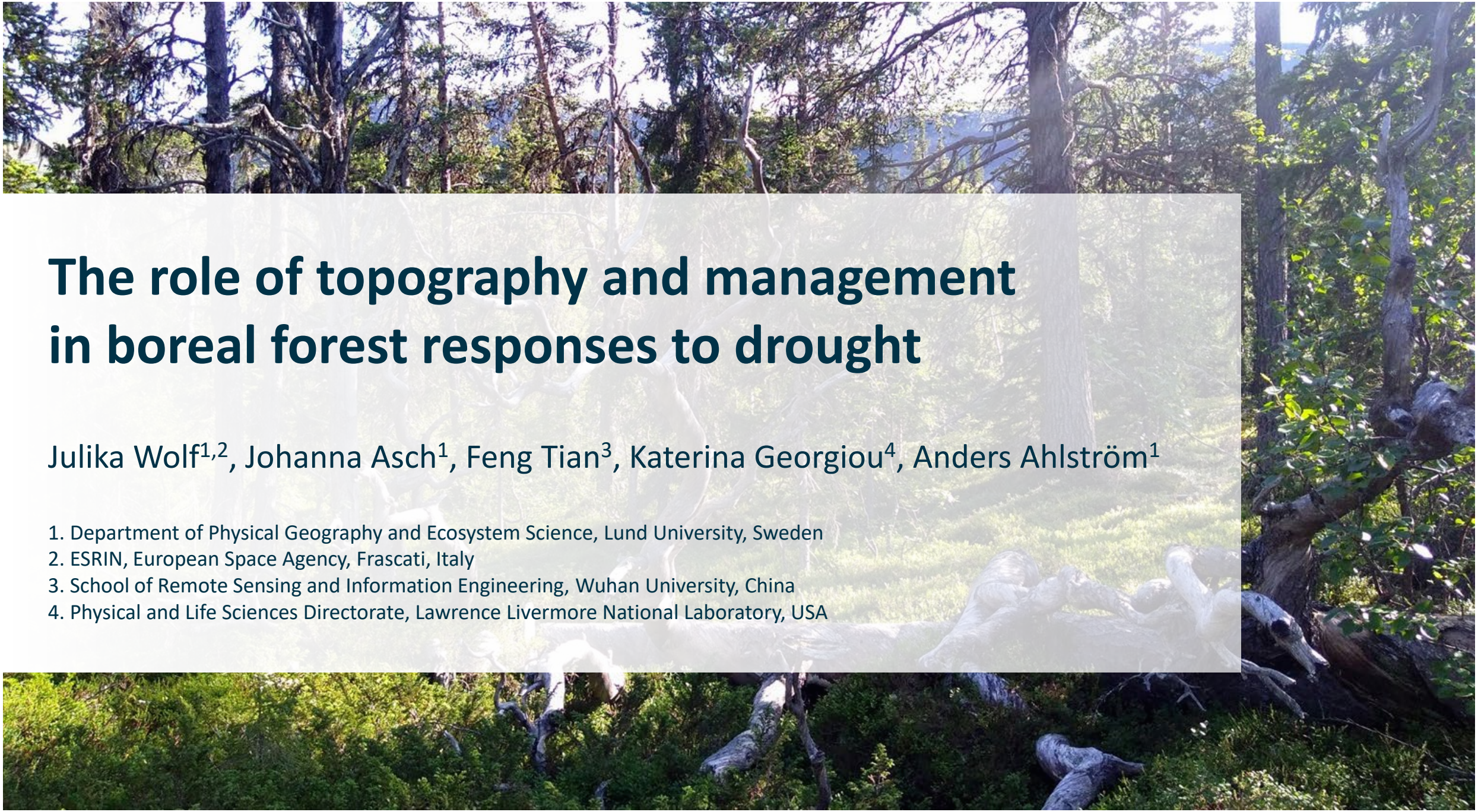

The role of topography and management in boreal forest responses to drought

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The Swedish landscape from above

Two very different types of forest

Two very different types of forest

The Swedish primary forests project

The heart of the project

A new primary forest map

→ 348 primary forests scattered across Sweden

→ forest pair = primary + surrounding secondary forest

The heart of the project

A new primary forest map

Exclusions made

→ non-forested pixels

→ young stands or recent clear-cuts

→ forest on wetlands

→ ‘non-productive’ forest land

→ areas affected by the 2018 fires

Secondary forests, additional exclusion:

→ areas with conservation value

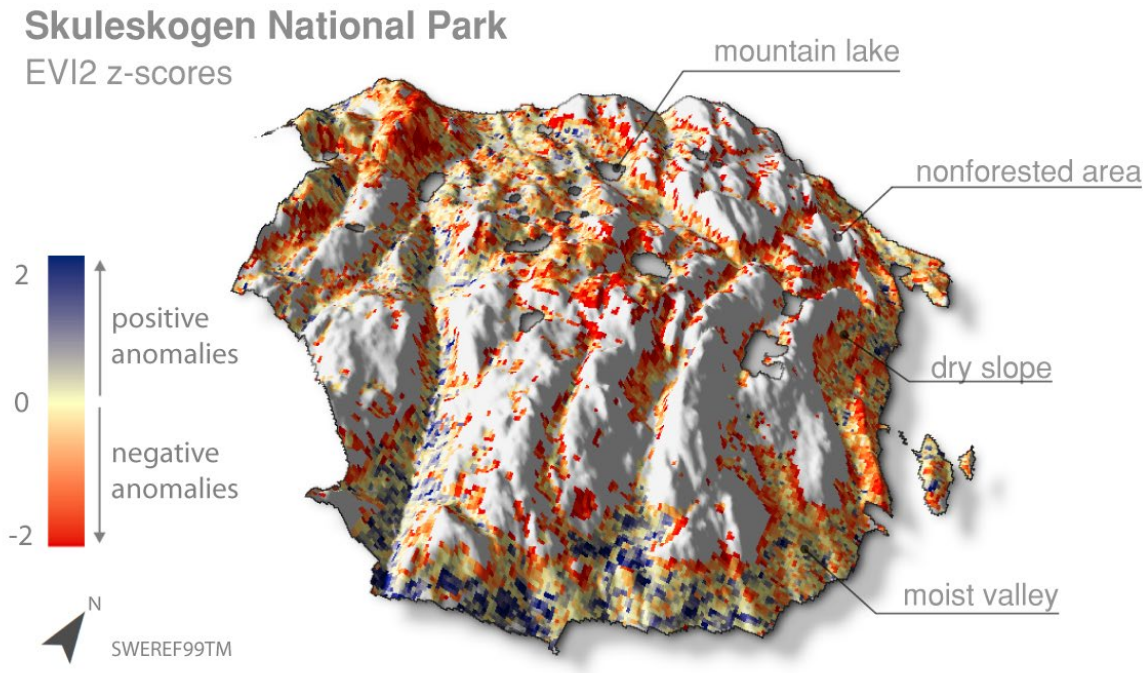
Landsat EVI2 z-scores

→ drought period = 2018 July-Sept median

→ baseline reference = 2008-2017

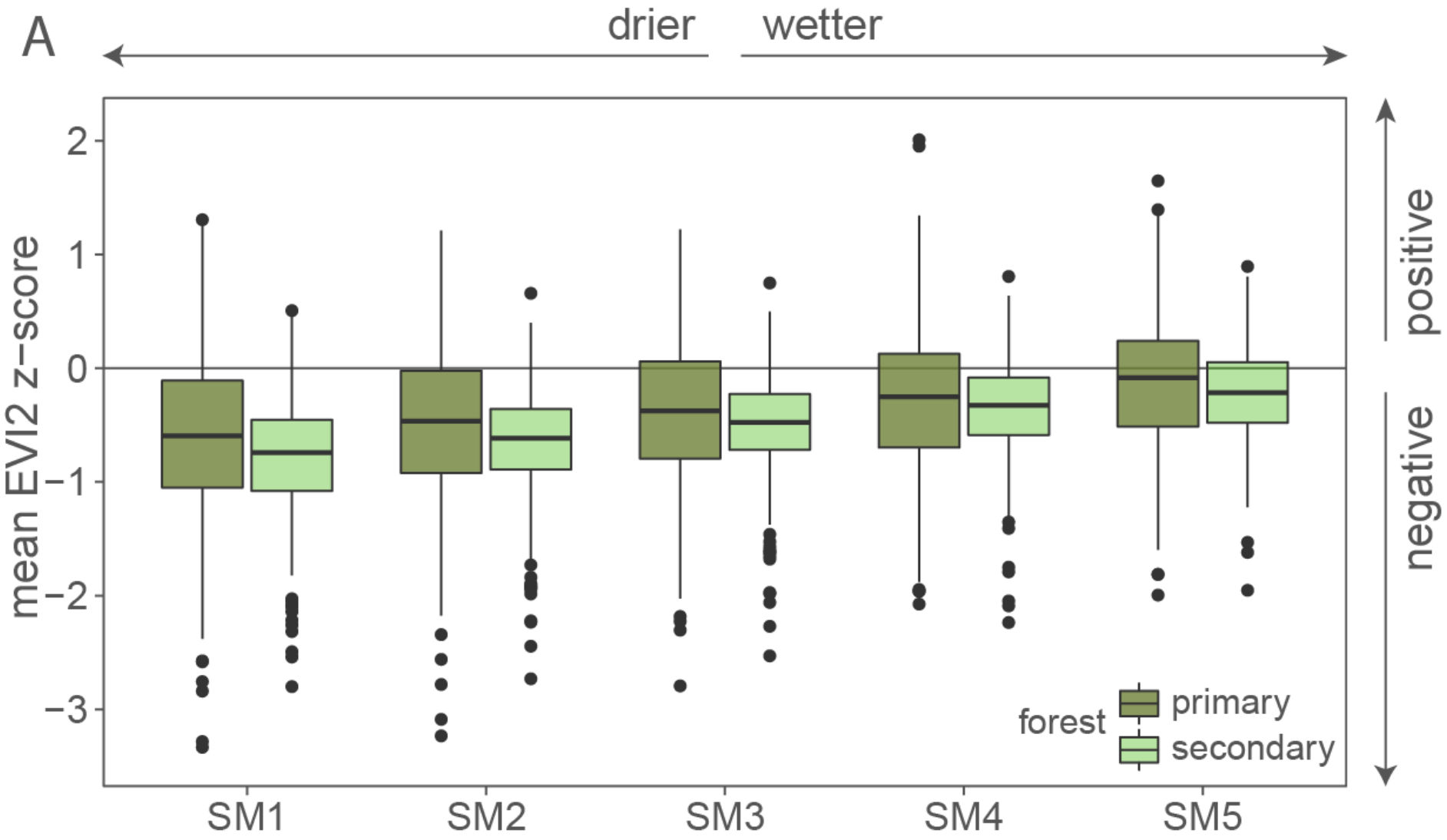
→ division into **five topographical soil moisture classes**

→ per-forest mean



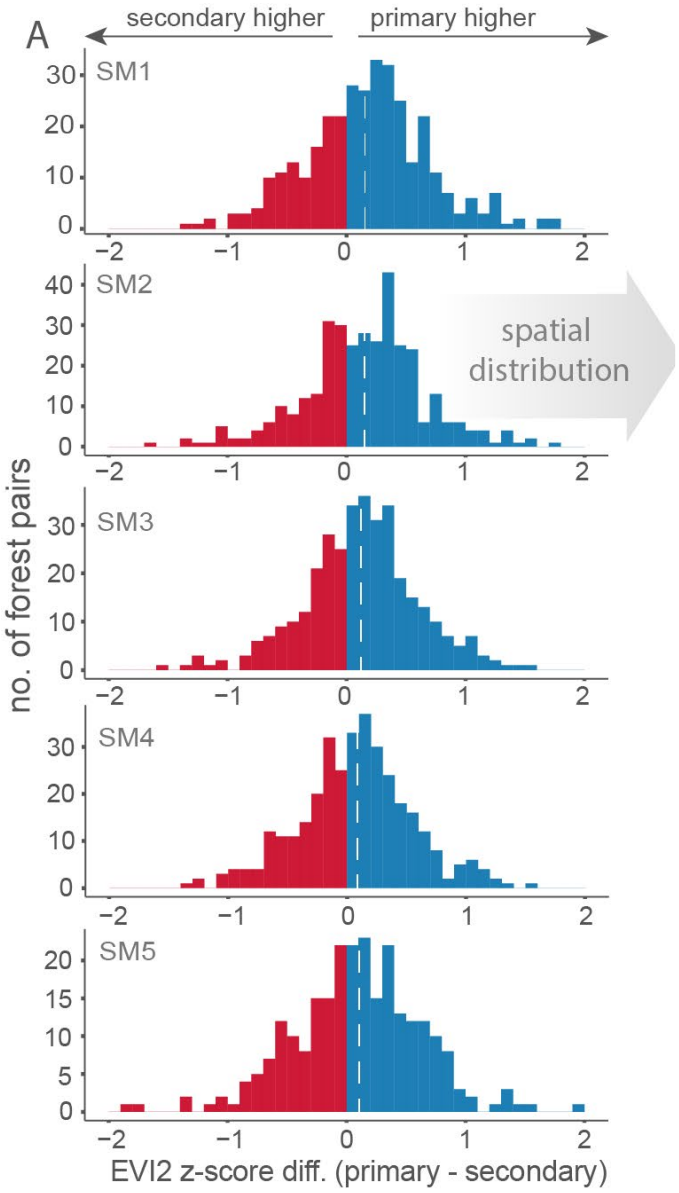
Results: topography effects

→ a forest's drought response is dependent on its topographic position in the landscape



Results: primary and secondary forest pairs

→ on average, primary forests showed less canopy browning than surrounding secondary forests



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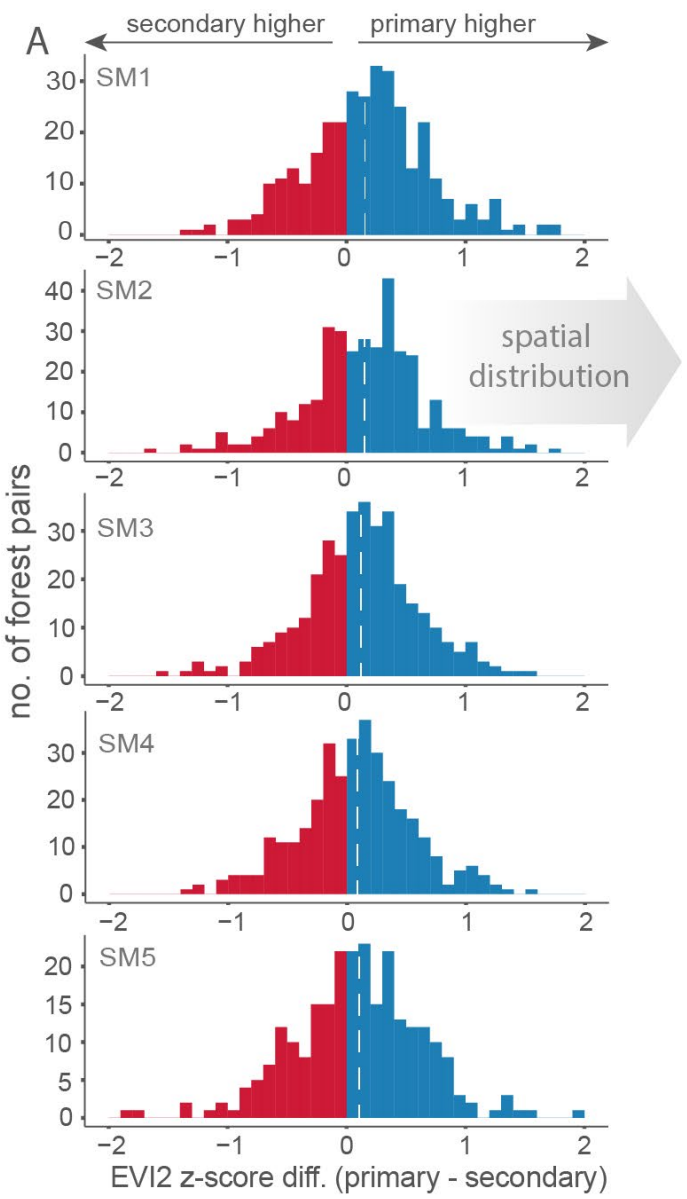

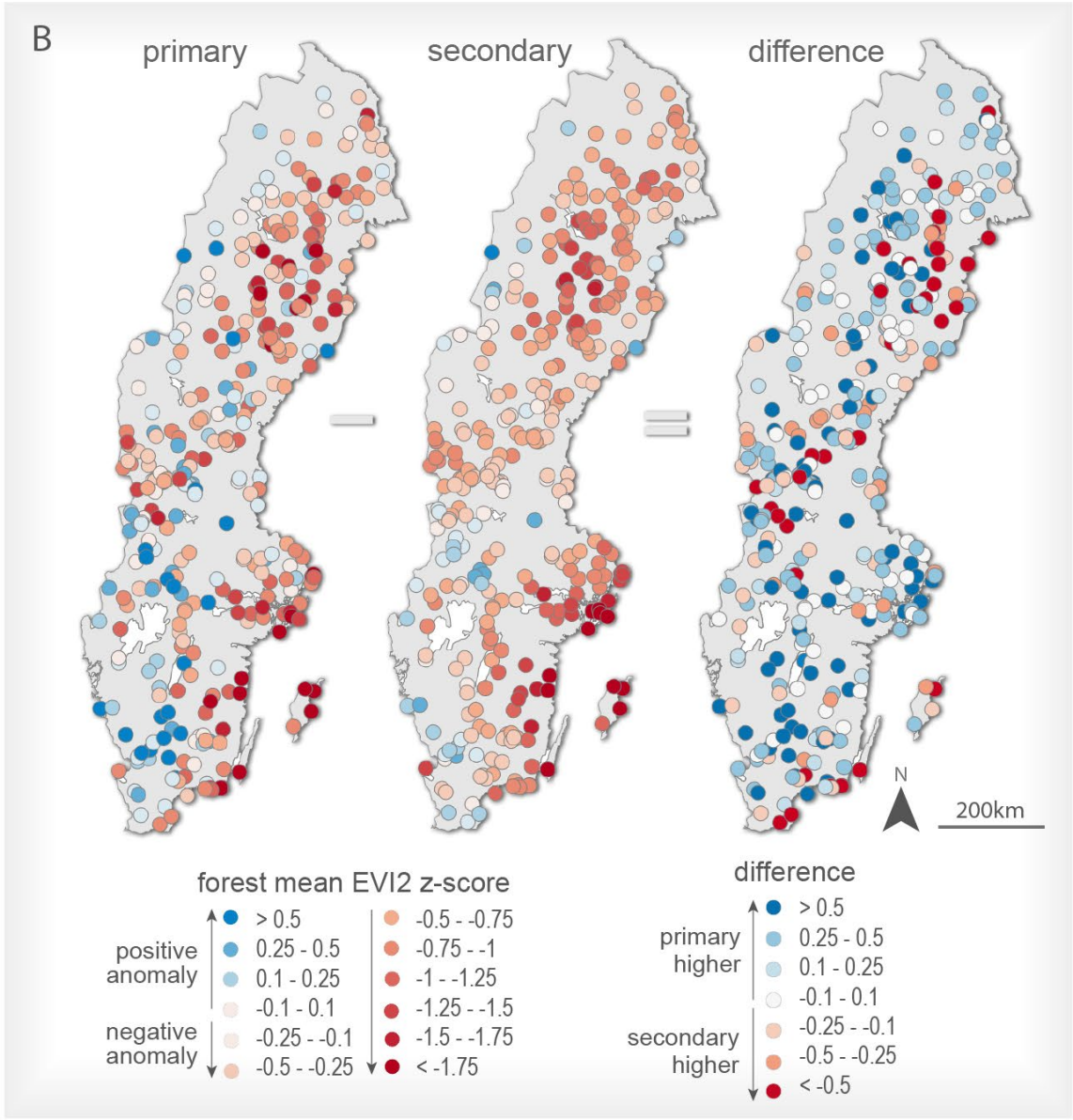

Questions or suggestions:

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Further info

Ahlström, A., G. E. de Jong, W. Nijland, and T. Tagesson. 2020. Primary productivity of managed and pristine forests in Sweden. *Environmental Research Letters*.

Wolf, J., J. Asch, F. Tian, K. Georgiou, and A. Ahlström. 2022. Swedish primary forests showed less canopy browning than managed secondary forests during the 2018 drought (*under review*).