

## Resilience of Dutch natural ecosystems to fire

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### Project description

Fire risk is projected to increase in many regions around the world because of increasingly occurring dry, hot and windy days. The Netherlands is no exception and thus a key aspect that is necessary to evaluate is how Dutch ecosystems will respond to wildfires. Plants in fire-prone ecosystems have evolved strategies to cope with fires: for example, some species can resprout, i.e., the individual plant can regrow from their underground root reserves after a fire occurs. The proportion of post-fire resprouters is thus an indicator of resilience to fire. At present, we lack an overview about fire-response traits of dominant plant species in the Netherlands, which is essential in order to assess potential impacts of future fires. The main goal of this assistantship is to quantify the resilience of different ecosystems across the Netherlands. The student will do so by combining information from (a) vegetation inventories; e.g., Dutch National Vegetation Database (Schaminée et al 2012), global database sPLOT (Bruehlheide et al 2019); (b) literature review together with existing databases of plant traits; e.g. TRY database (<https://www.try-db.org/TRY-Web/Home.php>), and BROT (Tavsanoglu & Pausas 2018); and (c) fieldwork in recently burned areas in NL. One potential output of this assistantship could be a map of ecosystem resilience to fire for the Netherlands, which would be a very useful tool to help managers identify vulnerable hotspots where fire management measures should focus. This project will be developed in collaboration with Dr. Mara Baudena (Italian National Research Council, Turin, Italy) and Dr. Ángeles G. Mayor (UU).

### Job requirements

No specific requirements are necessary for this project but knowledge of Dutch flora, and/or experience in field vegetation sampling would be a plus.

### References:

- Bruehlheide, H, Dengler, J, Jiménez-Alfaro, B, et al. sPlot – A new tool for global vegetation analyses. *J Veg Sci.* 2019; 30: 161– 186. <https://doi.org/10.1111/jvs.12710>
- Schaminée, J. H. J., Hennekens, S. M., & Ozinga, W. A. (2012). The Dutch national vegetation database. *Biodiversity & Ecology*, 4, 201-209. <https://doi.org/10.7809/b-e.00077>
- Tavsanoglu Ç. & Pausas J.G. 2018. A functional trait database for Mediterranean Basin plants. *Scientific Data* 5:180135.