

Supplemental information

Figure S1. Wind rose in Windsor during 1996-2015, a) all data, b) smog season (April to September).

Figure S2. Directional smog season mean O₃ concentrations in Windsor during 1996-2015. Boxes indicate the interquartile (the 25th to 75th percentile). Middle line in each box represents the median value. The mean value is indicated by a circle marker. Whiskers represent the 1.5 times interquartile ranges.

Figure S3. Smog season 24-hour backward trajectories arriving in Windsor in 2015.

Figure S4. Clustering of smog season 8-hour max O₃ concentrations averaged by 36 air mass trajectory directions in Windsor during 1996-2015.

Table S1. Result of Tukey's tests of 8-hour max O₃ and meteorological parameters by cluster in Windsor during 1996-2015 (in Table 3).

Table S2. Correlation coefficients between smog season hourly/daily O₃ concentrations and meteorological parameters in Windsor during 1996-2015.

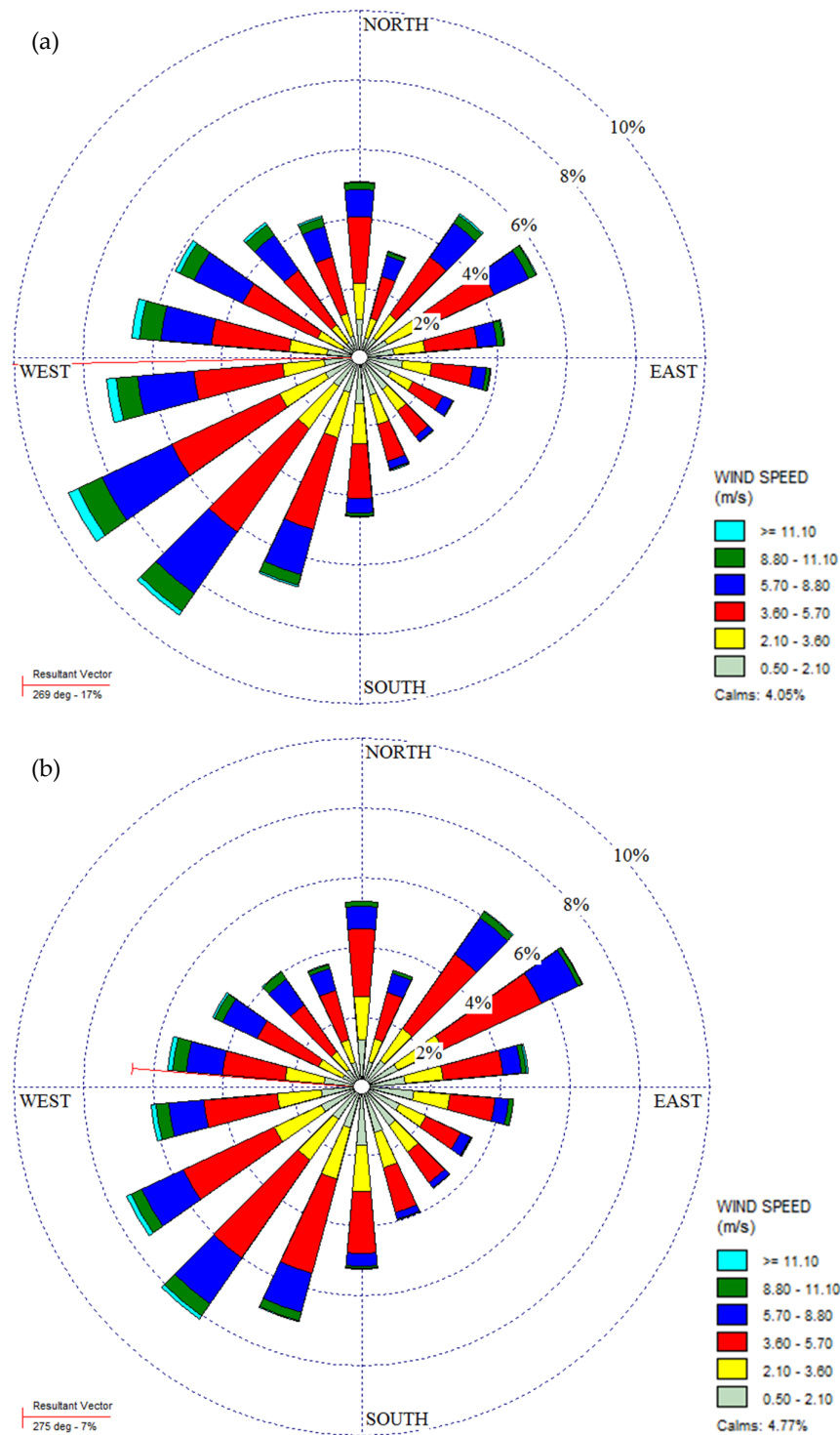


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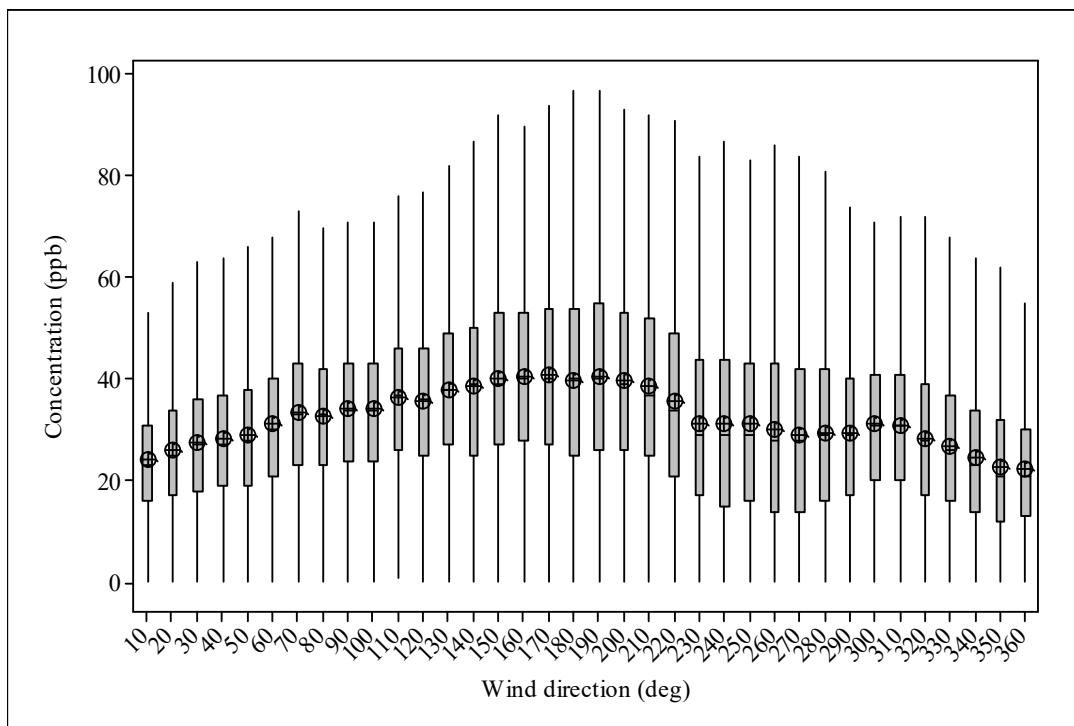


Figure S2. Directional smog season mean O_3 concentrations in Windsor during 1996–2015. Boxes indicate the interquartile (the 25th to 75th percentile). Middle line in each box represents the median value. The mean value is indicated by a circle marker. Whiskers represent the 1.5 times interquartile ranges.

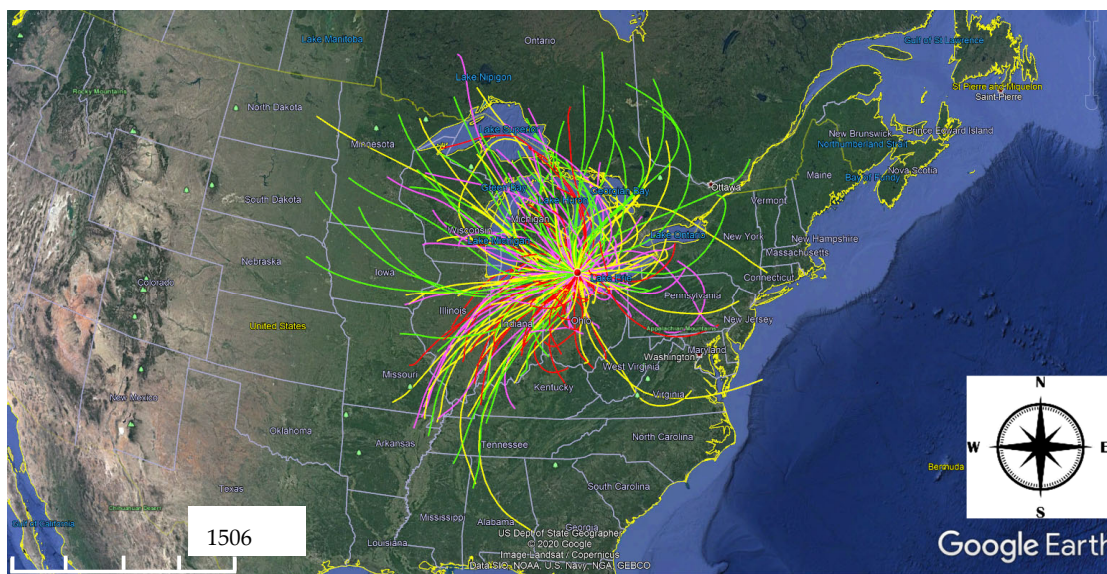


Figure S3. Smog season 24-hour backward trajectories arriving in Windsor in 2015. Trajectories in green, yellow, pink and red represent 8-hour max O_3 concentration in Windsor was in 0th–25th, 25th–50th, 50th–75th, and 75th–100th percentile levels, respectively.

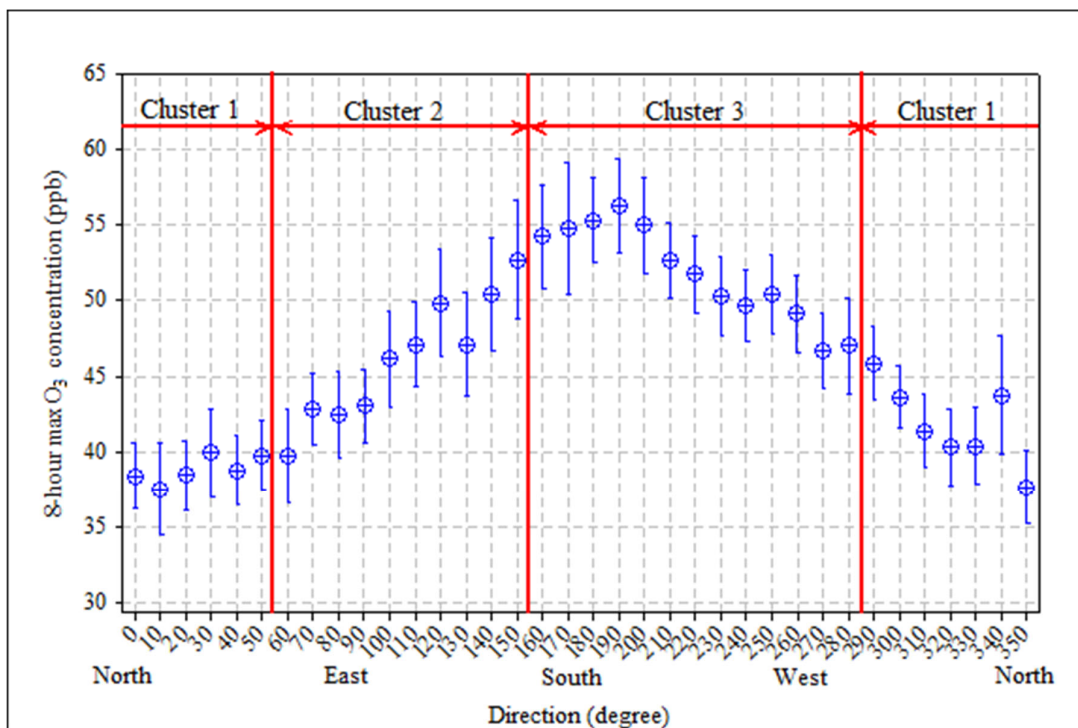


Figure S4. Clustering of smog season 8-hour max O₃ concentrations averaged by 36 air mass trajectory directions in Windsor during 1996–2015.

Table S1. Result of Tukey's tests of 8-hour max O₃ and meteorological parameters by cluster in Windsor during 1996–2015 (in Table 3). Clusters that do not share a letter are significantly different.

Cluster	8-hour Max O ₃	Daily Mean Temp	Daily Mean Relative Humidity	Daily Mean Wind Speed	Daily Mean Atmospheric Pressure
Cluster 1	C	B	B	A	B
Cluster 2	B	B	A	B	A
Cluster 3	A	A	A	A	C

Table S2. Correlation coefficients between smog season hourly/daily O₃ concentrations and meteorological parameters in Windsor during 1996–2015.

Meteorological parameters	Hourly O ₃ (ppb) ^a	Daily O ₃ (ppb) ^b
Temperature (°C)	0.518 *	0.414 *
Relative humidity (%)	–0.521 *	–0.238 *
Visibility (km)	0.031 *	–0.08 *
Wind speed (km/h)	0.316 *	–0.023
Atmospheric pressure (kpa)	–0.055 *	0.011

^a: Spearman's rank correlation coefficients; ^b: Pearson correlation coefficients; *: significant at $p < 0.05$.