# 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) and have taken a vital part into the ecological systems. The ignition of natural fires has been caused by lighting (Komarek, 1964). Sine the upcoming of humans, the ignition has been caused by human activity (**SOURCE**). Fire has been used for various tasks such as to modify their surrounding areas to prepare for agricultural activity or domestic purposes. For the last 300 years, humankind has drastically influenced the fire regimes with the great expansion of farmland and the accumulation of fuel in fire sensitive climates (Bowman *et al.*, 2011). The expansion of farmland caused a decrease of fires all around the world.

MISSCHIEN OVER NATUURBRANDEN

Wildfires have a great impact on its surroundings for the short and long term (Morton *et al.*, 2003; Ganteaume *et al.*, 2013) and greatly impact the health of the respiratory system for a short and long period of time (Reid *et al.*, 2016; Cascio, 2018).

**OORZAKEN VAN VUUR BESPREKEN**

Throughout the last century a rise of temperature on a global scale has been observed (with the mean temperature between 1986 to 2005 as a base temperature). This rise in temperature has been related to greenhouse gasses that are emitted by human activity. The effects of this phenomenon has on the atmospheric and biochemical cycles (Hartmann *et al.*, 2013). It is also going to affect various fire regimes around the world. The effects of climate change will impact the burning seasons. They are going to be longer and the frequency of is increasing over the 21th century (Flannigan *et al.*, 2009). Furthermore, potential of the fire is going to increase and even be amplified by the landcover as a response to the warmer and drier climate (Liu, Stanturf and Goodrick, 2010).

Climate change effects various fire regimes all over the world, including Europe, Currently, around 70% of the fires and 85% of the burned surface area in are in the Mediterranean Region in Europe. Therefore, is the Mediterranean area extensively researched by various researchers (San-Miguel-Ayanz and Camia, 2010; Oliveira *et al.*, 2012; Ganteaume *et al.*, 2013). The effect of climate change is causing that some regions are going to experience a higher frequency of wildfires and an increase intensity and size, because the drier periods and the fire seasons are going to be longer (San-Miguel-Ayanz, Moreno and Camia, 2013). Lung *et al.* (2013) has displayed that the coming century the risk of forest fires is going to be higher in higher centred latitude regions.

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

The western part of Europe with an Atlantic climate, has been more effected by the increasing frequency of storms (Kovats *et al.*, 2015) and pest species infecting forestry (Lindner *et al.*, 2010), but the increasing risk of wild fires and changing climate zones are effecting.

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. Furthermore, this country has a rich history in spatial planning and in general water management. This lead in the 20th century to greatly improving the Dutch waterworks to protect cities and the diverse spatial policies. These developments resulted in a highly fragmented landscape (Janssen-Jansen, 2016; De Mulder, 2019).

In the 2000’s was also a European policy named the Bird and Habitats directives; whereby several designated landscapes are indicated with the intention to preserve the European biodiversity. In the Netherlands, was this mostly done by local and regional local instruments (Beunen, Van Assche and Duineveld, 2013). This policy also contributed in the short to the Dutch landscape. These natural areas are also interesting to observe wildfires, because these fires have access to limited natural resources to develop. **MISSCHIEN NOG REDENEN VERZINNEN WAAROM DIT HANDIG IS**

Another unique trait of the Netherlands is that it has the highest population density per square kilometre in Europe with 513 people / km2 ‑(CBS, 2016) and really high dense highway infrastructure **BRON ZOEKEN**. These traits could also influence the fire regimes in the Netherlands, because most forest fires are indirectly caused by human agents (Ganteaume *et al.*, 2013) and a lower distance to infrastructure has been related to increasing chance of fire (Oliveira *et al.*, 2012). With these relations in mind, it is interesting how the fire regime has developed in for the last couple years with the current increased temperature and increasing chance of wildfires.

**LANDCOVER RELATEREN AAN KANS OP VUUR MISSCHIEN AL EERDER**

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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