

# StatEO

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## EO4Nature

From Earth Observation time series to statistics-ready indicators for nature-based climate action

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# The Federal Action Plan on Nature-based Solutions for Climate and Biodiversity

- Funding of the Federal Government for nature conservation and climate protection (since 2023)
- Measures are funded in various fields of action:

- Peatlands and rewetting
- Rivers, lakes and floodplains
- Wilderness and protected areas
- Forest ecosystems
- Soils as carbon stocks
- Settlement and transport areas
- Seas and coast



- Remote sensing is explicitly named as a monitoring method for the measures

## About EO4Nature

- EO4Nature is Germany's nationwide monitoring and application portal for nature-based solutions and nature conservation based on Earth Observation data.
- EO4Nature builds on the expertise of more than 20 partners from science, business and public administration.
- EO4Nature uses modern AI methods to provide reliable information for planning processes and the monitoring of nature-based solutions.
- EO4Nature connects knowledge from specialists in Earth Observation as well as geoinformation, and provides extensive training materials.
- EO4Nature offers open communication forums for all users on topics related to nature-based solutions.
- EO4Nature is a component of Germany's Spatial Data Infrastructure.
- From early 2028, EO4Nature will be available permanently and free of charge as an official platform of the Federal Ministry for the Environment, Climate Action, Nature Conservation and Nuclear Safety.



**E04Nature target groups**

**registered users**

**unregistered users**

**Municipalities**

- Cities
- Districts
- Other local authorities
- Municipal enterprises
- Neighbourhood management

**Organised public**

- Associations (esp. land-user associations, NGOs)
- Political parties, parliamentarians
- Research institutions and Universities

**Federal states**

- Federal ministries
- regional administrations

**Federal level**

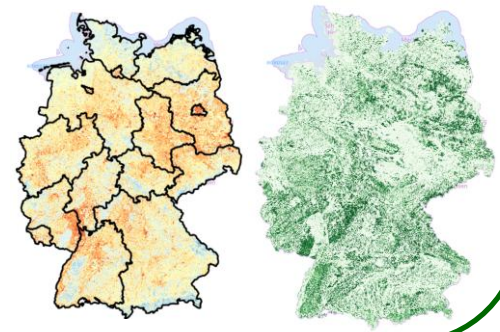
- Ministries
- Federal authorities

**Private individuals incl. private entities**

# Core functionalities of EO4Nature

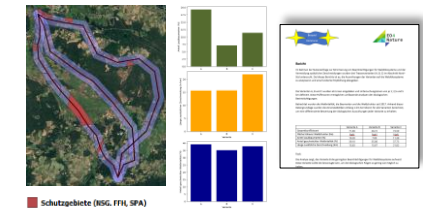
## Monitoring

- Thematic maps for all services and indicators
- Time series (baseline usually 2018)
- Spatial/temporal selection
- Statistics and reports
- Monitoring of conservation measures



## Applications

- Level 1: GIS-based apps (selection/overlay, spatial analyses)
- Level 2: specialist apps (grassland mowing service)
- AI-based apps (scoping, optimization/prioritization)
- Processing of user data



## Knowledge + Learning

- Interactive modules/webinars
- Integrated training mode
- Chatbot
- External training content

**Interaktive Lernmodule anhand von Use Cases**

Wildnis und Schutzgebiete | Moore und Wiedervernässung | Waldökosysteme | Böden | Auen

Siedlung und Verkehrsflächen

**Stadtgrün - Prüfung des Straßenbaumzustands für Wegesicherheitspflicht**  
Erfahren Sie mit wenigen Klicks mehr über den Gesundheitszustand der Straßenbäume in Ihrer Gemeinde. Seit den Trockenjahren 2018/2019 sind die Bestände geschwächt. Visualisieren Sie diese Entwicklung und ermöglichen Sie wirkungsvolle Handlungen, auch ohne eigene Datengrundlage.

**Auen - Instandhaltung und Milderung der Klimawandelfolgen**  
Stellen Sie leicht die Überflutungsdynamiken in regionalen Auengebieten fest und nutzen Sie diese Informationen für die datenbasierte Planung gezielter Anpassungsmaßnahmen. So werden intakte Auen geschützt und ihre Resilienz für Dürren und Hochwasser steigen.

## News + Networking

- NBS news & funding links
- Thematic forum
- Topic of the month

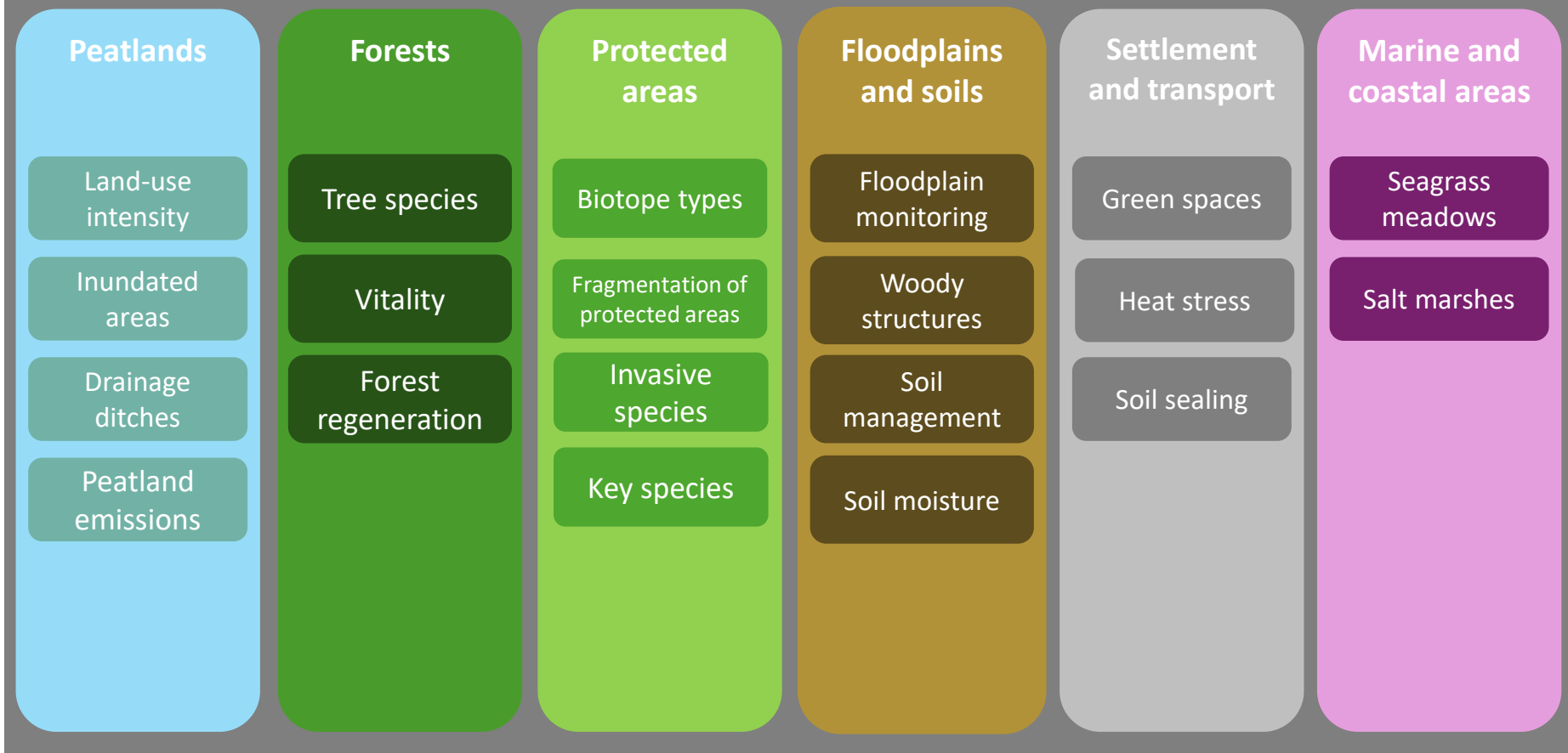




# EO4Nature – Monitoring services

## Monitoring services by ecosystem

### Standardised spatial framework (land-cover)

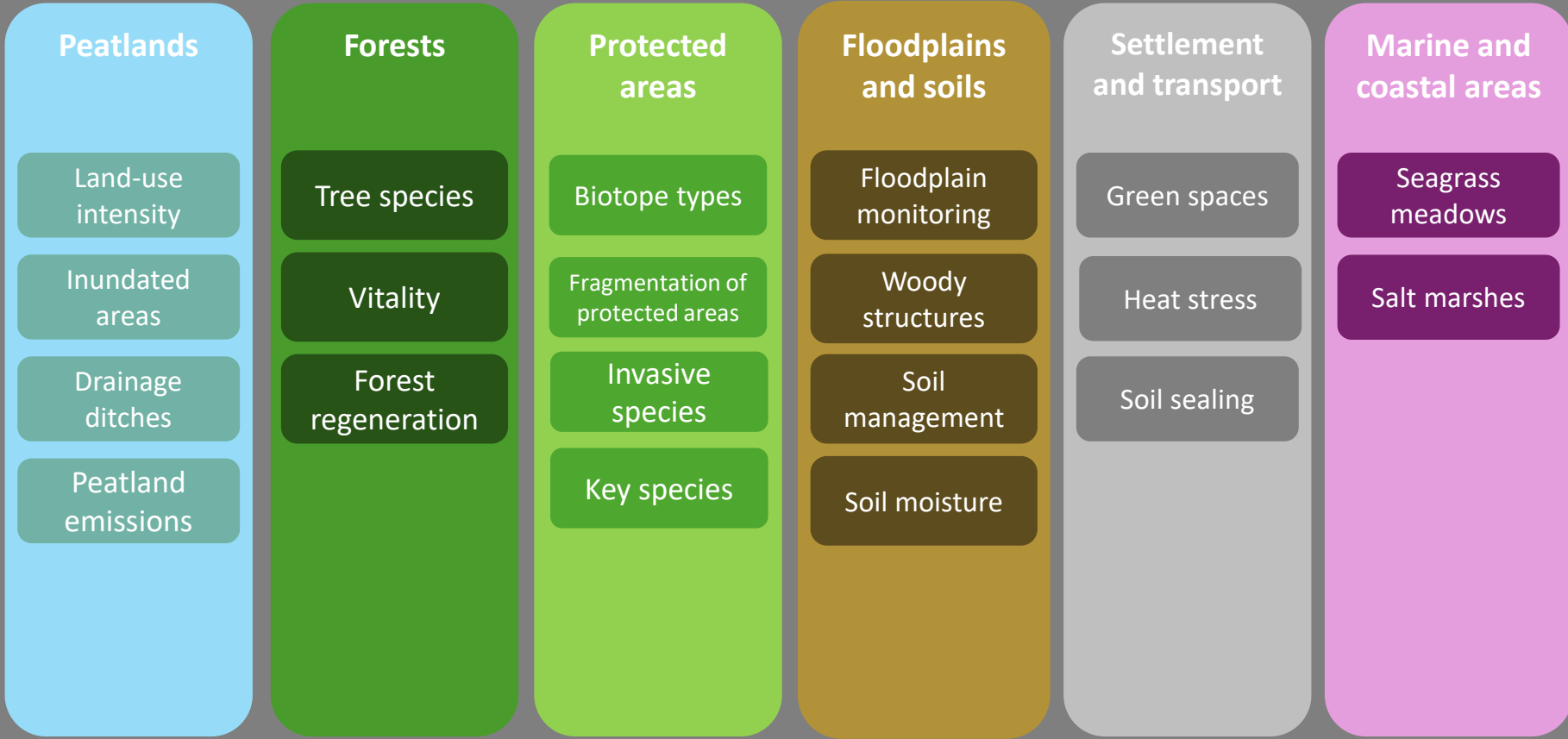




# EO4Nature – Monitoring services and applications

## Monitoring services by ecosystem

Standardised spatial framework (land-cover)



## Applications

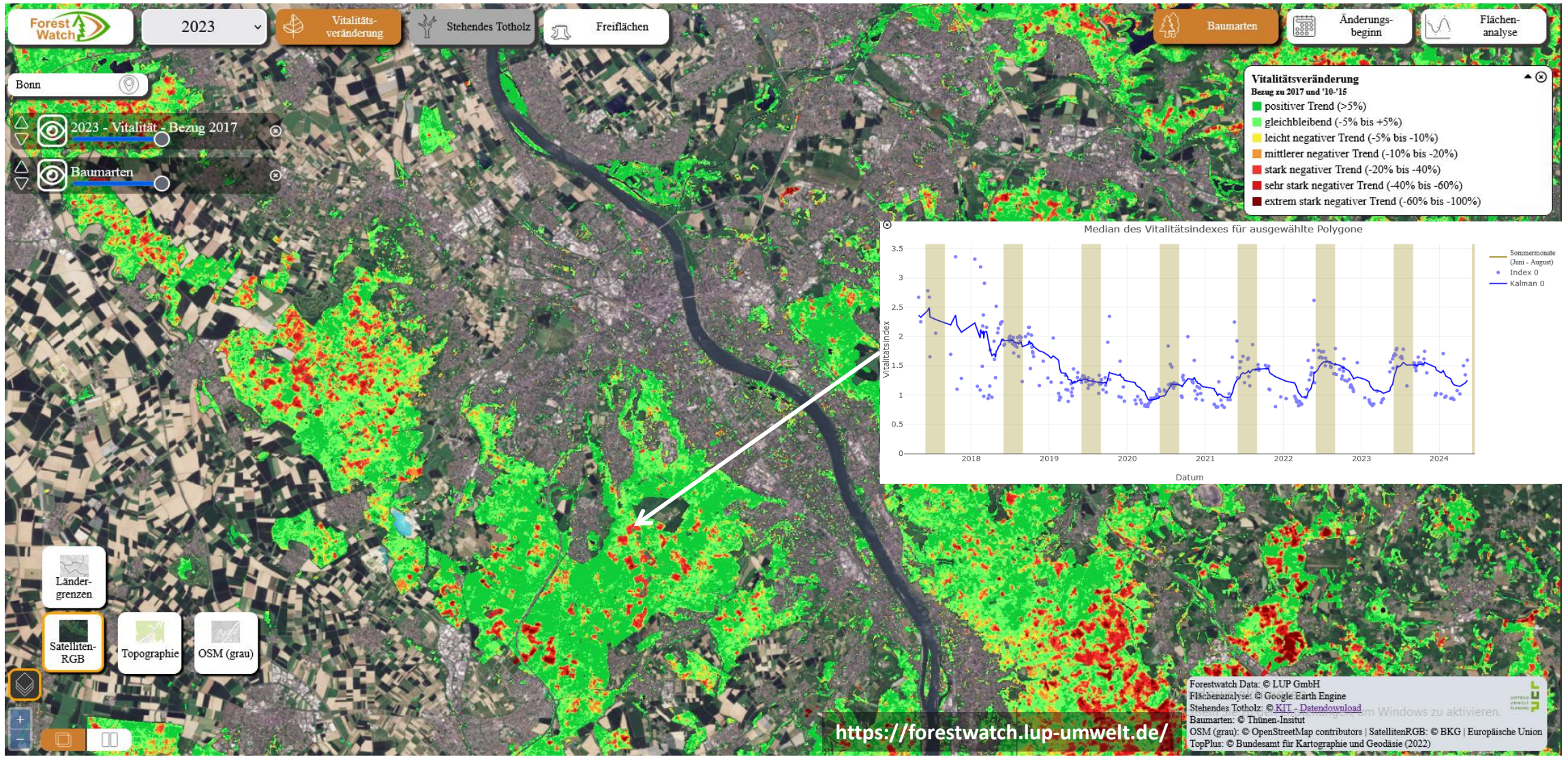
### GIS-based applications

- Routes and alternatives
- Planning maps
- Alert systems
- Reporting

### AI-based analyses & apps

- Pilot: scoping application
- Pilot: grassland mowing app
- in prep.: env. report app
- in prep.: prioritisation
- in prep.: optimisation

# Services – Example Forest Vitality

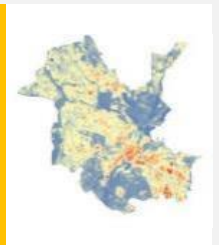


# Services – Example for Settlements and Transport

Cloud-based data:

**Thermal Stress**

- LST
- Albedo
- Shadowing



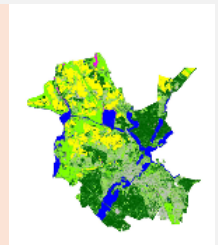
**Thermal Relief**

- Canopy Cover
- Green
- Vitality
- Soil cooling potential



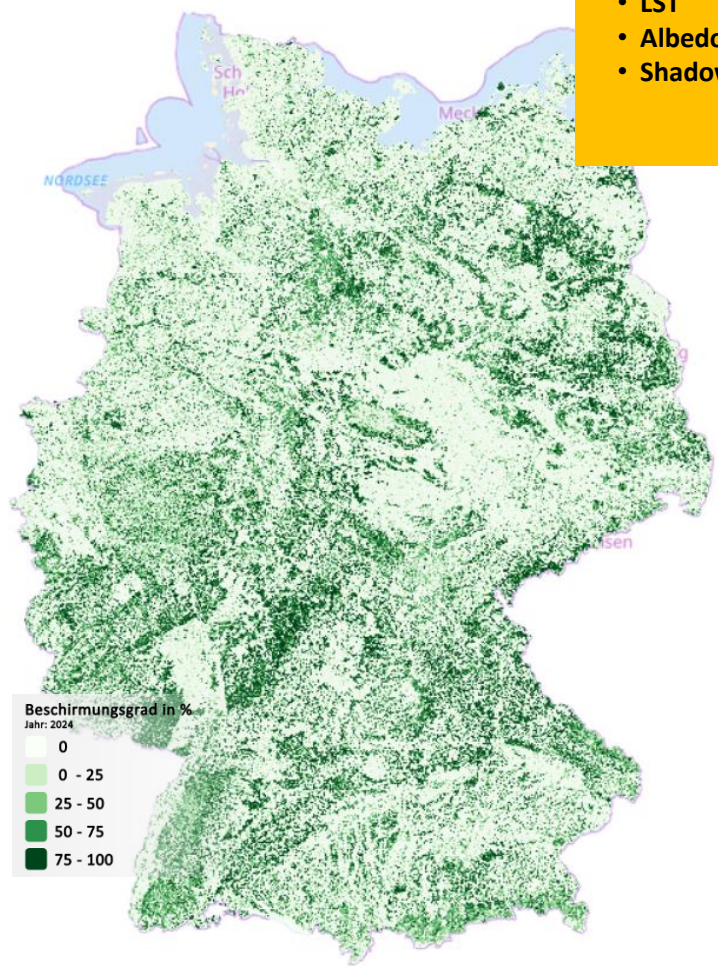
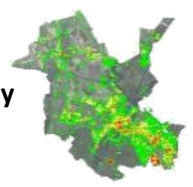
**Hydrological relief**

- Infiltration areas
- Soil sealing



**Deficit analysis/scenarios**

- Green Volume deficit
- Heat vulnerability index



Tree Cover Density 2023, Leipzig



Change Tree Cover Density between 2018 and 2023



Identification of potential areas for new plantings

# Application in the EO4Nature Portal



## Has my forest come through the last heatwave well?

► Answer on the map

Soil moisture

Vitality

Tree species

Heat stress

Woody vegetation



Peatlands and rewetting



Forest ecosystems



Settlement and transport areas



Soils



Peatlands and rewetting



Floodplains



# Individual Dashboard in the EO4Nature Portal

Search My account Help English



My orders New order My files Map (Most used) Menu

## My products

Create new product

 +

### Customized ★

Optional descriptive text entered by expert users.

- ▶ last updated 01/01/2026
- ▶ additional link

Peatlands and rewetting Wilderness and protected areas Forest ecosystems

Settlement and transport areas Soils Rivers, lakes, floodplains ★ Favorites

### Complex product 1 ★

Wilderness and protected areas

Brief product description, two lines that get straight to the point

### Another product ☆

Wilderness and protected areas Soils

Brief product description, two lines that get straight to the point

### Product 3 ☆

Wilderness and protected areas Soils

Peatlands and rewetting

Brief product description

### Product 4 ☆

Peatlands and rewetting

Forest ecosystems

Brief product description, two lines that get straight to the point

## Outlook and Recommendations

- Addition of emission services (at least soils, forest biomass, LULCF services, ...)
- Implementation of new sensor technology (e.g. hyperspectral data)
- Addition and harmonization of other administrative data
- Addition of new specialized applications
  - SPA management planning (AI-supported optimization)
  - Potential support for municipal specialist applications, e.g. tree irrigation, maintenance of green spaces
  - Potential support for W-VO Article 8 (core indicators: canopy cover and green spaces)

### Continue and deepen stakeholder engagement

**Expand EO-based monitoring into operational climate and biodiversity services**

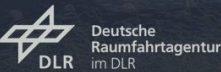
**Embed AI-supported E04Nature applications into standard planning procedures**



Thank you!  
Questions?  
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Gefördert durch:



Im Auftrag des:

