FOREST BIODIVERSITY

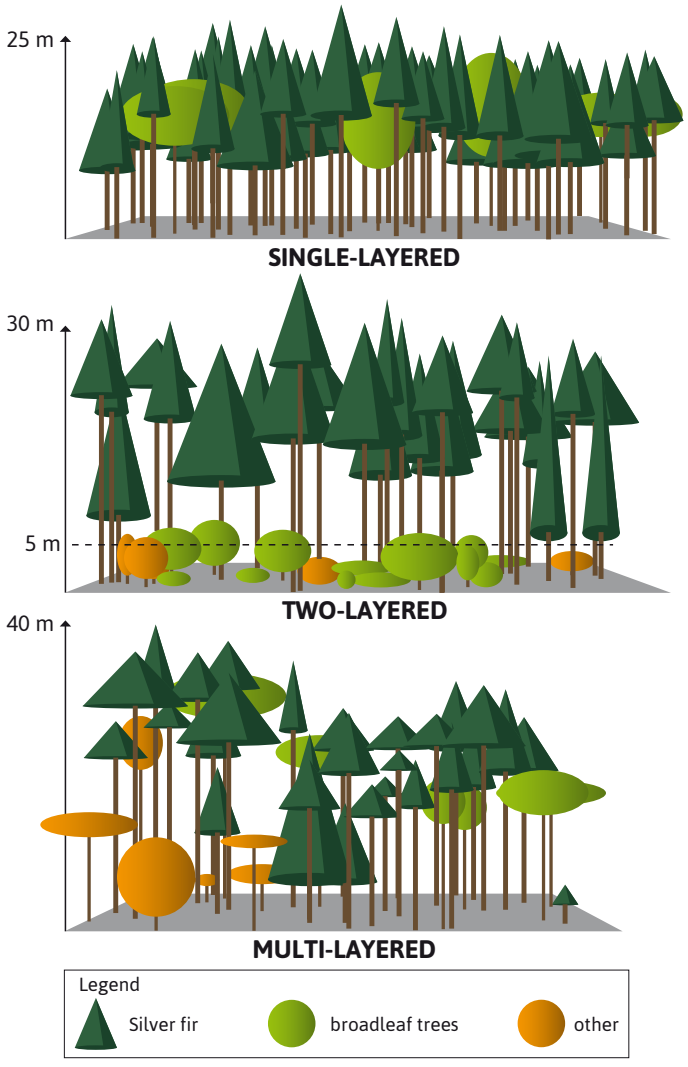
FORESTA ITALIANA CERTIFICATA
CANSIGLIO
BOSCO DA REME DI SAN MARCO

The *diverse* diversities

To describe the biodiversity of a forest ecosystem we need to look beyond **genetic diversity** (the genetic pool of a population of individuals of the same species) and **specific diversity** (or diversity of species, i.e. the number of diverse species inhabiting an ecosystem and their mixture).
We should also make reference to (i) **structural biodiversity**, that is, the forest's horizontal structure, and (ii) tree size variability.

Structural diversity

The horizontal structure of the population refers to tree density, the *horizontal distribution* of the trees, namely the way they are spatially arranged and the *degree of canopy cover*. **Cover** is expressed as a percentage of forest floor covered by the canopies.
The BIOΔ4 project defined a **set of indicators** that regard the different components of structural diversity.
The interpolation of structural diversity and specific diversity data will give us *smart* **effective and practical-to-use indicators** to quantify forest biodiversity.



(Source: Bianchi and Paci, 2008)

Vertical structure of the forest

The vertical structure of the forest can be single-layered, two-layered or multi-layered, depending on whether there are one, two or multiple levels.

Even-aged populations are characterised by a **single-layered** vertical structure. Trees are more or less the same height and their green canopies are within a single layer.

Uneven-aged populations often present a **two-layered** or multi-layered vertical structure; the shade-tolerant species are part of the dominated layer.

Mixed and **multi-layered** forests have good diameter diversification, as a result of which structural diversity, both horizontal and vertical, and in general, biodiversity, are expressed to a greater degree.

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