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STATUS, CHALLENGES AND FUTURE OF URBAN FORESTRY IN CHANDIGARH

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ABSTRACT

Designed by Le- Carbusier, Chandigarh- The city beautiful, is known for its unique architecture and well planned landscaping. The trees have been planted along roads, in parks and gardens and due regard has been given to beautiful shrubs and climbers. A number of beautiful avenues with conspicuous tree species, green belts running across the length and breadth of the city impart unique aesthetic beauty to the city, hence the name city beautiful. The city however, is now facing lot of challenges. viz migration of rural poor to fringe areas of the city, who still continue with rural life, and are more concerned with the economic value of trees than their aesthetic sense; widening of roads for accommodating vehicular traffic; demand for parking space and tiling & concreting. These are all putting lot of pressure on existing vegetation. As a result, the urban forestry scenario is changing in the city. The species planted close to residential areas during establishing Chandigarh township, have grown to their full capacity and are causing hazards as these trees with their expanded crown, have reached to the residential buildings. Their roots are spreading and are making the buildings unsafe. The branches often break during thunder storms putting many lives to risk. The biggest hurdle are the overhead electricity wires. The branches are regularly chopped off to prevent short circuits. As result, trees lose their natural shape, become disoriented and easily fall prey to storms, insects and fungi. In view of these challenges, species occupying less space and possessing shade and sun considerations need to be explored. Most affected will be Wavy Leaved Fig (*Ficus virens*) as many roads have been identified with it. People's response to existing species, emerging new pests and possible future species for different landscapes have also been discussed.

Key words: Chandigarh, Landscaping, Challenges, Future, Pilkhan.

Introduction

Located in the lap of panoramic Shiwalik foot hills, Chandigarh, the 'City Beautiful' is the first well planned modern city of India. It is a rare epitome of modernization, coexisting with nature's preservation. Named after Goddess '*Chandi*', the city is famous all over the world for its unique architecture, planning and landscaping. The city presents a visual delight of a harmonious blend of buildings, trees and other landscape elements embellishing the skyline (Singh *et al.*, 1999). The seeds of its extensive landscaping and verdure were sown by none other than its Swiss-French architect-planner Le Corbusier right at the beginning, with provision of large number of open spaces, green belts and city parks. Total area of the city is 114 km^2 and is at present home for about 1.1 million people. There is very good network of wide and open roads and underground drainage system. The tree plantations is the unique feature and plantations run across the length and the breadth of the roads. Today, even after 60 years of its inception, the city stands tall for its high quality life and relatively pollution free environment, unlike any other growing urban area of India. The conservation of this green heritage in future is a major concern with regard to the rapid development of the city in the past few decades (Chandigarh Master Plan, 2031).

The components of urban forestry in Chandigarh comprise of: (a) Roadside Plantations (Road Avenues), (b) Parks, gardens and greenbelts (c) Plantations in institutions (d) Herbal Gardens in schools and colleges (e) Round abouts. The criteria for the roadside plantations were that only one tree species will be planted on one road and the tree species should be hardy, evergreen and pollution abating (Singh, 2016). There are 1900 small and big parks and depending upon the size of parks, a specified percentage of area has been earmarked for woodlots. If the area is one acre, the area under woodlot will be 30%. For one to five acre area, 40%; for five to 20 acres 50% and for area more than 20 acres, the woodlot area earmarked is 60%. Some 800 ha of open spaces are spread over an area of 114 km^2. Major open spaces include Leisure Valley, Sukhna Lake, Rock Garden and Rose Garden. The prominent flowering trees are Red Gulmohar (*Delonix regia*), Indian Laburnum (*Cassia fistula*), Orchid Tree (*Bauhinia variegata*), Pink Cassia

As the horizontal spaces for afforestation is reducing in the cities, there is no option left than to go vertically to enhance the green space.

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(*Cassia javanica, C. nodosa*), and Silver Oak (*Grevillea robusta*). The conspicuous non flowering trees include Kusum (*Schleichera oleosa*) and Wavy Leaved Fig (*Ficus virens*). These trees noted for their vast and thick canopies, form great vaulting shelters over many of the city's roads. In all, more than one hundred tree species have been planted in Chandigarh (Lakshmanan, 2012). Other trees include: Indian Mahogany (*Chuckrassia tabularis*), Tulip Tree (*Spathodea campanuata),* Mahogany (*Swietenia mahogany*), Arjun (*Terminalia arjuna*), Cape Myrtle (*Lagerstroemia parviflora*), Neem/Margosa Tree (*Azadirachta indica*), Red Silk Cotton (*Bombax ceiba*), Floss Silk (*Ceiba speciosa*), The Scholar (*Alstonia scholaris*), Pongam (*Millettia pinnata*), Golden Bell (*Tabebuia aurea*) etc. The trees in Chandigarh are also a source of livelihood for poor people like cobbler, barber, roadside tea vendors and cycle mechanic, etc. as they all earn livelihood by doing the small business under the trees. The planting activity has been continuing since the inception of the city and is still continuing. However, the saturation stage has already reached. Annually, about sixty thousand plants are planted in the city.

Challenges

Chandigarh was planned initially for accommodating half a million people, but at present it is harboring human population more than double of its capacity. This is putting lot of pressure on resources. All other developmental activities or expansion of already existing facilities demand diversion of existing forest/greenery to non-forest use and this accelerates the depletion of green cover. Due to increasing human populations and vehicular traffic, urban forestry is under tremendous pressure. The main challenges are:

Electricity wires are enemies of urban trees: Due to increase in urban population, the requirement of power (electricity), drinking water, and dumping grounds, etc. are required in increased proportion. Overhead and underground transmission lines, sewage and water supply lines, telephones lines, etc. are demanding extra space either underground or overhead, which is usually a territory occupied by trees and shrubs along the roads. Electricity transmission system in the city is such that the electricity poles and wires occupy the space on the banks of roads which is actually occupied by trees. And this is the cause of conflict. And finally, it is the trees which loose the battle. The trees have to be chopped of regularly and the method used for chopping is cruel and unscientific. The trees are unable to develop their natural shape and crown. Instead of giving aesthetic look, the trees give ugly look. They take saucer shape in place of oval or round crown shape. The wounds are also an open invitation to the insect-pests and diseases. Underground wiring is an answer but the cost is prohibitive. It amounts to 4000 crore rupees (one rupees is equal to 0.015 USD) and so, the Chandigarh administration is not ready to go for underground wires.

Widening of roads: Ever-increasing traffic load on the roads necessitates the expansion of roads which encroaches the adjoining green belt. With the widening of the roads, the whole scenario of urban forestry is undergoing a sea change. The heavy machines used for the earth work severely injure the roots of trees. While many trees get uprooted by the storms, others are attacked by insect pests and fungi. As a result of this, the life of urban trees is being reduced considerably. As the roads have been widened to the maximum possible limit, there is not much space left for growing the tall trees. Their canopy is touching the residential buildings. This is threatening the existence of tall and spreading tree species like Wavy leaved fig, Bargad (*Ficus benghalensis)*, Sacred fig/Peepal (*Ficus religiosa*), etc. As the trees are being pushed aside due to widening of the roads, their canopy forms tunnel with other trees. As a result of this, the pollen grains are not able to move away. They fall on the moving passengers and cause skin and breathing allergy.

Pavement of area under the trees: The trees in the urban area live in different environment than their counterparts in the surrounding areas. They are always under stress due to one reason or the other. They are directly subjected to heat and pollution conditions. Added to this worry is that the areas under the trees or the shrubs are being made pucca by making pavements. Demand for vehicle parking space is increasing which in turn, is also eating away the space meant for the greenery. Tiling/concreting on the name of beatification of the city is responsible for eradication of grounds floor (grasses and shrubs) and thereby reduces the green cover. So, even the area between the roads is also tiled and concreted. At the time of the metalling and tarring of the road, no scope is left for the future horizontal expansion of the tree trunk. This is the only area from where the water can enter into the root zone of the tree. However, as the tree grows, the trunk near the base is not able to break hard concrete surroundings. This is not only a cruelty but also leaves no scope for rain water to enter. The water table is not getting recharged and the plants are struggling for survival. As a result of this, the growth, development and life span of the tree is affected adversely and probably this is the reason as to why more and more trees are drying and dying in the urban areas of Chandigarh. Efforts are required to be done in this direction as well to leave as much area as possible from the tree trunk to allow infiltration of rain water. Besides this, as the entire area under the tree trunk is tiled

and concreted and the tree trunk struggles to expand horizontally. Most of the times, the tree trunks above ground become heavy and thin below it. Soon, the tree trunk becomes weak and hence it becomes dangerous to life and property, as such trees can fall off any time.

Hot bulbs reduce biological age: The trees in the urban areas are considered as the easy and cheap objects for putting the hot bulbs or the tubes on them. The poor trees are forced to undergo the agony of tolerating the heat of bulb even during the peak summer months. This is definitely affecting the health of the tree in terms of enhanced transpiration through stomatas, killing of cells and tissues near the affected portion and change in biological clock which forces plants to do photosynthesis during night as some infrared radiations are produced by the electricity. As a result of this, some trees dry up and die much before their expected natural death.

Problem of emerging new pests: Emerging new pests which are posing serious threats to the urban trees are as under:

Gall insect (*Pauropsylla tuberculata*) of Saptparni (*Alstonia scholaris)*: Saptparni is mainly planted for its dense shade. It was considered a pest free species till 2008. However, a tiny gall insect first attacked it in 2008, but it was not serious and was just ignored. It was only in the year 2010 and 2011 that the pest assumed serious proportions. The phenomenon has been continuing since then year after year. All plants of all ages were affected in nurseries and plantations. In literature, the insect is called as the leaf gall insect of *Alstonia* but in Chandigarh it is attacking all follicles as well (Chander, 2015) reducing seed production by about 90%. The symptoms start appearing on the affected plants in the month of April in the form of small dots, which later on become elongated and take the form of hard black brown galls in the month of May and June. The hard elongated galls are infact the result of hyperplasia and hypertrophy in the cells brought about by the plant in response to the foreign toxic material excreted by the larva. The plants/trees look ugly. The leaves heavily ladened with the galls finally fall of the plant.

Gall insect of *Terminalia arjuna:* The insect has been affecting plants in the nursery and plantations for the past four years. However, it was only since 2010 that the pest has been assuming serious proportions. 100 per cent plants were affected in the nurseries in and around Chandigarh (Chander, 2015). The symptoms start appearing on the affected plants in the last week of April in the form of small spots, which later on elongate and take the form of hard black brown galls in the month of May. The plants/trees give ugly look. The leaves heavily ladened with the galls finally fall of the plant. The insect has been identified as *Trioza fletcheri*.

Curling and puckering of leaves of *T. arjuna*: The problem was first noticed during last week of June, 2011 as the humidity increased in the atmosphere. The plants in nursery and mature trees were affected. The terminal leaves had typical discolouring in the form of light yellow shining curling and puckering. The affected leaves became thick and juicy. Careful examination of the leaves showed the presence of Wooly nymphs on them. The infestation continued right upto mid November. Thereafter, the affected leaves became brown and wooly nymphs disappeared leaving wooly mass intact on the leaves. The leaves however, remained intact on the plants till first week of December. Since then this is being observed every year and the attack of the pest is lowering the ornamental value of the tree. The insect responsible for this has been identified as *Megatrioza hirsuta*. The pest was studied under the controlled conditions and it was found that the insect is heavily parasitized by a parasite called *Psyllaephagus phylloplectae (*Fam. Encytridae). Fortunately, this parasite is doing a good job.

Leaf miner of *T. arjuna*: The attack of Leaf Miner on the leaves of *T. arjuna* is affecting trees of all ages. The pest mines the leaves, eats away the chlorophyll and proceeds in a jig-jag manner leaving the thin papery layer intact. The affected trees give ugly look till the leaf fall. The trees lost their vigour and became week and some branches dried up. Fully grown larva is shining green and measured about half a cm in length. The insect was found hibernating both in the larval and pupal stage. The insect has not been identified as yet.

Blotch leaf miner of pongam *(Millettia pinnata)*: The insect attacks plants of all ages both in the field and in the nurseries. The symptoms started appearing in the month of June in the form of small white round spots. The spots then got enlarged and covered the whole leaves. The affected plants gave ugly look reducing its ornamental value. The insect has been recently identified as *Acrocercops anthracuris*- a lepidopteran moth. Careful examination of the mined spots showed tiny caterpillar feeding inside the mined portion. Infact the female lays eggs on the dorsal side of the leaves just below the epidermis. The larva after emergence from the egg, started mining the leaves and formed protective covering on it. In the process of mining, the larva removed chlorophyll and fed on it. The pupation also took within the mined portion. The adult emerged from it after making a hole in the thin papery structure and started new infestation by laying fresh eggs.

Problems of peri-urban area

In urban forestry, we talk about the intangible benefits of trees. Ecological, social, aesthetic and public

health values are considered more important than the tangible benefits like wood, fuel wood and fodder etc. This is true for special class of people but while saying this, we forget the fact that in fringe area of each city there lives a class of people who migrate from rural areas in search of employment. They continue with their rural life. So, they cook food using fuel wood and need fodder for their animals. They take bath in open and there is no well planned drainage system. As a result of this, the water stagnates and provides breeding ground for pathogens like mosquitoes and flies. They may be living illegally but they can't be ignored simply for this reason. We need to meet their requirement of shade, fuel wood and fodder respectively, and trees, shrubs and climbers have to be planted as per their requirement. Accordingly, the choice of species has to be different than the other areas. If we plant species which do not suit to them, it is extremely difficult to make planting a success simply because they do not like them and they do not have any emotional attachment with those species. So, we can't plant species like Tulip Tree *(Spathodea companulata)* or *Chuckrassia* in fringe areas.

Solution

The urban forestry scenario in Chandigarh is changing. The shortage of land has created necessity for new innovations. It is for certain that the species that we have today in urban forestry, is perhaps the last generation of that kind. In the years to come, where these species are growing; either their place will be occupied by concrete blocks or if some consideration is given to the plants, it will be small trees and shrubs that will replace the existing species. The existing species will be replaced by the ones occupying the small space. Only small trees and shrubs will take their place. Most affected in this scenario will be *Ficus* species. Many roads dividing the sectors have been planted with wavy leaved fig. It is not free from the electricity wires and is chopped off regularly. This instead of creating soothing effect, creates slaughter effect. It is made to struggle and is nothing less than cruelty. There are a few other trees like Peepal or Bodh Vriksha or Tree of Penance *(Ficus religiosa)* and Banyan Tree *(Ficus benghalensis)* which though have not been planted on road sides but have been retained at the time of creation of Chandigarh city. These trees have now grown to their full capacity and are occupying huge space owing to their very nature of huge crown. There is hardly any scope for growing any banyan or peepal tree in Chandigarh once these *Ficus* trees die. If at all they are seen in future, that will be one or two in green parks and not in other places, as all other places have been utilized for one purpose or the other. Next to go will be *Chuckrassia* as it has started facing opposition. It is also comparatively tall tree, evergreen and not local. It does not produce attractive flowers either. Other tall trees will follow the same path.

Due to above mentioned challenges in urban forestry; innovations are required to face this situation. A few of them are discussed:

Selection of species: The trees selected for planting in Chandigarh have heavy and thick foliage, long life, pollution abating and hardy in nature. With the passage of time, the roads were expanded/widened to accommodate galloping vehicular load. In the process of expansion of the roads, the set trees standing on the road berms were victimized. The soil around the root system was compacted to make way for the road & their foliage was pruned heavily to make way for the smooth traffic flow. Underground space meant for the expansion of roots was reduced due to expansion of road and thus make the trees weak and unstable. Similarly, overhead transmission lines conflicting with the crown of the trees are brutally cut and pruned to make way for these lines. This not only damages and defaces the trees but also destabilizes the heavy trees and makes them prone to tilting or lodging during storms/ heavy winds. Selection of species for planting under the electricity wires is the biggest challenge urban forestry in Chandigarh is facing today. At present, the trees planted under electricity wires are being maintained by cutting the branches. But once these trees fall prey to the insect and fungal attack, they have to be replaced by some other species. In such a situation, it will not be same tree species but some other tall shrubs will also have to be included. As the underground space and overhead space for roots and shoots of trees is diminishing year after year, it is the need of the hour to find alternate species which require less underground and overhead space and also are equally hardy, pollution abating and having long life. Few such tree species which can be accommodated are as under:

Pride of India (*lagerstroemia thorelli)*: It is a small tree which produces beautiful violet flowers during late spring or early summer. By little head and side pruning, it can be kept under control.

Chinese tallow plant (*Triadica sebifera*): This tree has short height and is therefore, suitable for planting under electricity wires. It becomes very attractive tree during winter because of its foliage which turns pink due to the overabundance of anthocyanins pigments before the leaf fall. Its seeds contain high percentage of fats which attracts birds like Grey Hornbill *(Ocyceros birostris)*, Crimson Breasted Barbet or Brown Headed Barbet *(Megalaima zeylanica)*, Coppersmith Barbet *(Megalaima haemacephala)* which can be seen cracking its small seeds during winters.

Jiapota (*Putranjiva roxburghii)*: This is a slow growing species and produces very attractive foliage and when planted in a row, it gives very soothing effect. When fully grown, it becomes fairly a tall trees but it responds very well to pruning of branches. In fact, it can be made more attractive by regular pruning of branches.

Gandhraj or King of scents *(Gardenia florida)*: This is a tall evergreen shrub and produces sweet scented flowers during June- July. Planting it on the roadside under the electric wires, produces soothing effect especially during rainy season and makes the whole environment around scented.

Umbrella persian lilac *(Melia compacta):* This is a small tree and is valued for its beautiful round crown, and dense shade. It is leafless during winter allowing much needed sunshine during that period.

Jewels on a string *(Millettia peguensis):* It is small tree and is suitable for planting under electricity wires. It is evergreen tree and produces bunches of beautiful flowers during March. Besides this, it is tolerant to leaf miner insect than its counterpart Pongam Tree *(Millettia pinnata).*

Sita ashok *(Saraca indica)*: It is a religious tree as it is associated with mother Sita in Ramayana. Besides, it also produces bunches of beautiful orange flowers during March and April. It is a small tree and is suitable for planting under electricity wires.

Pencil cedar *(Juniperus virginiana):* It has short height and when planted a row or in a grove, it gives a very beautiful effect because of its attractive pyramidal shape.

Sawani or cape myrtle *(Lagerstoemia indica):* This is a shrub or a small tree and produces violet and white flower in bunches. Come June and it gets ladened with beautiful flowers. It can be maintained in good shape by proper pruning.

Weeping willow *(Salix babylonica)*: It is a small tree which produces a number of drooping branches. Collectively, these branches produce attractive drooping foliage. It is leafless during winter and therefore, does not block much needed sunlight. It is suitable for planting in areas retaining sufficient moisture like leisure valley.

Yellow trumpet (Tecoma stans): It is a tall shrub which produces beautiful yellow flowers.

Scrambled egg bush (Cassia glauca): This is a small tree or a tall shrub and produces attractive yellow flowers just after the rains.

Bull bay *(Magnolia grandiflora)*: This is small evergreen tree and produces big and white scented flowers during summer.

As the horizontal space for afforestation is reducing in the cities day by day, there is no option left than to go vertically to enhance the green space of the city. Terrace gardening, keeping potted plants in balcony stairs and within the residential and commercial establishments, must be promoted. Decorative shrubs and herbs having attractive foliage and flowers will not only enhance the internal landscape of the house but also help in improving green cover of the city.

Peri/Sub urban areas

For peri-urban areas, we need to select multiple species: the species which can provide shade, fuel wood, fodder and some fruits. The final species selection has to be in consultation with the people. If this done, the results will be different because the people will themselves protect those species. Accordingly, the following species have been finalized after talking to peri- urban people:

Bael or stone apple *(Aegle marmelos):* The people living in fringe areas are familiar with this species since their childhood. They have been eating its fruits since their childhood and know its healing properties. Its fruits and flowers are offered to Lord Shiva particularly on the occasion of Mahashivratri. Therefore, if this species is planted, they will protect it on their own because they will not only eat bael fruits but will also sell near Shiva temples. The people will love this species as it is dear to them.

Black mulberry *(Morus alba):* It provides sun, shade, fruits, sticks and looks beautiful. It is leafless during winters when we need sunshine. Its black fruits are sweet and are eaten. The children of the poor people can often be seen collecting and eating mulberry fruits. It produces lot of sticks and quality fodder and hence it satisfies the needs of fodder and fuel wood of fringe urbanites. Hence, it is highly suitable for planting in fringe areas.

Sahjin or drumstick tree *(Moringa oleifera):* The pods of this tree are very dear to the people of southern part of the country. But people in the north have also been using its buds for making dry dish. FAO has recently termed *Moringa* as nutritional superstar of 21st century as all its parts are packed with amazing quality and quantity of nutrients. It is acceptable to the people.

Lasora or assyrian plum *(Cordia myxa):* Its fruits are eaten by poor people during June- July. Besides, it is a good shady tree as well. Its branches keep on drying and provide fuel wood to the poor people.

Kachnar or orchid tree *(Bauhinia variegata):* This is a multipurpose tree in the sense that it gives food, flowers, shade, fuel wood and attracts birds. Its flower buds are made into dry vegetable. It produce beautiful flowers in

large numbers and provide psychological relief. The branches keep on drying ensuring regular supply of fuel wood to the poor people.

Jamun (*Syzygium cumini)*: It is a source of fruits and shade and all people have liking for it.

Conclusion

Space meant for trees in Chandigarh is being slowly diverted for other activities. The tall and spreading trees is going to be a thing of past. Once the old trees die, either no tree will come up there and if at all some consideration is given for the green lungs, it will be shrubs only. The permanent/long lasting tree cover is going to be reduced drastically. In order to avert pollution, heat and dust, we need to have greenery in one form or the other. When we talk of green lungs, we forget about the role of shrubs and climbers. The climbers can be trained to grow on shrubs and trees which besides ensuring proper greenery will also provide psychological relief to all especially when peeping through the windows. Some climbers which can be trained on the walls and trees are: Golden Shower *(Pyrostegia venusta)*, Passion Flower *(Passiflora)*, Purple Wreath *(Petrea volubilis),* Honeysuckle *(Lonicera periclynemum),* Railway Creeper *(Ipomoea cairica),* Climbing Rose, Rangoon Creeper *(Combretum indicum),* and *Clerodendron* etc. The change in the species will be required in Chandigarh and it has to be done in consultation with people. Sun and shade consideration has to be given place in planning as Chandigarh has clear severe winter and summer seasons. Beautification and paving activities must be done carefully and judiciously so that the aesthetic value is not affected and no cruelty is meted out to the trees. If not today, planning will be required for underground electricity wires and hence the beginning has to be made at the earliest. In view of land shrinking for trees, there is no way left but to go for vertical forests in Chandigarh. This has started happening in Milan (Italy). China has also started doing this in Beijing where buildings with vertical forests will be ready in 2018. We need to do this in Chandigarh and in the other states of India.

चण्डीगढ़ में शहरी वानिकी की स्थिति, चुनौतियां एवं भविष्य

जगदीश चन्द्र और ईश्वर सिंह

सारांश

ली कार्बूजियर द्वारा अभिकल्पित खूबसूरत शहर चण्डीगढ़ अपने विलक्षण वास्तुशिल्प और सुनियोजित भूदृश्य के लिए जाना जाता है। सड़कों के साथ-साथ, पार्कों और उद्यानों में वृक्षों का रोपण किया गया है तथा सुन्दर झाड़ियों एवं आरोहियों को उचित सम्मान दिया गया है। उत्कृष्ट वृक्ष प्रजातियों के साथ असंख्य सुन्दर वृक्षवीथियां, शहर के चारों ओर हरित पट्टियां शहर को विलक्षण सौन्दर्यपरक सुन्दरता प्रदान करती हैं। अत: इसका नाम 'सिटी ब्यूटीफुल' भी है। तथापि अब शहर अनेकों चुनौतियों का सामना कर रहा है, उदाहरणार्थ- शहर के सीमा क्षेत्रों में ग्रामीण गरीबों का स्थानान्तरण, जो अभी भी ग्रामीण जीवन जी रहे हैं और ये वृक्षों के सौन्दर्यपरक अर्थ की अपेक्षा इनके आर्थिक मानों से ज्यादा जुड़े हैं; बराबर बढ़ती गाड़ी-मोटरों के यातायात को समायोजित करने के लिए सड़कों का चौड़ीकरण; रेत, सीमेंट और बजरी से जगह को पक्का करना और पार्किंग स्थल हेतु बराबर बढ़ती माँग । ये सब विद्यमान वनस्पति पर अत्यधिक दबाव डाल रहे हैं। परिणामत: शहरी वानिकी परिदृश्य शहर में बदल रहा है। चण्डीगढ़ शहर की स्थापना करने के दौरान आवासीय क्षेत्रों के समीप रोपित प्रजातियां अपनी पूरी क्षमता तक वृद्धि कर गयी हैं और संकट खड़ा कर रही हैं, क्योंकि अपने विस्तारित छत्र के साथ ये वृक्ष आवासीय भवनों तक पहुंच गए हैं। इनकी जड़ें फैलकर भवनों को असुरक्षित बना रही हैं। प्राय: अंधड़ के दौरान शाखाएं टूटकर अनेकों लोगों के जीवन को खतरे में डाल देती हैं। सबसे बड़े अवरोध ऊपर से गुजरने वाले विद्युत के तार हैं। शार्ट सरकट की रोकथाम के लिए शाखाओं को नियमित रूप से काटा जाता है। इसके चलते वृक्ष अपना प्राकृतिक आकार खो देते हैं, इनकी दिशा गड़बड़ा जाती है और ये आसानी से आंधी, कीटों एवं कवक के शिकार हो जाते हैं। चुनौतियों को देखते हुए कम स्थान घेरने वाली तथा छाया एवं धूप धारण करने वाली प्रजातियों का पता लगाने की आवश्यकता है। सबसे प्रभावित तरंगित पत्तीदार फिग पिलखन (*फाइकस वाईरन्स*) होगी, क्योंकि कई मार्गों की पहचान इसके साथ बनी है। विद्यमान प्रजातियों के प्रति लोगों की अनुक्रिया, उभर रहे नए नाशी कीट और विभिन्न भूदृश्यों के लिए संभावित भावी प्रजातियों पर भी चर्चा की गई है।

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