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Estimating future burnt area changes over Greece using the JULES-INFERNO model

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Our previous studies have shown that climatic conditions in the Mediterranean and specifically over Greece are expected to change, resulting in an increase in fire season length which implies increases in burnt area. Our research employs the Joint UK Land Environment Simulator (JULES) to investigate the repercussions of climate change and future land use land cover (LULC) on future burnt area using UKESM1-0-LL gridded data from the ISIMIP3b model run. In the present study, the modelled burnt area is validated against satellite observations from Copernicus. We use two representative concentration pathways (RCPs) consisting of an optimistic emissions scenario where emissions peak and decline beyond 2020 (RCP2.6) and a pessimistic scenario, in terms of mitigation where emissions continue to rise throughout the century (RCP8.5). Our results show increased burnt area in the distant future compared to the present period in response to higher future availability of heat resistant needle leaf trees.