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Phenological trends in Northern Italy (Bologna)

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Phenological behaviour of some common woody species have been recorded during about 3 decades (1975-2008) in the city centre of Bologna (Emilia-Romagna, Northern Italy) and in several hillside stations in the neighbourhood of the town.
The dates of start and full flowering have been analysed in relation with time and temperature changes.
Both winter (hazel) and spring flowerings (ash tree and chestnut tree) show slight negative trends (an advance of 2-4 days per decade) along the period.
In the last 40 years of the 20th century, in Emilia-Romagna region, the winter and spring temperatures have shown an increase of 0,2- 0,4°C per decade (Tomozeiu et al. 2006, Clim. Res. 31) and a further increase of about 0,2-0,3°C per decade has been predicted, by means of a downscaling technique, in the 21th century (Tomozeiu el al. 2007, Theor. Appl. Climatol. 90).
Since the flowering days of the observed species show significant correlations with the mean temperature of the preceding months (3-5 days of earlier start per degree of increasing temperature), in the future earlier flowerings can be expected to occur.