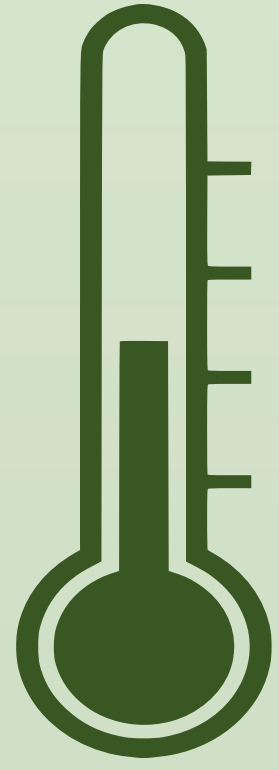


BeBrit Extreme Heat Risk Project City Case Study

PARIS, FRANCE

Paris has experienced significant heatwaves in recent history, especially the European heatwave of 2003 when 500 people died in the city, which highlighted its vulnerability to extreme heat.

Key Climate Change Challenges



Urban Heat Island (UHI) effect
Heatwaves
Infrastructure Resilience
Olympics and Paralympics 2024

Air Quality
Water Management
Energy Consumption
Flooding

Impact of the Heatwaves

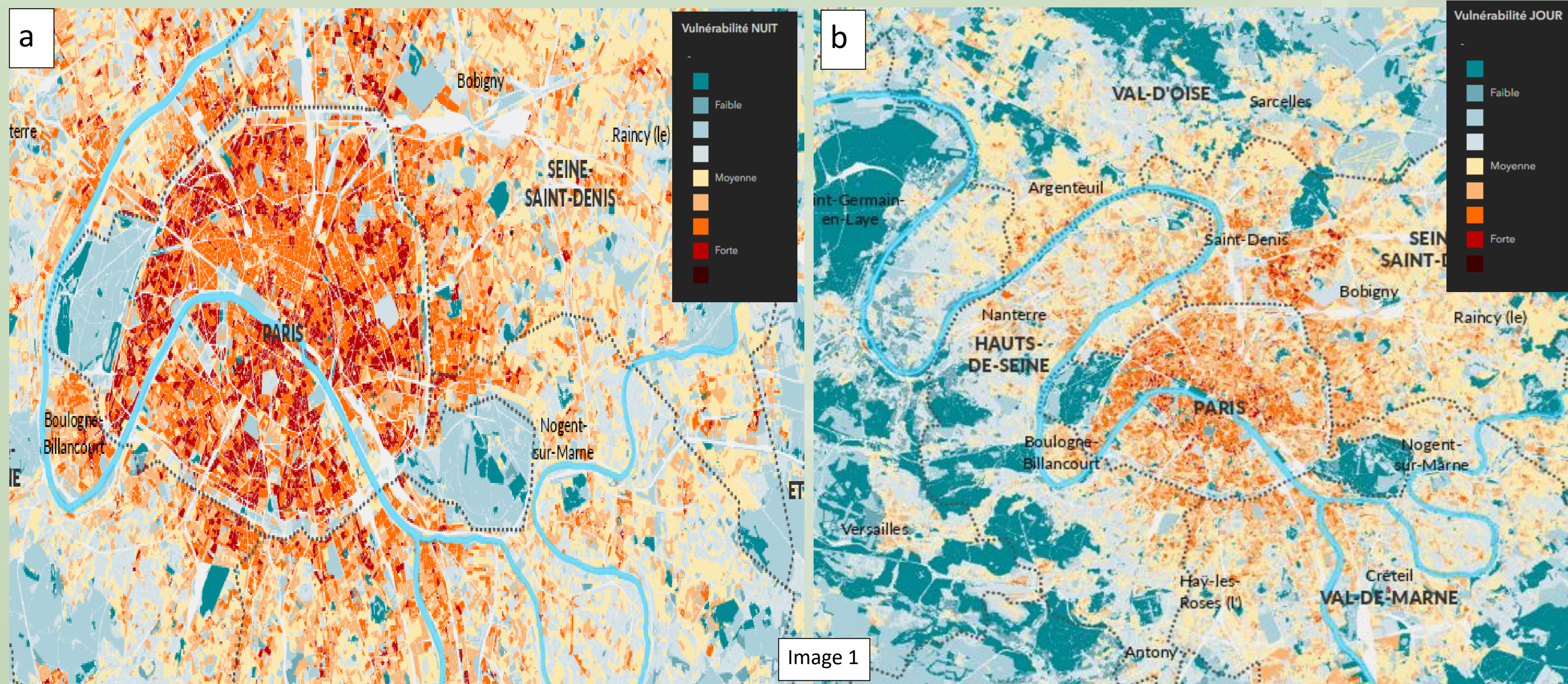


Image 1. Territorial diagnosis of vulnerability to urban heat in 2022 during (a) night and (b) day by The Institut Paris Region, IAU Île-de-France (2023).

The level of vulnerability to heatwaves (both day and night) is assessed by combining

- Heat Wave Hazard Amplified by the UHI Effect
- Sensitivity of People and Property
- Difficulty of Coping

AREAS OF IMPACT

⚠ Economic Activity	⚠ Productivity	⚠ Workers	⚠ Natural Environment
⚠ Agriculture	⚠ Building Materials	⚠ Health	⚠ Energy Consumption

City Actions in Paris to Reduce Heatwave Impacts



Islands of Freshness
Paris has nearly 1,400 "islands of freshness." Some green spaces are open 24 hours a day during summer.



Misting and Water Facilities
The city has over 1,273 fountains, 173 misting fountains, and more than 80 green spaces equipped with misters.



Public Amenities
Free swimming pools are available during July and August, and several pools are open for public use.



Interactive Resources
An interactive map helps residents find these cooling spots throughout the city.



Image 2. Misting place during summer in Nelson Mandela Park, in the 1st arrondissement in Paris. Image by familinparis.fr



Image 3. Free Public Pools Located at Bassin de la Villette (an artificial lake connected to the Seine in the 19th arrondissement). Photo by Bruno Levesque

Is The City Ready for Heat Risk?

- Comprehensive Emergency Plan and Resilience Plan launched by the City Mayor Ann Hidalgo between 2018 – 2019
- Pre-emptive announcements of a heat emergency
- Chalex – the city's heat danger register
- Targeted measures for vulnerable groups
- Emergency Scenario Exercise in 2023 for 50-degree Celsius
- Olympic and Paralympic 2024 – used modelling and simulations to prepare e.g. consequences of moving events to avoid midday heat; keeping athletes and spectators cool

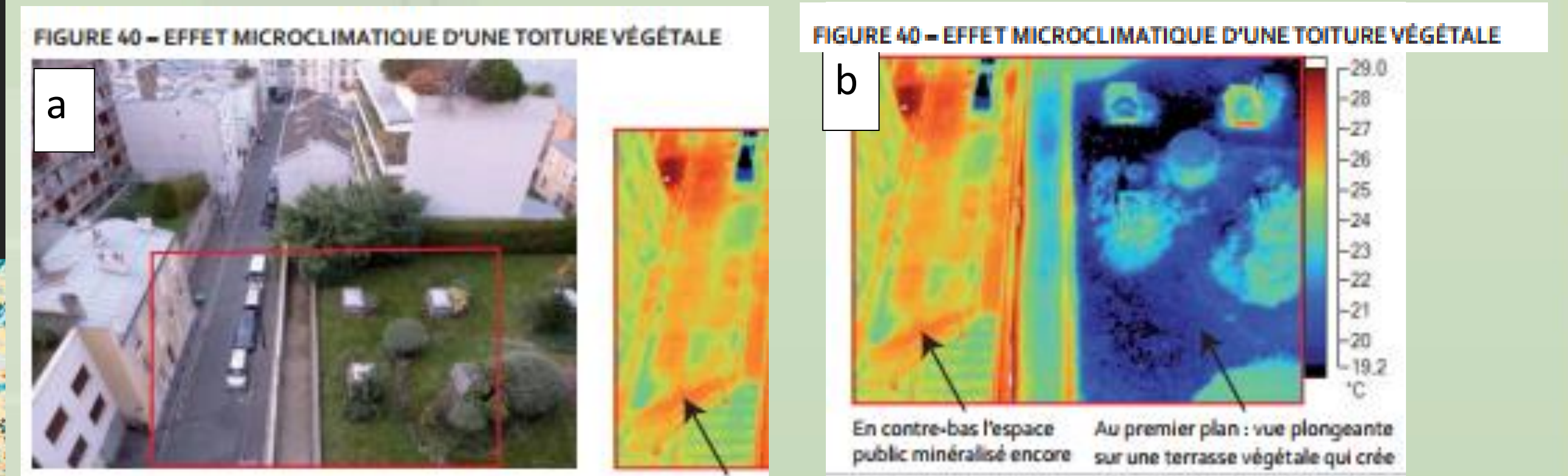


Image 4. Figure 40 by Apur (2012). a) Microclimatic effect of a green roof, b) Left Image: Green roof compared to the mineral public space. Right Image: Infrared view of the green roof as an example of Urban Planning and NBS.

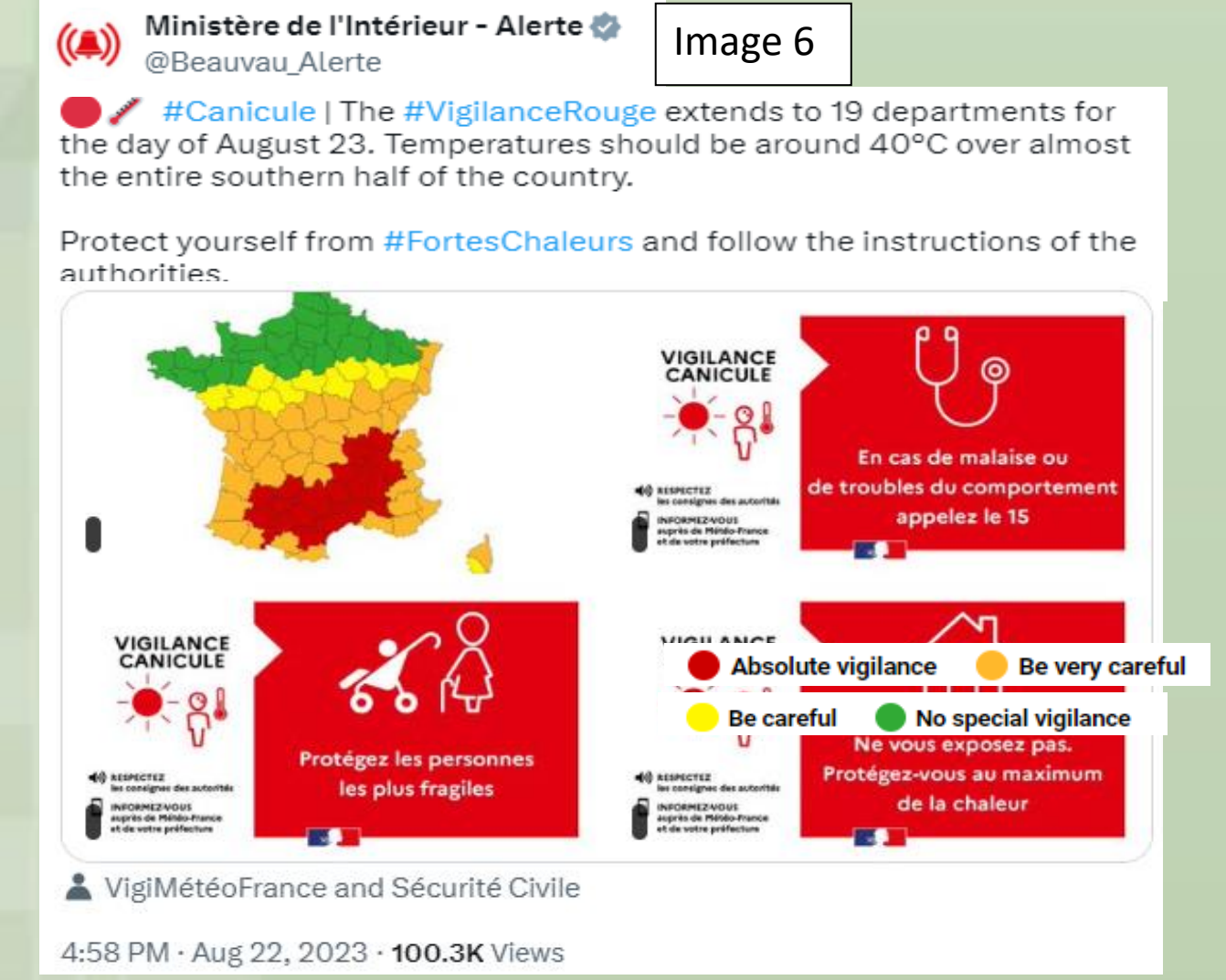
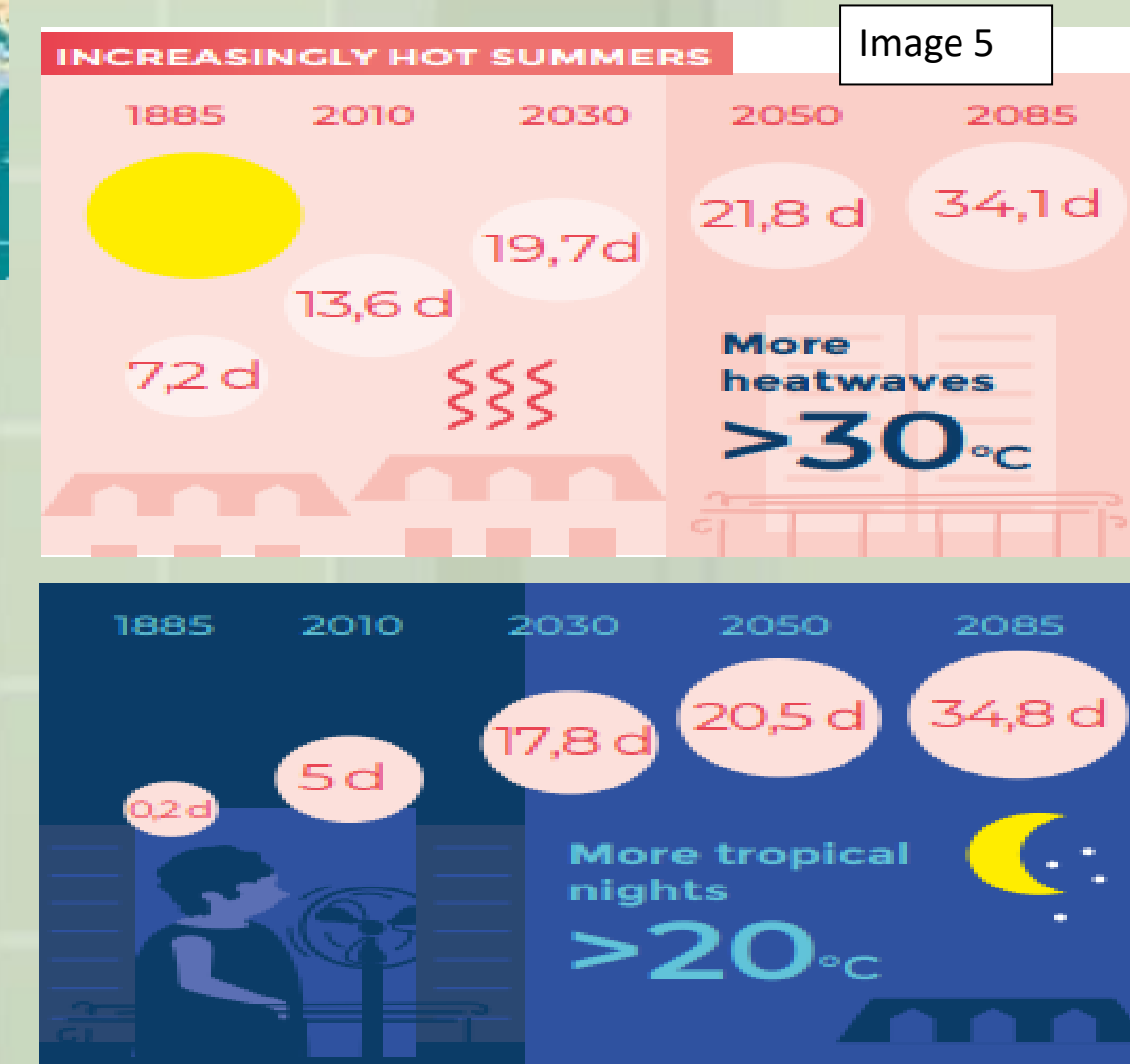


Image 5. Expected number of days and nights with temperatures >30°C and >20°C, respectively, during summer in Paris made by government agencies such as Urban Ecology Agency, Paris Climate Agency, and Urbanism Department by Paris Action Plan – Paris in Face of Climate Change, 2021.

Image 6. Screenshot from a social network that the Agency of the French Minister of the Interior uses to communicate weather events, showing one of Paris Heat-Health Alert System.



Figure 15 – Mesures de températures de l'air relevées entre la gare de l'Est et le parc des Buttes-Chaumont le 1^{er} août 2011 vers 22h (20h UTC) on August 1, 2011, around 10 PM (8 PM UTC).

What can be improved?

Paris' aging infrastructure is not well equipped to deal with extreme heat. Significant investment is needed to modernize and retrofit these systems to improve their resistance to heat.

Although the city has implemented some measures, residents of unrenovated buildings and users of intercity transport face challenges related to quality of life during extreme heat due to the lack of air conditioning and long commuting times.

The city has actively developed policies and actions to deal with heat waves, providing clear and accessible resources for residents and visitors. However, these efforts become less noticeable as you move away from the city center.

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