LIFE GoProForMED

Identify, conserve & manage Mediterranean forest habitats

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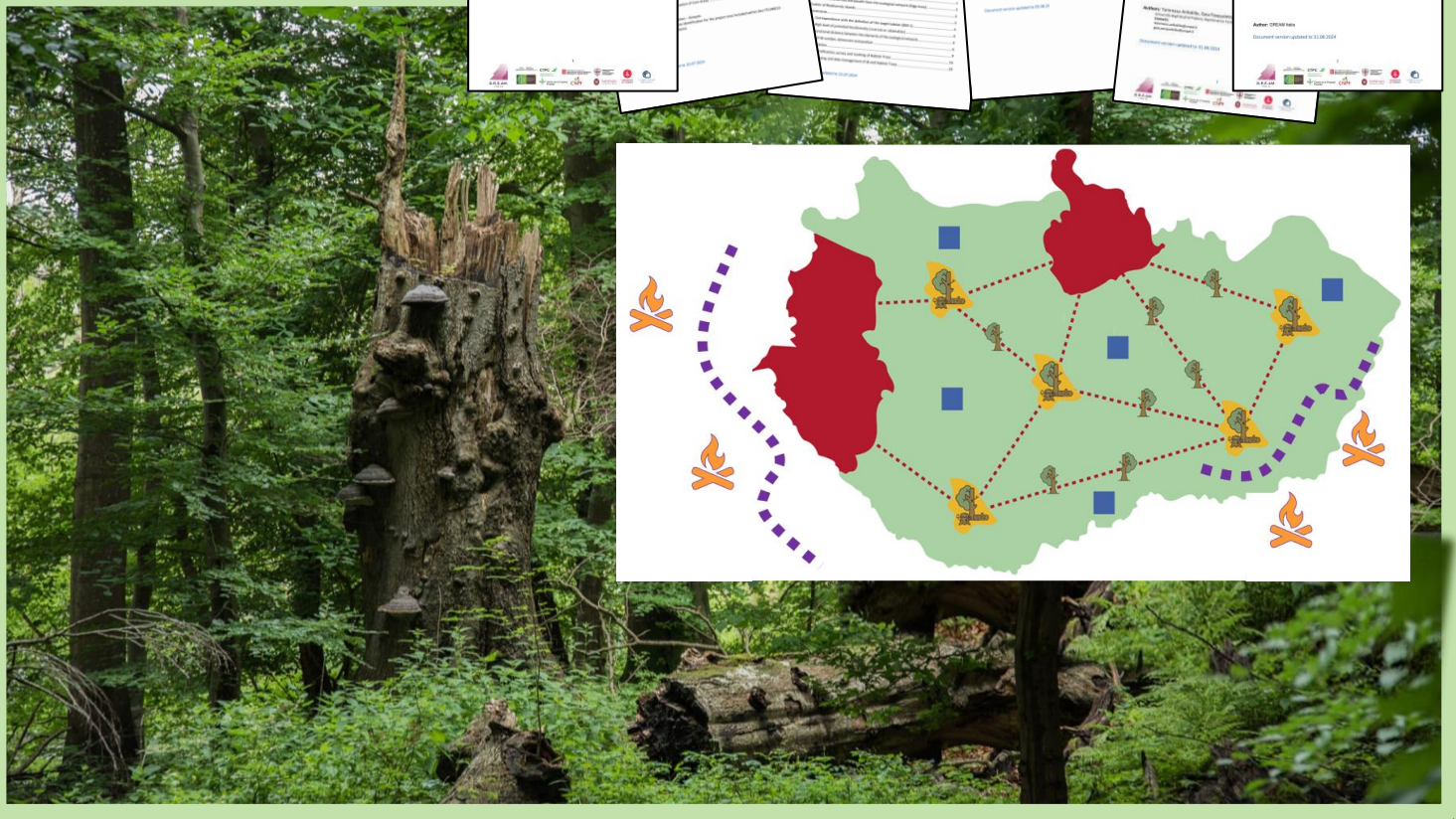
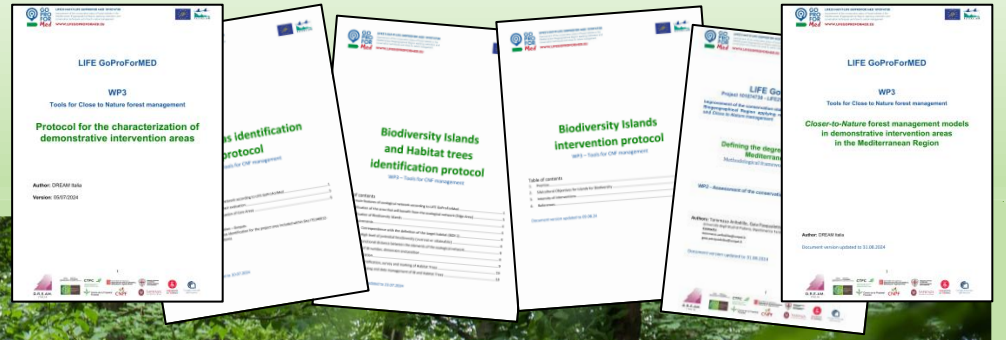




MAIN AIM:

enhance the conservation status
of 4 forest habitats
in the Mediterranean Biogeographical Region

- Transnational conservation strategy
- Definition & application of management models
- Enabling their adoption and diffusion through training and network

Conservation status of **4 target forest habitats** HD (Art. 17) 2013-2018

	MED
9260 - Castanea sativa woods	U2
9330 - Quercus suber forests	U2
9340 - Quercus ilex and Quercus rotundifolia forests	U1
9530 - (Sub-)Mediterranean pine forest with endemic black pine	U1

Unfavourable/Bad

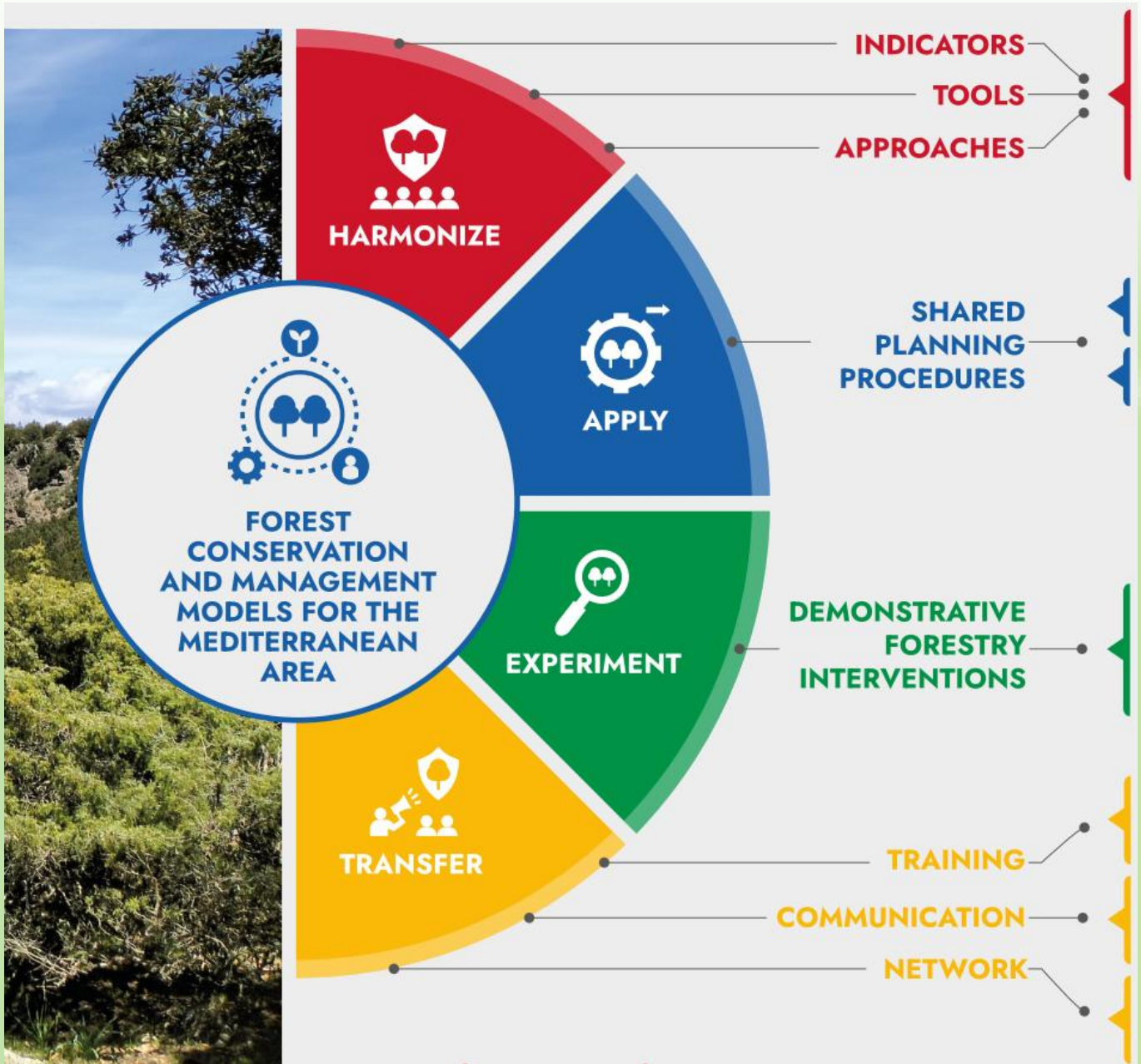
Unfavourable/Inadeguate

Key challenges

↓

project's action lines

→



- Test TreMs as indicators
- Adapt indicators to the Med. area
- Adapt Index of Biodiversity Potential (IBP) also to Spain and Greece
- Common habitat classification system
- Assessment of hab. conservation status

- Ecological network for biodiversity conservation
- Wildfire risk mitigation

PROTOCOLS

- Biodiversity conservation
- Wildfire risk mitigation
- Economic production

CLOSER-TO-NATURE PRINCIPLES

- Common training system
- Transposition of technical contents
- Involvement of experts and associations of the Mediterranean area

REGULATION (EU) 2024/1991 ON NATURE RESTORATION

RESTORATION

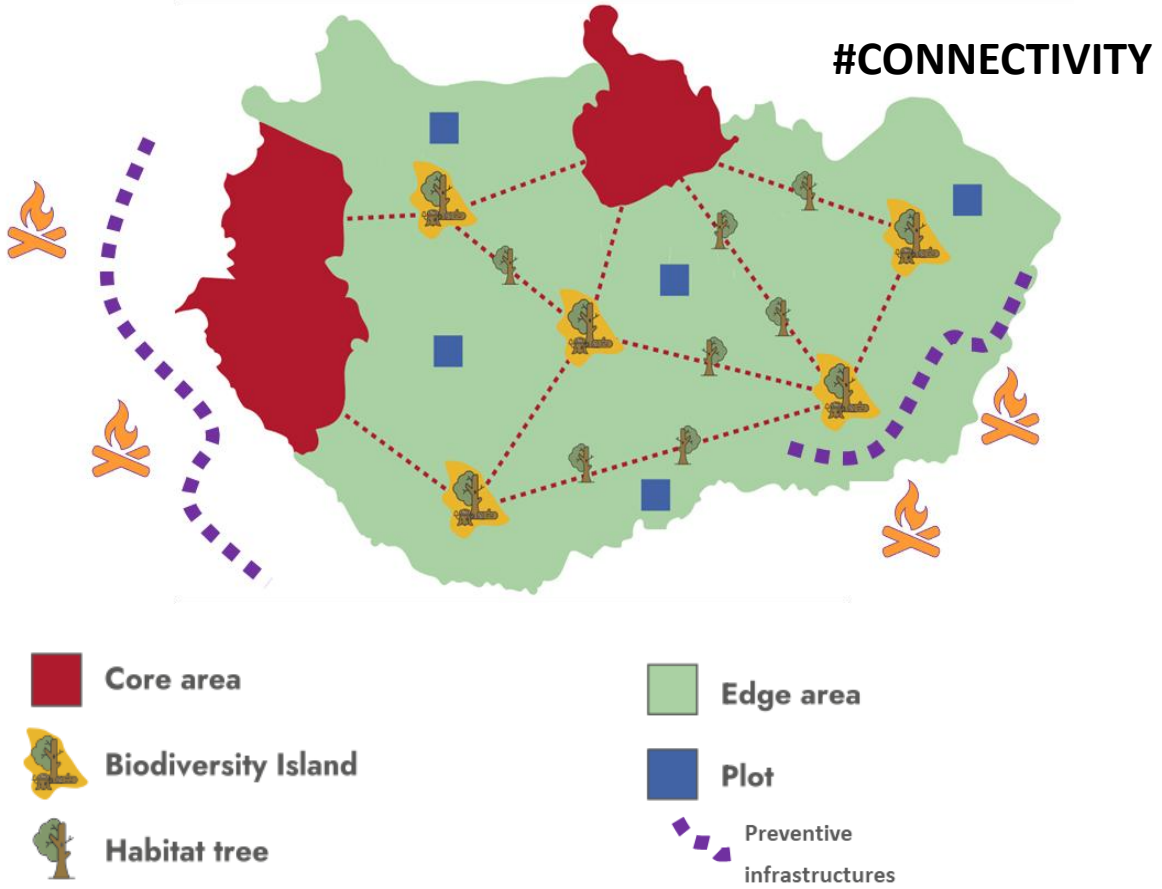
"process of actively or passively assisting the recovery of an ecosystem in order to improve its **structure** and **functions**, with the aim of conserving or enhancing **biodiversity** and ecosystem **resilience**, through improving an area of a habitat type to good condition […] improving a habitat of a species to sufficient quality and quantity"

FORESTS

"In the absence of a common method for assessing the condition of forest ecosystems […] it is appropriate […] to improve biodiversity in forest ecosystems and measure the fulfilment on the basis of indicators:

#forest bird index #standing and lying deadwood
#connectivity #uneven-aged structure #CO_2 stock
#native tree species #tree species diversity

PRESERVE AND IMPROVE **KEY STRUCTURAL ELEMENTS**
TO ENSURE **HABITAT FUNCTIONALITY**



DEFINE & APPLY **MODELS**
TO MANAGE THE REMAINING SURFACE ACCORDING TO
CNF PRINCIPLES & **FIRE RISK REDUCTION**

* https://www.sciencedirect.com/science/article/pii/S0378112725002439

LIFE Platform Meeting on Forest Restoration in Europe, 3-5 JUNE, BRASOV ROMANIA

ECOLOGICAL NETWORK: preserve & improve **key structural elements** to ensure **habitat functionality**

CORE AREA

Min surf. 5 ha
Source of biodiversity

ISLAND for BIODIVERSITY

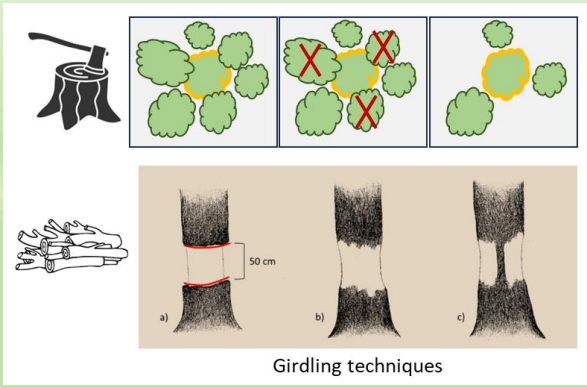
Min surf. 1 ha
Min dist. 200 m

5-10% of the forest habitat/area

HABITAT TREE Bearing TreMs (Tree Microhabitats)

NO INTERVENTIONS

IB - Free evolution



Girdling techniques

IB - to be improved

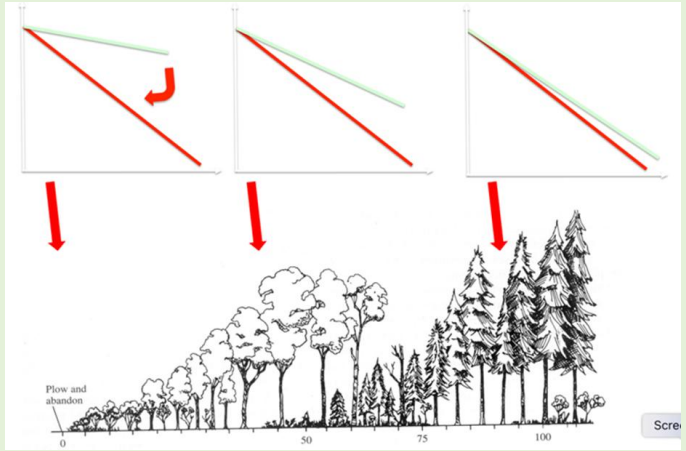
INTERVENTIONS GUIDED BY

- **OB1**. **Structure** of maximum functionality
- **OB2**. **Very large trees**
- **OB3**. **Habitat trees**
- **OB4**. **Specific diversity**
- **OB5**. **Vertical structure**
- **OB6**. **Open areas**
- **OB7**. **Deadwood**

INTERVENTIONS OBJECTIVES

Energy-Equivalent Principle approach (EEP)*

It predicts the structure that corresponds to the maximum resource use (*close-to-nature* model)

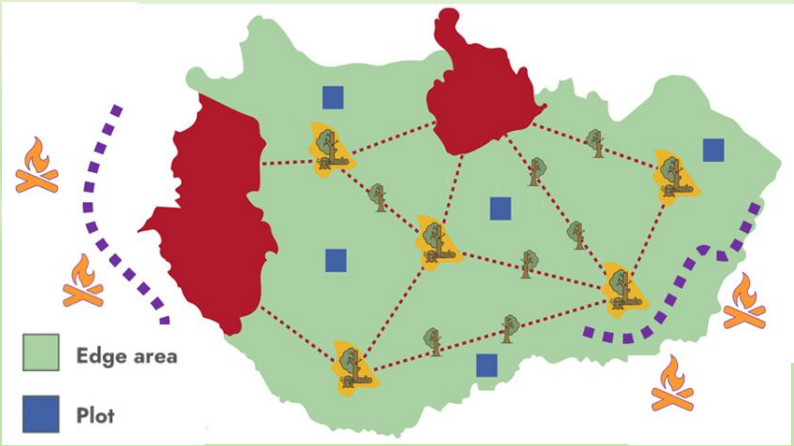


Structure represented by an ideal **diametric distribution**

	Saplings 10-15 cm	Poles 20-35 cm	Large 40-55 cm	Very Large >60 cm
EEP	53% ↓	36% ↑	8% ↓	3% ↓
Stand distribution	27%	66%	7%	0%

MODELS TO MANAGE THE REMAINING SURFACE ACCORDING TO **CNF PRINCIPLES** & FIRE RISK REDUCTION

Objective of the interventions: guide forest structure towards an irregular, continuous-cover system, **enhancing ecosystem health** and **resilience** to ensure **greater multifunctionality** and **long-term ecological stability**.



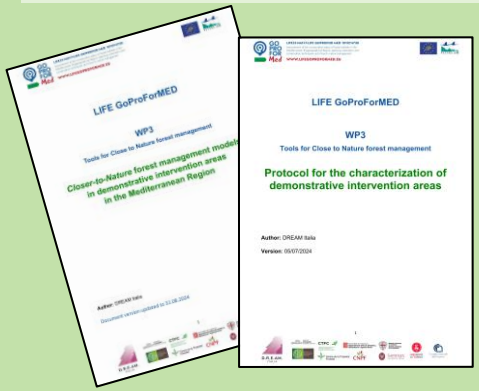
Specific objectives

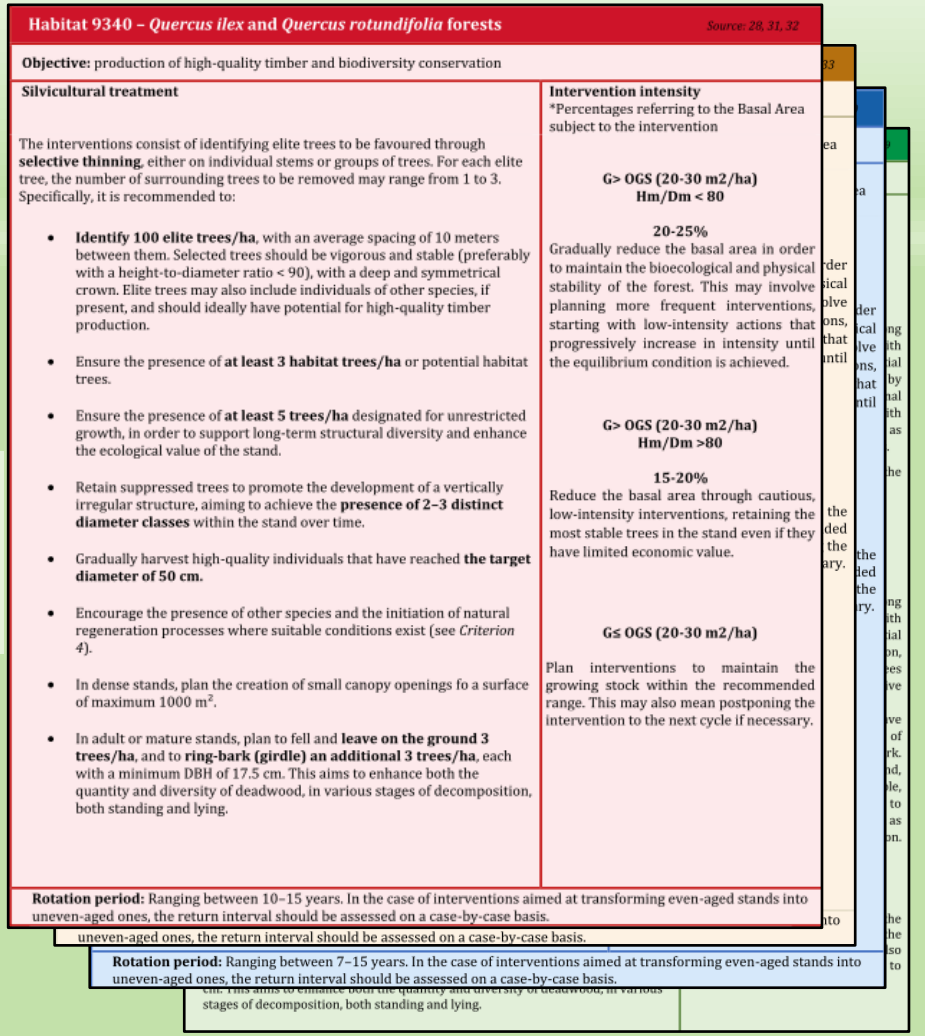
- sustainable timber production
- high-quality timber and cork
- biodiversity and landscape value
- protect soil
- natural forest regeneration
- store CO_2

Interventions adapted according to **6 key criteria**

1. Optimal Growing Stock
2. Structure and stage of development
3. Stability
4. Regeneration
5. Species diversity
6. Biodiversity conservation

Demonstrative interventions for each target habitat





Habitat 9340 – *Quercus ilex* and *Quercus rotundifolia* forests *Source: 28, 31, 32*

Objective: production of high-quality timber and biodiversity conservation

Silvicultural treatment

The interventions consist of identifying elite trees to be favoured through **selective thinning**, either on individual stems or groups of trees. For each elite tree, the number of surrounding trees to be removed may range from 1 to 3. Specifically, it is recommended to:

- **Identify 100 elite trees/ha**, with an average spacing of 10 meters between them. Selected trees should be vigorous and stable (preferably with a height-to-diameter ratio < 90), with a deep and symmetrical crown. Elite trees may also include individuals of other species, if present, and should ideally have potential for high-quality timber production.
- Ensure the presence of **at least 3 habitat trees/ha** or potential habitat trees.
- Ensure the presence of **at least 5 trees/ha** designated for unrestricted growth, in order to support long-term structural diversity and enhance the ecological value of the stand.
- Retain suppressed trees to promote the development of a vertically irregular structure, aiming to achieve the **presence of 2–3 distinct diameter classes** within the stand over time.
- Gradually harvest high-quality individuals that have reached **the target diameter of 50 cm.**
- Encourage the presence of other species and the initiation of natural regeneration processes where suitable conditions exist (see *Criterion 4*).
- In dense stands, plan the creation of small canopy openings fo a surface of maximum 1000 m^2.
- In adult or mature stands, plan to fell and **leave on the ground 3 trees/ha**, and to **ring-bark (girdle) an additional 3 trees/ha**, each with a minimum DBH of 17.5 cm. This aims to enhance both the quantity and diversity of deadwood, in various stages of decomposition, both standing and lying.

Intervention intensity
*Percentages referring to the Basal Area subject to the intervention

G> OGS (20-30 m2/ha)
Hm/Dm < 80

20-25%
Gradually reduce the basal area in order to maintain the bioecological and physical stability of the forest. This may involve planning more frequent interventions, starting with low-intensity actions that progressively increase in intensity until the equilibrium condition is achieved.

G> OGS (20-30 m2/ha)
Hm/Dm >80

15-20%
Reduce the basal area through cautious, low-intensity interventions, retaining the most stable trees in the stand even if they have limited economic value.

G≤ OGS (20-30 m2/ha)

Plan interventions to maintain the growing stock within the recommended range. This may also mean postponing the intervention to the next cycle if necessary.

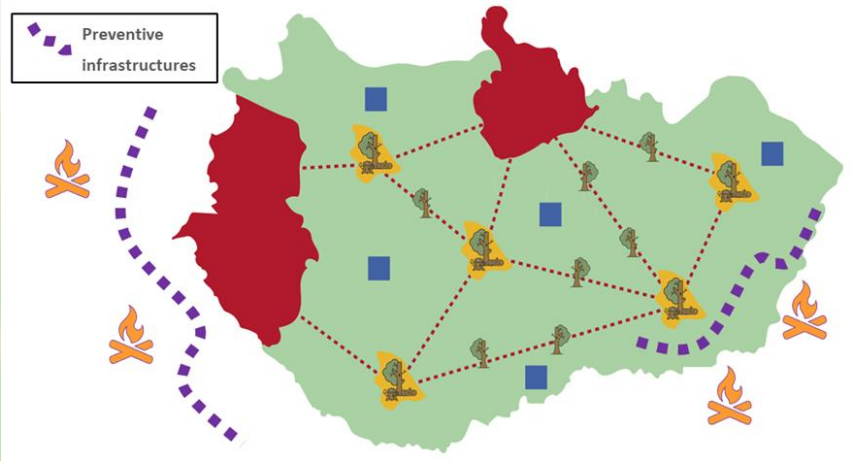
Rotation period: Ranging between 10–15 years. In the case of interventions aimed at transforming even-aged stands into uneven-aged ones, the return interval should be assessed on a case-by-case basis.

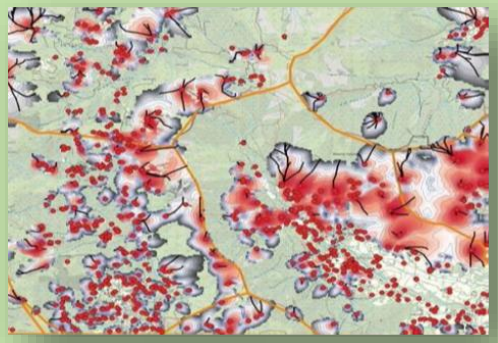
uneven-aged ones, the return interval should be assessed on a case-by-case basis.

Rotation period: Ranging between 7–15 years. In the case of interventions aimed at transforming even-aged stands into uneven-aged ones, the return interval should be assessed on a case-by-case basis.

stages of decomposition, both standing and lying.

MODELS TO MANAGE THE REMAINING SURFACE ACCORDING TO CNF PRINCIPLES & **FIRE RISK REDUCTION**





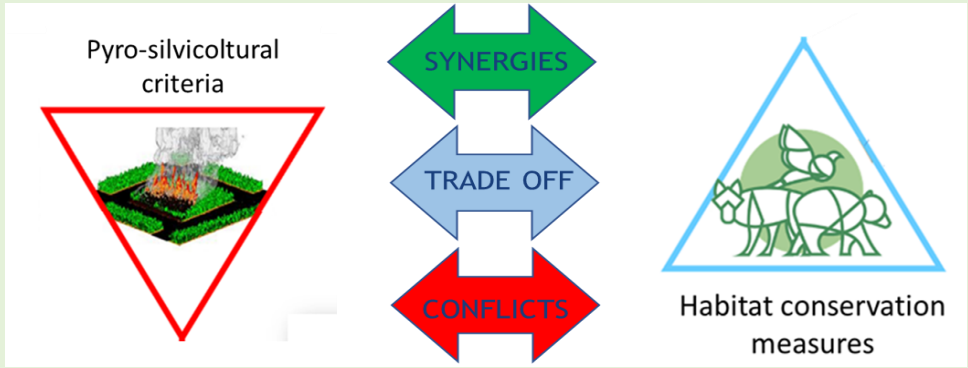
Two scales of analysis

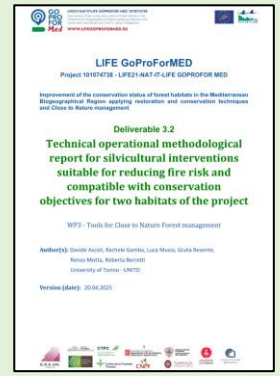
1) Landscape scale
strategic planning of **preventive infrastructures**
(Where should they be placed?)

→ **Action:** scenario comparison with DSS (Driven Decision Support)

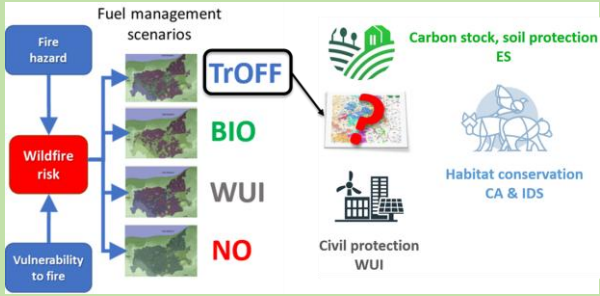
2) Stand scale
whether and how to intervene, whether within or outside the elements to be preserved

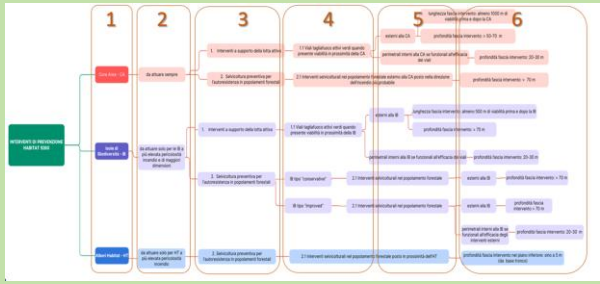
→ **Action:** implementation of a protocol (Decision Tree) based on 6 steps and on species ecology (hab. 9260 & 9530*)





SAME GOAL: establish a method of analysis for synergies, conflicts, and trade-offs between prescriptions for fire risk mitigation and conservation measures

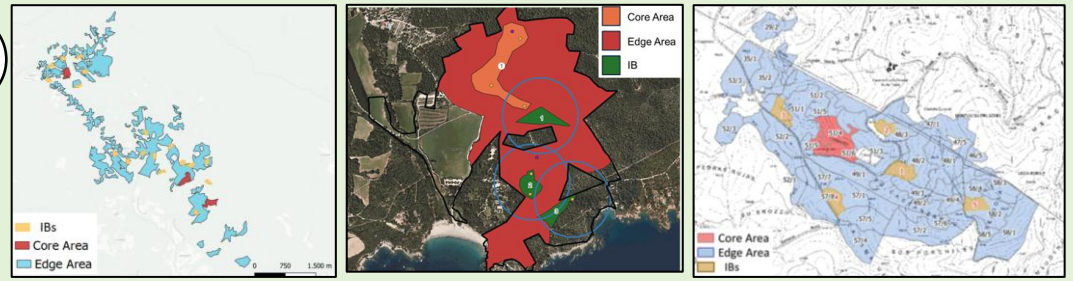




RESULTS (so far...)

1. ECOLOGICAL NETWORK ESTABLISHED ON 12 SITES (367 ha)
2. IMPROVEMENT of 4.083 ha of FOREST HABITATS
3. EEP MODELS FOR HABITATS **9260, 9330, 9340**
4. SPREAD OF **INDEX OF BIODIVERSITY POTENTIAL (IBP)**
5. STANDARD PROTOCOLS FOR A EASIER (RE-/AP-)PLICATION
6. **DASHBOARD TOOL** TO GUIDE INTERVENTIONS
7. FIELD MANUAL FOR HABITAT RECOGNITION AND CONSERVATION STATE ASSESSMENT

1



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Project's impact	Ecological network	N° IBs	Effort
4.083 ha	367 ha	101	9 %

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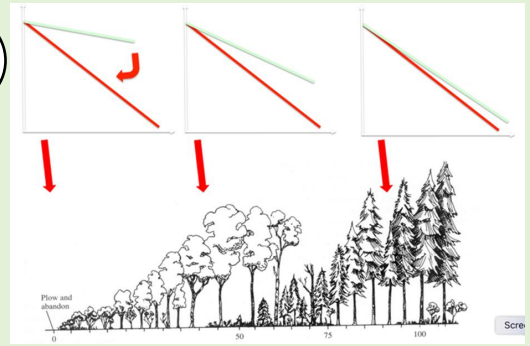

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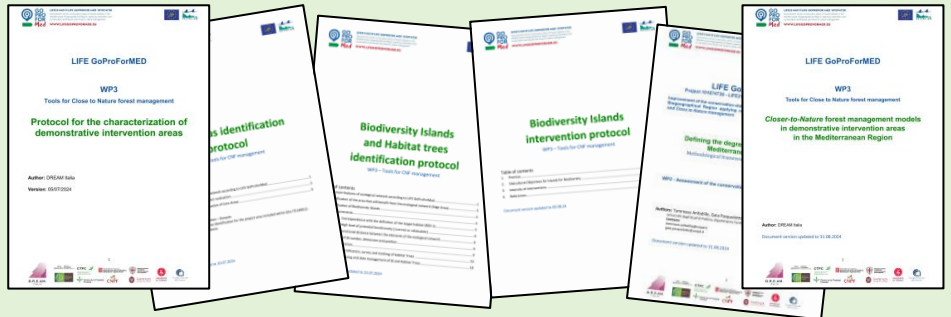

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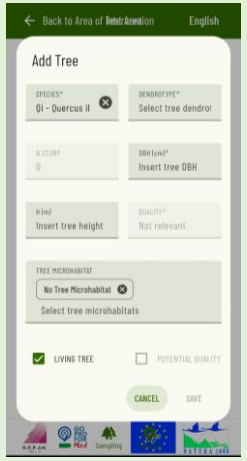

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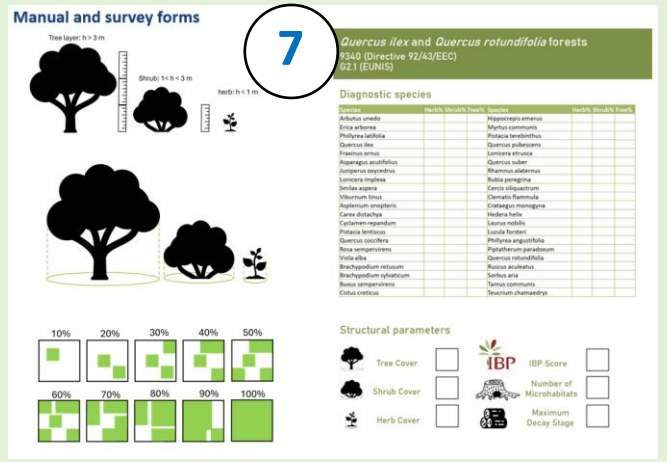


CHALLENGES AND SOLUTIONS

MOVING FROM THEORY TO PRACTICE

Scientific papers/researches ► concrete application

Among solutions: EEP MODELS for each target habitat

Support implementers

Among solutions

- Dashboard tool
- Strengthen practical competences through training

ECONOMIC SUSTAINABILITY of INTERVENTIONS

Solutions (within the project!):

- optimize interventions effort for greatest impact
- combine conservation with production

Project's impact	Ecological network	Effort
4.083 ha	367 ha	9 %

ACCEPTANCE by LOCAL COMMUNITIES

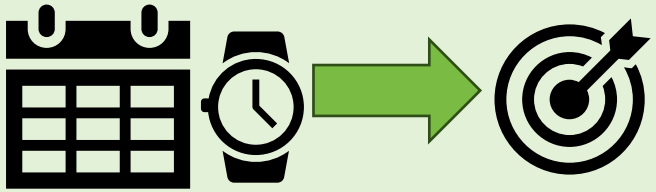
In the Mediterranean area, forests have always been used by the community

Solutions: transparency & communication

- participatory processes
- listen to their needs
- inform correctly

LESSONS LEARNT (so far)

Build the forest future, one step at a time



Improving forest ecosystems is a long journey: **clear goals** and **phased planning** make it work

Don't miss the key players

Don't dictate—**co-create**.

It's the only way to **lasting change**.

KEY MESSAGE

Apart from the funding sources
of the LIFE Programme
it is IMPORTANT to **find solutions** to make
forest management / habitat conservation
economically sustainable
through established and sound mechanisms

PES - PAYMENT FOR ECOSYSTEM SERVICES

Not only for non-action, but also for active and concrete actions

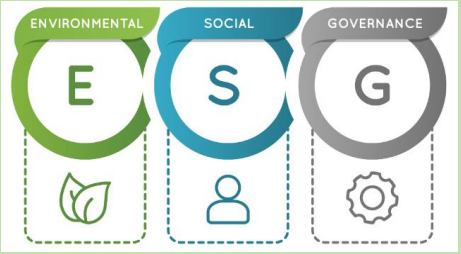
NOT ONLY CARBON CREDITS → BIODIVERSITY CREDITS

Voluntary biodiversity credits can help the private and public sectors to achieve a **nature-positive economic system**

Methodology needs to be scientifically robust,
but easily understandable

ESG MEASUREMENT CRITERIA AND STANDARDS

need to be concretely developed
to favour **DIRECT FINANCING FROM PRIVATES**



If we want restoration to become the norm - not the exception -
we must **unlock funding mechanisms that reward nature**

LIFE GoProForMED

https://www.lifegoproformed.eu/

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Thank you for your attention

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