

Monitoring air quality in Paris before the Olympic and Paralympic Games 2024: Air pollution and pollen report.

Supplemental Material

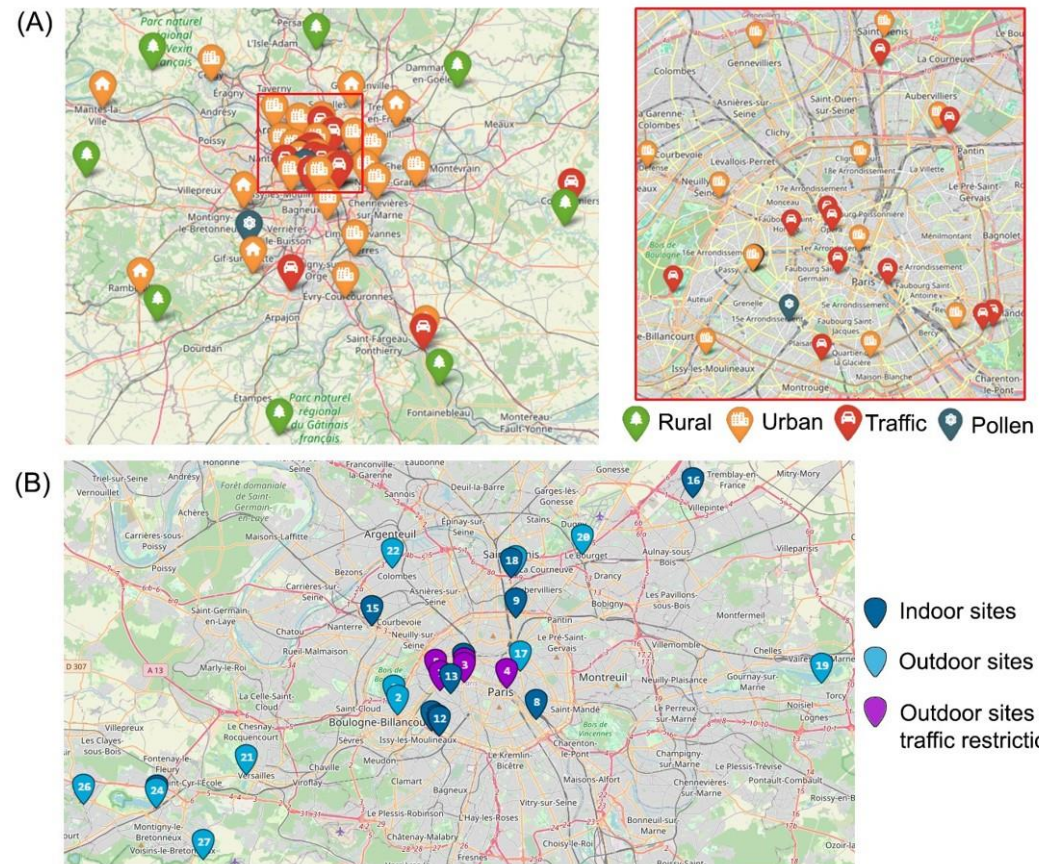
Table 1S: Regulated pollutants measured by *Airparif* with their associated measurement methods and standards.

Pollutant	AFNOR Standard	Measurement method
Nitrogen dioxide (NO ₂)	NF EN 14211	Catalytic reduction and chemiluminescence (automatic hourly measurements)
	-	Sampling by diffusion, followed by analysis by liquid desorption and visible spectrophotometry (weekly measurements by passive tubes)
Ozone (O ₃)	NF EN 14625	Ultraviolet photometry
Particles < 10 µm (PM ₁₀) Particles < 2,5 µm (PM _{2.5})	NF EN 12341 (sampling)	3 types of measurements, of which only sampling is standardized: <ul style="list-style-type: none"> • TEOM-FDMS, allowing better consideration of the volatile fraction of particles • BAM (β gauge) • FIDAS
Pollen 5 to 100µm	NF EN 16868	Volumetric Hirst method

AFNOR (*Association française de normalisation*): French Agency for normalization; NF: French norms; EN: European norms; TEOM: Tapered Element Oscillating Microbalance; FDMS: Filter Dynamics Measurement System; NF EN 14211: Standard method for measuring the concentration of nitrogen dioxide and nitrogen monoxide by chemiluminescence; NF EN 14625: Standard method for measuring ozone concentration by U.V. photometry; NF EN 12341: Standard gravimetric measurement method for determining the PM₁₀ or MP_{2.5} mass concentration of suspended particulate matter; NF EN 16868: Sampling and analysis of airborne pollen grains and fungal spores for allergy networks; BAM: Beta attenuation mass monitor; FIDAS: analyzer for real-time and continuous monitoring of particulate matter in ambient air

Table 2S: Location of AirParif network pollution and pollen sensors

Code	Site	Longitude	Latitude	Type
A1	Autoroute A1 Saint-Denis	2.35652	48.92476	TRAFFIC
ARG	Argenteuil	2.2216	48.9513	URBAN
AUB	Aubervilliers	2.3855	48.9039	URBAN
AUT	Boulevard Périphérique Auteuil	2.25330	48.85030	TRAFFIC
BASCH	Place Victor Basch	2.3275	48.8278	TRAFFIC
BOB	Bobigny	2.4527	48.9016	URBAN
BONAP	Rue Bonaparte	2.3353	48.8564	TRAFFIC
BP_EST	Boulevard Périphérique Est	2.41278	48.83917	TRAFFIC
CELES	Quai des Célestins	2.3605	48.8527	TRAFFIC
CERGY	CERGY-PONTOISE	2.0391	49.0411	URBAN
CHAMP	CHAMPIGNY SUR MARNE	2.5174	48.8165	URBAN
DEF	BOBIGNY	2.2405	48.8913	URBAN
ELYS	Avenue des Champs-Élysées	2.3123	48.8688	TRAFFIC
EVRY	EVRY	2.4293	48.6272	URBAN
GEN	GENNEVILLIERS	2.2944	48.9305	URBAN
GON	GONESSE	2.4448	48.9909	URBAN
HAUS	Boulevard Haussmann	2.3300	48.8733	TRAFFIC
LOGNES	LOGNES	2.6353	48.8403	URBAN
MANT	MANTES-LA-JOLIE	1.7211	48.9913	URBAN
MELUN	MELUN	2.6614	48.5414	URBAN
MONTG	MONTGERON	2.4556	48.7078	URBAN
NEUIL	NEUILLY-SUR-SEINE	2.2764	48.8811	URBAN
NOGENT	NOGENT-SUR-MARNE	2.4851	48.8405	URBAN
OPERA	Place de l'Opéra	2.3325	48.8703	TRAFFIC
PA01H	Paris 1er Les Halles	2.3458	48.8636	URBAN
PA07	Paris 7ème	2.2930	48.8572	URBAN
PA12	Paris 12ème	2.3944	48.8383	URBAN
PA13	Paris 13ème	2.3519	48.8288	URBAN
	PARIS 15ème			
PA15L	Stade Lenglen	2.2983	48.8382	URBAN
PA18	PARIS 18ème	2.3466	48.8913	URBAN
RAMBO	RAMBOUILLET	1.8324	48.6343	URBAN
RD934	RD934 Coulommiers	3.0842	48.8058	TRAFFIC
RN20	RN20 Montlhéry	2.26874	48.64072	TRAFFIC
RN2	RN2 Pantin	2.39117	48.90250	TRAFFIC
RN6	RN6 Melun	2.65351	48.52811	TRAFFIC
RUR-E	Zone rurale Est - SAINTS	3.0639	48.7653	RURAL
RUR-NE	Zone rurale Nord-Est - MONTGE-EN-GOELE	2.7527	49.0291	RURAL
RUR-NO	Zone rurale Nord-Ouest - FREMAINVILLE	1.8672	49.0625	RURAL
RUR-N	Zone rurale Nord - SAINT-MARTIN-DU-TERTR	2.3439	49.1015	RURAL
RUR-O	Zone rurale Ouest	1.6749	48.8580	RURAL
RUR-SE	Zone rurale Sud-Est - Forêt de FONTAINEBLE	2.7678	49.0885	RURAL
RUR-SO	Zone rurale Sud-Ouest - Forêt de RAMBOUILL	1.8827	48.5825	RURAL
RUR-S	Zone rurale Sud - BOIS-HERPIN	2.2359	48.3632	RURAL
SOULT	Boulevard Soult	2.40772	48.83798	TRAFFIC
STDEN	SAINTE-DENIS	2.3586	48.9341	URBAN
TREMB	TREMBLAY-EN-FRANCE	2.5752	48.9556	URBAN
ULIS	LES ULIS	2.1593	48.6744	URBAN
VERS	VERSAILLES	2.1305	48.7991	URBAN
VILLEM	VILLEMOMBLE	2.5071	48.8819	URBAN
VITRY	VITRY-SUR-SEINE	2.3758	48.7761	URBAN
	Paris	2.3108	48.8408	POLLEN
	Saclay	2.1488	48.7247	POLLEN

Figure 1. Map of Airparif measurement stations (A) and Olympic sites (B)

(A) Rural stations are in green, urban stations in orange, traffic stations in red and pollen stations in grey; (B) Olympic indoor sites are in dark blue, outdoor sites in light blue and outdoor sites with traffic restriction in purple. The list of stations is provided in Table 2S, and the list of Olympic sites is in Table 1. Data by © OpenStreetMap, under ODbL.