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101074738

PRESERVING AND MANAGING FOREST HABITATS IN THE MEDITERRANEAN AREA

WORKSHOP - MONDAY DECEMBER 4, 2023

Co-funded by the European Union

NATURA 2000

The case study of Montes

From the characterisation of the ecological network to the definition of interventions

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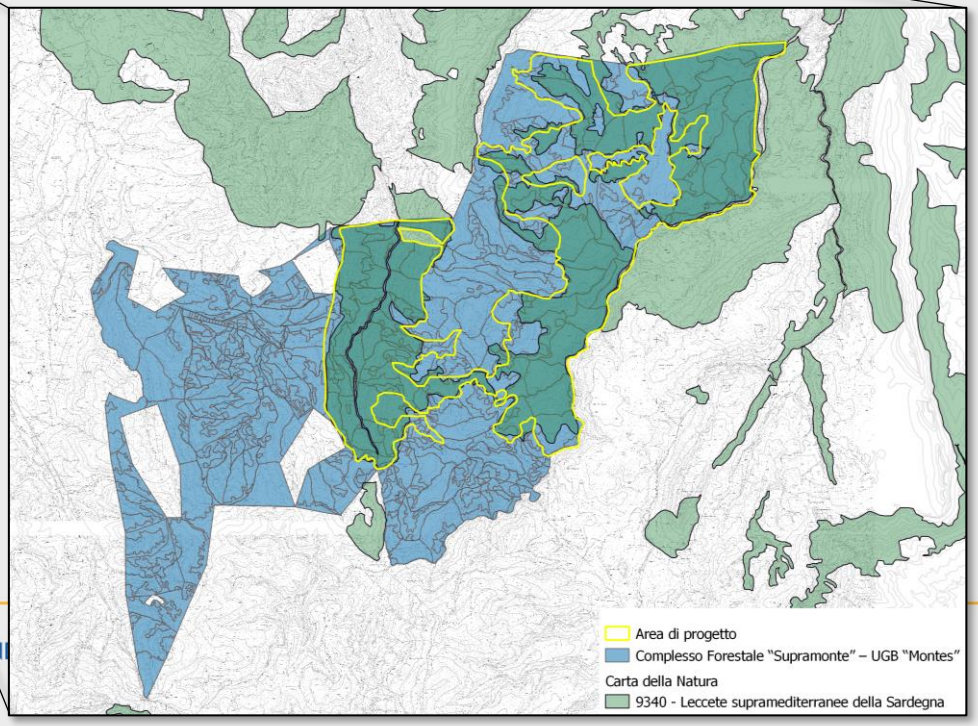
The Project site ITB022212 Supramonte di Oliena, Orgosolo e Urzulei - Su Sercone

Forest manager: Agenzia Fo.Re.STAS

Target habitat: 9340

Tot. Forest complex area: 4.659 ha

Project area: 1616 ha



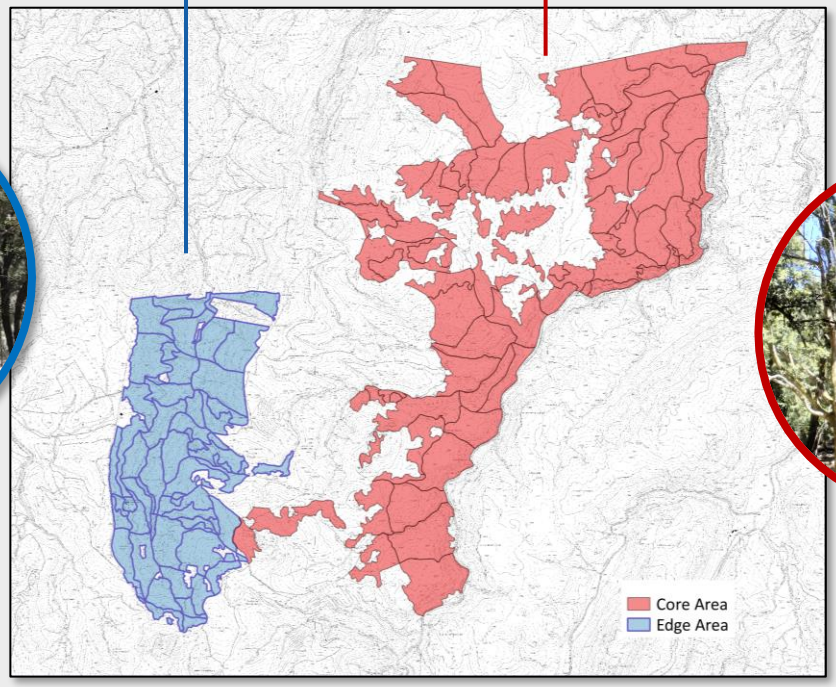
Summary

- Ecological network definition
- Core area
- IoS
- Ios characterization
- Surveys
- General results (IBP)
- General results (dendro)
- Silvicultural intervention definition
- Interventions criteria

- 3 study cases as en example
- Young stand
- Intermediate stand
- Mature stand

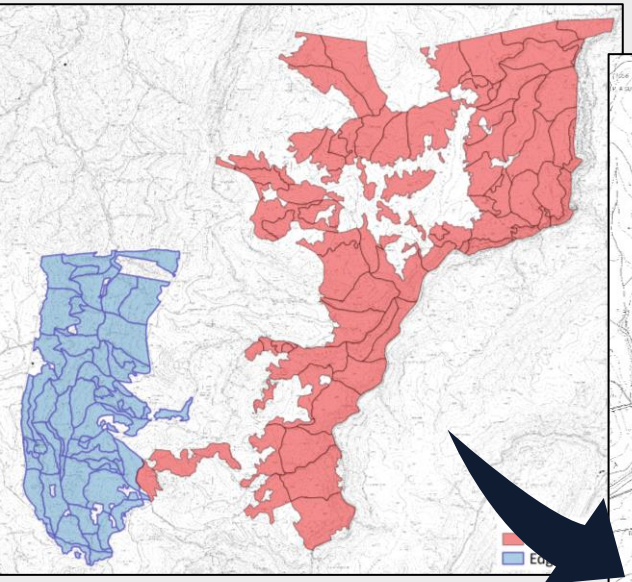
Edge Area

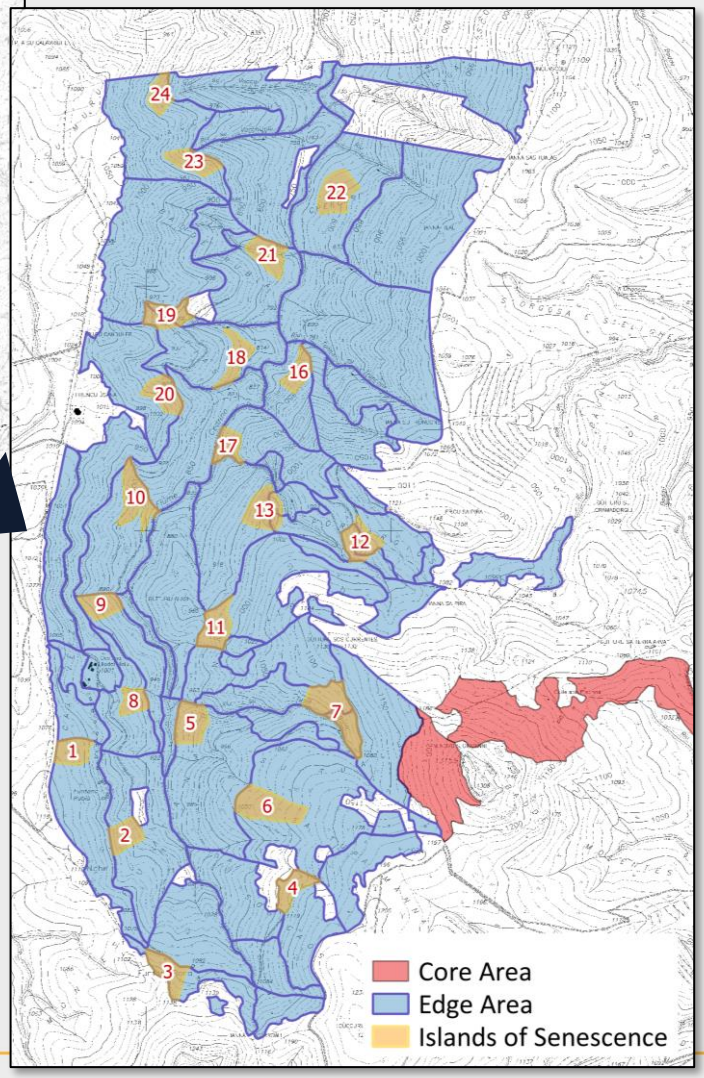
Young/adult forests



Core Area

Mature forests



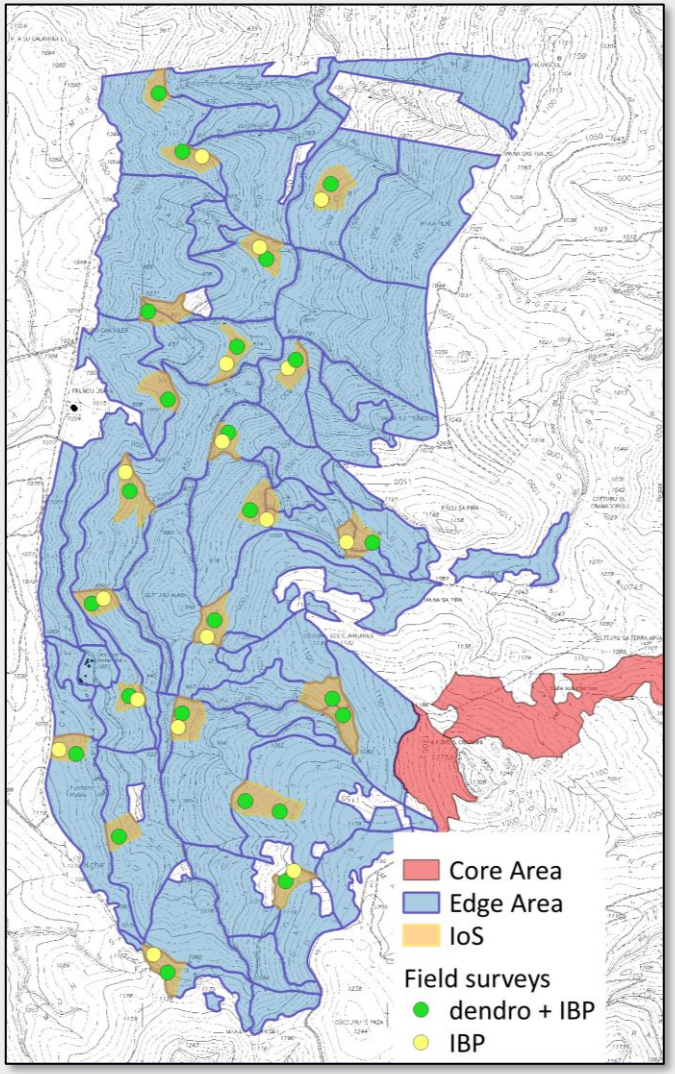


IoS were identified through the following steps:

1. calculation of the necessary number of IoS of 1 ha to cover 5% of the Edge Area
2. positioning of the IoS on the map, considering a distance of 200-300 m between one and the other
3. Discussion of feasibility with forest complex managers

Core Area	1.122 ha
Edge Area	459 ha

N. IoS	22
IoS tot surface	35 ha
Mean IoS surface	1,6 ha
Min. IoS surface	0,9 ha
Max. IoS surface	3,2 ha



Dendrometric survey

1 survey plot per IoS hectar:

- Species
- Diameter at Breast Height (DBH)
- Dendrotype
- Sample of tree heights

The aforementioned data where used in order to get the following data related each IoS:

- Number of trees
- Mean DBH
- Mean Height
- Total Basal area
- Total Volume

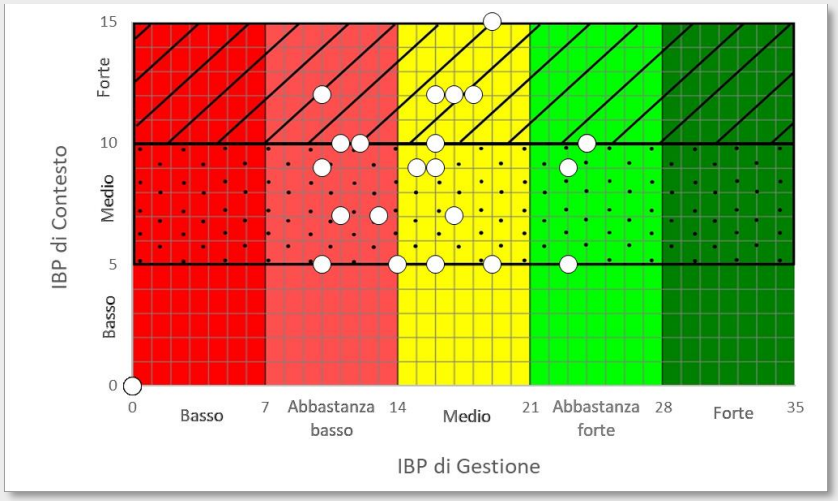
IBP survey

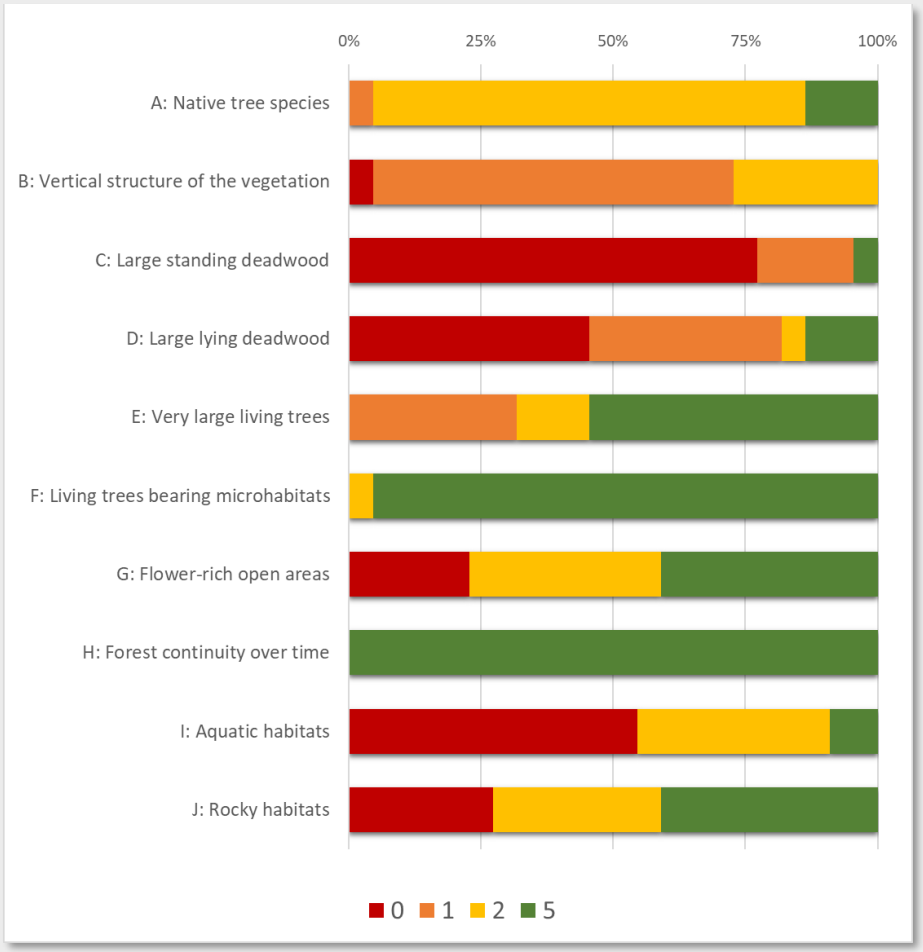
Partial survey made within circular survey plots (28 m radius), for a coverage of at least 50% of the IoS surface.

Dendrometric surveys: 24 plots of 20 m radius

IBP: **35** surveys for a surface of 11 ha

General results of IBP analysis



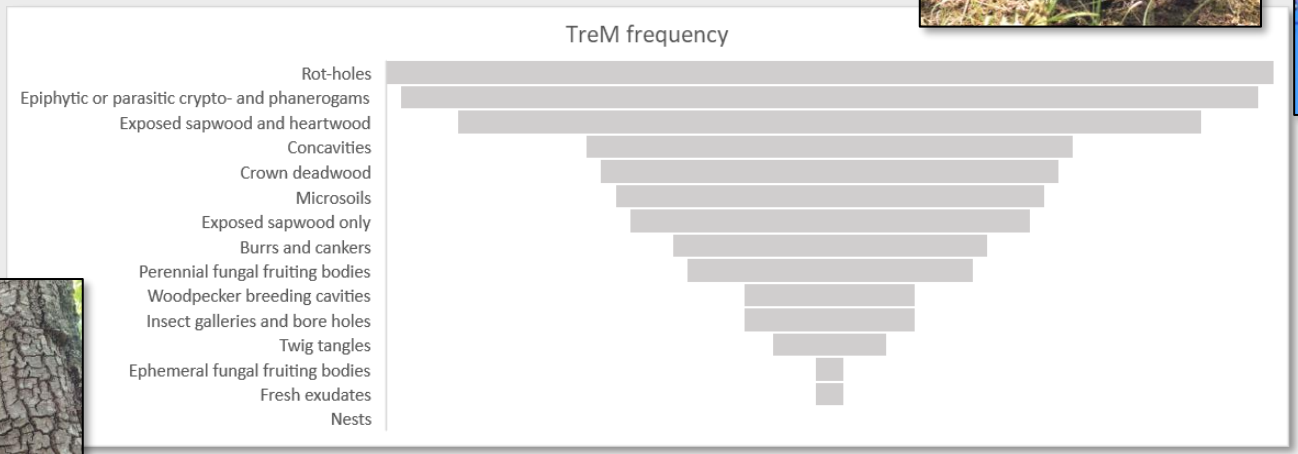


The majority of IBP surveys locates in the range of «quite low» and «medium» values for management factors

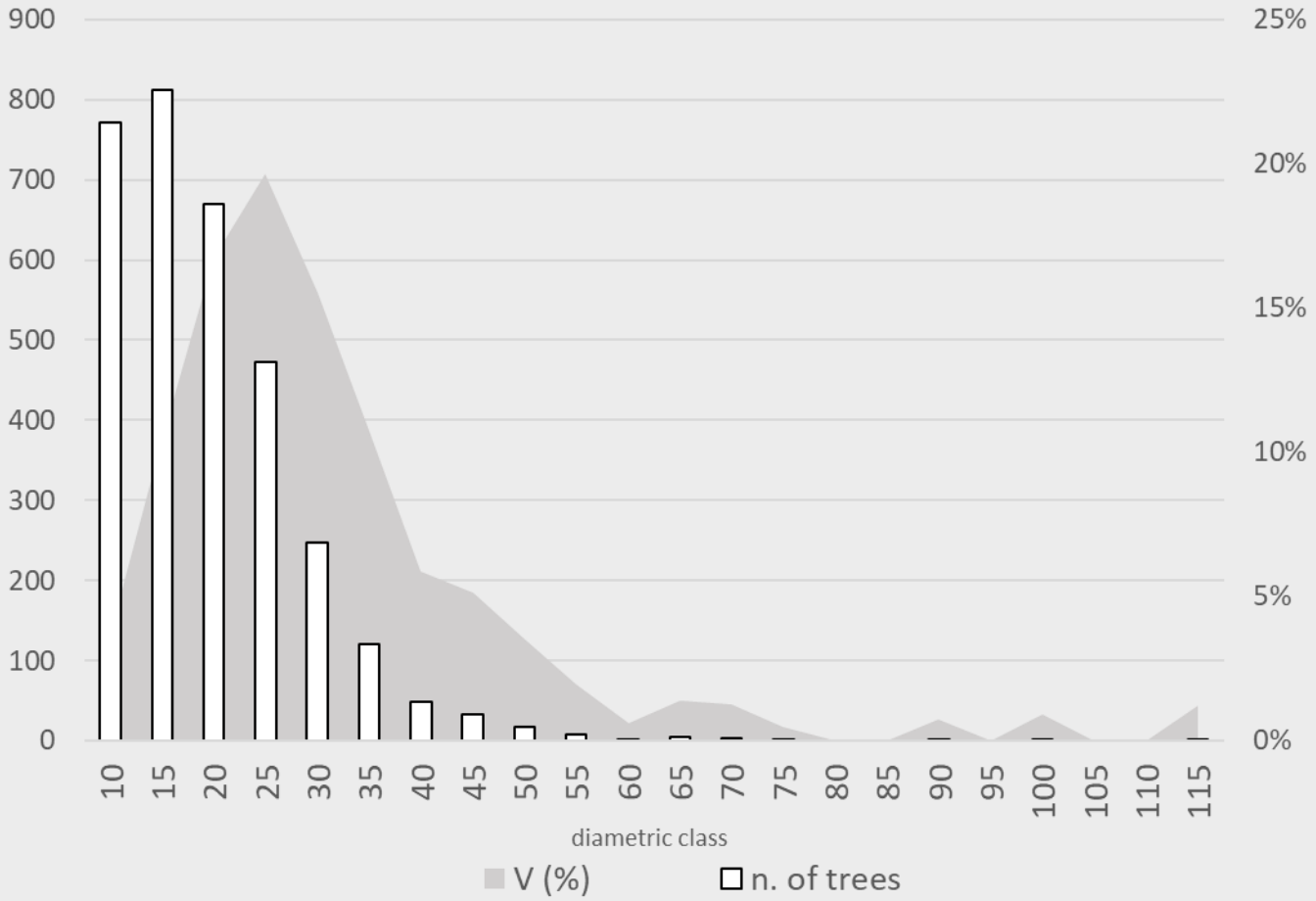
Factors C and D recorded the lowest values within management factors

The presence of isolated large trees allowed to reach high values in some cases for **factor E**

General results of IBP analysis

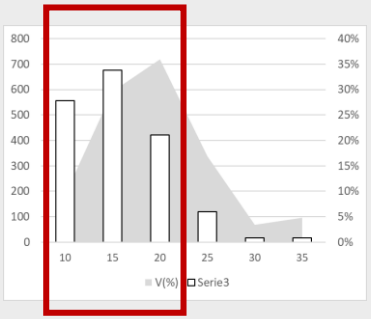


General results of dendrometric analysis



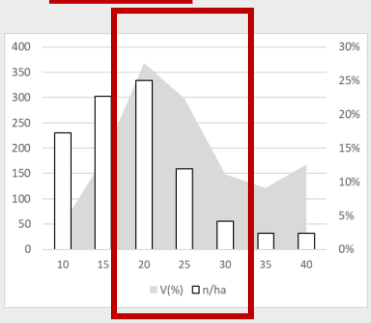
General results of dendrometric analysis

Young conditions



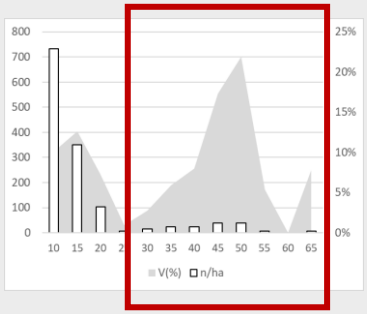
Forest tree volume mainly concentrated in smaller diametric classes (10-20)

Intermediate conditions



Forest tree volume mainly concentrated in medium diametric classes (20-30)

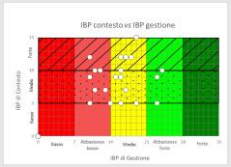
Mature conditions

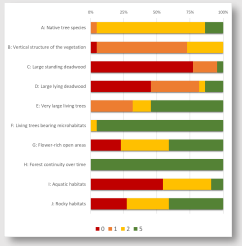


Forest tree volume mainly concentrated in higher diametric classes (30 +)

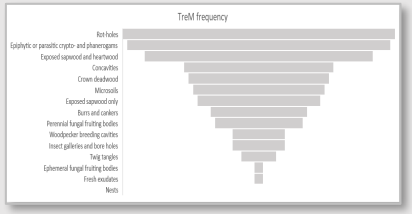
IBP

- Qualitative description of IoS



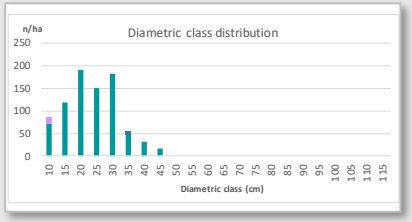


- TreMs distribution on stand scale



Dendrometric data

- Structural characterization of IoS



Management objectives

Definition of silvicoltural intervention

The Islands of Senescence in LIFE GoProFor Med project

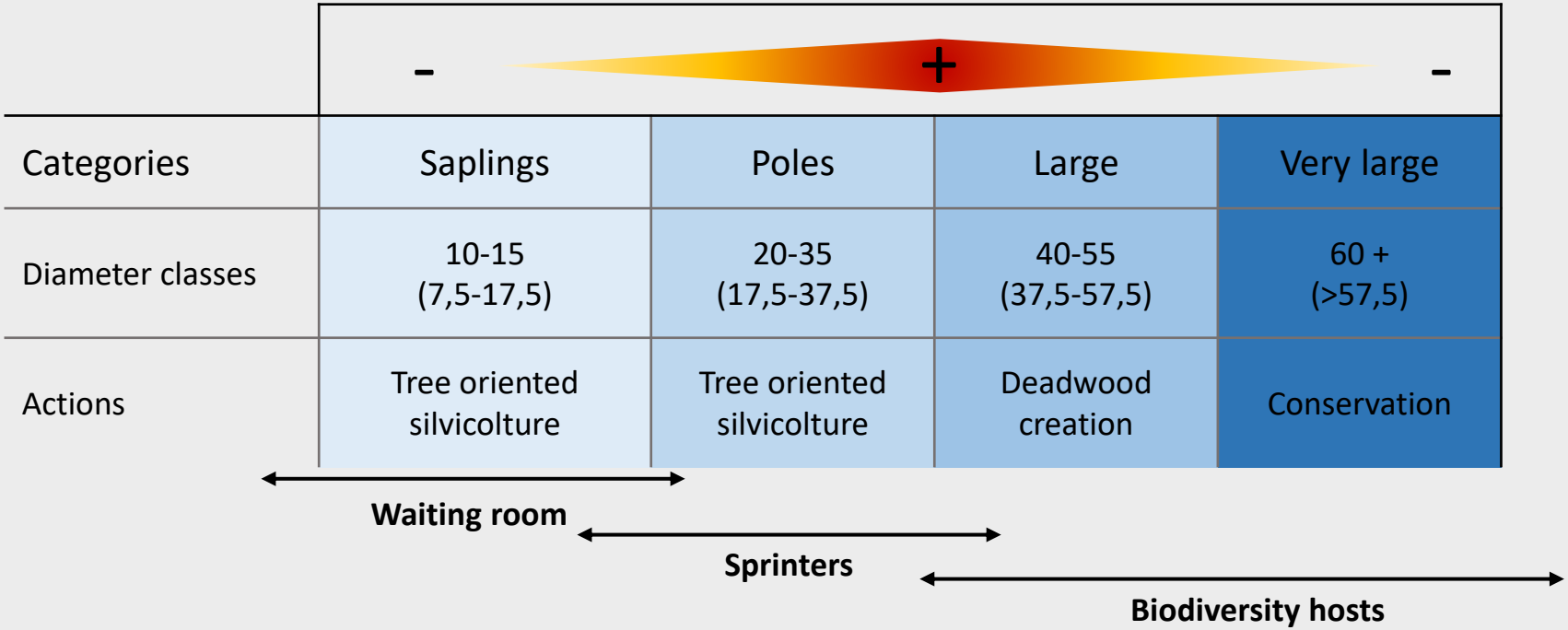
*"…"micro-reserves".. ..they guarantee the **continuous availability of deadwood** in high quantities, **necessary for the survival of saproxylic species** in the forest matrix, where it will be possible to continue to carry out close to nature silvicultural activities.*
Within IoS the supply of deadwood of different types will be maintained, and eventually we will actively intervene, where necessary, to create it artificially."

Management objectives

i) Promote **large trees** and **very large trees**
ii) Promote habitat **trees**, both current and future
iii) Promote **species diversity**
iv) Promote forest **structure diversity** and **flowering species**
v) Increase **standing and laying deadwood**

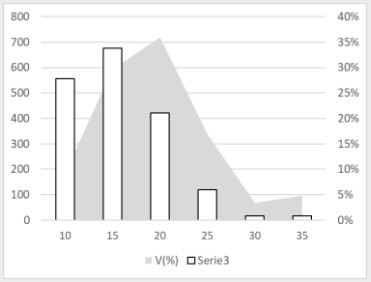
	Management objective	Actions
i)	**Promote large and very large trees**	Large and very large trees are promoted trough the implementation of **tree-oriented selvicolture** Vigorous trees from «poles» category can be selected as future trees when vigorous and they can be promoted through tree-oriented silvicuture to increase the quantity of large and very large trees in the future
ii)	**Preserve and promote habitat trees**	Habitat trees have to be identified, marked and promoted when necessary Trees with peculiar crown or trunk morphology are preserved and promoted to ensure genetic diveristy;
iii)	**Promote specific diversity**	Preserve and promote sporadic tree species
iv)	**Promote forest structure (vertical and orizontal) diversity and flowering species**	Open areas are realized to open the canopy up to a surface of around 400 m2
v)	**Increase deadwood quantity**	All trees selected to be removed are released (standing or lying) in order to reach a **target deadwood volume quantity** (between 5 and 30 cm3/ha)

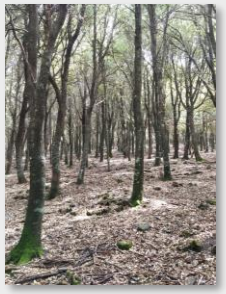
Intervention intensity



Intervention intensity

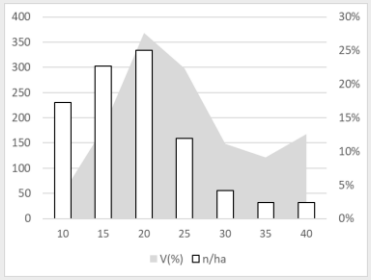
Young conditions





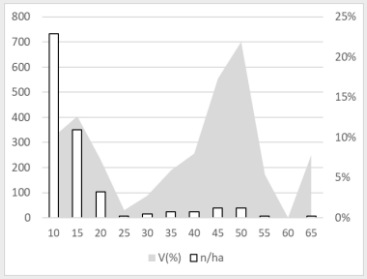
Low intervention intensity

Intermediate conditions



Medium/high intervention intensity

Mature conditions



Low intervention intensity

Three case studies as en example

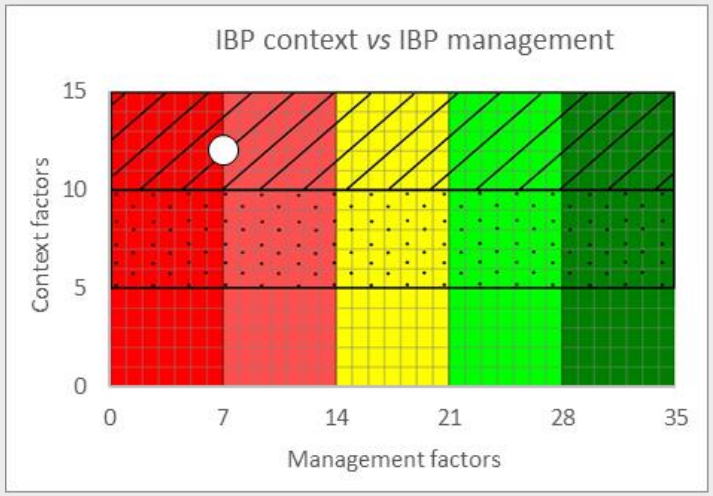
Tree selection criteria

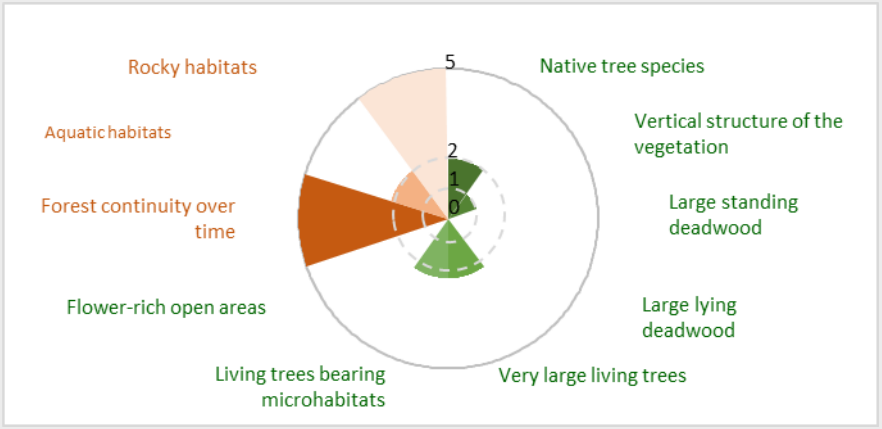
Deadwood target quantity (between 5 and 30 m3/ha)

Tree selection is done on the basis of the **distribution of stand volume**. Each category is affected by tree selection proportionally to its volume.

The **diametric distribution** it is also taken into account, meaning that categories which are represented by **< 5% of total tree number**, should not be affected by tree selection.

IoS 5 – young stand





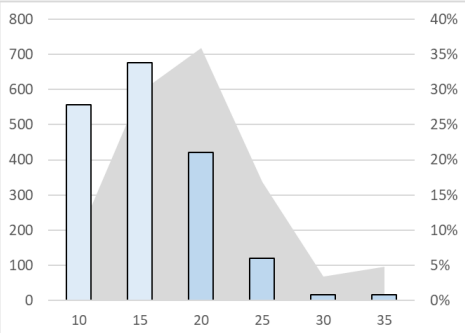
IoS 5 – young stand

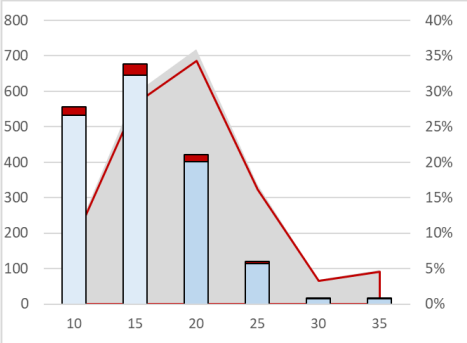
Tree selection criteria

Realization of one or more open areas for a total surface of 400 m2

Tree-oriented silviculture to favour habitat trees and large trees

Deadwood target quantity: 10 m3/ha

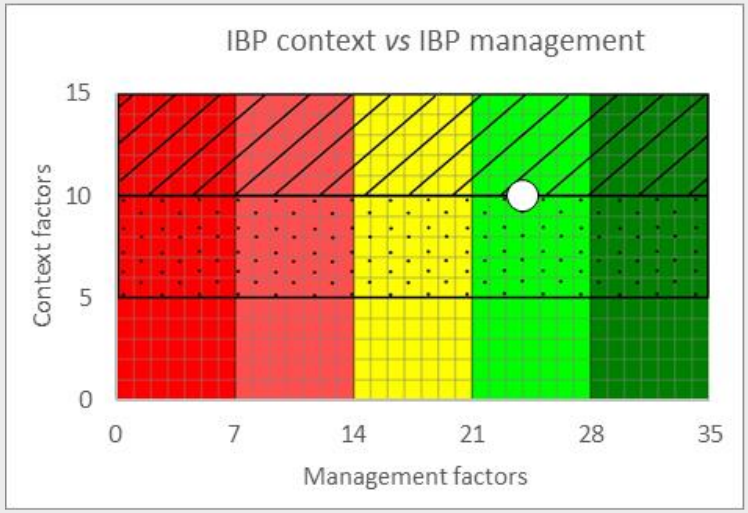


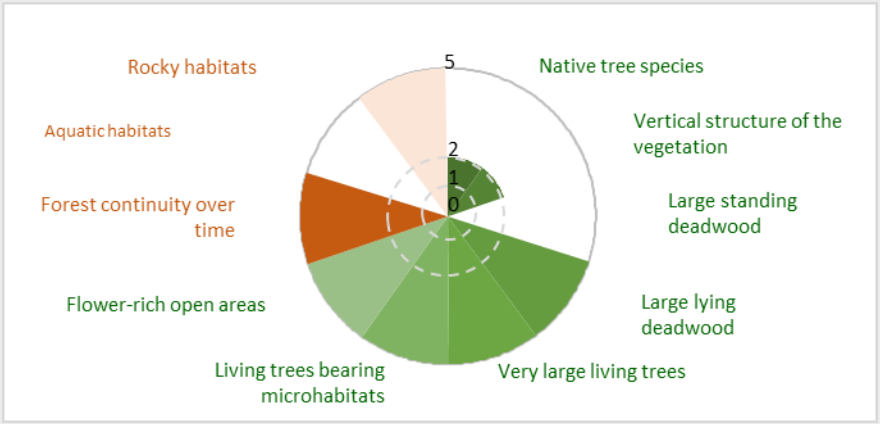


Categories	TOT	Saplings (10-15)	Poles (20-35)	Large (40-55)	Very large (60 +)
n/ha	1806	1233	573	-	-
V/ha (m^3/ha)	217	84,5	132,4	-	-

Hypotethic intervention					
V/ha	**10 (5%)**	**3,9**	**6,1**	-	-
n/ha	**83 (5%)**	**57**	**26**	-	-

IoS 11 – intermediate conditions



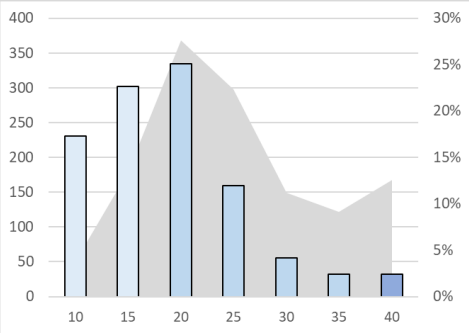


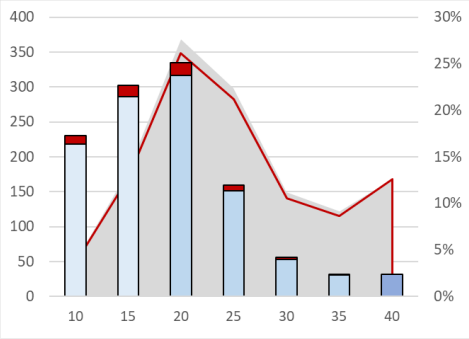
IoS 11 – intermediate conditions

Tree selection criteria

Tree-oriented silviculture to favour habitat trees and large trees

Deadwood target quantity: 10 m3/ha





Categories	TOT	Saplings (10-15)	Poles (20-35)	Large (40-55)	Very large (60 +)
n/ha	1154	533	581	32	-
V/ha (m^3/ha)	217,6	37,4	60	27,37	-

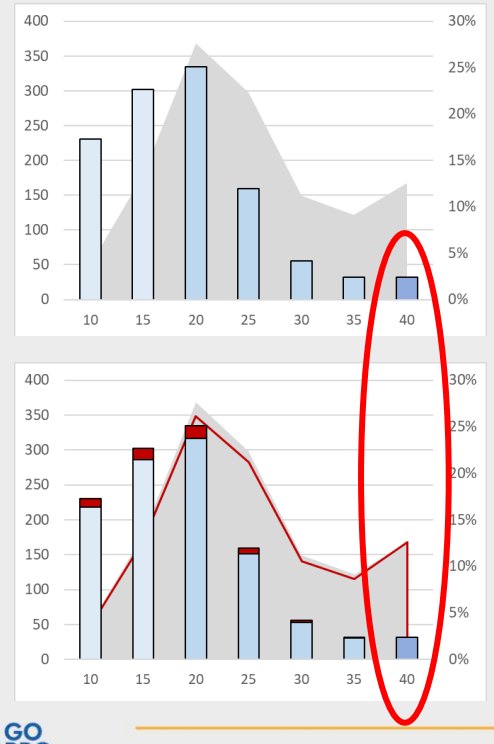
Hypotethic intervention					
V/ha	**10 (5%)**	**1,9**	**8,1**	0	-
n/ha	**83 (5%)**	**28**	**31**	0	-

IoS 11 – intermediate conditions

Tree selection criteria

Tree-oriented silviculture to favour habitat trees and large trees

Deadwood target quantity: 10 m3/ha

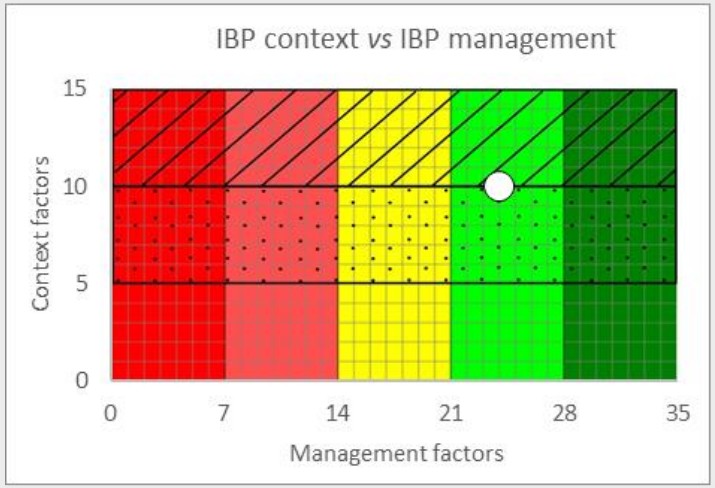


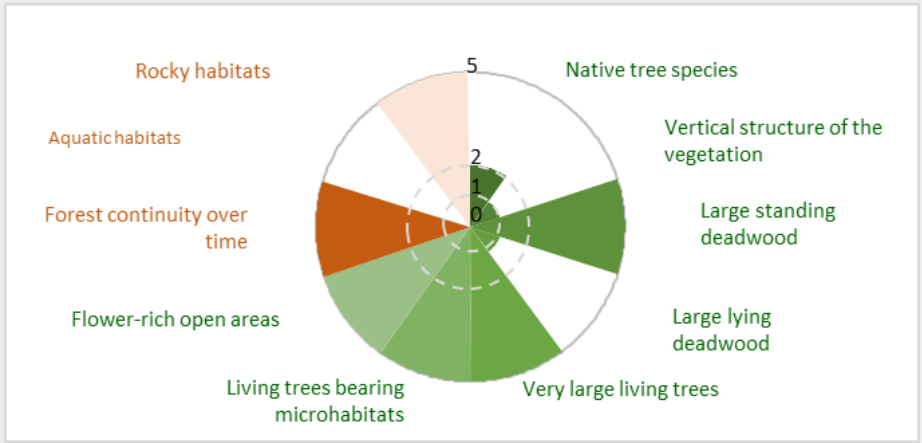
Categories	TOT	Saplings (10-15)	Poles (20-35)	Large (40-5	Very large (60 +)
n/ha	1154	533	581	32	-
V/ha (m^3/ha)	217,6	37,4	60	27 37	-

- 5%

Hypotethic intervention					
V/ha	**10 (5%)**	**1,9**	**8,1**	0	-
n/ha	**83 (5%)**	**28**	**31**	0	-

IoS 13 – mature conditions



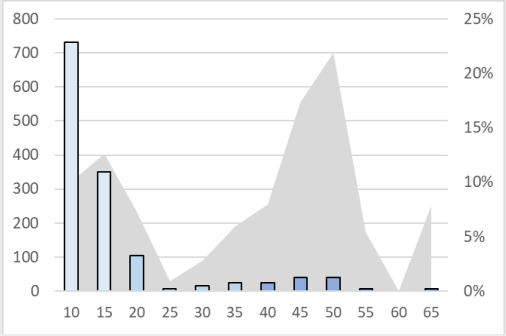


IoS 13 – mature conditions

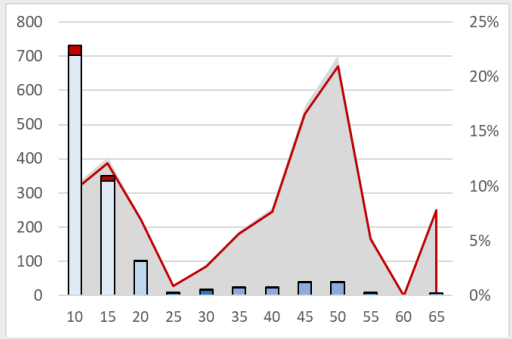
Tree selection criteria

Punctual intervention to increase deadwood quantity

Target deadwood volume between 10 and 20 m3/ha



Categories	TOT	Saplings (10-15)	Poles (20-35)	Large (40-55)	Very large (60 +)
n/ha	1353	1082	151	111	8
V/ha (m^3/ha)	264	59,9	44,6	138,8	20,6



Hypotethic intervention					
V/ha	**10 (4%)**	**2,5**	**1,8**	5,7	0
n/ha	**55 (4%)**	**44**	**6**	5	0

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