


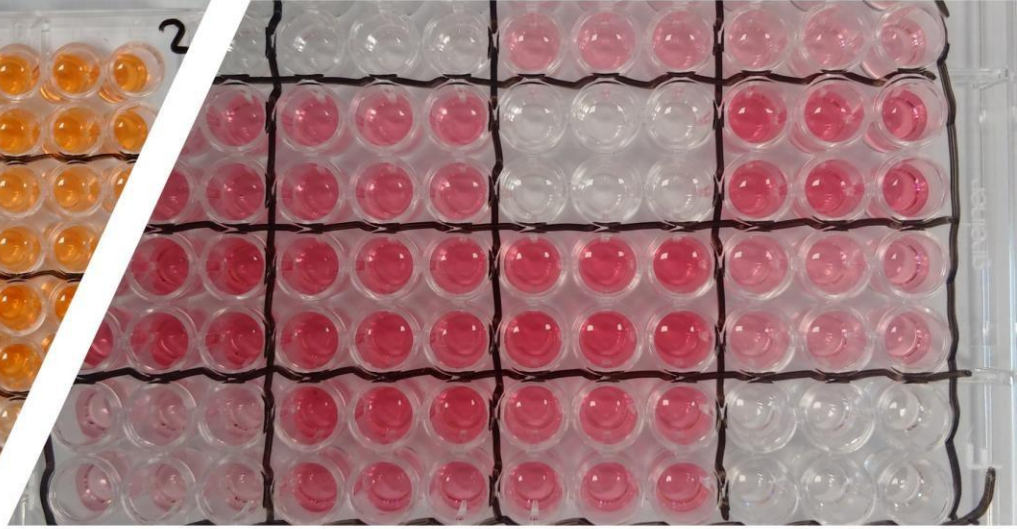


Seasonal growth in temperate deciduous forests

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How do biodiversity and fertility affect budburst timing in forests?

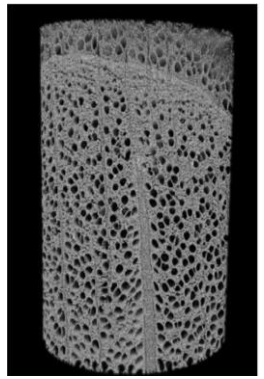
FIELD-WORK: 90% SPRING 2026 – 10% AUTUMN 2026;
Zonienwoud and Peerdsbos

Whole-tree water use during drought and link to senescence

FIELD-WORK: SUMMER 2026; Zedelgem

Measuring seasonal wood production (with X-ray) and link to forest CO_2 fluxes

HIGH-TECH with LIMITED FIELDWORK



Some topics more suited for MP, other for IP – ask for details

How do biodiversity and fertility affect budburst timing?

Spring **budburst** marks the beginning of the photosynthetic period. It's timing delicately balances maximizing **carbon gains** and minimizing frost risks and is finely tuned to our **climate**. However, other factors such as stand **species composition**, **fertility**, **density**, and tree **traits** may also influence when trees exactly leaf out.

In this project we will go into the field, visiting 2 **natural forest sites** in Brasschaat and the Zoniënwoud to investigate how the biodiversity and soil fertility affect the budburst timing. Learn field methods in **forest ecology**, **measure** and **model** budburst phenology, soil fertility, tree characteristics and more...

Advance **Budburst** **Delay**

Whole-tree water use during drought and link to senescence

Trees **compete for water** during droughts. **Species differ** in their competitiveness due to different water use strategies (e.g. rooting depth, stomatal regulation). → *Who survives future droughts?*

In this MSc thesis, we measure **whole-tree water use** of **different species in monospecific and mixed-species** stands at the FORBIO forest **biodiversity experiment** and make the link between **drought and leaf senescence timing**.

1. Measure leaf-level water use in the field.

2. Scale to tree-level using leaf area index.

3. Compare different species in different mixtures at different time of summer.

Top picture courtesy of NewScientist.com

Different approaches for tree carbon uptake assessment

Forests capture CO_2 from the atmosphere and store it as biomass. This makes **forests** and more specifically **trees** important **carbon sinks** and **crucial to mitigate climate change**.

In this MSc thesis we **measure** the actual **amount of carbon stored** at **seasonal level** (day to week for a whole year) in a forest (Brasschaat, Antwerp) using **different methods** (X-ray, flux tower and dendrometers) at **different scales** (tree, forest)

Tree height and width are crucial to determine the biomass

Determine size growth and biomass accumulation on **tree** level

Link the current **forest** biomass accumulation to CO_2 uptake

Calculate the total carbon stock of the **forest**