



Bulletin 3/4

LIFE GoProFor

**Good Practices for the
conservation of forest
biodiversity within
Natura 2000 Network**



GOPROFOR ACTIONS AND RESULTS

In over 4 years of activities, the **LIFE GoProFor** project has helped define and disseminate Good Practices, tools, methods and models useful in **integrating forest management with the conservation of biodiversity within Natura 2000 Network**.

At an Italian level, LIFE GoProFor contributed to:

- Increasing **awareness and knowledge of Natura 2000 Network**;
- Promoting **cooperation between stakeholders of the forestry sector and the conservation world**, with the involvement of a significant number of managers, professionals, technicians and operators;
- Increasing **the adoption of Good Practices in forest planning instruments**, both within and outside Natura 2000 Network.

At a European level, the project has seen a **significant network** developed both with LIFE projects and with key bodies, institutions and processes for forest management and biodiversity conservation, including the **Integrate Network**, the Biogeographic Process for the Mediterranean Region, the **FAO Task Force on Best Practices**, Egnos, EIP-AGRI and others.

It also rendered possible the publication of the call for the **preparatory project “Network of training activities for Natura 2000 site managers”**, the result of the participatory process initiated during a European workshop held in Palermo in 2019, thus helping to lay the foundations for developing a **European training system**.

The main activities results are presented in the bulletin:

- The **Database of Forest-related Good Practices** (pages 3–5);
- The activities of **training on forest management and conservation of biodiversity** (pages 6–10);
- The **National Network Table** (page 11);
- The **Potential Biodiversity Index** and its adaptation to the Italian context (pages 12–13);
- Application of the Potential Biodiversity Index in the processes of **forest planning** (pages 14–15).



GOOD PRACTICES DATABASE

The GoProFor project has collated into a single **Database** all the forest-related good practices from the LIFE Programme. The aim of the Database is to **capitalise on decades of experience in European projects**, providing easily-accessible, suitable and effective tools for the **conservation of forest biodiversity and forest management**. The Database is aimed at all those working within Natura 2000 Network and, in particular, those involved in forest management in this network of protected areas. The Database is in **Italian** and in **English**, and can be queried through search keys in Italian, English, French, Spanish and German.



WHAT IS A GOOD PRACTICE?

According to a commonly agreed upon definition, a **Good Practice** is an initiative (an approach, process, technique or technology) **successfully tested** and has the potential to be **easily transferred and/or adapted to other initiatives** with similar objectives. Success comes when the Good Practice has already provided **tangible and measurable results** in achieving a specific objective.

How to consult the Good Practices

The Good Practices are described in an articulate manner in order to comprehensively provide all useful information for replicability and transfer.

The description starts with **general information on the project** from which the Good Practice was extracted, information on the **context of application of** the Good Practice, then **detailed information** inherent to its implementation and useful for its replication.

The **specific objectives**, the **issues** that the Good Practice addresses along with target **forest habitats** and **species** it addresses are also cited.

When available, information is provided on the **material and instrumentation** necessary for executing the Good Practice, the **labour employed** and the **costs of implementation**.

Next is a report on the **results achieved**, also highlighting strengths and weaknesses emerged during its implementation.

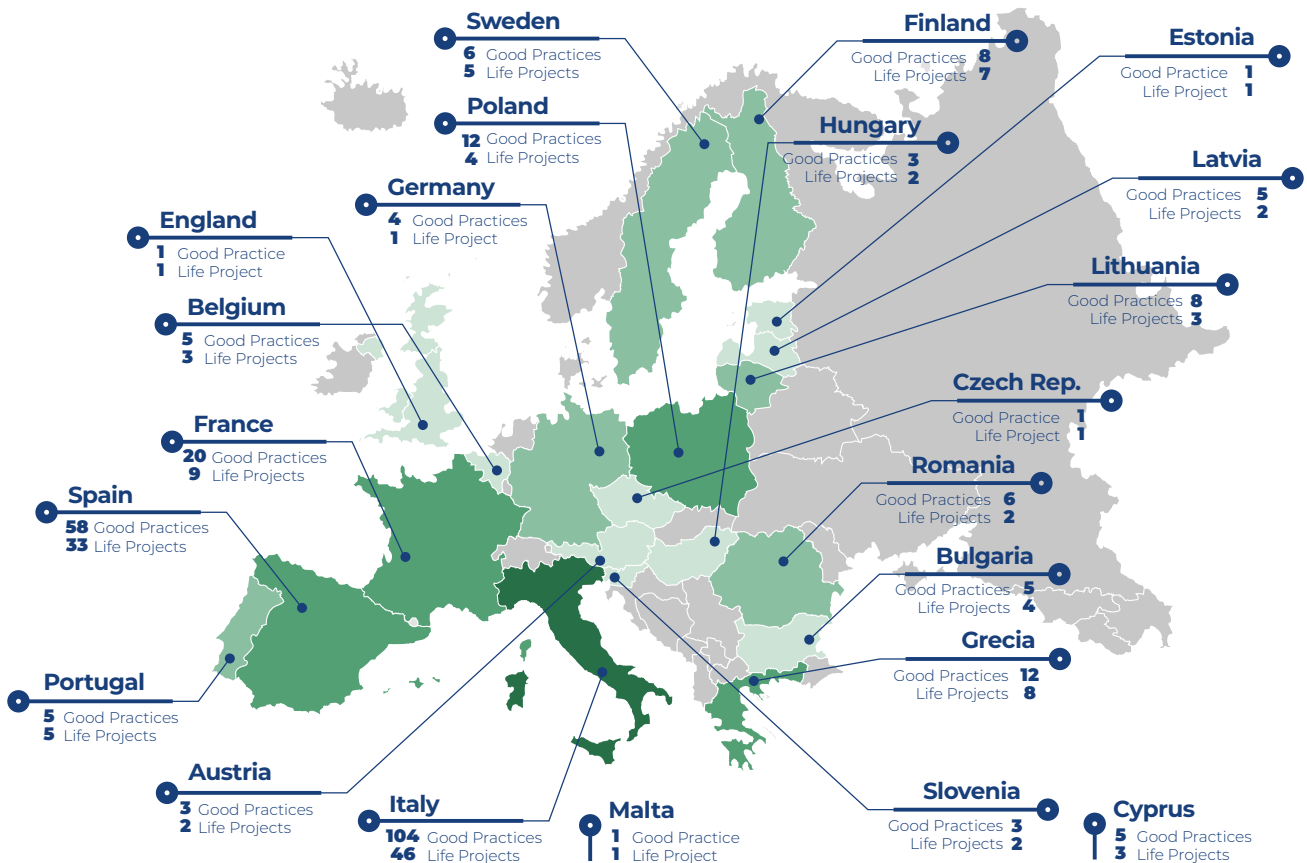
Additionally indicated is **whether the Good Practice has been replicated** and, if so, in which areas. The **quality and completeness of the information and documentation** used for describing the Good Practice is assessed, citing if **the Practice has been validated**.

Finally, **all available documentation is enclosed, whereby useful** for gaining a better understanding of the Good Practice.



Main results

To date, more than **270 Good Practices** from more than 140 LIFE projects have been implemented in **22 different European countries**. The Database has over 220 accredited users and is widely consulted (with more than 47,000 page views since its publication).



Geographical distribution of Good Practices and related projects, as selected by LIFE GoProFor.

GoProFor for the UN Decade Hub

To prevent, halt and reverse the degradation of ecosystems worldwide, the United Nations General Assembly has proclaimed 2021-2030 as the **UN Decade of Ecosystem Restoration**. To this end, a **Task Force** has been established, led by the Food and Agriculture Organisation (FAO) that has, amongst its objectives, the sharing and dissemination of Good Practices for restoration in all ecosystems.

The GoProFor project partners themselves collaborated with this “Task Force on Best Practices” to develop a common search engine to link practices gathered from various platforms, including the **GoProFor database** which was included in the UN Decade Hub in 2022.

For the GoProFor project, this was a **significant achievement**, resulting in a pledge to keep its database active for **10 years following** the end of the Project.

Multimedia collection of Good Practices

60 Good Practices were selected from 26 Italian LIFE projects, with the aim of creating a demonstrative network of Good Practices applied on the Italian territory. These Good Practices are pertinent examples that can also be replicated in other contexts of Natura 2000 Network. These practices were chosen based on their replicability and the possibility of observing the results in the territorial contexts in which they were applied.

For each of these 60 Good Practices, in addition to the in-depth fact sheet in the GoProFor Database, there are **specific tools for dissemination** to render their presentation more immediate and appealing and simultaneously increase knowledge and awareness of the contents of the Project itself.

Each of the 60 Good Practices was thus accompanied by:

- A short **video** (lasting from 4 to 9 minutes);
- A **presentation sheet**;
- A notice to stakeholders of the release of each video (via a **Newsletter** and **posts on the social media pages** of the Project and through **other media** addressed to the Italian forestry and environmental sector).

A smartphone app

Since this selection of Good Practices was also intended to be seen as directly applied throughout the territory, a specific **app was developed, offering directions for reaching the sites** where they have been implemented and applied. In addition to geographical directions, the app can be used for **consulting the tools for dissemination** related to the 60 Good Practices, both on a smartphone and directly on-site.

Some of the 60 Good Practices in this collection were also used to **support the training activities** realised by the Project and aimed at Italian technicians and operators. The entire **multimedia kit** is available on the website in Italian and English, so it may be consulted by **all stakeholders in forestry and biodiversity conservation** at a European level.



TRAINING ON MANAGEMENT AND CONSERVATION

At an Italian level, there are few initiatives for improving the degree of knowledge technicians have about the conservation practices of natural environments. **There is also a lack of integration between the various skills, there being few training opportunities involving naturalists and foresters working together towards common management objectives.**

The Italian context

There is often little knowledge regarding the effects of forest management activities on the conservation of forest biodiversity. To reduce the impact of this, a greater awareness of the elements of value for the forest environment in which one operates is indispensable, guaranteed through adequate professional training, which applies to all operators, both at an executive and management level. Interventions in the forest should, in fact, be planned and directed by capable technical personnel then carried out by experienced, motivated and adequately-trained workers. Yet, although licensed technicians have better knowledge and skills than forestry company operators, they are often not sufficiently up-to-date on the conservation aspects of the ecologically-valuable components of the forest. Finally, **even at the level of university and technical secondary education, there is little integration** between the topics of forest management and nature conservation. In the context of Natura 2000 Network, particular attention must



be paid to management practices and interventions that may have a negative impact on habitats and species of community interest.

GoProFor training

During 2021, the Project developed and proposed informal training activities on the topic of forest management for biodiversity conservation.

The main objective was to **increase knowledge on the need to understand how to work in the forest, taking into account multiple, environmental and socio-economic objectives**. The training activities were calibrated to **provide the knowledge, skills and tools** necessary to better direct management choices and silvicultural interventions that are attentive to the conservation of forest biodiversity.

These activities addressed a **broad audience with diverse professional and personal backgrounds**, with the no-less-important objective of **favouring opportunities for discussions and exchanges** between the forestry and conservation sectors.

Firstly, the Project identified the **minimum necessary basic knowledge and skills** that all forest workers should have in their personal background, especially for those operating in forest areas within Natura 2000 Network.

To this end, the profile of **“Expert in Forest Management for Biodiversity Conservation - Level 1”** was outlined, through a theoretical training plan with a **strong practical character**.



“Knowing that ...” and “knowing how to ...”

The **practical activities** constitute the most important and characterising aspect of training since in addition to “knowing that ...”, “knowing how to ...” is extremely important. The underlying philosophy is to best **use and capitalise on what is already available and has proven successful** on the European scene, both in terms of content and regards to training tools and methods, reorganised in such a way as to effectively achieve the set objectives. For this reason, extensive reference is also made in the theoretical activities to Good Practices derived from the experience of LIFE projects and collated in the ***Forest Good Practice Database***.



Geographical distribution of training areas and main characteristics of the Marteloscope events created within the context of CoProFor⁽¹⁾ and belonging to the Integrate Network.

⁽¹⁾The training area in Pennataro (IS-Molise) used the Marteloscope method already developed by the University of Molise in 2016.

In order to carry out the practical activities of the Level 1 course, the Project created **7 training areas** throughout Italy, to facilitate learner participation. In addition, the project realised **an additional 5 training areas** at the request of public bodies and institutions for internal training activities for their own personnel (Forestry Service of the Province of Trento, Forestry Consortium of the Alta Val di Susa – TO, University of Turin).

As part of the practical activities were the tools and approach developed by the **Integrate Network**, such as the recognition and classification in field of the **tree microhabitat** and the setting up and use of “**Marteloscope**” for simulating silvicultural operations and an opportunity for discussion and reflection in field. Finally, the Potential Biodiversity Index WAS applied, having originated from the French experience of the Centre National de la Propriété Forestière.

In-depth knowledge

To complement the basic knowledge and skills, the project then identified other **important in-depth knowledge** of salient topics pertaining to forests such as:

- Conservation of the main **forest wildlife groups**;
- Forest management of the main **invasive alien species**;
- Management of **aquatic ecosystems** embedded in the forest context;
- Enhancement of **ecosystem services** provided by the forests;
- Climate change and the impact on forests.

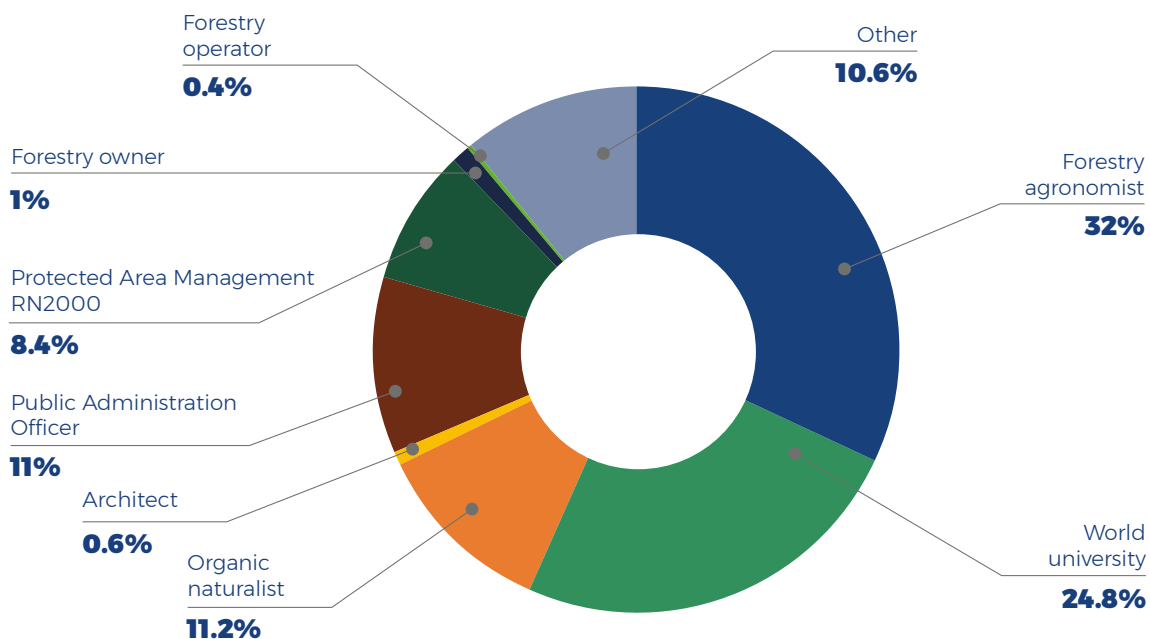
These are combined with the need to know how to navigate between the various European and national funding opportunities with a view also to self-entrepreneurship. The profile of “**Expert in Forest Management for Biodiversity Conservation – Level 2**” was then developed. The corresponding training plan consists exclusively in theoretical activities, split into training modules made available by the Project in **e-learning mode**.



Main results

Overall, **more than 500 Level 1 Experts** were trained, with **over 40** going on to acquire Level 2 status.

To give value to those who have acquired this specific knowledge and expertise, the GoProFor Project has published the ***list of "Experts"*** on its channels. In addition to the name, contact details and educational/professional background, the region in which the professional mainly works is also provided. The Project strongly promotes consultation and use of this list by Natura 2000 Network Managing Authorities, forest owners and forest enterprises operating within the Network.



Educational and/or professional background of Level 1 experts.

THE NATIONAL NETWORK TABLE

The National Network Table promoted by the Project has two main objectives. The first is to foster the **involvement and cooperation of and interaction between the players** in the forestry and conservation sector at an Italian level and secondly, to share and promote **the dissemination and transfer of tools, approaches, models and Good Practices** on the theme of forest management and biodiversity conservation.

The National Network Table was attended by representatives of the Ministries of the Environment and Agriculture, the Regional Forest and Biodiversity Services, the National Parks Network, the Rural Development Programme Management Authorities, the Carabinieri Forestry Officers, environmental associations, professional associations and trade organisations.

The activities of the Network Table

During two meetings, National Network Table participants, as part of a participative and collaborative process, raised the **critical factors perceived** at a national level, pertaining to:

- **Conflicts** between forest management and Natura 2000 Network management;
- **Implementation of Good Practices**;
- **Economic Policies** for the management and conservation of forests in the Natura 2000 Network.

From the contributions of the National Network Table, the Project developed a **Guidance document for managing forest habitats within Natura 2000 Network**. In line with new European and Italian policies on forests and biodiversity, the document suggests tools and approaches tested by the Project and useful for forest management in harmony with biodiversity conservation. In summary, the document contains:

- **Issues, critical factors and new challenges** concerning forest management and biodiversity conservation at an Italian level, in view of new European and Italian policies;
- **Proposals and solutions** to improve forest management in Natura 2000:
 - Examples of Good Practices;
 - New approaches to forest planning;
 - Analysis of silvicultural models;
 - Promoting the training of experienced technicians and operators.



POTENTIAL BIODIVERSITY INDEX

The Potential Biodiversity Index is a tool to help forest managers take biodiversity into account in day-to-day forest management.

An indirect and composite indicator

The assessment consists of assigning a score between 0 and 5 to **ten key factors**, identified as influencing the ability of forest stands to support animal, plant and fungal species. The sum of these scores gives the Potential Biodiversity Index and helps to **categorise the stand in a range from low- to high-bearing capacity**.

Determining the Potential Biodiversity Index of a forest is simple, quick and requires no special taxonomic knowledge.

THE TEN IBP'S FACTORS



7 factors pertaining to forest stands and management.

3 context-related factors.

In practice, it is sufficient to go through an **assessment of each of the ten factors**, such as the number of large dead trees or layers. The sampling method is chosen according to the objectives and characteristics of the stand. The best way is to assess the Potential Biodiversity Index in conjunction with another operation in the forest, such as when visiting a population to select plants before thinning (marking).

The Potential Biodiversity Index was created in 2008 in France for all forest types in the **different biogeographical regions within the country**. It was later extended to **Italy** thanks to the LIFE GoProFor project and, at the same time, to **Catalonia** through the LIFE Biorgest project.

This extension continues throughout **Spain** and **Greece** via the LIFE GoProFor Med project that was launched in 2022, whilst other European and Mediterranean countries are also testing the Potential Biodiversity Index.

In many cases, such as Italy, this extension is rather simple since the growing conditions are similar between countries, yet it is still necessary to adapt certain factors, such as "forest continuity over time", which depend on the local history of the forest.

International Committee of Experts

To **ensure harmonisation between the versions created for each country**, **a methodology has been proposed** with specifications and guidelines, along with a global organisation, with the International Committee of Experts. This committee is important for ensuring the coherence of Potential Biodiversity Index extension projects through the following actions:

- Providing **scientific and technical advice** on new versions of the Potential Biodiversity Index;
- Discussing the **ongoing projects**;
- Pooling **resources**.

A tool for Italian forests

In the case of Italy, thanks to the LIFE GoProFor project, the development of a specific version of the Potential Biodiversity Index was complemented by the **drafting of documents** including:

- The **Ten Key Factors for Species Diversity in Forests** handbook that explains the role and importance of biodiversity in the functioning of forest ecosystems;
- The **Field Sheets** for assessing the Potential Biodiversity Index;
- The Methodology document and **Excel spreadsheet** to record scores and create graphs.



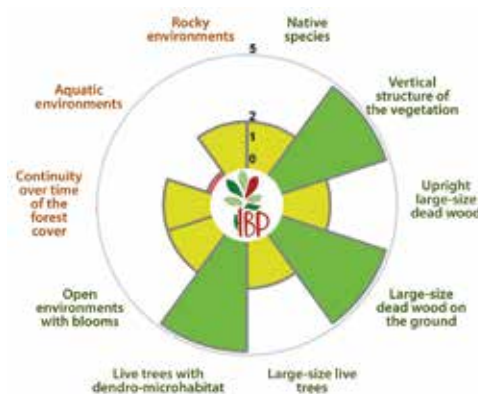
All Potential Biodiversity Index documentation (in Italian) is available on the GoProFor project website, www.lifegoprofor.eu.

Potential Biodiversity Index for improving biodiversity in management

The Potential Biodiversity Index will help managers to identify the elements – especially the trees – favourable to biodiversity and thus to be preserved versus the factors that could be improved.



Example of a radar diagram created with Potential Biodiversity Index scores – a good way to identify differences between factors.



Some ways to improve each factor are proposed in the handbook “Ten Key Factors for Species Diversity in Forests”. More generally, species diversity can be improved by increasing the habitats corresponding to the 10 factors and ensuring their continuity, both in terms of time and space.

The Potential Biodiversity Index offers managers a **new look at the forest**. This is why the Potential Biodiversity Index is often used to explain biodiversity, **not only to professionals but also to owners and, more generally, to all people interested** in forest biodiversity.



EMBERGER C., LARRIEU L., GONIN P., PERRET J., 2019 - **Dieci fattori chiave per la diversità delle specie in foresta. Comprendere l'Indice di Biodiversità Potenziale (IBP)**. Paris: IDF, 58 pages

LARRIEU L., GONIN P., 2008 - **L'indice de Biodiversité Potentielle (IBP): une méthode simple et rapide pour évaluer la biodiversité potentielle des peuplements forestiers**. Rev. For. Fr. 06: 727-748.

APPLYING THE IBP TO FOREST PLANNING

Although planned forest areas in Italy are only 19% of the national forest area, it is precisely in **forest planning that broader management strategies can be implemented**, including those pertaining to the conservation of habitats and forest biodiversity in general.

To improve forest management and make it more suitable for maintaining ecosystem efficiency and biodiversity, the **Potential Biodiversity Index assessment can be integrated into the ordinary technical operations** necessary to draw up a Forestry Plan.

In return for an additional economic investment in terms of the technical commitment for drafting the plan, the application of the assessment of potential biodiversity makes it possible to formulate supplementary recommendations to ordinary forest management in favour of **forest diversification** and the **conservation of biodiversity**.

To facilitate an easy and quick application of this approach in the implementation phase of the Plans, the LIFE GoProFor Project produced specific **methodological guidelines**. The proposed methodology allows the relevant information to be provided for development of biodiversity-conscious management guidelines and, in particular, contributes to the achievement of **two main management objectives** according to the prevailing functional orientation of the area being planned:

- If the **areas are predominantly productive or protective-productive**, then the objective will be to unite the cultivation recommendations provided in a Forest Management Plan with suitable consideration given to biodiversity factors.
- In the event of **predominantly naturalistic areas**, the aim will be to develop a conservation approach to safeguard forest biodiversity in woodlands under naturalistic management guidelines.

The methodology covers different ways of applying the assessment, depending on the management orientation of the area under investigation.



Predominantly productive or protective-productive orientation

The methodology foresees **sampling by sample plots** with an intensity ranging from 10 to 20% of the forest area, depending on the variability of the forest stands.

The results of the assessment are given by stand, understood as a homogeneous compositional physiognomic unit, which may concern one or more parcels of the plan. The outputs consist of highlighting strengths and weaknesses, related to the 10 Potential Biodiversity Index factors, and indicating which corrective elements to apply in the short- and medium-term.

Predominantly naturalistic orientation

First of all, the methodology involves the identification of the stands (or portions of them) that, due to their conditions of development and diversity, can be considered as **“source areas” of biodiversity**.

The attribution of “source area” status to a stand is achieved in terms relative to the overall average condition of the entire target forest area.

The identification of source areas is prioritised in parcels with the following characteristics:

- Forest sub-parcels included within **Natura 2000 Network and/or other protected areas**;
- Forest sub-parcels with **natural evolution**;
- Exclusion of stands of artificial origin;
- **Age > 45 years**;
- **Forest coverage > 60%**;
- **Multi-species forest composition**;
- Average slope < 70%.

The purpose of such stratification is to identify stands with a higher probability of recording **good Potential Biodiversity Index** values or that present at least the characteristics of the specific **maturity** and **composition** suitable for use in a naturalistic function.

The minimum objective is to identify one or more source areas, distributed across the stand, with **a minimum extension of 5% of the surface area**. Within these areas, and in contiguous forest parcels, the methodology involves a Potential Biodiversity Index sampling with an **incidence of at least 20%** compared to the forest area.

In this case, the determination of the Potential Biodiversity Index serves to identify silvicultural interventions aimed at significantly improving the Potential Biodiversity Index values measured for the stand, so as to enhance its function as a biodiversity source area.

A similar activity is carried out in the adjoining forest parcels.



GoProFor

LIFE17 GIE/IT/000561



Good Practices implementation network for FOREST biodiversity conservation
To implement the network of Good Practices for conservation of forest biodiversity
www.lifegoprofor.eu | www.lifegoprofor-gp.eu | www.facebook.com/goprofor



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Lazio Region



Molise Region



Tuscany Region

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