

Information on Afforestation Studies and Trees Planted**Afforestation Studies**

- ST Engineering's tree planting activity contributes to studies on the afforestation of native species and their effects on carbon sequestration and biodiversity replenishment in Singapore.
- Through establishing an urban microforest, long-term monitoring and valuable scientific data on the impact of microforests on microclimate can be generated, contributing to the long-term goals of improving urban landscaping methods and biodiversity. Variables that will be monitored as part of the study include soil chemical content, microbial communities, microclimate, canopy closure, growth and mortality.
- TLL's seedlings (*Hopea odorata*, *Gmelina arborea* and *Cynometra browneoides*) as well as City Sprout's saplings (*Buchanania arborescens*, *Neolitsea cassia*, *Planchonella obovata* and *Shorea leprosula*) were planted using the Miyawaki Method, an afforestation technique that rapidly restores native forests on degraded land. Through planting saplings at high densities and using native trees in the area, the natural forest regeneration process is replicated. Trees planted using this method grow much faster, jumpstarting the forest creation process and increasing carbon sequestration.

Native Tree Species

- ***Hopea odorata (Chengal Pasir)*** - trees of this species have tall trunks and dense crowns which provide shade, making them a popular choice for planting in urban environments as reforestation and roadside trees. An over 100-year-old *Hopea odorata* Heritage Tree can be found in the Singapore Botanic Garden. Its historical value lies in being part of the Garden's first inventory written in the 1910s.
- ***Gmelina arborea (White Teak)*** - it is a fast-growing, large-sized tree valued for agroforestry applications. Being a strong tree with a well-established rooting system and a dense trunk, it has high carbon storage. The tree forms a beautiful crown for shade and boasts fragrant ornamental flowers that attract bees and birds such as sunbirds, flowerpeckers and bulbuls. That makes it useful for avenue planting and reforestation.
- ***Cynometra browneoides (Handkerchief Tree)*** - it is a slow-growing, small-sized tree valued for its ornamental foliage. Young leaves grow in cluster in a drooping shape that resembles white handkerchiefs. It has aesthetic value and attracts biodiversity including birds like starlings and sunbirds.

- ***Buchanania arborescens*** - also known as Sparrow's Mango, it is a large tree with leathery oval to narrowly egg or drop-shaped leaves, small cream white flowers and red lens-shaped fruit. It can be found in various parts of Singapore including Bukit Timah Nature Reserve, Mandai, Sentosa and Pulau Tekong.
- ***Neolitsea cassia*** - a small to medium-sized tree, it has a dense conical shaped crown and leaves that are golden coppery in colour when young. Suitable for gardens, parks and roadsides, parts of the tree have medicinal value while its timber is a constituent of commercial timber.
- ***Planchonella obovata*** - this coppery tree is often seen on our wild shores: natural cliffs, rocky and sandy shores, back mangroves, as well as secondary forests. Its flowers are said to smell like pandan, and its leaves are used in treatments for stomachache and chest pains.
- ***Shorea leprosula*** - called, along with some other species in the genus *Shorea*, Light Red Meranti, this is a species of tree in the family *Dipterocarpaceae* that inhabits rainforests in Southeast Asia. As the tree is harvested from the wild for its resin and timber, it has suffered a massive population reduction.