Indicator theme (old)	**D** **Biodiversity**
Component (FDES)	**1: Environmental Conditions and Quality**
Sub-component (FDES)	**1.2: Land Cover, Ecosystems and Biodiversity**
Indicator topic (FDES)	**1.2.2: Ecosystems and biodiversity**

Indicator	**D-5.1 Abundance and distribution of selected species (common birds and grassland butterflies)**

ID and name in indicator guidelines	D5	Trends in the number and distribution of selected species

First publication		Latest update	10/7/2021

Indicator definition	The indicator shows trends in the abundance (population size) of selected species (common birds, according to the methodology of the Pan-European Common Bird Monitoring Scheme, and grassland butterflies, according to the methodology of the European Butterfly Monitoring Scheme) in a defined area (country, or samples thereof such as regions or individual protected areas). Common birds and butterflies are selected because they are relatively easy to monitor using established methodologies and sensitive indicators to broader environmental change. The common birds indicator can be disaggregated for all common birds, common farmland birds and common forest birds. Some adjustments owing to biogeographical diversity within UNECE region may be necessary.
Unit of measure	Index of change (%), with data of initial reference year set at 100%.
Coverage	Common birds and grassland butterflies
Spatial aggregation	National territory
Reference period	End of each calendar year or nearest date within that calendar year.
Update frequency	Annual
Purpose	This indicator provides detailed trends in abundance of two easily monitorable species groups, which – depending on sampling density, can in turn be indicative of broader trends in the structural and functional integrity of ecosystems at the national level and can add additional context to taxonomically broader indicators such as indicator D-4.2.
Policy context	Ecosystems and biodiversity have strong intrinsic values, provide multiple ecosystem services to human societies, and thereby support sustainable development and human wellbeing on Earth. They enable nature-based solutions to a wide range of challenges to Society. The proportion of threatened species within the overall species complement of a country is an important measure of the status of biodiversity. The indicator is relevant to SDG target 15.5 ("Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species"), as well as SDG target 15.9 ("By 2020, integrate ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts").

Link with SDG indicators

SDG indicators	Comments
15.5.1 Red List Index	

Policy references

Title and weblink	Comments
United Nations Convention on Biological Diversity (CBD) https://www.cbd.int/	
United Nations Convention on Biological Biodiversity: First Draft of the Post-2020 Global Biodiversity Framework https://www.cbd.int/doc/c/914a/eca3/24ad42235033f031badf61b1/wg2020-03-03-en.pdf	

Indicator	**D-5.1 Abundance and distribution of selected species (common birds and grassland butterflies)**

Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions.
EU Biodiversity Strategy for 2030. Bringing nature back into our lives.

https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1590574123338&uri=CELEX:52020DC0380

Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora

http://ec.europa.eu/environment/nature/legislation/habitatsdirective/index_en.htm

Recommendation No. 16 (1989) of the standing committee on areas of special conservation interest of the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention)

https://search.coe.int/bern-convention/Pages/result_details.aspx?ObjectId=0900001680746c25

Methodology for indicator calculation	This indicator consists of two sub-indicators, the Common Birds Index and the Grassland Butterfly Index.
	The Common Birds Index expresses relative (%) abundance change in a given year to abundance data of a reference year, and is calculated separately for all common birds, common farmland birds and common forest birds. The actual methodology is more complex (see below).
	Similarly, the Grassland Butterfly Index is computed for biogeographical regions from individual transect counts using Poission General Linear Models and application of a series of mathematical filters (see below).

Methodology references

Title of the reference document	Link
Biodiversity: Reference Metadata in Euro SDMX Metadata Structure (ESMS)	https://ec.europa.eu/eurostat/cache/metadata/EN/env_biodiv_esms.htm
A Monte Carlo Method to account for sampling error in multi-species indicators	https://www.sciencedirect.com/science/article/abs/pii/S1470160X17302881
Assessing Butterflies in Europe – Butterfly Indicators 1990-2018. Technical Report.	https://butterfly-monitoring.net/sites/default/files/Pdf/Reports/Assessing%20Butterflies%20in%20Europe%20-%20Butterfly%20Indicators%20Revised.pdf

Data and statistics needed to compile the indicator

ID	Data item	FDES topic
254	Site based abundance data of common birds (168 species in total)	1.2.2: Ecosystems and biodiversity
255	Distribution and area of common birds monitoring areas	1.2.2: Ecosystems and biodiversity
256	Site specific transect data for grassland butterfly species (17 species)	1.2.2: Ecosystems and biodiversity
257	Distribution and area of grassland butterfly monitoring areas	1.2.2: Ecosystems and biodiversity

Comments	This indicator complements indicator D-4.2.

Indicator **D-5.1 Abundance and distribution of selected species (common birds and grassland butterflies)**