Dissemination of seasonal fire weather information for stakeholders and researchers

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Fire is the primary driving factor of the ecosystem dynamics of many forests, directly affecting the global carbon balance and atmospheric concentrations of the trace gases including carbon dioxide. Recent anthropogenic influence has led to an increase in frequency and impact of wild fires. Hence, it is of vital importance to predict forest fire risk at monthly and seasonal time scales in order to mitigate its impacts, including fire driven dynamics of ecosystem and socio-economic services.

Resilience of the ocean–atmosphere system provides potential for early detection of upcoming fire season intensity. Here, we report on the development of a probabilistic empirical prediction system for forest fire risk on monthly to seasonal timescales across the Northern Hemisphere, using local and large scale climate information as predictors for future fire weather. The fire risk is quantified by the monthly drought code (MDC), which is an established indicator for seasonal fire activity.

The forecasts are disseminated through the KNMI climate explorer, using an interactive online Python application, in order to convey forecast information in a simple and digestible manner. A forecasting page allows for end-users to assess local seasonal fire weather risk, associated forecast skill, and the relation between historical MDC and observed fires. The forecasts are updated monthly throughout the fire season. A research page allows for local and global analysis of the sources of predictability, and characterization of the patterns of spatial and temporal variability of fire weather risk.