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Deforestation in forest-savannah transition zone of Ghana: Boabeng-Fiema monkey sanctuary

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Abstract

Forests provide many resources, ecosystem services and absorb carbon dioxide, which helps in climate regulation. In spite of the enormous benefits of forests, the issue of deforestation is still ongoing. There has been a continuous decline in forests globally and the forest area of Boabeng Fiema Monkey Sanctuary (BFMS) in Ghana is facing a similar threat. The aim of the study is to determine the different forest cover types and changes in the forest of BFMS. Satellite images for the years 1992, 1998, 2004, 2010, 2016 and 2018 were downloaded. Unsupervised and supervised classification were performed to determine the different forest cover types and remote sensing software was used to detect the changes in the forest cover. The forest cover was classified into six classes; closed forest, open forest, savannah woodland, savannah, farmlands and built-up area. Available data suggests that between 1992 and 2018, closed forest decreased by 242.19 ha, open forest increased by 122.85 ha, savannah woodland increased by 7.47 ha, savannah increased by 6.48 ha, farmland increased by 39.39 ha and built-up area increased by 65.7 ha. The changes in closed forest, open forest, farmland and built-up were all significant. Decreasing forest cover of BFMS is a threat to sustainable ecotourism since the forest serves as a habitat and food source to the monkeys. This research serves as guide to other researches aiming at determining forest cover changes in forest-savannah transition zones. In addition, the results have produced an inventory of the forest, which will help forest resource managers sustainably manage the forest.

Keywords: Carbon, climate change, deforestation, ecotourism, forest-transition zone

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