# Policy Brief

## Restoring the Night: A Policy Agenda for Light Pollution Mitigation in Europe

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This policy brief (D4.1) is produced as part of the Horizon Europe **PLAN-B project** (Grant Agreement No. 101135308) in collaboration with its sister **project AquaPLAN** (Grant Agreement No. 101135471). This **policy brief provides strategic guidance** for the **European Union** to **take steps** towards **addressing light pollution**, **recognising** its **adverse** environmental **impacts**, **harmonising efforts** and **providing a framework** for coordinated **national action,** as well as **promoting science-based regulation and management** of artificial light at night (**ALAN**).

# KEY MESSAGES

- Natural darkness plays a vital role in the development and evolution of many species and habitats, with **approximately 30% of vertebrates and over 60% of invertebrates being nocturnal**.

- While recognising the **beneficial** and important **role** of **artificial light at night** (ALAN) in providing human comfort, well-being and safety, its use must be **carefully balanced** to meet the needs of both **people and nature**.

- **ALAN causes light pollution when humans, other organisms, or the environment are exposed to unwanted or unnecessary lighting**. ALAN has to be **used and managed within** appropriate **ecological limits.**

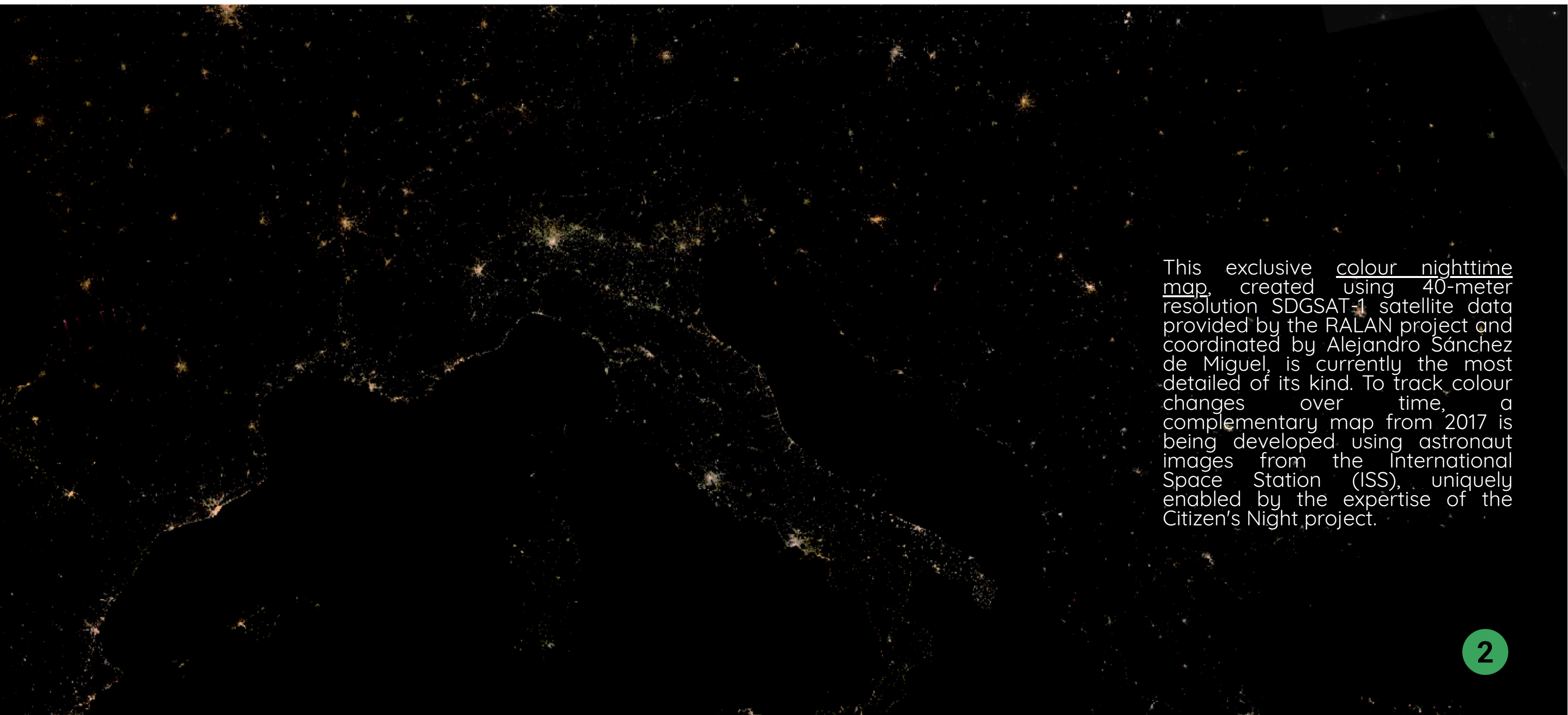
- **ALAN has increased thousands of times** compared to 200 years ago, **with 99% of Europe's** population and biodiversity now living **under light-polluted skies**.

- **Light pollution** brings **significant environmental threats**, impacting biodiversity through disrupting vital processes and behaviours like foraging, courtship, and mating.

- Globally, light pollution contributes to an estimated **3.4 trillion USD in lost ecosystem service value each year**.

- Like other forms of pollution, **light pollution should be integrated into the European environmental protection framework**, with continuous measurement and monitoring to strengthen nature conservation efforts.

- To align with the international agenda and recent regulatory developments, the **EU needs to support action to reduce light pollution** and establish a coherent, harmonised framework for Member States.



This exclusive colour nighttime map, created using 40-meter resolution SDGSAT-1 satellite data provided by the RALAN project and coordinated by Alejandro Sánchez de Miguel, is currently the most detailed of its kind. To track colour changes over time, a complementary map from 2017 is being developed using astronaut images from the International Space Station (ISS), uniquely enabled by the expertise of the Citizen's Night project.

# INTRODUCTION

**Natural darkness and starry skies** have played a **fundamental role** in **shaping ecosystems and human civilisation**. The natural rhythms of day and night guided the evolution and development of species and ecosystems, providing essential cues for activity, rest, and reproduction. For humans, the night sky has inspired scientific discovery, cultural traditions, and a deep connection with the cosmos (Stone, 2017).

The widespread adoption of artificial light, particularly since the late 19th century, has significantly altered these conditions. **Artificial light at night** (ALAN) has become an **essential part of modern life**, delivering **benefits** such as enhanced visibility, extended activity hours, and a sense of security. However, its **excessive and poorly managed use** has introduced additional **environmental pressures**, disrupting natural processes and degrading ecosystems. **Light pollution** occurs when **humans, other organisms, or the environment are exposed to unwanted or unnecessary lighting**, and it presents one of the **fastest-growing forms of environmental degradation** (Falchi et al, 2011).

Approximately **99% of Europe's population and biodiversity live under light-polluted skies** (Falchi et al, 2016). The European Union **wastes over 38 TWh of electricity** annually, equivalent to around **€6.3 billion**, on inefficient outdoor lighting (Sánchez de Miguel, 2015; Traverso et al, 2017). This resultant light pollution negatively affects the environment, human health and human activities, such as astronomy and indigenous practices.

Nature bears the most significant impacts of light pollution. **Approximately 30% of vertebrates and more than 60% of invertebrates are nocturnal**, relying on natural darkness for vital behaviours (Hölker et al, 2010). Despite the common perception that **light pollution** is a local issue, increased levels of ALAN can **travel long distances**, often crossing national borders and affecting areas far beyond their source, thereby making it a **transboundary environmental concern** (Ścieżor, 2025). **Skyglow**, the brightening of the night sky from artificial sources, now **doubles natural light levels** for nearly a quarter of the Earth's land surface, including **over 77% of protected areas and 51% of Key Biodiversity Areas** (Seymoure et al, 2025). Such exposure **fragments** terrestrial, aquatic and aerial **habitats**, **accelerates biodiversity loss**, and **undermines conservation goals** (Easton et al, 2024; Friulla et al, 2025; Bernadez et al, 2025). The global annual **loss of ecosystem service** value due to light pollution is **estimated at 3.4 trillion USD** (Anderson et al, 2024).

Despite growing scientific evidence on the harmful impacts of ALAN, **light pollution remains largely overlooked in the EU's political agenda**. There is an urgent need to integrate it into the broader environmental protection framework. Recognising natural darkness as an essential component of the environment is vital to strengthening overall conservation efforts.


Image © Bettymaya Foott

# ALAN AS AN ENVIRONMENTAL POLLUTANT

Nature functions within constantly changing cycles, with circadian rhythms or the cycle of day and night being among the most essential. The **natural nighttime environment is inherently dark**; therefore, **any alteration** of this natural darkness inevitably **impacts the environment and biodiversity** (Bará, 2023). While **ALAN brings undeniable societal benefits**, such as comfort and safety, it **becomes an environmental pollutant** when **humans, other organisms, or the environment are exposed to unwanted or unnecessary lighting**. Even at low levels, ALAN can alter habitats, fragment ecosystems, and accelerate biodiversity loss, especially among the many nocturnal species that rely on natural darkness to survive (Welch et al, 2024). Moreover, when **ALAN is poorly designed**, installed in unsuitable locations, used at inappropriate times, **or applied excessively**, its **harmful effects outweigh its intended benefits**, contributing to glare and other forms of light pollution that ultimately undermine safety and well-being (Linares et al, 2024; Motta, 2024).

**Approximately 60% of the biodiversity depends on darkness to survive**

In the EU, **environmental pollution** is generally understood as "the **introduction** of substances or **energy** into the environment, resulting in deleterious effects of such a nature as to endanger human health, harm living resources and ecosystems." A broader understanding is reflected in the international agenda. The Convention on Biological Diversity, in its guiding documents, defines pollution as contaminants introduced into the environment that cause instability or harm. Thus, for nature, **artificial light**, being a form of electromagnetic energy emitted into the environment that alters it and causes harmful ecological effects, **should be recognised as a source of pollution**, and should be **managed within clear ecological limits** (maximum permissible parameters), **balancing human and environmental interests**, like other forms of pollution such as noise, chemical, water, or air pollution.

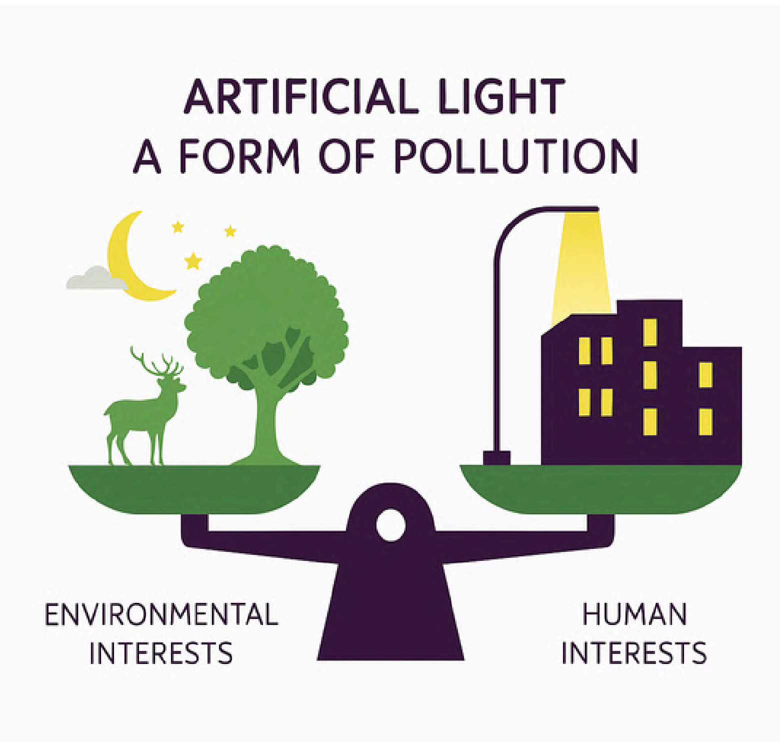



**Figure 1.** Like many other forms of pollution, light pollution is an unintended by-product of a desired activity. However, unlike pollutant substances that are difficult to remove once introduced into the natural environment, light pollution is relatively easy to address. By implementing more responsible and well-designed lighting installations, as well as applying responsible outdoor lighting practices to the existing infrastructure, it is possible to retain the intended societal benefits of artificial lighting while simultaneously preserving the environmental conditions essential for species and habitats.

# IMPACTS ON SPECIES, HABITATS AND ECOSYSTEM SERVICES

**Light pollution impacts are pervasive, affecting both terrestrial and aquatic ecosystems** and organisms living at the interface between these ecosystems (Parkinson et al. 2020). Researchers have identified light pollution **impacts from the organism to the ecosystem level** (e.g. Falcon et al. 2020, Zapata et al. 2019) and **across different** spatial and temporal **scales** (Tidau et al. 2021). The effects of light pollution on processes that are fundamental to the health and functioning of ecosystems have also been reported (Marangoni et al. 2022).

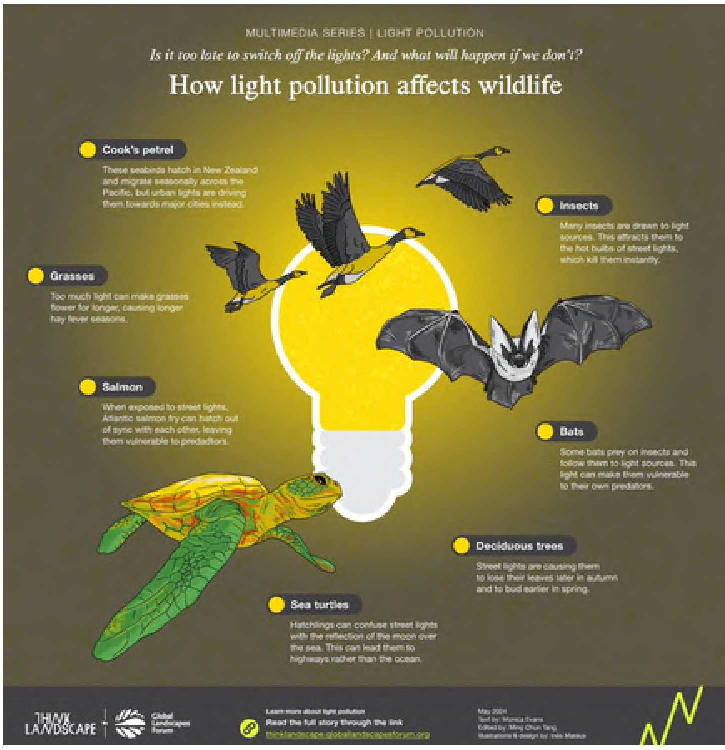



**Figure 2.** How light pollution affects wildlife.
© Think Landscape

**Impacts** have been **observed for the majority of organism groups**, including bacteria, fungi, plants, insects, fish, amphibians, reptiles, birds and mammals. These impacts manifest in different ways, including changes in physiology, daily activity patterns and life history traits (Sanders et al. 2020, Hölker et al. 2021).

**Organisms differ in their sensitivity to light** (Longcore 2023) and hence in their response to light pollution from different sources. For example, light pollution effects on insect behaviour are well-documented (Degen et al. 2024), and sources that emit ultraviolet light are known to be much more attractive to insects than yellow and orange lights (van Grunsven et al. 2014). Similarly, different life stages can have different sensitivities to light (Hölker et al. 2023).

**Light pollution can cause significant impacts close to its source.** For example, the illumination of buildings has been shown to **disorient birds**, leading to **collisions with the building** surface and resultant **fatalities** (Korner et al. 2022). Light pollution from buildings and other sources also **disrupts migratory patterns** at local, regional and macro scales (Curt et al. 2023).

**Figure 3.** It is estimated that each year, collisions with buildings kill between 100 million and one billion birds in the US alone.
Photo © Melissa Breyer

# IMPACTS ON SPECIES, HABITATS AND ECOSYSTEM SERVICES

Photo © Canva

**Light pollution impacts** can also **occur at great distances** from the source of the light pollution. **Approximately 1.9 million km² of the world's coastal seas are light-polluted** at one metre below the surface, and the Mediterranean is one of the European regions most exposed to light pollution (Smyth et al., 2021). The daily movement of marine organisms between the surface water and deeper waters, known as the Diel vertical migration, is **the largest migration of biomass on the planet**, and this has also been shown to be **impacted by light pollution** (Berge et al., 2020).

These significant **impacts at different spatial and temporal scales**, affecting different organisms to different extents and in differing ways, have **cascading effects on the ecosystem** services provided to society.

**Ecosystem services** are the **benefits** that humans derive from ecosystems and are often grouped into categories, including Provisioning Services (e.g. food), Regulating Services (e.g. disease regulation), and Cultural Services (e.g. ecotourism). **Adverse effects of light pollution on pollinators**, such as moths and bats, can **reduce Provisioning Services** by affecting the pollination of crops, including fruit crops, such as bananas, cocoa, coffee and peaches. Light can also **impact Regulating Services** through its disruption of biological control mechanisms, such as the activity of parasitoid wasps, which control populations of insect pests, and **Cultural Services** by affecting many species which are high in the public's consciousness, like turtles and corals.

The **extensive evidence on the diverse impacts of light pollution** from the individual organism to the ecosystem level, **including transboundary impacts**, highlights the **need to take action beyond the national scale**. Given the biodiversity crisis and the ambitious conservation targets that have been set for 2030 and 2050, it is essential that action is taken now.

Photo © Daniel Lisbona

# RESPONSIBLE LIGHTING FOR THE ENVIRONMENT AND BEYOND

**ALAN** is a vital part of life and is **widely associated with development**. It **offers** a range of **benefits**, including enhanced visibility, mobility, safety, and well-being, while also ensuring suitable conditions for work, leisure, and other activities during the night**.** However, the assumption that **"more light is better"** is being increasingly **challenged**. Studies on light and crime show inconsistent and inconclusive results, suggesting ALAN is not an ultimate solution to reducing crime rates (Van Tichelen et al, 2019; Uttley et al, 2024; Fotios et al, 2024). It is also indicated that the **overuse** of bright LEDs can produce **glare and increase contrast**, potentially **reducing** rather than enhancing **safety** (Hu et al, 2024). Studies show that excessive lighting may raise the risk of crime or accidents, and women and girls often report feeling safer in softly lit environments (Lorenc et al, 2015; Wood, 2020; Ceccato et al, 2020, Chaney et al, 2024).

A **shift towards a holistic approach to ALAN** use and management, which **recognises the importance** of **natural darkness** and **adequate lighting conditions,** is **needed**. This transition and change of perception requires **placing nature at the forefront** of planning decisions, in the same way environmental considerations are integrated into the regulation of other environmental stressors. Reduction of ALAN levels should not be feared; instead, the efforts should focus on improving the quality and purpose of lighting.

**Guidance for responsible lighting is already well established**. With advances in technology and design, outdoor lighting standards have evolved, shifting from a focus on humans to also addressing ecological and other impacts. For example, the Five Principles of Responsible Outdoor Lighting, CIE 150:2017 Guide, and the ROLAN Manifesto call for lighting that is useful, targeted, low-level, time-limited, and controlled. Good practices are already incorporated into various regulatory frameworks. **Achieving balance requires collaboration between science, industry, and policy.**

**Figure 4.** These photos visually demonstrate how properly shielded lighting installations reduce glare, enhance visibility and visual comfort, thereby increasing the feeling of safety. Images © Ken Walczak / Source: DarkSky International.

# PUBLIC PERCEPTION OF ALAN

Public acceptance is often the main concern when implementing light pollution reduction measures, largely due to the perceived impact of reduced ALAN on human activity and the potential consequences for public safety (Rashid et al., 2022). However, studies show that **people** are generally **unaware when light levels are reduced**, and most only notice when light is completely switched off (Green et al, 2015). Adaptive lighting has been positively received by drivers, indicating that functional, needs-based solutions can maintain safety (Pihlajaniemi et al, 2023).

Surveys show **strong public support for preserving natural darkness**. Adaptive lighting that not just dims lights, but turns lights off when not needed, is also strongly supported.

A recent New Zealand-wide survey assessing perceptions of natural darkness and ALAN found that between 31-58% of the population preferred lights to be off when not used (depending on the purpose of light, such as traffic safety, or other) (Cieraad et al, 2025). In Finland, 84.6% said light pollution has spread too widely, and 82.9% valued experiencing natural darkness (Lyytimäki et al, 2013). Additionally, 76.0% found commercial lighting disturbing, and 55.7% felt lighting reduced their neighbourhood's quality. Despite a strong need for further research, these findings suggest that **adaptive, ecologically responsible lighting is likely to be broadly accepted**. Available mitigation measures vary greatly, however, and the critical factor in their success will be how acceptable the specific measures are to those affected by their implementation.

# REGULATORY ACTION FOR RESTORING NATURAL DARKNESS

The growing body of evidence on the **negative impacts of ALAN** has not gone unnoticed and has recently **begun to attract political attention**, prompting the development of regulatory frameworks aimed at tackling light pollution at the international and national levels.

At the **international level**, the first to highlight the disappearance of the natural nocturnal environment and the transboundary nature of light pollution was the Convention on the **Conservation of Migratory Species** of Wild Animals (CMS). The CMS has **adopted several documents** raising awareness, calling for coordinated action to mitigate light pollution, and outlining practical measures to address its impacts. The most recent guidelines, the **International Light Pollution Guidelines for Migratory Species**, aim to provide the information needed to assess whether ALAN is likely to impact wildlife, along with management tools to minimise such effects (CMS, 2024).

Another international framework, the **Convention on Biological Diversity** (CBD), has also drawn attention to the environmental impacts of light pollution. Within its Kunming-Montreal Global Biodiversity Framework (GBF), the CBD **set an ambitious target to reduce pollution from all sources by 2050**, as one of the key drivers of the biodiversity decline. Although light pollution is not explicitly mentioned in the GBF, accompanying guidance clarifies that “all pollution sources” i**nclude artificial light**. Therefore, to meet this target, countries are expected to tackle light pollution. This is already reflected in the National Biodiversity Strategies and Action Plans (NBSAPs) adopted by several countries, including Austria, Belgium, France, Germany, and Spain, which outline national commitments to achieving the targets set out in the GBF.

At the **national level**, many countries have likewise begun addressing the adverse impacts of ALAN. Broadly, **regulatory approaches to light pollution** can be categorised into three groups: (1) the adoption of comprehensive light pollution acts that address a range of impacts (e.g. Croatia, Slovenia); (2) amendments to existing environmental legislation (e.g. Austria, Germany, Malta); and (3) combined approaches (e.g. France) (Yakushina, 2024). Regulatory developments are also increasingly evident at regional and local levels, particularly in Germany, Italy, and Spain.

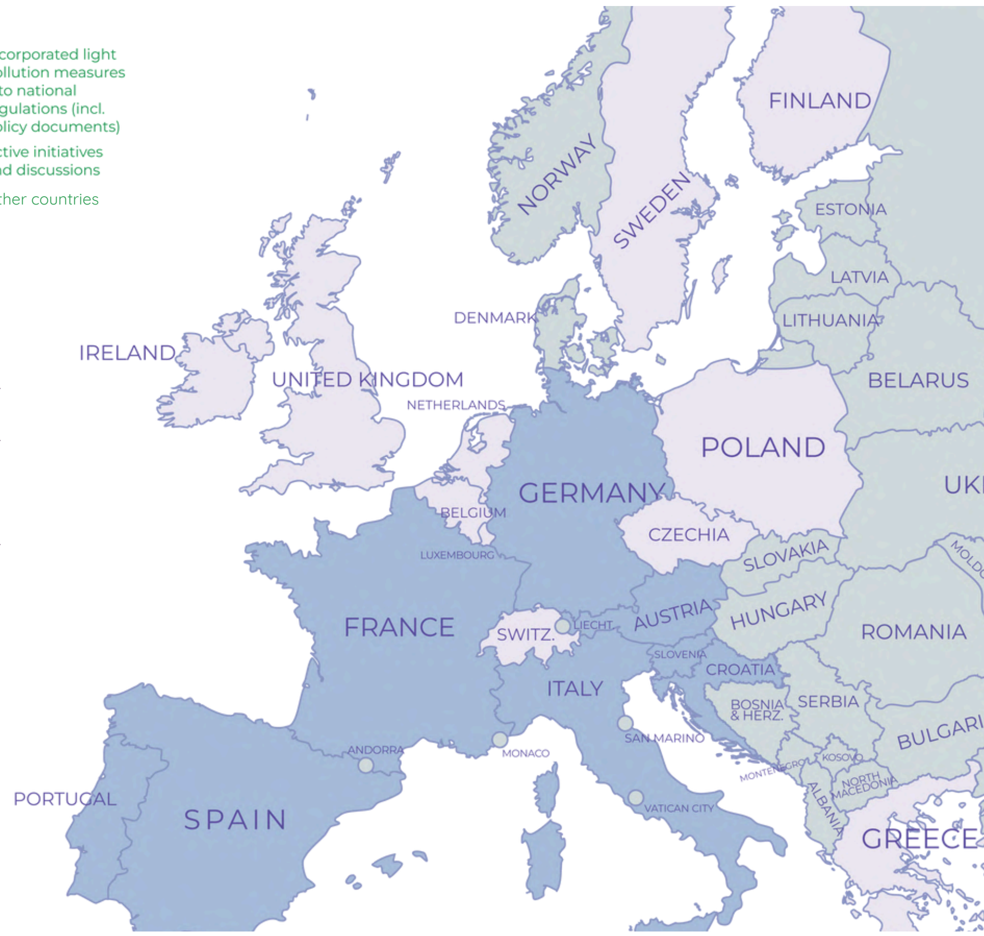



**Figure 5.** This map presents a non-exhaustive overview of countries in Europe that have adopted national regulations to address light pollution or included light pollution considerations into policies, and where initiatives or active discussions are underway to support the development of such regulatory measures. It was created using Mapchart.net. For further information and access to original regulatory sources, please refer to the Legal Light Pollution Database.

# LIGHT POLLUTION WITHIN THE EU REGULATORY FRAMEWORK

Although **not yet specifically regulated** at the EU level, **several documents** already **acknowledge light pollution** and its impacts. Furthermore, numerous **efforts** have been made to **bring light pollution onto the EU agenda.**

**Figure 6.** Illustrates the initiatives and documents that reference light pollution (LP) within the EU's political and regulatory agenda.

**2022** – The **8th Environmental Action Programme** highlights the need to address LP within the zero pollution framework

**2022** – Czechia Presidency of the Council of the EU
The **Brno Appeal**, calling on the EU to take decisive action to reduce LP

**2023** – Spanish Presidency of the Council of the EU
The **European Light Pollution Manifesto** underlined the urgent need for the EU to measure, monitor, and address LP

**2024** – **Nature Restoration Regulation**
Encourages Member States to consider stopping, reducing, or remedying LP across all ecosystems

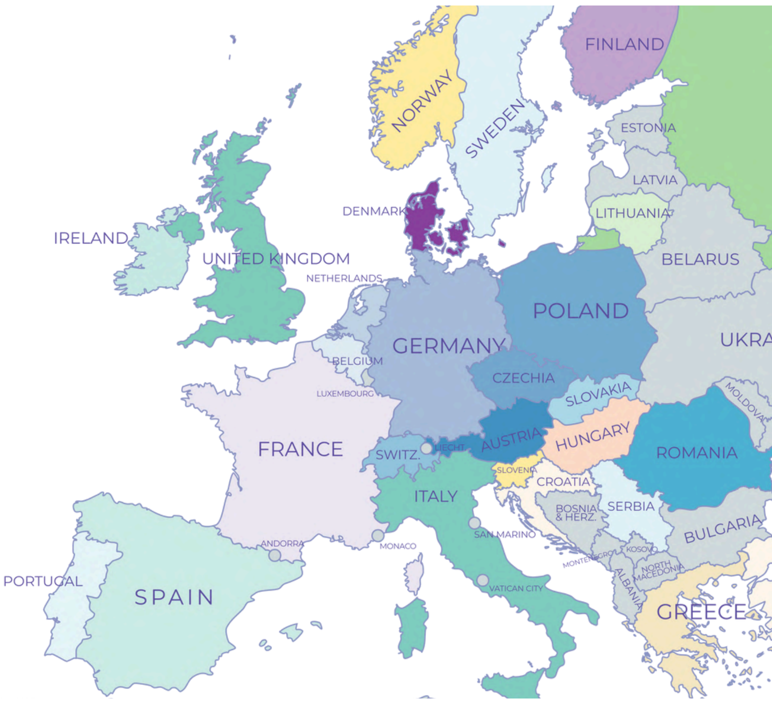
**2025** – **Zero Pollution Monitoring and Outlook Report**
LP is explicitly recognised as a threat to biodiversity, with a call for further action to tackle it across Europe

Currently, **artificial lighting** is **primarily regulated** through the EU **energy efficiency** framework, which focuses on reducing energy consumption rather than environmental impacts. However, **energy-efficient lighting** can still **cause significant ecological harm**, underscoring the **need to regulate ALAN beyond efficiency alone**. While existing EU environmental legislation does not explicitly mention ALAN, **environmental frameworks** can be applied **to protect the night**. Notably, several regulatory instruments, such as the **IPPC** and **EIA Directives**, provide the potential to consider light pollution as a pollutant within their legal regimes. Other instruments, i.a., **Birds and Habitats Directives** and the **Nature Restoration Regulation**, aiming at safeguarding ecological integrity, inherently recognise the nocturnal environment as a vital element of both habitat-based and species-based conservation.

Given recent international developments and growing commitments among Member States (MS), the **EU should harmonise regulatory efforts** by **providing a framework to address light pollution** at EU and national levels, and **closing regulatory gaps**, while recognising that MS retain key competences in this shared task, such as town and country planning. This would ultimately support nature conservation and help achieve Europe's biodiversity targets.

**Figure 7.** The **campaign**, launched in April 2025 by PLAN-B and DarkSky International, calls for stronger EU action on light pollution and is **supported** by organisations including Buglife, the University of Pisa, the Tyrolean Environmental Ombuds Office and the Royal Astronomical Society, as well as **individuals from over 40 countries**. Although still ongoing, it **already** emphasises the pressing, **highly topical need for coordinated European action** to tackle this environmental concern.

The **map**, created using Mapchart.net, uses different colours for each country to clearly **show the geographical distribution of support** provided.

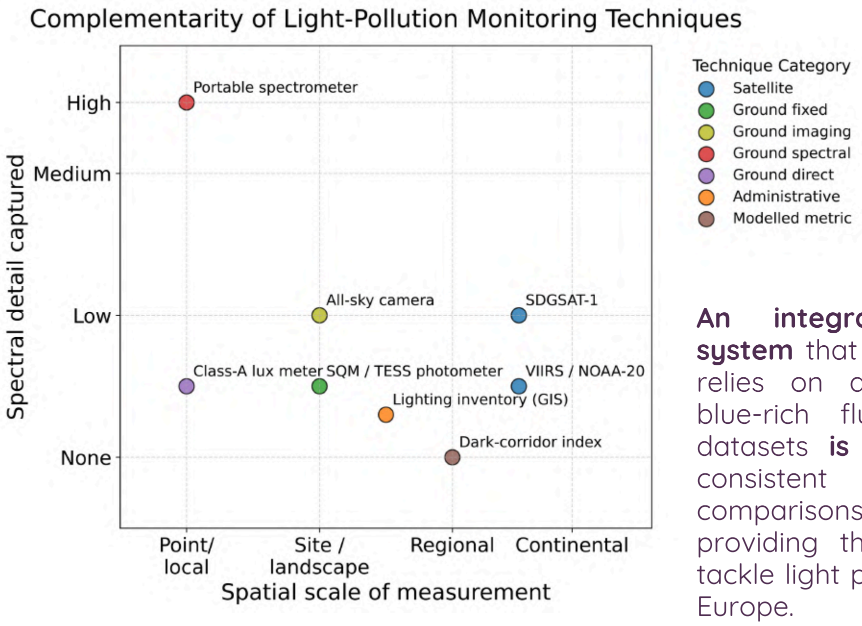


# MONITORING

At the EU level, systematic, **large-scale observation of ALAN is essential.** A coherent monitoring framework should track three complementary metrics: (1) Total (and blue-weighted) luminous flux released into the environment; (2) Nocturnal ecological connectivity: the darkness corridors that link protected areas, and (3) Nocturnal landscape quality, preserving starry skies as cultural resources (Sánchez de Miguel, 2025).

These metrics must be captured with satellite imagery, sky-quality measurements and ground-based sensors at seasonal (or finer) intervals so that temporary peaks, e.g. summer festivals or winter holiday lighting, and the disproportionate impact of blue-rich LEDs are not averaged out. Yet **EU light pollution monitoring is lacking**, **hindering** both management and **validation** of light pollution **mitigation measures**, as well as the **overall conservation efforts**.

**Figure 8.**




**An integrated, EU-wide monitoring system** that unites the three data sources, relies on available techniques, includes blue-rich flux, and publishes seasonal datasets **is needed**, since it will enable consistent baselines, cross-border comparisons and clear progress tracking, providing the evidence base needed to tackle light pollution and its impacts across Europe.

# MITIGATION MEASURES

There are **various approaches** to **tackling light pollution: regulatory, social, environmental, planning, and technological**, each playing a **crucial role in effectively mitigating** its negative **impacts**, particularly environmental pressures, and in restoring ecological networks.

**Unlike other forms of pollution, light pollution is relatively easy to resolve with straightforward mitigation measures, providing for adequate, necessary and purposeful ALAN within appropriate ecological limits.**

# LIGHT POLLUTION MONITORING AND MITIGATION MEASURES

With **existing knowledge and technology already available** to support these efforts, ongoing work should focus on further **developing the toolbox of measures** and ensuring effective implementation across Europe and beyond.

**Table 1.** Provides a classification of mitigation measures, with examples for each category.

| Type | Examples |
| --- | --- |
| **Regulatory** | Light pollution laws, environmental amendments, emission controls, incentives and sanctions, binding reduction targets, and updated public procurement criteria, impact assessment (such as EIA) |
| **Social** | Public awareness campaigns (media, events), citizen science, education, community engagement, consultations, school and university education, astrotourism |
| **Environmental** | Vegetative light buffering, dark corridors, dark sky protected areas, buffer zones for natural habitats |
| **Planning** | Dark sky ordinances (lighting ordinances incorporating principles of responsible outdoor lighting), light zoning, maximum permissible parameters for outdoor ALAN |
| **Technological** | Light dimming, adaptive lighting controls, better optics, targeted spectrum, light shielding |

When specifying a new lighting installation or making changes to existing systems, sufficient **consideration should be given to the intended purpose** of the ALAN, **in line with the five key responsible outdoor lighting principles**:

**Table 2.** Reflects the responsible outdoor lighting principles, developed by DarkSky International and IES, which help minimise potential increases in light pollution and its impacts.

| PRINCIPLE | CORE IDEA |
| --- | --- |
| **USEFUL** | Artificial light should be used only if needed (**clear purpose**) |
| **TARGETED** | Artificial light should be used only where it is needed (**target direction**) |
| **LOW LEVEL** | Artificial light should be **no brighter** than necessary. |
| **CONTROLLED** | Artificial light should be used **only when needed** (adaptive lighting). |
| **WARM-COLOURED** | Use **warmer** colours (less blue-light). |

# KEY RECOMMENDATIONS

**Light pollution must not remain overlooked at the EU level**. The rapid growth of light pollution and the consequent significant environmental pressures across Europe provide an **urgent need for action**. **Key recommendations** to tackle light pollution and its impacts **include**:

## 1. Recognise light pollution as a form of environmental pollution

Recognise light pollution as a form of environmental pollution, which **impacts** the **environment, biodiversity** and **ecosystem services**. Light pollution should be **explicitly included** within the **environmental regulatory framework** to enhance nature conservation efforts. Existing regulatory **frameworks** and **standards** governing the use and management of ALAN **should** be amended to **incorporate environmental considerations**.

## 2. Recognise night as an integral part of nature

**Night**, and **its protection from light pollution**, must be **recognised as an integral component** of the healthy functioning of **the natural environment**. The **EU's existing environmental framework**, which aims to safeguard nature's integrity, **already implicitly encompasses nocturnal preservation**. To fulfil obligations under the Natura 2000 regime, requiring avoidance of habitat deterioration and species disturbance, protection of current and future sites should be strengthened by minimising light pollution within and around them, thereby establishing and preserving dark corridors and ensuring ecological connectivity.

## 3. Define ecological limits

**Define** clear **ecological thresholds** and **maximum permissible parameters** for **ALAN use and management**, ensuring its **purposeful** and conscious **application** balances human needs with environmental protection. Initiate the development and dissemination of a **comprehensive toolkit** for **light pollution mitigation**, intended for widespread sharing among Member States, **fostering** adoption at both national and local levels to effectively regulate and **control light pollution**.

## 4. Set ambitious targets to reduce light pollution

**Light pollution targets** should be **included** in the EU Biodiversity Strategy, Zero Pollution Action Plan, and **relevant policies** to promote the achievement of international and European goals to protect the environment and biodiversity. The EU should encourage and **support Member States in including light pollution** within their National Biodiversity Strategies and Action Plans (**NBSAPs**) and **Nature Restoration Plans**.

## 5. Develop a coherent regulatory framework

**Align** with recent **international** and **national regulatory developments** on tackling light pollution. To close regulatory gaps across the EU and enable coordinated action to reduce light pollution in Europe, **develop a coherent framework** for mitigation and **urge Member States** to implement measures **to reduce light pollution**.

# KEY RECOMMENDATIONS

## 6. Require light pollution monitoring and assessment

To **assess the magnitude, growth and impacts**, the **EU** should **require light pollution monitoring** and **assessment** of the **environmental impacts of ALAN**, such as by making light pollution assessment a mandatory part of the Environmental Impact Assessment (EIA) and appropriate assessment under the Habitats Directive. **Implement an EU-wide monitoring network**, leveraging existing technological solutions, and foster collaboration among Member States to efficiently measure and reduce light pollution across the EU.

## 7. Ensure openness and transparency of data

**Promote openness, transparency,** and **accessibility of data concerning ALAN sources** and **light pollution levels**, fostering the free exchange of information within and between Member States, and prioritise public access to environmental monitoring data, ensuring a collaborative and informed approach to addressing light pollution.

## 8. Support education and research

**Allocate funding** and provide **support** for **education in lighting and lighting design** (incl. the development of projects and lighting plans), and in **light pollution**. **Increase research funding** opportunities **for initiatives** aimed at **combating light pollution** and its impacts, exploring and testing mitigation solutions, thereby **enhancing the capacity** of these **efforts**.

## 9. Enhance and initiate awareness-raising campaigns

**Initiate, expand** and **support awareness-raising campaigns on light pollution** and its impacts, and **advocate** for **interdisciplinary engagement** to develop science-based policies and measures aimed at reducing light pollution impacts.

## 10. Promote international cooperation

**Support** the **adoption** and further **development** of **light pollution** management and **mitigation** measures **within international frameworks** and structures. The EU should **take a leading role** in **promoting international action** to address **light pollution** as a **transboundary** environmental **issue**. Fully integrating light pollution into the mandates of organisations dealing with environmental protection and electromagnetic spectrum pollutants, such as the United Nations Environment Programme and the International Commission on Non-Ionising Radiation Protection, would **facilitate coordinated international action to address light pollution**.

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**Layout:** Yana Yakushina