JPSS Short Course
NOAA Environmental Satellite Enterprise: Applications and Opportunities

Monitoring and Predicting the Opening of the Northwest Passage

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27 June 2023, 13:00-15:00 EDT, Virtual

Reading List

Cruising Through the Passage

Online articles (easy reading):

"Crystal Serenity to become 1st luxury ship to tackle Northwest Passage", 2014, Canadian Broadcasting Corporation (CBC). [Link]

"Crystal Serenity's journey through Northwest Passage draws excitement, climate change fears", 2016, Global News Canada. [Link]

"In a Warmer Climate, A Luxury Cruise Sets Sail Through Northwest Passage", August 27, 2016, NPR [Link]

"No More Crystal Serenity in the Northwest Passage", 2017, High North News. [Link]

Arctic Climate Change

Online articles (easy reading):

"Climate Change Indicators: Arctic Sea Ice", 2022, US Environmental Protection Agency. [Link]

"Arctic Sea Ice Minimum Extent", NASA Global Climate Change. [Link]

Scientific papers:

Letterly, A., J. Key, and Y. Liu, 2018, Arctic Climate: Changes in Sea Ice Extent Outweigh Changes in Snow Cover, The Cryosphere, 12, 3373–3382, https://doi.org/10.5194/tc-12-3373-2018. [PDF]

Liu, Y., J. Key, X. Wang, and M. Tschudi, 2020, Multidecadal Arctic sea ice thickness and volume derived from ice age, The Cryosphere, 14, 1325–1345, doi: 10.5194/tc-14-1325-2020. [PDF]

Olsen, M.S., T. Callaghan, J. Reist, L.O. Reiersen, D. Dahl-Jensen, S. Gerland, B. Goodison, G. Hovelsrud, M. Johansson, R. Kallenborn, J. Key, A. Klepikov, W. Meier, J. Overland, T. Prowse, M. Sharp, W. Vincent, and J. Walsh, 2011, The changing Arctic cryosphere and likely consequences: An overview, Ambio, 40, 111-118, doi 10.1007/s13280-011-0220-y. [PDF]

Wang, X., Y. Liu, J. Key, and R. Dworak, 2022, A new perspective on four decades of changes in Arctic sea ice from satellite observations, Remote Sens., 14, 1846, https://doi.org/10.3390/rs14081846. [PDF]

NOAA Satellite Products (scientific papers on the products themselves)

Dworak, R., Y. Liu, J. Key, and W. Meier, 2021, A Blended Sea Ice Concentration Product from AMSR2 and VIIRS, Remote Sensing, 13, 2982. https://doi.org/10.3390/rs13152982. [PDF]

Key, J. R., R. Mahoney, Y. Liu, P. Romanov, M. Tschudi, I. Appel, J. Maslanik, D. Baldwin, X. Wang, and P. Meade, 2013, Snow and ice products from Suomi NPP VIIRS, J. Geophys. Res. Atmos., 118, doi:10.1002/2013JD020459. [PDF]

Liu, Y., R. Dworak, and J. Key, 2018, Ice Surface Temperature Retrieval from a Single Satellite Imager Band, Remote Sens., 10, 1909, doi:10.3390/rs10121909. [PDF]

Liu, Y., J. Key, and R. Mahoney, 2016, Sea and Freshwater Ice Concentration from VIIRS on Suomi NPP and the Future JPSS Satellites, Remote. Sens., 8(6), 523; doi:10.3390/rs8060523. [PDF]

Meier, W.N., J.S. Stewart, Y. Liu, J. Key, and J. Miller, 2017, Operational implementation of sea ice concentration estimates from the AMSR2 sensor, IEEE J. Selected Topics Appl. Earth Obs. Remote Sens. (J-STARS), 10(9), 3904-3911, doi: 10.1109/JSTARS.2017.2693120. [PDF]