LIFE RedBosques_Clima

Nature-based solutions to improve adaptation of forests to climate change

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LIFE Platform Meeting on "LIFE and European Forest Restoration"
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The LIFE RedBosques_Clima Project

DURATION: 01/09/21 - 30/11/25

Coordination: Fundación Fernando González Bernáldez

Partners:

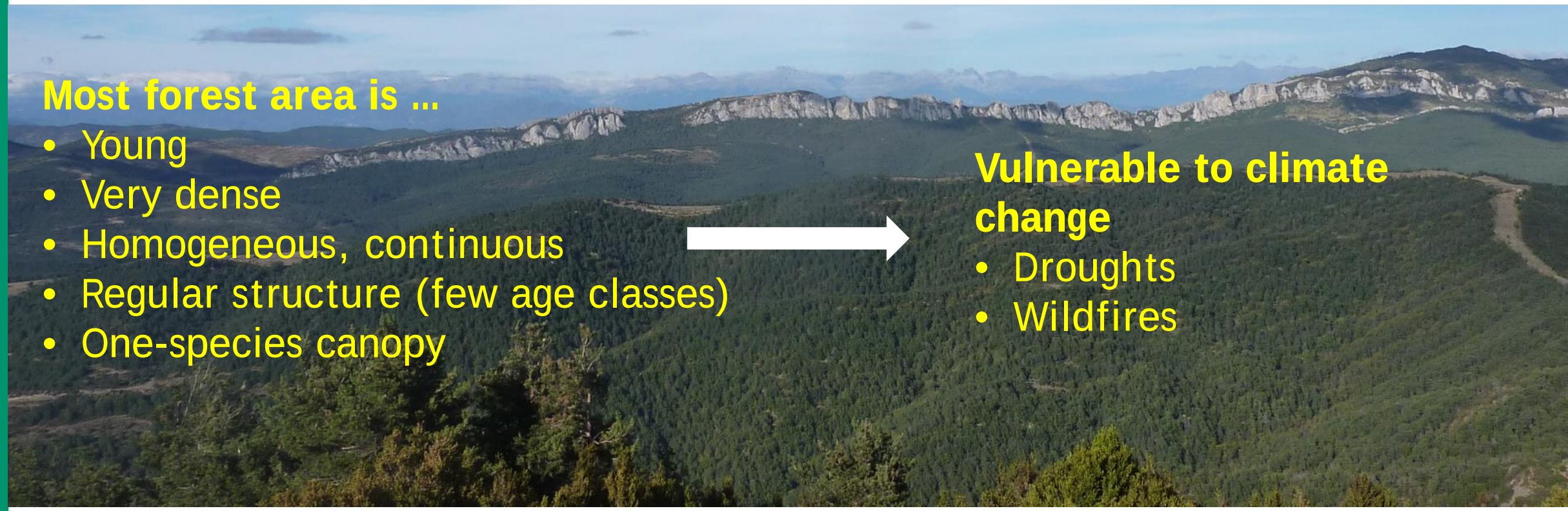
- Generalitat de Catalunya
- Centre de Recerca i Aplicacions Forestals CREAF
- Generalitat Valenciana
- VAERSA
- Junta de Comunidades de Castilla-La Mancha

Cofinancing Partner: Gobierno Vasco

Forests and Climate Change

Forests and Climate Change

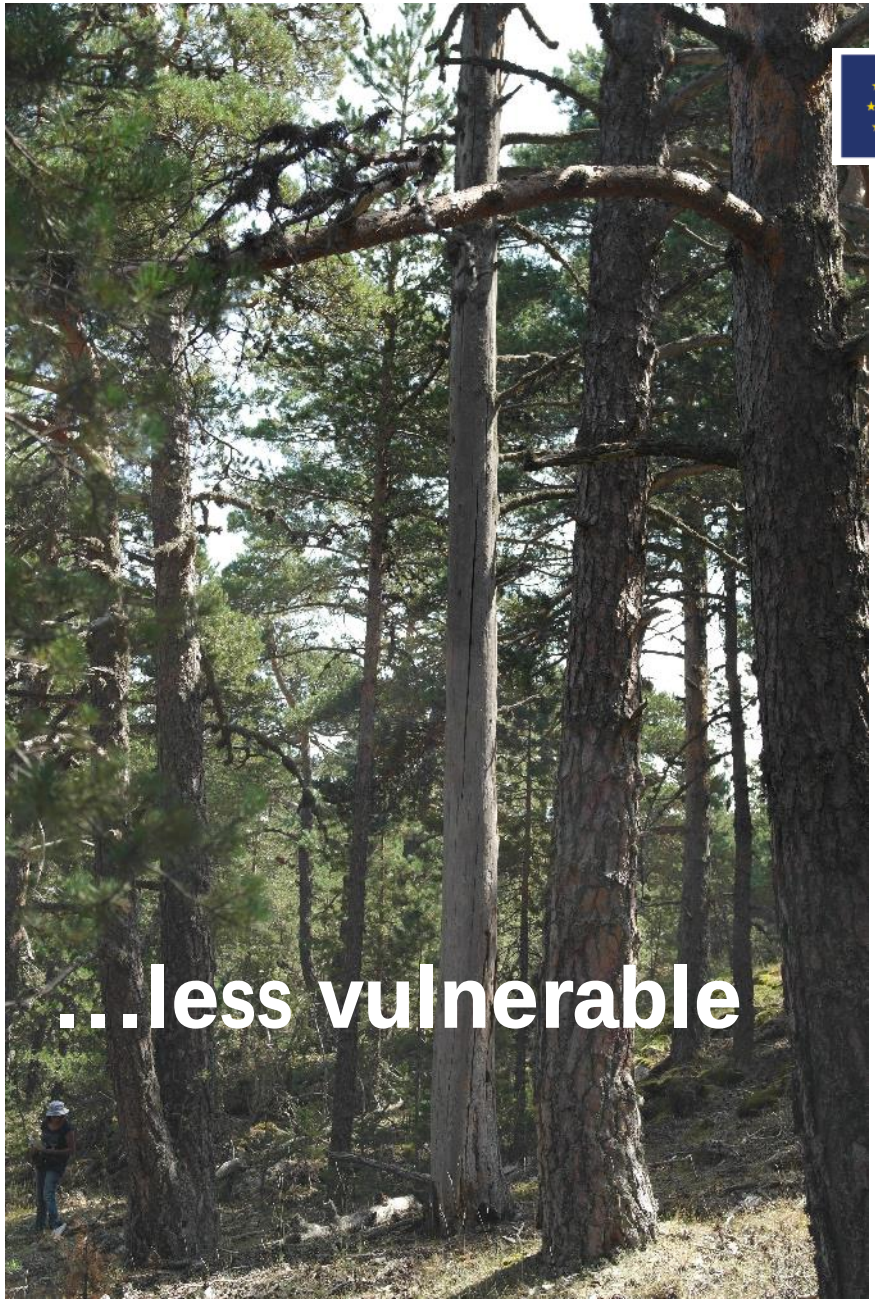
Temperature increase
Less rainfall/ irregular
More intense and frequent extreme events (heat waves)



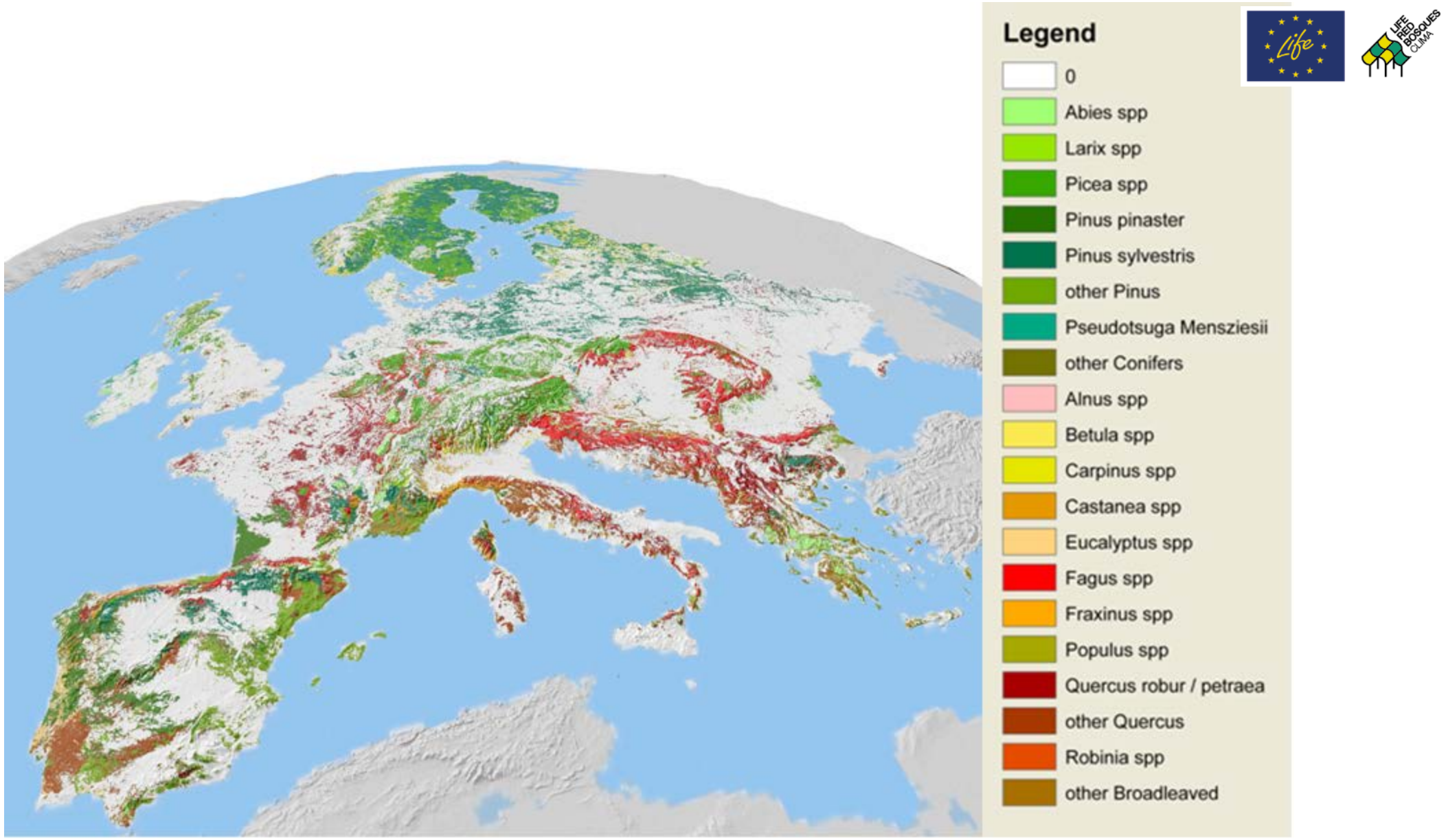

More vulnerable….


…less vulnerable

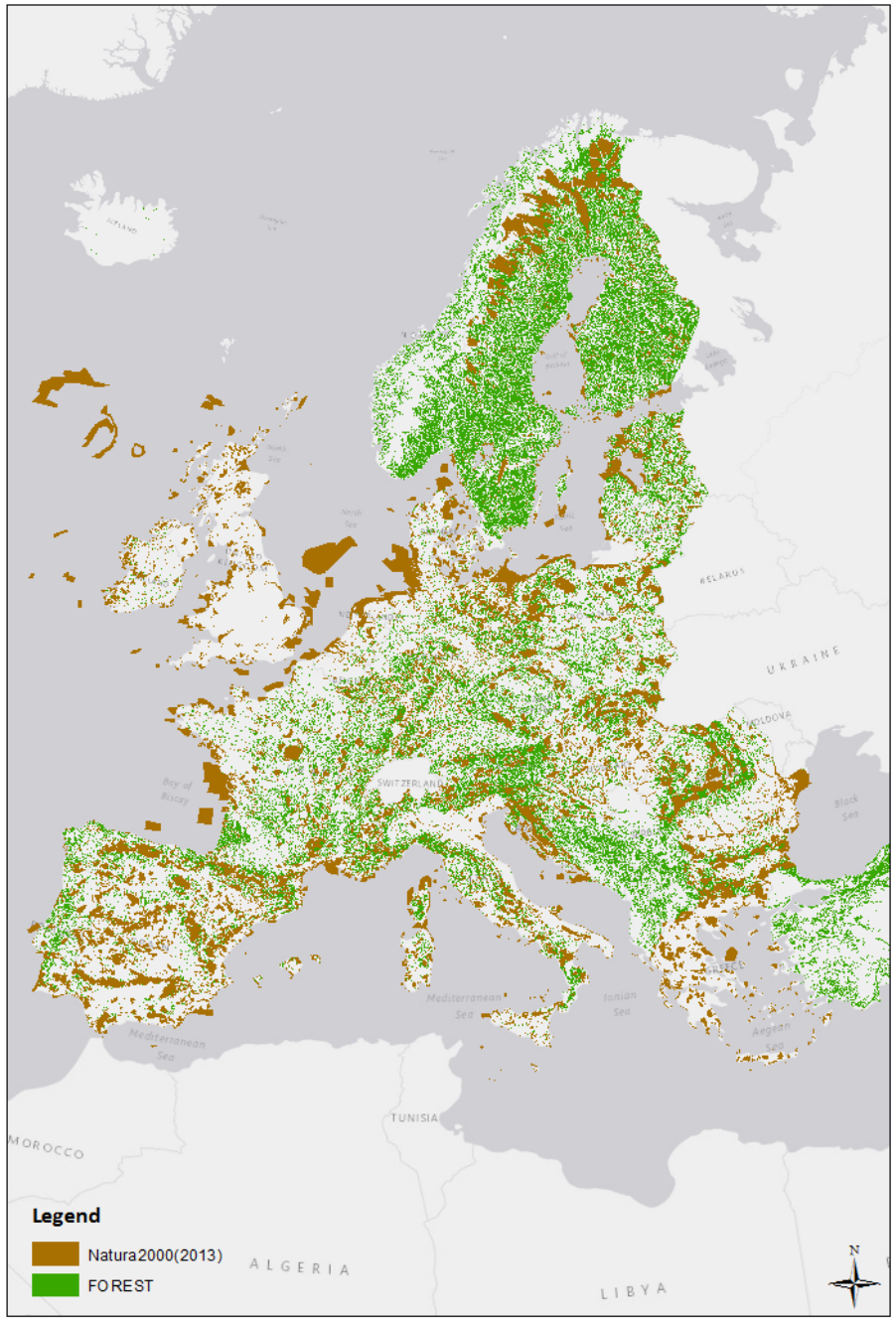

More vulnerable….


…less vulnerable

Forests in Southern Europe



Source: European Forest Institute



NATURA 2000

Forest **Habitats of Community Interest** represent 50% of the Natura 2000 area in the EU.

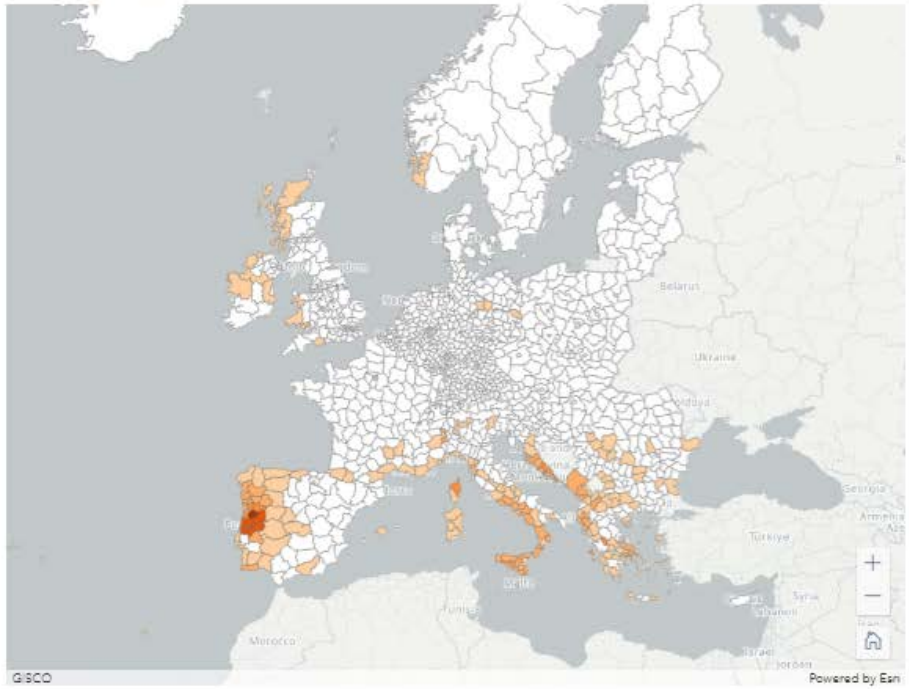
In Spain: Natura 2000 = 27%
80.000 km2 forest in Natura 2000

Source: An Bollen & Darline Velghe. 2015. Forest thematic report. University of Antwerp

Percentage of population exposed to wildfires in NUTS3 regions

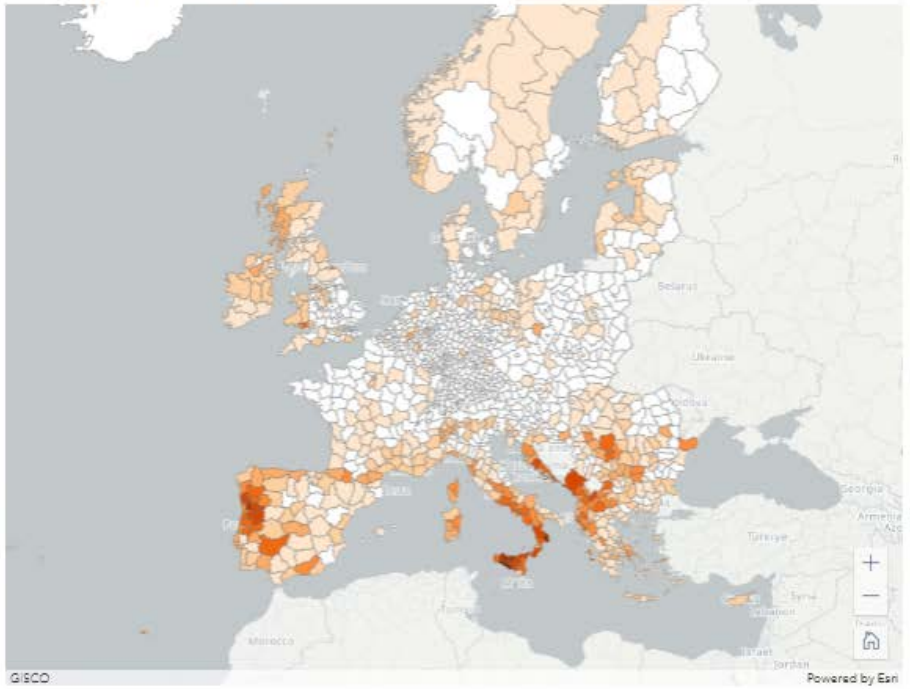
2010-2012 **2017-2019**

Percentage of population exposed



0 - 0.1% 0.1 - 0.5% 0.5 - 1% 1 - 5% 5% >

Percentage of population exposed within a 5km buffer



0 -1% 1 - 5% 5 - 10% 10 - 20% 20 - 30% 30 - 40% 40 - 50% 50% >

Source: Unpublished EEA analysis based on European forest fire information system (EFFIS) and Eurostat

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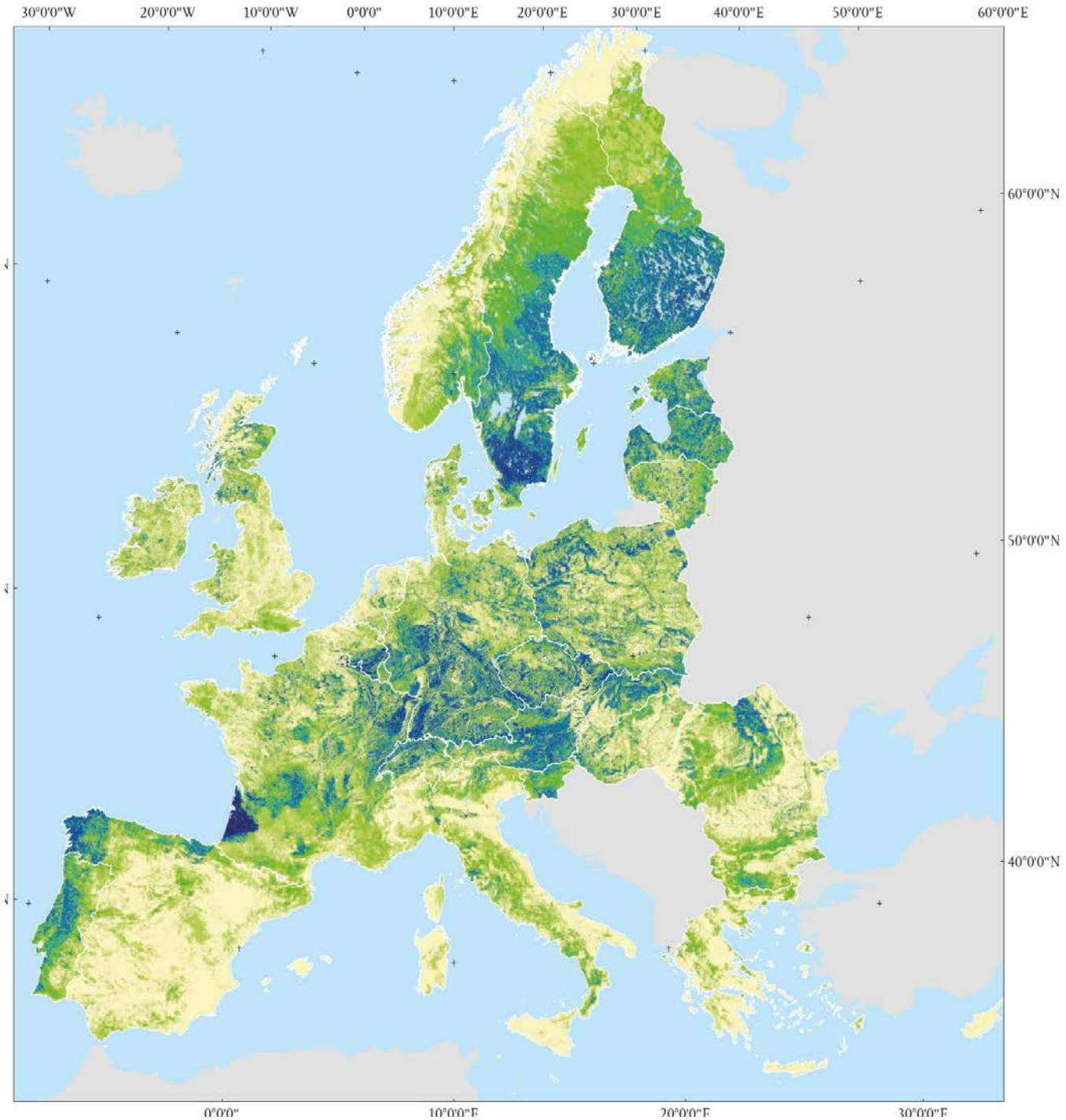
Sources

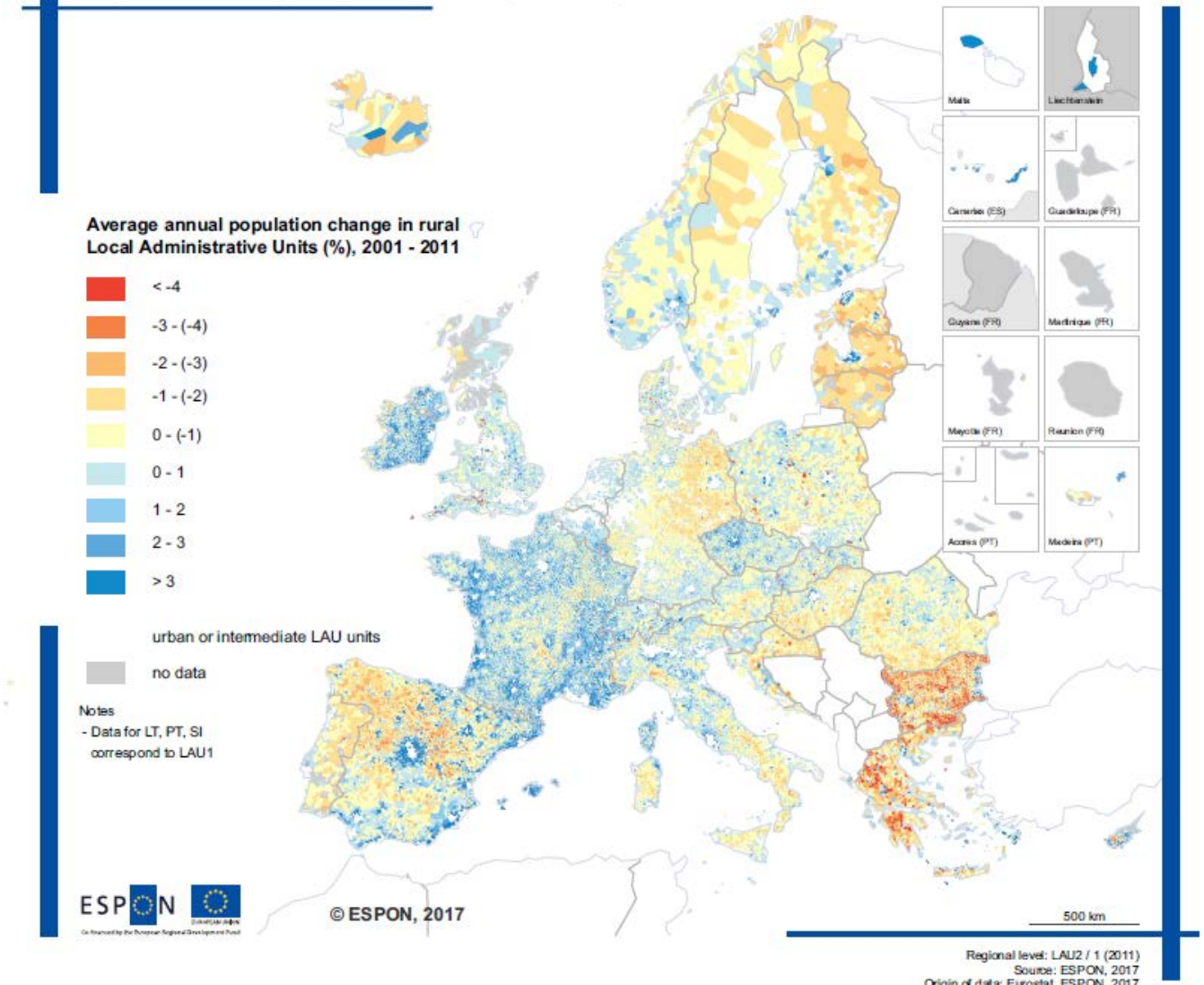
[1] EEA, 2023, Water scarcity conditions in Europe (Water exploitation index plus) (8th EAP)



Wood production (m^3 –ha –year) in Europe averaged over the period 2000-2010.

EUROPEAN FOREST INSTITUTE

Population change in predominantly rural regions, 2001-2011



Key messages

In the context of Southern Europe, adaptation of forests is a particularly priority strategy:

- Large area
- With high conservation values
- Highly vulnerable to climate change
- In a context of rural depopulation and abandonment

Key messages

1) Lack of expertise -> avoid maladaptation -> **decision support tools needed**

- **Tools for assessing vulnerability**
- **standards & protocols**

2) Manage forests for adaptation, but how?–> **close to nature silviculture & beyond**

Decision support tools: standards & protocols for design of adaptation measures

Criteria 1. Appropriate fit with planning and support

Criteria 2. Consideration of the project's social dimension

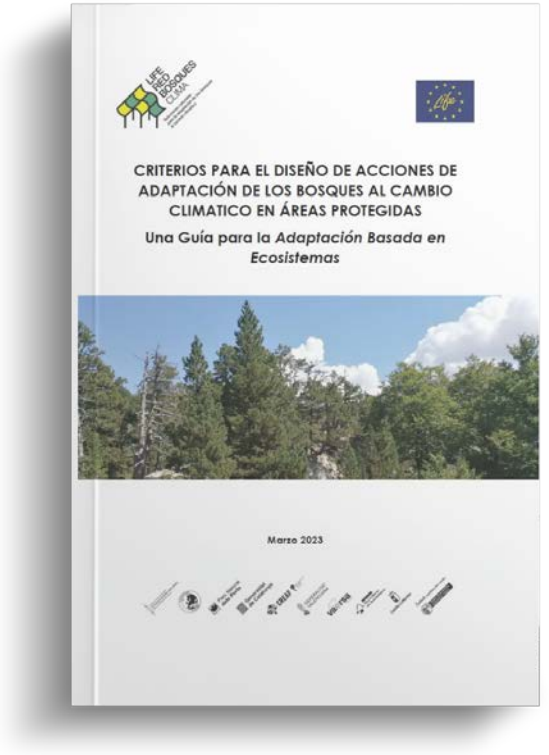
Criteria 3. The diagnosis includes a climate risk analysis

Criteria 4. Clear objectives related to climate vulnerabilities

Criteria 5. Synergies with biodiversity conservation objectives

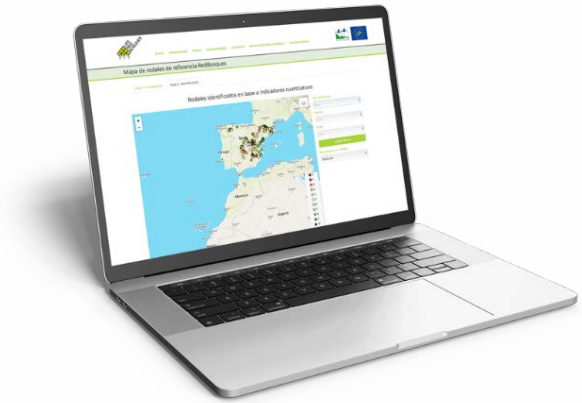
Criteria 6. The project's economic viability is considered

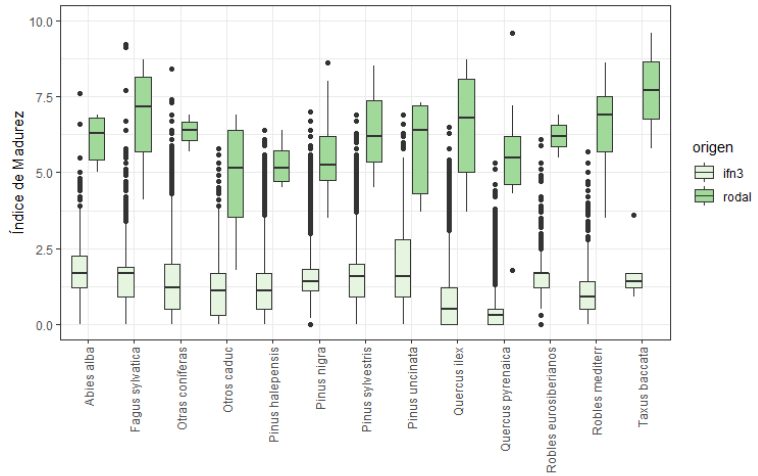
Criteria 7. Provide a system for monitoring and evaluating results



Decission support tools: index for assessing drought risk

Scope	Sub-scope	Criterion	Indicator
Exposure	Climatic exposure		Climatic aridity index
			Climatic suitability of species
	Geographic exposure		Topographic moisture index
			Solar radiation
			Soil depth
Vulnerability	Susceptibility	Functional susceptibility	Mean embolism susceptibility
			Mean root depth
			Embolism susceptibility diversity
			Root depth diversity
		Structural and compositional susceptibility	Basal area
			Mean diameter at breast height (DBH)
			Number of tree species
			Number of diameter classes
	Lack of recovery capacity		Mean resprouting capacity
			Resprouting capacity diversity
			Regeneration index





Manage forests for adaptation, but how?

Mechanized forestry is the only option with economic return

Not applicable in all cases (vulnerable habitats, inaccessible places…)

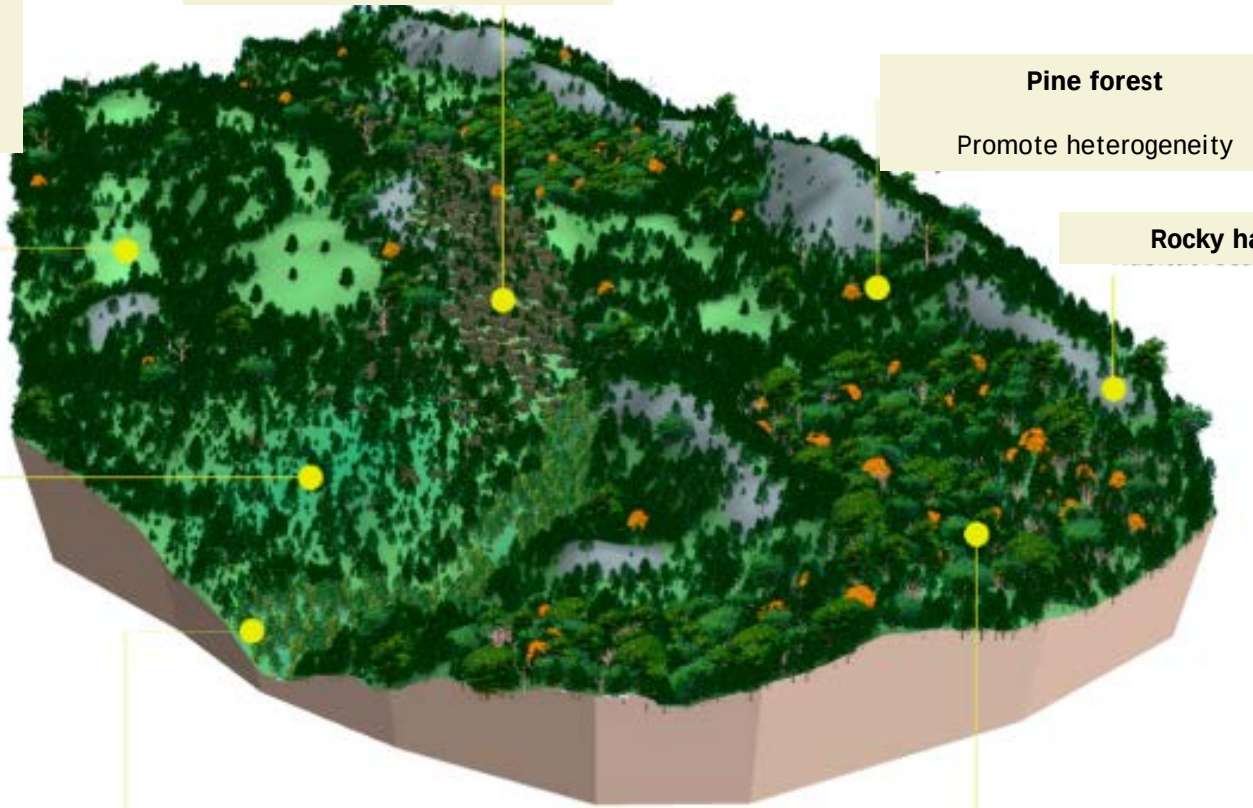
- Different approaches and techniques may be used to develop a resilient landscape

Manage forests for adaptation, but how?

- Adaptive Forestry
- Close-to-Nature Forestry

- Herbivory (domestic, wild)
- Fire Management

- Strict Protection (mature stands)



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