

Supplementary Materials: Land-Use Regression Analysis of Summer Tropospheric Ozone Concentrations in Ireland

Keelan McHugh ^{1,*}, Thomas Cummins ¹ and Julian Aherne ²

Table S1. Average co-located passive and active ozone data ($\mu\text{g}/\text{m}^3$) for Clonskeagh (CSK) and Kilkenny (SVL) and the reduction as % of the passive value used to calibrate the passive results.

Exposure	Passive	Active	Difference	Passive % reduction
1	66.2	47.1	19.1	29
2	67.3	49.5	17.9	27
3	68.9	54.5	14.4	21
Average	67.5	50.4	17.1	25

Table S2. Predictor variable values used in final model.

Site	Dist. Coast (m)	Dist. IPC (m)	Rain (mm/year)	Forest 500 buffer (m^2)	Water 1000 buffer (m^2)
Athlone	65357	20326	947	185471	1392874
Ballinamore	47259	3027	1231	249134	42600
Belmullet	165	31400	1295	25847	1570489
Belmullet east	4772	18794	1497	5208	22794
Bray	2198	583	878	53566	10369
Carnsore point	156	15489	797	98190	1211847
Castlebar	17163	1811	1367	175892	170652
Clare	13664	26180	1290	149741	155143
Clonskeagh	2268	3586	750	98592	38226
Cloone	55743	11897	1084	174631	109687
Cork	46413	14890	1104	202969	6586
Donegal	13114	28318	1920	21731	32917
Dublin Airport	4065	338	752	76269	10535
Emo	68396	5037	846	304051	85051
Galway	22580	17922	1127	60782	434
Glanmire Road	17293	835	1065	81507	221969
Henry street	71308	1595	995	63367	444666
Kerry	14488	11038	1497	704588	5543
Kilkenny	40200	3797	889	103150	17618
Kilkitt	33286	9154	1067	65154	3484
Louth	13181	8255	811	45376	4194
Mace Head	118	59707	1334	0	1851288
Mohill	52286	6748	1092	114950	11092
Palmerstown	6929	79	763	249193	106543
Rathmines	3662	3363	733	18904	15649
Sligo	10342	15325	1213	72716	45
Tipp north	48876	13196	938	55090	20559
Tipp south	27781	17518	1145	114966	38117
Valentia	574	308	1570	84053	434185
Waterford	9682	291	1031	26497	3805
West Cork	8255	14475	2090	170725	17799
Westmeath	54833	7579	951	61785	52584
Wexford	16034	6072	1056	48925	2349
Wicklow	30583	26262	1493	595145	0

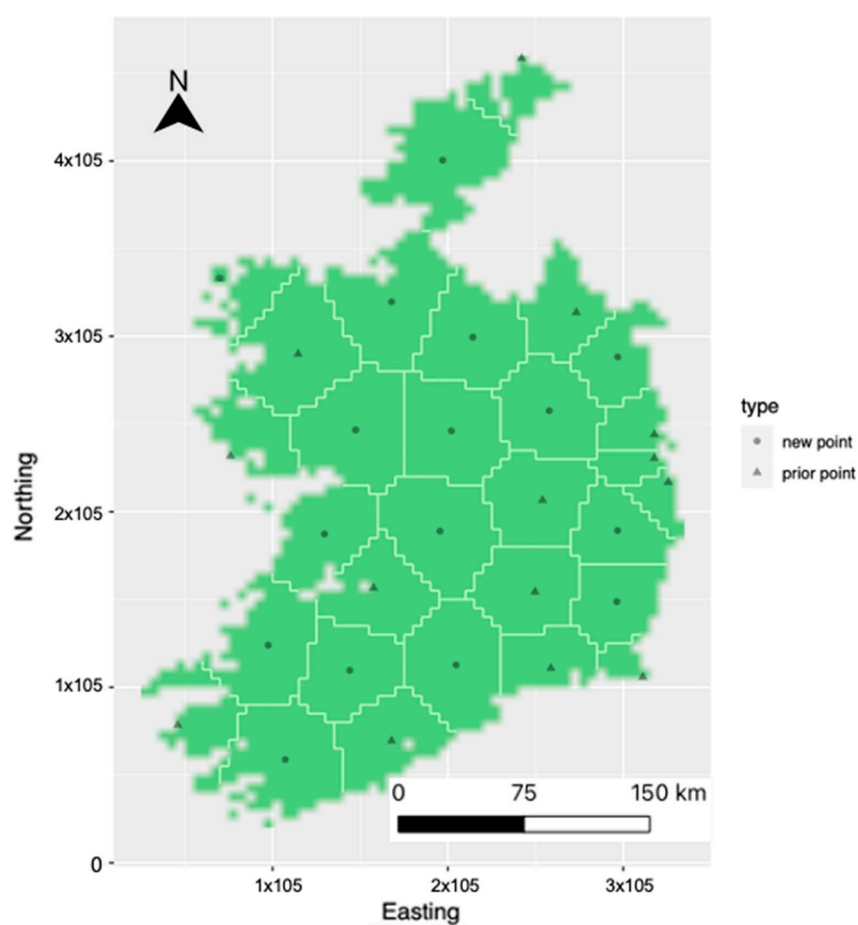


Figure S1. The 16 existing monitoring stations (triangles) and 14 new sampling sites (circles). New sample points were chosen from the centre of spatially balanced strata that were mapped using k-means clustering in R (SPCOSA package; [36]).

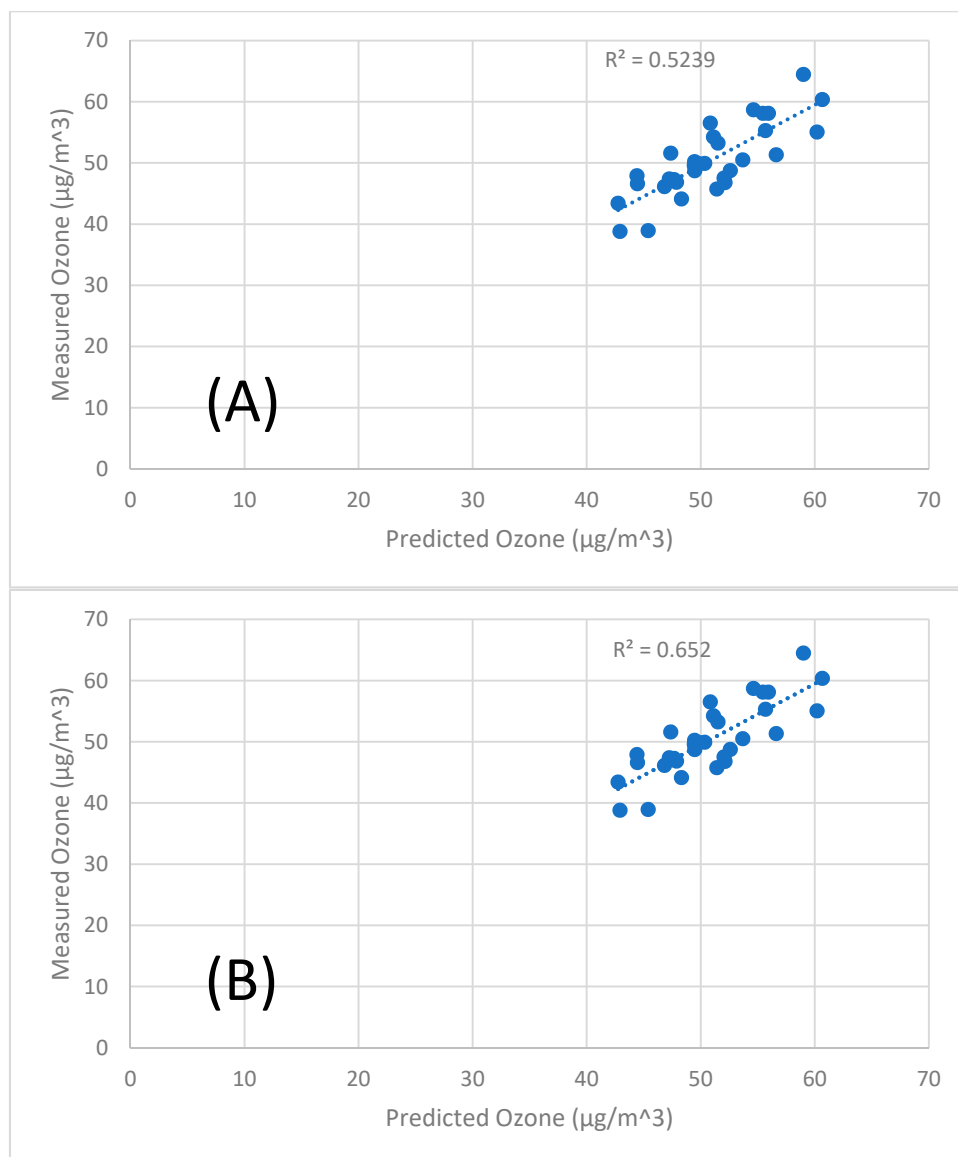


Figure S2. Scatter plot and R^2 values of predicted and measured ozone with Waterford site included (A) and Waterford site removed (B).

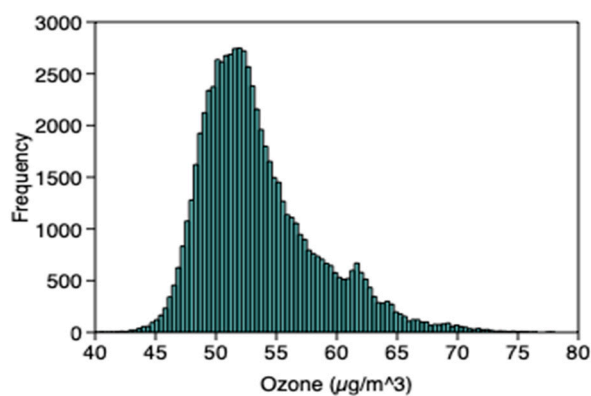


Figure S3. Frequency distribution of modelled ozone data ($\mu\text{g}/\text{m}^3$) for summer 2022.