Effects of fire on the arthropod community in Kfira National Park

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In recent years fires have become increasingly frequent as a result of climate change, deforestation, a decline in grazing pressure, and abandoned agricultural plots. In November 2016 many fires broke out in Israel, two of them in Kfira National Park in the Judean Mountains. Scrubland fires are characterized by a relatively fast burn at low temperatures in a homogeneous pattern, while thicket fires are characterized by a relatively long burn and at higher temperatures in a patchy pattern. Large areas of Kfira Park were burned, although some remained unscathed due to the terrain and wind direction. Arthropods constitute the most diverse group of animals in terrestrial systems, with both direct and indirect effects on every part of the ecosystem. They offer a potential tool for evaluating and characterizing changes in the ecological system, and are valuable as bio-indicators for assessing the effects of fire on the local habitat. Seeking to understand the effects of fire on the arthropod community, we have been investigating changes in the arthropod community for the past two years, following the fires of 2016. Ground-dwelling insects were sampled in burnt and control plots in thicket and scrubland habitats using pitfall traps. Arboreal arthropods were sampled in the thicket habitat, using the “beating” method. We found different arthropod communities between treatment and control, across both habitat types. We also observed different diversity values according to the different fire intensities. Bio-indicator species were found only in blooming vegetation.