



## **Dominating fire direction in burned areas of Dzūkija National Park (Lithuania)**

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Fire perturbation has been often breaking out in Dzūkija's National Park landscapes over the last 150 years - coinciding with the age of oldest forests in the park's territory. Valuable information was obtained by carrying out a retrospective analysis which helped to reveal ancient presence of fire in the park. The study was developed on previously stipulated old forest stands around the area of Marcinkonys village. Of a total of 28 burned-stands, direction of fire spread was noted down from all standing trees presenting fire traces within two plot areas of 20 meters x 10 meters. It should be stated, however, that for half of the plots fire direction was uncertain and, hence, not taken into account. South-west direction was evidenced in half of the plots, being indeed the one with most presence in the burned stands; west and south direction were dominating in 28.5% and 25% of the plots respectively; in 10.7% of plots north-west was dominating direction; whereas fire traces were rarely observed facing north -only in 3.7% of plots-. Regarding the rest of directions, they were absent in all sampling sites. The direction of fire spread is largely determined by wind flow patterns: specifically wind and relative humidity could significantly change burning conditions. Despite that wind in the region blows predominantly from west and south-west, when analyzing our findings, it appears that dry continental air masses, and in general wind events associated with passing of dry cold fronts, produce more favorable conditions for the occurrence of fire. Wind-driven fires are mostly spreading to south-west as dry wind coming from north-west and west might generate the principle source of ignition and make vegetation more flammable.