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# Projections and predictability of Arctic shipping accessibility

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The observed reduction in Arctic sea ice opens up the potential for shorter shipping routes across the Arctic Ocean, leading to potentially significant global economic savings. We demonstrate, using bias-corrected global climate models, that the projected sea ice melt through the 21st century increases opportunities for ships to sail through the Arctic between North Atlantic and East Asian ports. Transit potential for Open Water vessels doubles from early to mid-century and coincides with the opening of the trans-polar sea route. Although seasonal, routes become more reliable with an overall increased shipping season length, but with considerable variability from year-to-year. We also demonstrate that there is potential predictability for whether a particular season will be relatively open or closed to shipping access from a few months ahead.