Canada/United States (U.S.) Transboundary Resources Steering Committee
Via GoToMeetings
September 2, 2020
Meeting Minutes

Canadian Participants:

Doug Wentzell (alternate for Mary-Ellen Valkenier), Fisheries and Oceans Canada (DFO), Steering Committee Co-Chair
Irene Andrushchenko, DFO, Science
Ray Belliveau, Gulf of Maine Advisory Committee (GOMAC) Industry Co-Chair
Kathryn Cooper-MacDonald, DFO, Fisheries Management
Jill Currie, DFO, Integration Committee
Alain d'Entremont, Transboundary Management Guidance Committee (TMGC) Industry Co-Chair
Jennifer Ford, DFO, Acting Director of Resource Management and Licensing
Michelle Greenlaw, DFO, Transboundary Resource Assessment Committee (TRAC) Acting Co-Chair
Terry Higgins, DFO, Integration Committee
Craig Hominick, DFO, Species at Risk Working Group (SAR WG) Acting Co-chair
Reide Thomas, DFO, Integration Committee
Roger Stirling, GOMAC Industry Co-Chair (via teleconference)

U.S. participants

Michael Pentony, National Marine Fisheries Service (NMFS) Greater Atlantic Regional Fisheries Office (GARFO), Steering Committee Co-Chair
Pete Christopher, GARFO, Supervisory Fishery Policy Analyst (Groundfish)
Marianne Ferguson, NMFS GARFO, Integration Committee Co-Chair
Jean Higgins, NMFS, SAR WG Co-Chair
Tom Nies, New England Fishery Management Council (NEFMC), Executive Director
John Quinn, NEFMC Vice-chairman, TMGC Co-Chair
Michael Simpkins, NMFS NEFSC, TRAC
Spencer Talmage, NMFS GARFO, Integration Committee
Tara Trinko-Lake, NMFS Northeast Fisheries Science Center (NEFSC), TRAC Co-Chair

Opening Remarks

Mr. Michael Pentony, U.S. Co-Chair, began his opening remarks by thanking staff for their work developing the agenda and transitioning the meeting to a virtual platform. Mr. Pentony stated that NOAA Fisheries Greater Atlantic Regional Fisheries Office (GARFO) has been working remotely since mid-March. GARFO entered Phase 1 last week, where up to 25 percent of staff, namely those doing mission essential work, are allowed back in the office. Previously the region was operating in Phase 0, where only a handful of mission critical staff were working in the building. Mr. Pentony noted that the Northeast Fisheries Science Center was on a slightly different trajectory given the nature of their work, but in general, regional staff has been very successful in completing their work and meeting the Agency's mission remotely.

In terms of the Regional Fishery Management Councils, all of their public meetings have been held remotely since March, with the exception of one recent face-to-face public hearing hosted by the New

England Fishery Management Council (NEFMC). NEFMC staff continues to work remotely for the most part as well. Fishery observers were suspended in mid-March via a two-week and then set of month-long waivers, and were recently reinstated in Mid-August. GARFO continues to provide waivers for situations where observers cannot safely work, which has led to a recent increase in waivers. Mr. Pentony followed the observer discussion with an update on the development of NEFMC's Amendment 23 to the Northeast Multispecies Fishery Management Plan to revise the groundfish monitoring program, which focuses on amending the monitoring and accountability measures of fisheries. The public hearings concluded on August 26th and the comment period officially closed on August 31st. The Council is scheduled to take final action on Amendment 23 on September 30th. Depending on the final decisions of the Council, implementation of Amendment 23 measures may be phased in during fishing years 2021 and 2022.

Mr. Pentony added that GARFO continues to make progress on their rulemaking efforts to reduce the risk of entanglement of North Atlantic right whales (NARW) in northeast trap and pot gear. Additionally, as NOAA Fisheries continues to work on the evaluation of national ship speed regulations, GARFO launched a new campaign asking boaters to take a proactive role in protecting NARW from vessel strikes, called Right Whale Slow Zones.

Mr. Doug Wentzell, Acting Canadian Co-Chair, began his remarks by noting that his office was also adapting to the virtual environment. He thanked the members of the Transboundary Resource Assessment Committee (TRAC) and the Transboundary Management Guidance Committee (TMGC) for their work. Mr. Wentzell reported that Fisheries and Oceans Canada Maritimes Region (DFO) was fully operational almost immediately upon the onset of the pandemic. Fishery officers and critical staff remained in workplaces and in the field, and the rest of the staff was able to work from home. DFO partnered in creative ways to collect data with a high degree of collaboration so that much of DFO's necessary field work was completed. DFO is also in Phase 1 of Return to the Workplace, which includes roughly 25 per cent of the workforce back in their facilities, and Phase 2 (up to 50 per cent of the workforce) could potentially return to the workplace in October. In terms of external work, DFO engaged with industry from the early days of the pandemic. At first meetings were held twice a week with an industry round table that includes 50 participants across the Maritimes region. The frequency reduced to once per month over the summer months. This cooperation allowed DFO to understand the unique challenges the region's fishery fleets were facing and to respond in real time with policy flexibility. Similar to the U.S., they suspended observer coverage and the program is now back online with precautions. Mr. Wentzell added that due to the economic and community challenges as a result of the pandemic, the Government of Canada was able to provide $469 million in fiscal support under the Fish Harvester Benefit and Grant Program– the largest single investment in fisheries in the past 20 years. This grant will help harvesters navigate the pandemic-related challenges.

Mr. Wentzell noted that there had been five sightings of NARW in the region, but no reports of entanglements or vessel strikes, which he hopes remains the case as the region continues to engage with industry on management measures. In terms of staffing updates, the former Regional Director of Fisheries Management, Ms. Annette Daley, retired and Ms. Jacinta Berthier has filled her role. Ms. Jennifer Ford is acting in Ms. Berthier's former role of Director of Resource Management and Licensing, and Ms. Michelle Greenlaw will continue in her acting capacity as the Canadian TRAC Co-Chair.

Species at Risk Working Group Updates

Ms. Jean Higgins, U.S. Co-chair for the Species at Risk Working Group (SARWG), began her presentation with updates from the virtual Northeast U.S. Implementation Team (NEIT) meetings and the Team's recovery planning efforts. The Team had an aquaculture webinar in May and a full webinar in

June that covered species status updates and work group reports, and brainstormed shovel ready (ready for potential funding) ideas for planning. The next NEIT meeting will be the fall webinar, likely in November. The Population Evaluation Tool (PET) subgroup will likely release a population viability analysis and quantitative threats assessment in early 2021.

Ms. Higgins shared that two vessel collisions had taken place in U.S. waters earlier in the year, involving NARW calves. She then explained the origins and purpose of the new Right Whale Slow Zones campaign. Launched in August, this campaign is based on an NEIT recommendation to include acoustic data into NMFS' voluntary Dynamic Management Area (DMA) program. The Right Whale Slow Zones campaign uses visual surveys and acoustic data to send notification maps to boaters about potential NARW presence in areas. While DMA information previously focused on messaging to the shipping industry, the Slow Zone campaign asks boats of all sizes to avoid these areas or slow down to 10 knots or less. Slow Zone messages are distributed by electronic mailing lists, text messages, the Coast Guard, and the whale alert app. Messaging has begun in the Northeast and may be adopted in the Southeast region as well.

Ms. Higgins' next update was on the *Marine Mammal Protection Act* (MMPA) Atlantic Large Whale Take Reduction Planning (ALWTRP) efforts. NMFS is still working toward their goal of reducing mortality and serious injury to below Potential Biological Removal (PBR) for right whales. NMFS aims to do so through a recommendation of 60 per cent risk reduction in Northeast trap/pot fisheries through reduced vertical line and rope strength. NMFS is developing a proposed rule for public comment that will potentially be available by the end of this year. Ms. Higgins followed the MMPA update with an *Endangered Species Act* (ESA) Section 7 update. The Batched Fisheries Biological opinion under development for numerous Northeast species will assess how the proposed MMPA Take Reduction Measures change the fisheries and any potential impacts to protected species (including NARW). The right whale vessel speed rule evaluation is still expected later this year. This report will evaluate rule effectiveness, compliance, and economic and navigational impacts. For ESA Decision updates, Ms. Higgins noted that NMFS found the petition to list the Northwest Atlantic Leatherback Turtle Distinct Population Segment (DPS) as threatened was not warranted. A status review of the species found seven populations meeting the definition of endangered. However, Leatherback turtles are already listed as endangered throughout their range, so the listing changes were not warranted. Ms. Higgins noted that other ESA actions remain underway including Five-year status reviews of Atlantic salmon (Gulf of Maine DPS), four DPSs of Atlantic sturgeon, and Sei whale; and Critical Habitat Designation for the Green turtle DPSs (including the North Atlantic DPS). Mr. Wentzell asked if there was any ongoing enforcement or monitoring efforts for smaller vessels in the Right Whale Slow Zones and Ms. Higgins answered that small vessel operators abide by slow-zone measures on a voluntary basis.

Mr. Craig Hominick, SARWG Canadian Co-chair and alternate for Donald Humphrey, followed Ms. Higgins with updates on *Species at Risk Act* (SARA) listings. DFO is finalizing its advice to the Minister of Fisheries and Oceans Canada regarding the Atlantic salmon Designatable Units (DUs) in the Maritimes (Outer Bay of Fundy, Southern Upland, Inner Bay of Fundy and Eastern Cape Breton) and a listing decision is expected in Fall 2021. This species is important to Indigenous and local groups and they hope for a decision soon. Mr. Hominick then reviewed some of the species under consideration for listing and stated that he would provide an overview of other species under consideration for listing following distribution of the Steering Committee (SC) meeting minutes. Mr. Hominick noted that many species have been on the list of consideration for a while, and that he would let the group know in the spring if there are any updates.

Mr. Hominick provided recovery planning updates for the NARW. The Comprehensive Action Plan (AP) was posted as proposed and available for public comment from March to August 2020. Over 5,000 comments were received, many from campaigns, and now DFO is compiling the comments and theming them. The feedback will be considered and the final AP will be posted to the SAR Public Registry. There were many questions about fishery measures, so DFO is considering these in the development of the Final Action Plan. This AP for all threats will supersede the previous AP. A second five year report for the species is in draft now and proposed to be finished in the next six months. For Loggerhead Sea turtle, the recovery strategy was posted as proposed on the SAR Public Registry in July 2020 for a 60 day comment period and the action plan will begin development this fiscal year. The Leatherback Sea turtle recovery strategy from 2007 is being amended to include critical habitat, and the action plan was posted to the SAR Public Registry in March 2020. The Five year report for 2013-2019 is targeted for completion in 2020-21.

Mr. Hominick then presented an update on the Species at Risk Working Group (SARWG) Terms of Reference (TOR). The SARWG was established in 2003 to identify opportunities and review proposals for addressing concerns related to transboundary SAR. An associated workplan and set of TORs were developed in 2006. Substantial changes in membership, working groups, policies, and approaches have occurred since that time, so the SARWG Co-Chairs suggested a review of the TORs for amendments and development of a five year work plan. Although this initiative had been delayed by COVID and other WG priorities, the Co-Chairs did start discussions with each other and staff. Following internal discussions, the SARWG had developed a few questions to aid in reshaping the WG, in order to both fulfil the needs of the SC, as well as enhance DFO-NOAA Communications about species at risk. Mr. Hominick noted that some concerns go beyond the region and that patterns and scope around the WG issues are changing. He concluded by saying the goal is to revitalize and reshape the WG so its work is more on target to the needs of the SC.

Ms. Higgins presented the next steps for the WG revitalization. The WG hopes to solicit feedback from the SC members on the WG's role via a survey. The WG will also arrange a webinar in late fall with key players to discuss the role of the working group and future workplan items. Following that input, the WG will rewrite the TORs to reflect feedback received and will provide an update at the next SC meeting. Ms. Higgins noted there have been a many questions about the roles of the WG, in terms of their role for the SC and their role in the SAR landscape at large. She stated that coordination across groups is key.

Mr. Pentony added that this is a good time to take a fresh look at TORs and the five-year work plan, and that he defers to the expert judgment of the Co-Chairs, but looks forward to providing feedback on the value of the WG. Mr. Wentzell echoed Mr. Pentony's comments, noting that while work on the three groundfish stocks is important, keeping the SARWG integral to the SC is important as well. He also noted the importance of evaluating efforts in order to ensure that time is invested efficiently. Mr. Nies agreed that understanding the role of the SARWG is useful in terms of understanding the SC as well as cross border collaboration on species other than the three groundfish stocks.

Transboundary Resources Assessment Committee (TRAC) – Georges Bank Yellowtail Flounder

Ms. Tara Trinko-Lake, U.S. TRAC Co-Chair, presented on Georges Bank (GB) yellowtail flounder Catch. The combined Canadian and U.S. catches in 2019 totaled 8 mt from a quota of 140 mt. (the catch was approximately 75 per cent discards and 25 per cent landings. The Canadian catch was 4 mt, out of their 34 mt quota and the U.S. catch was 5 mt out of a quota of 106 mt. It was noted that survey biomass has decreased in recent years for both countries. The biomass index of the three surveys indicated the capacity of the stock is significantly diminished, and that stock biomass is low and productivity is poor. Ms. Trinko-Lake also shared that relative fishing mortality has declined since 1995, although total

mortality from all sources has remained high. Fishing does not appear to be a major driver of stock status currently.

TRAC has recommended changing the approach for setting the quota for this stock, from the current empirical approach to a constant catch approach using the GB Yellowtail Flounder Limiter 'Shiny' App developed by Chris Legault at the 2020 TRAC. This approach will be reviewed and presented next year at TRAC. When Mr. Nies questioned why both constant catch and the shiny app were being used, Ms. Trinko-Lake stated that TMGC requested one more year of comparison between the constant quota and empirical approaches.

TRAC – Eastern Georges Bank Haddock

Ms. Trinko Lake presented on Eastern GB haddock. She stated that the combined Canadian and U.S. catches were 14,762 mt against a quota of 30,000 mt. Canada caught 94% of their allocation (14,168 mt against a quota of 15,000 mt); the U.S. caught 0.4% of their allocation (594 mt against a quota of 15,000 mt). As expected, the catch was dominated by the exceptionally strong 2013 year class at age 6 (a biomass decrease of 75% for U.S. and 66% for Canada). Survey age structure through 2019 represented a broad array of age groups that reflects improving recruitment since 1995. There are no indications of exceptional year classes coming into the population from the 2019 NMFS Fall survey, though recruitment has been above the median since 2010. The spatial distribution patterns from the most recent surveys are similar to average patterns over the last ten years. Given restrictions under the COVID-19 pandemic (cancelled 2020 NMFS Spring survey and no ages from the 2020 DFO Spring survey) and the absence of a usable model, multiple approaches were explored using available lines of evidence to provide a range for catch advice. In 2019, TRAC provided advice by comparing the change in the 2013 year class to that of a previously observed strong year class. Building on last year's approach, in 2020 TRAC continued to monitor the change in the previously observed strong year class to adjust the quota advice for 2021, resulting in a range of 2,635-14,117 mt. Although only one of the methods was chosen to provide advice, the others were considered confirmatory in nature and all three showed overlap in the range of quota advice.

Mr. Wentzell asked for clarification as to whether the NMFS fall 2020 and spring 2021 surveys were both cancelled and Ms. Trinko-Lake confirmed the fall 2020 survey for NMFS was canceled and a decision on the NMFS Spring 2021 would be made closer to the survey date.

TRAC – Eastern Georges Bank Cod

Ms. Irene Andrushchenko presented on Eastern GB cod. Her first update was on the terms of reference. Since there was no model, TRAC uses fishery indicators for the state of cod. In 2019, the Canadian and U.S. total catch was 428 mt, out of a quota of 650 mt. Canadian catch in 2019 was 396 mt out of a quota of 461.5 mt. Canadian discards were estimated at 3 mt from the groundfish fishery and 5 mt from the scallop fishery. U.S. catch in 2019 was 31 mt out of 66 mt (using a different quota year) and discards were 1 mt from the groundfish fishery. This was the lowest catch in the time series.

Ms. Andrushchenko then updated the group on survey biomass indices. These indices were updated for the NMFS fall survey and the DFO survey. There has been no change in the status of the transboundary cod stock, with biomass remaining below the time series mean and no signs of major recruitment events. The condition factor is showing signs of improvement and the 2019 fishery catches were the lowest on record. Without a model, and no indication of a change in stock status, TRAC indicated that there is no basis to change catch advice from the previous two years (602 to 676 mt).

TRAC – Groundfish Allocations

Ms. Andrushchenko then presented the Groundfish Allocations through fishing year 2021. She first reviewed the joint management unit area maps. Cod and haddock are mostly centered around the eastern portion of the region, while the yellowtail flounder management area is wider. Ms. Andrushchenko reminded the group that allocation shares are based on an agreed upon formula that incorporates historical utilization of the fishery (based on catch from 1967 to 1994) and the survey distribution of the resource from the most recent fishing year. As years progressed from 2003 to 2010, resource distribution was more heavily weighted in the allocation equation, ending with 90 per cent for resource distribution and 10 per cent historical utilization in 2010, which reflects the current weighting. Based on this formula, the allocation shares for fishing year 2021 are 30 per cent U.S. and 70 per cent Canada for cod, 46 per cent U.S. and 54 per cent Canada for haddock and 64 per cent U.S. and 36 per cent Canada for yellowtail flounder, Mr. Nies raised the point that calculating allocation shares based on survey distribution will be an issue next year due to the canceled surveys. Ms. Andrushchenko assured the SC that both TRAC and TMGC are writing terms of reference to address that issue for next year.

TRAC – DLM Tool Update

Ms. Andrushchenko provided an updated on the progress of the DLMtool application to Eastern Georges Bank cod noting that TMGC was halfway through a two year process of using the DLMtool as an interim approach for providing catch advice for cod until a benchmark can be held. Ms. Andrushchenko explained that development of the DLMtool had fallen slightly behind schedule due to COVID-19 and staffing changes, but is still on track to provide new catch advance next year. TMGC approved several DLMtool components (the operating models, management procedures, and management objectives) at the September 1st TMGC meeting. An initial run of the tool may help inform whether TMGC will need to adjust any of those prior to running the Management Strategy Evaluation (MSE) for TRAC 2021. Ms. Andrushchenko shared the nine operating models, which revolve around uncertainty in mortality and in stock-recruit relationship. The range of operating models represent different views of what is driving the stock. The operating models are still open to revisions and additions as development continues. Next, Ms. Andrushchenko reviewed the six initial management procedures, made up of a constant catch group and survey based group of procedures. Again, additional options may become evident as development continues. Lastly, the four management objectives and their associated timelines and evaluation criteria were reviewed. Once the components of the DLMtool are approved, TRAC can run simulations in fall 2020 and will be on track to provide interim TRAC advice.

TRAC – 2021 Terms of Reference and Future Meeting Schedule

Ms. Michelle Greenlaw, Acting Canadian Co-Chair of TRAC, shared the changes TMGC had made to the TRAC TORs, the biggest of which was for haddock. She noted that the location for the next TRAC meeting is still in question due to COVID-19 and there may be a separate meeting for the haddock benchmark/research track review, depending on the results at the TMGC meeting.

For cod, TRAC will provide an indicator update, including the aging data from last year that could not be updated for the DFO survey due to the pandemic. In the absence of the DLMtool, TRAC will use indicators to comment on whether there is sufficient reason to change advice from 2018.

Next, Ms. Greenlaw provided an update on the haddock TORs. If completed during the next year, TRAC will apply the research track approach for haddock, update data, and provide catch advice if possible. Progress on the Research Track process would be reviewed and if it was not expected to be completed TRAC would update biological and fishery indicators with previously missing 2020 data and available

2020-2021 data. TRAC would also identify and comment on changes in survey and fishery indicators relative to the 2020 TRAC and provide catch advice for 2022 by evaluating the 2021 quota and comparing relative F values, weights at age, and survey trends.

For yellowtail flounder, Ms. Greenlaw explained that the terms of reference are still in flux, as the U.S. Spring survey was canceled. TRAC is expected to apply the benchmark assessment (i.e., empirical approach) for yellowtail flounder, update results from the latest information from fisheries, including discard estimates and research surveys, and characterize the uncertainty of estimates. TRAC will also provide catch advice for 2021 based on the empirical approach for a range of exploitation rates for 2021. Ms. Greenlaw noted that without the surveys, it could be hard to apply the empirical approach, so TRAC would revisit the issue in the spring. Next, she stated that TRAC would describe any adjustments in the benchmark assessment model applied during TRAC, including impacts on the advice given to TMGC. In addition, TRAC would update and comment on trends in relative F and total mortality (Z). TRAC will discuss the Georges Bank yellowtail flounder limiter approach and provide recommendations to TMGC with respect to setting average survey biomass bounds and a constant quota until the average survey biomass falls outside these bounds, as a possible alternative to the empirical approach. This discussion could take place in a pre-TRAC intersessional to identify if any information was needed from TMGC. Lastly, due to COVID-19, TRAC would examine qualitatively or quantitatively, any readily available research and fishery data that they determine could provide valuable context in the absence of trawl surveys.

For allocation shares, TRAC will review the biomass distribution relative to the U.S./Canada boundary, and update results with the 2020 surveys information. They also plan to provide details to TMGC on analyses to deal with the missing survey information due to the impacts of COVID-19 by looking at two approaches through an e-mail review or an options paper: rollover or a multi-year average.

TRAC will report on any changes to the surveys that might impact the assessments such as changes to vessels, timing, area coverage, etc. and describe any potential impacts of these changes. They will also provide an update on targeted research that could help identify mechanisms contributing to changes in stock productivity. Next, TRAC will draft the 2022 TORs for the three stocks. TRAC will also provide an update on planning and research progress for upcoming benchmarks/research assessments and will provide a list of potential research gaps to inform the process – potentially before the next cod and yellowtail flounder assessments. TRAC will also discuss, as appropriate, the impacts of COVID-19 restrictions in each country on achieving or completing work on any TORs, including alternatives to address data shortfalls. Lastly, TRAC will report on the results of the index-based methods Research Track.

The upcoming publications for TRAC include TRAC Transboundary Status Reports, TRAC Reference Documents, TRAC Proceedings, and a TRAC Reference document for the DLM Tool.

Ms. Trinko-Lake provided additional COVID-19 updates. TRAC is anticipating addressing several intersessional items. The first item will be to determine the best methods to calculate Allocation Shares with two of the three surveys missing in 2020. TRAC anticipates completing this determination via email correspondence, though TMGC may need to meet to make a final decision. The other potential intersessional item is expected to be a desktop review of the DLMTool methodology (reviewers would review the tool for scientific validity and provide feedback by email). Ms. Trinko-Lake reminded the group that the U.S. 2020 fall survey is canceled due to COVID-19 and also that aging data related to the 2020 DFO winter research survey was not available in time for TRAC, but is now proceeding. She also noted that limits on the availability of Canadian Unit leads and extra work associated with missing survey

data due to COVID-19 may broadly impact the TRAC intersessional meetings and deliverables on Eastern Georges Bank haddock and cod. Ms. Trinko-Lake then discussed the upcoming U.S. domestic Research Track for the next five years. Haddock is planned for 2021, cod for 2023, and yellowtail flounder for 2024. DFO Science has agreed to participate as a full partner in the multi-stock Haddock Research Track. The initial working group with three Canadian DFO Science participants will hold their kickoff meeting on Friday, September 4th. The final peer-review of the approach to provide catch advice is expected in summer 2021 after the TRAC meeting. Lastly, Ms. Trinko-Lake shared that the Atlantic Cod Stock Structure Working Group (ACSSWG) investigated stock structure of Atlantic cod in U.S. waters, and the interactions of U.S. stocks with adjacent Canadian Stocks. The working group identified a number of mismatches between the current U.S. management units and biological stock structure, and proposed five biological stocks in U.S. waters. The findings were peer-reviewed by a sub-panel of the Scientific and Statistical Committee (U.S. process) and this information in total or in part could have significant effects on the science and management of the transboundary cod stock.

TMGC Report

Mr. Alain d'Entremont and Mr. John Quinn, Canadian Co-Chairs, presented the TMGC Report on the recently negotiated Total Allowable Catch (TAC) based on TRAC advice.

The 2021 TAC for Georges Bank yellowtail flounder is 125 mt, which is a decrease from 162 mt in 2020 and consistent with TRAC advice for the stock. Based on the previously discussed allocations, the Canadian TAC is 45 mt and the U.S. TAC is 80 mt. Mr. d'Entremont emphasized the potential for issues caused by the cancellation of both NMFS 2020 spring and fall surveys and lack of complete aging data from DFO's 2020 survey. TMGC and TRAC will continue to explore the most appropriate method to provide catch advice for this stock in its current state of productivity.

The 2021 TAC for Eastern GB haddock is 14,100 mt, which was a significant drop from 2020 (a 53% decrease) and consistent with TRAC advice. Based on the previously discussed allocations, the Canadian TAC was 7,614 mt and the U.S. TAC was 6,486 mt. Stock status cannot be determined due to lack of a model, however there was consensus at TRAC that the stock condition is not poor. Mr. d'Entremont indicated that due to the COVID-19 pandemic, the 2020 NMFS spring survey was canceled, and aging data was not completed for the 2020 DFO survey. In the absence of an analytical model, there is a large amount of uncertainty about the haddock quota and the population size. TMGC has also been reaffirming the priority for a TRAC benchmark for haddock for a number of years. Canada has agreed to participate in the 2021 haddock research track assessment with the U.S., which includes Eastern Georges Bank haddock. That assessment is scheduled for July 2021.

The 2021 TAC for Eastern GB cod is 635 mt, consistent with TRAC advice and a slight decrease from 2020; the Canadian TAC is 444.5 mt and the U.S. share is 190.5 mt. TRAC reviewed fishery and biological indicators and provided no new catch advice for cod in 2021, and there was no reason to change the advice provided for 2018-2020. Quotas have been low in recent years and stock status remains poor, so TMGC's recommendation for a low quota in 2021 is expected to promote cod rebuilding. Mr. d'Entremont stated once again that there was no 2020 NMFS spring survey and ages were unavailable for the 2020 DFO spring survey and the Canadian commercial catch due to the COVID-19 pandemic. He also shared that the DLMtool approach is on track for providing catch advice for TRAC 2021. A new timeline has been proposed and accepted which depicts the iterative collaboration between a TMGC working group and a TRAC working group that needs to happen over the next year. The timeline includes an initial run through the simulation, giving the TMGC, and TRAC WGs a chance to revise the DLMtool components before the final iteration. Mr. Quinn added that the most back and forth discussion between

countries occurs with cod, and there is pressure to improve the stock beyond status quo on the U.S. side. More detailed discussions may occur in the next few years to enact that positive change and moving toward a lower TAC reflects a step in that direction.

TMGC is planning to hold an intersessional phone call or webinar. This meeting would cover a DLM update, define expected document requirements from TRAC 2020, and an update on limiter approach needs for yellowtail flounder. TMGC would also discuss changing requirements and evolving issues as a result of COVID-19. An options paper from TRAC discussing possible management of allocation shares in the absence of surveys will be required for this discussion. Mr. d'Entremont highlighted the commercial importance of haddock and explained that there are timing concerns with respect to the 2021 haddock research track assessment and availability of data that TMGC and TRAC will need to address. Mr. d'Entremont noted that although stock assessments are typically completed on time, a delay in the completion of the 2021 haddock research track assessment could delay the haddock portion of the TRAC meeting until August. This would subsequently delay the fall TMGC and SC meetings. If this happens, one option would be to hold a separate meeting for haddock and another for yellowtail flounder/cod. Another option would be to delay the TMGC/SC meetings until all three species could be discussed together. Given scheduling concerns, limiting to one SC meeting is the preference, although the timing may not work for yellowtail flounder.

Mr. Wentzell noted his preference to delay the SC meeting to provide time for the haddock assessment update. Mr. Pentony agreed that one meeting would be preferable, but expressed concern about the implications for the Council management process and the decisions that are usually made at the September NEFMC meeting. TMGC quotas are reviewed at the September meeting to allow time to renegotiate the quotas if they are rejected by the Council. While rare, this has happened in the past, and if the Council was to wait until December to approve the quotas, there would potentially be an issue if one was not accepted, as measures may not be in place until the start of the fishing year. If TMGC could be scheduled by October 15, 2021, then NEFMC could assess the recommendations in December 2021. Since Canada's quota year begins on January 1st, Mr. Wentzell added that although DFO has put interim quotas in place for species such as scallops, that is not the preferred method for groundfish. There was discussion of having a yellowtail flounder-only TMGC meeting in early September, with SC approvals provided secretarially and then cod and haddock meetings later. It was noted that it would be helpful to not have the TMGC and SC meetings overlap, to include more participants in the TMGC discussions. Mr. Pete Christopher observed that if the SC meeting is held in October, then the quotas would be discussed at the late November or December Council Meeting and if the approvals process is delayed, the NEFMC could delay decisions on Canada-U.S. transboundary stocks until January. When asked if there were any concerns for the scallop fishery which begins fishing in April, and has a small yellowtail flounder bycatch quota, Mr. Christopher noted that the yellowtail flounder quota does not typically change much, so it should be workable. Mr. Wentzell stated he would ensure that Maritimes Region's internal processes would support the decisions to be made, and Ms. Ford stated that DFO would need to speak internally on what steps would be necessary if renegotiation is needed, as implementing an interim Total Allowable Catch without a joint agreement is a concern. She did note that it seems like the countries are currently well aligned.

Atlantic Herring Information Sharing

Mr. Christopher described the ABC Control Rule approved in Herring Amendment 8 (final rule pending). This rule establishes a herring acceptable biological catch (ABC) control rule intended to ensure sustainable harvest of the herring resource and account for herring's role as forage in the ecosystem. The agency has been sued on herring and the need to take forage into account, and NEFMC went through a

stakeholder driven Management Strategy Evaluation in 2016-2018 to develop a biomass based ABC control rule. This control rule (which is being used to set the 2021-2023 specifications) limits fishing mortality to 80% of the fishing mortality rate to support maximum sustainable yield when herring biomass is high; limits fishing morality even further when biomass is low; and sets ABC for three years, but allows it to vary year-to-year with projected estimates of biomass. If biomass bottoms out, the fishery can shut down. Mr. Christopher then outlined the herring management areas. He first explained that the Atlantic States Marine Fisheries Commission (ASMFC) manages inshore and state waters, while the federal waters are broken up into four management areas, one of which is the Georges Bank area which is open year round and accounts for 39 per cent of the annual catch limit (ACL). Mr. Christopher described the Inshore Midwater Trawl Restricted Area, which prohibits midwater trawl gear inshore of 12 nautical miles from Canada to Connecticut and inshore of 20 nautical miles off Cape Cod and ensures that herring is available inshore for other user groups. There are also potential biological benefits for river herring and shad, the inshore component of the herring stock, and predators.

The 2020-2021 catch limits were reduced almost 90 per cent from 2016-2018. The NEFMC is in the process of developing specifications for 2021-2023 and NMFS expects the ACL will be lower than it was in 2020. The management uncertainty buffer used in the calculation of herring specifications is an estimate of the Southwest New Brunswick (SWNB) weir landings. For 2019 and 2020-2021 the uncertainty buffer was set using a 10-year average of landings – the longer time series captures the year-to-year variability in landings because an apparent trend was not detected. The 2020-2021 management uncertainty buffer is 4,560 mt. If the 2020 SWNB weir landings are below 2,942 mt through October 1, then 1,000 mt will be subtracted from the management uncertainty buffer and added to the Area 1A sub-ACL and ACL. Based on the importance of expected and realized SWNB weir catch to the U.S. catch data, NMFS is curious if DFO is confident they will have accurate and complete SWNB weir catch estimates by October as NMFS would like to better understand the SWNB weir fishery in order to better estimate the management uncertainty buffer in the future. Regarding permits, Mr. Christopher reported that the U.S. herring fishery is a limited entry fishery with about 40 vessels that land over 99 per cent of total catch. Vessels in this category include purse seine, midwater trawl, and bottom trawl vessels. A suite of catch monitoring requirements are used during the fishing year (January to December). When the ACL or management area sub-ACL is reached, a 2,000 lb possession limit is implemented for all areas or a specific area. If herring catch exceeds the ACL and/or a management sub-ACL, the amount of the overage is deducted from the ACL and/or that sub-ACL in a subsequent year. Those accountability measures are designed to minimize the frequency and magnitude of catch overages and allow for harvest adjustments when limits are exceeded. If the ACL is not exceeded, catch underages in a management area (up to 10 per cent of that area's sub-ACL) are carried over and added to that area's sub-ACL in a subsequent year. That carryover does not increase the ACL. Due to the current low catch limits, the NEFMC did not recommend allowing carryover in 2020-2021 (pending any revisions for 2021). Mr. Christopher noted that the 2020 assessment is finalized, and NMFS will send an official notification to the NEFMC that the herring stock is overfished. The letter will inform the NEFMC that it must prepare and implement a rebuilding program for herring within two years, as required by the *Magnuson-Stevens Fishery Conservation and Management Act*. The NEFMC will need to submit an action within 15 months of receipt of the letter to ensure that there is enough time for NMFS to implement rebuilding measures, given that there are major catch issues to resolve.

Mr. Nies added that the MSE control rule initiative was a management measure decided upon by NEFMC to respond to stakeholders and that the quota recommendations going forward are slightly lower than those shown in the presentation.

Mr. Michael Simpkins presented key points from the most recent NEFSC Atlantic Herring Stock Assessment. Generally, recruitment has been poor in recent years and biomass and catch have been decreasing as well. Stock status is worsening and the 2020 assessment showed that the stock is overfished, but not undergoing overfishing. The fixed gear fishery, 90 per cent of which is made up of the Canadian weir fishery, is increasing in importance in the stock assessment. The selectivity of the mobile and fixed gears are very different, in that the mobile fleet has broader distribution across age classes, but the weir fishery mainly catches two year old herring. Differences in selectivity cause a challenge for development of both the assessment model and the resulting catch advice. Bilateral scientific coordination is key to ensuring an accurate stock assessment and appropriate catch advice.

Ms. Ford asked if data requests are responded to reasonably quickly and meet the needs of the U.S. scientists. Mr. Christopher stated the data has improved over years to provide enough information for quota adjustment, although it depends on timing of when the data comes in to DFO as there have been delays in the past. He noted that part of the challenge was understanding how to accurately project catch and how to subsequently implement management measures. Ms. Ford noted that it is a highly variable fishery influenced by different drivers and that landings can change drastically from year to year.

Mr. Pentony stated he hoped the presentations provided insight on the management and challenges present in the U.S. Atlantic herring fishery and indicated that he was interested in Canada's herring update. He said he was hopeful that the two sides could continue dialogue on the subject.

Mr. Wentzell stated that Canada also wants a common understanding of how herring is managed, and the science behind the management. For managing herring in Canada, Mr. Wentzell explained that Canada has several management components, with the largest being the Southwest Nova Scotia (SWNS)-Bay of Fundy component. The two management committees in that region are the Herring Purse Seine Monitoring Committee and the Herring Weir Advisory Committee. The last assessment for the fishery was in 2018 and raised similar red flags to the U.S. assessment. Difficult decisions were made in the last few years, including reducing the TAC from 50,000 mt to 35,000 mt, closing areas and having closed times, and imposing limits on small fish removals to in order to support recruitment.

There have been some small positive signs – the spawning stock biomass estimate in SWNS Bay of Fundy for the acoustic survey increased approximately 25 per cent from 2018 to 2019 and there has been some biomass index increase in other areas. Mr. Wentzell stressed that DFO is being conservative in the management approach, through the TAC and other controls such as conservation harvesting plans for fleets and areas, as well as seasons, monitoring requirements, and gear restrictions such as mesh size. The fishery is generally active from June to November, logbooks are required and all herring fishing boats must hail in and hail out and are subject to dockside monitoring, so that overall 95 per cent of herring catch is dockside monitored. Every mobile gear landing has a length frequency sampling taken by the dockside monitoring company, and there are area caps to support overall reduction for the TAC.

In terms of the stock status for SWNS Bay of Fundy, the primary indicator for science advice is the relative index of spawning stock biomass. The reference for that indicator is based on data from 1999. The reference point of the mean value is based on data from 2005-2010. Mr. Wentzell shared that the ongoing MSE is bringing together scientists, fishery managers, and industry stakeholders, with a goal to set a management procedure for the fishery, especially given the transboundary aspect of the resource. It will define operating models to evaluate harvest control rules going forward. The first MSE meeting occurred in October 2019 and the framework should be complete by the end of 2020. DFO staff mentioned that Mr. Matt Cieri from Maine's Department of Marine Resources is participating in the MSE as an expert reviewer. Ms. Ford noted that the herring fishery was complex, with many spawning

components and gear and management strategies. Ms. Greenlaw noted that there is a high degree of uncertainty in the origin of the fish caught in the Canadian weir fishery. The assumption that Canadian weir catch are of U.S. origin came from a short period of tagging, where the full amount of tag returns hadn't yet been collected. Subsequent analyses and further tagging studies challenge the assumption that all Canadian weir catch are fish of U.S. origin. We first see this officially questioned in our 2006 framework, where the proceedings suggest that some of the Canadian weir catch should be included in the SWNB landings.

Mr. Nies asked what management area imposes controls on SWNB weir fishery, if it was possible to predict catches, if there are management measures in place, and if the stock structure has been identified with the U.S. Ms. Ford answered that the weir fishery is effort controlled with no TAC or catch limit, that there is reporting and selective gear. She added that migration was brought into the MSE by focusing on how the weir fishery relates to the rest of the SWNS-Bay of Fundy fishery. This understanding will help the SWNS-Bay of Fundy fishery be more resilient to the amount of fish in the fishery from the U.S. and from Canada. . Mr. Nies asked about coordination with the U.S on identifying the stock structure and mentioned that DFO worked with the U.S. on cod. Ms. Greenlaw noted that there are currently a few tagging papers that have been published and tagging studies show there is uncertainty in the origin of juvenile fish and that there are different patterns from juveniles to adults. When Mr. Nies asked how DFO defines effort control in the weir fishery, Ms. Ford explained that there is a limit on the number of weirs and restrictions on the way the weirs are constructed, such as leader length and mesh size. Active weir numbers are variable from year to year and dependent on market conditions and the success of the fishery. Salmon aquaculture can limit weir fishing as well because the two industries take place in the same areas. There is a maximum number of weir permits, for specific locations, but they are rarely, if ever, all actively fished.

Mr. Pentony thanked Mr. Wentzell and DFO staff for talking through the herring issues and stated that he hoped to continue the discussion and work from the same page. Mr. Wentzell stated he and his staff were open to answering questions and interested in having a federal U.S. scientist participate in the Canadian MSE process.

Given the discussion, Mr. Wentzell suggested a literature review and exchange as a next step. Mr. Simpkins and Ms. Greenlaw agreed that they could collaborate on information sharing.

Closing Remarks

Given the concerns raised in the TMGC report regarding the timing of the haddock assessment, the Co-Chairs agreed that one Steering Committee meeting later in the fall would be best. To avoid conflicts with Fishery Management Council meetings and to provide time earlier in that week for a potential TMGC meeting, the SC proposed October 14th as the 2021 fall meeting date. Given the uncertainty of travel at this point, the location is still to be decided.

TRAC will be held July 12-14th (with the 12th as a travel day), with the location still to be decided as well. The haddock portion of the TRAC may be held at an alternative date in August if necessary.

Mr. Pentony closed the meeting by thanking participants for their time. He noted it was a productive discussion, despite the constraints due to the virtual format, but hoped to meet in person next year. He finished by acknowledging members of TMGC, TRAC, and the SAR WG for their work in preparation for the meeting.

Mr. Wentzell noted there was lots of dialogue and collaboration leading up to the meeting, and echoed Mr. Pentony thanking staff for their hard work.