2015, a 2014 quota of less than 500 mt would be required.

Special Considerations

The TRAC acknowledged that the assumptions made about population dynamics in the model do not fully capture the trends in the data. However, the model's conclusion that stock conditions are poor is valid. This is supported by the fact that survey indices continued to decline when catches decreased from 1,800 mt to 722 mt during 2008 to 2012 due to reduced quotas. When the Split Series VPA is projected without a rho adjustment, fishing at F_{ref} results in 562 mt. This catch quota is certainly too high based on past performance of the Split Series model projections. There is some evidence from the two most recent assessments that the rho adjusted projections perform better than the unadjusted values.

Due to the assumption used for the 2012 year class in the projections, the increase in adult biomass will be optimistic if the 2012 year class is as poor as the recent year classes.

There is a continued need to conduct research to limit the possible causes for the retrospective bias exhibited in this assessment.

In July 2013, the minimum size was reduced from 13 inches (33.0 cm) total length to 12 inches (30.5 cm) for the U.S. fishery which is expected to result in reduced discards and a possible change in partial recruitment for the youngest ages.

Source Documents

Stone, H.H., L. O'Brien, and L. Van Eeckhaute. 2013. Update of allocation shares for Canada and the USA of the transboundary resources of Atlantic cod, haddock and yellowtail flounder on Georges Bank through fishing year 2014. TRAC Reference Document 2013/xx.

TRAC. 2013. Georges Bank yellowtail flounder. TRAC Status Report 2013/01.

TRAC. 2013. Eastern Georges Bank cod. TRAC Status Report 2013/02.

TRAC. 2013. Eastern Georges Bank haddock. TRAC Status Report 2013/03.

Consultations

Transboundary Resources Assessment Committee (TRAC) meeting, St. Andrews, New Brunswick, 25-27 June 2013.

Transboundary Management Guidance Committee public consultation in Canada, Yarmouth, Nova Scotia, 24 July 2013.