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# CURRENT AFFAIRS

**Date:** 20 - June 2023

## MIYAWAKI FOREST

*This article covers "Daily Current Affairs" and the topic details "Miyawaki Forest". The topic "Miyawaki Forest" has relevance in the Environment section of the UPSC CSE exam.*

### **Relevance:**

#### **For Prelims:**

*What is Miyawaki Forest?*

#### **For Mains:**

*GS 3: Environment*

*Benefits of Miyawaki Forest?*

*Miyawaki Forest vis-a-vis India?*

### **Why in the News?**

Prime Minister Narendra Modi during his latest 'Mann ki baat' episode spoke about Miyawaki plantation, the Japanese method of creating dense urban forests in a small area.

### **What is Miyawaki Forest?**

The Miyawaki Forest Method, also known as the Miyawaki Technique or Miyawaki Afforestation Method, is a reforestation and afforestation technique developed by Japanese botanist Dr. Akira Miyawaki. It involves planting a dense and diverse mixture of native tree species in a small area to create a self-sustaining forest ecosystem.

### **The key features of the Miyawaki Forest Method include:**

- **Origin:** The Miyawaki Forest Method was developed in the 1970s by Japanese botanist Dr. Akira Miyawaki. He aimed to create dense, native forests in urban areas to combat deforestation and promote biodiversity.
- **Native Species Selection:** The technique emphasizes using native tree species that are well-suited to the local climate and soil conditions. This promotes biodiversity and helps restore the natural ecosystem.
- **Dense Planting:** Trees are planted close together in a dense pattern, typically with a spacing of around 30-50 cm between saplings. This creates a competitive environment for the trees, encouraging vertical growth and enabling the forest to establish quickly.
- **Multi-Layered Structure:** The Miyawaki Forests are designed to have multiple layers of vegetation, including tall trees, shrubs, and ground cover plants. This mimics the structure of natural forests and supports a diverse range of plant and animal species.

- **Soil Preparation:** Before planting, the soil is carefully prepared by removing invasive species and improving its fertility. Organic matter, compost, and natural fertilizers are often added to enhance the soil quality and provide nutrients for the saplings.
- **Maintenance and Monitoring:** Miyawaki Forests require regular maintenance, including watering, weeding, and monitoring for pests and diseases. This ensures the healthy growth of the trees and increases the chances of long-term forest survival.

### Benefits of Miyawaki Forest?

- **Rapid Growth and Dense Vegetation:** Miyawaki forests exhibit rapid growth and result in densely packed vegetation. The close proximity of trees allows for efficient space utilization, leading to quicker canopy formation and an overall lush appearance.
- **Biodiversity Enhancement:** The technique promotes the planting of a wide variety of native plant species. This diversity attracts different types of insects, birds, and other wildlife, leading to an increase in biodiversity within the forest ecosystem.
- **Carbon Sequestration and Climate Change Mitigation:** Miyawaki forests are effective carbon sinks. The dense vegetation and active growth contribute to the sequestration of carbon dioxide from the atmosphere, helping mitigate climate change by reducing greenhouse gas emissions.
- **Soil Improvement and Erosion Control:** The deep root systems of the trees in Miyawaki forests help improve soil structure and fertility. They prevent soil erosion by anchoring the soil with their roots, thereby protecting against landslides and soil degradation.
- **Improved Air Quality:** Miyawaki forests act as natural air purifiers. The trees absorb air pollutants and release oxygen through the process of photosynthesis, leading to improved air quality and a reduction in harmful airborne particles.
- **Microclimate Regulation:** The dense foliage of Miyawaki forests provides shade and helps regulate temperature, especially in urban areas affected by the urban heat island effect. They create cooler microclimates and reduce heat stress in nearby surroundings.
- **Water Conservation:** The dense canopy of Miyawaki forests helps in conserving water. It reduces evaporation and slows down rainfall runoff, allowing more water to infiltrate into the ground, replenishing groundwater resources, and reducing the risk of flooding.
- **Habitat Creation:** Miyawaki forests create valuable habitats for various species of plants and animals. The diverse plant species and the resulting ecosystem provide food, shelter, and nesting sites, supporting a wide range of wildlife and contributing to the overall ecological balance.
- **Aesthetic Appeal and Recreational Value:** Miyawaki forests offer visually appealing landscapes that enhance the beauty of the surroundings. They provide peaceful and rejuvenating spaces for recreation, nature walks, and educational activities, benefiting the well-being and mental health of individuals.
- **Community Engagement and Environmental Awareness:** Miyawaki forests foster community participation and environmental awareness. Involving local communities in the planting and maintenance of these forests promotes a sense of ownership and responsibility, leading to increased environmental consciousness and sustainable practices.

### Miyawaki Forest vis-a-vis India?

- **Adoption in India:** The Miyawaki Forest Method has gained significant popularity and adoption in India, particularly in urban areas. Many cities, including Chennai, Bengaluru, Delhi, and Mumbai, have implemented Miyawaki forest projects to address deforestation, improve air quality, and enhance urban green spaces.

- **Urban Greening:** Miyawaki forests in India play a crucial role in urban greening initiatives. They help combat the loss of green spaces in cities, counteract the heat island effect, and provide natural habitats for urban flora and fauna.
- **Chennai's Success Story:** Chennai, a city in southern India, has been at the forefront of Miyawaki forest implementation. The city's efforts in establishing Miyawaki forests have received international recognition. The projects have transformed barren land into lush green patches, contributing to enhanced biodiversity and improved microclimate.
- **Reforestation of Public Spaces:** Miyawaki forests have been established in various public spaces across India, including parks, school campuses, roadside medians, and government-owned lands. These initiatives engage local communities and raise awareness about the importance of environmental conservation.
- **Ecological Restoration:** Miyawaki forests in India have been instrumental in the restoration of degraded lands, such as mining sites and abandoned quarries. These projects help rehabilitate the soil, prevent erosion, and restore native vegetation, thus promoting ecological balance.
- **Community Participation:** Miyawaki forest projects in India often involve active participation from local communities, resident welfare associations, and environmental organizations. This community involvement fosters a sense of ownership, encourages sustainable maintenance, and builds environmental consciousness.
- **Afforestation Initiatives:** The Miyawaki Forest Method has been utilized as part of large-scale afforestation initiatives in India, such as the "Green India Mission" and "Hariyali Mahotsav." These initiatives aim to increase forest cover, restore degraded lands, and promote sustainable land management practices.

Source:

<https://indianexpress.com/article/explained/explained-climate/pm-modi-miyawaki-forests-mann-ki-baat-what-is-this-method-8671133/>

**Q.1 Which afforestation technique emphasizes the dense planting of native tree species to create self-sustaining forest ecosystems?**

- (a) Agroforestry
- (b) Miyawaki Forest Method
- (c) Silviculture
- (d) Monoculture

**Answer: (b)**

**Q.2 Which of the following statements regarding Miyawaki forests is/are correct?**

- 1: Miyawaki forests promote rapid growth and dense vegetation, resulting in efficient space utilization and quicker canopy formation.
- 2: Miyawaki forests contribute to climate change mitigation by acting as carbon sinks and sequestering carbon dioxide from the atmosphere.
- 3: The Miyawaki forest method involves planting non-native tree species to create diverse ecosystems.
- 4: Miyawaki forests have minimal impact on air quality improvement due to their limited tree density.

**Choose the correct option:**

- (a) 1 and 2 only

- (b) 2 and 3 only
- (c) 1, 2, and 3 only
- (d) 1, 2, and 4 only

**Answer: (a)**

**Q.3 Discuss the potential of Miyawaki forest method in addressing environmental challenges and promoting sustainable development in India.**

**Rishabh**



**Yojna IAS**  
योजना है तो सफलता है