

# Reconstruction of urban forests as a basis for ensuring sustainable development of urban ecosystems

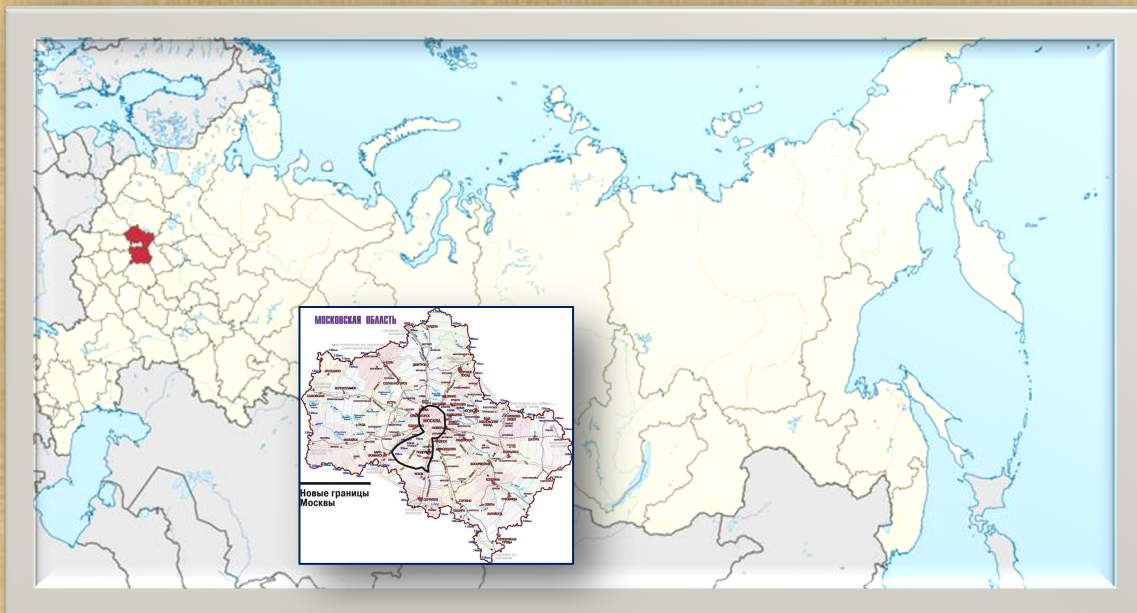
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**N.V.Tsitsin Main Botanical Garden of Russian Academy of Sciences**



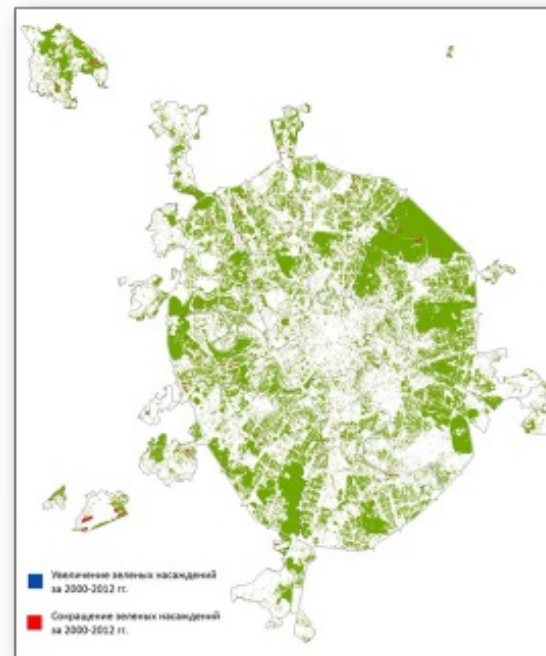
# The Moscow region is the most urbanized region of Russia



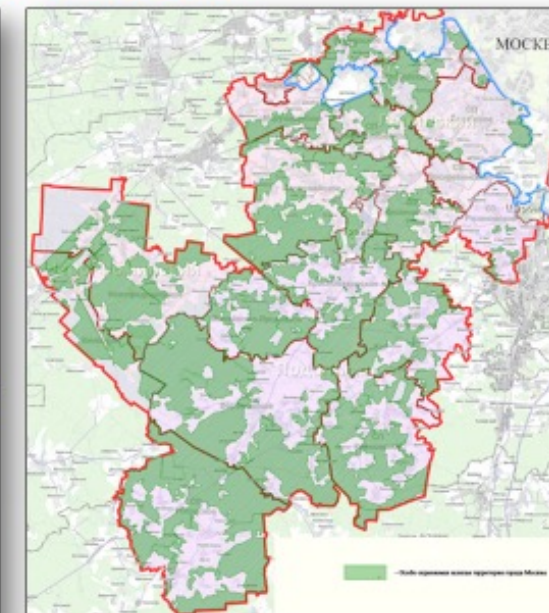
- The area of the Moscow region is ~ 47,000 km<sup>2</sup> (0.27% of the territory of the Russian Federation)
- Population ~19.6 million people (13.35% of the population of the Russian Federation)

- On the territory of Moscow and the suburban area, there are still significant forests in terms of area, which play a crucial role in creating a favorable habitat for the population. The composition of suburban forests is dominated by 4 forest-forming species - birch, pine, spruce and aspen; birch, pine and linden predominate in urban forests.

## Green areas of Moscow



Green spaces in "Old" Moscow



Suburban forests of new territories of Moscow (now - Protected Green Areas)



**The reconstruction of a low-value stand** involves the creation of polydominant forest ecosystems of different ages, close to natural and characterized by higher resistance to the aggressive effects of natural and anthropogenic factors. The formation of an optimal spatial and age structure of stands can be ensured by thinnings, promoting natural regeneration and creating multi-species artificial plantings.

Researchers from the N.V.Tsitsin Main Botanical Garden of Russian Academy of Sciences are developing an assortment of woody plants that can be used for landscaping the cities of the Moscow region.

In the last decade, they have been cooperating with specialists in the field of forestry in order to develop types of multi-species forest cultures that are promising for the creation and reconstruction of recreational forests. The proposed forest cultures involve the use of local tree species and shrubs, taking into account the conditions of the place of growth, the peculiarities of the mutual influence of plants.

**For the successful implementation of scientific developments, it is necessary:**

- organization of cultivation in proper volumes of planting material of hardwoods, focused specifically on the creation of forest cultures;
- the use of more labor-intensive and expensive compared to traditional technology for the creation and formation of multi-species forest cultures.

For the successful implementation of scientific developments on the conservation and reconstruction of forests of the Moscow region, active organizational and financial support from the relevant management structures of Moscow and the region is necessary.