CHAPTER-I
INTRODUCTION

CHANDIGARH AND ITS ENVIRONMENT

Chandigarh, the 'City beautiful' is a rare epitome of modernization, co-existing with nature's preservation. It is designed by famous French Architect, Le Carbusier known for its unique architecture and well planned landscaping. The city was named after the mother goddess of power, Chandi, whose temple Chandimandir is located in the vicinity of the site selected for the city. It is a modern city housing, the Capital of two States Punjab and Haryana and the M.P. seat of 'Union Territory' Administration. The Chandigarh city is situated in a picturesque setting under the foot of Shivalik Hills at a height of 365 meters above the mean sea level. Geographically its boundaries are defined by two seasonal rivulets – the Patiali ki Rao and the Sukhna choe. A harmonious blend of buildings, trees and other landscape elements, with the beautiful backdrop of the Shiwalik hills, enhances its aesthetic value.

The most fascinating feature of the City's, landscaping is perhaps the Tree plantation along avenues, open spaces, green belts and around building complexes. A number of beautiful avenues with conspicuous tree species, well wooded forests along the periphery of city, 'Sukhna Lake' against the backdrop of Lake Reserve Forests, green belt s running across the length and breadth of the city and a beautiful 'Sukhna Wildlife Sanctuary' on its periphery, further enhance the ecological, environmental and aesthetic richness of the city.

"Our Earth - Our future - Just save it."

GREEN CHANDIGARH TASK GROUP

The agencies responsible to maintain the legacy of well planed landscape are Forest Department, Horticulture wings of Engineering Department & Municipal Corporation, Chandigarh & its caring Citizens. To fulfill its commitment to maintain and improve the greenery of the city and to have a better co-ordination among these different stakeholders & to chalk out the planning of plantation works, its implementation & to look into all aspects of Silvicultural/Horticultural operations, Chandigarh Administration formed a Greening Chandigarh Task Group in the year 2001.

GREENING CHANDIGARH ACTION PLAN

The responsibility entrusted upon the Greening Chandigarh Task Group is a challenge. The population of the city is 11,09,377 lakhs as per 2013 population census and the number of vehicles including the floating vehicles is more than 9.00 lakhs approx. The galloping increase in population and rapid increase in the number of vehicles have led to a rising trend in pollution levels in Chandigarh. This increase in pollution levels has posed a challenge before the Greening Agencies. However to counter the problem and to strategies effectively, the Greening Task Group first came out with a Greening Chandigarh Action Plan in the Year 2001. This plan was the guiding tool for all greening agencies to live up to the expectations. Since then this Action Plan is being published annually.

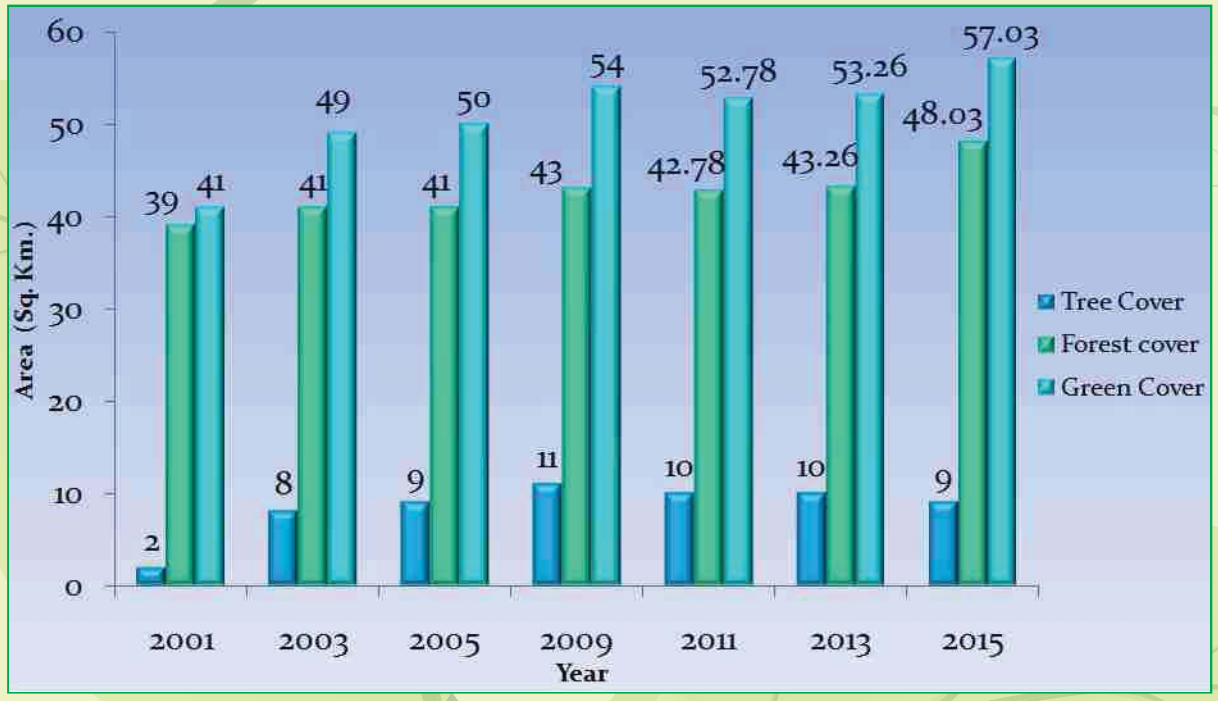
GREEN AND FOREST COVER OF U.T. CHANDIGARH

Geographical area of U.T. Chandigarh is 114 sq. Kms. and another 25.98 sq. km. of hilly area which has been declared as 'Sukhna Wildlife sanctuary' on 06th March, 1998 earlier acquired for soil conservation works.

UT Chandigarh has 48.01 sq.km area under forest cover and another 9 sq.km. area is under tree cover .

As per F.S.I. report I.S.F.R. 2015, total forest cover of UT, Chandigarh has increased 4 Sqkm due to plantation and protection activities of forest department.

Green Cover of Chandigarh:



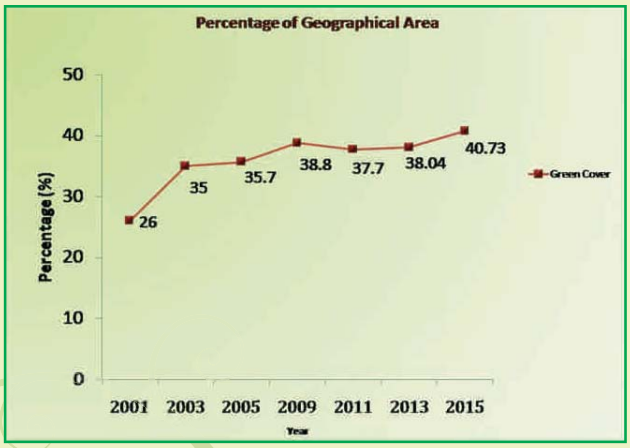
Source : India State of Forest Report by FSI, Dehradun.

On the path of Achievement

- Chandigarh bestowed with Indira Priyadarshini Vriksha Mitra Award-2010.
- Forests of Chandigarh has been assigned the Rank 1 on Planning Commission's Environmental performance index.
- The forest cover in U.T. Chandigarh is 48.03sq km and another 9 sq km area is under tree cover.
- The Green cover of UT Chandigarh has increased 4 Sq.Km. in last two years as per ISFR-2015.

"The future of our planet depends on the actions we take today."

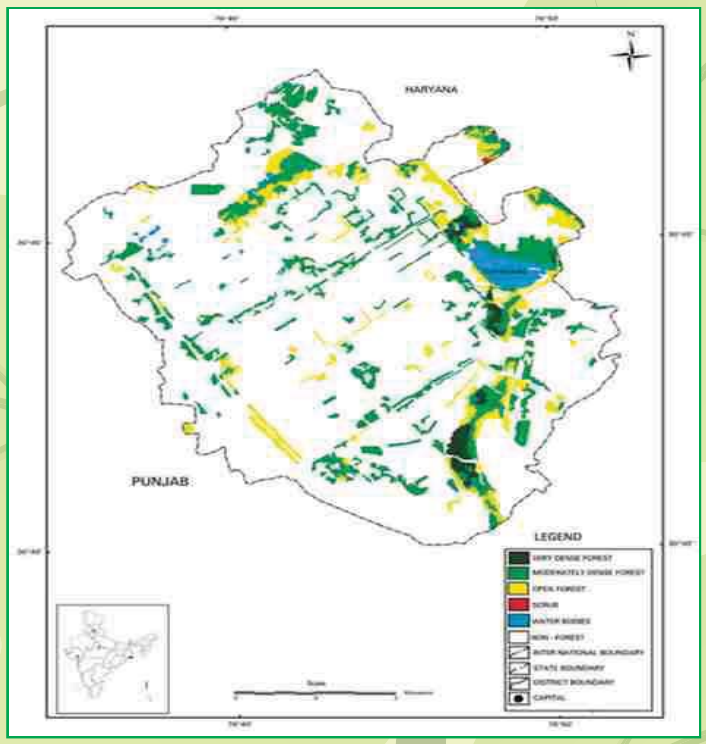
Green Cover of UT. Chandigarh



(Source: FSI, ISFR-2015)

Showing the percentage of Green & Forest Cover in UT Chandigarh.

Green Cover Map of UT Chandigarh:



(Source: ISFR-2015 FSI, Dehradun)

"We are not still where are we going, but we are not where we were."

The galloping increase in population and rapid increase in the number of vehicles have led to a rising trend in pollution levels in U.T. Chandigarh. The sharp increase in number of vehicles from 2,58,843 in 1991 to about 7.3 lakhs in 2009 is a matter of concern and is responsible for the rising trend in air pollution. As compared to neighbouring cities/towns of Punjab and Haryana, the quality of 'ambient air' today in Chandigarh is better. SO_2 and NO_x levels are well within permissible limits. However SPM (Suspended particulate matter) levels at times cross the permissible limits.

As per monitoring data of Chandigarh Pollution Control Committee, SO_2 and NOx levels in Chandigarh are very low, though; Residual Suspended Particulate Matter (RSPM) levels are matter of concern. However it is significant to mention that despite of remarkable increase in number of vehicles which are the main source of air pollution in Chandigarh, in previous years there is no major change in Residual Suspended Particulate Matter (RSPM) levels. One of the main reasons for Check on air pollution is the increasing green cover of the city during the last decade.

AMBIENT AIR QUALITY DATA IN CHANDIGARH (ANNUAL AVERAGE)

Zone	Sector 17			Industrial area			Punjab Engineering college			Govt. College IMTECH			Kaimbala village		
Parameter	RSPM	SO_2	NO_x	RSPM	SO_2	NO_x	RSPM	SO_2	NO_x	RSPM	SO_2	NO_x	RSPM	SO_2	NO_x
2015	81	2	24	96	2	31	77	2	24	88	2	24	85	2	23

Note : Permissible limit of Ambient Air quality:- **(Source : Chandigarh Population Control Committee)**

RSPM : 60 Micro Gram/m^3

SO_2: 50-80 Micro Gram/m^3

NO_x: 40-80 Micro Gram/m^3

ROLE OF THE FORESTS IN AMELIORATION OF THE ENVIRONMENT

In cities, trees play a key role in creating healthy urban environments. Rising pollution level and degrading environment of the city particularly by vehicular pollution highlights the need for remedial steps to combat pollution. Though the best way to reduce pollution at source is by adoption of clean technology and clean fuel, proper maintenance of roads & vehicles, maximum use of bicycles, strict enforcement of Air (Prevention and Control of Pollution) Act, 1981, Water (Prevention and Control of Pollution) Act, 1974 and the Environment (Protection) Act, 1986 etc., yet another effective way to reduce air and noise pollution is through a well planned and

"Nature is treasure save it for pleasure"

realistic afforestation strategy. Apart from giving shade, aesthetic beauty, recreational spots and playing host to a wide variety of birds and insects, forests & trees play an important role in amelioration of environment due to their tremendous potential to act as:

1. Source of vital oxygen.
2. Organic sponges to absorb gaseous pollutants via their leaf stomata (the tiny pores on the leaves) breaking them down into less harmful molecules during the process of Photosynthesis.
3. Storehouse of Carbon dioxide (CO_2) by assimilating the carbon dioxide in the form of sugar.
4. Natural air conditioners as well as purifier of air.
5. Vegetative measures for Soil and water conservation.

The urban green spaces mitigate heat island effect during hot summers. In the city, trees enhance its visual character by adding variety and richness to urban landscape with their different foliage and blossoms. They provide habitat for the wildlife, improve microclimate. Green Cover significantly affects the building heating budget. It helps in reducing the noise pollution to the acceptable level.

Plants play an important role both in reducing the environmental pollution load as well as acting as pollution indicator. Vegetal cover is, therefore, a pollution scavenger as it absorbs gases and gathers particulate matter through leaves having large surface areas. The green portion of the trees and plants has the capacity to filter dust, smoke and other pollutants in the air. Some species like Ficus, Mango, Neem etc. also act as good dust collectors.Well laid out gardens and parks with selected ornamental and shady trees provide good recreational spots and enhance the beauty of the city.

Well-designed green belts prove to be very effective wind break and help in soothing the microclimate of the surroundings.