

Effect of the North Atlantic Oscillation on the Pattern of Lake Ice Phenology in Poland

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Abstract

This paper presents an analysis of the influence of the North Atlantic Oscillation on the pattern of lake ice phenology in Poland. The research embraced 22 lakes in Poland over the period 1961-2010. Strong relations were found to hold between NAO and individual characteristics of ice phenology. In a negative NAO phase, one can observe a later appearance of ice phenomena and ice cover compared with the average values, ice cover persisting even 30 days longer and being thicker even by more than 10 cm. In turn, in a positive NAO phase the duration of ice phenomena and ice cover is shorter, the cover being less thick and solid. The observed spatial differences in the effect of NAO on the pattern of ice phenomena in Poland show this matter to be fairly complex. The most significant factor changes in climatic conditions, which manifest themselves in the continentality of the climate growing eastwards.

Key words: climate change, ice cover, teleconnections.