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# Pacific and North Atlantic Ocean warming and their impacts on global fire patterns

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The spatio-temporal patterns of global fires are influenced by a myriad of factors that mainly relate to climatic and anthropogenic variables. Increasing fire frequencies and increased burned areas have been reported in almost all ecosystems since the 80´s. Whether this response is a consequence of a globally warmer atmosphere, of higher human pressures, of climatic oscillations related to the periodic warming of Pacific and Atlantic oceans, or a combination of them all, it is unclear. The connection of tropical wildfires with El Niño derived droughts has largely been recognized. However, less is known about the role of the North Atlantic Ocean's warming, the interactions with ENSO and the individual and combined consequences of these phenomena on global wildfires. This Atlantic Multidecadal Oscillation (AMO) is believed to pose similar fire threats than the ENSO multiannual oscillation, but the mechanisms behind this phenomenon, and the global distribution of its impacts, are poorly understood. Based on the long term (1982-1999) Joint Research Centre's global burned area database, the present study searches for the spatio-temporal fingerprints of both macroclimatic oscillations (ENSO and AMO) by focusing on forest fire anomalies during known ENSO and AMO years, and interactions among them. Learning about these fire anomalies will guide our knowledge about areas of higher climate vulnerability, and potential adaptability measures.