

EGU21-16431

<https://doi.org/10.5194/egusphere-egu21-16431>

EGU General Assembly 2021

© Author(s) 2021. This work is distributed under the Creative Commons Attribution 4.0 License.



Near-complete loss of fire-resistant primary tropical forest cover in Sumatra and Kalimantan

Tadas Nikonovas¹, Allan Spessa¹, Stefan Doerr¹, Gareth Clay², and Symon Mezbuhaddin³

¹Department of Geography, Swansea University, Singleton Park, Swansea, SA2 8PP, UK

²Department of Geography, School of Environment, Education and Development, University of Manchester, Oxford Road, Manchester, M13 9PL, UK

³Department of Renewable Resources, University of Alberta, Edmonton, Alberta, T6G 2E3, Canada

Deforestation in Indonesia in recent decades has made increasingly large parts of the region vulnerable to fires. Burning is particularly widespread in deforested peatlands, and it leads to globally significant carbon emissions. Here we use satellite-based observations to assess loss and fragmentation of primary forests and associated changes in fire regimes in Sumatra and Kalimantan between 2001 and 2019. We find that fires did not penetrate undisturbed primary forest areas deeper than two kilometres from the forest edge irrespective of drought conditions. However, fire-resistant forest now covers only 3% of peatlands and 4.5% of non-peatlands; the majority of the remaining primary forests are severely fragmented or degraded due to proximity to the forest edge. We conclude that protection and regeneration of the remaining blocks of contiguous primary forest, as well as peatland restoration, are urgently needed to mitigate the impacts of potentially more frequent fire events under future global warming.