# Réka Aszalós et al. (2012): Accurate prediction of ice disturbance in European deciduous forests with generalized linear models: a comparison of field-based and airborne-based approaches. Eur J Forest Res 131: 1905-1915.

Reference: Réka Aszalós, Imelda Somodi, Kata Kenderes, János Ruff, Bálint Czúcz & Tibor Standovár (2012): Accurate prediction of ice disturbance in European deciduous forests with generalized linear models: a comparison of field-based and airborne-based approaches. European Journal of Forest Research 131: 1905-1915.
Short reference: Aszalós et al. (2012)
First author: Aszalós Réka
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Abstract

We analyzed an ice disturbance event of deciduous forests in Hungary by Generalized Linear Models (GLM). Two statistical models were generated: the first model was based on a disturbance map created from a series of aerial photographs, and the second model was based on a map created by half-year-long intensive field work. The second map was considered as the reference map of ice disturbance. Our hypothesis was that the predictive power of the field-based statistical model would be significantly higher than that of the aerial photo-based model on the reference map. Elevation, slope, aspect, mixture ratio of beech, height of the dominant tree species and their interactions were used in the two (aerial photo- and field-based) GLMs as explanatory variables. The accuracy of the models was measured by the AUC (Area under the ROC curve) values. Sensitive area maps of ice disturbance were generated by both models. Our hypothesis was definitely rejected. Both models performed high predictive accuracy (median AUC > 0.9) with no significant difference in the prediction capacity regarding the reference ice disturbance pattern. Our study demonstrates that ice damage can effectively be predicted if remote sensing interpretation is coupled with GLM as predictive model.

habitat: oak-hornbeam forests, beech forests
forest diseas, pathogens, pests
forest structure: stand

methodology: modelling
remote sensing
remote sensing: aerial photo
map: forest management map
Notes

A vizsgált terület a Csóványos - Nagy-hideg-hegy vonalától délre esik, így nem fed át közvetlenül a Pogány-Rózsás ER-mal (de azzal határos)

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