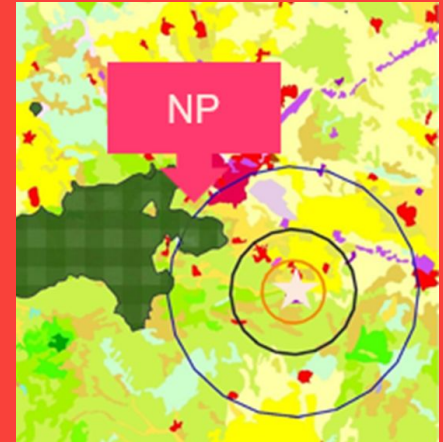




# Toolset for Hierarchical Reporting and Insightful Validation of Ecosystems

Dr. Niels Raes & Natural Capital Team



# What is Thrive

- Analysis pipeline to assess the impacts and dependencies of the private sector on biodiversity and ecosystems
- Answers to needs for Corporate Sustainability Reporting Directive (CSRD) reporting
- Results of a pilot project



<https://www.naturalis.nl/en/thrive>

# Corporate sustainability reporting

EU rules require large companies and listed companies to publish regular reports on the social and environmental risks they face, and on how their activities impact people and the environment.

## PAGE CONTENTS

**What the EU is doing and why**

Policy making timeline

Relevant legislation

Related links

## What the EU is doing and why

EU law requires all large companies and all listed companies (except listed micro-enterprises) to disclose information on what they see as the risks and opportunities arising from social and environmental issues, and on the impact of their activities on people and the environment.

This helps investors, civil society organisations, consumers and other stakeholders to evaluate the sustainability performance of companies, as part of the [European green deal](#).

## New rules on corporate sustainability reporting: The Corporate Sustainability Reporting Directive

On 5 January 2023, the [Corporate Sustainability Reporting Directive \(CSRD\)](#), entered into force. It modernises and strengthens the rules concerning the social and environmental information that companies have to report. A broader set of large companies, as well as listed SMEs, will now be required to report on sustainability. Some non-EU companies will also have to report if they generate over EUR 150 million on the EU market.



# CSRD

**EFRA** – *European Financial Reporting Advisory Group* - has developed the *European Sustainability Reporting Standards (ESRS)* which provide a framework for companies to report on **Environmental**, **Social**, and **Governance (ESG)** topics. The 12 standards must be reported against by all companies subject to the *Corporate Sustainability Reporting Directive (CSRD)*

## Topical standards

Environment: ESRS E	Social: ESRS S	Governance: ESRS G
Climate Change E1	Own workforce S1	Business conduct G1
Pollution E2	Workers in the value chain S2	
Water and marine resources E3	Own affected communities S3	
Biodiversity and ecosystems E4	Consumers and end-users S4	
Resource use and circular economy E5		

## Cross-cutting standards

General requirements: ESRS 1
General disclosures: ESRS 2



## ESRS – E4 Biodiversity and Ecosystems

**EFRAG – European Financial Reporting Advisory Group** - recommends to use the TNFD **LEAP** approach for ESRS – E4 reporting



[https://tnfd.global/wp-content/uploads/2023/08/Guidance\\_on\\_the\\_identification\\_and\\_assessment\\_of\\_nature-related-issues\\_The\\_TNFD\\_LEAP\\_approach\\_v1.pdf](https://tnfd.global/wp-content/uploads/2023/08/Guidance_on_the_identification_and_assessment_of_nature-related-issues_The_TNFD_LEAP_approach_v1.pdf)

# ESRS – E4 & TNFD LEAP

## Scoping

A quick, high-level preliminary scan of internal and external data and reference sources to generate a hypothesis about the organisation's potential nature-related dependencies, impacts, risks and opportunities to define the parameters for a LEAP assessment and to ensure managers and the assessment team are aligned on goals and timelines.



### Locate The interface with nature

#### L1 Span of the business model and value chain

**What** are our organisation's activities by sector and value chain? **Where** are our direct operations?

#### L2 Dependency and impact screening

**Which** of these sectors, value chains and direct operations are associated with potentially moderate and high dependencies and impacts on nature?

#### L3 Interface with nature

**Where** are the sectors, value chains and direct operations with potentially moderate and high dependencies and impacts located?  
**Which** biomes and specific ecosystems do our direct operations, and moderate and high dependency and impact value chains and sectors, interface with?

#### L4 Interface with sensitive locations

**Which** of our organisation's activities in moderate and high dependency and impact value chains and sectors are located in ecologically sensitive locations?  
And **which** of our direct operations are in these sensitive locations?



### Evaluate Dependencies & impacts

#### E1 Identification of environmental assets, ecosystem services and impact drivers

**What** are the sectors, business processes or activities to be analysed? **What** environmental assets, ecosystem services and impact drivers are associated with these sectors, business processes, activities and assessment locations?

#### E2 Identification of dependencies and impacts

**What** are our dependencies and impacts on nature?

#### E3 Dependency and impact measurement

**What** is the scale and scope of our dependencies on nature?

**What** is the severity of our negative impacts on nature? **What** is the scale and scope of our positive impacts on nature?

#### E4 Impact materiality assessment

**Which** of our impacts are material?



### Assess Risks & opportunities

#### A1 Risk and opportunity identification

**What** are the corresponding risks and opportunities for our organisation?

#### A2 Adjustment of existing risk mitigation and risk and opportunity management

**What** existing risk mitigation and risk and opportunity management processes and elements are we already applying?

How can risk and opportunity management processes and associated elements (e.g. risk taxonomy, risk inventory, risk tolerance criteria) be adapted?

#### A3 Risk and opportunity measurement and prioritisation

**Which** risks and opportunities should be prioritised?

#### A4 Risk and opportunity materiality assessment

**Which** risks and opportunities are material and therefore should be disclosed in line with the TNFD recommended disclosures?



### Prepare To respond & report

#### P1 Strategy and resource allocation plans

**What** risk management, strategy and resource allocation decisions should be made as a result of this analysis?

#### P2 Target setting and performance management

How will we set targets and define and measure progress?

#### P3 Reporting

**What** will we disclose in line with the TNFD recommended disclosures?

#### P4 Presentation

**Where** and how do we present our nature-related disclosures?

# Exploring Natural Capital Opportunities, Risks and Exposure



Select ISIC Section or ISIC Division (based on the International Standard Industrial Classification of All Economic Activities) to explore dependencies and impacts on natural capital.

ISIC Section 

ISIC Division

View:  Dependencies  Impacts

Agriculture, forestry and fishing



EXPLORE

1. ISIC Section ?  
Agriculture, forestry and fishing

2. ISIC Division ?  
Crop and animal production, hunti...

3. ISIC Group/Class ?  
Growing of cereals (except rice), l...

Dependencies ?

Impacts ?

Showing - 9

Ecosystem services

Ecosystem components

Provisioning services ? (4)

— HIDE ALL


Biomass provisioning services

Provided by:  

Genetic material services

Provided by: 

Water supply

Provided by: 

Other provisioning services - Animal-based energy

Provided by: 

Regulating and maintenance services ? (15)

+ SHOW ALL




## Provisioning services ? (4)

[-- HIDE ALL](#)


### Biomass provisioning services

Provided by:  

### Genetic material services

Provided by: 

### Water supply

Provided by: 

Water supply services reflect the combined ecosystem contributions of water flow regulation, water purification, and other ecosystem services to the supply of water of appropriate quality to users for various uses including household consumption. This is a final ecosystem service.



#### Water

[FACTSHEET >](#)[EXPLORE MAP >](#)

### ISIC Groups/Classes

**Growing of cereals (except rice), leguminous crops and oil seeds**



**High materiality rating** Growing of non-perennial crops depends on water supply services provided by ecosystems to ensure sufficient quantity and quality of water to grow the crops and for general on-farm use (such as cleaning, sanitation, crop spraying).

1. ISIC Section ?  
Agriculture, forestry and fishing

2. ISIC Division ?  
Crop and animal production, hunti...

3. ISIC Group/Class ?  
Growing of cereals (except rice), I...

Dependencies ?

Impacts ?

Showing - 9

Pressures

Ecosystem components and types



Disturbances (e.g noise, light)



Area of freshwater use



Emissions of GHG



Emissions of non-GHG air pollutants





### Emissions of toxic pollutants to water and soil

### Volume of water use

Water is used for the activity. Example metrics include volume of groundwater consumed, volume of surface water consumed, etc.

[FACTSHEET >](#)

[EXPLORE MAP >](#)

### ISIC Groups/Classes

**Growing of cereals (except rice), leguminous crops and oil seeds**

VH

**Very high materiality rating** A significant amount of water is required during the cultivation of cereals, leguminous crops and oil seeds due to potential water losses through the puddling process, surface evaporation, and percolation. Irrigation of crops leads to a substantial water footprint which contributes to water stress, especially in areas where water resources are already limited.

### Introduction of invasive species

ENCORE

Explore Data & Methodology News Resources About Log in/Register

1. ISIC Section ?  
Agriculture, forestry and fishing

2. ISIC Division ?  
Crop and animal production, hunti...

3. ISIC Group/Class ?  
Growing of cereals (except rice), l...

Dependencies ?

Impacts ?

Showing - 8

Pressures

- Atmosphere
- Land geomor
- Minerals
- Ocean geomorphology

ENCORE uses a list of 271 economic activities which correspond to ISIC Groups. ISIC divides economic activities into Sections, which are further broken down into Divisions, Groups and Classes, with the exception of selected Groups that have been further broken down to align with ISIC Classes.

# ESRS – E4 & TNFD LEAP

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## **THRIVE - spatial explicit and hierarchically organised**

Scoping of impacts and dependencies on biodiversity using ENCORE

Biodiversity data

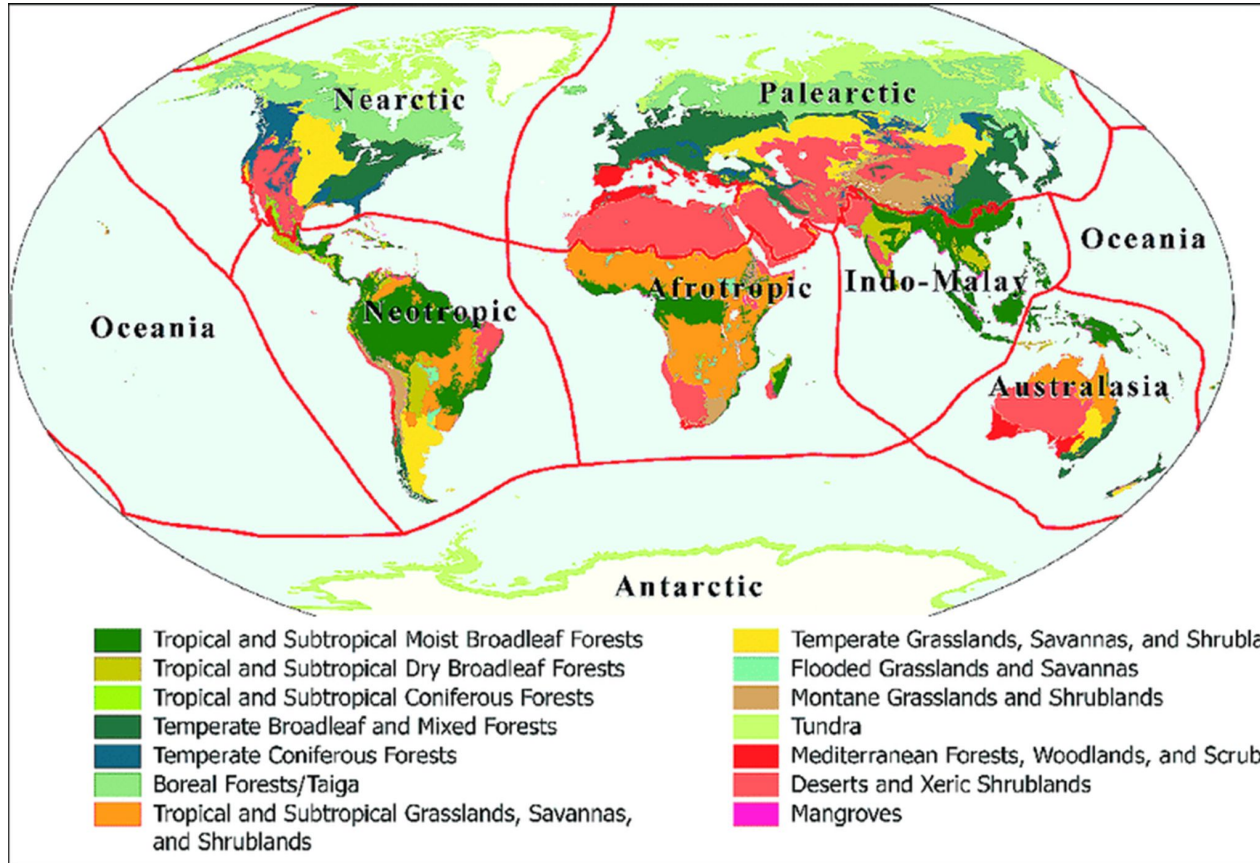
1. Biomes and biogeographic realms
2. Terrestrial, Freshwater and Marine Ecoregions of the World
3. Global Ecosystem Mapping
4. Global critical habitats
5. Global biodiversity hotspots
6. Global hotspot of plant richness and phylogenetic diversity
7. IUCN animal richness and rarity-weighted richness
8. Key Biodiversity Areas (KBAs)
9. WDPA - World Database on Protected Areas
10. Ramsar wetland sites
11. IUCN Red List species ranges
12. GBIF species specific data

Abiotic spatial data depending on identified ENCORE pressures

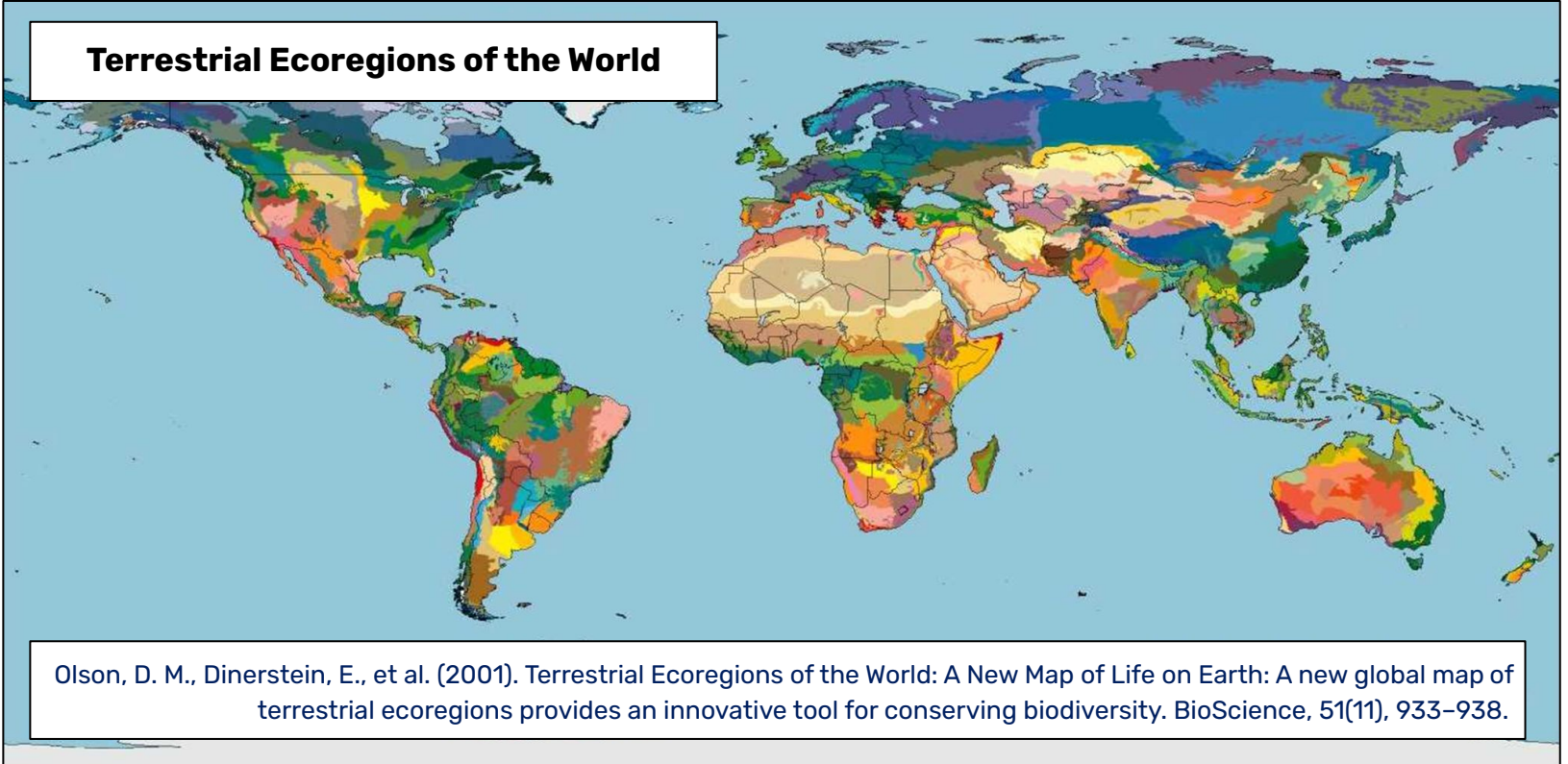
Landcover (CLC & ESA WorldCover) - habitat intactness

Intersecting at different buffer ranges depending on business impacts





## Terrestrial Ecoregions of the World

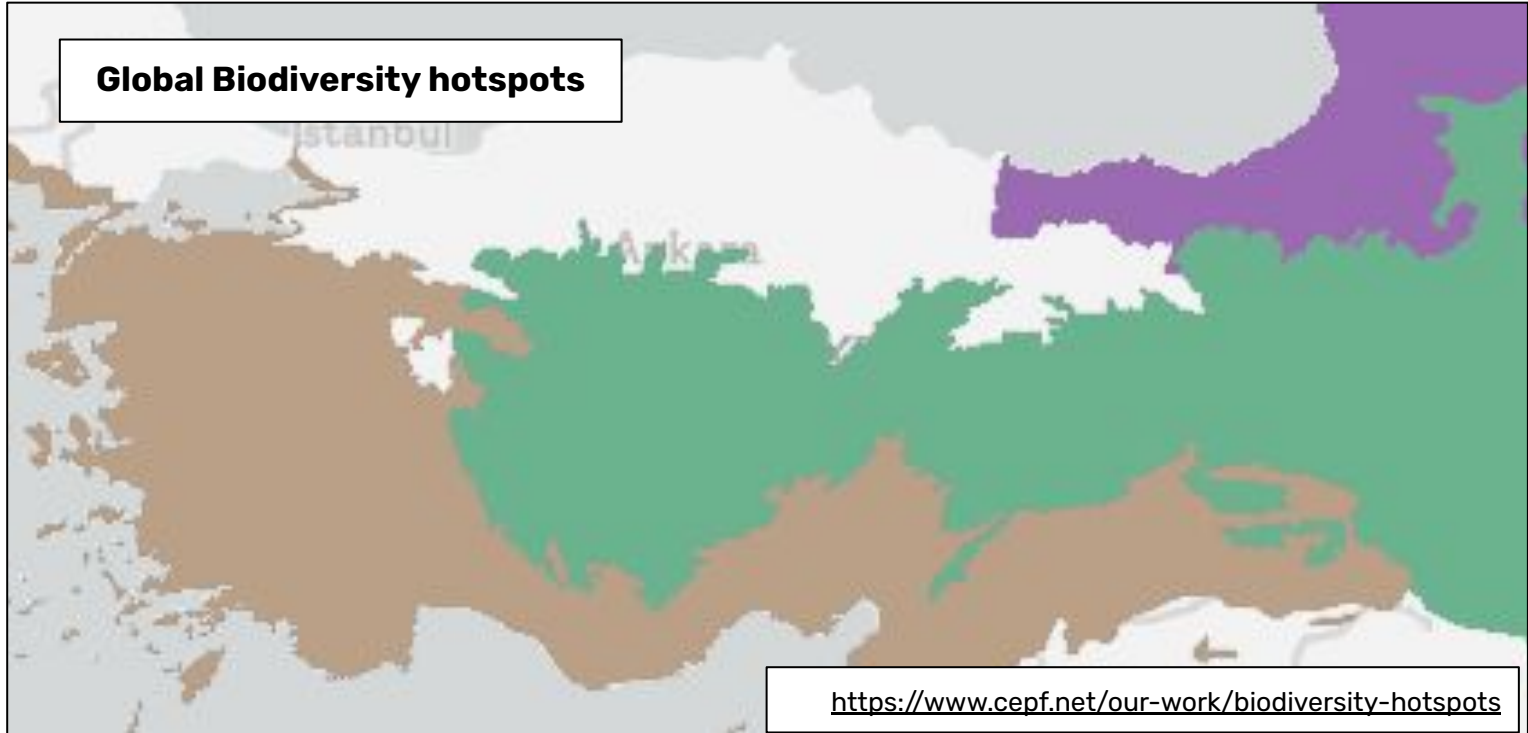


Olson, D. M., Dinerstein, E., et al. (2001). Terrestrial Ecoregions of the World: A New Map of Life on Earth: A new global map of terrestrial ecoregions provides an innovative tool for conserving biodiversity. *BioScience*, 51(11), 933–938.

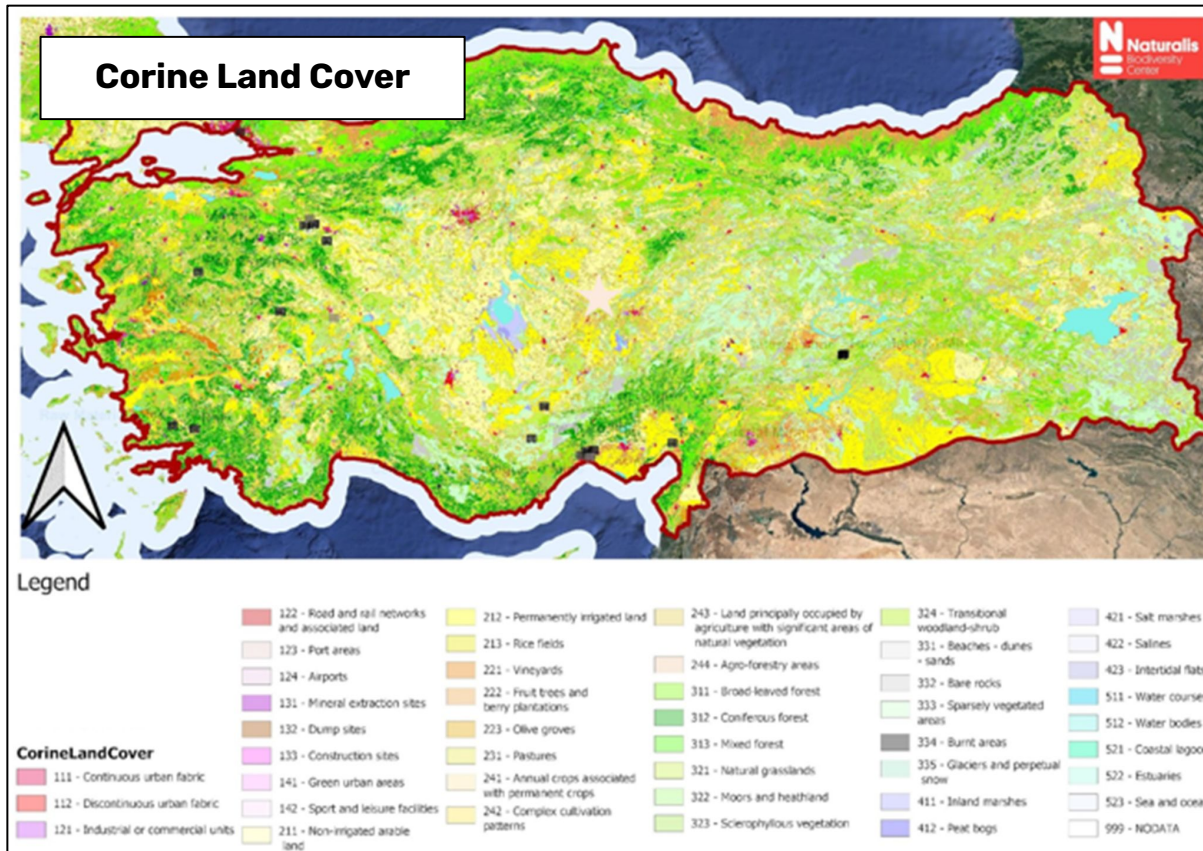


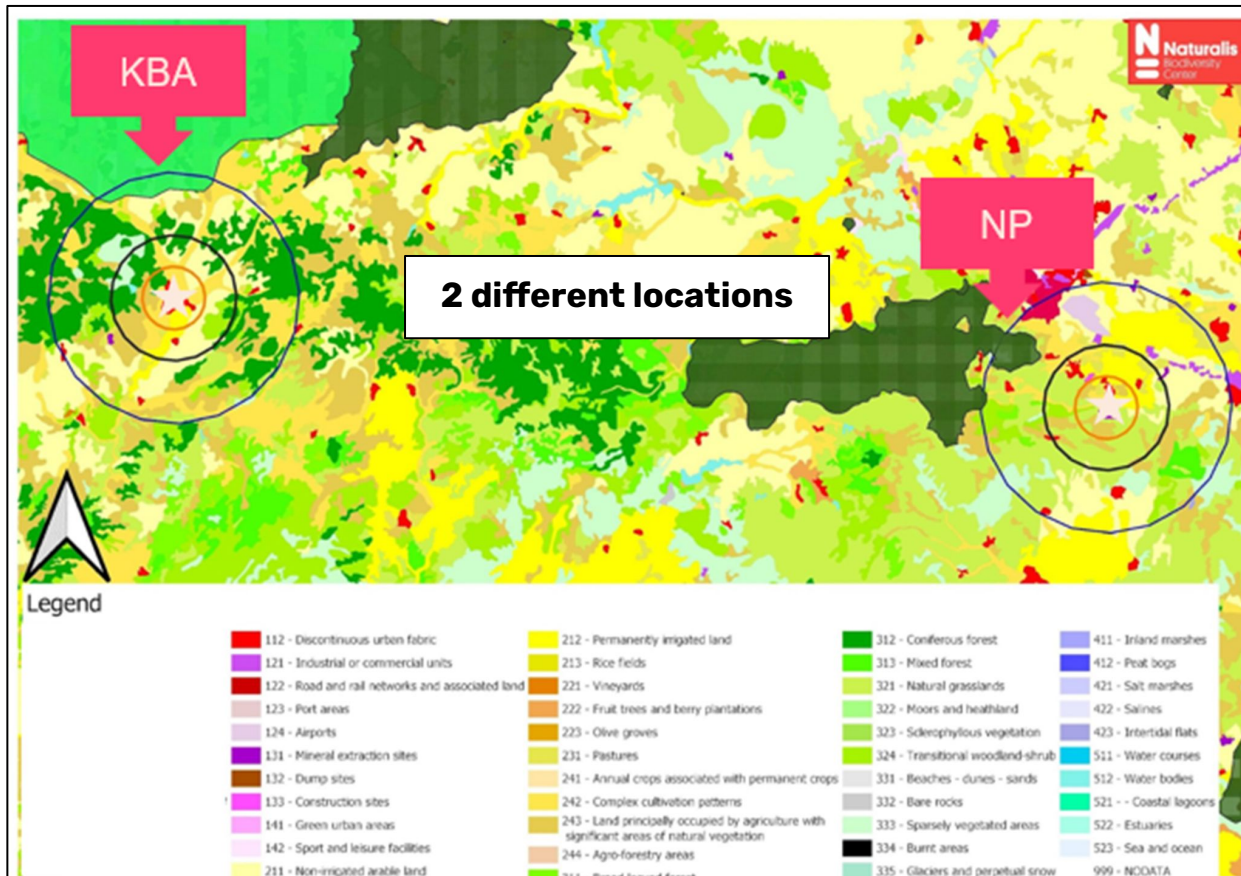


### Global Biodiversity hotspots

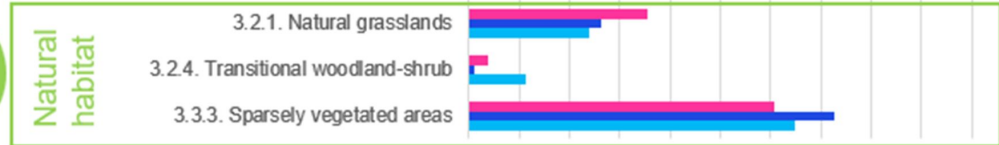


- > 1,500 endemic vascular plants (>0.5 percent of the global total)
- > 70% of the primary vegetation **is lost**

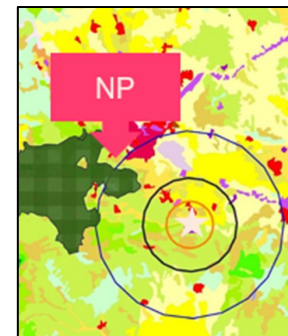
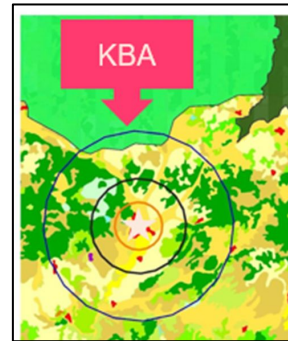




35%



0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%



■ 2.5 ■ 5 ■ 10



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Landcover (CLC & ESA WorldCover) - habitat intactness

Intersecting at different buffer ranges depending on business impacts



# Thank you for your attention



## Thrive

Toolset for Hierarchical Reporting and Insightful Validation of Ecosystems

### Spatial explicit and hierarchically organised

Business activities intersect with biodiversity and ecosystems at spatial explicit locations. The degree of impacts and dependencies of these activities are related to the characteristics of nature and its ecosystems at these localities. THRIVE measures the impact and dependencies of business activities in a spatial explicit and hierarchical organised way.



