

# TRAVAILLOSCOPE IN RAMBROUCH

TARGETED FORESTRY WORK  
IN CONTINUOUS COVER FORESTRY

**FORÊT**  
• NATURE

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# 1 INTRODUCTION

Nowadays, many foresters are looking for alternatives to decrease the investment costs related to forest renewal (planting and care). Rising energy and labour costs put additional pressure on the profitability of our forests. Many are turning to more cost-effective forestry, taking greater advantage of natural dynamics and continuous cover forestry. In addition, the current context of climate change and biodiversity loss is increasingly being taken into account in forest management. Even-aged single-species softwood stands, which are particularly affected by health threats, are not without their limitations. There is an urgent need to achieve greater forest resilience from both an economic and ecological point of view.

With continuous cover forestry, work is limited to a strict minimum, which is made possible by the longevity of the cover and the support of the young tree stems. If the optimal conditions are not met (large fauna, competition, weeds, etc.) and the natural dynamics move away from the forest manager's objective, forestry work is necessary. Without this, existing opportunities will be lost. The targeted work differs from traditional practices in that, instead of a «single-task» forester working systematically, instead there is a forester who acts autonomously and in a multifunctional way by focusing on what makes the stand **valuable**.

The travailloscope ("workscope"—stimulating the work of forestry workers) is, like the marteloscope ("hammerscope"), a life-size exercise that deals with themes related to forestry work, such as:

- Observation and understanding of the natural dynamics of young stands
- Identification of development phases and key moments of intervention
- to know the tools, techniques and their costs

« The establishment of a future generation of trees capable of very high-quality output never requires full-scale operations. Existing or fostered favourable conditions on small plots are sufficient to achieve this demanding goal »

GEORG WILHELM, HELMUT RIEGER  
(LANDESFÖRSTEN RHEINLAND-PFALZ)

The purpose of the training associated with the travailloscope is to strengthen the skills of the professionals responsible for carrying out forestry work. Indeed, the training of forestry workers and the recognition of manual work, combined with technical reflection, are the basis for quality work.

The subject of forestry work is very broad and there is a real need for training for all those involved in forestry. In order to make the material digestible, we have chosen to divide this theme into several different and complementary thematic courses. The Rambrouch circuit (presented in Chapter 3) focuses on:

- the management of young mixed stands (autoecology and synecology),
- the renewal of bark-affected stands,
- the management of large-scale fauna damage,
- the intensity of work,
- and the designation of options

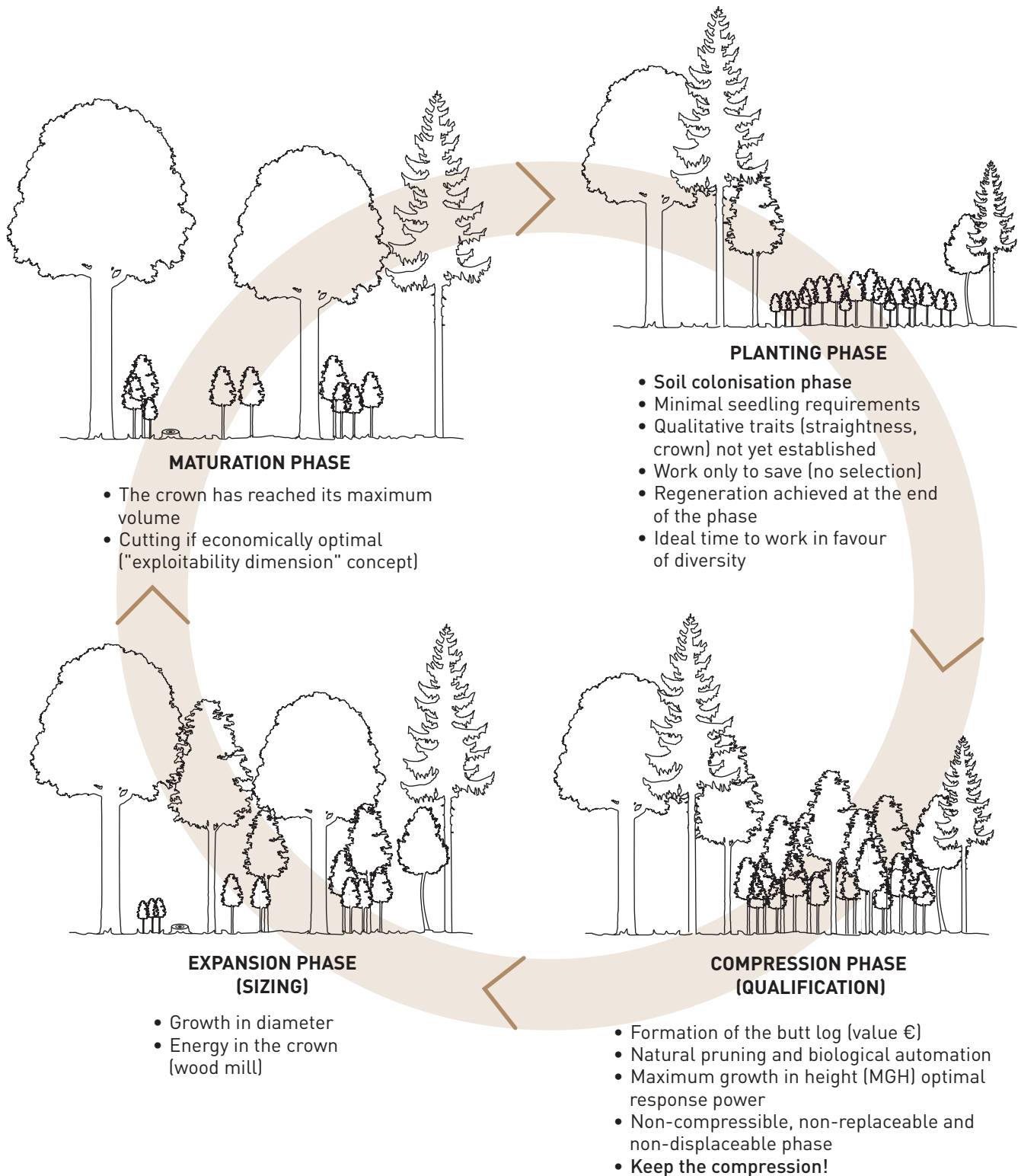
However, it is impossible to predict with precision the evolution of life and therefore of the stems presented in the exercise. Mortality, climate change, competition, wildlife, changes in the timber market, etc. are all unpredictable factors. Therefore, the travailloscope has to work with a number of assumptions to give representative indicators of the choices made.

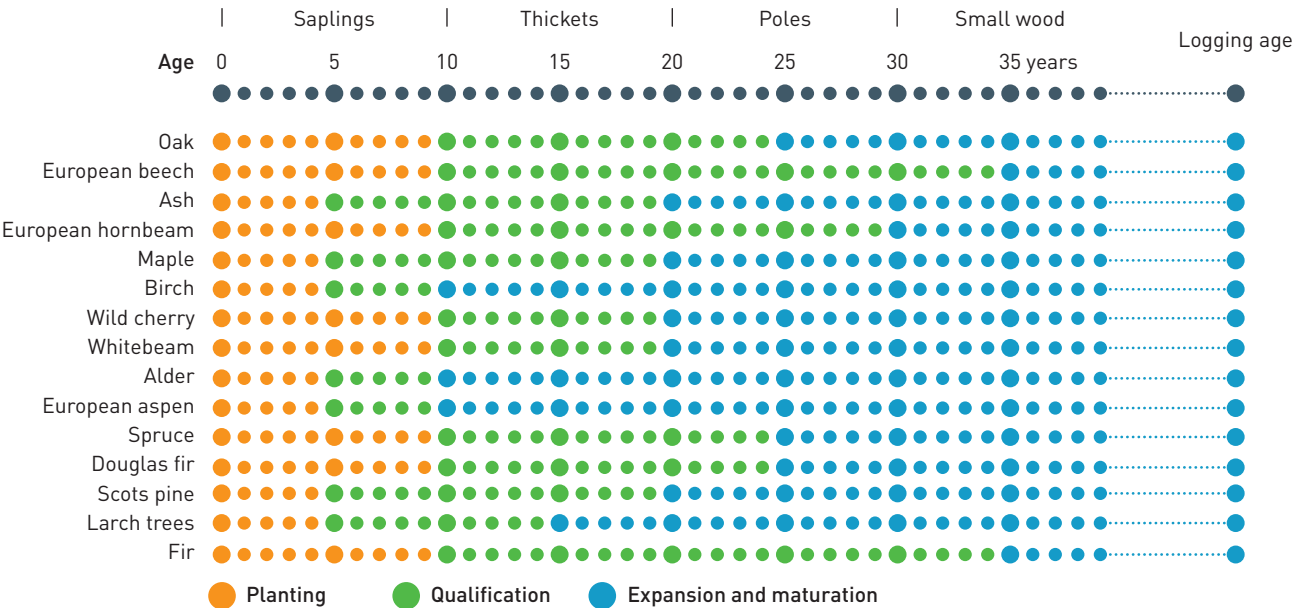
## 2 THE NATURAL EVOLUTIONARY PHASES OF TREES

With the QD method, 80% of net income is derived from only 20% of wood production.

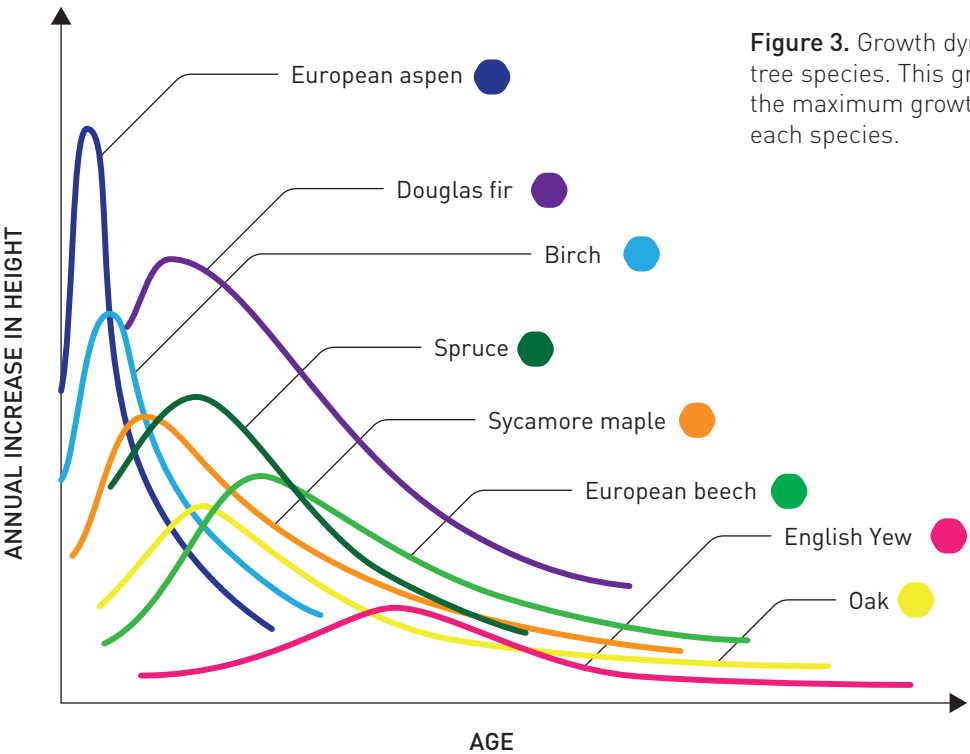
GEORG WILHELM, HELMUT RIEGER  
(LANDESFORSTEN RHEINLAND-PFALZ)

Figure 1. The four natural stages of evolution.





**Figure 2.** Natural evolutionary phases according to age and stage of development. The average age of exit from the compression phase is 20 years but this figure varies from species to species



**Figure 3.** Growth dynamics of some common tree species. This graph shows at which age the maximum growth in height is reached for each species.

### 3 TRAVAILLOSCOPE IN RAMBROUCH

This mixed hardwood and softwood travailloscope is installed in the triage de Rambrouch area (Luxembourg). For several years now, the sorting work has been giving more and more space to natural dynamics. The proprietor, the municipality of Rambrouch, supports this approach in order to move towards a continuous cover forestry.

Natural regeneration is abundant in the travailloscope area despite a high density of large fauna (roe deer, stags, wild boar). Indeed, a lot of damage is visible in the field (grazing, scratching).

The average altitude of this forest is 470 m. Most of the soils are of the Gbbfi1 type (stony loam soils with an admixture of shale and slate with almost entirely natural drainage) with some areas having an alternating hydrological regime. The forest is generally well diversified. There are about 12 species of trees in the Rambrouch travailloscope, mainly native oaks, spruce, mountain ash, larch, beech and birch.

Felling tracks are commonly used on the site, both for hardwood and softwood trees, in accordance with the ANF forestry admission's instruction. The municipality of Rambrouch relies on four workers to carry out forestry work, an advantage for the targeted work method.



## POINT 1 (A22)

### EXERCISE BY ZONE

#### Soil acronym.

Zone 1 (0,73 ha) : Ghxfia1 (30 %) et Gbbfi1 (70 %)

Zone 2 (0,62 ha) : Ghxfia1 (5 %) et Gbbfi1 (95 %)

**Soil.** Stony loam soils with an admixture of shale and slate with an alternating water regime (Ghxfia1) and stony loam soils with an admixture of shale and slate with almost entirely natural drainage (Gbbfi1).

**Background.** Area of bark-beetle infected spruce clear-cut in 2020 as a result of numerous windfalls following thinning for health reasons. In successive gaps, diversified natural regeneration was able to take place, notably among spruce, mountain ash, beech, etc. Felling occurred on felling tracks without rotary-chopping.

A few windrows have been made. A certain amount of saplings were already present before the clear cut, mainly in zone 1 where the stand was lighter. The area has some rush, bramble, broom, hair grass, raspberry



and other grasses. No intervention has been carried out in this area. The presence of the forest road creates a barrier to the drainage of surface water, so that part of zone 1 has soils with an alternating water regime, i.e. soils that are very dry in summer and very wet in winter.

Work	Method	Type	Code	Zone (1, 2 or 1+2)	Intensity	Favoured or affected species
Rien			0	.....	.....	.....
Cleaning						
	by cutting					
		In the open	1	.....	.....	.....
		By support point	2	.....	..... m	.....
	by girdling					
		In the open	3	.....	.....	.....
		By support point	4	.....	..... m	.....
	by breaking					
		In the open	5	.....	.....	.....
		By support point	6	.....	..... m	.....
Pruning						
		In the open	7	.....	.....	.....
		Situated	8	.....	..... trees	.....
Formative pruning						
		In the open	9	.....	.....	.....
		Situated	10	.....	..... trees	.....
General and formative pruning						
		In the open	11	.....	.....	.....
		Situated	12	.....	..... trees	.....

Work	Method	Type	Code	Zone (1, 2 or 1+2)	Intensity	Favoured or affected species
Planting						
		• In the open	13	.....	.....	.....
		• In a cell (12 plants)	14	.....	..... cells	.....
		• Individually	15	.....	..... trees	.....
		• In strips	16	.....	.....	.....
Protection						
		• individuelle				
		• Repellent	17	.....	..... trees	.....
		• Sheathing	18	.....	..... trees	.....
		• collective				
		• Enclosure	19	.....	.....	.....
		• Cell	20	.....	.....	.....
Thinning out						
			21	.....		
Bramble combating						
		• In the open	22	.....		
Manual removal of bracken						
		• In the open	23	.....		
		• Located in the cells	24	.....	.....	.....
Reversible scarifier						
		• In the open	25	.....		
		• Located in the cells	26	.....		
Forestry netting						
			27	.....	..... m	
Rotary-chopping						
			28	.....		

## POINT 2 (B22)

### EXERCISE BY STEM

**Soil acronym.** Gbbfi1

**Soil.** Stony loam soils with an admixture of shale and slate with almost entirely natural drainage.

**Background.** Planting of sessile oak, beech and black alder of about 25 years old. Some rowan, spruce and native ash trees are also present. This stand suffers from many late frosts, which slows down growth. Clearing work in early years, but no more work done for about 15 years. Before planting, it was a spruce forest.



#### Possible work

None  
Pruning  
General and  
formative pruning  
Formative pruning

Removal:  
• Cutting  
• Girdling  
• Breaking  
Individual protection

Stem No.	Work to be done	Option ?	Comment
Ex.	Pruning	yes	Good stem
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
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Stem No.	Work to be done	Option ?	Comment
29			
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## POINT 3 (C22)

### EXERCISE BY ZONE

**Soil acronym.** Gbbfi1

**Soil.** Stony loam soils with an admixture of shale and slate with almost entirely natural drainage.

**Contexte du point.** Plantation of European larches of about 12 years old at a wide spacing (4 x 4 m), with high mortality but enriched with natural regeneration in a mixed combination. Before planting, it was a spruce forest on wet soils with frequent windfalls. Around 2010, there was a resulting clear cut.

Areas of 'blockage' persist, preventing natural regeneration from occurring. No forestry work carried out to date. Felling tracks are not present and the felling machinery has been running through the area without restriction.



Work	Method	Type	Code	Zone (1, 2 or 1+2)	Intensity	Favoured or affected species
Rien			0	.....	.....	.....
Cleaning						
	• by cutting					
		• In the open	— 1 —	.....	.....	.....
		• By support point	— 2 —	.....	..... m	.....
	• by girdling					
		• In the open	— 3 —	.....	.....	.....
		• By support point	— 4 —	.....	..... m	.....
	• by breaking					
		• In the open	— 5 —	.....	.....	.....
		• By support point	— 6 —	.....	..... m	.....
Pruning						
		• In the open	— 7 —	.....	.....	.....
		• Situated	— 8 —	.....	..... trees	.....
Formative pruning						
		• In the open	— 9 —	.....	.....	.....
		• Situated	— 10 —	.....	..... trees	.....
General and formative pruning						
		• In the open	— 11 —	.....	.....	.....
		• Situated	— 12 —	.....	..... trees	.....

Work	Method	Type	Code	Zone (1, 2 or 1+2)	Intensity	Favoured or affected species
Planting						
	• In the open	— 13 —	.....	.....	.....	.....
	• In a cell (12 plants)	— 14 —	.....	.....	..... cells	.....
	• Individually	— 15 —	.....	.....	..... trees	.....
	• In strips	— 16 —	.....	.....	.....	.....
Protection						
	• individuelle					
	• Repellent	— 17 —	.....	.....	..... trees	.....
	• Sheathing	— 18 —	.....	.....	..... trees	.....
	• collective					
	• Enclosure	— 19 —	.....	.....	.....	.....
	• Cell	— 20 —	.....	.....	.....	.....
Thinning out ————— 21 — .....						
Bramble combating						
	• In the open	— 22 —	.....	.....	.....	.....
Manual removal of bracken						
	• In the open	— 23 —	.....	.....	.....	.....
	• Located in the cells	— 24 —	.....	.....	.....	.....
Reversible scarifier						
	• In the open	— 25 —	.....	.....	.....	.....
	• Located in the cells	— 26 —	.....	.....	.....	.....
Forestry netting ————— 27 — .....						
Rotary-chopping ————— 28 — .....						

## POINT 4 (D22)

### EXERCISE BY STEM

**Soil acronym.** Gbbfi1

**Soil.** Stony loam soils with an admixture of shale and slate with almost entirely natural drainage.

**Background.** Plantation of European larches of about 12 years old at a wide spacing (4 x 4 m) high mortality but enriched with natural regeneration in a mixed combination. Before planting, it was a spruce forest on wet soils with frequent windfalls. Around 2010, there was a resulting clear cut. No forestry work carried out to date. Felling tracks are not present and the felling machinery has been running through the area without restriction.



#### Possible work

None  
Pruning  
General and  
formative pruning  
Formative pruning

Removal:  
• Cutting  
• Girdling  
• Breaking  
Individual protection

Stem No.	Work to be done	Option ?	Comment
Ex.	Pruning	yes	Good stem
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
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14			
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Stem No.	Work to be done	Option ?	Comment
28			
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**Photo credits, graphic design and layout.**

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# Travailloscope in Rambrouch

## Targeted forestry work in Continuous Cover Forestry

**Maude Vandenaabeele**

Forêt.Nature

Forestry work is a major commitment for foresters.

Many foresters are looking for alternatives to reduce investment costs related to forests in the current economic climate. Many are turning to more cost-effective forestry, taking greater advantage of natural dynamics and continuous cover forestry.

The purpose of the training associated with the travailloscope is to strengthen the skills of the professionals responsible for carrying out forestry work. Indeed, the training of forestry workers and the recognition of manual work, combined with technical reflection, are the basis for quality work.

As the topic of forestry is very broad, it has been deliberately divided into several different and complementary thematic courses. This course (Rambrouch) focuses on: management of young mixed stands (autoecology and synecology), renewal of bark-affected stands, management of large-scale wildlife damage, intensity of work and designation of options.

This training is offered by Forêt.Nature with the support of Wallonia, the European Union and the Administration de la nature et des forêts du Luxembourg.

Training support document:

**Travailloscope in Rambrouch. Targeted forestry work in CCF**

Information and registration on [foretnature.be](https://foretnature.be)



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