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### RELATIONSHIP BETWEEN TEMPORAL DYNAMICS OF FLOWERS AND CLIMATE

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#### ABSTRACT

The cerrado is a Brazilian neotropical savanna and a biodiversity conservation hotspot. The interactions with floral visitors depend on the plant's reproductive strategies and climatic conditions. In the tropics, the relationships between climate change and reproductive phenology, and their consequences, are still understudied. Therefore, we assessed a long-term flowering phenology of a cerrado tree community, considering the start and peak dates, and the duration of animal-pollinated species, to answer: (i) Are there differences in the flowering between species that are dependent and independent of biotic pollination? (ii) Are these differences in flowering related with shifts on temperature and precipitation over time? We analysed a unique 15 years-long (2005-2019) monthly observation of woody cerrado phenology, of 10 plant species, separated in two groups: dependent of biotic pollination (N=5) and independent of biotic pollination (N=5). We built circular-linear models of phenology with precipitation and temperature. Most cerrado species showed a decrease of flowering duration over time, regardless the pollination dependence or independence from pollinators. Species depend on biotic pollination had a more severe decrease the flowering duration. We also found an overall positive relationship between the increase of temperature and the decrease of the duration of flowering. The flowering start and peak dates changed over time between the compared groups but were not related with the climate. Our results indicated that availability of flower resources is decreasing for pollinators in time across the cerrado species, which may lead to a mismatch between plants and pollinators, reduction of flower visitors and reproductive success.