EGU2020-10648
https://doi.org/10.5194/egusphere-egu2020-10648
EGU General Assembly 2020

Wildfires in Fennoscandia under changing climate and forest cover

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In recent years, large forest fires in Fennoscandia have shown that wildfires can have a strong impact on society also in northern Europe. In the future, meteorological conditions are expected to become increasingly favorable for wildfires due to climate change. An important aspect in fire management are the national forest management strategies that play a crucial role in controlling e.g. fuel availability in forests, and further areal coverage of burned area. In addition, the effectiveness of rescue services is crucial. Thus, the development of fire risk prediction and fire detection systems, as well as, modeling of spread of fires and emissions of harmful ingredients, such as black carbon are urgently required to improve the societies preparedness to the increasing thread. In this presentation we synthetize the current state-of-the-art understanding of wildfires in Fennoscandia from a wide range of key perspectives: historical fire regimes, monitoring using in-situ and remote-sensing technologies, integrated modeling (e.g. climate models, spatial fire propagation models forced with operational weather forecast model) and fire suppression. In addition, we assess the amount of black carbon emissions released from recent wildfires in Fennoscandia. These results will help northern societies to tackle against the negative impacts of climate change and to support the development of efficient mitigation strategies. In the upcoming decades the effective management of wildfires is especially relevant, as wildfires greatly affect regional carbon budgets and mitigation efforts.