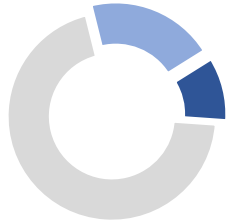




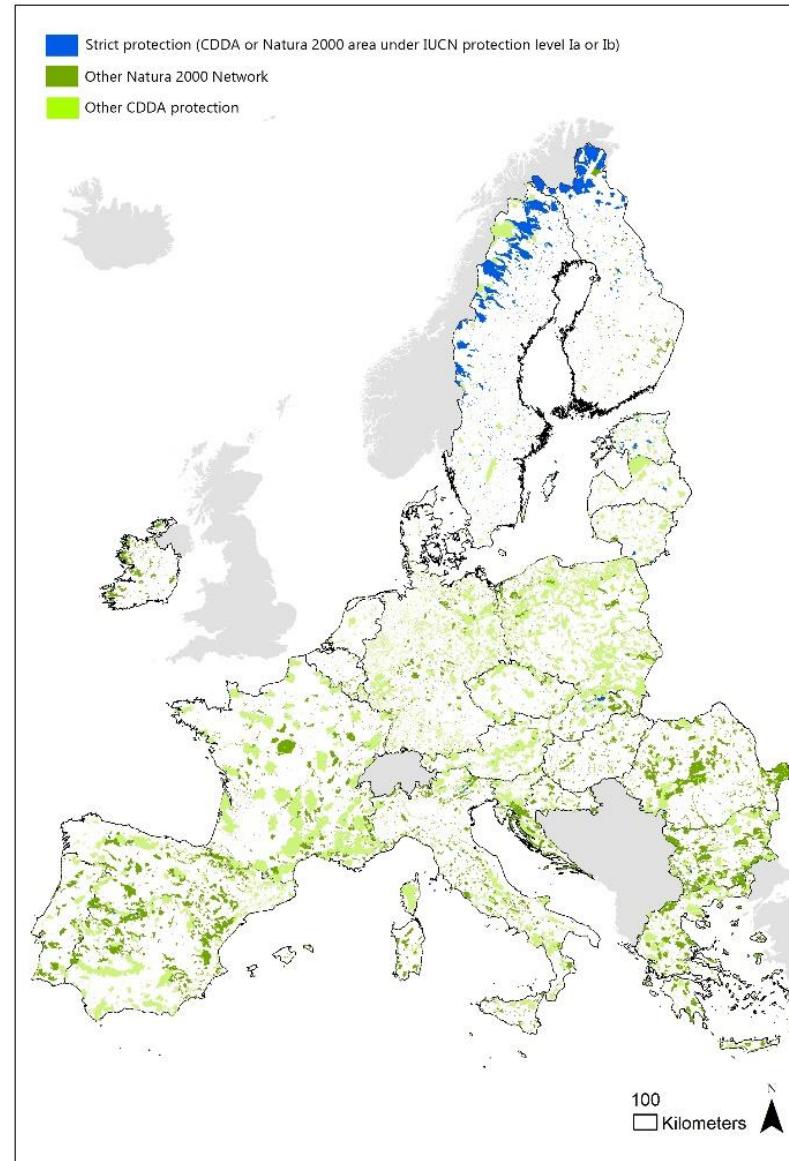
ETC-BE 2023

The protection status of primary and old growth forest in the EU & implications for strict protection targets under the Biodiversity Strategy 2030

Policy Background: The strict protection targets of the Biodiversity Strategy 2030



Legally protect at least **30% of land** and 30% of the sea in the EU. At least **1/3** of this should be **strictly protected**



26% to 30% “normal protection”

~2-3% to 10% “strict”
the real challenge



Policy Background: The strict protection targets of the Biodiversity Strategy 2030

Explicitly mentioned to strictly protect all remaining “primary” and “old growth” forest

What defines primary and old growth forest?

Forest == Forest?

(I) forests of any age that have a history of **minimal or absence of human disturbance**
“primary forest”

(ii) old forests or forests in a **late-successional stage with varying degrees of human disturbance**,
“old-growth forest”.



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Protection gaps and restoration opportunities for primary forests in Europe

Francesco M. Sabatini  William S. Keeton, Marcus Lindner, Miroslav Svoboda, Pieter J. Verkerk, Jürgen Bauhus, Helge Bruelheide, Sabina Burrascano, Nicolas Debaive, Inês Duarte, Matteo Garbarino, Nikolaos Grigoriadis, Fabio Lombardi, Martin Mikoláš, Peter Meyer, Renzo Motta, Gintautas Mozgeris, Leónia Nunes, Péter Ódor, Momchil Panayotov, Alejandro Ruete, Bojan Simovski, Jonas Stillhard, Johan Svensson, Jerzy Szwagrzyk, Olli-Pekka Tikkanen, Kris Vandekerckhove, Roman Volosyanchuk, Tomas Vrska, Tzvetan Zlatanov, Tobias Kuemmerle ... [See fewer authors](#) ^

54 forest types



European Environment Agency
European Topic Centre
Biodiversity and ecosystems



Why are primary and old growth forests so important?

Multiple values and services

- Biodiversity
 - Last remaining pockets of wilderness
- Regulating services
 - Carbon sequestration, water cycle, air, temperature
- Cultural services:
 - recreation, foraging, cultural identity
- Economy
 - wood and non-wood forest products



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Why are primary and Old Growth Forests threatened?



Significant loss of primary forests in Europe continues to take place today, pointing at the necessity of effective strict protection to achieve the targets of the EU Biodiversity Strategy.

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Salvage logging after windfall or barkbeetle outbreaks allowed even in national parks

Small size of patches



Previous work and need for update

Diversity and Distributions

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A Journal of
Conservation
Biogeography

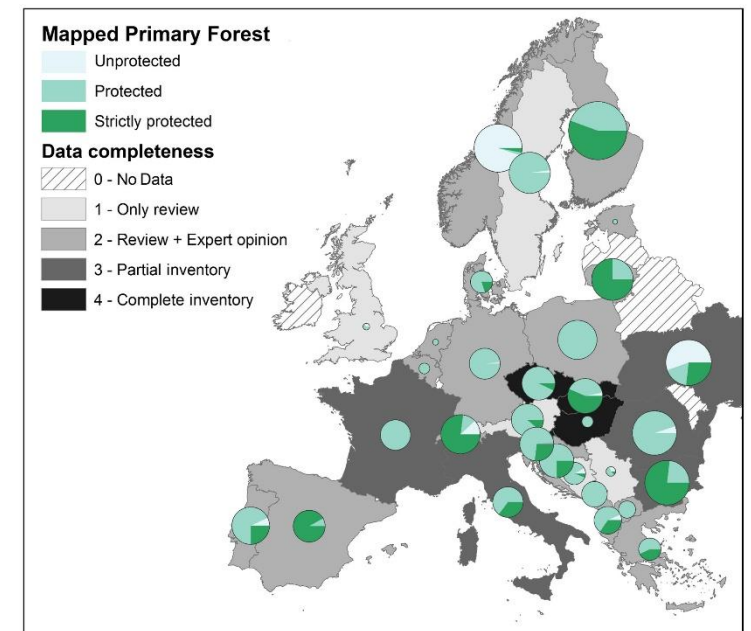
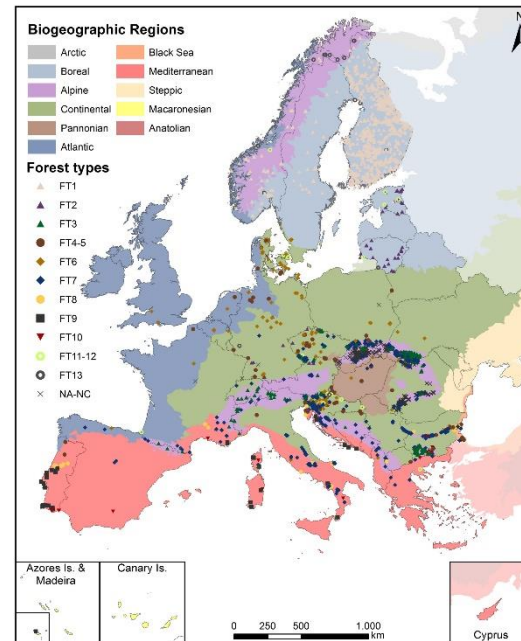
BIODIVERSITY REVIEW | [Open Access](#)

Where are Europe's last primary forests?

[Correction\(s\) for this article](#)

Francesco Maria Sabatini [✉](#), Sabina Burrascano, William S. Keeton, Christian Levers, Marcus Lindner, Florian Pötzschner, Pieter Johannes Verkerk, Jürgen Bauhus, Erik Buchwald, Oleh Chaskovsky, Nicolas Debaive, Ferenc Horváth, Matteo Garbarino, Nikolaos Grigoriadis, Fabio Lombardi, Inês Marques Duarte, Peter Meyer, Rein Midteng, Stjepan Mikac, Martin Mikoláš, Renzo Motta, Gintautas Mozgeris, Leónia Nunes, Momchil Panayotov, Peter Ódor, Alejandro Ruete, Bojan Simovski, Jonas Stillhard, Miroslav Svoboda, Jerzy Szwagrzyk, Olli-Pekka Tikkanen, Roman Volosyanchuk, Tomas Vrska, Tzvetan Zlatanov, Tobias Kuemmerle ... [See fewer authors](#)

First published: 24 May 2018 | <https://doi.org/10.1111/ddi.12778> | Citations: 225



Previous work and need for update

scientific data

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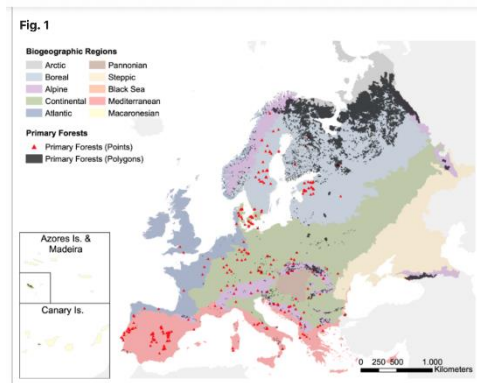
Data Descriptor | [Open Access](#) | Published: 17 August 2021

European primary forest database v2.0

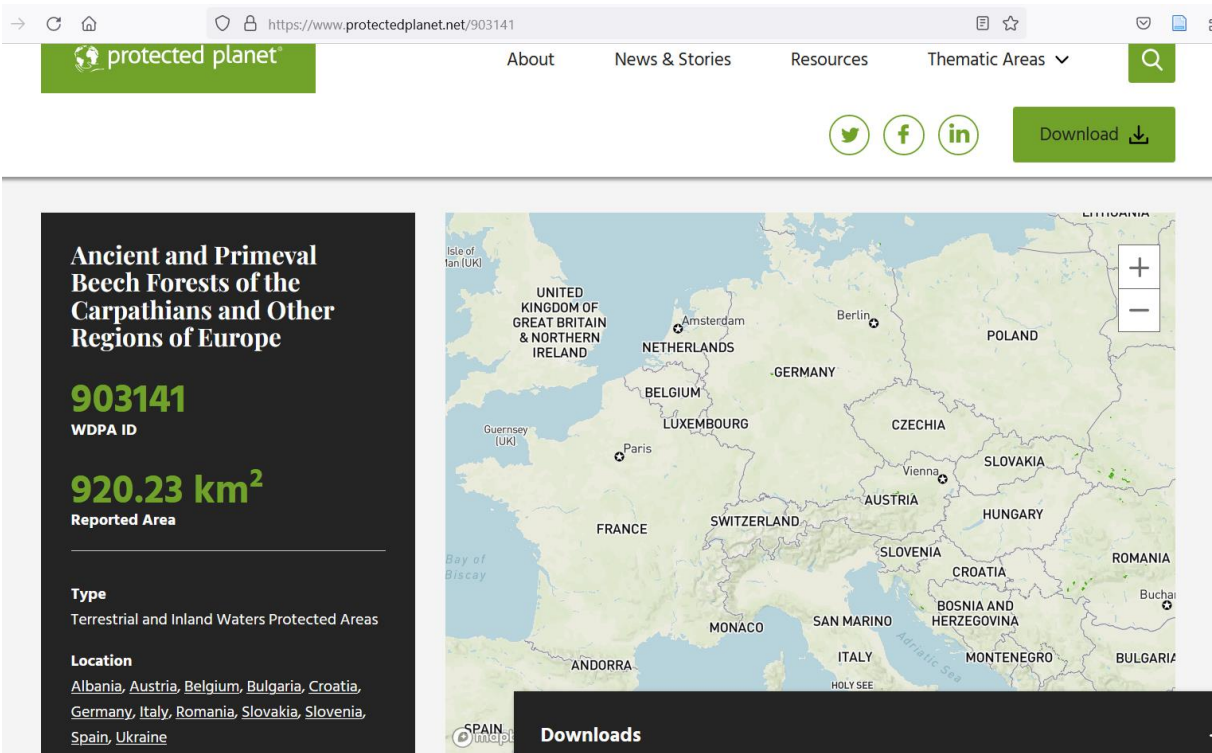
[Francesco Maria Sabatini](#) , [Hendrik Bluhm](#), [Zoltan Kun](#), [Dmitry Aksenov](#), [José A. Atauri](#), [Erik Buchwald](#), [Sabina Burrascano](#), [Eugénie Cateau](#), [Abdulla Diku](#), [Inês Marques Duarte](#), [Ángel B. Fernández López](#), [Matteo Garbarino](#), [Nikolaos Grigoriadis](#), [Ferenc Horváth](#), [Srđan Keren](#), [Mara Kitenberga](#), [Alen Kiš](#), [Ann Kraut](#), [Pierre L. Ibisch](#), [Laurent Larrieu](#), [Fabio Lombardi](#), [Bratislav Matovic](#), [Radu Nicolae Melu](#), [Peter Meyer](#), [Rein Midteng](#), [Stjepan Mikac](#), [Martin Mikoláš](#), [Gintautas Mozgeris](#), [Momchil Panayotov](#), [Rok Pisek](#), [Leónia Nunes](#), [Alejandro Ruete](#), [Matthias Schickhofer](#), [Bojan Simovski](#), [Jonas Stillhard](#), [Dejan Stojanovic](#), [Jerzy Swagrzysk](#), [Olli-Pekka Tikkanen](#), [Elvin Toromani](#), [Roman Volosyanchuk](#), [Tomáš Vrška](#), [Marcus Waldherr](#), [Maxim Yermokhin](#), [Tzvetan Zlatanov](#), [Asiya Zagidullina](#) & [Tobias Kuemmerle](#) — Show fewer authors

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European primary forest database v2.0



Country	Num. feat.	Tot. estimated area (1,000ha)	Sources (Dataset IDs)
Albania	13/6	13.36	0, 1, 47, 54
Austria	34/2	1.46	9, 35, 49
Belarus	3/0	188.29	
Bosnia and Herzegovina	41/2	4.1	0, 2, 50, 53
Bulgaria	483/2	56.77	0, 3, 4, 35
Croatia	45/3	6.24	0, 5, 9
Czechia	86/10	9.07*	0, 6, 9
Denmark	0/24	1.68	
Estonia	0/29	0.05*	0, 8
Finland	1,008/3	2,817.38*	0, 12, 38, 39
France	1,067/2	10.86*	0, 13, 14, 35, 37
Germany	25/21	13.65*	0, 9, 15, 35
Greece	5/2	1.75*	0, 16
Italy	86/12	6.84*	0, 18, 35, 55
Latvia	3/0	4.79	40
Lithuania	20/0	32.05	19
Moldova	0/1	0.03	35
Montenegro	2/0	2.85	2, 50
Netherlands	3/0	0.08	36
North Macedonia	5/1	0.81	1, 20
Norway	240/1	280.05*	0, 21, 36, 43
Poland	66/5	21.15*	0, 22, 35
Portugal	32/21	15.75*	23, 24
Romania	3,571/6	59.11*	0, 1, 25, 32, 33, 35
Russian Federation	3,082/3	37,417.69*	0, 51
Serbia	14/4	7.78	0, 35, 36, 44, 45
Slovakia	280/4	10.98	0, 9, 26
Slovenia	170/1	9.53	0, 27
Spain	44/58	9.4*	0, 41, 52
Sweden	0/51	32.81*	0, 29, 35
Switzerland	0/5	2.29	0, 30, 35
Ukraine	8,966/3	97.8*	0, 1, 32
United Kingdom	0/2	0.1	
Total	18,411/29	41,136.53*	



Data sources

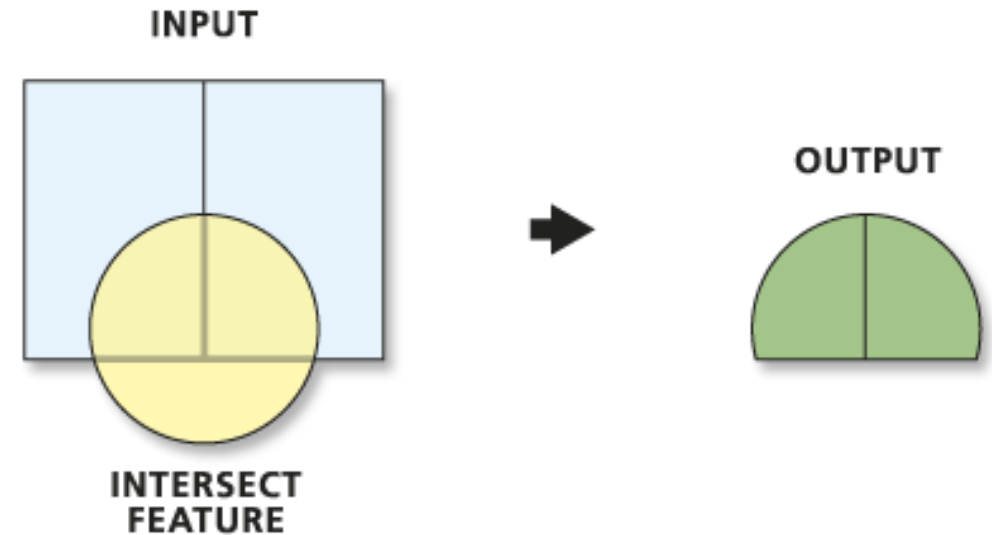
Countries
+
Counties

CDDA
+
Natura 2000

Strict protection: IUCN Ia & Ib

Sabatini et al.
+
Carpathian Convention

(also credit to JRC & ETC DI)



Results

Total forest OGF

3.385.082 ha

Forest EU

~2-4%



EU

~0.8%



protection class

hectares

percent

1	not protected	817.207	24.1
2	not reported, assigned or applicable	103.794	3.07
3	protection	412.986	12.2
4	strict protection	2.051.095	60.6

country

hectare

1	Finland	2.816.432
2	Romania	180.255
3	Bulgaria	70.722
4	Sweden	64.709
5	Slovakia	33.115
6	Croatia	32.469
7	Lithuania	31.991
8	Poland	25.981
9	Slovenia	25.100
10	Germany	17.259

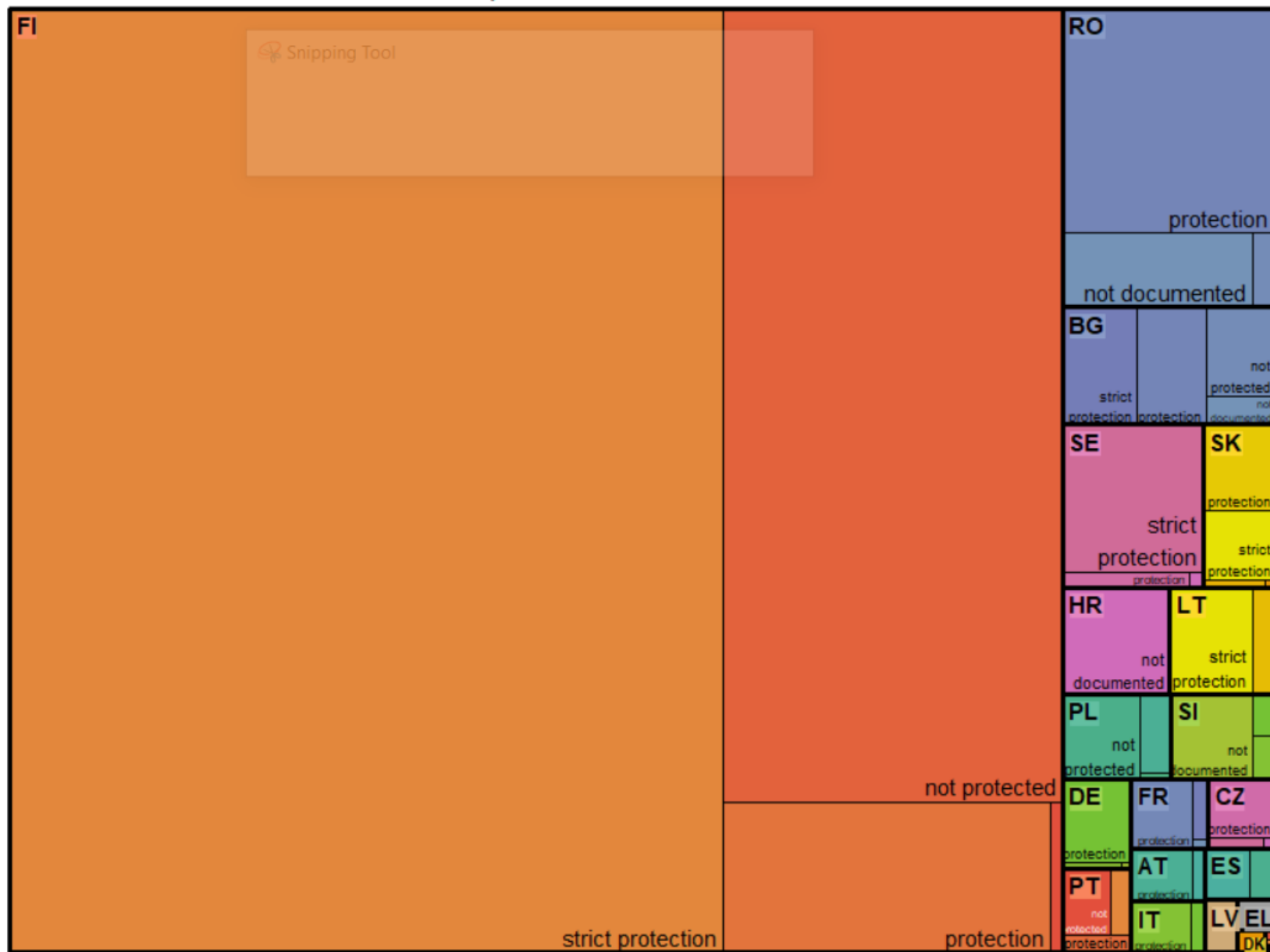
country

percent

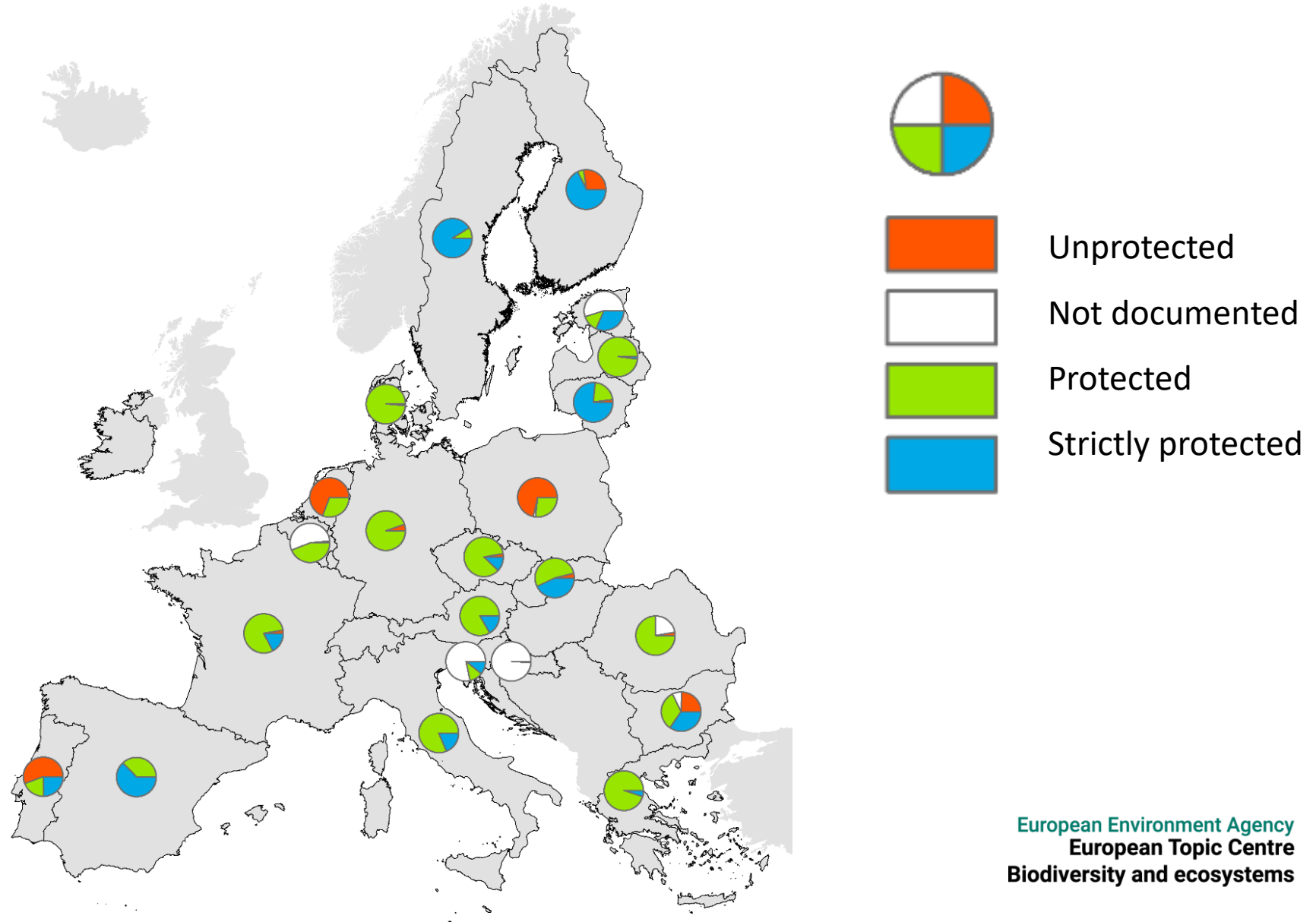
1	Finland	8.34
2	Slovenia	1.24
3	Romania	0.756
4	Slovakia	0.675
5	Bulgaria	0.637
6	Croatia	0.574
7	Lithuania	0.493
8	Portugal	0.177
9	Czechia	0.166
10	Sweden	0.144



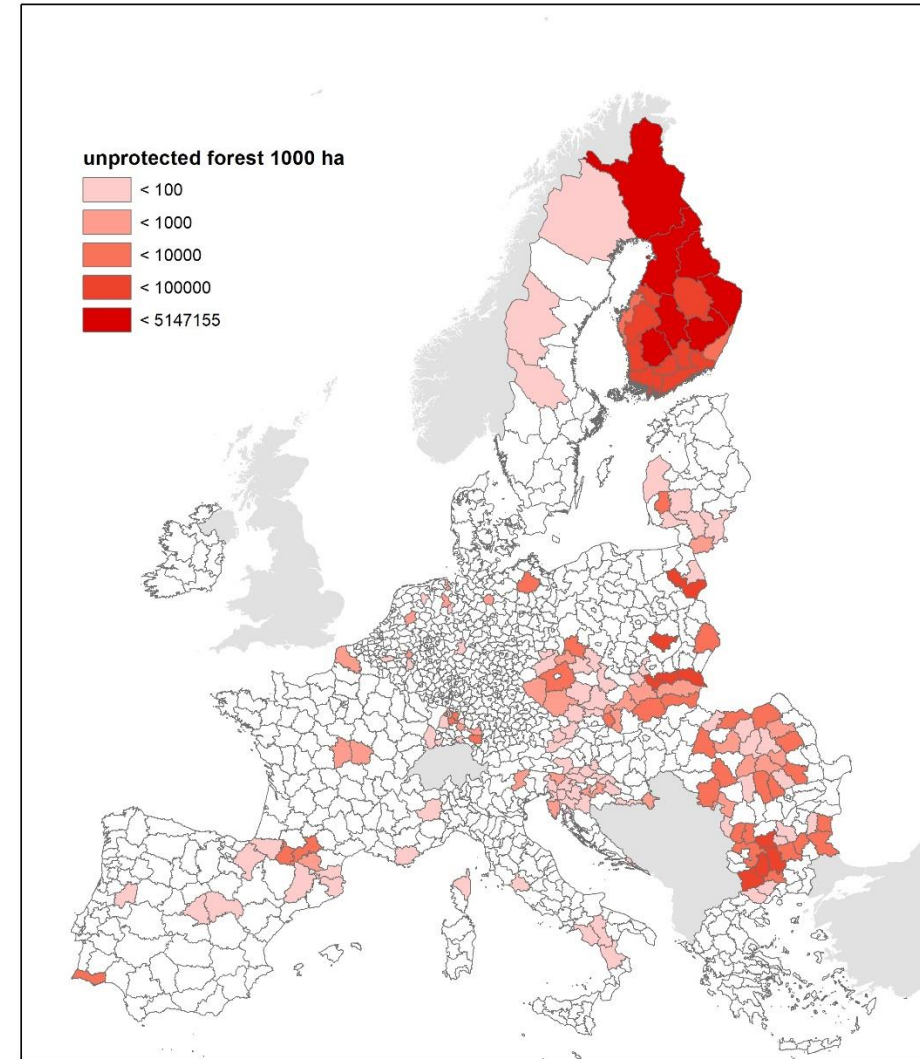
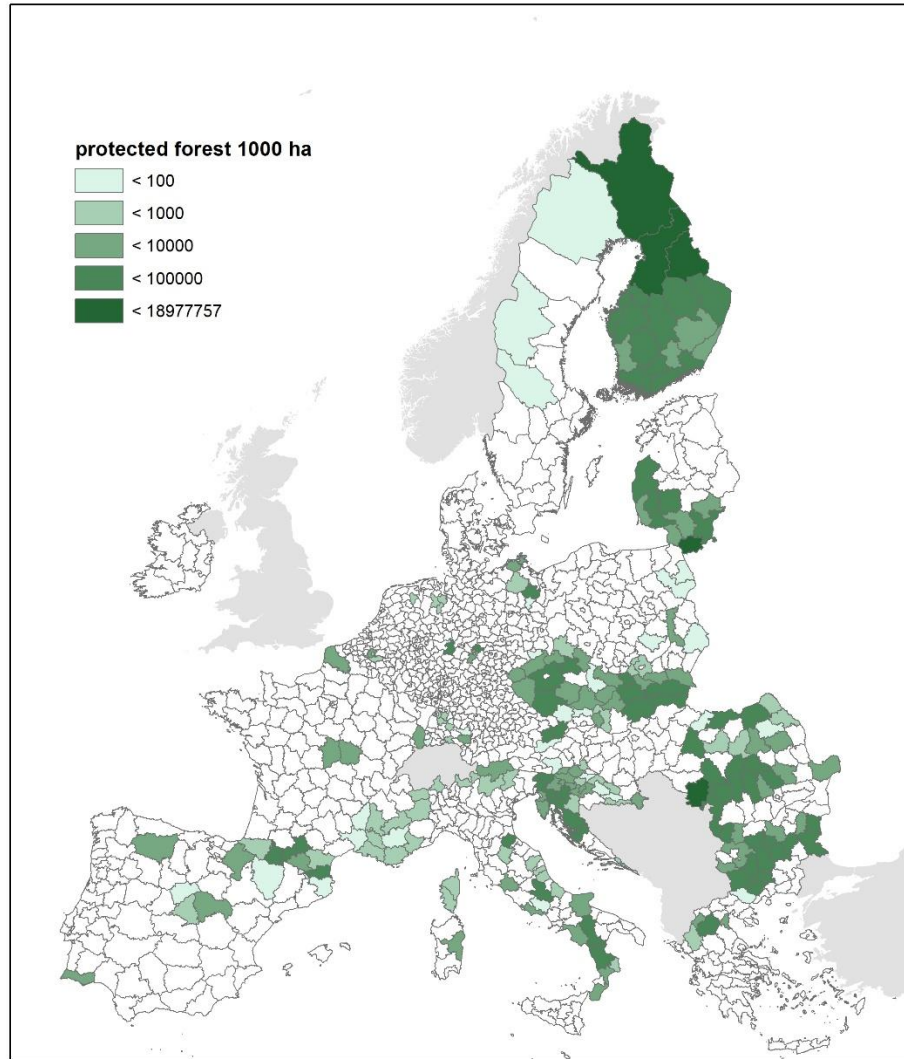
OGF area and protection status in EU Member States



Results



Results



Caveats

There might be less forest

Forestwatch data known to
have errors in Europe

← **Uncertainties** →

There might be more forest

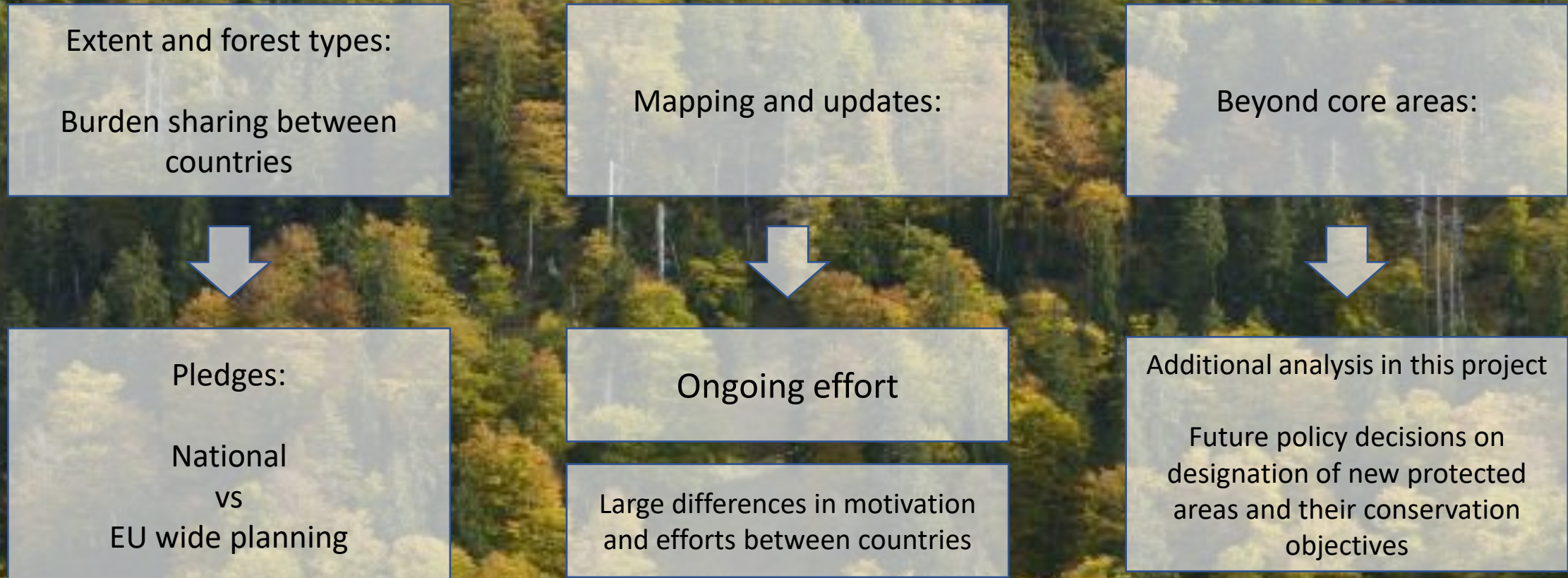
Definitions not clear

Lack of motivation or resistance

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Implications: challenges and opportunities





Funded by
the European Union



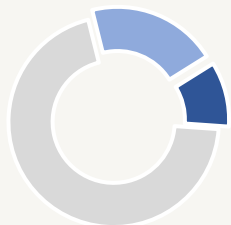
Designing a resilient and coherent Trans-European
conservation network for nature and people



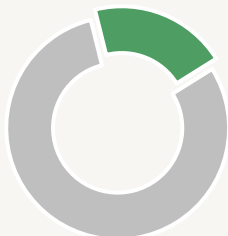
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website
or get in touch?

European Biodiversity Strategy 2030



Legally protect at least 30% of the land (incl. freshwater), and 30% of the sea in the EU.
At least **1/3** of this should be **strictly protected**



Include **restoration on 20%** of lands by actively or passively assisting towards **good condition**



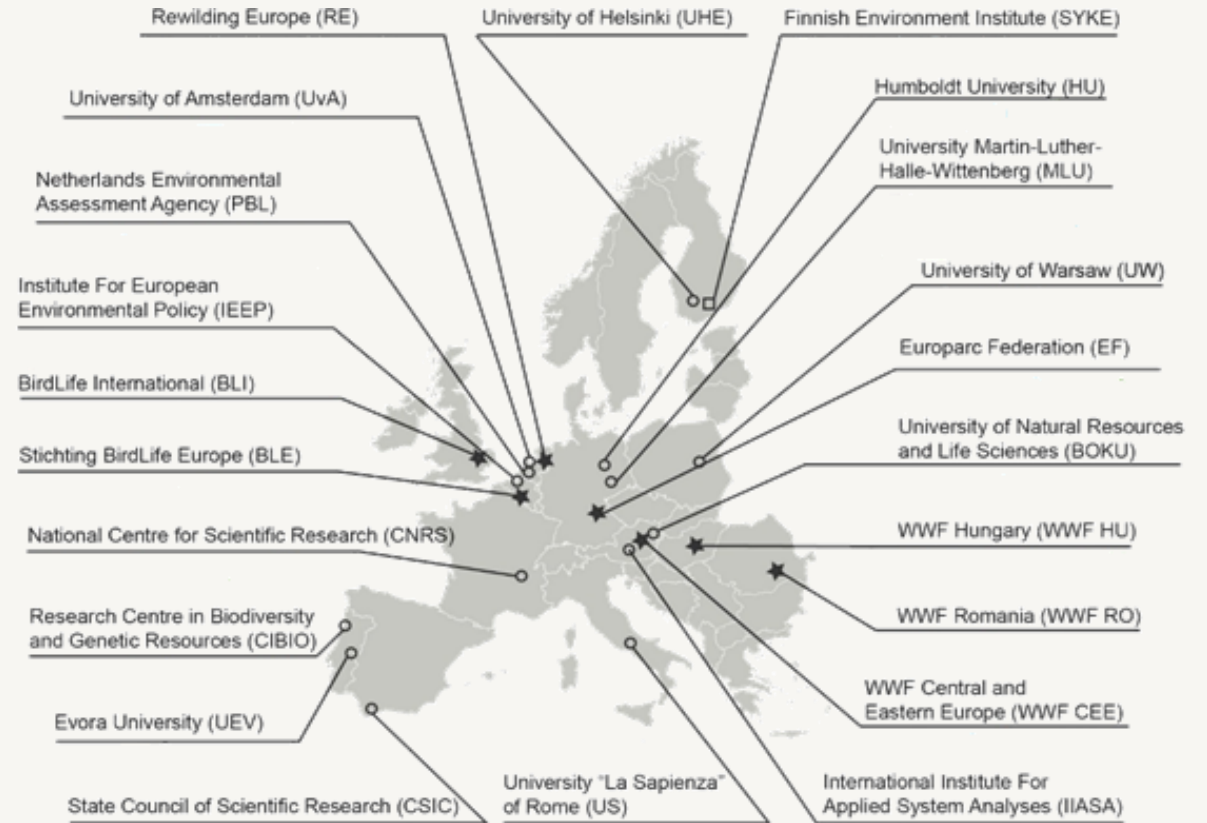
Facilitate ecological corridors and support sustainable land management, while **increasing resilience** through climate mitigation and adaptation



Natura 2000 network of protected areas

Aim 2023 - 2026

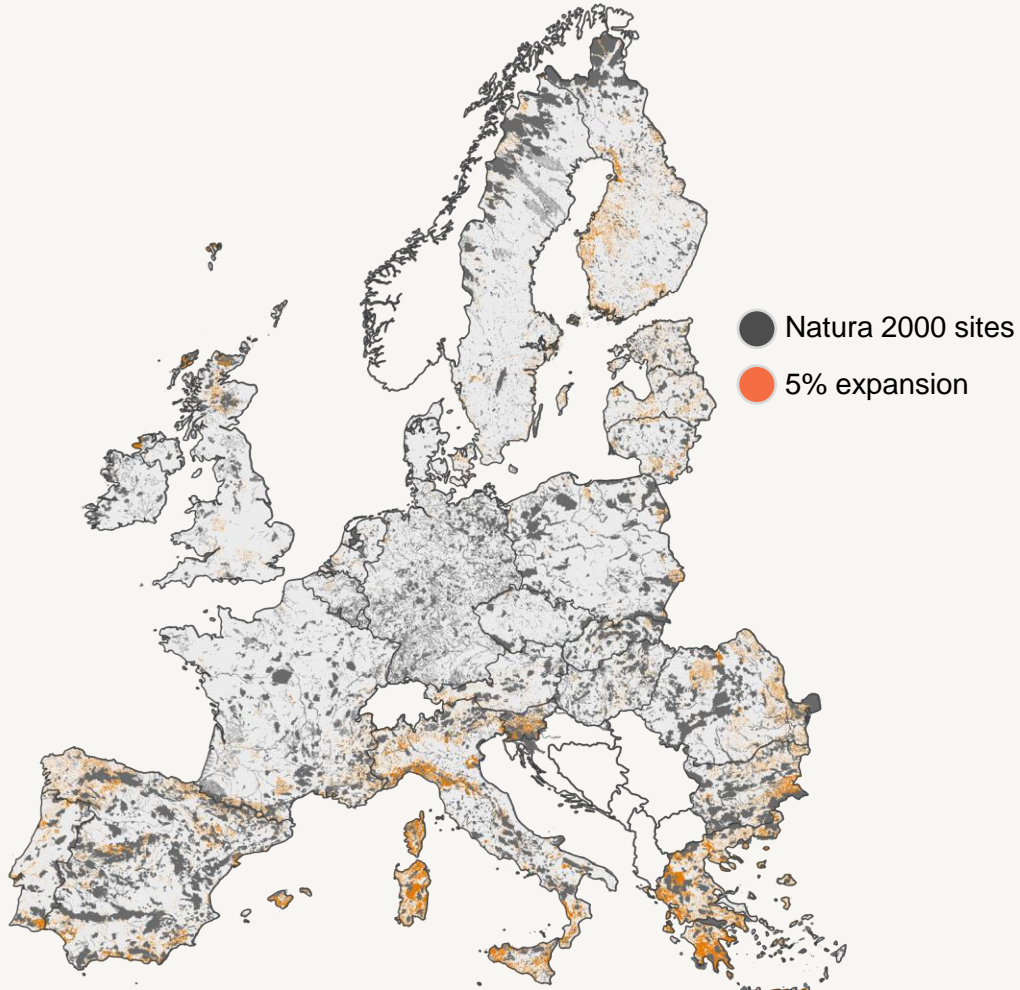
co-create with key decision-makers
and stakeholders from EU Member
States an ecologically representative,
resilient and well-connected **network of**
conserved areas



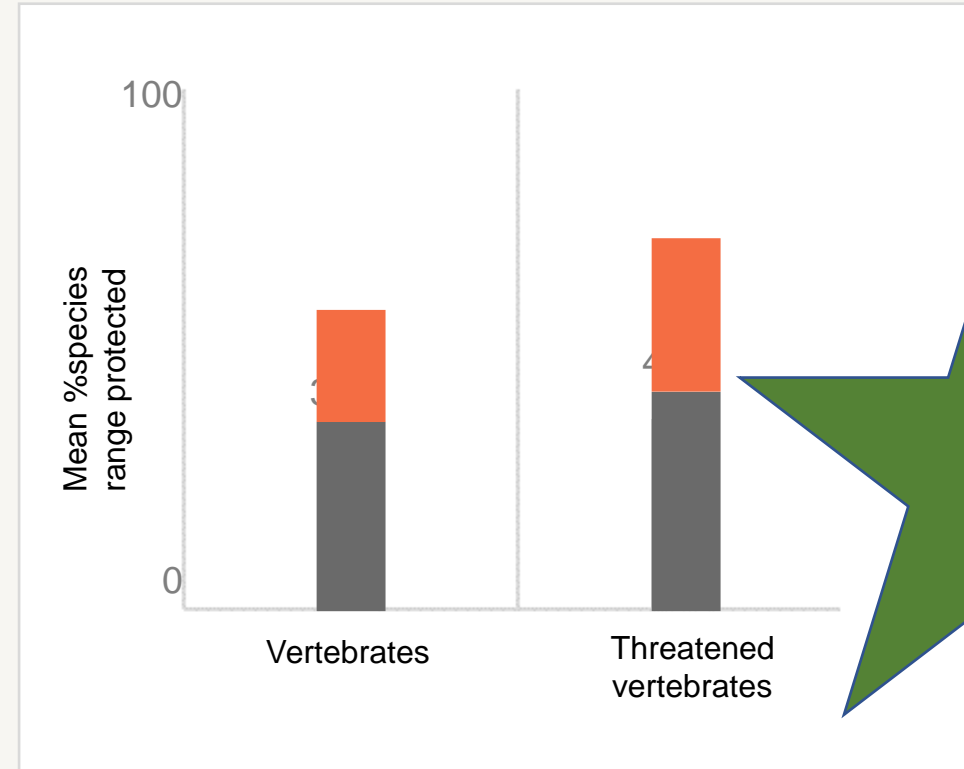
15 Research organisations

7 National agencies & conservation NGOs

Large conservation gains are possible in few areas



5% expansion of Natura 2000 network when focusing on terrestrial vertebrates



Just a small amount of protected area expansion **in the right places** can make a big difference!

Thank you!

Questions?

Talk to me 😊

beher@iiasa.ac.at

X @jut_beh