

# The Paris greening programme

November 2014



## Specific goals for 2020 :

- Reduce the urban heat island effect and improve the comfort of Parisians in summer
- Planting of vegetation on all new constructions
- 100 additional hectares of roofs and facades planted with vegetation in Paris, 1/3 of which used for the production of fruit and vegetables
- 30 hectares of new green spaces in Paris
- 20,000 more trees in Paris
- 200 local areas to be planted



## In connection with the Paris Biodiversity Plan:

- Study and define the framework of green and blue infrastructures endorsed by the Grenelle process
- Reinforce the green network and its role as an ecological corridor



- 23% of the Paris region to be planted with vegetation
- 62 hectares of new green spaces have been opened to the public in Paris since 2001
- 47,000m<sup>2</sup> of roofs planted with vegetation on municipal buildings (2012 inventory)
- More than 100,000 trees within Paris proper (excluding woodland)
- 11,000 teqCO<sub>2</sub> captured by the two Paris Woods (18.5 km<sup>2</sup>) per year (2009 Carbon footprint report)

Paris Climate Plan

Since 2007, the Paris greening programme has been one of the emphases of the **adaptation strategy of the Paris Climate Plan** which aims to prepare the city for climate changes and dwindling resources.

Planting in Paris may take several forms: public parks and gardens (more than 500), woodlands, 20 cemeteries with trees, shared gardens (nearly 90), private gardens, tree-lined boulevards and streets planted with grass, green walkway created on the “petite ceinture” former railway line, rain gardens, vegetation integrated into buildings, or even bus shelters with plants! The greening programme extends to all these areas in the city which cover nearly a quarter of the Paris territory, involving repeated and interconnected additions aimed at **improving the quality of life and attractiveness of Paris**. One of the objectives is to **reduce urban heat island effects within Paris and its inner suburbs**.

During the heatwaves of 2003, the night-time temperature in central Paris rose to 8°C above temperature readings in the rest of the Île-de-France region. Plants add moisture and cool the air through the phenomenon of evapotranspiration. The shelter effect provided by trees also prevents buildings and streets from heating up. Thus vegetation can be a major asset to cool the city down during hot summer periods, combating microclimates generated by urban density. The greening of public spaces and buildings therefore offers improved comfort for Parisians in summer, in a context where heatwaves are becoming the norm.

This cooling is however subject to two constraints:

- extensive irrigation required during repeated droughts and heatwaves, as confirmed by the results of the EPICEA study (led by Météo-France for the City of Paris). These findings show the importance of plant hydration in order to obtain a cooling effect in the City.
- the adaptation of tree and plant species, in particular to withstand the new weather conditions.

In 2012, Paris was awarded a **Silver Territoria prize in the “Development of public spaces” category for its experiments with vegetation-planted roofs**. In the same year, greening in public spaces was extended to 5,705m<sup>2</sup> additional green areas and 6,430m<sup>2</sup> of roofs on public buildings, at a cost of 158,000 euros. In 2014, **30 innovative greening planting projects were trialled** in real conditions and a **study on the thermoregulation role of green spaces and wetlands in Paris** attempted to assess and quantify the cooling effect of planted areas and wetlands in Paris in the summer period.

At the same time, **the Paris Biodiversity Plan** voted in 2011 advocates the preservation and enhancement of nature in the city with precise goals in terms of management practice to limit pollution and harmful effects on the environment. The challenges are different to those of the Climate Plan but the planting of vegetation is a shared response. It is now a question of **characterising the way, particularly in public facilities, vegetation can meet the dual challenge of cooling and biodiversity**: minimum soil thicknesses, species to plant, plant watering systems, etc. In the Biodiversity Plan, the City set itself the target by 2020 of programming seven hectares of planted roofs across the whole Paris territory. This objective is backed up by the 2014-2020 term program which anticipates the creation of **100 new hectares of planted roofs and facades and the collaborative development of urban agriculture**.

Planted roofs and the restoration of soil permeability through the presence of plants are also supported in the future **Paris Rain Plan**, a key response to the risk of flooding which Paris is faced with during heavy rains. Planted roofs relieve the burden on the drainage and rainwater treatment system and limit discharges into the Seine. In this regard, the City is engaged in a broader reflection on the establishment of rainwater zoning to force property owners to recover a minimum amount of rainwater based on the size of the plot for new constructions.

Finally, for private spaces, which are also important in the city-wide greening project, there will be extensive documentation available to Parisians to help them change their practices and implement projects.

## Focus

### Urban heat islands

The urban environment is the source of radiative, thermal, dynamic and water processes that change the climate of the city. The surface layer of the soil (plant and water surfaces), human activities which generate heat and pollutants, urban structures using construction materials and the morphology of the built-up environment are the main factors causing these changes. The overall effect of the urban climate is to limit drops in temperature during the night, a drop which is essential during heatwaves so as to allow the human body to recover after high daytime temperatures.

### Paris Biodiversity Plan

Voted in November 2011, the **Paris Biodiversity Plan translates into 30 actions**. The targets are to strengthen the green and blue infrastructures endorsed through the Grenelle process, to promote ecological networks which are essential to the maintenance of diversity in the city and to make biodiversity a structuring element of municipal action in order to preserve new ecological balances in the capital. Local professionals are engaged via the **Paris Biodiversity Observatory** which has a scientific monitoring role and provides tools for management practices and methods that promote biodiversity.

[Find out more about biodiversity in Paris](#)

[Read the Paris Biodiversity Plan](#)

### Call for projects and consultation with citizens

- **Innovative greening**

In March 2013, the City of Paris partnered with the Paris Region Lab to launch a call for projects dedicated to innovative planting. Thirty projects from companies and associations were selected to test the solutions in the areas of biodiversity, urban agriculture and adaptation of the city to climate change.

[Read the news on paris.fr](#)

- **Green areas close to you**

In summer 2014, Parisians were asked to suggest places to “green up” via a smartphone application: walls, pavements, small squares, facades, etc. Two hundred public places will be chosen for greening from among the proposals.

[Read the article on paris.fr](#)

## For more information

The **Sustainable living logbooks** available on the City website present technical solutions. Some are accompanied by sheets giving examples of good practice.

[Read the Living in built-up areas logbook](#)

[Read the Vegetation planting in private courtyards and gardens logbook](#)

[Read the Vegetation planting on walls and roofs logbook](#)

The **Technical logbook on planted roofs** has 15 sheets with technical recommendations for installing planted roofs in Paris to be used by professionals and Parisians.

[Read the Technical logbook on planted roofs](#)

The brochure titled “**How to adapt the Paris territory to future heatwaves? Strategies for adaptation to climate change**”, published by the Paris Climate Agency and Météo France, provides an overview on the heatwave risk in Paris.

[Read the brochure](#)

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