

SDG 15 - Life on land

Statistics Explained

Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

*Data extracted in April 2024.
Planned article update: June 2025.*

Highlights



EU trend of SDG 15 on life on land

This article is a part of a [set of statistical articles](#) , which are based on the Eurostat publication '[Sustainable development in the European Union — Monitoring report on progress towards the SDGs in an EU context — 2024 edition](#)' . This report is the eighth edition of Eurostat's series of monitoring reports on sustainable development, which provide a quantitative assessment of progress of the EU towards the SDGs in an EU context.

SDG 15 seeks to protect, restore and promote the conservation and sustainable use of terrestrial ecosystems. This includes efforts to sustainably manage forests and halt deforestation, combat desertification, restore degraded land and soil, halt biodiversity loss and protect threatened species.

Life on land in the EU: overview and key trends

SDG 15 is one of the key goals at international level that addresses biodiversity and ecosystems. In the EU, this goal ensures that the health and functioning of terrestrial ecosystems and the delivery of ecosystem services remain a priority, especially in the face of global trends such as population growth, accelerating urbanisation and an

increasing need for natural resources as well as climate change impact. Monitoring SDG 15 in an EU context focuses on trends in ecosystem status, land degradation and biodiversity. Over the five-year period assessed, the EU has experienced a number of negative trends in the indicators analysed here, resulting in an overall moderately negative assessment for SDG 15 as a whole. While the EU's forest area has grown slightly, recent trends for pollutant concentrations in EU rivers have been mixed. Land degradation continues, with increasing land take and drought impact. Indicators on species' biodiversity show a long-term and continued decline in common birds and grassland butterflies in the EU. Moreover, growth in the designation of terrestrial protected areas has stalled, and the EU is not on track to meet its respective 2030 target.

Indicator	Period	Annual growth rate	Assessment
Ecosystem status			
Share of forest area	Time series too short for long-term assessment		:
	2015–2018	0.7 %	↗
Biochemical oxygen demand in rivers (*)	2006–2021	– 0.7 % ⁽¹⁾	↗
	2016–2021	– 1.6 % ⁽¹⁾	↑
Phosphate in rivers (*)	2006–2021	– 1.3 % ⁽²⁾	↑
	2016–2021	3.9 % ⁽²⁾	↓
Land degradation			
Area at risk of severe soil erosion by water	2000–2016	– 0.9 %	↗
	2010–2016	– 0.1 %	→
Drought impact on ecosystems	2009–2022	3.0 % ⁽³⁾	↓
	2017–2022	13.0 % ⁽³⁾	↓
Soil sealing index (*)	2006–2018	0.3 %	↘
	2015–2018	0.3 %	↘
Biodiversity			
🎯 Terrestrial protected areas	2011–2021	Observed: 0.7 %	↗
		Required: 1.1 %	
	2016–2021	Observed: 0.6 %	↘
		Required: 1.3 %	
Common bird index	2007–2022	– 0.5 % ⁽⁴⁾	↘
	2017–2022	– 0.5 % ⁽⁴⁾	↘
Grassland butterfly index	2005–2020	– 1.8 % ⁽¹⁾	↓
	2015–2020	– 6.6 % ⁽¹⁾	↓

Note: See Annex II for a description of the methodology used for the compound annual growth rate calculation and the trend assessment. For indicators without a target, the growth rates observed over the specified periods are given. For indicators with a quantified EU target (marked with a target sign 🎯), both the observed growth rates and the growth rates that would have been required in the specified periods for meeting the target are given. See Table A.1 in Annex I for the full list of EU policy targets considered for monitoring in this report.

(*) Multi-purpose indicator.

① Data refer to an EU aggregate based on 18 Member States.

② Data refer to an EU aggregate based on 16 Member States.

③ Assessment based on a 10-year moving average.

④ Data refer to an EU aggregate that changes over time depending on when countries joined the Pan-European

- Common Birds Monitoring Scheme.

Table 1: Indicators measuring progress towards SDG 15, EU







Symbol	With quantitative target	Without quantitative target
	Trends for indicators marked with this 'target' symbol are calculated against an official and quantified EU policy target. In this case the arrow symbols should be interpreted according to the left-hand column below. Trends for all other indicators should be interpreted according to the right-hand column below.	
	Significant progress towards the EU target	Significant progress towards SD objectives
	Moderate progress towards the EU target	Moderate progress towards SD objectives
	[Category not applicable]	No progress towards nor movement away from SD objectives
	Insufficient progress towards the EU target	Moderate movement away from SD objectives
	Movement away from the EU target	Significant movement away from SD objectives
:	Calculation of trend not possible (for example, time series too short)	

Table 2: Explanation of symbols for indicating progress towards SD objectives and targets

Ecosystem status

Humans benefit greatly from many [ecosystem services](#), such as clean air, purified water and food provision. In addition, terrestrial ecosystems provide natural resources used in industrial processes and cultural services such as outdoor recreation. Other services that ecosystems offer include protection from natural disasters, such as flooding, and mitigation of the negative effects of [climate change](#). Human activities that degrade ecosystems, including pollution and the overuse of resources, threaten animals and plants and, as a result, the provision of ecosystem services and their benefits to human well-being¹.

In 2019, the [Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services \(IPBES\)](#) released a [Global Assessment Report on Biodiversity and Ecosystem Services](#). The key findings of the report indicate that negative trends in biodiversity and ecosystem services are expected to hinder progress towards the 2030 Agenda and its SDGs. As such, current global conservation and sustainability goals will not be met unless transformative change is implemented. In 2021, the European Commission issued the report [Accounting for ecosystems and their services in the European Union \(INCA\)](#), which delivered an integrated system of ecosystem accounts for the EU. The report's key findings suggest that between 2000 and 2018, changes in the extent of most ecosystem types have been small in relative terms. However, urban ecosystems have seen a significant increase in their extent, indicating a continued expansion of urbanised areas at the expense of semi-natural ecosystems and farmland. The report also suggests that sites in the Natura 2000 network tend to have a higher degree of ecosystem stability than those outside the network².

¹Diaz et al. (2019), [Summary for policymakers of the global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on biodiversity and Ecosystem Services](#).

²Vysna et al. (2021), [Accounting for ecosystems and their services in the European Union \(INCA\)](#), Final report from phase II of the INCA project aiming to develop a pilot for an integrated system of ecosystem accounts for the EU, Statistical report, Publications office of the European Union, Luxembourg.

Some types of terrestrial ecosystems (for example, [wetlands](#) , heathlands and scrub) and the pressures placed on them (such as invasive species, habitat fragmentation, and noise and light pollution) are not monitored in this report due to data shortcomings. It is therefore important to recognise the limitations in presenting a full and complete picture of Europe's terrestrial ecosystems, the status of which cannot be fully assessed with the long-term datasets that are currently available.

The share of forest area in the EU is growing slowly

Europe's [forests](#) provide multiple benefits, such as enhancing soil fertility and conserving soil moisture, storing carbon and providing habitats for animals and plants. They also provide employment in rural areas and help mitigate climate change and regulate the microclimate. In 2018, forests and other wooded land covered 43.5 % of the EU's total area. As a proportion of total land area, the EU's share of forests and other wooded land increased slightly, by 0.9 percentage points, between 2015 and 2018.

Currently, forests are affected by pressures from habitat degradation and loss, invasive alien species, pollutants and excessive nutrient loads, as well as climate change³, which has resulted in persistent droughts and heatwaves. This means that EU efforts to retain and sustainably manage its forested areas are increasingly important. According to the 2020 assessment of the [State of Nature in the EU](#) , only about 14 % of forest habitats at the EU level are in good conservation status, while the rest are in poor and bad conservation status. Nevertheless, the report shows that forest habitats have experienced the most improvement compared with other habitats.

Organic and phosphate pollution levels in EU rivers have seen a long-term decrease, even though short-term trends are more mixed

The ecological status of European water bodies gives an important indication of how Europe's natural environment is faring in the face of pressures from human use. Two indicators monitor progress in this area: biochemical oxygen demand in rivers and phosphate in rivers. While these indicators paint a somewhat favourable picture of the EU's progress over the past 20 years in making rivers cleaner, the short-term developments have been less clear-cut.

Biochemical oxygen demand (BOD) in rivers is an indicator of organic water pollution and the effectiveness of water treatment. When a high level of oxygen (O₂) is required for the microbiological decomposition of organic compounds in water this means there is less O₂ available for other river species. As such, biochemical oxygen demand provides an indication of a river system's overall health. Available data for 18 Member States show an overall decline in BOD in EU rivers, from 3.1 mg/L in 2006 to 2.8 mg/L in 2021. The trend, however, has not been continuous. While BOD levels were showing a downward trend up to 2011, they had climbed back to 3.1 mg/L by 2015 before falling again. Recently, there has been a small increase from 2.7 mg/L in 2019 to 2.8 mg/L in 2021. Overall, BOD levels in EU rivers have fallen by 9.5 % since 2006 and by 8.0 % since 2016. Between 2016 and 2021, 12 out of 18 reporting Member States saw reductions in BOD in their rivers. The overall decrease in BOD values is mainly linked to a general improvement in waste water collection and treatment throughout Europe.

Phosphate (PO₄) in rivers can originate from agricultural production, [urban waste water](#) and industrial discharges. Heavy loads of phosphate in rivers can harm the environment by causing biodiversity loss and water eutrophication. Data on phosphate concentrations in EU rivers are available for 16 Member States. They show a marked improvement between 2007 and 2011, after which, however, the trend levelled off and even started increasing again. Thus, while the phosphate concentration of 0.074 mg/L recorded in 2021 is considerably below the values reported in the early 2000s of around 0.092 mg/L, it is 21.3 % higher than in 2016.

The overall positive long-term trend is to some extent the result of measures implemented under the Urban Waste Water Treatment Directive, especially the introduction of phosphate-free detergents⁴. The recent turnaround may be related to the slower decrease in phosphorus emissions from the agricultural sector as well as increasing phosphorus fertiliser consumption at EU level⁵. Of all the reporting Member States, rivers in Finland and Sweden on average had the lowest concentrations of phosphate between 2016 and 2021. This is likely to be a result of their low population densities and high levels of waste water collection and treatment. In contrast, relatively high

³European Environment Agency (2016), [European forest ecosystems — State and trends](#) , EEA Report No 5/2016, Copenhagen.

⁴European Environment Agency (2023), [Nutrients in freshwater in Europe](#) .

⁵Eurostat (2023), [Statistics Explained, Agri-environmental indicator — mineral fertiliser consumption](#) .

concentrations were found in some Member States with high population densities and/or intensive agriculture. The higher short-term values observed, particularly in Lithuania, Spain, Bulgaria and Belgium, may lead to freshwater eutrophication⁶.

Land degradation

Land degradation is linked to the long-term functionality and biological productivity of land or land-based ecosystems. It is a complex phenomenon bringing together several elements, including soil degradation and the capacity of land to sustain water resources, biodiversity and primary productivity⁷. Soil degradation by itself covers many aspects such as soil sealing and contamination, erosion by wind and water, loss of soil biodiversity, compaction, decline in organic matter, desertification, acidification and salination⁸. Not all of these threats to soil quality can be covered in the EU SDG indicator set, so the analysis in this report has been limited to imperviousness change, the area impacted by drought and the risk of soil erosion by water.

Land take is continuing to increase in the EU

Land take is described as the process of transforming agricultural, forest and other semi-natural and natural areas into artificial areas. It often means an increase in settlement area over time, usually at the expense of agricultural areas. Land take can be monitored using the [Copernicus CORINE land cover datasets](#), which have been published every six years since 2000. Net land take includes the 'reverse land take process', which occurs when artificial areas are returned to non-artificial land categories through recultivation and renaturalisation. According to [data from the European Environment Agency \(EEA\)](#), net land take in the EU amounted to 11 845 square kilometres (km²) between 2000 and 2018, equalling an average annual net land take of 658 km². Even though the rate of net land take has fallen by more than 40 % over the three observation periods, there is still a long way to go to meet the 'no net land take' policy target for 2050.

In all three observation periods, [EEA data](#) show that agricultural areas were the most likely to be converted to artificial surfaces, reducing the amount of land available for food and feed production. This results in increased fragmentation and loss of natural habitats. Furthermore, artificial areas create plots that are isolated from functional ecosystems and can lead to increased flood risk and more frequent rapid surface run off⁹. Moreover, sealed lands cannot store carbon and thereby contribute to greenhouse gas emissions and climate change.

Soil sealing is the most intense form of land take and is essentially an irreversible process. It destroys or covers soils with layers of partly or completely impermeable artificial material such as asphalt and concrete¹⁰. Increases in the area of sealed land can be used to estimate land-use change for human use or intensification. Between 2006 and 2018, the area of sealed soil in the EU grew by 3 605 km² or 3.4 %. In 2018, 2.7 % of the EU area was covered with impervious materials. Across Member States, the share of sealed soil area ranged from below 1 % in Sweden and Finland to around 10 % in Belgium and the Netherlands up to 18 % in Malta.

The area at risk of severe soil erosion by water has decreased slightly in the EU

Soil is a resource that provides multiple benefits to society, including the provision of raw materials, food production,

⁶European Environment Agency (2023), [Nutrients in freshwater in Europe](#).

⁷European Environment Agency (2016), [The direct and indirect impacts of EU policies on land](#), EEA Report No 8/2016, Copenhagen. European Environment Agency (2019), [Land degradation knowledge base: policy, concepts and data](#), European Topic Centre on Urban, Land and Soil Systems (ETC/ULS) Report No 1/2019, Vienna.

⁸European Commission (2012), [The implementation of the Soil Thematic Strategy and ongoing activities](#), COM(2012) 46 final; FAO (2015), [Status of the World's Soil Resources](#), Food and Drug Administration, Rome, Food and Agriculture Organization of the United Nations.

⁹European Environment Agency (2017), [Landscapes in transition: An account of 25 years of land cover change in Europe](#), EEA Report No 10/2017, Copenhagen.

¹⁰Prokop G, Jobstmann H, Schonbauer A (2011), [Report on best practices for limiting soil sealing and mitigating its effects](#), European Commission, Brussels.

storage, filtration and the transformation of many substances, including water, carbon and nitrogen. Maintaining soil health ensures the continued provision of these benefits. While soil erosion by water poses the biggest threat to EU soils, multiple erosion processes, including water, tillage, wind and crop harvesting erosion contribute to soil degradation simultaneously or subsequently. Co-occurring processes may enhance and trigger each other or lead to self-reinforcing feedback loops, and thus enhance the severity of soil degradation¹¹.

More than 5 % of the non-artificial erodible land area in the EU is estimated to be at risk of severe soil erosion by water (referring to soil loss of more than 10 tonnes per hectare per year). Overall, water erosion is the major cause of soil displacement, both quantitatively (51 % of the total displacement) and spatially (57 % of the total area)¹². Hotspots are found in particular in Mediterranean areas and some Alpine regions, mainly due to a combination of steep topography and high rainfall erosivity¹³. Modelling results show that water erosion could rise by up to 22.5 % by 2050 compared with today due to climate change and increased erosivity¹⁴. Other erosion processes are tillage erosion (36 % of the total displacement), wind erosion (10 %) and crop harvesting (2.7 %)¹⁵. These processes often occur almost unnoticed without leaving substantial geomorphic evidence but may act as a trigger and enhance soil degradation. Accordingly, evidence suggests that countries such as Denmark and the Netherlands, which are considered to be little affected by water erosion, are very prone to wind erosion risks¹⁶.

Efforts to address and mitigate soil erosion by water have helped to reduce the estimated EU land area at risk of severe soil erosion by water, from 198 607 km² in 2010 to 196 853 km² in 2016, equalling a decrease of 0.9 %. This represents a considerable slowdown compared with the period 2000 to 2010, when the estimated area at risk fell by 12.6 %.

Between 2010 and 2016, arable land experienced the greatest reduction in area at risk of soil erosion compared with other land types¹⁷. Here, improvements due to the implementation of agro-environmental standards under the Common Agricultural Policy (CAP) may have helped to reduce the mean rate of soil loss by water erosion. This includes the application of soil conservation practices such as reduced tillage, preservation of a minimum soil cover, reduction in the area of bare soils, contour farming along slopes, maintenance of terraces and stone walls, and extended use of grass margins¹⁸. Nevertheless, the cost of lost agricultural productivity due to water erosion in the EU is estimated at around EUR 1.3 billion annually, and the cost of removing an estimated 135 million m³ of accumulated sediment due to water erosion is estimated at roughly EUR 2.3 billion annually¹⁹.

The area impacted by drought increased considerably in 2022

The effects of drought reduce nature's capacity to provide a wide range of environmental, social and economic benefits. They affect the EU's ability to achieve its climate change mitigation target through reduced carbon

¹¹Borrelli et al. (2022), [Policy implications of multiple concurrent soil erosion processes in European farmland](#), Nature Sustainability, Volume 6, January 2023, 103–112.

¹²Ibid.

¹³Panagos et al. (2015), [The new assessment of soil loss by water erosion in Europe](#), Environmental Science & Policy 54, 438–447.

¹⁴Panagos et al. (2021), [Projections of soil loss by water erosion in Europe by 2050](#), Environmental Science and Policy, 124: 380–392.

¹⁵Borrelli et al. (2022), [Policy implications of multiple concurrent soil erosion processes in European farmland](#), Nature Sustainability, Volume 6, January 2023, 103–112.

¹⁶Ibid.

¹⁷Panagos et al. (2020), [A soil erosion indicator for supporting agricultural, environmental and climate policies in the European Union](#), Remote Sensing 12 (9), p. 1365.

¹⁸Panagos et al. (2020), [A soil erosion indicator for supporting agricultural, environmental and climate policies in the European Union](#), Remote Sensing 12 (9), p. 1365; and Panagos et al. (2016), [Soil conservation in Europe: wish or reality?](#) Land Degrad. Dev., 27, pp. 1547–1551.

¹⁹Panagos et al. (2024), [Understanding the cost of soil erosion: An assessment of the sediment removal costs from the reservoirs of the European Union](#), Journal of Cleaner Production, Volume 434, 2024, 140183, ISSN 0959-6526.

sequestration and have implications for adaptation and the implementation of the EU's biodiversity and soil strategies. Drought also hampers the ability to achieve the ambitions of the CAP and the goals of the European Green Deal, the Farm to Fork Strategy and the Biodiversity Strategy. Reducing the severity of drought impacts and strengthening the resilience of ecosystems to climate change induced droughts is thus vital.

In 2022, Europe experienced its hottest summer and the second warmest year on record, resulting in the largest total area impacted by drought, with more than 630 000 km² being affected. This corresponds to 15.7 % of the EU area and is almost four times the area of the long-term average of 167 000 km² over the period 2000 to 2022²⁰. Between 2000 and 2022, there was an increasing trend in drought-impacted areas in the EU due to low precipitation, high evaporation and heatwaves. These conditions are exacerbated by climate change²¹ and contribute to worsening ecosystem conditions²². Over the period from 2017 to 2022, the 10-year moving average of drought impact on ecosystems in the EU increased by 84.0 %. Expressed in terms of the EU area affected by drought, this indicator changed from 4.1 % to 15.7 % over the same period. A look at the underlying annual data shows strong fluctuations, with the area affected by drought almost tripling in some years. There are also large variations between countries. In 2022, Luxembourg, Belgium and Slovenia showed ecosystems impacted by drought on more than 50 % of their country area.

Biodiversity

Terrestrial ecosystems have been protected under the Birds Directive since 1979 and the Habitats Directive since 1992. Both Directives form the main pillar for the protection of Europe's biodiversity and ecosystems. Under these Directives, Member States are required to designate and manage Special Protection Areas (SPAs; Birds Directive) and Sites of Community Importance/Special Areas of Conservation (SCIs/SACs; Habitats Directive). These sites, collectively known as the Natura 2000 network, should enable protected habitats and species to reach favourable conservation status in the EU. The Natura 2000 network is complemented by nationally designated terrestrial protected areas that are established under each Member State's national framework. The [EU Biodiversity Strategy for 2030](#) includes a target for at least 30 % of EU land to be protected.

The EU is not on track to reach its 2030 target for terrestrial protected areas

In 2021, the EU and its Member States protected 1 075 959 km² of terrestrial habitats, covering 26.0 % of the EU's land area. This is an increase of only 7.2 % compared with 2011, when 1 003 558 km² (equalling 24.3 % of the EU's area) were protected. The designation of new protected areas has furthermore slowed over the past five-year period, stalling at 26.0 % since 2019. This means the EU is currently not on track to achieve its 30 % target by 2030²³. The Member States with the largest protected areas relative to country size in 2021 included Luxembourg (55.8 %), Bulgaria (41.0 %) and Slovenia (40.4 %). In contrast, the shares of protected areas were smallest in Finland (13.3 %) and Ireland (13.9 %).

The latest assessment of the [State of Nature in the EU](#) reveals that many species and habitats of European interest are still in unfavourable conservation status. The conservation status of habitats did not improve over the reporting period (2013–2018), but for species other than birds a slight improvement can be stated. Across the EU, about a quarter (27 %) of species assessments and 15 % of the habitat assessments show a good conservation status, compared with 23 % and 16 %, respectively, reported in the [assessment for the period 2007–2012](#). The majority of the assessments considered, however, have a poor or bad conservation status at EU level (63 % for species and 81 % for habitats). Moreover, a look at the trends reveals that only 6 % of species assessments and 9 % of habitat assessments showed improving trends in the reporting period, while 35 % and 36 % indicated a deteriorating trend at EU level, respectively.

The State of Nature report also shows that fish and molluscs continue to have a particularly high proportion of

²⁰European Environment Agency (2021), [Drought impact on ecosystems in Europe, 2000–2022](#).

²¹European Environment Agency (2023), [Drought impact on ecosystems in Europe](#).

²²European Environment Agency (2021), [Drought impact on ecosystems in Europe, 2000–2022](#).

²³European Environment Agency (2023), [Terrestrial protected areas in Europe](#).

species (around 30 % each) with a bad conservation status, while reptiles and vascular plant species have the highest proportion of good conservation status (36 % and 40 % respectively). Habitats in dunes, bogs, mires and fens have the highest share of assessments showing a bad conservation status (around 50 % each). Grasslands, which contain some species-rich habitats that are particularly suitable for pollinator species, also have one of the highest proportions of bad conservation status assessments (49 %).

Common birds and grassland butterflies are in long-term decline in the EU

Birds are sensitive to both human-induced and natural environmental change, making them good indicators of wider ecosystem health. Their widespread and diverse habitats also make them ideal for monitoring the results of conservation efforts.

The EU [common bird index](#) tracks the population abundance and diversity of a selection of common bird species in the EU, further typified by common forest and common farmland bird species. The index shows a 13.8 % decline of all common birds and a dramatic 39.9 % fall in the abundance of common farmland birds between 1990 and 2022. Common forest birds have declined slightly, with their index falling 3.4 % over the whole period.

The decline in common farmland birds has largely been attributed to agricultural intensification, which has reduced natural nesting habitats such as hedges, wetlands, meadows and fallow fields. Agro-chemicals, such as pesticides, and changes in ploughing times for cereals have also affected common farmland birds, disrupting their breeding and reducing available food sources, in particular insect populations²⁴.

Shorter-term trends show a continued decline for all common birds and common farmland bird populations. For all common birds there has been a 7.5 % decline since 2007 and a 2.5 % decline since 2017, while common farmland birds continued to show an even stronger decline, by 22.2 % since 2007 and 9.1 % since 2017.

Butterflies, which are among the most common plant pollinators, are well suited to act as signals of environmental and habitat health. They occur in a wide range of habitat types and are sensitive to environmental change. The grassland butterfly index is based on data from 18 Member States, measuring the population trends of 15 butterfly species within the national Butterfly Monitoring Schemes²⁵. According to estimates from these monitoring efforts, butterfly populations declined by 29.5 % between 1991 and 2020, signifying a dramatic loss of grassland biodiversity. Overall, grassland butterfly populations fell by 24.3 % between 2005 and 2020 and by 28.9 % between 2015 and 2020.

The main causes for this decline can be attributed to land use changes in rural areas, in particular stemming from intensification of agricultural grasslands, and deposition of nitrogen in protected areas, mainly in North-western Europe. In the rest of Europe, grassland abandonment is a threat²⁶. The increased duration, frequency and intensity of heatwaves and droughts as a result of climate change have also contributed to the decline of grassland butterflies over the past decade. While moderate climate warming aided a temporary increase in butterfly populations between 2002 and 2012, the increasing frequency of extreme temperature led to even stronger declines in the subsequent years²⁷.

While butterflies show a decline in non-urban areas, they have been stable within urban areas across Europe, suggesting that parks and other green parts of the urban environment are becoming increasingly suitable and are being managed in a butterfly-friendly way. However, the situation of butterflies in urban areas requires further

²⁴Greshko (2018), [Around the World, Farmland Birds Are in Steep Decline](#), National Geographic.

²⁵Van Swaay, C.A.M., Dennis, E.B., Schmucki, R., Sevilleja, C.G., Åström, S., Balalaikins, M., Barea-Azcón, J.M., Bonelli, S., Botham, M., Cancela, J.P., Collins, S., De Flores, M., Dapporto, L., Dopagne, C., Dziekanska, I., Escobés, R., Faltynek Fric, Z., Fernández-García, J.M., Fontaine, B., Glocovcan, P., Gracianteparaluceta, A., Harpke, A., Harrower, C., Heliölä, J., Houard, X., Kolev, Z., Komac, B., Kühn, E., Kuussaari, M., Judge, M., Lang, A., Lysaght, L., Maes, D., McGowan, D., Mestdagh, X., Middlebrook, I., Monasterio, Y., Monteiro, E., Munguira, M.L., Musche, M., Olivares, F.J., Ōunap, E., Ozden, O., Pavlíčko, A., Pendl, M., Pettersson, L.B., Rákósy, L., Roth, T., Rüdisser, J., Šašić, M., Scalercio, S., Settele, J., Sielezniew, M., Sobczyk-Moran, G., Stefanescu, C., Švitra, G., Szabadfalvi, A., Tiitsaar, A., Titeux, N., Tzirkalli, E., Ubach, A., Verovnik, R., Vray, S., Warren, M.S., Wynhoff, I., & Roy, D.B. (2022), [European Grassland Butterfly Indicator 1990-2020 Technical report](#). Butterfly Conservation Europe & SPRING/ eBMS & Vlinderstichting report VS2022.039.

²⁶Ibid.

²⁷Ibid.

research, as different studies offer contrasting findings²⁸.

Main indicators

Share of forest area

LONG TERM



Time series
too short

SHORT TERM

2015–2018



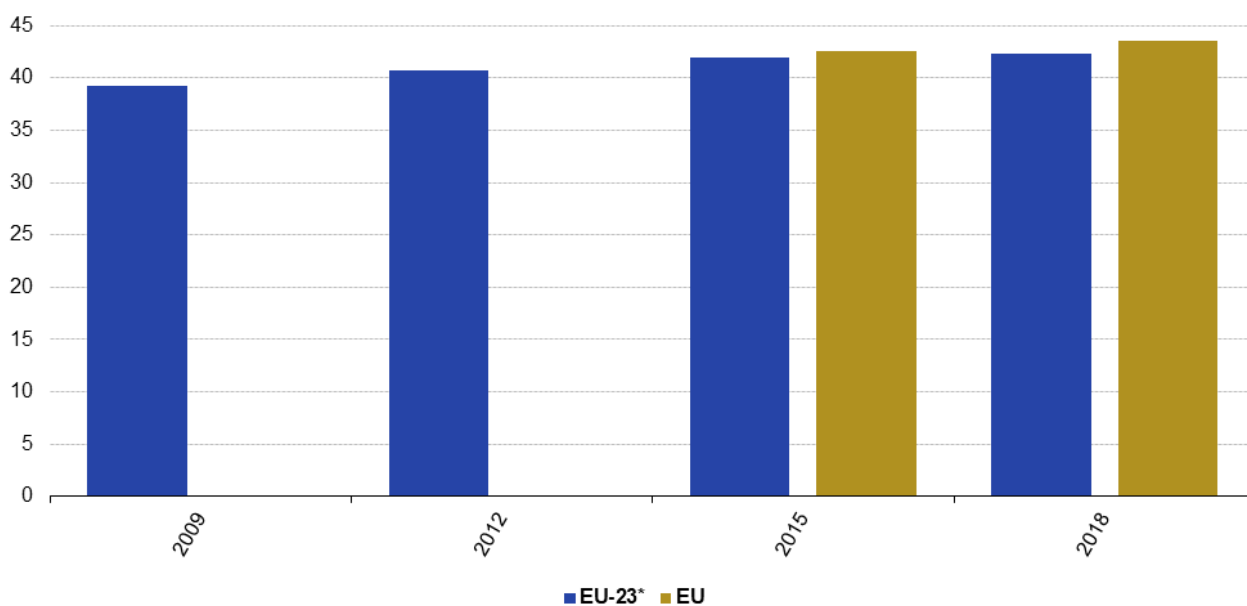
This indicator measures the proportion of **forest** ecosystems in comparison to the total surface area. Data used for this indicator is derived from the [Land Use and Cover Area frame Survey \(LUCAS\)](#). The LUCAS [land use](#) and [land cover](#) classification has been adapted to FAO forest definitions, distinguishing between the categories 'forests' and 'other wooded land'²⁹.

²⁸Van Swaay et al. (2020), [Butterflies in Europe - Butterfly Indicators Revised.pdf](#) [Assessing Butterflies in Europe — Butterfly Indicators 1990–2018](#), Technical report, Butterfly Conservation Europe & ABLE/eBMS ([www.butterfly-monitoring.net www.butterfly-monitoring.net]).

²⁹Eurostat, [Statistics Explained, LUCAS — Land use and land cover survey](#).

Share of forest area, EU, 2009-2018

(% of total area)



Note: EU-23* refers to an aggregate including the UK but excluding Bulgaria, Croatia, Cyprus, Malta and Romania.

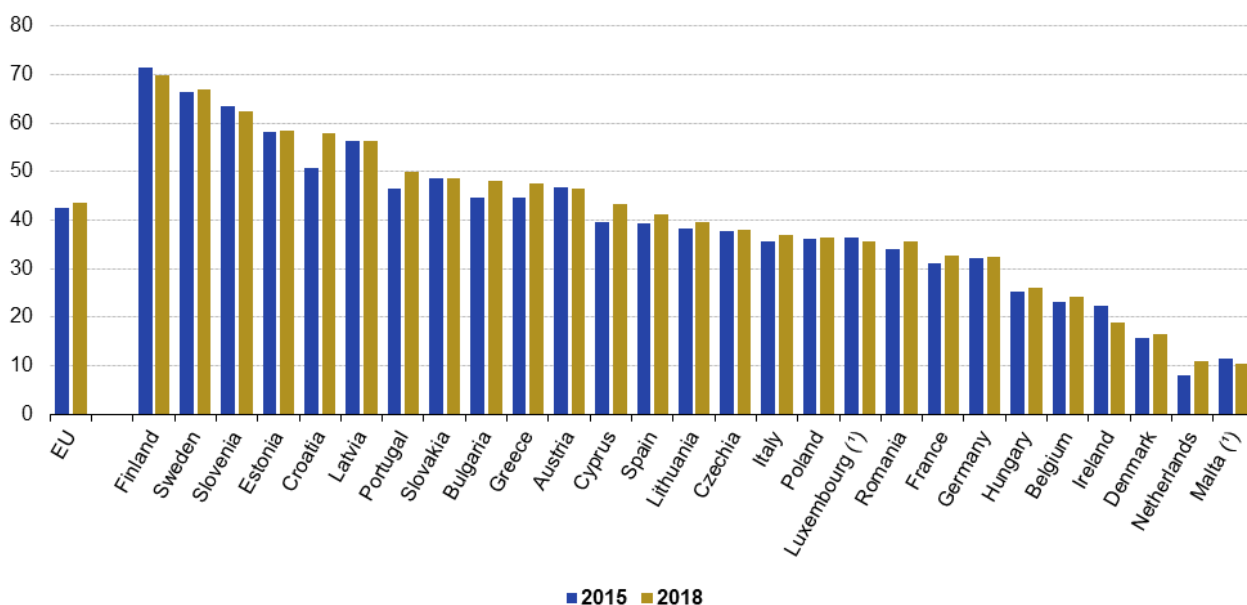
Source: Eurostat (online data code: sdg_15_10)

eurostat

Figure 1: Share of forest area, EU, 2009-2018 (% of total area) Source: Eurostat (sdg_15_10)

Share of forest area, by country, 2015 and 2018

(% of total area)



(*) Data have lower reliability.

Source: Eurostat (online data code: sdg_15_10)

eurostat

Figure 2: Share of forest area, by country, 2015 and 2018 (% of total area) Source: Eurostat (sdg_15_10)

Area at risk of severe soil erosion by water

LONG TERM

2000–2016



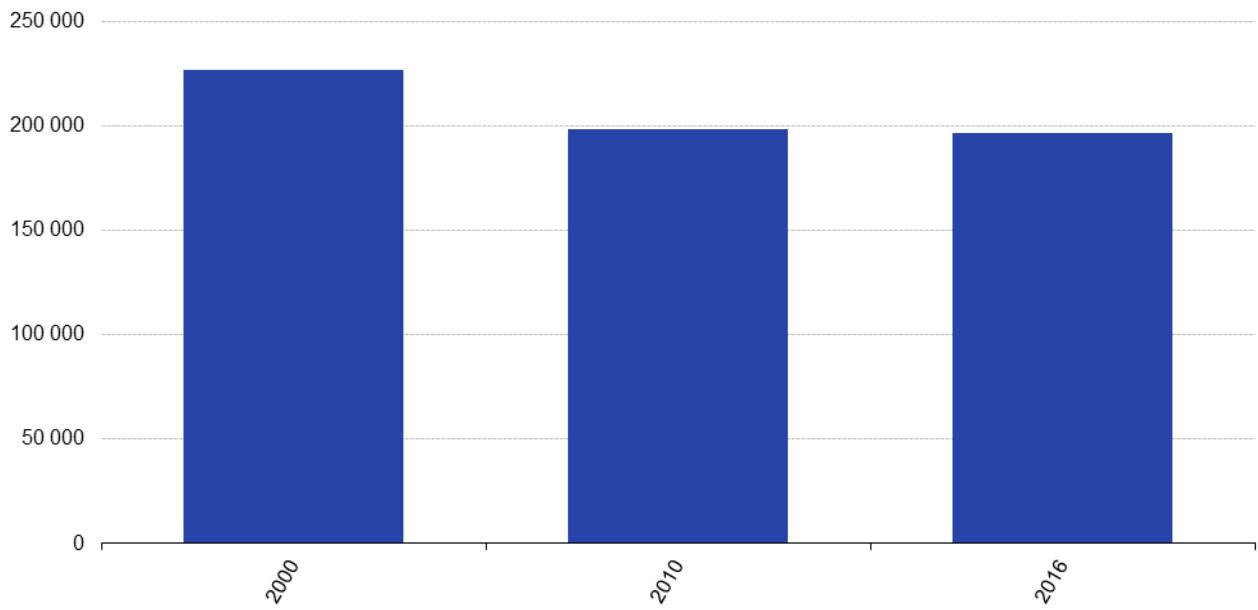
SHORT TERM

2010–2016



This indicator estimates the area at risk of severe erosion by water such as rain splash, sheet-wash and rills (soil loss greater than 10 tonnes per hectare and year). This area is expressed in square kilometres (km²) and as a percentage of the total non-artificial, erodible area in the country. The numbers are [estimated using soil erosion susceptibility models](#). Data presented in this section stem from the JRC's soil erosion database.

Area at risk of severe soil erosion by water, EU, 2000, 2010 and 2016 (km²)



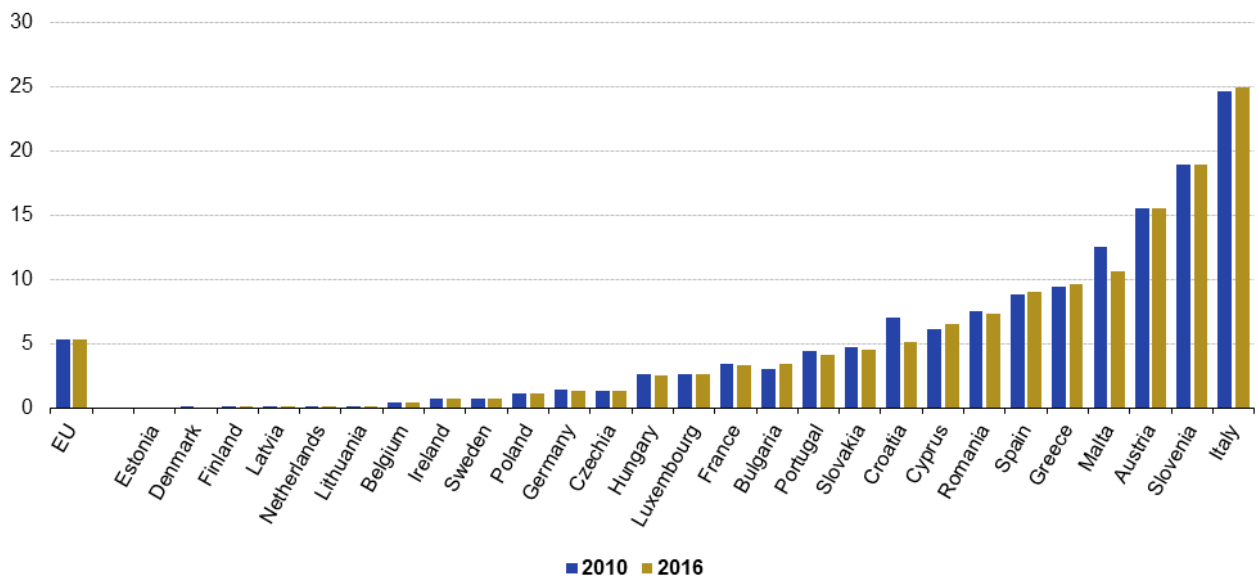
Source: Joint Research Centre (Eurostat online data code: sdg_15_50)

eurostat

Figure 3: Area at risk of severe soil erosion by water, EU, 2000, 2010 and 2016 (km²) Source: Joint Research Centre, Eurostat (sdg_15_50)

Area at risk of severe soil erosion by water, by country, 2010 and 2016

(% of the non-artificial erodible area)



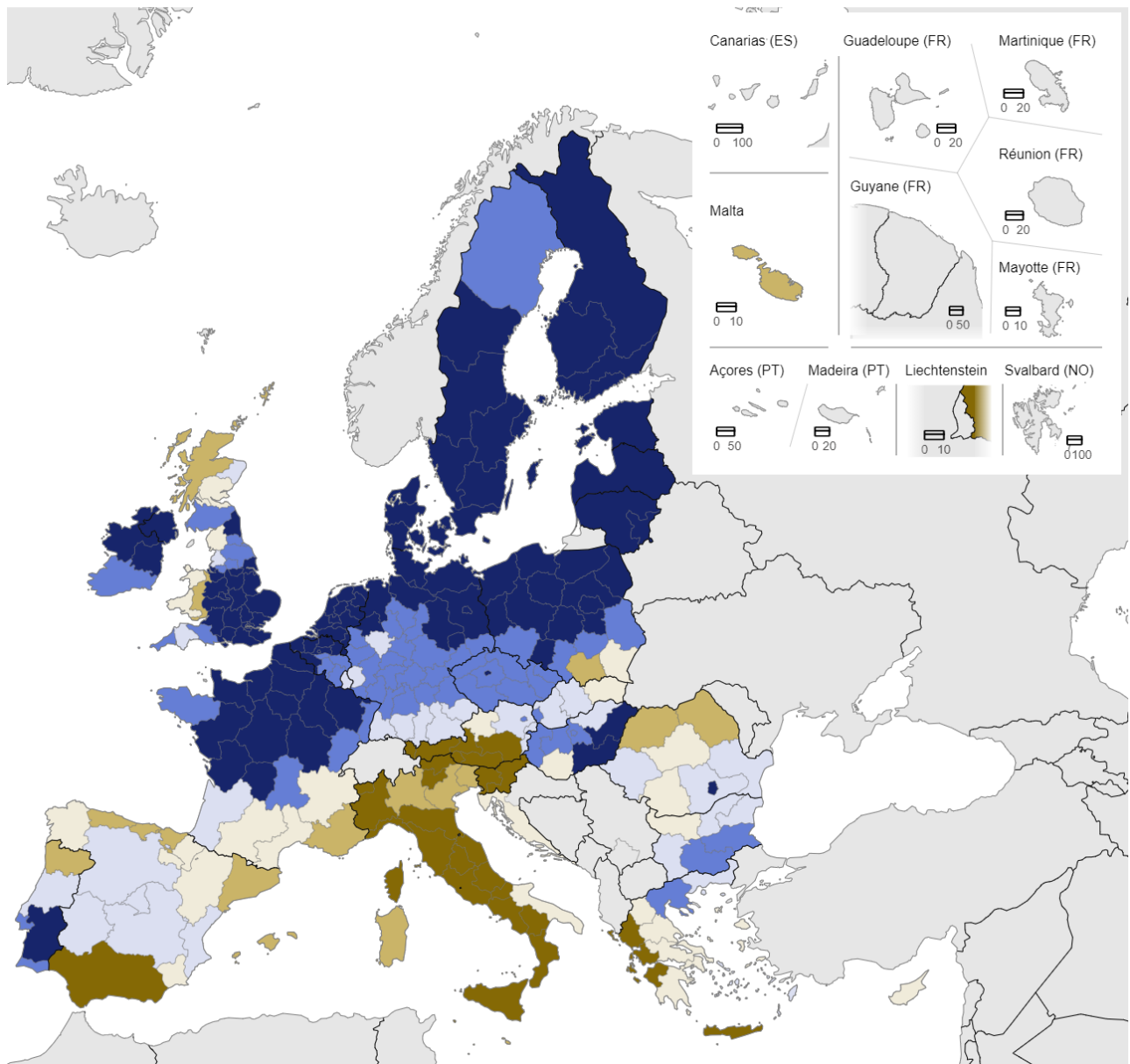
Source: Joint Research Centre (Eurostat online data code: sdg_15_50)

eurostat

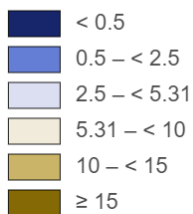
Figure 4: Area at risk of severe soil erosion by water, by country, 2010 and 2016 (% of the non-artificial erodible area) Source: Joint Research Centre, Eurostat (sdg_15_50)

Area at risk of severe soil erosion by water, by NUTS 2 region, 2016

(% of the non-artificial erodible area)



EU = 5.31



Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat. Cartography: Eurostat – IMAGE, 05/2024
Source: Eurostat (online data code: aei_pr_soiler)

Map 1: Area at risk of severe soil erosion by water, by NUTS 2 region, 2016 (% of the non-artificial erodible area) Source: Eurostat (aei_pr_soiler)

Drought impact on ecosystems

LONG TERM

2009–2022



SHORT TERM

2017–2022

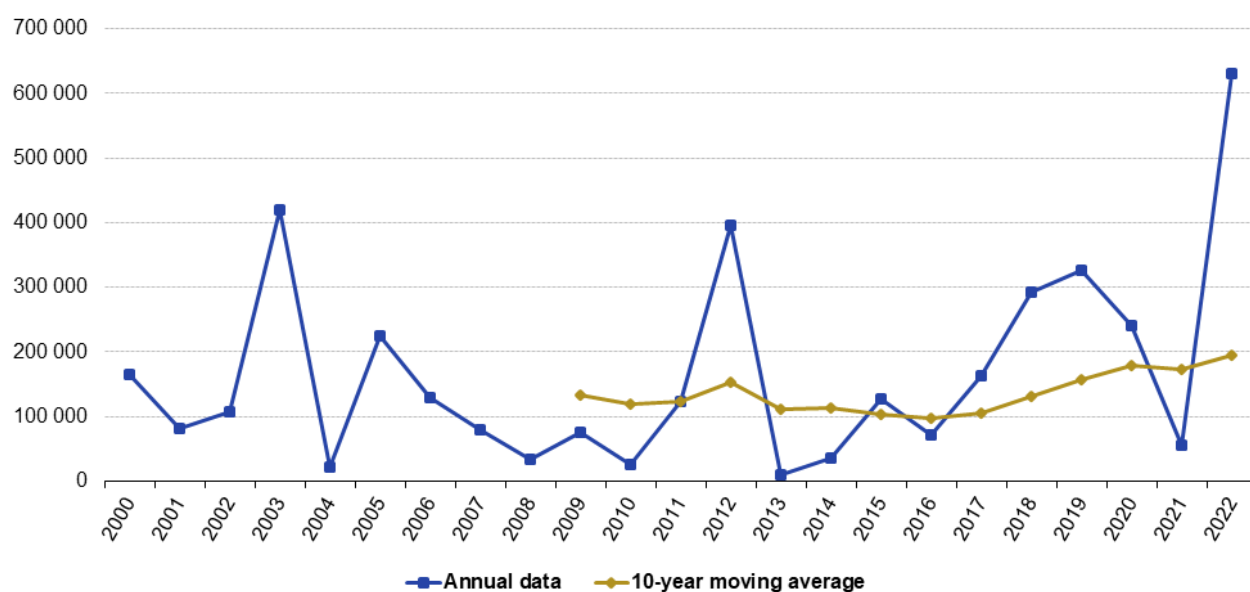


This indicator shows the area impacted by drought by monitoring negative anomalies in vegetation productivity in areas with a severe soil moisture deficit during the growing season (more than one standard deviation from the long-term average – observed through remote-sensing data collected at 500×500 [U+202F] meters resolution by the Copernicus EMS European Drought Observatory of the European Commission Joint Research Centre³⁰). The indicator covers only agricultural droughts with soil moisture deficits causing reduced vegetation productivity due to insufficient precipitation, as opposed to hydrological droughts, which occur when low water supplies become apparent in streams, reservoirs, and groundwater levels, usually after many months of meteorological drought.

³⁰EDO (2019), [Soil Moisture Anomaly \(SMA\)](#) , EDO Indicator Factsheet, Copernicus European Drought Observatory.

Area impacted by drought, EU, 2000-2022

(km²)



Note: The annual data points for the 10-year moving average refer to the average over the 10-year period up to these years.

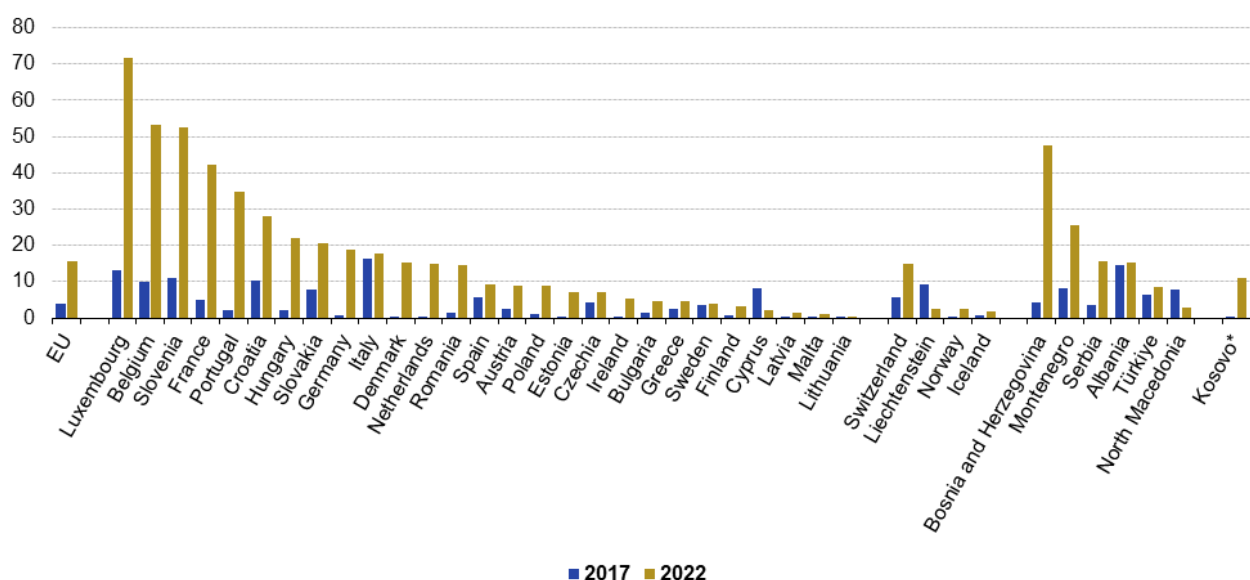
Source: EEA (Eurostat online data code: sdg_15_42)



Figure 5: Area impacted by drought, EU, 2000-2022 (km²) Source: EEA, Eurostat (sdg_15_42)

Area impacted by drought, by country, 2017 and 2022

(% of country area)



(*) This designation is without prejudice to positions on status, and is in line with UNSCR 1244/1999 and the ICJ Opinion on the Kosovo Declaration of Independence.

Source: EEA (Eurostat online data code: sdg_15_42)



Figure 6: Area impacted by drought, by country, 2017 and 2022 (% of country area) Source: EEA, Eurostat (sdg_15_42)

Terrestrial protected areas

LONG TERM

2011–2021



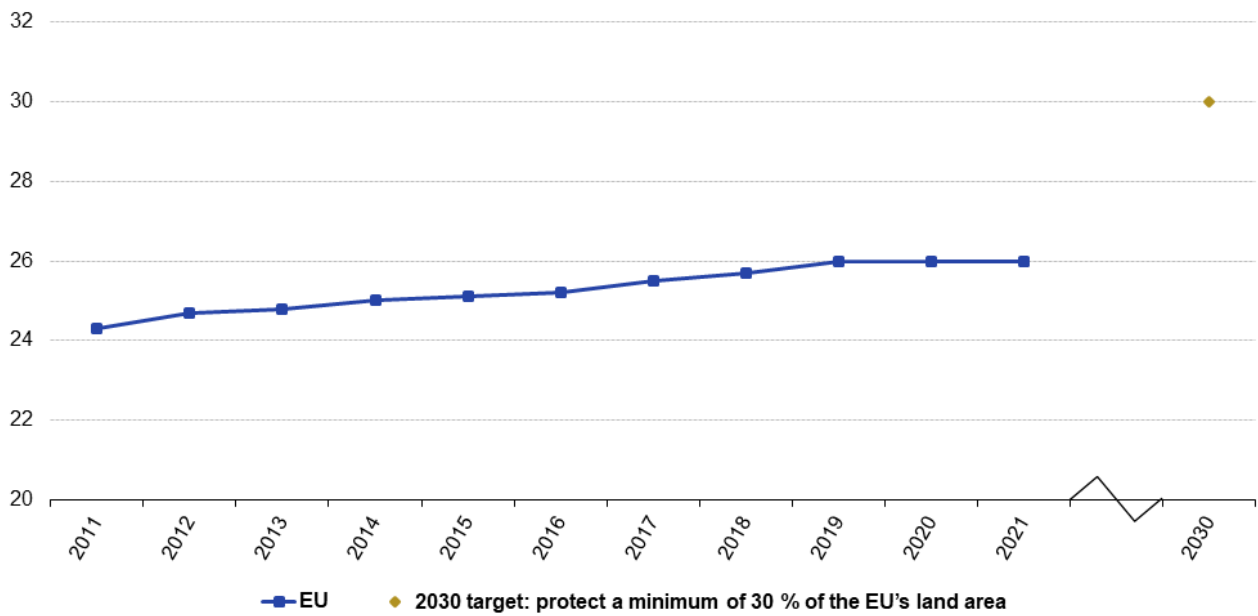
SHORT TERM

2016–2021



This indicator measures the extent of terrestrial protected areas, comprising nationally designated protected areas and Natura 2000 sites. A nationally designated area is an area protected by national legislation. The Natura 2000 network comprises both marine and terrestrial protected areas designated under the EU Habitats and Birds Directives with the goal to maintain or restore a favourable conservation status for habitat types and species of EU interest. The EU biodiversity strategy aims to protect at least 30 % of land and sea in Europe including both nationally designated sites and Natura 2000 sites. Data provided by the Member States to the Commission are consolidated at least yearly by the European Environment Agency and the European Topic Centre on Biological Diversity (EEA ETC/BD) and collected by European Commission Directorate-General for the Environment.

Terrestrial protected areas, EU, 2011-2021 (% of total area)

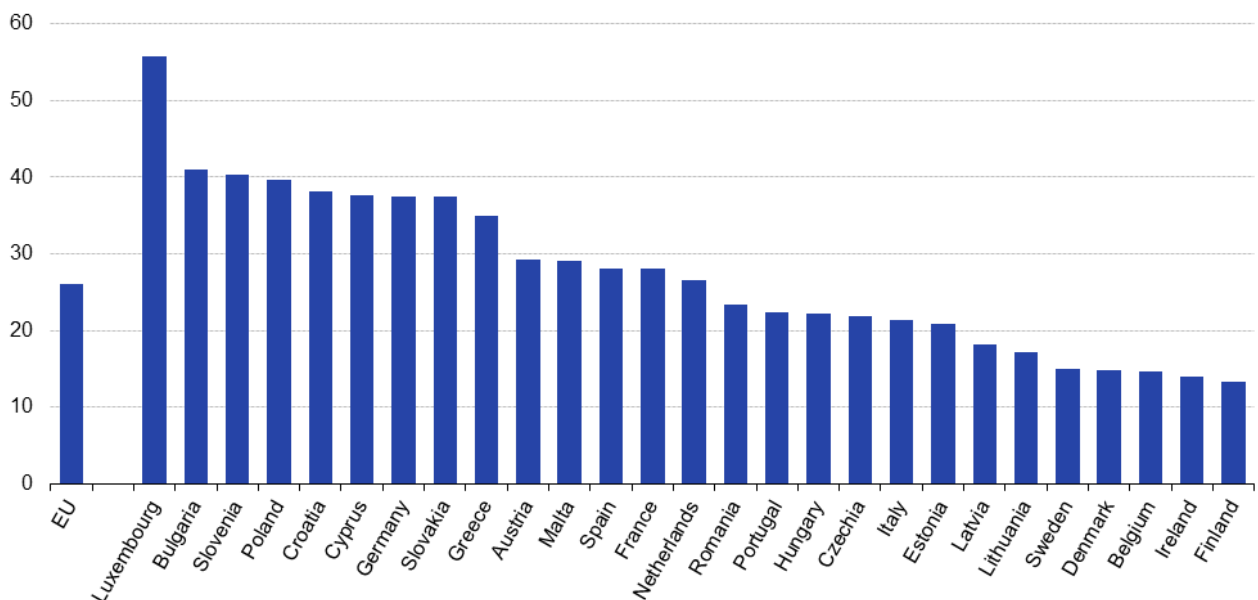


Source: EEA (Eurostat online data code: sdg_15_20)



Figure 7: Terrestrial protected areas, EU, 2011–2021 (% of total area) Note: y-axis does not start at 0. Source: EEA, Eurostat (sdg_15_20)

Terrestrial protected areas, by country, 2021 (% of total area)



Source: EEA (Eurostat online data code: sdg_15_20)



Figure 8 Terrestrial protected areas, by country, 2021 (% of total area) Source: EEA, Eurostat (sdg_15_20)

Common bird index

LONG TERM
2007–2022



All common
birds



Common
farmland birds

SHORT TERM
2017–2022



All common
birds

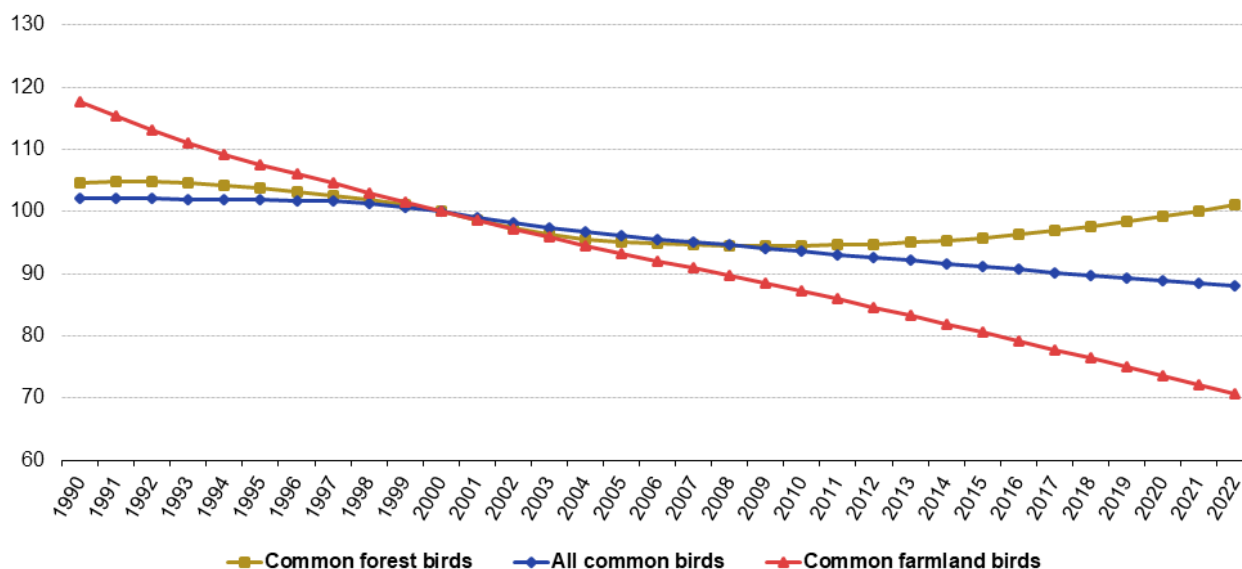


Common
farmland birds

This indicator is an index integrating the abundance and **diversity** of a selection of **common bird species** associated with specific habitats for feeding and nesting. Rare species are excluded, although some species common in certain Member States may be considered rare in others. Three groups of bird species are represented: common farmland species (39 species), common forest species (34 species) and all common bird species (168 species; including farmland species, forest species and common generalists' species). The indices are presented for EU-aggregates only and with smoothed values. The index draws from data produced by the European Bird Census Council and its Pan-European Common Bird Monitoring Scheme programme. Data coverage has increased from nine to 25 EU Member States over the period 1990 to 2014, with 26 countries covered as of the reference year 2015³¹.

Common bird index, by type of species, EU, 1990-2022

(index 2000 = 100)



Note: The EU aggregate changes depending on when countries joined the Pan-European Common Birds Monitoring Scheme.

Source: European Bird Census Council (EBCC), National BirdLife organisations, Royal Society for the Protection of Birds (RSPB), Czech Society for Ornithology (CSO) (Eurostat online data code: sdg_15_60)



Figure 9: Common bird index, by type of species, EU, 1990-2022 (index 2000 = 100) Note: y-axis does not start at 0. Source: European Bird Census Council (EBCC), National BirdLife organisations, Royal Society for the Protection of Birds (RSPB), Czech Society for Ornithology (CSO), Eurostat (sdg_15_60)

Grassland butterfly index

³¹Eurostat, [Metadata Biodiversity \(env_biodiv\)](#) .

LONG TERM
2005-2020



SHORT TERM
2015-2020

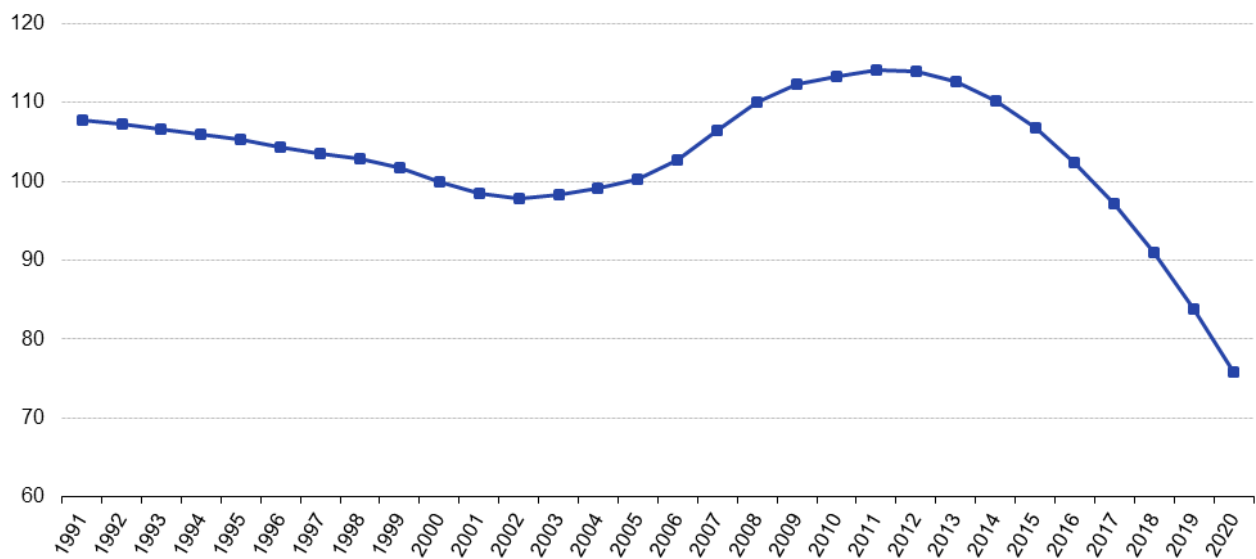


This indicator measures the population trends of 15 butterfly species at EU-level. The index is presented as an EU-aggregate only and with smoothed values. The indicator is based on data from 18 EU Member States (Austria, Belgium, Czechia, Estonia, Finland, France, Germany, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, the Netherlands, Romania, Slovenia, Spain and Sweden)³². The data are integrated and provided by the Butterfly Conservation Europe, European Butterfly Monitoring Scheme partnership, [SPRING project](#). For technical details see the [European Grassland Butterfly Indicator 1990–2020 report](#).

³²Van Swaay, C.A.M., Dennis, E.B., Schmucki, R., Sevilleja, C.G., Åström, S., Balalaikins, M., Barea-Azcón, J.M., Bonelli, S., Botham, M., Cancela, J.P., Collins, S., De Flores, M., Dapporto, L., Dopagne, C., Dziekanska, I., Escobés, R., Faltynek Fric, Z., Fernández-García, J.M., Fontaine, B., Glocovcan, P., Gracianteparaluceta, A., Harpke, A., Harrower, C., Heliölä, J., Houard, X., Kolev, Z., Komac, B., Kühn, E., Kuussaari, M., Judge, M., Lang, A., Lysaght, L., Maes, D., McGowan, D., Mestdagh, X., Middlebrook, I., Monasterio, Y., Monteiro, E., Munguira, M.L., Musche, M., Olivares, F.J., Óunap, E., Ozden, O., Pavlíčko, A., Pendl, M., Pettersson, L.B., Rákossy, L., Roth, T., Rüdissler, J., Šašić, M., Scalercio, S., Settele, J., Sielezniew, M., Sobczyk-Moran, G., Stefanescu, C., Švitra, G., Szabadfalvi, A., Tiitsaar, A., Titeux, N., Tzirkalli, E., Ubach, A., Verovnik, R., Vray, S., Warren, M.S., Wynhoff, I., & Roy, D.B. (2022), [European Grassland Butterfly Indicator 1990-2020 Technical report](#). Butterfly Conservation Europe & SPRING/eBMS & Vlinderstichting report VS2022.039.

Grassland butterfly index, EU, 1991-2020

(index 2000 = 100)



Source: Butterfly Conservation Europe, European Butterfly Monitoring Scheme partnership, SPRING project (Eurostat online data code: sdg_15_61)

eurostat 

Figure 10: Grassland butterfly index, EU, 1991-2020 (index 2000 = 100) Note: y-axis does not start at 0. Source: Butterfly Conservation Europe, European Butterfly Monitoring Scheme partnership, SPRING project, Eurostat (sdg_15_61)

Notes

Explore further

Other articles

- [All articles on sustainable development goals](#)

Database

- [Sustainable development indicators](#)

Dedicated section

- [Sustainable development indicators](#)

Publications

Further reading on life on land

- [Butterfly Conservation Europe \(BCE\)](#)
- [Díaz et al. \(2019\), Summary for policymakers of the global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on biodiversity and Ecosystem Services \(IPBES\).](#)
- [EEA \(2020\), State of nature in the EU. Results from reporting under the nature directives 2013–2018, Publications Office of the European Union, Luxembourg.](#)

- EEA (2020), The European Environment – state and outlook 2020, Luxembourg: Publications Office of the European Union.
- FOREST EUROPE, 2020, State of Europe’s Forests 2020.
- FAO and UNEP (2021). Global Assessment of Soil Pollution: Report. Rome.
- Maes et al (2021), EU Ecosystem Assessment, EUR 30599 EN, Publications Office of the European Union, Luxembourg.
- Panagos et al. (2020), Soil related indicators to support agri-environmental policies, Publications Office of the European Union, Luxembourg.
- PECBMS (2023), Report on the Pan-European Common Bird Monitoring Scheme, February 2023.
- UN (2021), System of Environmental-Economic Accounting—Ecosystem Accounting, Committee of Experts on Environmental-Economic Accounting.
- Van Swaay et al. (2022), European Grassland Butterfly Indicators 1990–2020, Technical report, Butterfly Conservation Europe & ABLE/eBMS
- EEA (2023), European forest ecosystems: key allies in sustainable development

Methodology

More detailed information on EU SDG indicators for monitoring of progress towards the UN Sustainable Development Goals (SDGs), such as indicator relevance, definitions, methodological notes, background and potential linkages can be found in the [introduction](#) as well as in Annex II of the publication ‘[Sustainable development in the European Union — Monitoring report on progress towards the SDGs in an EU context — 2024 edition](#)’ .

External links

Further data sources on life on land

- EEA, Conservation status of species under the EU Habitats Directive.
- EEA, Conservation status of habitats under the EU Habitats Directive.
- EEA, Land take and net land take, indicator dashboard.
- EEA, Land cover and change statistics 2000-2018, dashboard.
- European Commission, European Soil Data Centre (ESDAC): Soil Threats Data.