

The start of biological spring in Africa is linked to the quantity of hours of sunshine

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Experts from the University of Seville have published a recent study in which they determine that the start of the increase in the verdure of vegetation (equivalent to the start of spring) in Africa is directly connected to the amount of hours of sunshine a day—that is to say, it would be the "photoperiod" which controls this process and not the arrival of the first rains, as was believed until now. This work has been published in *Communications Biology*, a new review from the Nature group.

The increase in vegetation is driven by environmental factors such as the photoperiod, precipitation, temperature, hours of sunshine and the availability of nutrients. However, in Africa there is ambiguity as to which of these are key elements for driving the growth of vegetation,

which can generate uncertainty when making predictions on the impact of global warming in the [terrestrial ecosystems](#) and their representation in dynamic vegetation models.

Using data obtained from satellites, researchers from the Faculty of Geography and History at the University of Seville have carried out a systematic analysis of the relationship between vegetation phenology (that is, the date on which [seasonal changes](#) are produced) and environmental factors. The study, in different regions of Africa, has revealed that it not just one, but a combination of [environmental factors](#) that influences the start and end of the season of vegetation growth. Although, the most important factor is the number of hours of sunshine.

"Consequently, to improve our predictions on this [impact of climate change](#), the role of the photoperiod should be incorporated into the modelling of vegetation, climate and ecosystems. In addition, it is necessary to define clearly the response of vegetation to the interaction between a signal level of hours of constant light and the year-on-year variation in other factors, especially in a changing climate," explains University of Seville researcher Víctor F. Rodríguez.

More information: Tracy Adole et al, Photoperiod controls vegetation phenology across Africa, *Communications Biology* (2019). [DOI: 10.1038/s42003-019-0636-7](#)

Provided by University of Seville

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