



## **Tracking changes of forest carbon density following mega-fires: comparison studies in the Yellowstone National Park and Boreal Forests of Northeast China**

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Wildfires and post-fire management directly change C stored in biomass and soil pools, and can have indirect impacts on long-term C balance. Two mega fires occurred in the Yellowstone National Park (YNP) and the boreal forests of Northeast China in 1988 and 1987, respectively, making them ideal sites to examine and compare the effects of management and disturbances on regional carbon dynamics. In this study, we quantified effects of the 1988 Yellowstone fires on YNP carbon storages and fluxes. And then we tracked and modeled post-1988 forest carbon stocks change in YNP, and compared with simulation results of carbon stock changes in post-1987 fire boreal forests of Northeast China. Preliminary results show that in YNP, the mega fires in 1988 were responsible for an immediate loss of 900 g/m<sup>2</sup> ecosystem average C density and it would take about a decade before the YNP ecosystem recover to the pre-fire average C condition. In boreal forests of Northeast China, fire reduced aboveground and belowground carbon by 230±60 g/m<sup>2</sup> and 460±340 g/m<sup>2</sup>, respectively.