

Overview on the Integrate marteloscope network and new software developments

8th Annual Meeting of the European Integrate Network
19th to 21st October 2022
Madrid-Valsaín

Andreas Schuck, Sergey Zudin, Jakob Derks



facilitated by EFI

Demonstration site network now

- Nearly 190 sites in 24 countries across Europe
- New countries joining the network (GE and TR)



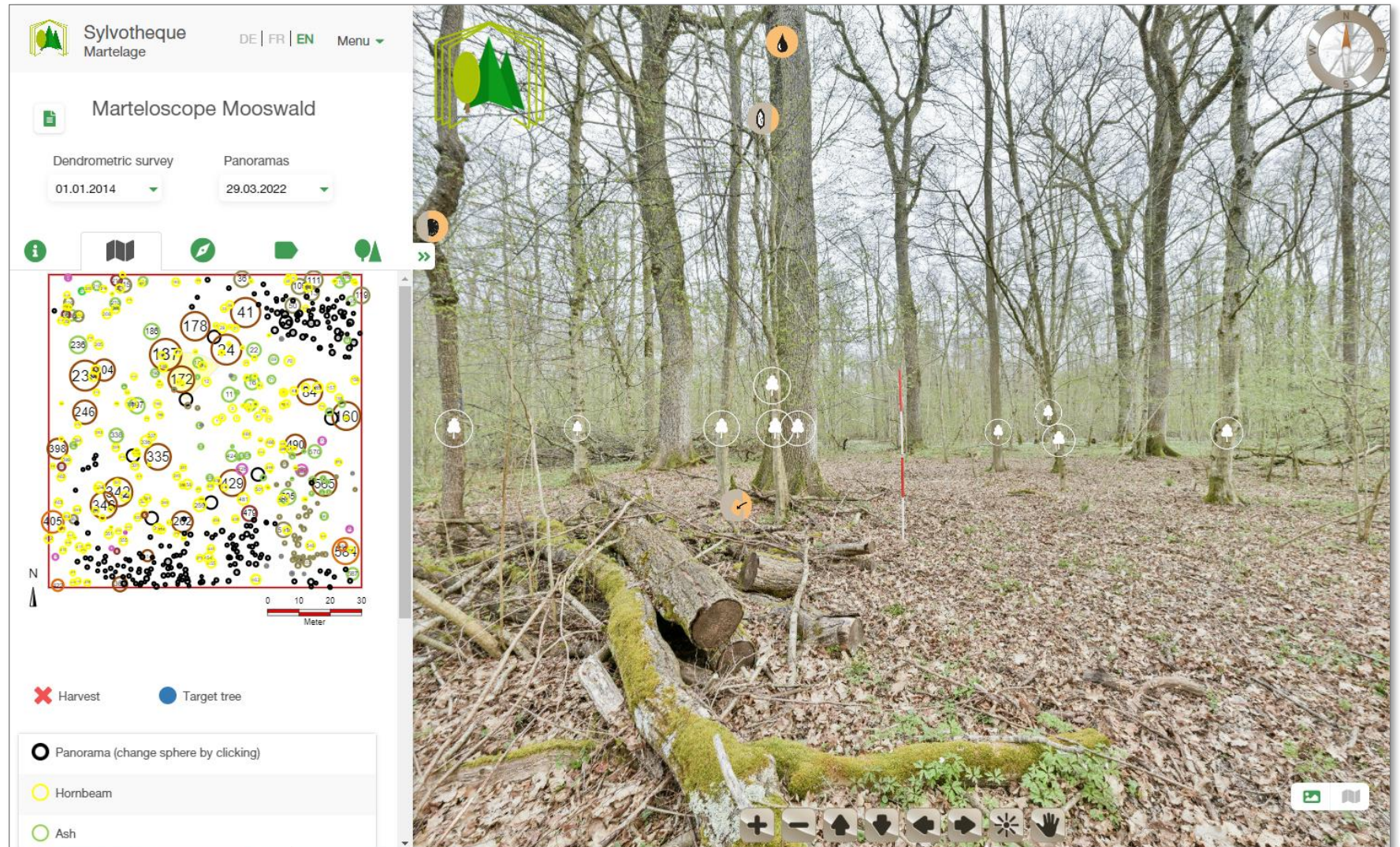
Country	AT	BE	CH	CZ	DE	DK	ES	FI	FR	GE	HU	IE	IT	LU	NL	PT	PL	RO	RS	SE	SI	SK	UA	TR
Sites	5	5	3	6	63	4	12	2	15	3	2	9	11	7	1	1	5	6	14	1	3	2	2	6

Wide variety of site types and management regimes



Photos: local marteloscope managers

Virtual forest visits

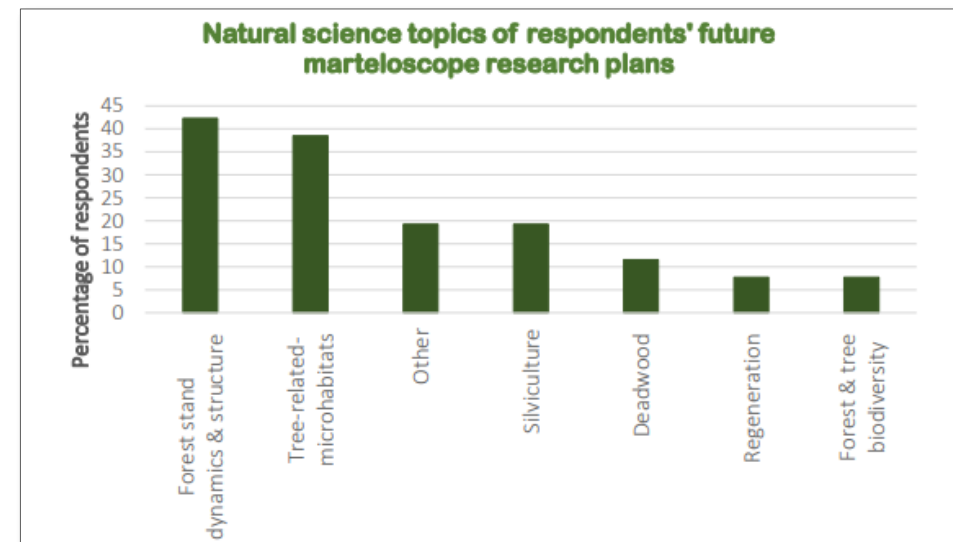
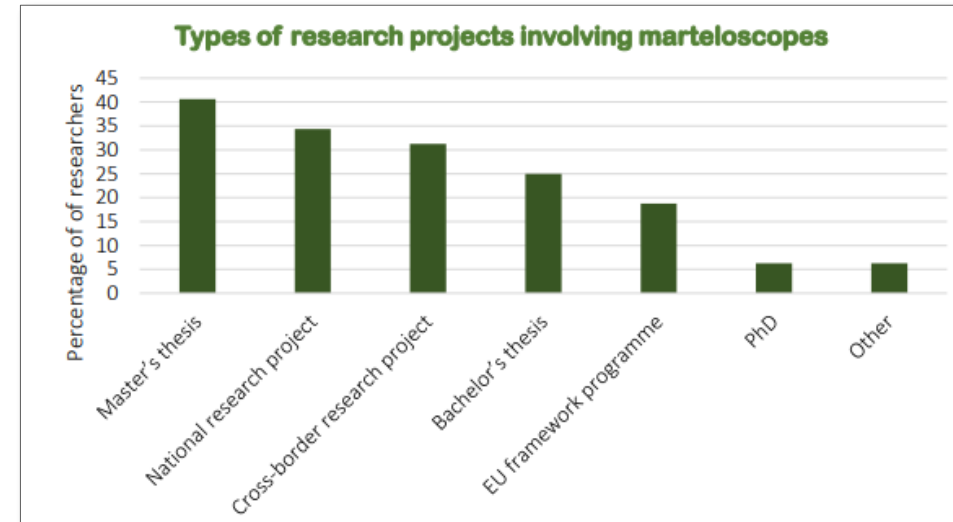


Financially supported by the **'Swiss Federal Office for the Environment (FOEN)'** four Integrate Network marteloscope sites data was prepared and then photographically documented by the Bern University of Applied Sciences (HAFL), who has developed this innovative 'virtual forest visit' technique.

Use of demonstration sites and data in research

Aim: investigate applications of marteloscopes in research and stimulate their use

- Overview of scientific literature using marteloscopes as a research method
- Questionnaire
 - current and past marteloscope research conducted by respondents including published and unpublished research, followed by respondents' review of marteloscopes for research
 - feedback on future research topics applying marteloscopes
 - collect scientific papers/reports



Use of demonstration sites and data in research (examples)

- Data available for science via 'Global Biodiversity Information Facility'
- Scientific papers
- Other publications (e.g. practitioners journals)
- Bachelor / Master theses

Volume 170, Issue 2
1 March 2019

RESEARCH ARTICLE | MARCH 01 2019

Marteloskope als Trainingstools zur Erhaltung und Förderung von Habitatbäumen im Wald

Frank Krumm; Thibault Lachat; Andreas Schuck; Rita Büttler; Daniel Kraus
Schweizerische Zeitschrift für Forstwesen (2019) 170 (2): 86-93.
<https://doi.org/10.3188/szf.2019.0086> Article history

Split-Screen PDF Share Tools

Biodiversity Data Journal
Data Paper Biodiversity Data Journal 10: e91385
<https://doi.org/10.3897/BDJ.10.e91385> (12 Oct 2022)

A spatially-explicit database of tree-related microhabitats in Europe and beyond

Sergey Zudin, Wilfried Heintz, Daniel Kraus, Frank Krumm, Laurent Larrieu, Andreas Schuck

Abstract

Background

Tree to tree interactions are important structuring mechanisms for forest community dynamics. Forest management takes advantage of competition effects on tree growth by removing or retaining trees to achieve management goals. Both competition and silviculture have, thus, a strong effect on density and distribution of tree related microhabitats

Contents lists available at ScienceDirect

Ecological Indicators

Journal homepage: www.elsevier.com/locate/ecolind

Co-occurrence patterns of tree-related microhabitats: A method to simplify routine monitoring

Laurent Larrieu^{a,b}, Alain Cabanettes^c, Benoît Courbaud^d, Michel Goulard^e, Wilfried Heintz^f, Daniel Kozák^g, Daniel Kraus^h, Thibault Lachatⁱ, Sylvie Lader^j, Jörg Müller^k, Yvon Paillet^l, Andreas Schuck^l, Jonas Stillhard^m, Miroslav Svobodaⁿ

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Biodiversity and Conservation (2020) 29:3717–3737
<https://doi.org/10.1007/s10531-020-02046-x>

ORIGINAL PAPER

Resolving the trade-off between production and biodiversity conservation in integrated forest management: comparing tree selection practices of foresters and conservationists

Hannes Cosyns¹ · Bettina Joa² · Ronja Mikoleit³ · Frank Krumm¹ · Andreas Schuck² · Georg Winkel² · Tobias Schulz¹

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Published online: 12 September 2020
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der Technischen Universität Dresden im Master-Studiengang „Forstwissenschaften“

zur Erlangung des akademischen Grades
Master of Science (M.Sc.)

die Masterarbeit mit dem Thema:

„Überführung von Fichtenreinbeständen in Bergmischwälder zum Anfasen:
Anlage, Auswertung und Auszeichnung einer Marteloskop-Sequenz im Erzgebirge“

vorgelegt.

Tag der Einreichung:

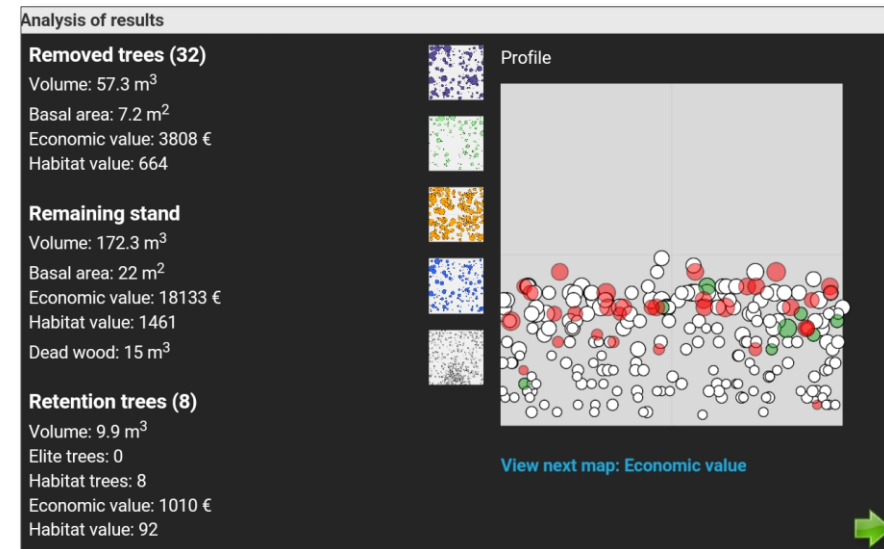
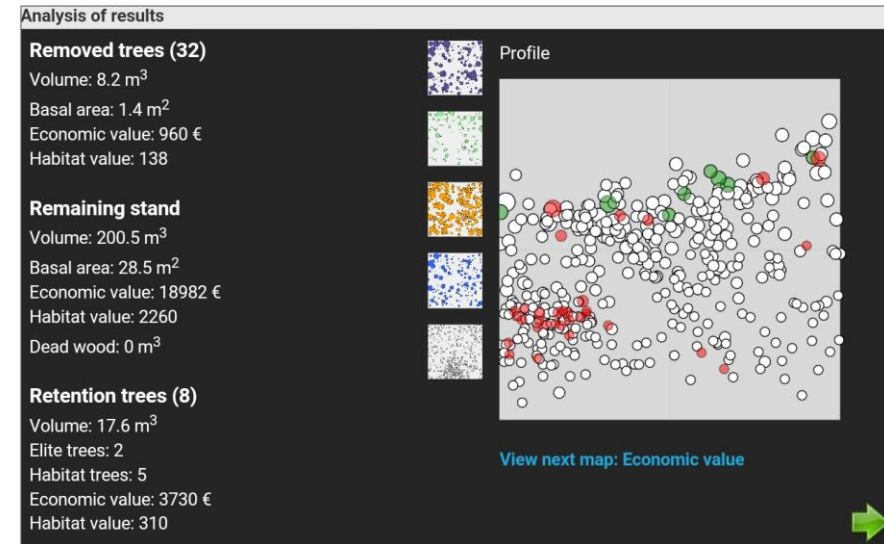
Verantwortliche/r: Prof. Dr. Marieke van der Maaten-Theunissen (Hochschullehrer/in)
M. Sc. Andreas Schuck (Betreuer/in)

Institut: Institut für Waldwachstum und forstliche Informatik

Professur: Professur für Waldwachstum und Produktion von Holzbiomasse

I+ Software developments

- New functionalities and new modules available and under development
- All information directly or indirectly linked to the software can be found on the I+ website (<http://iplus.efi.int/>)



Stand profile (mini maps)

I+ Software developments (1)

Deadwood module

Removed trees (18)
 Volume: 81.4 m³
 Basal area: 6.6 m²
 Economic value: 2616 €
 Habitat value: 470

Remaining stand
 Volume: 373.9 m³
 Basal area: 25 m²
 Economic value: 20098 €
 Habitat value: 1570
 Dead wood: 48.8 m³

Retention trees (5)
 Volume: 27.6 m³
 Elite trees: 0
 Habitat trees: 5
 Economic value: 1249 €
 Habitat value: 128

Tree selection

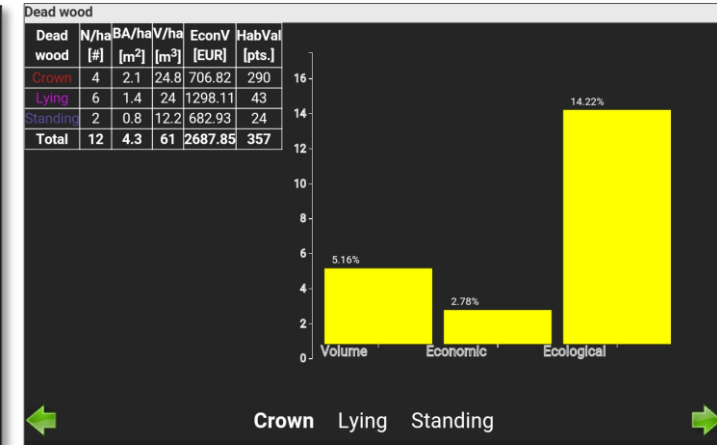
Microhabitats | Quality distribution | Toggle competing trees

common beech
 Fagus sylvatica [id: 235]

Retention
 Elite tree
 Habitat tree
 Veteran tree
 Diversity
 Seed tree

Removal
 Target diameter
 Competitor
 Structure
 Regeneration
 Sanitary

Dead wood
 Standing
 Lying
 Crown



Regeneration module

Removed trees (0)
 Volume: 0 m³
 Basal area: 0 m²
 Economic value: 0 €
 Habitat value: 0

Remaining stand
 Volume: 234.5 m³
 Basal area: 29.3 m²
 Economic value: 24087 €
 Habitat value: 2125
 Dead wood: 0 m³

Retention trees (0)
 Volume: 0 m³
 Elite trees: 0
 Habitat trees: 0
 Economic value: 0 €
 Habitat value: 0

Sallershausen, Germany

Removed trees (0)
 Volume: 0 m³
 Basal area: 0 m²
 Economic value: 0 €
 Habitat value: 0

Remaining stand
 Volume: 234.5 m³
 Basal area: 29.3 m²
 Economic value: 24087 €
 Habitat value: 2125
 Dead wood: 0 m³

Retention trees (0)
 Volume: 0 m³
 Elite trees: 0
 Habitat trees: 0
 Economic value: 0 €
 Habitat value: 0

Info

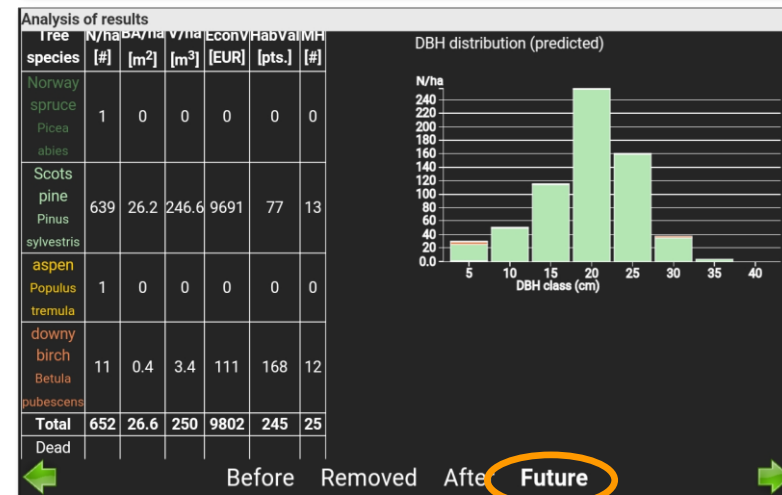
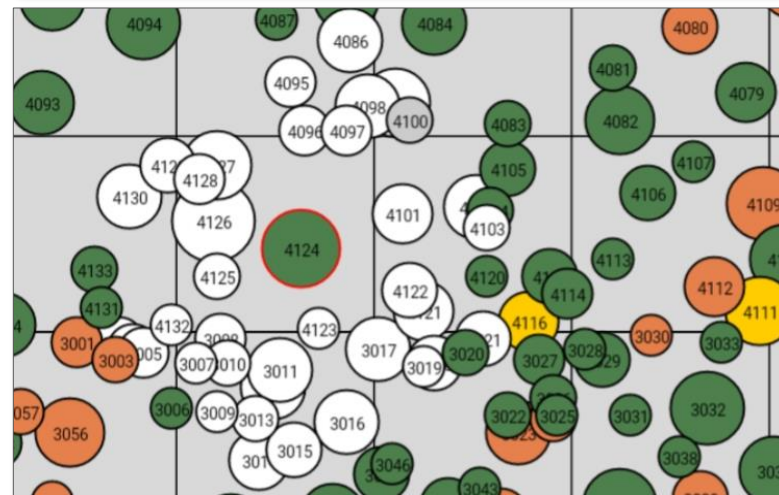
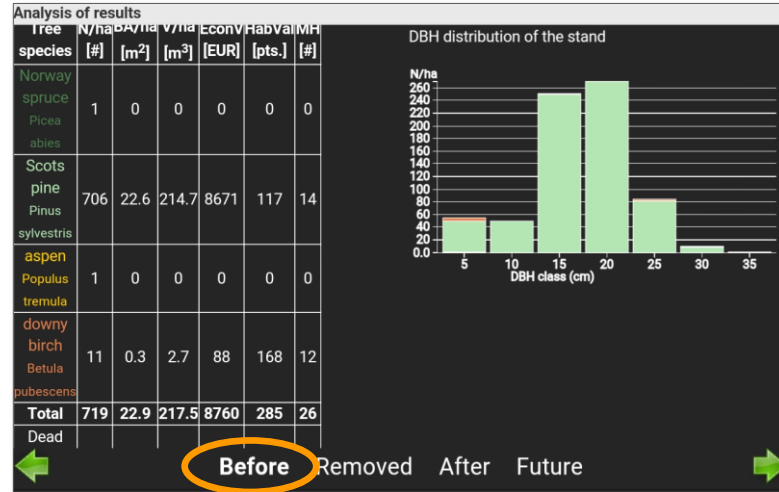
Natural regeneration

data:
 Polygon 1
 Info : beech; H av.>2m
 Density : 5000 N per ha

Sallershausen, Germany

I+ Software developments (2)

Stand development after intervention



Training, knowledge transfer, education



Equipping Irish forest owners, foresters and forestry students to manage diverse forests

Published June 9, 2022 by Jonathan Spazzi

[Tweet](#)

A new forest training network aims to enhance confidence and ability in managing a diverse forests in Ireland, writes Jonathan Spazzi, Teagasc Forestry Development Officer. Teagasc has partnered with EFI to make marteloscope training programmes and resources available to forest owners, foresters, students and other user groups.



Establishing a dialogue between forest management and nature conservation in Central Bohemia

23/09/2022 - admin



On the 9th of September, the Czech state forest enterprise *Lesy České republiky (LCR)* organized a joint meeting with colleagues from Germany's *Sachsenforst state forests* at the *Křivoklát forest*, in Central Bohemia. At the Marteloscope Křivoklát area, foresters from Saxony got to know the integrated approach to forest management of the Křivoklát area.

University Copenhagen

First year Master's students at Stenholtvang marteloscope (9/2022).
Plans

- Course "biodiversity in managed forest"
- Master's level courses on "silviculture in temperate forests" (Salten Langsø marteloscope)

Marteloscopes and software applied in other projects

- Ongoing
 - Holisoils (EU-H2020)
 - Multipliers (EU-H2020)
 - INFORMA (EU-HE)
 - OptFORESTS (EU-HE)
 - Integrate Finland (EU Reg. Dev. Fund)
 - Lifespan (EU Life+)
 - **GoProForMed (EU Life+)**
 - Martelkom (FNR, national)
- Completed
 - GoProFor (EU Life+)
 - Informa and FoReSite (national)
 - Dauerwald Project (national)
 - Luxembourg marteloscopes (national)



Photo: SergeyZudin

LIFE GoProFor MED

Improvement of the conservation status of forest habitats in the Mediterranean Biogeographical Region - applying restoration and conservation techniques and Close to Nature management (Duration: 01/09/22- 31/08/28)



Improve and/or not worsen the conservation status of 4 forest habitats in the Mediterranean area (9260, 9330, 9340, 9530*), by applying retention forestry and flexible *Close to Nature* management models



Establish a common transnational strategy for the conservation of target forest habitats based on network of IdS+CNF

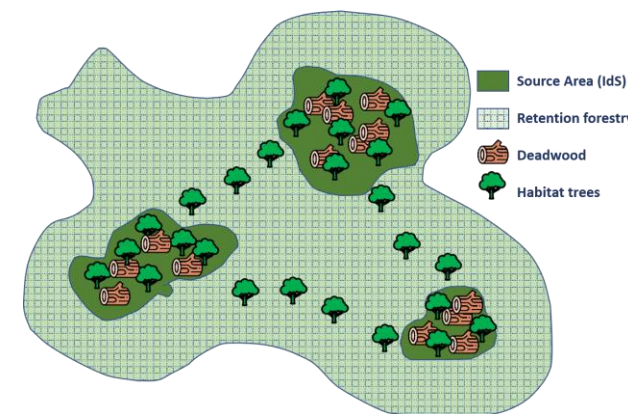
122 ageing patches (IdS) impacting on 3600 ha of target forest habitats
84 ha of demonstration areas based on CNF principles

Promote the adoption of suitable forest management among the main actors of forest management

48 marteloscopes in Mediterranean forest habitats (Italy: 24, Spain: 18, Greece: 6)
1600 people trained

3 Network among:

- (1) European foresters (Prosilva);
- (2) Mediterranean Model Forest managers;
- (3) International experts of Potential Biodiversity Index (IBP)





„ManagerWorkshop“, Bonn, 28-29.06.2022

Manager Forum

The screenshot displays the Integrate Network Forum website. At the top left is the logo for Integrate Network, facilitated by EFI. A navigation menu includes Home, About Us, Our approach, Members, Demo sites, Events, Forum, and News & Publications. A search icon and a Contact us button are in the top right. The main header features a large landscape image with the word "Forum" in white text and a breadcrumb trail: Home / Members / Forum. Below this is a secondary navigation bar with links for Forums, Register, Login, Recent Posts, and Members, along with another search icon. The main content area is titled "Integrate Network Forum" and includes a sub-header "Main forums" with an "Add topic" button. Three forum categories are listed: "Practical use of marteloscope sites" (0 / 0), "I+ Software" (0 / 0), and "Other issues" (0 / 0). At the bottom, a table header shows columns for Status, Author, Topics, Forum, Replies, Views, and Last Post.

Exploratory study: Challenges and experiences in adapting forest management to a changing climate – a practitioners' view

- Aim: collect examples at management level on how climate induced challenges are addressed in practice
- online survey - exploratory overview
 - Which practical measures are taken to adapt to, or mitigate the effects of climate change?
 - What is the role of scientific evidence in decision making and practice implementation?
 -?
- In-depth analysis of selected cases
- Investigate potentials of applying marteloscope sites for training on climate change adaptation and enhancing forest resilience



Thank you

andreas.schuck@efi.int

<http://iplus.efi.int/>