# Miyawaki Method

**2024**

## Overview

The Miyawaki Method is an approach for creating hyper-dense patches of native vegetation on small plots of land. The method uses a four-step technique of botanical research, soil enhancement via added nutrients, planting of dense clusters of seeds, and maintenance. Proponents of the method claim that it grows up to 10 times faster than traditional plant growth and that planted areas are self-sustaining after 2-3 years.

### What is the Miyawaki Method?

- The Miyawaki Method is a planting technique that focuses on **growing dense patches** of **local vegetation** over short periods of time.
- The method is named after Dr. Akira Miyawaki, a botanist whose work is centered around the **restoration of depleted land** (Nargi, 2019).

### Benefits

- The results are **not reliant on plot size**, meaning they can work with whatever land is available down to 3 square meters (Western Washington University)
- The planted areas use around 30,000-50,000 seedlings per hectare as opposed to the 1,000 seedlings per hectare common in commercial forestry, producing **much denser vegetation**. (Nargi, 2019).
- The dense vegetation of this method encourages competition between the plants, resulting in **growth around 10 times faster** than conventional afforestation techniques (Nargi, 2019).

### How Does it Work?

- The Miyawaki uses a **four-step system** that is consistently reflected in the various consultants that utilize the method (SUGi, 2021).
- **Step 1**
  - Researching and identifying the **proper plants** for the area, particularly identifying four categories of plants: **main tree species**, **sub-species**, **shrubs**, and **ground-covering herbs** (Nargi, 2019).
  - Around 70-80% of the plants are **main species or sub-species**, with around 10% of the plants as shrubs and the rest as **ground-covering herbs** (Western Washington University).
  - For greater detail concerning the classifications of main tree species, sub-species, shrubs, and ground-covering herbs, see the research document "**Choosing Your Tree**."
- **Step 2**
  - Preparing the soil. The soil should be **loosened down** to around 30 cm (about 11.81 in) to 1 m (Western Washington University) and should be **enriched with supplements** like compost (SUGi, 2021).

- o **Soil mounds** are advised in rainy areas to **prevent water pooling**. Rounded planting mounds are advised in windy areas to provide shelter for the seedlings (Western Washington University).
- **Step 3**
  - o Planting the seedlings. The plots are generally best planted in the spring, with the seedlings dispersed in dense clusters around 3-5 seeds per square meter without planting two of the same seeds close to each other (Western Washington University).
- **Step 4**
  - o Maintain the plot. The area will need **continued watering, weeding, and general maintenance** for about 2-3 years before it **becomes self-sustaining** (Western Washington University).

## Criticisms
- The primary criticism of the method is the **high expense** of the approach for a **low amount of coverage**, making the method unaffordable for many areas (Gisebert, 2023).
- The method tends to **ignore complex local ecological factors**, instead opting for a "shortcut" approach of creating biodiversity (Gisebert, 2023).
- The method was developed with a **focus on Japanese ecology**. Recent studies on its implementation outside of the country have shown fewer promising results than Miyawaki claims (Gisebert, 2023).
- The method is strongly **promoted by corporations** that are **known for intensive, deforesting logging** (Gisebert, 2023). There is a possibility that the results of the method are exaggerated by the companies using them to preserve public image.

## Case Studies

### Daheny Park Forest: Cambridge, MA
- Planted in 2021 in collaboration with SUGi. Since the planting, the forest has had a 95% survival rate with the tallest trees measuring 5.3 m. The site has served as an important community center, as it was planted as part of a community volunteer initiative. So far, the project seems to be a success (SUGi).

### Greene-Rose Park Forest: Cambridge, MA
- Planted in 2022, this budding park is still too young to provide solid data regarding the long-term success of the project. However, it has already proven to be a popular community node that provides a regular avenue for community members, especially children, to learn about local vegetation and gardening principles (Biodiversity for a Livable Climate).

## Resources
- Urban Forestry Tree Service
- Native Plants Finder

## References

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spreading roots