



Variability of surface water extent in central Siberia during the summer seasons

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Arctic warming has accelerated since the 1980s, driving an array of complex and ecological changes in the region. A recent study concluded that climate warming on high latitude permafrost-controlled lakes and wetlands may well be the cause of their widespread disappearance. In this paper we analyse 15 years of passive microwave SSM/I data from 1988 until 2003, to estimate the timing of snowmelt and the evolution of surface water extent during the summer. We consider an area in Central Siberia that includes the Ob river basin and we divide it into regions according to the type of permafrost (the region of continuous permafrost with average temperatures less than -7°C , the region of discontinuous permafrost with average temperatures between -7°C and -1°C , and the southern area with average ground temperatures higher than -1°C). Over the 15 years period analysed, the surface water extent in July and August decreased in the continuous permafrost region while it increased in the Ob river basin. These trends are interpreted by comparison with trends in snowmelt timings as well as temperatures and precipitation in each permafrost region .