



Phenology of woody vegetation of an open savanna (Cerrado Ralo): effects of a burn in the rainy season

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Introduction

Fire, along with precipitation seasonality, are considered the main drivers of vegetation dynamics and of the maintenance of the Cerrado physiognomies. Fire regimes may impact on the reproductive phenology of species as well as in their survivorship.

This study aimed to describe the phenology of the woody species of a Cerrado Ralo after a fire event at the onset of the rainy season, simulating natural fires.

Methods

The experiment was conducted in an open savanna, 25 km South of Brasília (DF), that had been burnt the year before. We selected two 3000 m² plots, one burned in September 2018 and the other as the control plot.

For both plots, monthly observations were taken to determine the phenological stage (resprouting, production of leaves, production of flowers, flowering or fruiting) of the woody species found in the plots bellow.

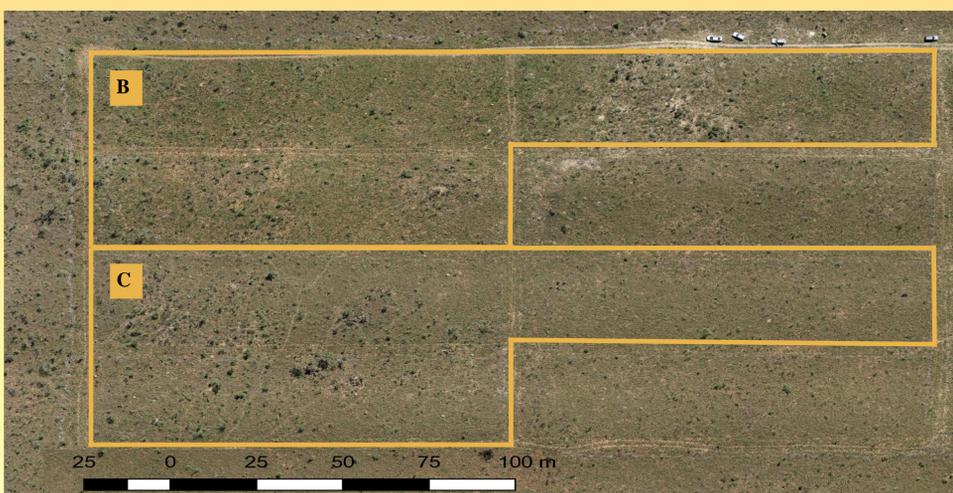


Figure 1. Satellite photo of the Cerrado Ralo plots at Estação de Rádio da Marinha do Brasil, Brasília, DF. Plot B was burned in September 2018, at the onset of the rainy season (53,2 mm of precipitation prior to the prescribed fire). Plot C remained as the control plot.

Results and Discussion

Fire did not cause topkill or mortality of any individual. Efforts in replacing the vegetative structures lost in fire lingered until November/December, during the start of the rainy season. In March, reproductive structure were present in a higher number of individuals in the Burned Plot.

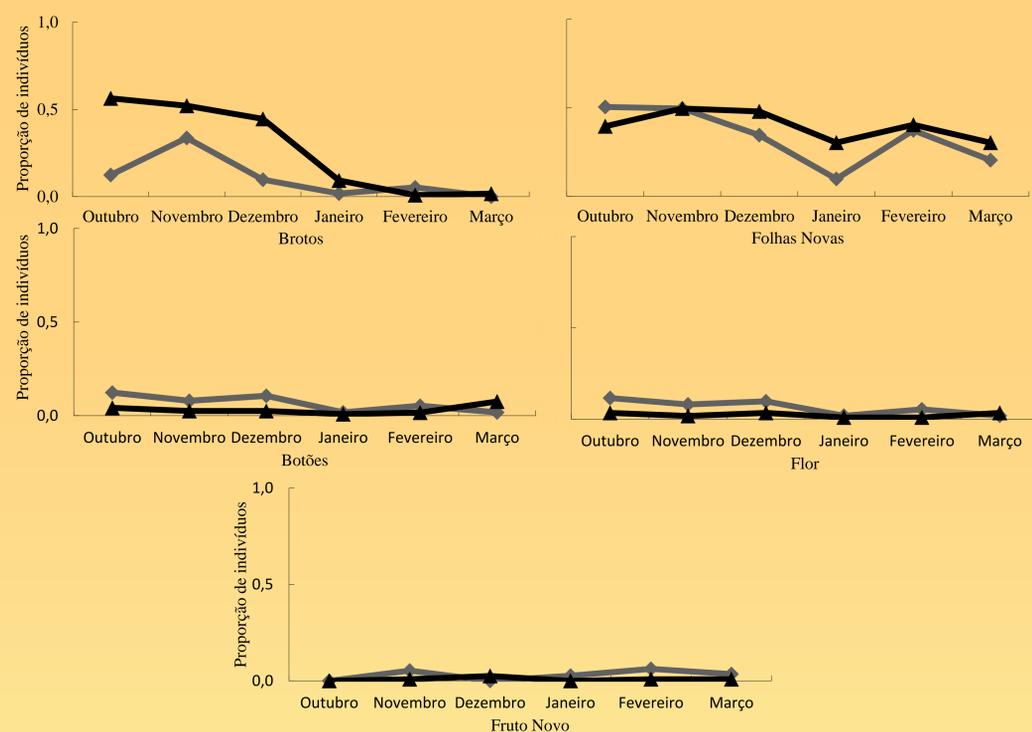


Figure 2. Vegetative and reproductive phenology of the woody individuals of a Cerrado Ralo burnt at the onset of the rainy season (▲) and of individuals on the control plot (◆). The area was subjected to a prescribed burn in September 2018.

Conclusion

The woody species of the burnt Cerrado Ralo presented low production of reproductive structures in the succeeding months after fire. This may have resulted from the use of the plant nutrient supplies to replace the vegetative structures that were lost due to fire, suggesting a persistence strategy in fire-prone ecosystems.