

Phenological trends in Estonian long-term time series and correlations with soil temperature

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Phenophases are important indicators of the impact of a changing climate. We studied the trends of 943 phenological time series of plants, fishes and birds gathered from 1948–1999 in Estonia. Majority of the studied phenological phases have advanced during springtime, whereas changes are smaller during summer and fall. Significant values of plant and bird phases have advanced 5–20 days, and fish phases have advanced 10–30 days in the spring period. Estonia's average air temperature has become significantly warmer in spring, while at the same time a slight decrease in air temperature has been detected in autumn. The growing season has become significantly longer in the maritime climate area of Western Estonia. The trends of phenophases at the end of spring and the beginning of summer have high correlations with soil temperature in different depths.