**Spatiotemporal patterns of fire in the Netherlands**

Fire currently is not a major ecosystem process or hazardous concern in the temperate climate of the Netherlands. Humans have a large control on fire occurrence in these regions, indirectly by creating fragmented landscapes that limit fire spread, and directly by igniting and extinguishing fires. Climate is also important since it may induce the susceptibility of fuels to ignite and burn, and influences lightning ignitions. With a changing climate, fire may become more prevalent in these regions. It is therefore important to understand current spatiotemporal patterns of fire. The Suomi National Polar-Orbiting Partnership (Suomi NPP) spacecraft with the Visible Infrared Imaging Radiometer Suite (VIIRS) has been detecting fires around the globe with the help of a developed fire detection algorithm (Schroeder *et al.*, 2014). This thesis will investigate this dataset in combination with land cover, climate and infrastructure datasets to reconstruct the regional effect of the fires.

# Introduction

**VUUR ALS OP ZICH ZELF STAAN IETS**

Fires has been important part for various ecosystems around the world and has been occurring since the late Silurian (Scott, 2010). Since the upcoming of the *Homo-*species, fire has been used for various tasks such as to modify their surrounding areas or domestic purposes (Bowman *et al.*, 2011). Besides the usages of fire, wildfires have a negative impact on its surroundings on the short and long term (Morton *et al.*, 2003; Ganteaume *et al.*, 2013) and high impact on the health of the local population (Reid *et al.*, 2016; Cascio, 2018)

**VUUR IN EUROPA**

70% of the fires and 85% of the burned surface area in Europe are in the Mediterranean Region, therefore has and is extensively researched (San-Miguel-Ayanz and Camia, 2010; Oliveira *et al.*, 2012; Ganteaume *et al.*, 2013). Over the last century, the mean global temperature has been rising, whereby climate zones are going to change, whereby the amount of precipitation, temperature and extreme weather effects are affected and going to affect vegetation, water availability and more (Beck *et al.*, 2018). Wildfires are part of these changing the climate zones. The burning seasons are probably going to be longer and the amount of fires increasing (Flannigan *et al.*, 2009). These climate changes affect the fire regimes in Western Europe (Lung *et al.*, 2013). However, there is not a lot information about the fire regime in Western Europe and especially in infrastructure dense and zoned countries such as the Netherlands.

However, the global trend in yearly burned area and size is declining, which is driven by the more capital-intensive agricultural land use on the lands, socioeconomic development, and the growing demand of regional and global agricultural products (Andela *et al.*, 2017).

**MEER INFORMATIE OVER HET VERANDERDE KLIMAAT IN EUROPEAN ATLANTIC**

The Netherlands is one of the countries that is going to be influenced by the increasing risk of forest fires if the predicted scenario of A1B (climate scenario whereby the energy resources are mixed, but if technological development in sustainable energy is going to be fast (Nakicenovic *et al.*, 2000) then this situation could possibly going to be true (Lung *et al.*, 2013) or if this development slow worse.

**MISSCHIEN NOG OVER DE URBANISATIE EN RUIMTE OVER NEDERLAND BESPREKEN**

The paper is first going to summarize the datasets and the provide how these datasets are used in the analysis. The results sections are going to give an interpretation of the datasets and the validation of these results. At least, there is going to be a discussion if these results give valid information about the temporal spatial patterns in the Netherlands (**MOET UITGEBREIDER EN SPECIFIEKER)**

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