

林冠が疎なアラスカのクロトウヒ林における林床植生の生長期間の推定モデルの開発

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Development of phenology model for evaluation of growing season of understory vegetation in an open-canopy black spruce forest in Alaska

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To deeply understand the interaction between weather and meteorological changes and ecosystem functions (e.g. photosynthesis) in boreal forests in Alaska, we should accurately evaluate the spatio-temporal variability of timings of start (SGS) and end of growing season (EGS) of understory vegetation. Here, (1) we obtained daily canopy surface images in an open-canopy black spruce forest in Alaska (Poker Flat Research Range site; 65°07'24.10"N, 147°29'14.8"W) from spring in 2011 to summer in 2015 and (2) we examined the relationships between daily mean air temperatures and the timings of SGS and EGS of understory vegetation by analyzing RGB values of daily canopy surface images, and made a statistical phenology model based on their relationships. We found that (1) the interannual variability of daily mean air temperatures over 5°C and below 13°C well affected that of the timings of SGS and EGS, respectively, and (2) the estimation accuracy of the timing of SGS was better than that of EGS.