SUPPLEMENTAL MATERIAL for
ARCTIC, ANTARCTIC, AND ALPINE RESEARCH
ARCTIC ANSWERS
2021, VOL. 00, NO. 0, pp. 00-00
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Arctic Answers Knowledge Pyramid

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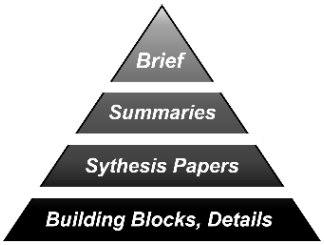
By A. Author, B. Author, and C. Author



Arctic Answers Briefs answer questions about Arctic environmental change that are framed for policy makers. Each Brief concisely conveys the state of the science. For supporting information and further reading, the **Knowledge Pyramid** of the state of the science and knowledge is presented below with the references from the Brief at the apex, built upon layers of references of increasingly more technical information: summaries, synthesis papers, and the building blocks of detailed basic research and technical academic studies.

Key References: ***Selected references that provide recent, accessible information needed to answer policy-relevant questions about rapid Arctic change (also cited in the Brief).***

Parkinson, C.L. and J.C. Comiso. 2013. On the 2012 record low Arctic sea ice cover: Combined impact of preconditioning and an August storm. *Geophysical Research Letters* 40 (7):1356-1361. https://doi.org/10.1002/grl.50349.

Deser, C., F. Lehner, K. Rodgers, T. Ault, T. Delworth, P. DiNezio, A. Fiore, C. Frankignoul, J. Fyfe, D. Horton, et al. 2020. Insights from Earth system model initial condition large ensembles and future prospects. *Nature Climate Change* 10:277-286. https://doi.org/10.1038/s41558-020-0731-2.

Moon, T. 2017. Saying goodbye to glaciers. *Science* 356 (6338):580-581. doi:10.1126/science.aam9625.

Summaries: ***State-of-the-art information on main findings, critical questions, and societal importance written for non-technical audiences.***

Borunda, A. 2020. Arctic summer sea ice could disappear as early as 2035. *National Geographic* 13 August 2020. https://www.nationalgeographic.com/science/article/arctic-summer-sea-ice-could-be-gone-by-2035.

Moon, T.A. et al. 2020. Greenland Ice Sheet. In *Arctic Report Card 2020,* eds. R. L. Thoman, J. Richter-Menge, and M. L. Druckenmiller. https://doi:10.25923/ms78-g612. http://www.arctic.noaa.gov/reportcard.

Harvey, C. 2021. Hurricanes Are Hitting Maximum Strength Closer to Land. *Scientific American*, E&E News, Natural Disasters, 29 January 2021. https://www.scientificamerican.com/article/hurricanes-are-hitting-maximum-strength-closer-to-land/.

Syntheses: ***Resources for a comprehensive and often more technical understanding of the issue and how different concepts interrelate.***

Deser, C., A. Phillips, V. Bourdette, and H. Teng. 2012. Uncertainty in climate change projections: The role of internal variability. *Climate Dynamics* 38:527– 546. https://doi:10.1007/s00382-010-0977-x.

IPCC. 2019. IPCC Special Report on the Ocean and Cryosphere in a Changing Climate. Eds. H.-O. Pörtner et al. https://www.ipcc.ch/srocc/.

Building Blocks: ***Technical studies with details and foundational information about individual concepts.***

Kossin, J.P. 2018. A global slowdown of tropical-cyclone translation speed. *Nature* 558 (7708):104–107. https://doi.org/10.1038/s41586-018-0158-3.

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2. List references alphabetically within each tier following the Arctic, Antarctic, and Alpine Research journal style (examples with proper formatting are shown). If available, use DOI hyperlinks to open-source materials.
3. Examples are given of the *types* of publications appropriate to each tier. Note that the Key References tier is the same as provided in the Brief itself, and that there may be a mix of summaries, syntheses, and technical studies cited in this tier.
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