EU Grassland Watch

An Operational Service for Monitoring Grassland Dominated Natura2000 Sites with Copernicus Data

Geoff Smith, Stefan Kleeschulte, Tomas Soukup, Raul Garcia, Gebhard Banko, Bruno Combal

space 4 environment

gisat

bil30mātica aniversario

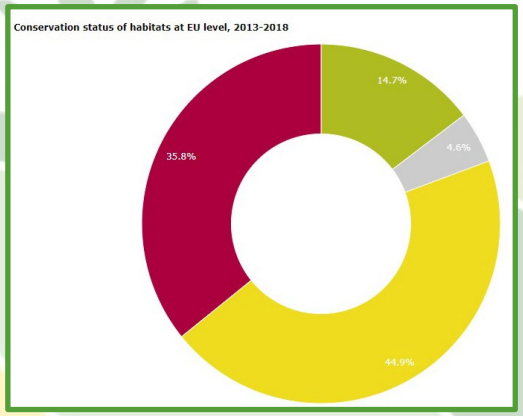
SPECTO NATURA Earth Observation Consultancy

umweltbundesamt PERSPEKTIVEN FÜR UMWELT & GESELLSCHAFT

European Commission

Definition of the problem

- **Issues with Natura 2000:**
  - Less improvement than expected.
  - Resources for regularly monitoring often limited.
  - Important datasets are lacking or of insufficient quality.
  - Information about the condition of individual Natura 2000 sites is often weak or missing.



- **Need:**
  - Information about the effectiveness of Natura 2000 sites in protecting their species and habitats
  - Grasslands are important as they are extremely vulnerable.
  - Site or even patch-based information required.
  - Close integration with the Copernicus Land Monitoring Service and the data supplied by the Sentinels
  - Develop a service to support site, national and European requirements.

COP4N2K

Land cover land use classifications (1994 -)

- **Earth Observation inputs:**
  - Landsat
  - Sentinel-1 & Sentinel-2
- **Spatial reference:** CLMS N2K local / hotspot product
- **Thematic reference:** CLMS N2K local and CORINE Land Cover products
- **Classification approach:**
  - Quarterly / monthly composites
  - Support Vector Machine, separate optical and SAR workflows
  - Combined result, MAES-based nomenclature
- **Additional properties**
  - Grassland biophysics
  - Phenology and management
  - Indicators

COP4N2K

EU Grassland Watch Beta

EU GRASSLAND WATCH

Understand to protect

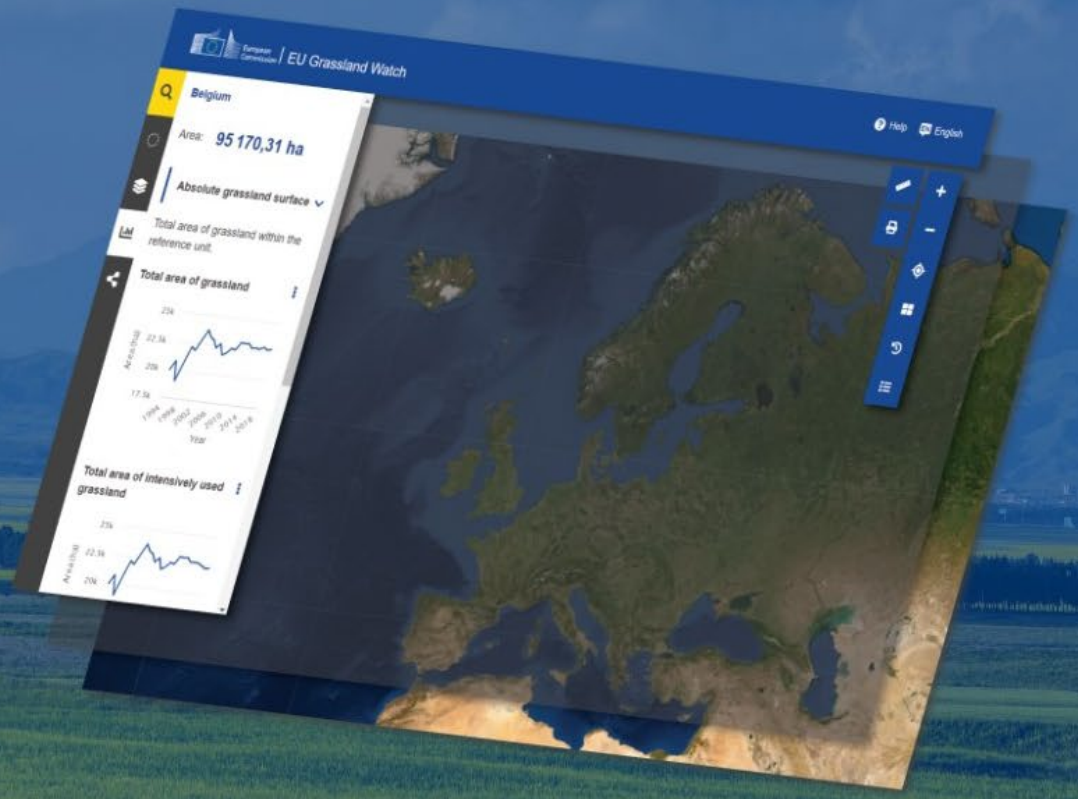
Exploring the evolution of grasslands in Natura 2000 sites

Based on satellite data, EU Grassland Watch provides grassland information in 3 689 Natura 2000 sites in 27 EU Member States. Covering the period from 1994 until the present, the information in this portal exploits Landsat and, since 2016 Copernicus Sentinel 1 and 2, images. Users can explore grassland cover changes at land parcel, Natura 2000 site or regional levels.

At present, the portal covers Natura 2000 sites that were previously mapped in the frame of the Copernicus Land Monitoring Service.

The development of this portal was a pilot project financed by the European Parliament. Further updates and improvements of the contents of this portal, including an increase in the number of Natura 2000 sites to be covered, will take place in the near future.

START EXPLORING



550 000

images used so far

Each year EU Grassland Watch has collected and analysed up to 100 000 images to generate land monitoring information. Between 1994 and 2018 a total image area of 6.65 billion km^2 were used, which would cover the Earth 13 times as a single layer.

Note: Situation as of 2018

273 124 km^2

of Natura 2000 sites mapped

Each year EU Grassland Watch provides information on land cover / land cover changes for 3 689 Natura 2000 sites, selected for their high conservation value of species-rich grasslands. These sites cover almost 25 % of the total land area of the Natura 2000 network.

35 503 km^2

of grassland mapped within sites

The total area of grasslands in the EU-27 is approximately 736 000 km^2. EU Grassland Watch is mapping only 5 % of these grasslands within the selected Natura 2000 sites but they are likely to be the most important species-rich high biodiversity examples.

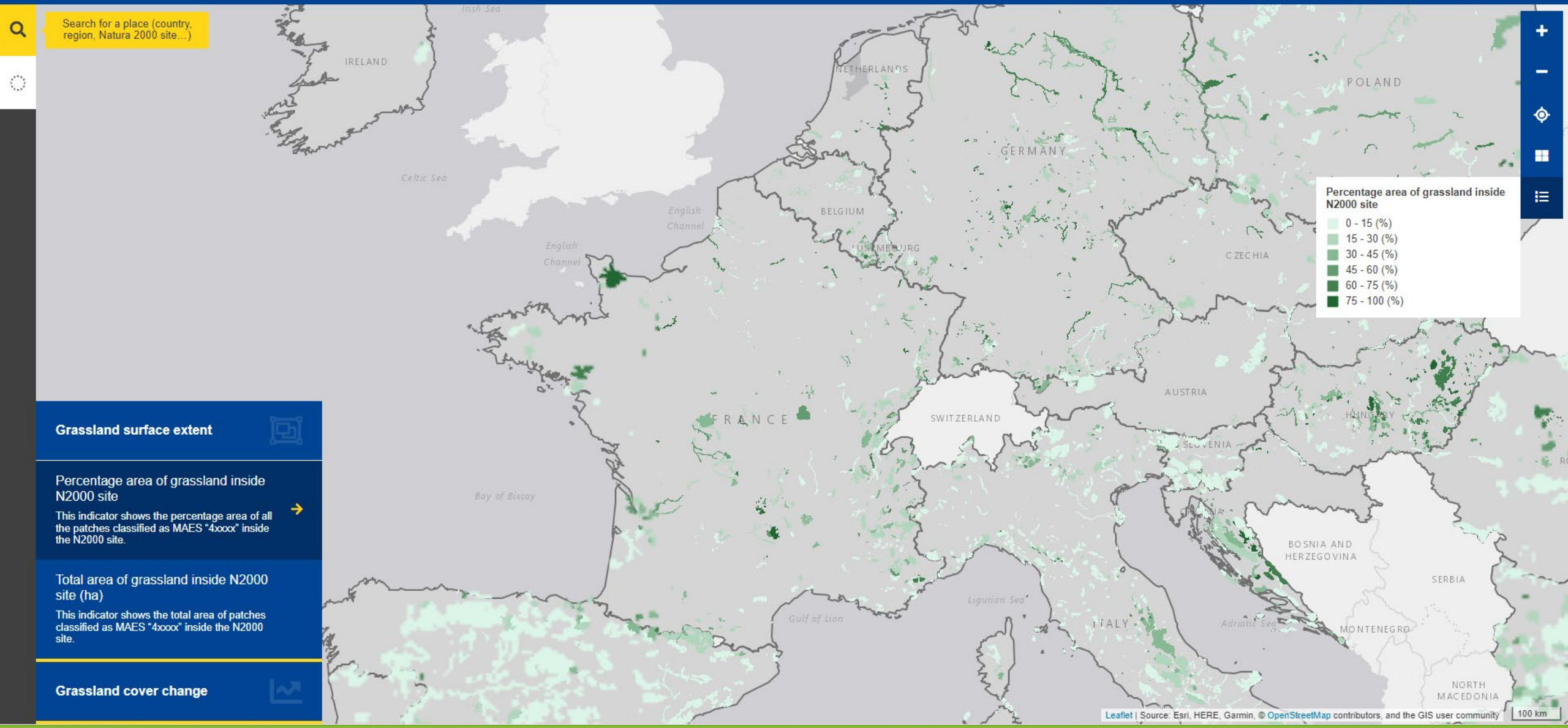
About

- What is a Natura 2000 site? +
- Why are grasslands so important? +
- How are space observations used? +

European Commission | EU Grassland Watch

Help | English

Search for a place (country, region, Natura 2000 site…)



Grassland surface extent

Percentage area of grassland inside N2000 site

This indicator shows the percentage area of all the patches classified as MAES "4xxxx" inside the N2000 site.

Total area of grassland inside N2000 site (ha)

This indicator shows the total area of patches classified as MAES "4xxxx" inside the N2000 site.

Grassland cover change

Close

Find places

Search for a place (country, region, Natura 2000 site…) Search

List of places

- Cyprus
- Czechia
- Denmark
- Estonia
- Finland
- France
- Germany
- Greece
- Hungary
- Ireland
- Italy
- Latvia
- Lithuania
- Luxembourg
- Malta
- Netherlands

- Arr. Ath
- Arr. Bastogne
- Arr. Brugge
- Arr. Charleroi
- Arr. Dendermonde
- Arr. Diksmuide
- Arr. Dinant
- Arr. Eeklo
- Arr. Gent
- Arr. Halle-Vilvoorde
- Arr. Hasselt
- Arr. Huy
- Arr. Ieper
- Arr. Kortrijk
- Arr. Leuven
- Arr. Liège

Valleien van de Winge en de Motte met valleihellingen.

Valleigebied tussen Melsbroek, Kampenhout, Kortemberg en Veltem.

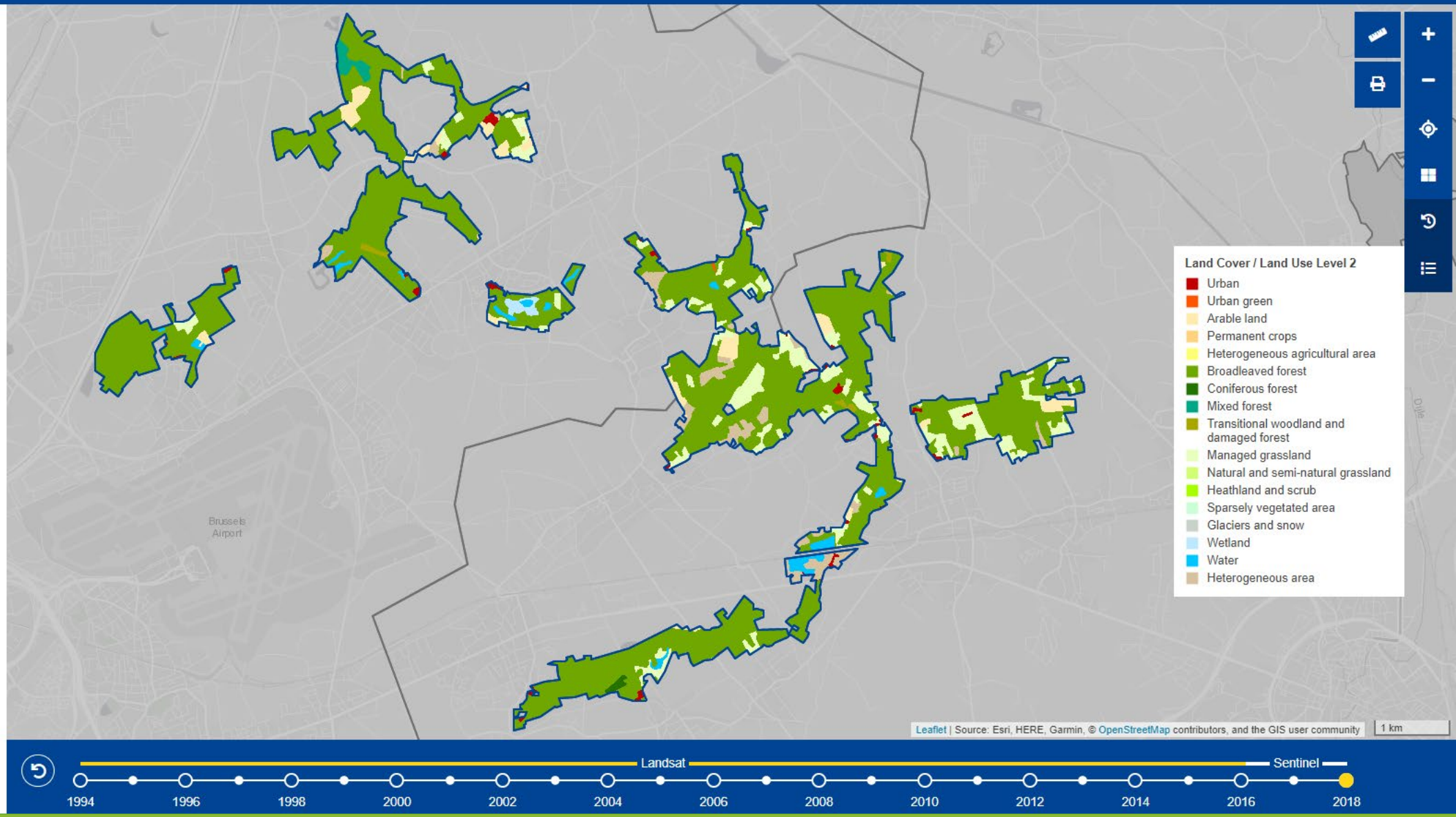
Belgium > Arr. Leuven >

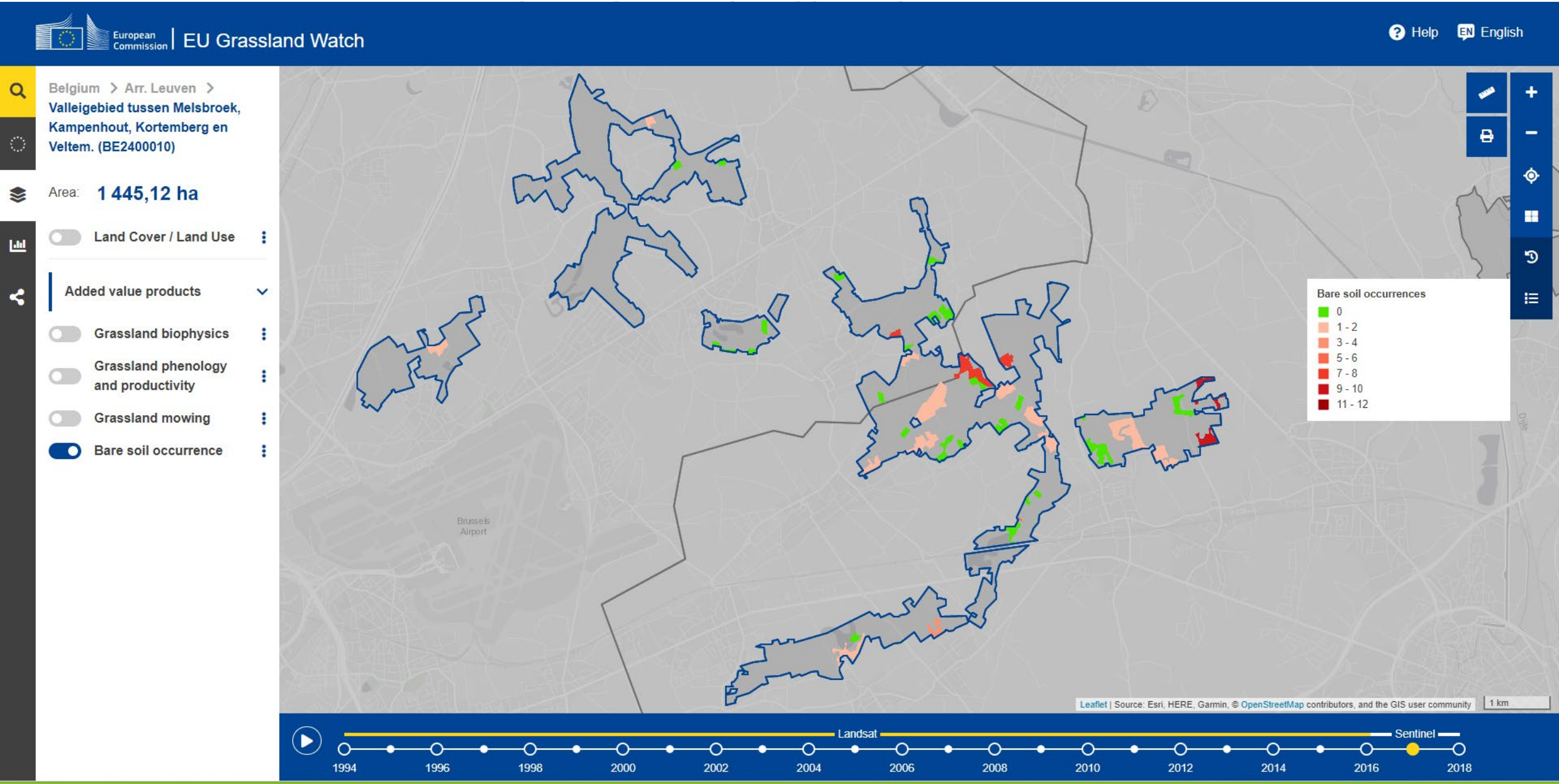
Valleigebied tussen Melsbroek, Kampenhout, Kortemberg en Veltem. (BE2400010)

Area: **1 445,12 ha**

- Land Cover / Land Use
  - Level 1
  - Level 2
  - Level 3
  - Level 4

Added value products >




European Commission
EU Grassland Watch
Help
English
Belgium > Arr. Leuven >
Valleigebied tussen Melsbroek, Kampenhout, Kortemberg en Veltem. (BE2400010)
Area: 1 445,12 ha
Land Cover / Land Use
Added value products
Grassland biophysics
Grassland phenology and productivity
Grassland mowing
Bare soil occurrence
Bare soil occurrences
0
1 - 2
3 - 4
5 - 6
7 - 8
9 - 10
11 - 12
Brussels Airport
Leaflet | Source: Esri, HERE, Garmin, © OpenStreetMap contributors, and the GIS user community
1 km
Landsat
Sentinel
1994
1996
1998
2000
2002
2004
2006
2008
2010
2012
2014
2016
2018

Belgium > Arr. Leuven >

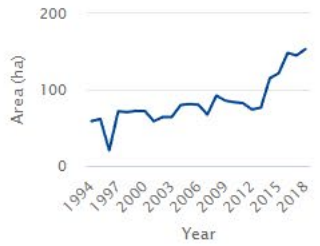
Valleigebied tussen Melsbroek, Kampenhout, Kortemberg en Veltem. (BE2400010)

Area: **1 445,12 ha**

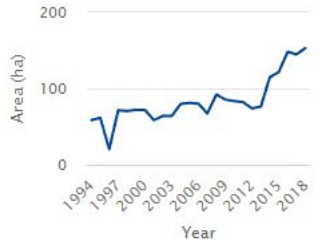
Absolute grassland surface

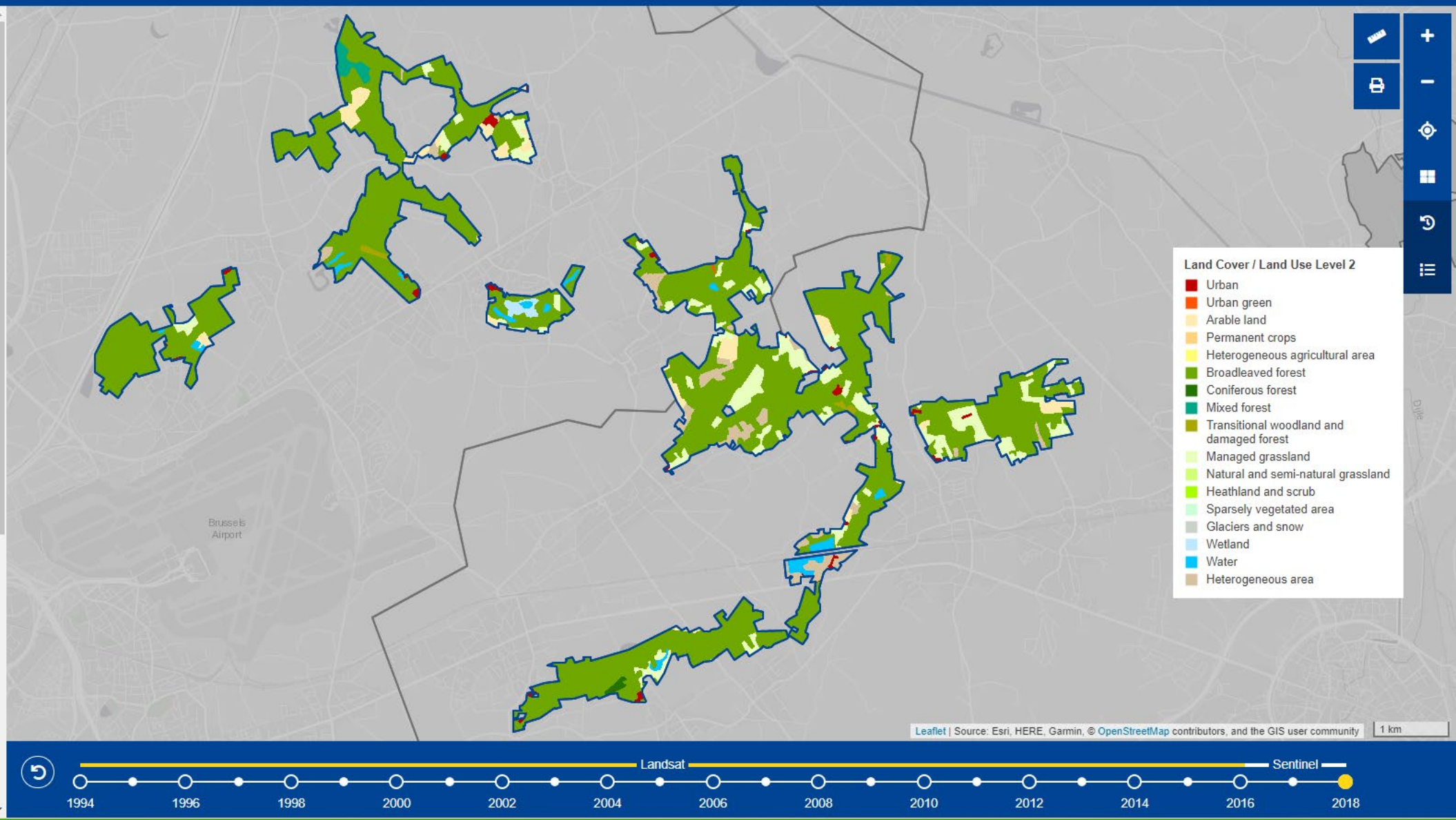
Total area of grassland within the reference unit.

Total area of grassland



Total area of intensively used grassland





European Commission | EU Grassland Watch

Help | English

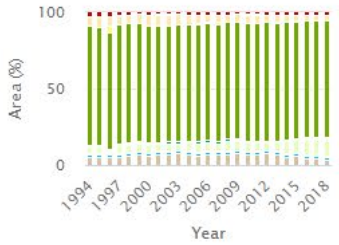
Belgium > Arr. Leuven > Valleigebied tussen Melsbroek, Kampenhout, Kortemberg en Veltem. (BE2400010)

Area: **1 445,12 ha**

- Absolute grassland surface
- Relative grassland surface
- Grassland cover changes
- Class diversity

Diversity of land use/land cover classes within the reference unit

Proportion of land cover categories



1994

Close

Proportion of land cover categories

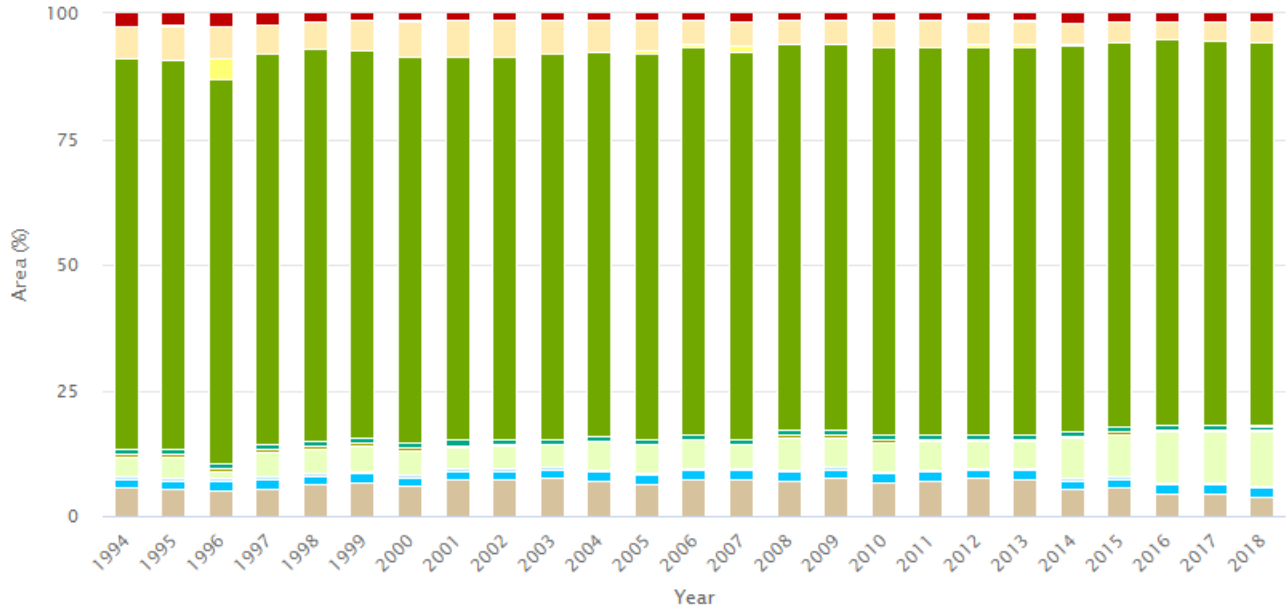
The indicator 'Proportion of land cover categories' gives the percentage of each existing Land Cover/Land Use class within the N2K site for each reference (i.e., Land Cover/Land Use map production) year. The indicator is calculated as the sum of all the areas of the objects with the same MAES code divided by the total area of the N2K site and gives an overview of the land cover/land use class distribution within the site.

Choose export format

PNG

Export

Chart | Table



Belgium > Arr. Leuven >

Valleigebied tussen Melsbroek, Kampenhout, Kortemberg en Veltem. (BE2400010)

Copy and paste this link

https://bm-eugis.tk/cop4n2k_app/

Copy

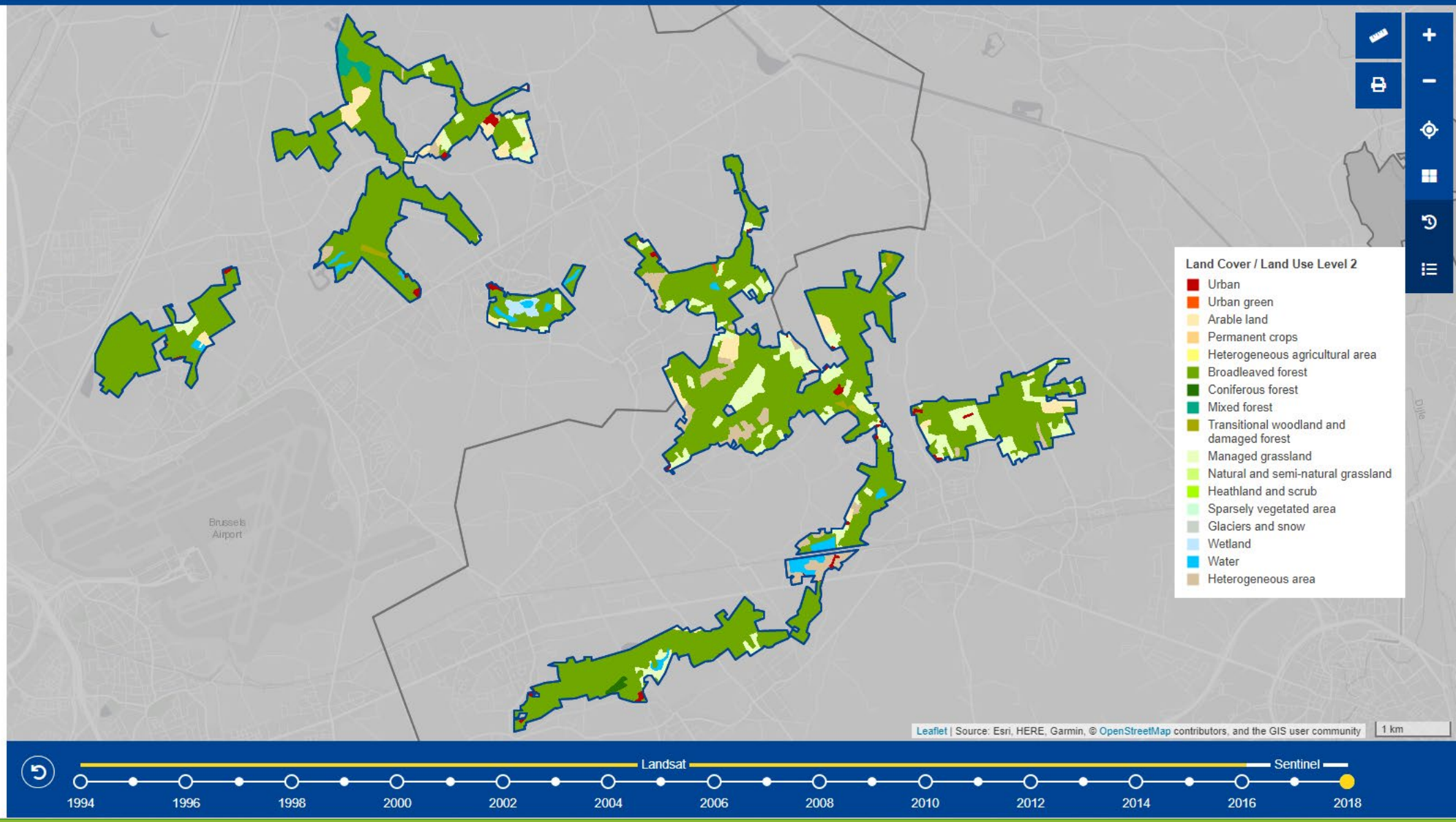
Share this page

Facebook

Twitter

LinkedIn

E-mail



Conclusions

- EU Grassland Watch service will support EU Member States and the Commission to proactively manage the Natura 2000 network
- Help prevent the deterioration of species and habitats
- Present spatially and temporally detailed attribute rich information
- Provide environmental management at local to continental scales
- Demonstrate how frequent spatially detailed EO can provide an effective tool
- Show how downstream services can be built on the free and open data policy of Copernicus
- **EU Grassland Watch now live as Beta / Prototype**

C P4N2K

Thank you for attention

https://ec.europa.eu/eu-grassland-watch/

Twitter: @cop4n2k

www.cop4n2k.eu

COP4N2K