

# LIGHT POLLUTION – WHEN NIGHT BECOMES DAY



Whoever goes out at night and looks up at the sky is often disappointed, especially when living in a city. As a result of artificial light, the night sky has become brighter, so much so that we can often no longer see the stars. This is especially unnerving, since so many people still look up at the stars for context in life and to feed imaginations. With increasing urbanization, especially in the western world, fewer and fewer people are able to see the stars in a dark sky.

GREECE



GERMANY



LITHUANIA



## What is light pollution?

When we talk of light pollution, we mean the excessive and often misdirected use of artificial outdoor lighting after dusk, especially at night. The threat of light pollution continues to grow as the demand for artificial light increases each year.

## Effects of light pollution

- Ecosystems get disturbed which has negative impacts on plant, animals and humans.
- Plants: growth and flowering cycles are disturbed → implications for the wildlife that depend on trees as habitat
- Animals:
  - Migratory birds which use the stars for orientation lose track on their routes
  - Birds are killed because they crash into illuminated buildings
  - Insects are killed in neon lights and lamps → negative effects on the food chain
- Humans are used to a 24-hour light/dark cycle (circadian rhythm) any light after dusk is unnatural. When this rhythm is disturbed this can lead to:
  - Stress
  - Depression
  - Head aches
  - Disturbed sleeping rhythm
  - “mini jetlag” if staying up longer
  - Higher risk for cancer
- Lighting needs a lot of energy. Light pollution therefore adds to climate change

## Our findings

We measured light pollution in Lithuania, Italy, Greece and Germany in December 2017 (occasionally as a practice) and March 2018 (each night for one week) with the app “Loss of the night”. Comparing our data we found, as expected, great differences in light pollution in rural and urban areas.

Varda/Greece, Palanga/Lithuania, Montalbano/Italy and Norderney/Germany showed lower levels of light pollution with an average of 12 stars visible on our measuring days while Athens/Greece, Karlsruhe/Germany and Siauliai/Lithuania had high levels of light pollution with an average of 2 visible stars and an immense amount of glare.

## Possible Solutions for everybody

- Avoid unnecessary lighting (no permanent outside light, no neon lights)
  - use motion detectors and time switches
  - use LED bulbs to save energy (longer lifespan, needs less energy, doesn’t attract as many insects)
  - use the app “Loss of the night” or “Dark Sky Meter” to measure light pollution in your area and participate in the Globe at Night citizen-science campaign
- Visit [www.darksky.org](http://www.darksky.org) and [www.myskyatnight.com](http://www.myskyatnight.com) for more information on light pollution



Light pollution obscures the night sky in Tenerife, Spain.  
Source: [Cestomano/Flickr](https://www.flickr.com/photos/cestomano/)