This study focuses on the limitations that seasonal sea ice in Hudson Bay imposes on navigable access to the Port of Churchill. By correcting climate model biases and introducing a novel path-finding approach that requires continuous navigable routes, it provides a relatively detailed projection of future shipping navigable periods. The navigability of Type E vessels is evaluated under two criteria. While the study has certain value in terms of methodological improvements and scenario analysis, several issues still require clarification or improvement.

Major comments:

1. The goal of the paper is to evaluate different navigability assessment methods and simulation bias-correction methods. Therefore, the authors should more clearly and objectively quantify the degree of improvement that different methods bring to the results. Although Figs. 8 and 9 provide information, it is very difficult to precisely read the NP values for specific years or specific warming levels and the differences among methods from the figures. I would suggest the addition of a quantitative table to present the results more clearly and objectively. For example, in the historical period, which method or combination of methods yields NP closest to observations? By how much is the multi-model ensemble bias reduced? What are the projected results of each method?
   Thank you for this great suggestion. We agree that a quantitative comparison is important for objectively evaluating the differences among the navigability assessment and bias-correction methods. To address this concern, we have added Tables 2 and 3, which provide the specific NP values from Fig. 8 and 9, respectively. We also revised the manuscript as follows.

Table 2. Median navigable period (in days) for type E vessel under different global surface air temperature (GSAT) anomaly levels and SSP5-8.5 across the ice-free and low-risk conditions for the Labrador Sea and Chesterfield Inlet routes.

GSAT anomaly (°C)	Ice-free		Low-risk	
	Labrador Sea	Chesterfield Inlet	Labrador Sea	Chesterfield Inlet
1.00–1.50	128	139	157	157
1.50–2.00	147	154	175	173
2.00–2.50	162	165	193	187
2.50–3.00	177	177	206	202
3.00–3.50	192	194	222	218
3.50–4.00	215	207	246	237
4.00–4.50	236	226	270	263
4.50–5.00	265	246	304	284

Line 462: Table 2 summarizes how the median NP varies with increasing GSAT anomalies for the ice-free and low-risk definitions along the Labrador Sea and Chesterfield Inlet routes. Overall, the rate of lengthening NP with continued warming varies from 42 d °C−1 for the low-risk definition and Labrador Sea route to 31 d °C−1 for the ice-free definition and Chesterfield Inlet route. The sensitivity increases above a GSAT anomaly of 3.5 °C, with average rates of approximately 27–33 d °C−1 below 3.5 °C compared with approximately 35–55 d °C−1 above 3.5 °C, depending on route and definition.

Table 3. Projected navigable period (in days) over time for type E vessel under SSP5-8.5 across the ice-free and low-risk conditions for the Labrador Sea and Chesterfield Inlet routes using two bias correction methods.

Year	Delta Shift				Weighted Average			
	Ice-free		Low-risk		Ice-free		Low-risk	
	Labrador Sea	Chesterfield Inlet	Labrador Sea	Chesterfield Inlet	Labrador Sea	Chesterfield Inlet	Labrador Sea	Chesterfield Inlet
2020	123	140	151	159	152	173	161	181
2030	138	147	168	167	153	182	170	190
2040	143	156	173	174	164	185	178	195
2050	164	171	194	192	177	200	192	212
2060	178	181	209	203	194	212	207	222
2070	196	193	228	219	206	218	219	229
2080	221	211	257	242	234	240	250	256
2090	239	230	281	267	268	268	294	290
2099	279	267	307	292	309	291	332	317

Line 502: Table 3 summarizes the projected navigable period (in days) over time under SSP5-8.5 for the ice-free and low-risk conditions along the Labrador Sea and Chesterfield Inlet routes using two bias correction methods. Collectively, these results show that both correction methods broadly capture the long-term increase in NP, although their projected values diverge substantially in some years, particularly in several late-century projections and for the ice-free definition. The discrepancies range from approximately 2 to 38 days (about 1–24%, depending on method, route, and year), highlighting the sensitivity of NP projections to the choice of bias correction method.

2. 2.3: "shipping routes were represented as a 200 km-wide zone". A 200 km resolution is overly coarse, and the choice of this width lacks sufficient justification. Many CMIP6 models have resolutions around 100 km. The 200 km choice sacrifices specific precision, though it remains meaningful for regional accessibility. I would suggest that the models should first be interpolated to a uniform resolution (e.g., the same 25 km as the observations) before calculations are performed, and that the sensitivity of the results to resolution be examined. Thank you for this comment. We agree that the width of the shipping zone and the differences in spatial resolution among CMIP6 models require clarification. We note first that the 200-km width refers to the width of the geographic assessment zone, rather than a 200-km model resolution. The purpose of using a finite-width zone is to represent shipping accessibility at a regional scale rather than constrain navigability to a single prescribed track. This width-based approach allows for spatial variability in potential navigable pathways in the region depending on ice conditions while providing a consistent framework for comparison across models with different spatial resolutions and grid structures. We clarified this in the revised manuscript.

   Line 167: In this study, shipping routes were represented as a 200 km-wide zone (Figure 1). This buffer was selected to represent regional-scale shipping accessibility rather than a single prescribed track, thereby allowing for spatial variability in potential navigable pathways in the region depending on ice conditions while providing a consistent framework for comparison across models with different spatial resolutions and grid structures.

   Also, please see the response to the next comment for further details regarding the interpolation and the concern about spatial resolution.

3. When the authors apply sea-ice data from different models to the same 200 km-wide shipping zone for assessment, do they first interpolate all model data onto a uniform spatial grid? If no uniform interpolation is performed, then a considerable portion of the inter-model differences shown in Figs. 5–7 may arise from differences in model spatial resolution. For example, lower-resolution models may be unable to resolve the narrow islands and channels in Hudson Strait, thereby systematically overestimating navigability.
   Thank you for your comment -- this is an important point. Lower-resolution models may not adequately resolve complex coastlines features and could therefore produce systematically different estimates of sea ice conditions and in turn navigability.

   No, we did not interpolate or re-grid all model data onto a common spatial grid. The primary reason is that re-gridding the data to a common resolution would not necessarily eliminate the underlying differences in spatial representation among the models. In other words, interpolation to a common grid cannot recover sub-grid scale geographic features that are unresolved in the original model. For example, if a model does not resolve the narrow channels or islands in Hudson Strait, then when the model's sea ice component is running, there will be no impact of those islands on sea ice dynamics. Post-hoc interpolation of the model's output to a finer common grid will not restore those physical limitations. Additionally, interpolation could potentially give a misleading impression of spatial consistency.

   Instead, we retained each model's original spatial resolution and evaluated the sea ice conditions within the same geographic shipping zone. This approach preserves the information as represented by each model and avoids introducing an additional interpolation step that could alter the original sea ice fields or introduce artifacts. We acknowledge that this means the inter-model differences reflect not only differences in the simulated sea ice conditions and model physics, but also differences in model spatial resolution and the associated representation of coastlines, islands, and narrow channels.

   We have clarified this point in the revised manuscript and now explicitly acknowledge spatial resolution as an additional source of uncertainty when interpreting the inter-model differences.

   Caption Fig 1 added this: (100 km on either side of the route).

   Line 161: It should be noted that, to preserve the native spatial characteristics of each model and avoid potential artifacts introduced by interpolation, all data were evaluated at their original model resolutions. Consequently, differences among the models may partly reflect variations in spatial resolution and in their representation of complex features, such as narrow channels and coastal areas.

   Also, in Supplementary Table S1, we added another column to this table for "# Grid cells" and revised the caption: Summary of CMIP6 models used in this study, including the modeling center, country of origin, horizontal spatial resolution, and the number of grid cells covering the 200-km-wide route buffer for each model. For OSISAF and PIOMAS, the corresponding number of grid cells are 605 and 313, respectively.

Additionally, for the historical period (1979–2013) for Churchill-Labrado Sea route, we assessed the sensitivity of NP bias (defined as CMIP6 - PIOMAS) to differences in model spatial resolution (please see the figure below). We found no clear relationship between spatial resolution and NP bias. Models with similar spatial resolutions exhibited substantially different biases, indicating that spatial resolution alone does not explain the inter-model differences in estimated NP. This is consistent with previous results by Crawford et al. (2023; see Section 5.5 and Fig. S7).

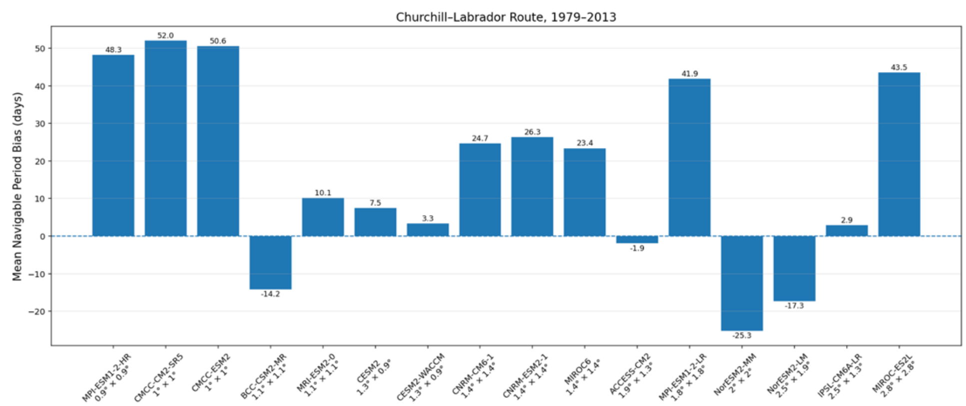


Table S1. Summary of CMIP6 models used in this study, including the modeling center, country of origin, horizontal spatial resolution, and the number of grid cells covering the 200-km-wide route buffer for each model. For OSISAF and PIOMAS, the corresponding number of grid cells are 605 and 313, respectively.

Model	Country	Resolution	# of Grid cells
ACCESS-CM2	Australia	1.9°×1.3°	149
BCC-CSM2-MR	China	1.1°×1.1°	73
CESM2	USA	1.3°×0.9°	176
CESM2-WACCM	USA	1.3°×0.9°	176
CMCC-CM2-SR5	Italy	1°×1°	184
CMCC-ESM2	Italy	1°×1°	184
CNRM-CM6-1	France	1.4°×1.4°	184
CNRM-ESM2-1	France	1.4°×1.4°	184
IPSL-CM6A-LR	France	2.5°×1.3°	184
MIROC-ES2L	Japan	2.8°×2.8°	116
MIROC6	Japan	1.4°×1.4°	116
MPI-ESM1-2-HR	Germany	0.9°×0.9°	467
MPI-ESM1-2-LR	Germany	1.8°×1.8°	206
MRI-ESM2-0	Japan	1.1°×1.1°	142
NorESM2-LM	Norway	2.5°×1.9°	251
NorESM2-MM	Norway	2°×2°	251

4. Type E (pleasure craft) vessels are selected as the assessment object. Type E vessels are defined as "non-ice-strengthened" in the POLARIS system. Are Type E vessels the main vessel type currently or in the future operating at the Port of Churchill? Using the Type E vessels as the baseline will systematically underestimate future navigable periods. It is recommended that the authors investigate the main vessel types operating at the port before conducting the assessment, and/or add discussion to clearly state the rationale and limitations of adopting Type E vessels. Thank you for raising this important point. We agree that the selection of Type E (Pleasure Craft) vessels requires further clarification.

   Type E vessels are indeed the dominant commercial vessel class currently operating at the Port of Churchill during its limited summer operating period. They were selected as a conservative baseline representing ice-free accessibility. The objective is to characterize the period during which the route can be accessed by standard open-water, non-ice-strengthened vessels, rather than to estimate the maximum navigable period achievable by ice-strengthened vessels. (And as shown below, some vessels can already operate year-round along this route under present-day conditions.)

   This distinction is important from an operational and economic perspective. Standard open-water vessels generally have lower construction, operating, and insurance costs than ice-strengthened vessels (Solakivi et al., 2018) found that higher ice-class vessels can involve substantially higher capital and fuel costs and reduced cargo-carrying capacity. Polar Class vessels can cost up to approximately three times as much to build and may carry approximately 20% less cargo than comparable reference vessels. Consequently, although ice-strengthened vessels can operate under more severe ice conditions and therefore have longer navigable periods, their use does not necessarily represent the most economically attractive option for seasonal transportation of commodities such as agricultural products and minerals.

   We also acknowledge the reviewer's point that using Type E vessels will result in a more conservative estimate of the navigable period than would be obtained for ice-strengthened commercial vessels. This should therefore not be interpreted as an estimate of the full commercial shipping season or the maximum future navigability of the Port of Churchill. Rather, it represents the potential accessibility period for economically attractive open-water shipping under ice-free conditions. We have clarified this point in the revised manuscript.

   Line 210: It is noted that Type E vessels are the primary focus of this study as they represent the dominant commercial vessel class currently operating at the Port of Churchill during its short summer season, serving as a conservative baseline for open-water accessibility. Standard non-ice-strengthened vessels generally have lower construction, operating, and insurance costs than ice-strengthened vessels, making them more economically attractive for seasonal shipping (Solakivi et al., 2018). Accordingly, the use of Type E vessels provides a conservative estimate of economically accessible shipping conditions; longer navigable periods are achievable by ice-strengthened vessels (see Section 3.5).

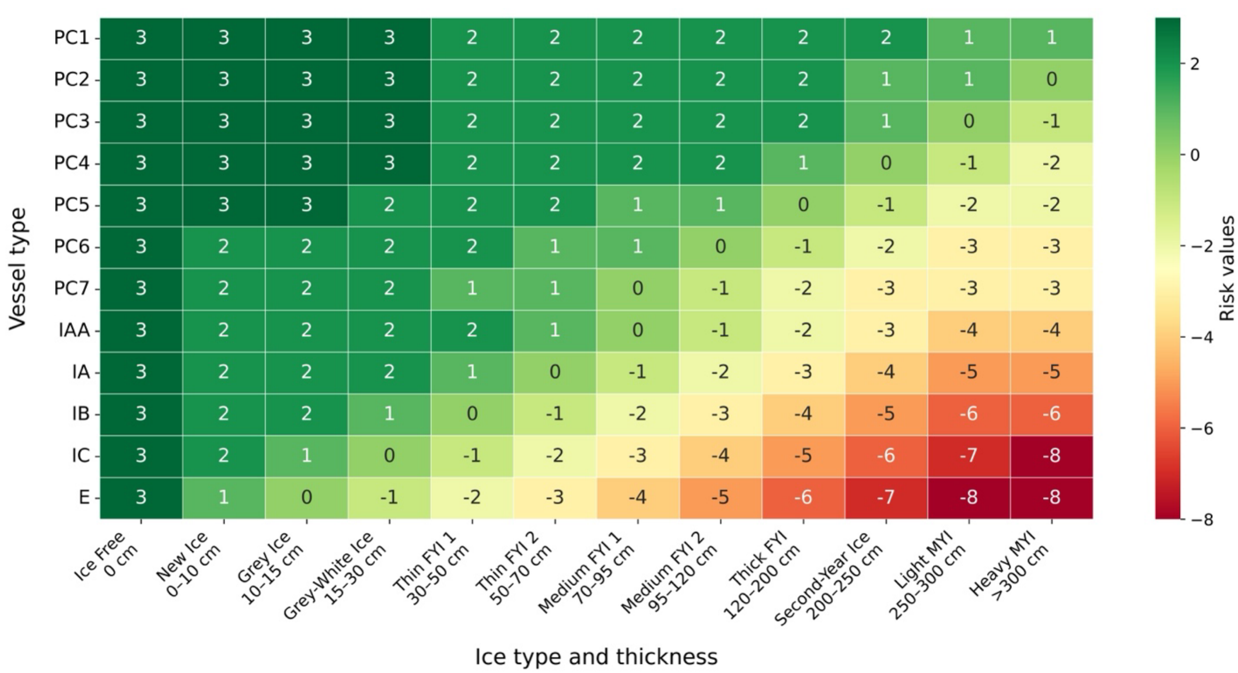
Additionally, based on your comment, we have updated Figure 2 panel (a) and included more vessel types. We have also added results for different vessel types in Section 3.5, along with a new Figure 9.

Section 3.5 Navigable Period for Different Vessel Types:

Figure 9 examines how different vessel types affect the NP under historical period (1979–2013; panel a) and future warming levels (panel b) for the Labrador Sea route using the low-risk method.

In panel (a), the CMIP6 multi-model mean NP increases from 158 days for Type E vessels to 225 days for Type IAA vessel, compared with the corresponding PIOMAS means of 140 and 191 days, respectively. The more ice-capable polar classes exhibit substantially longer navigable periods, with PC6 and PC5 reaching 258 and 351 days, respectively, compared with the corresponding PIOMAS means of 218 and 338 days. These results demonstrate that vessel ice capability is an important determinant of historical route accessibility and that the Type E results represent a conservative lower bound on navigability rather than conditions representative of all vessel types.

In panel (b), the NP under the delta-shift bias-corrected CMIP6 multi-model mean for SSP5-8.5 generally increases with GSAT anomaly across all vessel types, although the magnitude of the response varies substantially by vessel type. The least ice-capable Type E vessels show a pronounced increase in NP, from approximately 160 days at 1.0–1.5°C warming to more than 300 days at 4.5–5.0°C, indicating a transition toward near year-round accessibility under high-end warming. Intermediate vessel classes (IA, IAA, IB, and IC) also exhibit progressively longer NPs, while the more ice-capable PC classes maintain substantially longer navigation windows throughout the warming level, with PC5 remaining close to year-round accessibility. Vessel types with greater ice capability than PC5 (PC4 to PC1) reach year-round accessibility and are therefore not shown here. Nevertheless, Type E vessels do not achieve continuous navigability under the high-end



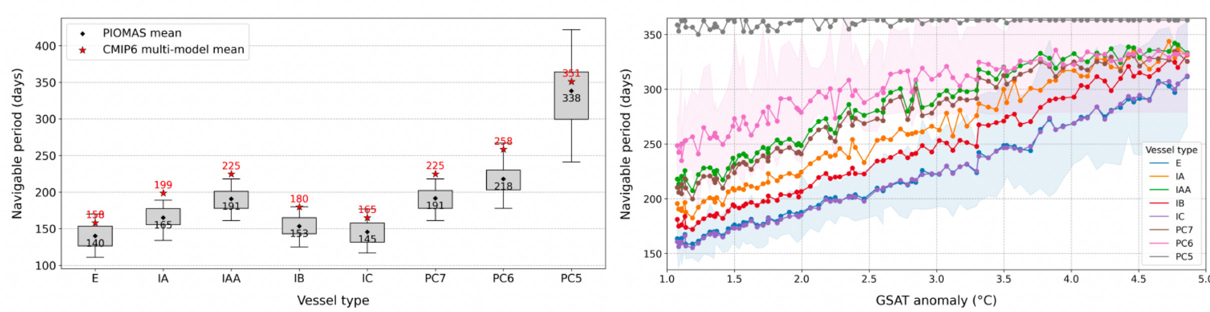
SSP5-8.5 scenario, indicating that year-round shipping would still require vessels with greater ice capability throughout the 21st century.

Minor comments:

1. The authors state in the introduction that “the southern route is currently the preferred operational route”. But in the manuscript, they set up two routes. These two routes differ completely in destination distance, so a direct comparison between them lacks persuasiveness. And, what is the purpose of presenting this comparison? This should be clearly explained in the text. If there is no special objective, results for routes within the region are suggested to be merged for analysis as SI. The purpose of retaining both routes is to assess two distinct aspects of maritime accessibility from the Port of Churchill: the Churchill–Labrador Sea route represents international connectivity and access to global markets, whereas the Churchill–Chesterfield Inlet route represents regional connectivity to northern communities. This distinction is also reflected in our study objectives and route design.

   We have revised the manuscript to clarify that the comparison is intended to examine regional versus international accessibility and their respective responses to changing sea ice conditions, rather than differences attributable to route distance. To improve the clarity and focus of the main text, the three additional regional routes to Arviat, Whale Cove, and Rankin Inlet (which show broadly similar patterns because of their geographic proximity) are included in the Supplementary Material.

   We have also clarified that the statement that the “southern route is currently the preferred operational route” refers specifically to the southern passage through Hudson



(a) Historical navigable period, Labrador Sea

(b) Projected navigable period, Labrador Sea

Fig. 9. Navigable period (in days) for different vessel types in the Labrador Sea using low-risk definition: (a) Historical navigable period during 1979–2013 for the CMIP6 multi-model mean and PIOMAS mean, (b) Projected navigable period under SSP5-8.5 for the delta-shift bias-corrected CMIP6 multi-model mean. The CMIP6 10th–90th percentile range is shown as a shaded area for Type E and PC6 vessels for illustration.

Strait within the Churchill–Labrador Sea route, which is favored because of its shorter transit distance, rather than implying that the Labrador Sea and Chesterfield Inlet routes are alternative routes to the same destination.

Line 171: Each route is defined by a start and end node, with the start node corresponding to the marine grid cell containing the Port of Churchill and the end node corresponding to the marine grid cell containing the destination point. We examined two distinct shipping corridors: the Churchill–Labrador Sea route, representing international access to global markets, and the Churchill–Chesterfield Inlet route, representing regional connectivity to northern communities, including Arviat, Whale Cove, and Rankin Inlet. For the Churchill-Labrador Sea route, the southern passage through Hudson Strait is currently favored because of its shorter transit distance (Pizzolato et al., 2016).

2. Line 190:

To make the utility of this equation more apparent, we have embellished the explanation.

"…this equation implies that the RV is 0 for the open water part of a cell, making it less permissive than Equation 1, which uses a value of 3 for open water. In other words, 2 shows the impact of considering only SIT in determining a grid cell's RIO instead of both SIT and SIC."

3. 2.6: The definitions of OD, CD and NP are very complex and obscurely worded. How is the start day of the "sea ice year dynamically" determined? Specifically, which day is it? The text mentions "zones where the timing of maximum ice extent", but provides no operable algorithm. The determination of OD and CD involves concepts such as "the median day for which a route is open/close", "last day the route was closed", and "the first closed day", making it difficult for readers to intuitively understand their physical meaning. In particular, when NP exceeds 365 days, OD and CD become "undefined" and are specially treated, introducing an artificial discontinuity. Since the assessment is oriented toward the full year, it is recommended to define OD, CD and NP based on the simplest and most intuitive calendar year.

Defining the sea ice year "dynamically" means that there is not necessarily a consistent day on which the sea ice year begins and ends. Using a calendar year is not appropriate because the sea ice in Hudson Bay has a highly erratic seasonal cycle. Blockage of the routes by sea ice may happen in winter or in spring, so it is quite common for PC5 vessels to have most of the year navigable but just a short period in April, May, or June be closed because thick ice blocked part of Hudson Strait. For example, in 1983, the Churchill-Labrador route was closed to PC5 vessels from April 18 through June 14. In 1984, it was closed much longer, February 11 through June 25. Therefore, the navigable period for 1983 is most intuitively June 15, 1983, through February 10, 1984. It does not fit neatly into a single calendar year because the navigable period crosses January 1.

Based on those two examples, it might seem logical to use May 1 to April 30 as a "sea ice year", but this is also problematic. Again, looking at PC5 vessels and the Churchill-Labrador route, consider 2005 and 2006. In 2005, the route was closed April 13 to May 31, and in 2006 the route was closed April 16 to April 17 – just two days. Therefore, there was a continuous navigable period from June 1, 2005, through April 15, 2006 – which still fits within a fixed May 1 to April 30 "year". However, another navigable period starts April 18, 2006, and that one is a problem. That navigable period straddles May 1, so if you use May 1 to April 30 as a sea ice year, you will erroneously miss 13 days. This is why using a fixed date for the sea ice year – any fixed date – is problematic. It will never overestimate the longest continuous navigable period, but it will sometimes underestimate. That leads to a bias.

Instead, a dynamic sea ice year, which responds to what the sea ice is doing instead of making an artificial temporary boundary, is more appropriate. We did include an operable algorithm in Section 2.6: "The start of each sea ice year is defined as the median day January through April for which the given route is closed." This solves the problem of sea ice (especially sea ice thickness) having highly variable seasonality year to year. This method is also well-tested: it been previously employed by several peer-reviewed works, including Crawford et al. (2021), Crawford et al. (2023), and Mudryk et al. (2026). We stand by this method and the fact that it is superior to using a calendar year (or any fixed date for dividing years).

But there is a big downside, as the reviewer points out: it's much less simple to describe a dynamic year definition than "a calendar year" or any fixed date for years. We appreciate that the description was long and detailed and therefore cumbersome for readers. In other words, we concede a communication problem despite standing by the method. We also hope we have come up with a satisfactory solution to simplify the description.

The solution comes from the fact that the definition we use in the code is a general definition that is applicable to the entire Arctic. For our study area, however, all routes are always navigable for all vessel types on September 1 in every year considered. Therefore, we are able to describe the process in reference to September 1 instead of in reference to the "start day" of a "sea ice year". This greatly simplifies the description, although the code has not been changed. We also removed details for some of the fringe cases that result to focus on the essential steps that would be needed to replicate the results.

Here is the new text:

To characterize the seasonal accessibility of the defined routes, we define three key indices for each route and year following the method of Crawford et al. (2021,2023): opening day or OD, closing day or CD, and navigable period or NP. These indices are derived from daily binary assessments of route navigability using either the ice-free or low-risk method. Because September 1 is always navigable for every ship class along every route for every year of study, the NP can be defined as the continuous period of navigable conditions that encompasses September 1. The OD is the day after the last day prior to September 1 for which the route is closed. The CD is the first day after September 1 for which the route is closed. Note that the CD often falls within the following calendar year, especially for ice-strengthened vessels and/or the late 21st century. Also note that if a route is permanently open, that the NP is assigned 365 days per year (366 days in leap years) and the OD and CD are undefined.

4. Line 275: "Model skill and projections are also evaluated using percentiles (median, 10th, 90th) against a reference dataset." How exactly is this done? Thank you for pointing this out. For each route and navigability criterion, the 10th, 50th (median), and 90th percentiles are calculated across the model ensemble to characterize the spread of simulated OD, CD, and NP. Model performance is evaluated separately by comparing these results with the corresponding observational reference dataset (OSISAF for the ice-free method and PIOMAS for the low-risk method). Only the first realization from each model is used to ensure equal model weighting. We revised the manuscript.

   Line 271: For each route and navigability criterion, the 10th, 50th (median), and 90th percentiles are calculated across the model realization to characterize the spread of estimated OD, CD, and NP. Model performance is evaluated separately by comparing these results with the corresponding observational reference dataset (OSISAF for the ice-free method and PIOMAS for the low-risk method). Only the first realization from each model is used to ensure equal model weighting.

5. Line 285: Are the weights independent of time? Then are the observations and simulations using climatological means? This should be clarified. Thank you for bringing this to our attention. We clarify that the model weights are time independent. For the final weighting procedure, the observational reference is first averaged over the historical evaluation period (1979–2024) to obtain the climatological mean of OD and CD. The corresponding historical model values are used to calculate each model's distance from the observational reference and inter-model similarity, from which a single weight (w_i) is assigned to each model realization. These weights are then held fixed and applied to the model output at each time step when calculating the weighted projection. Thus, the weights are derived from historical climatological means, whereas the weighted projections retain their temporal variability. We have revised Section 2.7.2 to make this point explicit.

   Line 301: It is noteworthy that the weights are calibrated using the 1979–2024 climatological mean of OD and CD and are subsequently held fixed when applied to the time-varying model projections.

6. Line 350: "the opening day exhibits greater variability…2000s." The authors attribute this to internal variability. In reality there is also the cause of fragmented drift ice, see Cook et al. (2024): Cook, A.J., Dawson, J., Howell, S.E.L. et al. Sea ice choke points reduce the length of the shipping season in the Northwest Passage. Commun Earth Environ 5, 362 (2024). https://doi.org/10.1038/s43247-024-01477-6 Thank you for this comment. When we use the term "internal variability", we are referring to internal variability of the climate system, which includes any year-to-year variation in ocean and atmospheric circulation that may, in turn, lead to year-to-year variability in sea ice dynamics. The term "internal variability" in this case meant to distinguish from long-term climate change. However, you are correct, that one of the effects of climate change is

increased sea ice mobility, which has resulted in increased presence of MYI within the channels and straits of the CAA, and Cook et al (2024) illustrates the impact of such MYI on ship navigability within the NWP passage. To clarify these different processes, we have specified "internal **climate** variability" in the text. We also cite Cook et al. (2024) as an example.

This variability can result from multiple processes: for example, both internal climate variability and as well as changes in the dynamic redistribution of sea ice, including the persistence or drift of fragmented ice into localized choke points, which can delay route opening (Cook et al., 2024). The opening day is more variable than the closing day because it is governed not only by the cumulative impacts of sea ice dynamics, but also by summer sea ice melt processes, both of which are greatly influenced by year-to-year atmospheric variability (Hoccheim and Barber, 2014; Crawford et al., 2023).

References:

1- Solakivi, T., Kiiski, T., & Ojala, L. (2018). The impact of ice class on the economics of wet and dry bulk shipping in the Arctic waters. *Maritime Policy & Management*, *45*(4), 530-542.

2- Pizzolato, L., Howell, S. E., Dawson, J., Laliberté, F., and Copland, L.: The influence of declining sea ice on shipping activity in the Canadian Arctic, Geophysical Research Letters, 43, 12–146, 2016.

3- Crawford, A. D., Rosenblum, E., Lukovich, J. V., and Stroeve, J. C.: Sources of seasonal sea-ice bias for CMIP6 models in the Hudson Bay Complex, Annals of Glaciology, 64, 236–253, 2023.

4- Cook, A. J., Dawson, J., Howell, S. E., Holloway, J. E., and Brady, M.: Sea ice choke points reduce the length of the shipping season in the Northwest Passage, Communications Earth & Environment, 5, 362, 2024.

5- Mudryk, L.R., Gruber, S., Beltaos, S., Brown, L., Burgess, D., Crawford, A., Culpepper, J., Howell, S., Kokelj, S., Roy, A., Sharma, S., Smith, S., and Thomson, L. (2026). Changes in the cryosphere. In *Canada's Changing Climate Report 2026*. (pp. xx–xx). Government of Canada.