Fisheries and Oceans Canada | Pêches et Océans Canada
Ecosystems and Oceans Science | Sciences des écosystèmes et des océans

Quebec Region

Canadian Science Advisory Secretariat
Science Advisory Report 2021/034

STOCK ASSESSMENT OF GULF OF ST. LAWRENCE (4RST) ATLANTIC HALIBUT IN 2020

Atlantic halibut (Hippoglossus hippoglossus)
Photo: DFO, Claude Nozères.

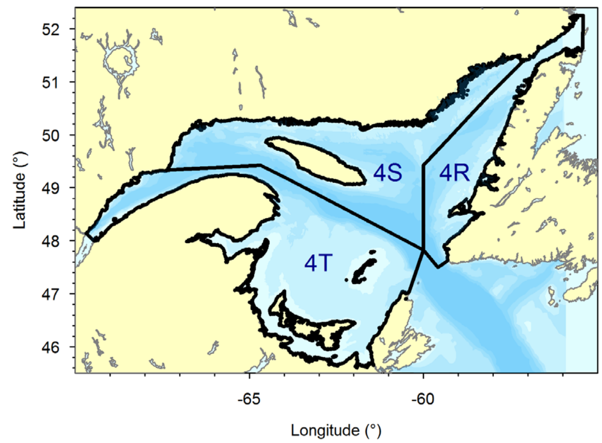

Figure 1. Atlantic halibut stock management area in the Gulf of St. Lawrence (NAFO 4RST).

Context:

The Atlantic halibut commercial fishery in the Gulf of St. Lawrence began at the end of the 19th century. During the first half of the 20th century, this resource was exploited by American and Canadian fleets. Since the second half of the 20th century, the species has been exploited almost exclusively by the Canadian fleet from the four Atlantic provinces as well as Quebec. From over 650 t during the 1960s, landings steadily decreased until the early 1980s, totalling 91 t in 1982. Landings increased again in the late 1990s and are now approaching 1,400 t, the highest level recorded in the past 60 years.

The current Gulf Atlantic halibut stock management unit (Figure 1), Northwest Atlantic Fisheries Organization (NAFO) divisions 4RST, was defined in 1987. In 1988, Fisheries Management introduced the first total allowable catch (TAC), followed in 1997 by a minimum legal size. The Atlantic halibut directed fishery is carried out by longliners on a competitive basis or by Individual Transferable Quota.

Assessment of the resource is conducted every two years in order to highlight changes in the status of the resource that would justify adjustments to the conservation measures and management plan. The current assessment puts into perspective the available information from fishery statistics, commercial catch sampling and scientific survey data.

This Science Advisory Report is from the March 16–17, 2021 regional advisory meeting on the Assessment of the Gulf of St. Lawrence (4RST) Atlantic Halibut. Additional publications from this meeting will be posted on the [Fisheries and Oceans Canada (DFO) Science Advisory Schedule](#) as they become available.

SUMMARY

- Atlantic halibut landings have been increasing since the early 2000s and have reached the highest values since 1960. For the 2019–2020 and 2020–2021 management years, preliminary landings are 1,383 t and 1,229 t, respectively.
- The values of the abundance index for commercial-sized Atlantic halibut (over 85 cm) from scientific bottom trawl surveys in 2019 and 2020 are among the highest of the historic time series.
- The abundance index for pre-recruit Atlantic Halibut (65–85 cm) from the scientific bottom trawl surveys is at a high value since 2007.
- Catch per unit of effort in the Atlantic halibut directed longline fishery has increased from an average of about 100 kg per 1,000 hooks in the early 2000s to about 560 kg per 1,000 hooks in 2020, the highest value of the historic time series.
- The size of landed halibut is increasing and the average weight of a landed halibut has doubled between 2006 and 2020.
- The estimated relative exploitation rate, based on landings as a function of minimum trawl able biomass, is low. Preliminary analysis of tag-recapture data from the longline survey also suggests that the exploitation rate is low.
- The precautionary approach and reference points for this stock are under development.
- There is moderate evidence and high consistency among sources of evidence that the status of the stock is currently at a historically high level.
- There is robust evidence and high consistency among sources of evidence that recruitment to the fishery remains high. There is limited evidence and high consistency among sources of evidence that the exploitation rate has generally remained below the rate of biomass increase during the last 10 years, which would explain the increase in biomass of halibut over 85 cm.
- It is unlikely that maintaining current harvest levels will result in a decline in stock status. The results of this assessment do not allow the identification of a removal threshold, beyond which a decline in biomass becomes likely.

BACKGROUND

Atlantic halibut can be found throughout the lower estuary and Gulf of St. Lawrence. Figure 2 shows the distribution of catches made during mobile gear fishery-independent surveys between July and September from 1985 to 2020. The probability of capture is higher on the channel banks at depths near 200 m, and around the 35 m isobath in the southern Gulf of St. Lawrence. Atlantic halibut appear to be absent from the cold intermediate layer (where temperatures are lower than 1 degree Celsius), which is located at an average depth of between 50 m and 100 m. Some Atlantic halibut have been observed to undertake seasonal migrations, moving from shallow areas in summer (less than 50 m) to deep channels in winter. Potential breeding areas were identified through geolocation by modelling locations where tagged fish made rapid vertical migrations likely associated with spawning. These behaviours were observed between mid-January and mid-March at depths greater than 300 m in the Gulf channels.

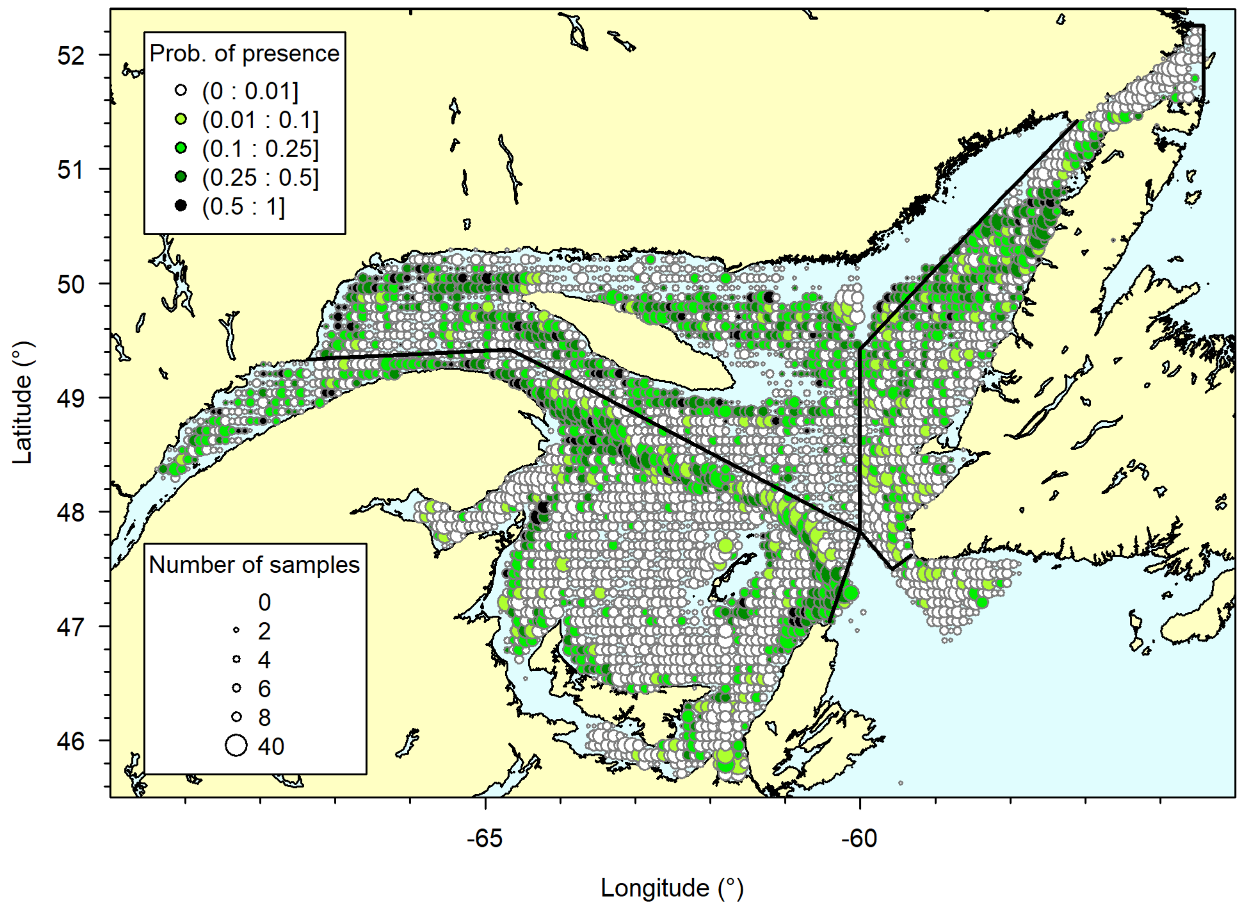

Figure 2. Probability of occurrence of Atlantic halibut in catches made during mobile gear research surveys, per 5-minute square. All available years for each survey conducted during different periods between 1985 and 2020 are considered.

The ecosystem of the GSL has undergone significant changes over the last few decades, particularly due to the warming of deep waters—where record high temperatures were observed in 2020—and the return of high redfish abundances. The temperatures observed in deeper waters are not expected to negatively impact the survival or development of Atlantic halibut, as they do not exceed the documented preferred temperatures for the species. Research on the food sources of Atlantic halibut and redfish has shown that the diet of Atlantic halibut older than three years differs from that of redfish. The impact of competition for prey between redfish and Atlantic halibut younger than three years still needs to be assessed.

Annual landings of Atlantic halibut were on the order of 600 t in the early 1960s (Figure 3). Landings then decreased to hit a record low of 91 t in 1982. Total allowable catches (TACs) were established in 1988 and were reached on only four occasions between 1988 and 2004. Since 2004, TACs have been reached every year. Annual landings reached their highest level in 60 years in 2019 and 2020, at nearly 1,400 t. Since 2017, a 50 t to 60 t allocation has been taken from the TAC and set aside under section 10 of the *Fisheries Act* to support the longline survey project and the annual tagging program conducted by DFO in partnership with industry. The remaining quota is distributed among 12 fleets in Quebec and the four Maritime provinces, including eight inshore fixed-gear fleets involved in the directed Atlantic halibut fishery. Atlantic halibut are caught as bycatch by other fleets, with the gillnet Greenland halibut fleet having the greatest impact. Over the past five years, landings of Atlantic halibut in these fisheries accounted for 3.8% of overall landings, on average, in comparison with 93.4% for the directed longline fishery for Atlantic halibut.

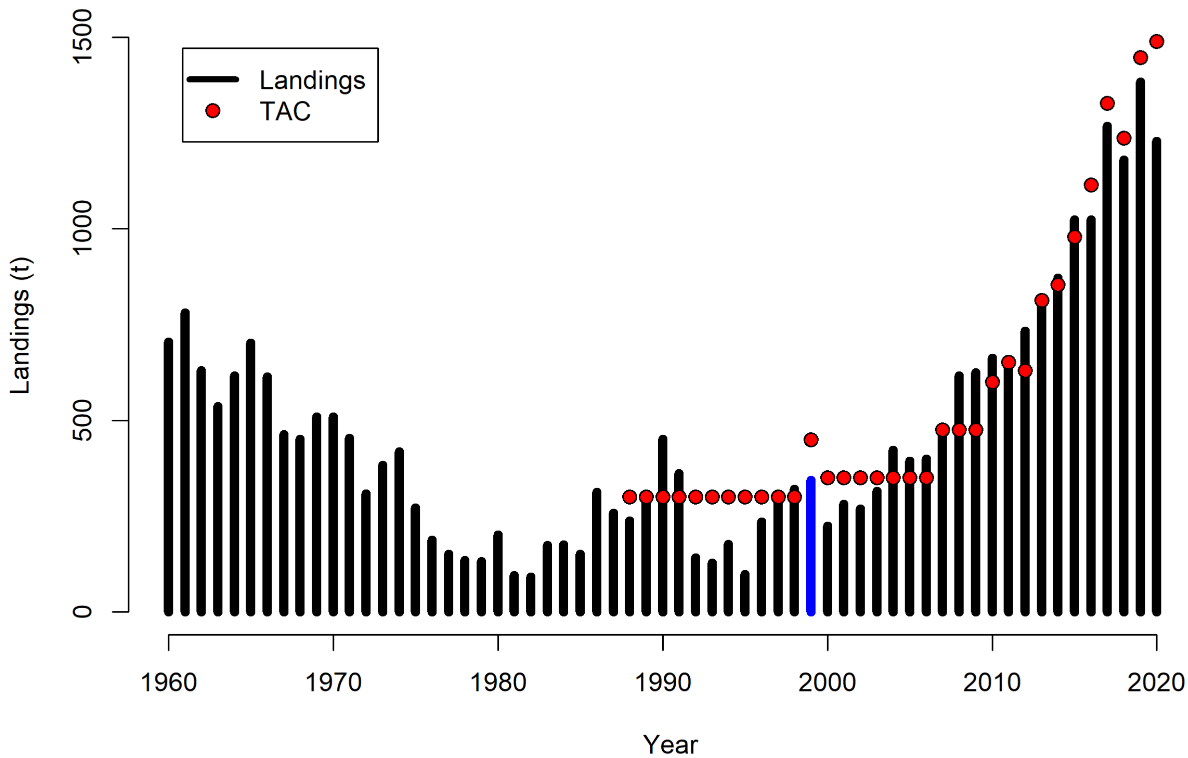

Figure 3. Atlantic halibut landings (t) and TACs (after revision) by fishery management cycle for NAFO divisions 4RST. Landings in 1999 (blue) were reported on an exceptional basis for a period of one year and 135 days due to a change in the definition of the management year. Data for 2017 to 2020 are preliminary.

A number of management measures have been implemented over the years to protect the Atlantic halibut. In 1997, a minimum legal size (MLS) of 81 cm was incorporated into the Atlantic halibut commercial fishing licence conditions. The MLS was increased to 85 cm in 2010. All Atlantic halibut smaller in size must be returned to the water. There are other existing management measures, such as a dockside commercial catch monitoring program (100%), at-sea coverage by observers (percentage varies by fleet), mandatory logbooks (except for vessels < 10.67 m in Newfoundland), predetermined fishing periods, limits on the size and maximum number of hooks allowed per line, bycatch protocols and, for large longliners in Quebec (13.71 m and over), a vessel monitoring system (VMS). A quota reconciliation program has been in effect since the 2011 fishing season. Any quota overruns in a given year under an individual quota system are counted toward the established quota for the following season(s). The carry forward of uncaught quotas of Atlantic halibut from the previous year may be authorized for up to 15% of the original quotas.

ASSESSMENT

Assessment of the Atlantic halibut stock status is based on commercial fishery data and analysis of fishery-independent research surveys. Commercial fishing data are taken from three different sources: purchase slips, fishers' daily logbooks and commercial catch samples collected at sea and dockside. Research survey data are derived from three bottom trawl surveys conducted annually between July and September and one longline survey conducted in September. Two bottom trawl surveys are conducted aboard a DFO vessel and the third by the sentinel fishery program.

Commercial Fishery

The geographic distribution of Atlantic halibut catches (Figure 4) shows that these catches were made mainly along the Esquiman, Anticosti and Laurentian channels as well as on the north side of Prince Edward Island, on the Miscou bank and around the Magdalen Islands. For some NAFO subdivisions, up to 120 t of Atlantic halibut (annual average) could not be associated with a geographic location. As a result, catches from some fleets may be entirely absent from the maps, notably along the west coast of Newfoundland.

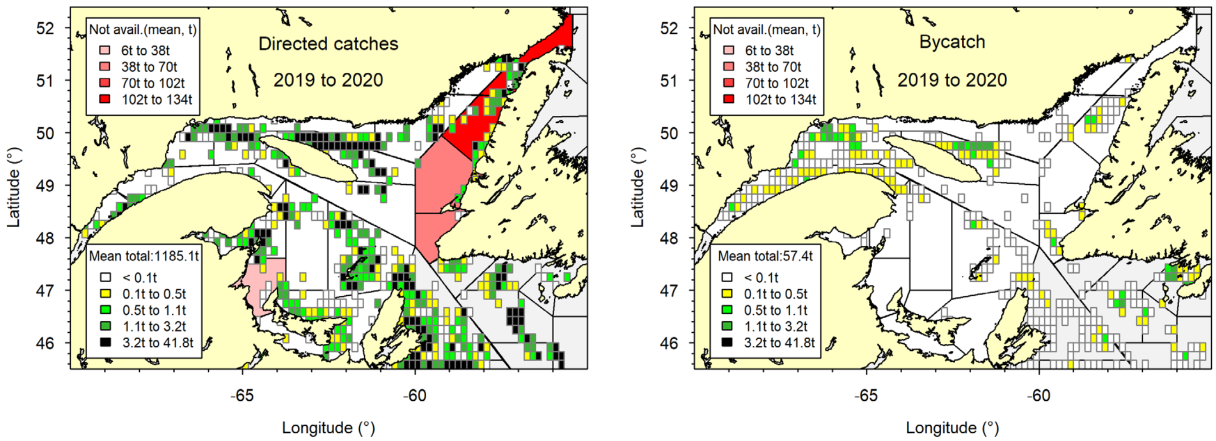

Figure 4. Spatial distribution of Atlantic halibut catches from directed fishery and by-catch per 10-minute square. Landings non-geolocated are reported to the NAFO subdivision (in red) and the average annual amount is show as Not avail. Data are preliminary.

The non-standardized catch per unit effort (CPUE) corresponds to the annual average of observed individual CPUE—that is, each individual landing divided by the effort required to obtain it. Annual standardized CPUE values are also calculated to take into account changes in the fishing season (months), differences between NAFO divisions and the size of the fishing vessels involved. Figure 5 presents the CPUE for all the NAFO divisions 4RST from 2003 to 2020. Commercial CPUE values were trending upward (from 100 kg/1,000 hooks to 560 kg/1,000 hooks) over the entire time series (2003–2020). However, variations in the quality of the effort measure (temporal and spatial) were observed, particularly in NAFO division 4R. Fishing behaviour may have changed over time, namely due to the influence of financial incentives to target smaller fish, a change in the MLS, and an increase in seal predation of hooked Atlantic halibut.

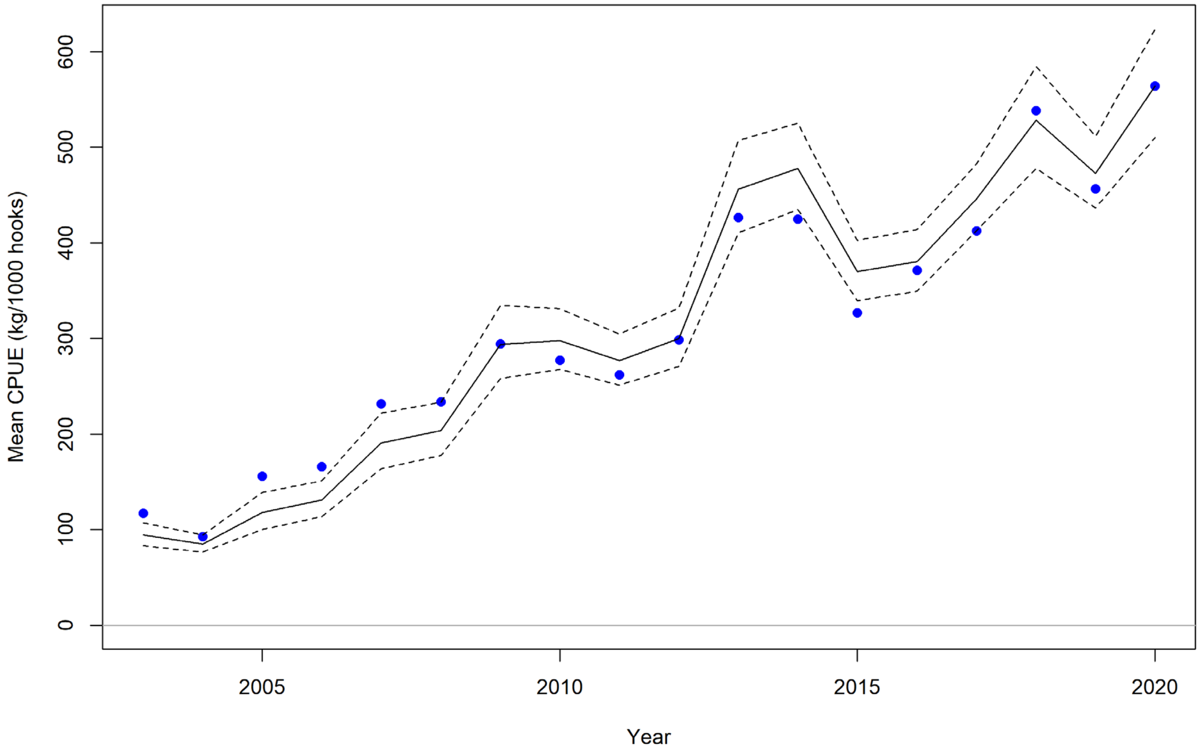

Figure 5. Catch per unit effort for the Atlantic halibut commercial longline fishery. The blue dots represent the average of the observed values (before standardization), and the solid line indicates the average predicted values after standardization. The dotted lines indicate the 95% confidence interval.

A DFO sampling program to gather biological data on Atlantic halibut landed at dockside or at the processing plant has been in place since 1990. A second sampling campaign, conducted under the observers program, is carried out at sea onboard fishing vessels and has been providing data since 1996. The information supplied by at-sea observers who monitor and record fishing activities provides greater detail than what can be obtained from fishery monitoring documents submitted by fishers. Catches of all species, whether they are kept or released, are recorded. Figure 6 shows the sizes of Atlantic halibut captured in the commercial fishery and sampled at sea and at dockside, as well as the presumed growth trajectories of five cohorts (1992, 1994, 2003, 2005 and 2011). The sizes of Atlantic halibut sampled at dockside indicate that fish smaller than the MLS in force are virtually absent from the landings.

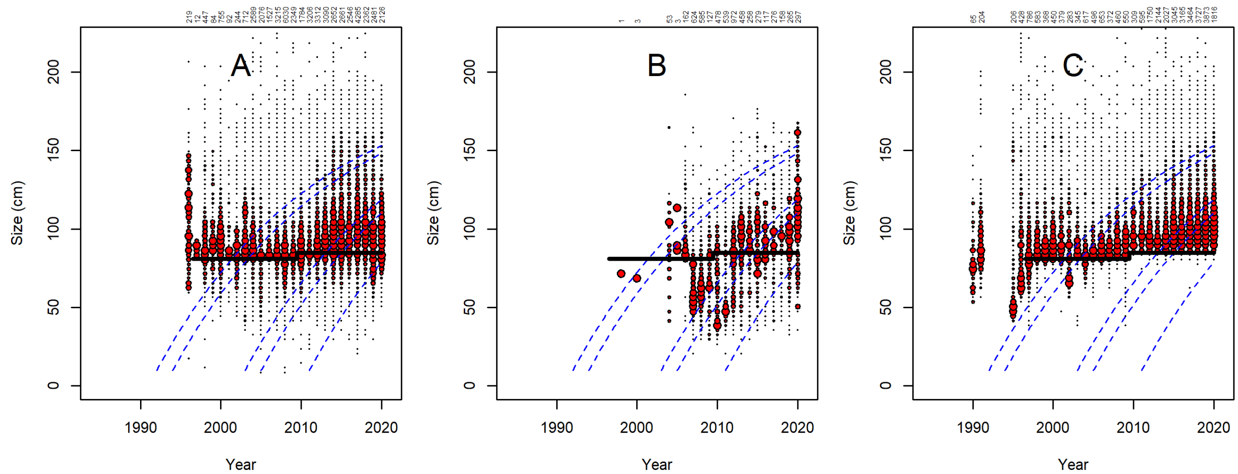

Figure 6. Distribution of Atlantic halibut size frequencies for at-sea sampling in the (A) longline and (B) gillnet fisheries as well as sampled at dockside for all fisheries (C). The diameter of each bubble is proportional to the number of individuals measured for the 3-cm size class and standardized by dividing by the number of measured individuals in the most abundant size class of the year. The total number of individuals sampled per year is indicated at the top of the graph. The dotted lines highlight the presumed trajectory of selected cohorts, and the minimum legal size in force is shown in black.

The measured size and mean estimated weight of Atlantic halibut caught with longlines have been increasing since 2005 (Figure 7). The mean weight of landed Atlantic halibut doubled between 2006 and 2020. The increase in the MLS in 2010 may have contributed to this rise by encouraging fishers to operate in areas frequented by larger Atlantic halibut. In addition to changes in fishing behaviour, a low exploitation rate allowing a greater number of Atlantic halibut to attain larger sizes could also account for this observation.

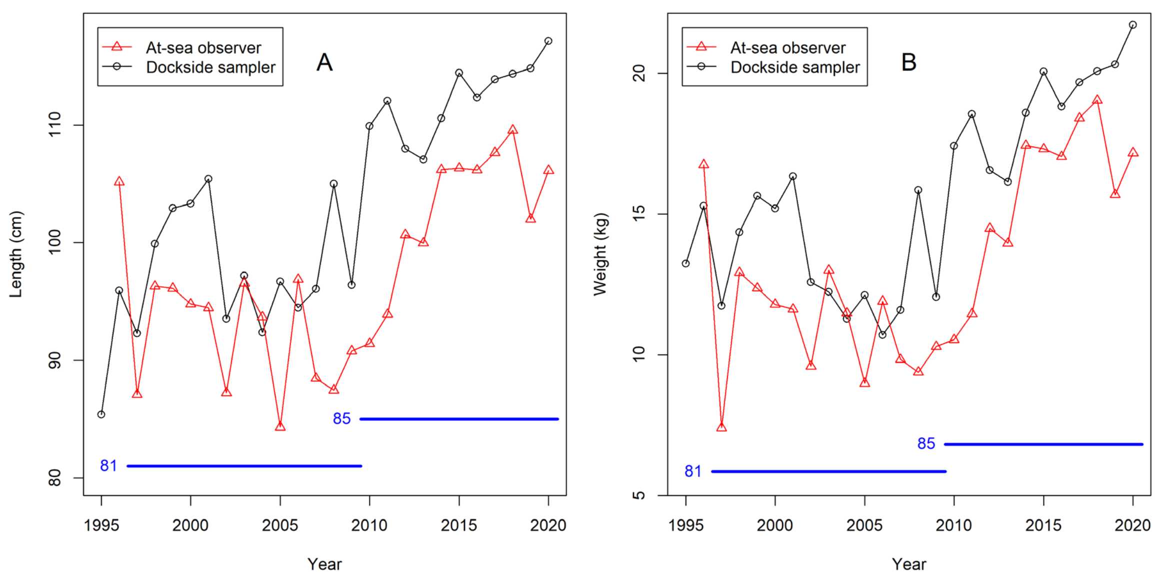

Figure 7. Mean size (A) of Atlantic halibut from the commercial longline fishery measured by at-sea observers and dockside samplers, from which mean weight is estimated (B). Periods with a different minimum legal size are indicated by a blue dash and labelled with the current value.

Research trawl surveys

The Atlantic halibut catch rates derived from the three research trawl surveys are disaggregated by size class in Figures 8 and 9. The size classes used make it possible to differentiate the fishable component (> 85 cm) from short-term recruitment (65–85 cm). In 2020, the fishable biomass of Atlantic halibut reached one of the highest values ever observed in each of the three surveys (Figure 8). In the northern GSL (nGSL), values for short-term recruitment (65–85 cm) measured by two of the surveys were, in 2020, among the lowest observed in the past 15 years. However, they are considerably higher than the values seen in the 1990–2003 period (Figure 9A and 9C). In the southern GSL (sGSL), recruitment was at the highest level observed in the last 35 years of available data (Figure 9B). For all of the surveys, the large confidence intervals around the catch rates would usually prevent variations in these abundance indicators from being considered significant. However, the consistency among the various surveys suggests that the increase in catch rates over the past 15 years is not a sampling artifact and instead reflects an increase in the abundance of the size classes monitored.

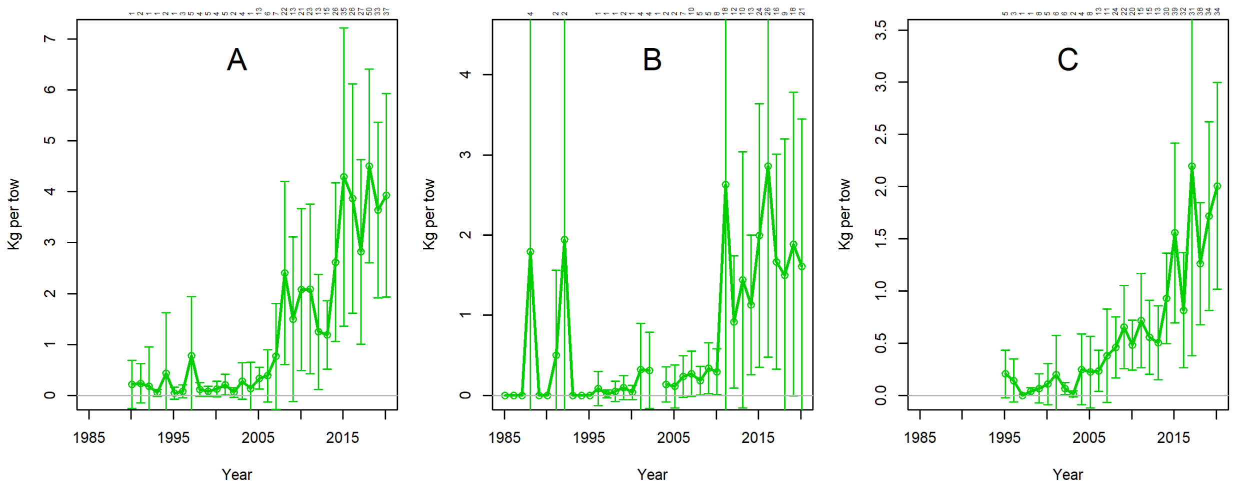

Figure 8. Average weight of Atlantic halibut per tow measuring larger than 85 cm in 3 fishery-independent trawl surveys: DFO research surveys in the nGSL (A) and sGSL (B) and the sentinel fishery program survey in the nGSL (C). The 95% confidence intervals are shown. The total number of individuals sampled per year is indicated at the top of the graph.

The size of the Atlantic halibut captured by two of the DFO surveys carried out in the nGSL and sGSL, as well as the sentinel fisheries program survey in the nGSL, consistently suggest the presence of cohorts of variable strength (Figure 10). The presumed growth trajectory of some cohorts indicated an average length increase of about 8.5 cm per year until recruitment to the fishery (85 cm) at approximately 10 years of age.

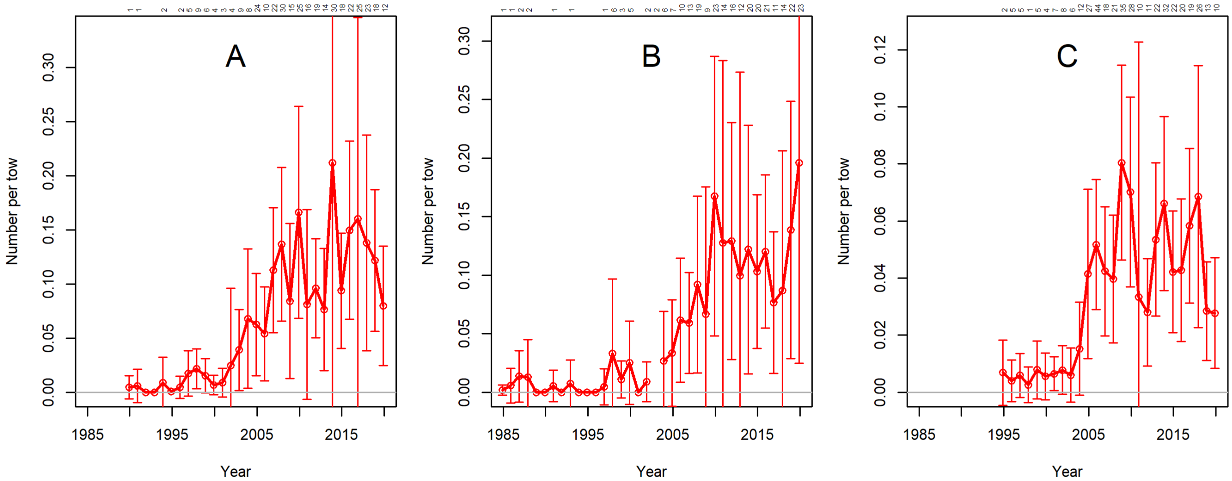

Figure 9. Average number of fish taken per tow measuring 65–85 cm as observed in 3 fishery-independent surveys: DFO research surveys in the nGSL (A) and sGSL (B) and the sentinel fishery program survey in the nGSL (C). The 95% confidence intervals are shown. The total number of individuals sampled per year is indicated at the top of the graph.

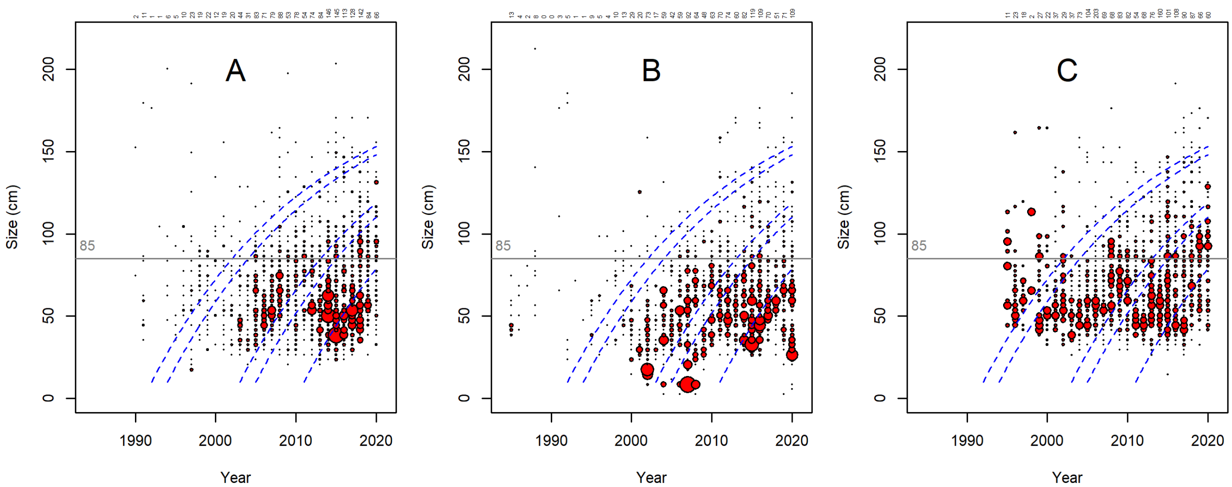

Figure 10. Atlantic halibut size frequency distributions for the trawl surveys conducted by DFO in the nGSL (A) and sGSL (B) and by the mobile gear sentinel fishery program in the nGSL (C). The diameter of each bubble is proportional to the number of individuals caught per 3-cm size class (A and B) and standardized by dividing by the number of measured individuals in the most abundant size class of the year (C). The dotted lines highlight the presumed trajectory of selected cohorts, and the minimum legal size in effect in 2020, 85 cm, is shown in grey. The total number of individuals sampled per year is indicated at the top of the graph.

A relative exploitation rate is calculated by dividing observed landings by minimum trawlable biomass estimates for the fishable component, which are calculated based on data from DFO trawl surveys. The nGSL and sGSL surveys overlap over 3% of the total area covered. Figure 11A illustrates the contribution from the northern, southern and common components of both surveys. The average relative exploitation rate for the last 13 years is 0.066 (Figure 11B).

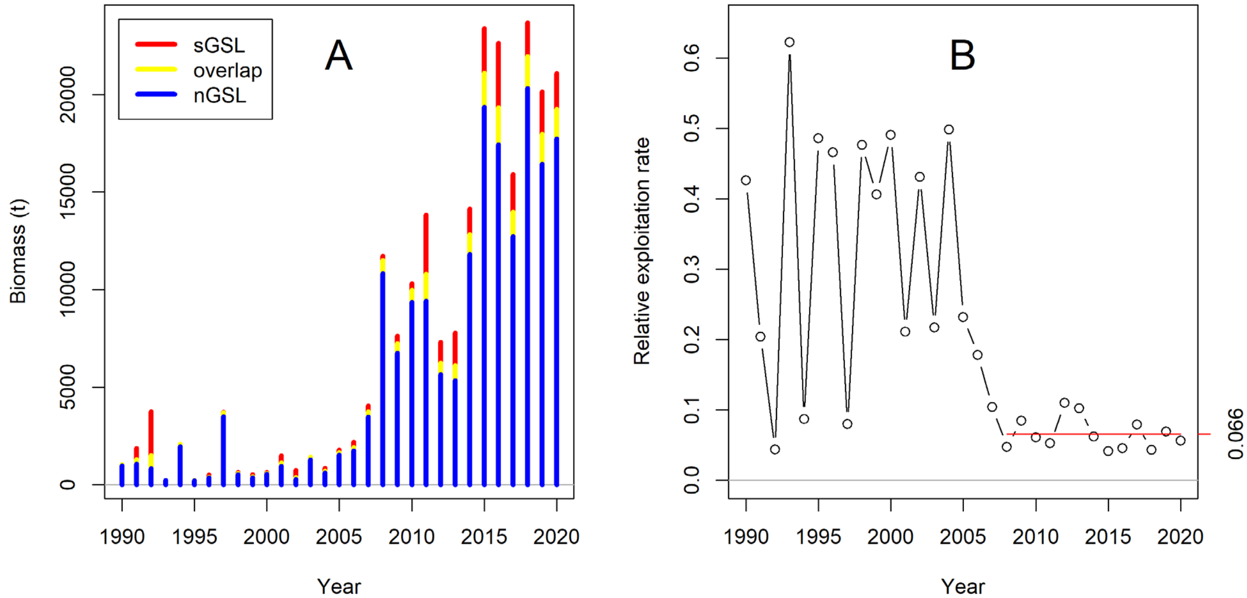

Figure 11. Minimum trawlable biomass for the fishable component as estimated by DFO trawl surveys (A) and corresponding relative exploitation rates (B). The biomass is described in terms of the contribution from the area covered by both surveys and the areas specific to each survey. The average relative exploitation rate for the last 13 years is represented by the horizontal red line.

Longline research survey and tagging project

Since 2017, a longline survey targeted at Atlantic halibut has been conducted through a collaboration between DFO and six fishing associations from four provinces in eastern Canada. The survey samples 120 stations annually across the area occupied by Atlantic halibut in NAFO divisions 4RST and has enabled the tagging and release of 2,518 Atlantic halibut. However, the short time series of four years (Figure 12) does not permit trends in catch rates to be analyzed or corresponding variations in spawning biomass to be inferred. Commercial fishers have reported their catches of tagged Atlantic halibut (recaptures) to DFO, and the information submitted (catch date, position, size, etc.) was added into DFO databases. The preliminary analysis of these data has given rise to estimates of instantaneous rates of fishing mortality of less than 0.041 per year from 2018 to 2020, based on various tag return rate scenarios and post-tagging survival rates (Table 1). However, considering the low absolute number of recaptures reported and the short historical perspective, interpretation of the results calls for caution, as demonstrated by the unrealistic estimate of natural mortality rates. For the purposes of the preliminary analysis, an instantaneous natural mortality of 0.15 (as used to model the Atlantic halibut stock in NAFO divisions 3NOPs4VWX5Zc) was applied to the model.

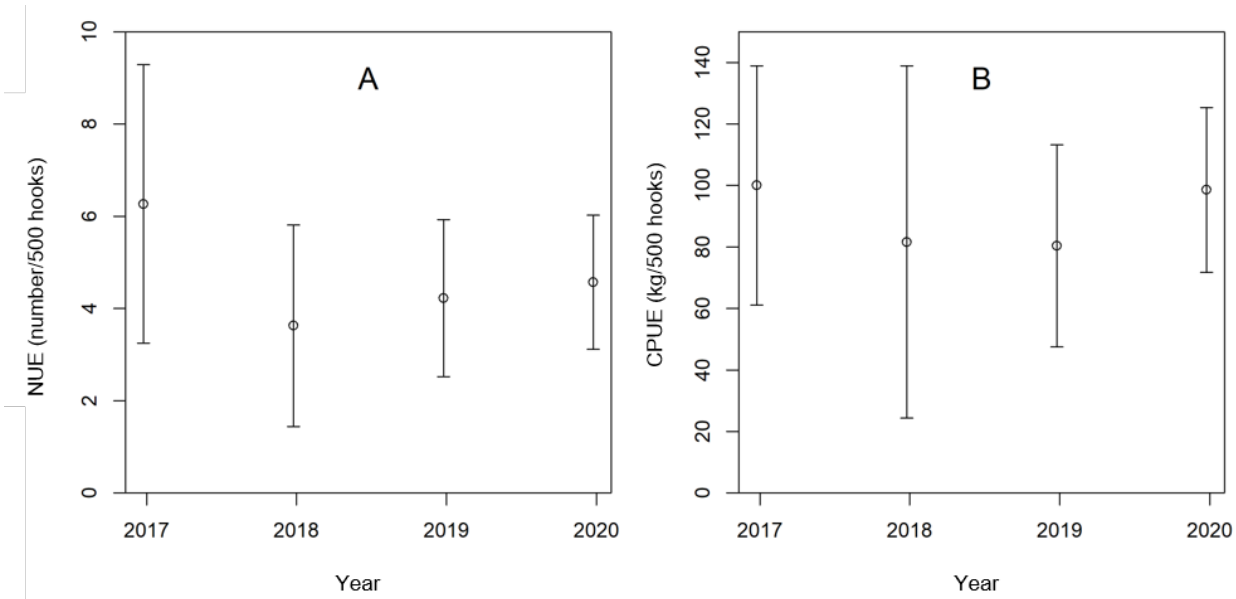

Figure 12. Stratified random mean of yields by number (A) and weight (B) of Atlantic halibut > 85 cm in the scientific longline surveys.

Table 1. Instantaneous fishing mortality (F) estimated annually by fitting a recapture model of tagged Atlantic halibut. A range of values for the tag return rate (TR) and the post-tagging survival rate (PTS) were used in the model. Natural mortality (M) is set at 0.15.

Model	M	F 2018	F 2019	F 2020
TR=0.5; PTS=0.9	0.15	0.041	0.034	0.041
TR=0.5; PTS=1	0.15	0.037	0.030	0.037
TR=0.6; PTS=0.9	0.15	0.034	0.028	0.034
TR=0.6; PTS=1	0.15	0.031	0.025	0.031
TR=0.7; PTS=0.9	0.15	0.029	0.024	0.029
TR=0.7; PTS=1	0.15	0.026	0.021	0.026
TR=0.8; PTS=0.9	0.15	0.025	0.021	0.025
TR=0.8; PTS=1	0.15	0.023	0.018	0.023
TR=0.9; PTS=0.9	0.15	0.022	0.018	0.023
TR=0.9; PTS=1	0.15	0.020	0.016	0.020

Limit Reference Point

The implementation of the precautionary approach requires, among other things, the identification of a limit reference point (LRP) and tools to determine the stock status in relation to the LRP. Two approaches developed to satisfy these requirements were presented at the stock assessment meeting on the Gulf of St. Lawrence (4RST) Atlantic halibut. The first approach identifies an empirical LRP value on the basis of the average catch rate of the DFO trawl surveys in the nGSL and the sGSL. The second approach fits a surplus production model to commercial fishery yields and to the catch rates of the DFO trawl surveys in the nGSL and the sGSL. Meeting participants mentioned the existence (current or imminent) of data that would allow other approaches to be considered, such as updated growth curves and catch-at-age estimates for commercial fisheries. No limit reference point was identified at the end of the meeting, and other approaches will be explored over the next two years.

Sources of Uncertainty

Spawning biomass levels and trends are poorly documented. Traditional sources of data on this stock are the commercial fishery and fishery-independent trawl surveys, which are known to be poorly selective for mature Atlantic halibut or biased toward smaller individuals. The longline survey and tagging project established in 2017 are aimed at addressing this gap by providing an indicator that is unbiased, size-selective and unaffected by the spatial distribution of Atlantic halibut. However, the short four-year time series of results is insufficient for conclusions to be drawn on the basis of catch rate levels and trends.

In NAFO division 4R, the fishing effort associated with a catch and the position of that catch is less well documented than in other areas. At-sea observer and dockside sampling coverage is also close to nonexistent, whereas this information is collected in divisions 4S and 4T. Regional disparities in the availability of this information can lead to bias in the interpretation of results and in the catch per unit effort calculated for the commercial fishery. Moreover, the volume of recent data available at the time of the assessment varies from one year to the next, as the fishing season and data entry are not yet complete at the time of the peer review.

CONCLUSION

There is a moderate evidende and high consistency among sources of evidence that the stock status is currently at a record high level. Commercial CPUE trends and trends for the > 85 cm class size that were observed in three fishery-independent surveys support this conclusion. However, the commercial CPUE is known to vary non-linearly with resource abundance and is subject to hyperstability, while fishery-independent trawl surveys are non-selective for large size classes. The number of catches in the trawl surveys remains low, and indicator values, subject to great uncertainty, may have wide interannual variations which are unlikely to correspond to significant changes in Atlantic halibut abundance. Despite these variations, the trends of the three surveys are generally very consistent. Together, these surveys sampled the bulk of NAFO divisions 4RST. All of these factors suggest that the quality of this evidence should be classified as “moderate.”

There is robust evidence and high consistency among sources of evidence that recruitment to the fishery remains high. The three fishery-independent bottom trawl surveys show high abundance values for Atlantic halibut in the 65–85 cm size class over the last 15 years. Survey selectivity for this class size is better than it is for larger individuals. Although catch numbers are low, they are high compared to the average of two Atlantic halibut captured per survey each year from 1985 to 2003. All of these factors suggest that the quality of this evidence should be classified as “robust.”

There is limited evidence and high consistency among sources of evidence that the exploitation rate has generally remained below the rate of biomass increase throughout the last 10 years, which would explain the increase in biomass of Atlantic halibut > 85 cm. However, the exploitation rates estimated using data from the mark-recapture project were calculated based on a low number of tagging years (three), and parameters from other, similar projects had to be used to avoid generating erratic results. The estimated relative exploitation rate, obtained by dividing catches by the minimum trawlable biomass of the fishable component, is derived from trawl surveys that are non-selective for this size class and for which the number of catches remains low and variable. All of these factors suggest that the quality of this evidence should be classified as “limited.”

It is unlikely that maintaining current harvest levels will result in a decline in stock status. The results of this assessment do not allow the identification of a removal threshold, beyond which a decline in biomass becomes likely.

As there is no stock assessment model, it was not possible to project a biomass level for 2021 and 2022. A high level of recruitment, low fishing mortality rates and harvesting activities that have promoted biomass accumulation suggest that upward trends could continue. However, abundance indicators for the fishable component are at or near historical highs. Although it is possible that the stock abundance was higher in the distant past (prior to 1960), we cannot rule out the hypothesis that the stock has reached the carrying capacity of the habitat, which would slow down or stop the increase in indicators. Thus, although it seems unlikely that current harvest levels will result in a decline of stock status, it is not possible to identify a harvest threshold above which a decrease in biomass becomes likely.

LIST OF MEETING PARTICIPANTS

Name	Affiliation	March 16	March 17
Bélanger, Michel	MAPAQ	x	x
Belghith, Khaled	UQAR	x	x
Benoit, Hugues	DFO - Science	x	x
Bermingham, Tom	DFO - Science	x	x
Bernier, Denis	DFO - Science	x	-
Bois, Samantha	ACPG	x	x
Boudreau, Mathieu	DFO - Science	x	x
Boulanger, Marie-Pier	ISMER/UQAR	x	-
Bourbonnière, Jean-Patrick	DFO - Science	x	x
Bourdages, Hugo	DFO - Science	x	x
Brassard, Claude	DFO - Science	x	x
Cantin, Guy	DFO - Science	x	x
Carruthers, Erin	FFAW	x	x
Chabot, Denis	DFO - Science	x	x
Chlebak, Ryan	DFO - Science	x	x
Cyr, Charley	DFO - Science	x	x
Denis, Marcel	ACPG	x	x
Desgagnés, Mathieu	DFO - Science	x	x
Dubé, Sonia	DFO - Science	x	x
Dufresne, Christiane	UQAR	x	-
Dumont, Dany	UQAR	x	x
Duplisea, Daniel	DFO - Science	x	x
Dwyer, Shelley	MPO - Fisheries Management - NL	x	x
Fisher, Jon	FMI – Memorial University of Newfoundland	x	x
Ferguson, Louis	Union des pêcheurs des Maritimes	x	x
Fronton, Fanny	INRS	x	-
Gatti, Paul	FMI – Memorial University of Newfoundland	x	-
Gauthier, Charlotte	UQAR	x	x
Giffin, Melanie	Prince Edward Island Fishermen's Assoc.	x	x
Hardy, Magalie	DFO - Fisheries Management - Quebec	x	x
Karbowski, Chelsey	Oceans North	x	-
Knickle, Craig	MCPEI	x	x
Langelier, Serge	AMIK	x	-
Lapierre, Daniel	DFO – Fisheries Management - Gulf	x	x
Laurie, Isabel	DFO - Science	x	-

Name	Affiliation	March 16	March 17
Le Bris, Arnaud	FMI – Memorial University of Newfoundland	x	-
Loboda, Sarah	DFO - Science	x	-
Loomis, Way	FFAW	x	x
Lussier, Jean-François	DFO - Science	x	x
MacDonald, Michael	Prince Edward Island Fishermen's Assoc.	x	-
MacMillan, Robert	PEI Department of Fisheries and Communities	x	x
Mugridge, Adam	Government of Nova Scotia	x	x
Nadeau, Paul	APBCN	x	-
Ouellette-Plante, Jordan	DFO - Science	x	-
Palais, Elodie	UQAR	x	x
Paquet, Frédéric	DFO - Science	x	x
Pelletier, Claude	DAAF-NB	x	x
Pomerleau, Corinne	DFO - Science	x	-
Pond, Nancy	DFO – Fisheries Management - NL	x	x
Robert, Dominique	UQAR	x	x
Roux, Marie-Julie	DFO - Science	x	-
Sainte-Marie, Bernard	DFO - Science	x	x
Sandt-Duguay, Emmanuel	AGHAMM	x	-
Senay, Caroline	DFO - Science	x	x
Simard, Émilie	DFO - Science	x	x
Spingle, Jason	FFAW	x	x
Tilley, Anna	Government of NL	x	x
Van Beveran, Elisabeth	DFO - Science	x	x
Vascotto, Kris	AGC	x	x

SOURCES OF INFORMATION

This Science Advisory Report is from the March 16-17, 2021 Regional Advisory Meeting on the Assessment of the Gulf of St. Lawrence (4RST) Atlantic halibut. Additional publications from this meeting will be posted on the Fisheries and Oceans Canada (DFO) Science Advisory Schedule as they become available.

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Institut Maurice-Lamontagne
850 route de la mer
Mont-Joli (Québec)
G5H 3Z4

Telephone: 418-775-0825
E-Mail: bras@dfo-mpo.gc.ca
Internet address: www.dfo-mpo.gc.ca/csas-sccs/

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