

Ocean Sci. Discuss., community comment CC1  
<https://doi.org/10.5194/os-2021-43-CC1>, 2021  
© Author(s) 2021. This work is distributed under  
the Creative Commons Attribution 4.0 License.

## Comment on os-2021-43

Rebecca Woodgate

---

Community comment on "On the circulation, water mass distribution, and nutrient concentrations of the western Chukchi Sea" by Jaclyn Clement Kinney et al., Ocean Sci. Discuss., <https://doi.org/10.5194/os-2021-43-CC1>, 2021

---

Very interested to see this. A few quick questions:

1) You report that cold WW in Herald Canyon is fresher in 2014 than 2008 and discuss (lines ~ 400) that that may be due to changes in advection and brine release. However, I wonder how much of that freshening can be related to the freshening in the Bering Strait, Woodgate and Peralfa-Ferriz, 2021. See, e.g., Figures 5 and 6a of Woodgate, 2018, and data available at [psc.apl.washington.edu/BeringStrait.html](http://psc.apl.washington.edu/BeringStrait.html) (monthly mean salinities for example) where you can clearly see 2014 is mostly fresher than 2008. Do you see this freshening in the Bering Strait in your model? And can you quantify how that affects the salinity in Herald Canyon?

2) Line 470 .. "a substantial fraction of PW ... continues to the ESS via Long Strait". It would be helpful to be specific as to how much.

3) Related, it would also be interesting to quantify in the model how much of the Chukchi outflow enters the Arctic via Herald Canyon directly (rather than through Barrow Canyon).