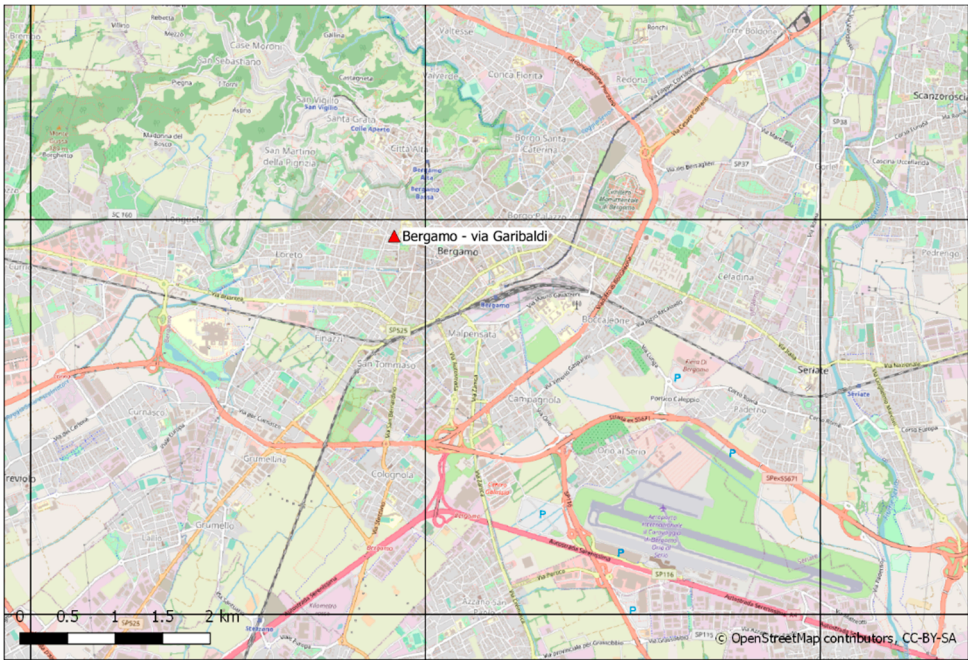
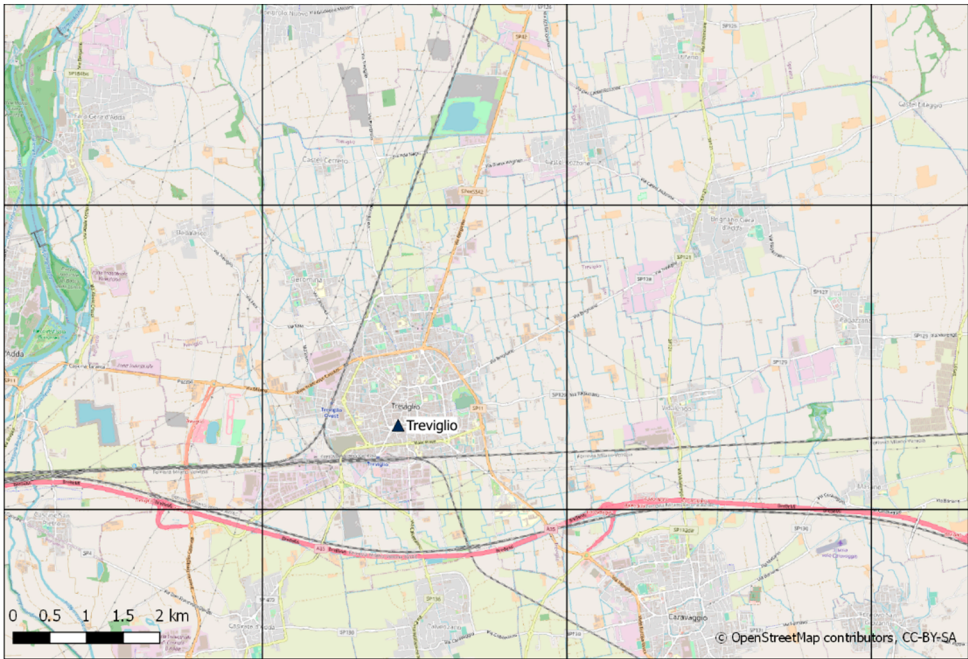


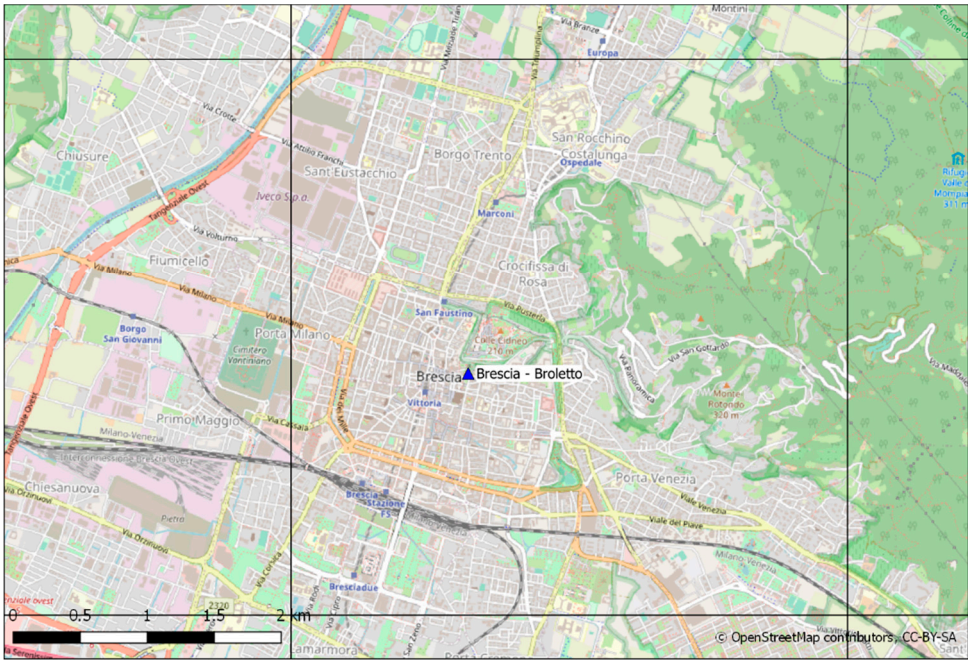
Supplementary images



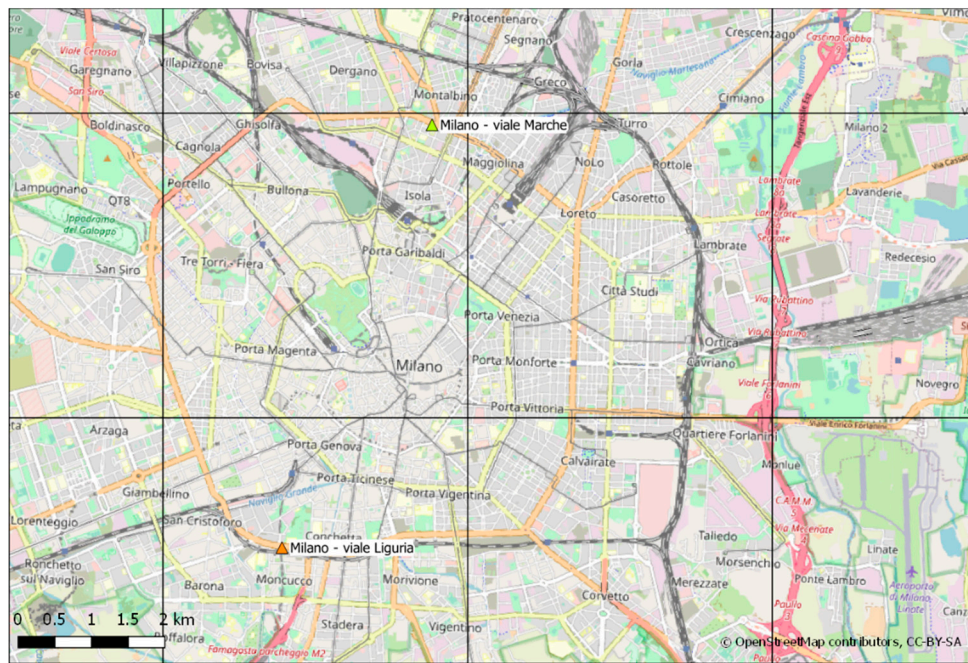
a)



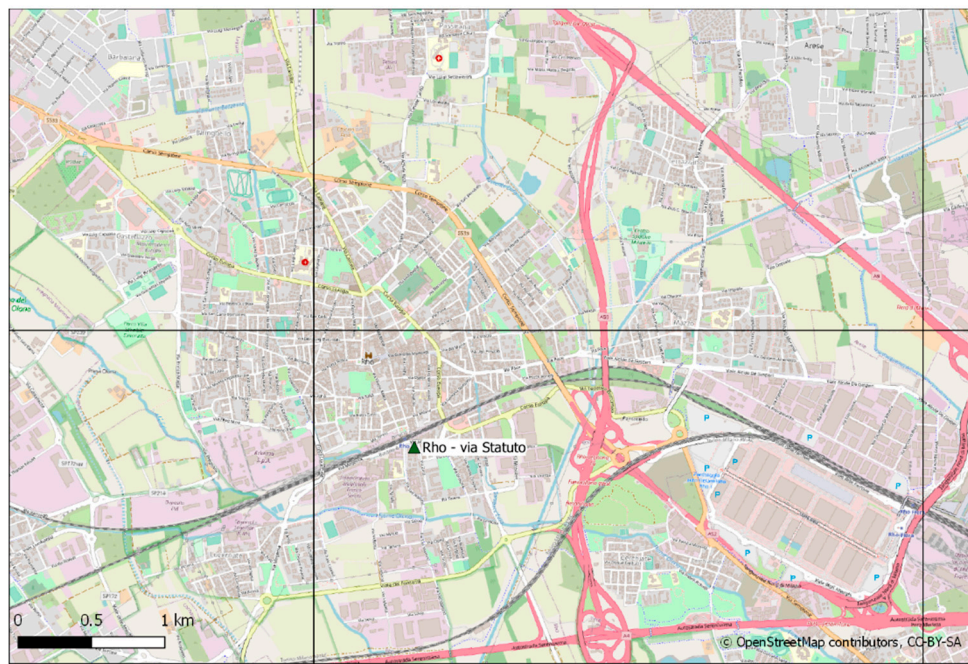
b)



c)



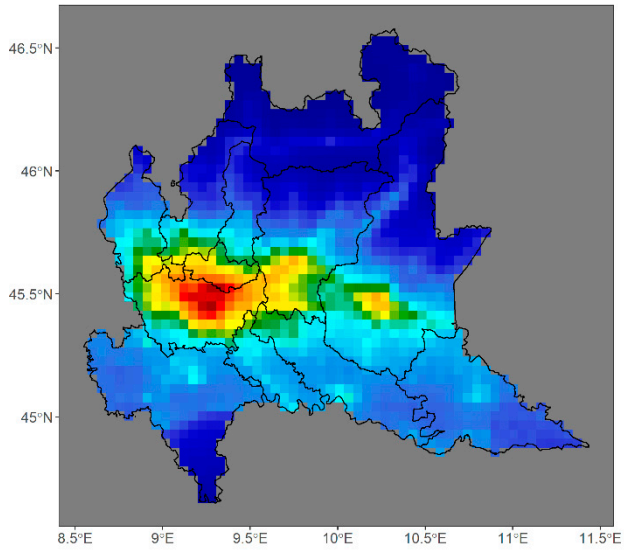
d)



e)

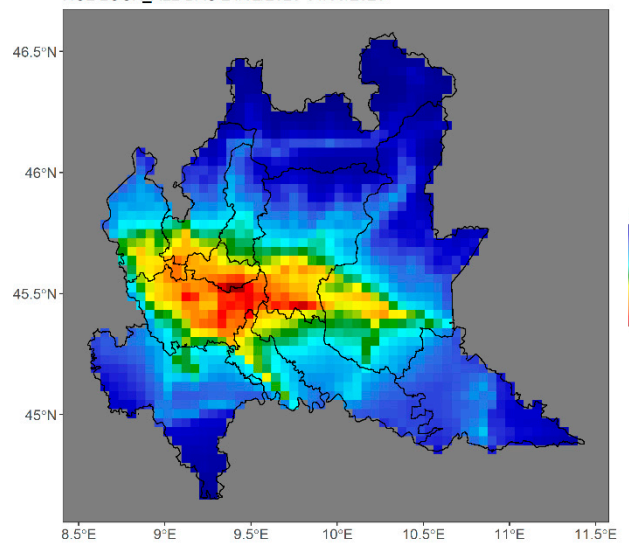
Figure 1. Location of air quality stations used in model validation with superimposed computational grid. a) Bergamo – Via Garibaldi, b) Treviglio, c) Brescia – Broletto, d) Milano- Viale Marche/Viale Liguria, e) Rho – Via Statuto.

NO2 BAU 24/02/2020-01/03/2020



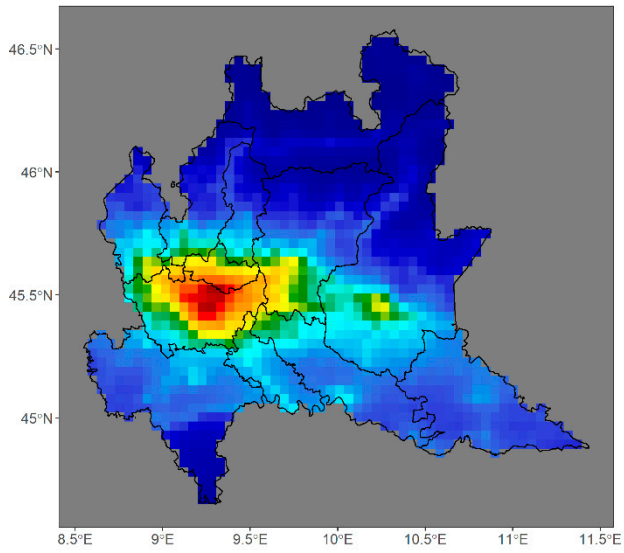
(a)

NO2 LOCK_ALL-BAU 24/02/2020-01/03/2020



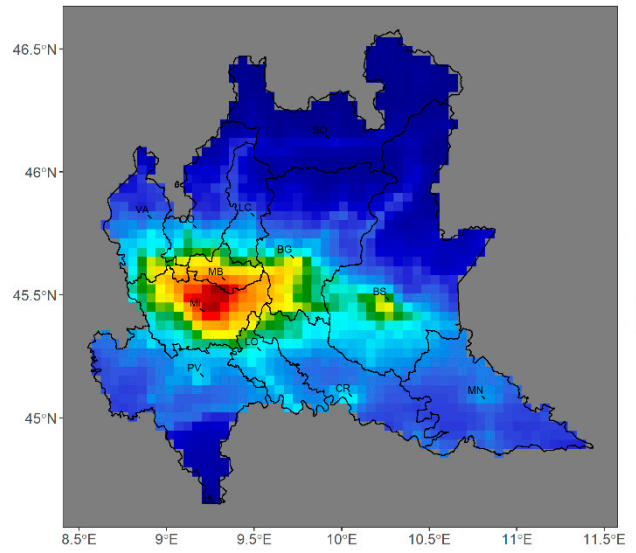
(b)

NO2 BAU 09/03/2020-15/03/2020

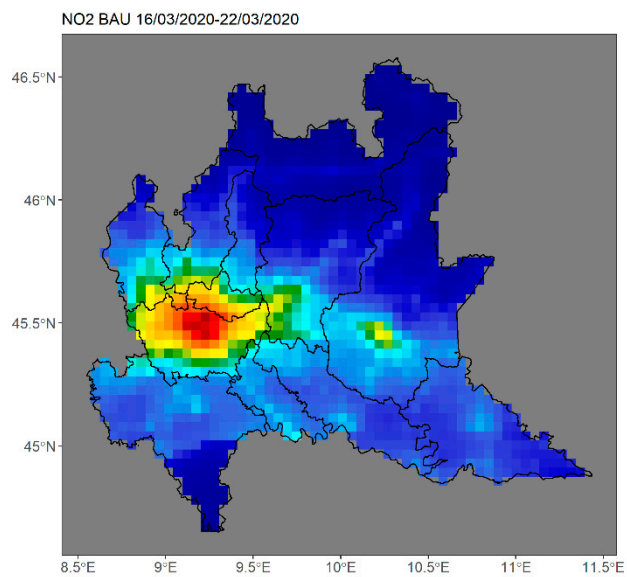


(c)

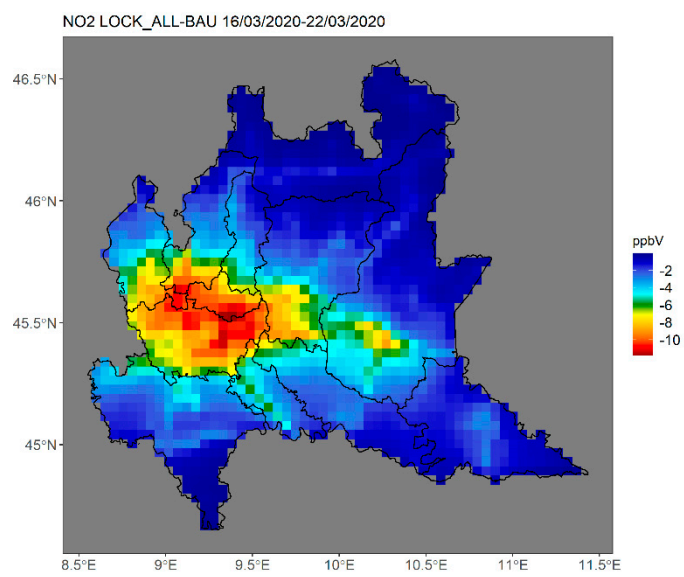
NO2 BAU 09/03/2020-15/03/2020



(d)



(e)



(f)

Figure S1 - NO₂ weekly mean concentration (ppbV) for the BAU scenario respectively for the week 1 (a), 3 (c) and 4 (e). Absolute difference between LOCK_TRA and BAU scenarios for the week 1 (b), 3 (d) and 4 (f).

WRF-ARW - DOMAIN CONFIGURATION

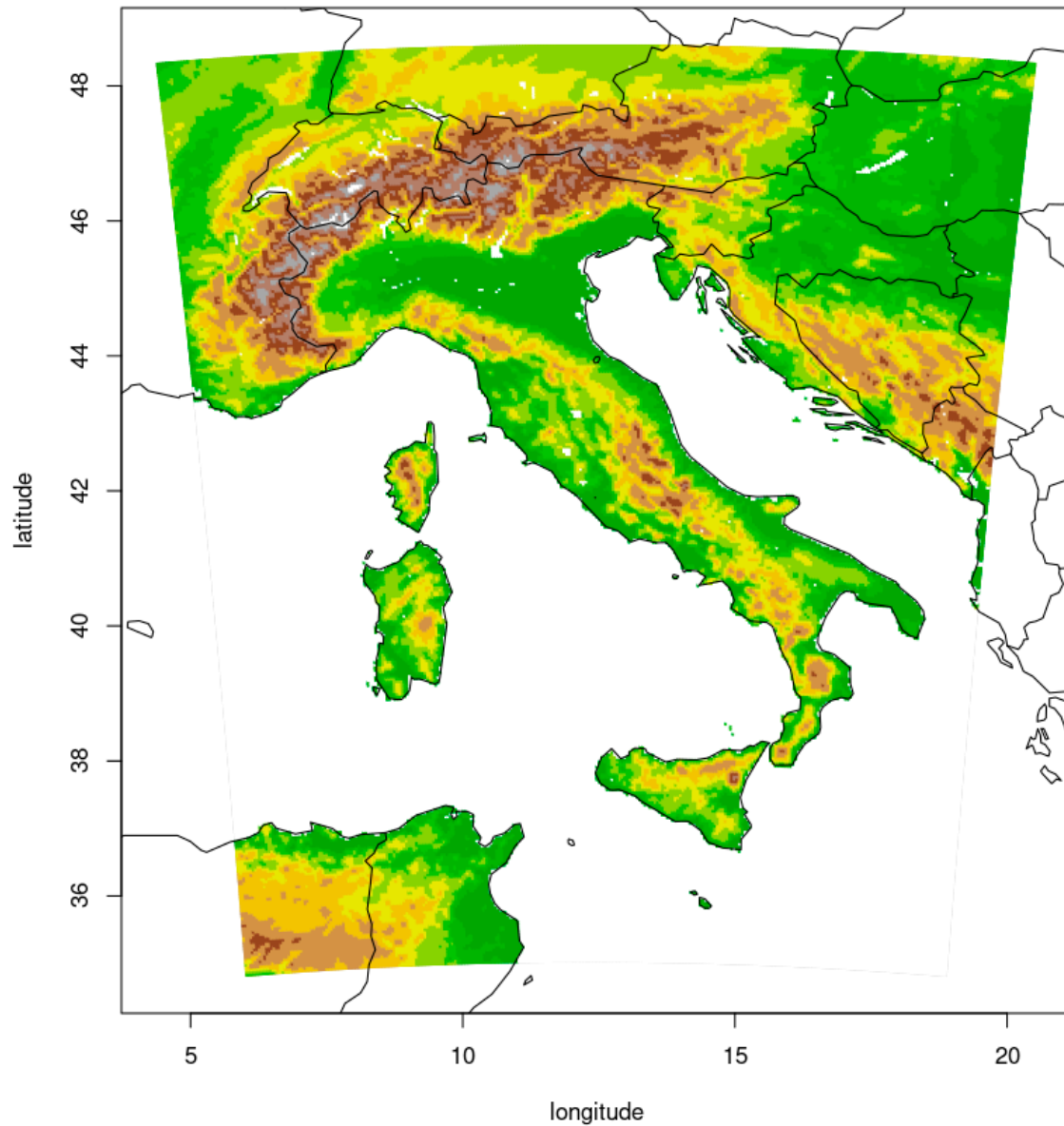


Figure S2 - Computational domain of WRF-ARW with the underlying orography. The grid has a horizontal resolution of 4 km, the simulations are conducted with 36 vertical levels.

Supplementary Tables

Table S1 – Kruskal-Wallis Test summary for pre-lockdown and lockdown period.

Period	Sample Count	Kruskal-Wallis rank sum statistic	p-value	Effect size (Small-Large)
01/01-08/03 (Pre-Lockdown)	464	33.71567565	7.63e-6	Moderate
09/03-30/04 (Lockdown)	378	82.010703001	1.37e-15	Large

Table S2 - Mann–Whitney–Wilcoxon test summary report for Pre-lockdown period.

group1	group2	n1	n2	Statistic	p-value	Adjusted p-value	Significance (* /****)	Effect size (Small-Large)
2014	2015	66	66	1232	1.68E-05	3.53E-04	***	Moderate
2014	2016	66	67	2446	0.291	1	ns	Small
2014	2017	66	66	1519	0.003	0.057	ns	Small
2014	2018	66	66	2139	0.861	1	ns	Small
2014	2019	66	66	1397	3.82E-04	0.008	**	Moderate
2014	2020	66	67	1956	0.252	1	ns	Small
2015	2016	66	67	2987	4.83E-04	0.01	*	Moderate
2015	2017	66	66	2295	0.596	1	ns	Small
2015	2018	66	66	2969	3.21E-04	0.007	**	Moderate
2015	2019	66	66	2315	0.534	1	ns	Small
2015	2020	66	67	2827	0.006	0.118	ns	Small
2016	2017	67	66	1607	0.007	0.139	ns	Small
2016	2018	67	66	2071	0.53	1	ns	Small
2016	2019	67	66	1562	0.004	0.074	ns	Small
2016	2020	67	67	2041	0.366	1	ns	Small
2017	2018	66	66	2782	0.006	0.126	ns	Small
2017	2019	66	66	2190	0.958	1	ns	Small
2017	2020	66	67	2668	0.04	0.838	ns	Small
2018	2019	66	66	1520	0.003	0.058	ns	Small
2018	2020	66	67	2053	0.478	1	ns	Small
2019	2020	66	67	2709	0.025	0.529	ns	Small

Table S3 - Mann–Whitney–Wilcoxon test summary report for Pre-lockdown period.

group1	group2	n1	n2	Statistic	p-value	Adjusted p-value	Significance (* /****)	Effect size (Small-Large)
2014	2015	54	54	1347	0.497	1	ns	small
2014	2016	54	54	1662	0.211	1	ns	small
2014	2017	54	54	1600	0.385	1	ns	small
2014	2018	54	54	1723	0.104	1	ns	small
2014	2019	54	54	1898	0.007	0.145	ns	small
2014	2020	54	54	2566	1.01E-11	2.12E-10	****	large
2015	2016	54	54	1785	0.045	0.941	ns	small
2015	2017	54	54	1688	0.158	1	ns	small
2015	2018	54	54	1826	0.024	0.502	ns	small
2015	2019	54	54	1971	0.002	0.034	*	moderate
2015	2020	54	54	2595	2.89E-12	6.07E-11	****	large
2016	2017	54	54	1420	0.818	1	ns	small
2016	2018	54	54	1490	0.847	1	ns	small
2016	2019	54	54	1717	0.112	1	ns	small
2016	2020	54	54	2536	3.58E-11	7.52E-10	****	large
2017	2018	54	54	1527	0.674	1	ns	small
2017	2019	54	54	1738	0.086	1	ns	small
2017	2020	54	54	2473	4.56E-10	9.58E-09	****	large
2018	2019	54	54	1701	0.136	1	ns	small
2018	2020	54	54	2485	2.84E-10	5.96E-09	****	large
2019	2020	54	54	2314	1.47E-07	3.09E-06	****	large