Minor Comments

- Paper's title and contents focus on the navigability of Hudson Bay but the shipping route in figure 1 shows Hudson Strait, so it might be worth it to change the text from "Hudson Bay" to the larger "Hudson Bay System" like in Hochheim and Barber (for example https://www.tandfonline.com/doi/full/10.1657/1938-4246-46.1.66) or "Hudson Bay complex" as seen in Barber's work
- In the abstract, not sure if SIC and SIT need to be spelled out or if they are considered common enough to be able to use it without definition
- May need to write "(CIS)" on line 55 since the authors use it in 2.2.2 without prior definition, I think?
- Although 2.6 has been significantly shortened, the wording is confusing. For example, "The OD is the day after the last day prior to September 1 for which the route is closed."

On the use of CIS charts (2.2.2)

- The **digital version** of daily CIS ice charts are only available from 2006 (paper format goes back further)
- Regional CIS charts are available further back (begins around 1970) but authors could state they don't have the desired temporal resolution (since change in this paper is reported in days, not weeks) although the magnitude of change could be reported in weeks, so should be able to pick up the signal from regional charts.
- While I agree that "availability and resolution vary over time" this does not mean that the chart quality itself is unreliable over time.
- "Their accuracy is also affected by atmospheric conditions" is relevant for the optical spectrum but the CIS relies on SAR as the primary data source, which avoids cloud cover
- Although "ice-type classifications may become less reliable after the ice-growth season," the human/analyst interpretation of the SAR imagery is still considered to be more reliable than automated classification of these ice types so arguably there is actually *more* uncertainty around other data sources.
- Authors write "these factors introduce additional uncertainty into long-term trend analyses" but the paper by Tivy et al. show that trend analysis from the charts are still valid (https://agupubs.onlinelibrary.wiley.com/doi/full/10.1029/2009JC005855)

So in short summary—I would argue that the use of PIOMAS over CIS should be due to temporal resolution (reporting in days rather than weeks) while still spanning the time frame of interest. POLARIS guidelines rely on ice typing, which normally come from charts but it's not a strict requirement. So the authors' use of PIOMAS can be substituted but ideally there would be a check to show the two datasets correspond well in thickness/ice type category or in risk index values.

On Type E Vessels

The paper still focuses heavily on type E vessels throughout: "Type E vessels are the primary focus of this study because they historically have been the dominant commercial vessel class operating at the

Port of Churchill (Andrews et al., 2016)." I think there's possibly a misinterpretation going on. Type E under the Canadian Polaris system ***can*** include pressure crafts but is not ***restricted*** to pleasure crafts. And so, this category captures all non-ice-strengthened or minimally ice-strengthened vessels, in which pleasure crafts are a subset. The authors may want to read the paper by Copland on vessel classes for further description https://www.sciencedirect.com/org/science/article/pii/S2371167121000466. So perhaps change throughout the paper "Type E (pleasure craft)" to "Type E (non-ice-strengthened or minimally ice-strengthened vessels). The use of "Type E (pleasure craft)" was confusing because it made it seem like the entire study was ***only*** done on pleasure crafts.

The authors may want to expand the final sentence in the abstract to then include what their figure 9 supports, which is that the navigable season extends for all vessel types (due to changing ice conditions, but legal, insurance, other restrictions still apply).