

Regional effectiveness of the implementation of the integrated fire management approach in the Chapada das Mesas National Park in Brazil

Livia C. Moura^{1*}, Paulo A. Dias², Isabel B. Schmidt¹

ABSTRACT – Brazil has recently made important steps towards environmental conservation by changing the historical fire exclusion policy to the implementation of an integrated fire management (IFM) approach. By implementing this approach, national agencies intend to reduce late-dry season wildfires and greenhouse gas emissions, increase landscape mosaics with different fire histories and improve knowledge exchange between managers, local/traditional communities and researchers. The Chapada das Mesas National Park (CMNP, northeast of Brazil) was one of the first protected areas in the Cerrado biome to implement the IFM programme in 2014, when managers started training the park's fire brigade to conduct prescribed burns and organize meetings with the local communities and researchers. In this study we evaluated the effectiveness of the implementation of the IFM approach in CMNP, by using burn scars and fuel load maps, dwellers' burning calendars and maps and community meetings from 2014 to 2017. There was a reduction (63,000 ha to 44,000 ha) of the total burned area between 2014 and 2016; of which 58% was burned by wildfires in 2014 and 40% in 2016, due to an increase on prescribed burns from 32% to 60% (2014 to 2016), burning 18,400 ha of strategic patches of fire-prone vegetation in the early-dry season of 2016. There was an increase in the number of community meetings from three in 2014 to eight in 2017, with an annual average of 180 participants. During the community meetings, there was an increase on the number of local dwellers (26 to 37) that defined their burning calendar and the areas they would burn (map) between 2015 and 2016, followed by a decrease (30) in 2017. These results show that the IFM approach has been efficient in CMNP and, therefore, should continue to be strategically implemented in other fire-prone environments, as long as it is assessed and readjusted accordingly. For successful outcomes in fire management activities, local communities and researchers must be involved and stimulated to participate in the entire process.

Keywords: Cerrado; prescribed burn; wildfire; local community; burning calendar; burn scar

¹Departamento de Ecologia, Instituto de Ciências Biológicas, Universidade de Brasília, Brasília-DF, Brasil

²Coordenação Regional do Instituto Chico Mendes de Conservação da Biodiversidade, Parnaíba-PI, Brasil, *Email para contato: liviaecogeo@gmail.com