

Bulletin



Monthly Newsletter



MAHARASHTRA POLLUTION CONTROL BOARD

JANUARY 2022



We are glad to present to the stakeholders MPCB's 7th edition of E-bulletin as we continue to series. This E-bulletin is an attempt to give you a brief insight into the latest happenings in the field in terms of various new initiatives undertaken, awareness programs being carried out by MPCB and introduce the reader to the breakthrough research which is being done in this field.

In this edition of the E-Bulletin, we are presenting article on the Miyawaki Plantation Technology and a brief update on India's Climate Action Plan and its commitments at COP26.

Editorial

We hope this E bulletin is very much valuable, informative and helpful for the readers and we will also greet your suggestion & feedback for betterment of our future E-bulletins.

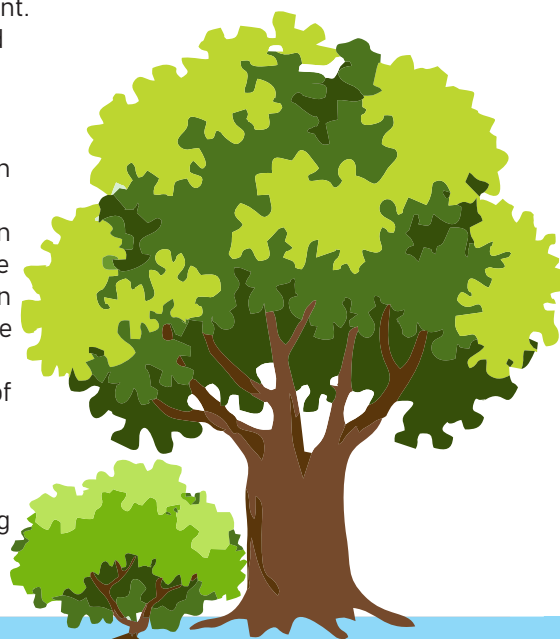
TECHNOLOGY

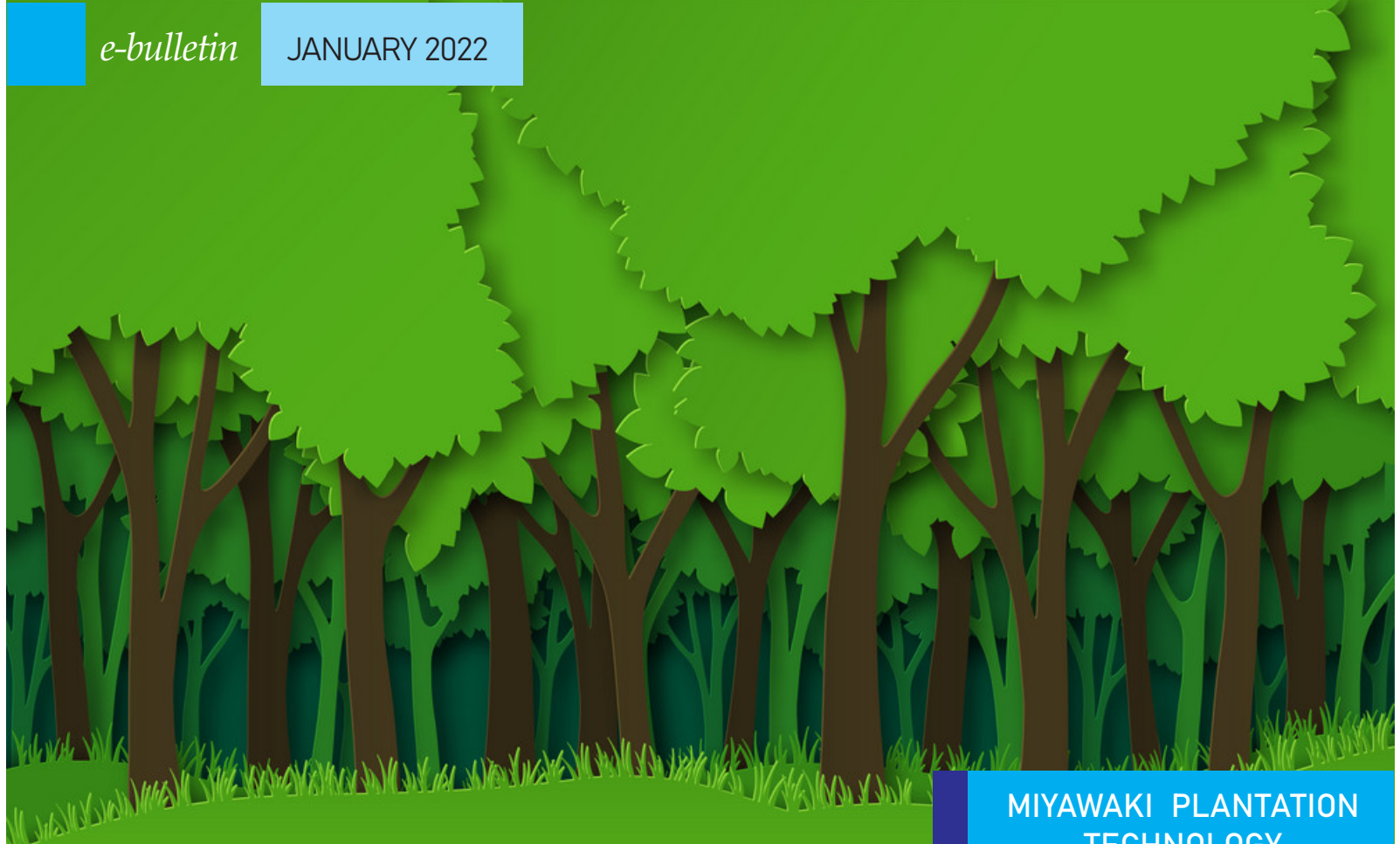
MIYAWAKI PLANTATION TECHNOLOGY

The Miyawaki method is a forest regeneration technique that aims to recreate self-sustaining multilayered indigenous forests on degraded land with little to no human intervention.

The Miyawaki Method is one of the most effective tree planting methods for creating forest cover quickly on degraded land that has been used for other purposes such as agriculture or construction. It is effective because it is based on natural reforestation principles, i.e. using trees native to the area and replicating natural forest regeneration processes. It has some significant benefits over more traditional forestry methods

when used in smaller afforestation projects and is particularly effective in the urban environment. The trees planted by this method grow much faster, jump starting the forest creation process and capturing more carbon. Higher biodiversity has been recorded in Miyawaki forests than in neighbouring woodland, so it's an ideal method for creating diverse forest ecosystems quickly. Within the context of the current climate change emergency and stark warnings about the global loss of biodiversity, being able to create diverse, healthy forests quickly could prove vital to meeting international targets and tackling these issues.





MIYAWAKI PLANTATION TECHNOLOGY

The method involves planting two to four trees per square metre. Miyawaki forests grow in two to three years and are self-sustaining. They help lower temperatures in concrete heat islands, reduce air and noise pollution, attract local birds and insects, and create carbon sinks.

IN A NUTSHELL

TSUNAMI PROTECTION

STABILISING MINE DUMP
SLOPES.

AS TYPHOON PROTECTION AND
FOR CARBON SEQUESTRATION.

URBAN FORESTS REDUCE
LOCAL TEMPERATURES.

IMPROVE AIR QUALITY BY
REDUCING POLLUTANT.

SEQUESTER CARBON.

IMPROVE THE WELLBEING OF
RESIDENTS.

CREATE A NATURAL OASIS FOR
INVERTEBRATES AND BIRDS.

APPLICATIONS OF THE MIYAWAKI METHOD

The Miyawaki Method has been used successfully around the world in over 3000 projects and the numbers are now also rising in Europe. The ability to create a dense native forest quickly has made the technique useful for creating urban micro forests, for restoring rainforest and Japanese evergreen broadleaf forests and for planting in arid Mediterranean habitat where other forestry techniques have not been successful. Miyawaki forests have also proven effective when used for a specific purpose, such as providing tsunami protection, stabilising mine dump slopes, as typhoon protection and for carbon sequestration. There has been particular focus on

planting Miyawaki forests in urban environments as there are significant benefits to tree planting in towns and cities, and this method maximises the space available. Urban forests reduce local temperatures (-1.3°C in one study), improve air quality by reducing pollutants, sequester carbon, and improve the wellbeing of residents, as well as creating a natural oasis for invertebrates and birds. There remains, however, much scope for research on the Miyawaki method. In particular the carbon sequestration rates could be significantly higher than on forest plantations because of the density both at planting and at the final forest stage.

The Miyawaki Method is named after its creator, **Akira Miyawaki**, a Japanese botanist and plant ecologist who has a particular interest in phytosociology, i.e. how plant species interact with each other within communities.

Following the completion of a PhD in plant ecology, Miyawaki went to study with phytosociologist Reinhold Tüxen in Germany, where he learned about the concept of potential natural vegetation. When he returned to Japan and applied the PNV principles to the Japanese landscape, he became interested in the relics of ancient forests found around temples and shrines, known as Chinju-no-mori, sacred groves.

Last year, Chief Minister Uddhav Thackeray Ji initiated a project which was proposed to the BMC by Shri Aaditya Thackeray, Minister of Tourism and Environment for the Govt. He stated that it is one of his dream projects. 65 plots of the BMC will have 400,000 plants of Indian origin planted in the Japanese Miyawaki method.



Benefits of Miyawaki Plantation Method

- Trees in a Miyawaki forest grow up to ten times faster at around a metre per year.
- They reach a stable multi-layered forest community in 20 to 30 years instead of hundreds of years.
- The growing trees absorb more carbon in a Miyawaki forest than in a plantation or in standard afforestation projects.
- The Miyawaki method has been successful where other planting projects have failed, such as in arid Mediterranean habitats, due to high survival rates.
- Native trees thrive in the conditions to which they are adapted and are more resilient to environmental changes.
- Miyawaki forests have been found to have far higher biodiversity than neighbouring woodland, on average 18 times higher.

MIYAWAKI FOREST LAYERS

CANOPY LAYER

TREE LAYER

SUB-TREE LAYER

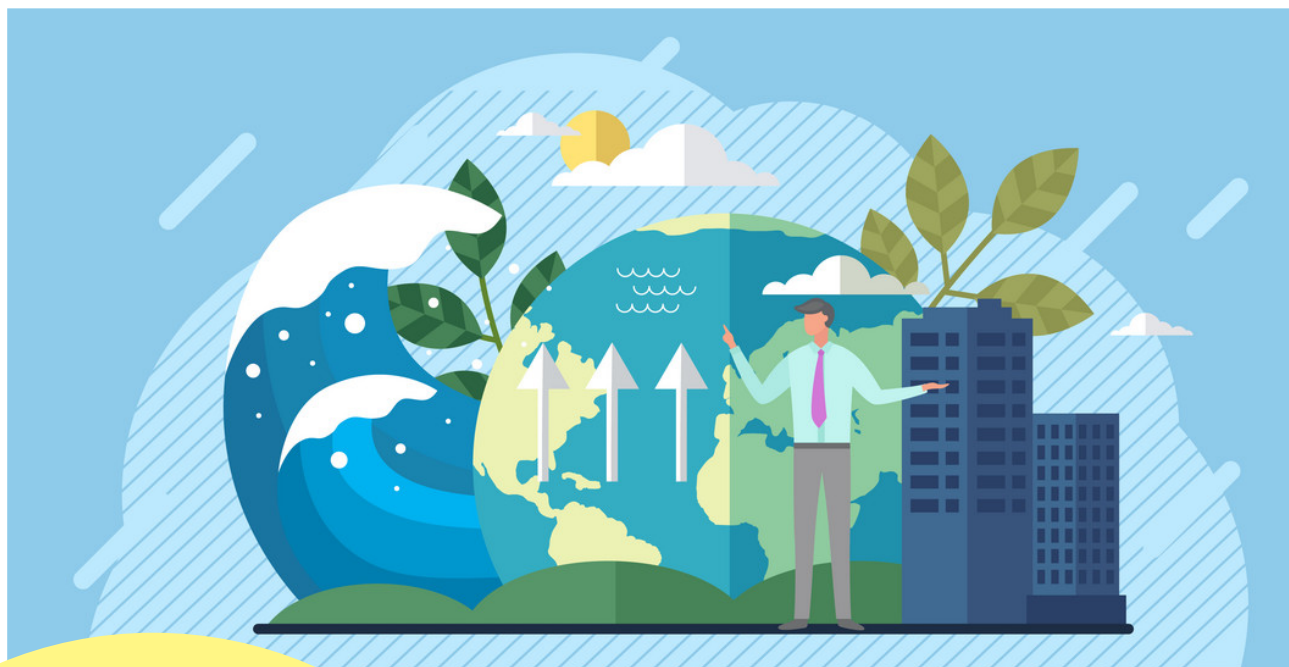
SHRUB LAYER



A distinct layering in the forest structure, with slow-growing canopy species, tree layer species, smaller sub-tree layer species, shrubs and ground covering herbs.

UPDATE

INDIA'S CLIMATE ACTION PLAN AND COMMITMENTS AT COP26



India announced its five commitments (Amrit Tatva) that it strives to meet as it continues to work to tackle climate change-related issues.

By 2030, India will increase its non-fossil capacity to 500 GW (Current 450GW).

India will fulfil 50% of its energy requirements with renewable energy by 2030.

India will reduce one billion ton of the total projected carbon emission between 2021 and 2030.

By 2030, India will reduce its economy's carbon intensity to less than 45%.

India will achieve the target of net zero emissions by 2070.

INDIA WILL FULFIL 50% OF ITS ENERGY REQUIREMENTS WITH RENEWABLE ENERGY BY 2030



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