Tiny Forest:
urban woodlands bringing social and environmental benefits

Pilat, C.*[1], Hayhow, D.B.[1], Cárdenas, M.L.[1], Chemais, M.[1], Sturgeon, G.[1], and Narraway, C.L.[1]

[1] Earthwatch Europe, Mayfield House, 256 Banbury Road, Oxford, OX2 7DE, UK

*Contact: cpilat@earthwatch.org.uk

Planted
149
Tiny Forests
since 2019

Engaged
7,713
Citizen Scientists
through planting and monitoring

1,442
Surveys submitted
by citizen scientists since 2019

What is a Tiny Forest?

A Tiny Forest is a small (200m^2), densely planted native woodland. Each contain 600 trees, of 12-25 different species, following the Miyawaki planting method [1].
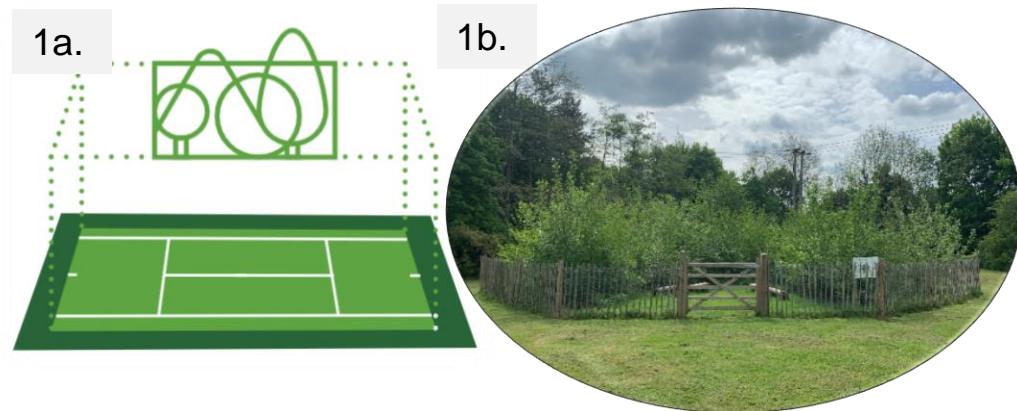
1a.

1b.

Figure 1a. A Tiny Forest is the size of a tennis court (200m^2). 1b. Witney Tiny Forest planted on 14 March 2020 in Oxfordshire. Credit: Earthwatch Europe.

Community benefits

Tiny Forests are often located in urban areas of economic or green deprivation. A Tiny Forest connects people with nature by:

"I want to be an environmental scientist when I grow up!"

- Engaging people in the design, implementation, and maintenance of their Tiny Forest.
- Training Citizen Scientists to monitor environmental benefits.
- Promoting community-driven stewardship of local green spaces.
- Providing usable green space to enjoy.

Methods for monitoring ecosystem benefits

Citizen Scientists monitor four key benefits of Tiny Forest:

1. **Biodiversity** – pollinator count, butterfly count, diversity of ground invertebrates.

2. **Carbon Storage** – measure height and diameter of 100 trees to calculate above-ground biomass.

Biodiversity Conservation

Thermal comfort

Carbon Capture

Flood management

CO$_2$
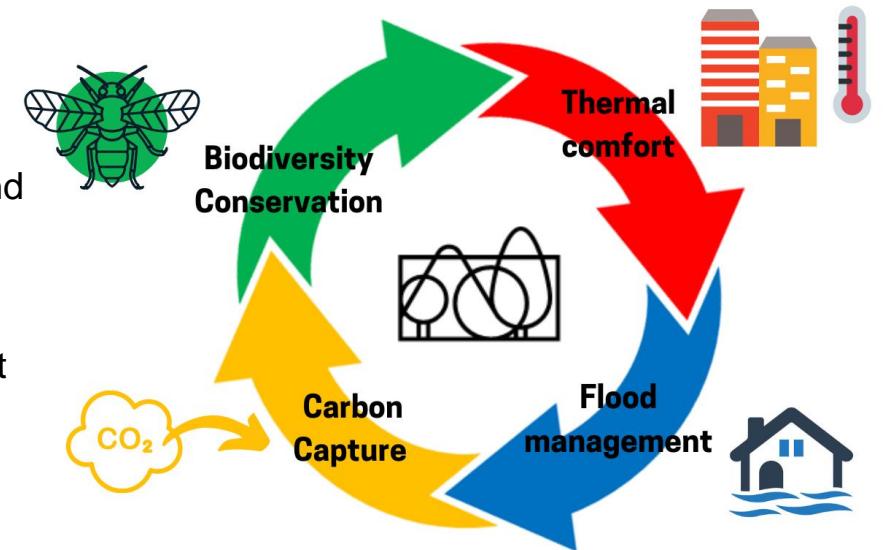
3. **Flood management** – examine soil type, colour, texture, compaction and infiltration rate to characterise flood mitigation potential.

4. **Thermal Comfort** – measure the cooling effect of trees on micro-local environmental temperature using a weather station and personal perception.

Super tiny, super powerful

tinyforest

Tiny Forest empowers people through Citizen Science

to become curious and knowledgeable about their local environment.

Year 1 monitoring results

So far, in 17 Tiny Forests in the first year since planting…

CO$_2$

290 Kg OF CO$_2$ STORED

This small amount of carbon, equivalent to boiling a kettle 6000 times, is an essential baseline to estimate future carbon storage capacity.

[1] Miyawaki, A., 1999. Creative Ecology: Restoration of Native Forests by Native Trees. *Plant Biotechnology*, 16(1), pp.15-25.