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## The human and climate drivers of Holocene grassland fires in the South Caucasus: A macro-charcoal, brGDGTs, and pollen reconstruction

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The mountainous area of Armenia has been a steppe throughout the Holocene with a rich history of fire events throughout this period. Previous research has found that changes in fire are linked to shifts between Poaceae grasslands and semi-arid Chenopodiaceae steppes. However, the climate and human drivers of these fires has yet to be fully explored in an area where agriculture has been practiced for almost 8,000 years. To elucidate these changes, we performed and compiled macro-charcoal analysis on four wetland sediment cores from the Kasakh Valley, Armenia. We aimed to understand fire frequency, intensity, size, and drivers of these events. In addition, we utilize a paleotemperature molecular biomarker branched glycerol dialkyl glycerol tetraethers (brGDGTs), a pollen climate reconstruction for temperature and precipitation, and the vast amount of archaeological data to help us untangle these changes. Early results suggest fires increase as temperature rose during the early Holocene and continue to increase with temperature during the Mid-Holocene despite an increase in agriculture during the Early Bronze Age. Between 4000 - 2000 cal. BP fires are small and almost disappear from the record. During this period these declines appear to be driven both by temperature fluctuations and an increase in regional mobile pastoralism resulting in declining biomass. Over the last 2000 years, humans appear to be the primary driver of fires with an increase in large intense events that are local to the watershed.