

# LIVING FORESTS FOR TOMORROW'S WORLD?

Let's take a look at a forest landscape of today, with all its qualities and fragilities

#### 1 Recreational activities.

#### 2 Continuous cover.

When the forest is managed with a continuous cover approach, the soil is never left bare and the forest atmosphere (shade, moisture, vegetation) is preserved at all times.

# 3 Mixed-species, multi-aged stand.

A forest comprising different species of trees in a single stand is more resistant than a monoculture, being less vulnerable to insect attacks and benefit from natural disease.

Multi-aged stands are more resistant to disturbances, as their trees are more balanced as individuals (with more developed crowns).

# 4 Mixed natural regeneration

Trees that have self-seeded cost nothing, and are highly resistant. They selection opportunities, and demonstrate "survival of the fittest" and most adaptable.

#### 6 Fragility of single-species. even-aged stands.

Single-species stands (comprising one species of tree) are more susceptible to disease and to attack by insects. Competition between trees for the same nutrients and water is also more severe.

# **6** Visual impact of clearcutting

It causes long-term damage to the forest ecosystem (removal of the forest atmosphere, loss of biodiversity, compaction and rapid mineralisation of the soil, etc.) and leads to a significant loss of stored carbon.

# 7 Additional costs arising 9 Continuous cover, from high population density of large animals. at a time.

The hunting approach is failing to Cutting down several individual achieve the objective of controlling trees, while leaving the rest of numbers. Because large animals the stand intact, preserves the (stags, deer and boar) are too numerous, saplings have to be pro-sity it supports. When a tree is tected, which significantly increases harvested, it frees up a space for the costs of rejuvenating the forest. a new one, and allows light to

# **B** Erosion, plus loss of carbon and mineral elements after rotary chopping.

It leads to soil compaction, and biodiversity.

# harvesting one tree

ecosystem and all the biodiverpenetrate the forest interior and nourish young saplings.

#### 10 Extraction using horses to avoid soil compaction.

provides favourable conditions for Protecting the soil is a crucial vigorous, fast-growing plants (such element of CCF, which is as grasses, ferns and brambles). always seeking to avoid soil This practice leads to uniformity in compaction, erosion or loss of the vegetation and diminishes the the soil's organic carbon.

# 11 Harvesting lumber.

CCF produces high-quality lumber and a regular, harvesting of trees that have reached maturity, while allowing other trees from such exposure. to continue growing , and preserving the ecosystem and its biodiversity.

# 12 Trees of different ages.

quickly from extreme young trees in the understorey, ready to take over.

# **13** Carbon stays in the ecosystem, thanks t continuous cover.

Large trees – significant carbon frequent net income, even sinks – are always present and if producing from a single maintained. CCF does not leave stand. It enables individual the soil bare, and thus avoids the sudden mineralisation and soil carbon losses that result

#### 14 Plant machinery movements are limited to the felling tracks.

These stands recover more To preserve the soil, the trees and natural regeneration, it is essenevents, notably thanks to tial that plant machinery moves the constant presence of around within a network of predefined routes (felling tracks).

# **15** Gentle, localised action.

Trees that have self-seeded develop in harmony with their surroundings, and their quality improves thanks to natural selection and learning from their elders. They have slender branches and less of a tendency to fork during growth. Through targeted, economical, light-touch action, the forester guides the mix and nurtures quality.

# **16** Conservation of habitat trees.

Preserving deadwood in the stand, and trees that provide micro-habitats or niches, helps to maintain a functional ecosystem.

#### **17** Single-species saplings planted all at the same time.

Exposed to the elements, young tree plantations suffer more than mixed/older ones from dry conditions, direct sunlight, wind and snow. Due to the droughts and climatic changes of recent years, numbers of failed plantations are rising.

# 13 Fragility of singlespecies stands.

Attacks by insects or pathogens can decimate a stand in a matter of days, and all the faster if the stand consists of identical trees.



#### 19 Imbalance between forest and animals, due to high population of large animals.

# 20 Multi-service forest.

Because it involves managing stands one tree at a time, CCF enables refined adjustments that can factor in many important elements: recreation, protecting the water resource, landscape, and the forest as a source of positive effects: improved physical and emotional well-being, artistic inspiration, heritage value and more.

#### 21 Natural regeneration under the cover of tall trees.

With CCF, the forest is constantly renewing itself. Seedlings enjoy favourable conditions for their development, under the protection of tall trees. Thanks to continuous cover, the forest floor is protected from direct sunlight, wind and sudden changes in temperature.

#### 22 Protection of the water resource.

#### 3 Open spaces between forest stands.

Open spaces naturally play an important role in the forest ecosystem. They allow development of the first stages in the forest's natural cycle (the pioneering initial stages), and the biodiversity that establishes itself alongside. With the CCF approach, the forester harnesses these natural dynamics and guides them to steer the future make-up of the forest, while main taining a diverse species mix.

#### 24 Preservation of deadwood.

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# **25** Carbon loss following clearcutting.

Half of the carbon in a forest ecosystem is stored in its soil. When the soil in a forest is left bare, for example after clearcutting or significant felling, a large proportion of the organic carbon in the soil is released into the atmosphere as a greenhouse gas.

# **26** Mixed stands.

A forest comprising different species of restored... trees in a single stand is more resistant than a monoculture, being less vulnerable to insect attacks and disease. This kind of stand optimises the sharing of resources such as water and minerals, because the trees' time frames and requirements, and strategies for managing them, vary according to the age and species of each tree.

#### 27 Soil damage (ruts) following machine operations.

If it were not mandatory for plant machinery to keep to the felling tracks, all the soil in the forest would be compacted by the vehicles' movements. It takes just one or two vehicle movements on soil to destroy its structure, and up to ten centuries for that structure to be

# 28 High-quality logs

#### 29 Protective fence to keep out large animals.

**30** Compaction of the soil by plant machinery.

#### **31** Lack of stability in dense stands of even-age trees.

Storms, which are predicted to occur more and more frequently, lead to cascades of toppling trees. Very dense stands comprising trees that have undergone crown reduction are particularly at risk.

# 32 Impact of clearcutting on the ecosystem and landscape.

When a stand is uniformly cut down, the suddenly denuded soil begins to be eroded by wind and rain. Also, these stands are usually replanted all at the same time, which is expensive and risky, whereas letting the area regenerate naturally means we can join forces with nature free of charge.

