

B11-O01

CHANGES IN ARCTIC SEA ICE CHARACTERISTICS AND THEIR IMPACT ON NAVIGATION

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We examine the changes in Arctic sea ice characteristics (seasonal extent, thickness, occurrence of multi-year ice) that have occurred during the last three decades and that are due to continue into the future. We examine what has already taken place in terms of navigational possibilities in the Northern Sea Route and Northwest Passage. In the light of projections of continuing sea ice retreat in summer and other seasons, we estimate how quickly it will be possible to develop more systematic marine links through the Northern Sea Route and Northwest Passage, and also when, or if, it will be possible to develop a direct Transpolar trade route. Evidence from observations of thickness and extent show that the downward trend is faster than hitherto assumed, which will bring forward the dates at which new developments can take place.