



## **The Phenological Network of Catalonia: an historical perspective**

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The Meteorological Service of Catalonia (SMC) began systematic phenological observation in 1932. Forty-four observers registered the phenophases of 45 plant species, the first or last sighting of six bird species and the first sighting of one species of butterfly. The study First results of phenological observation in Catalonia was published in 1936, showing the different behaviour of the vegetal species and birds according to geographical location.

The SMC worked against the military fascist uprising during the Spanish Civil War (1936-1939). Therefore, once the war was finished, the organisation was quickly closed by the Franco dictatorship and the National Meteorological Service became the official institution in Spain. This organization created the Spanish Phenological Network in 1943 following similar standards to the former Catalan network.

The reintroduction of democracy and the return of the Catalan self-government structures (1977) allowed the re-foundation of the SMC in 1996. The Climatology Department needed phenological data to complement the study of climatic indicators and realised the fragile situation of phenology observations in Catalonia, with very few operational series.

Following a preliminary analysis of the different systems of recording and saving data, the Phenological network of Catalonia (Fenocat) was re-established in 2013.

Fenocat is an active partner of the Pan European Phenology Database (PEP725) that uses BBCH-scale coding and the USA National Phenology Network observation system. It is an example of citizen science. As at December 2016, Fenocat had recorded more than 450,000 data. The extension of summer climatic conditions in the Western Mediterranean region has resulted in repetition of phenophases in the same year, such as the second flowering of the holm oak (*Quercus ilex*), almond tree (*Prunus dulcis*) and sweet cherry tree (*Prunus avium*), or the delay in the departure data of the swallow (*Hirundo rustica*) and hoopoe (*Upupa epops*).

Fenocat technicians are also involved in data rescue initiatives that allow the study of historical phenological series. The La Serra d'Almos (near Tarragona) phenological series is an example that shows the life cycle trends for plants and birds observed since 1971.

The Phenological Network of Catalonia has marked a turning point in the recording of the rhythms of nature in Catalonia and works to preserve sensitive information for the study of climate change in the fragile Mediterranean ecosystem.