

EGU22-2469, updated on 20 Aug 2022

<https://doi.org/10.5194/egusphere-egu22-2469>

EGU General Assembly 2022

© Author(s) 2022. This work is distributed under the Creative Commons Attribution 4.0 License.



Effects on soil and vegetation of prescribed burn in the southeast of the iberian peninsula

Álvaro Fajardo¹, Daniel Moya¹, Esther Peña¹, Pedro Plaza-Álvarez¹, Javier González¹, Asunción Díaz¹, Raúl Botella¹, Manuel-Esteban Borja-Lucas¹, Elena Gómez², and Jorge De las Heras¹

¹University of Castilla-La Mancha, ETSIAM, Plant production and agricultural technology, Albacete, Spain

²Junta Castilla-La Mancha, JCCM, Albacete, Spain

With current global warming, the exacerbation of climate change and the progression of neglect in rural areas, forest fires are increasing in extent and severity. To alleviate these changes in the fire regime and seek the reduction of large severe fires, the use of fire as a preventive management tool is being implemented through the application of prescribed burns in Mediterranean forests, used in forestry actions to reduce the understory and break both vertical and horizontal continuity of fuels. In this study we want to see the efficacy of the treatment by determining the effects of the prescribed burns on the soil, both physical-chemical and biological parameters, as well as on the vegetation, in a semi-arid forest ecosystem. The prescribed burns were performed in the municipality of Ayna, Albacete (SE Spain). To evaluate and monitor the ecological damage to the soil in the short term (1 year), CO₂ flow measurement cameras were used to measure soil respiration, mini-disk infiltrometers, with a monthly monitoring period throughout the year. The results do not show significant alterations in all the parameters studied due to these prescribed burns over a long period, stabilizing together with the unburned plots. However, in the short period of time (3 months later), some variables are affected. This study aims to observe, and make known, the effects that these actions have on the soil, being these of great relevance to carry out a design, management, and application of these tools to forest management in the Mediterranean area.