

Mapping PM2.5 Air Pollution in the Netherlands, 2024

Introduction

This project analyzes the spatial distribution of fine particulate matter (PM2.5) across the Netherlands using publicly available interpolated data from the European Environment Agency (EEA). It includes both a continuous surface map and zonal average calculations to identify regional pollution patterns and potential hotspots.

Data Sources

PM2.5, European air quality data, (interpolated data)

Source: European Environment Agency (EEA)

Format: GeoTIFF, gridded data

<https://www.eea.europa.eu/en/datahub/datahubitem-view/938bea70-07fc-47e9-8559-8a09f7f92494?activeAccordion=1084805%2C1096679>

Methods Overview

- Imported interpolated raster into ArcGIS Pro
- Created surface visualization with classified symbology
- Calculated zonal statistics (mean PM2.5 per municipality)
- Designed map layouts with legend, title, and description

Key Findings

- Southern provinces (e.g., Limburg, North Brabant) show consistently higher PM2.5 concentrations.
- This may be due to:
 - Proximity to industrial areas in Belgium/Germany
 - Intensive agriculture and livestock farming
 - Urbanization and traffic emissions
- Northern provinces and coastal regions generally have lower concentrations.

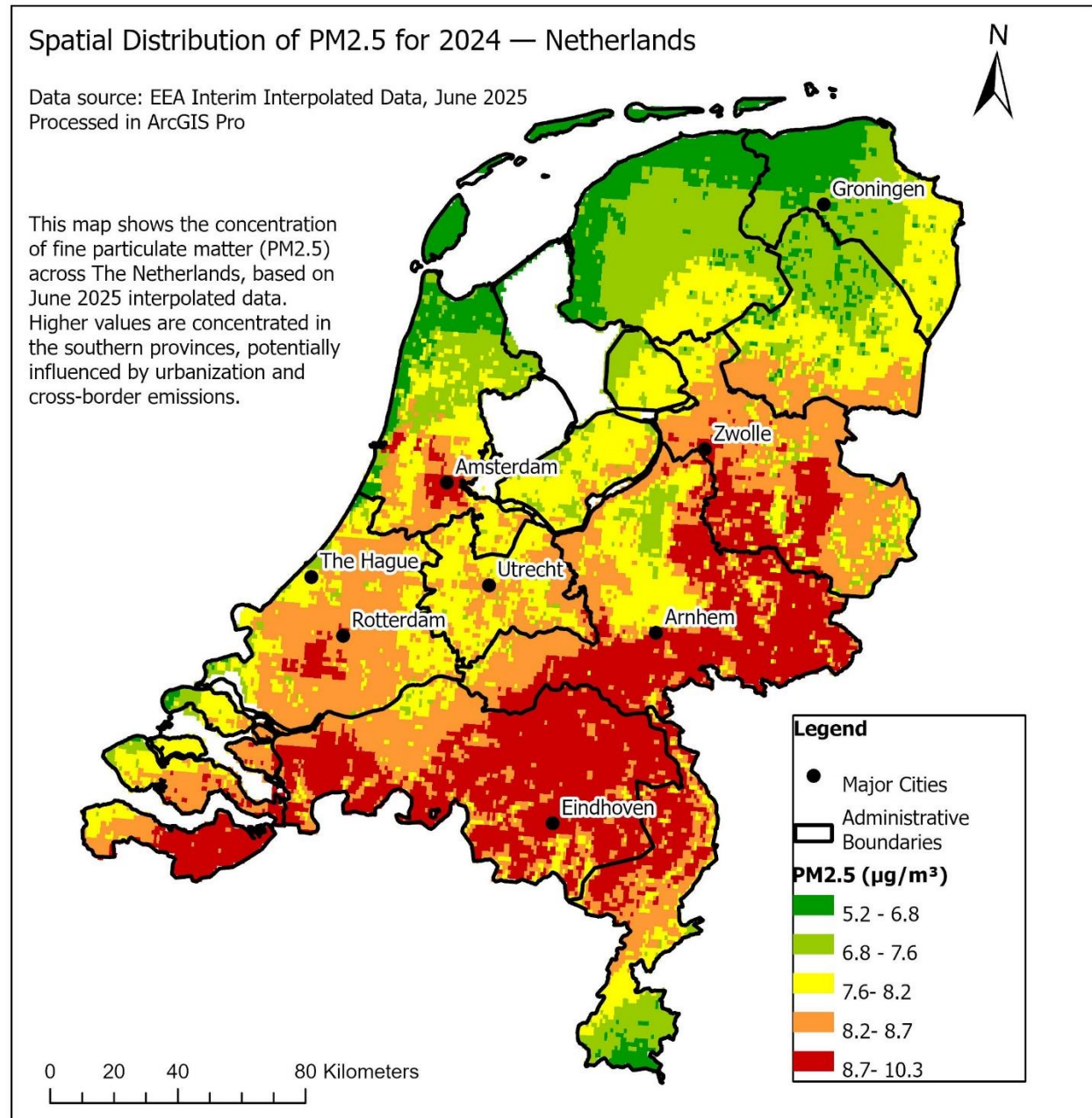
Tools Used

- ArcGIS Pro (Spatial Analyst, Layout tools)
- Symbology: Graduated colors, custom classification
- Analysis: Raster visualization, Zonal Statistics

Summary Statement

This project demonstrates the ability to work with real-world environmental data, apply spatial analysis methods, and present cartographic outputs in a clear and professional format.

Map 1: Spatial Distribution



Map 2: Average PM2.5 by Municipality

