



Supplement of

Operational, diagnostic, and probabilistic evaluation of AQMEII-4 regional-scale ozone dry deposition: time to harmonize our LULC masks

Ioannis Kioutsioukis et al.

Correspondence to: Stefano Galmarini (stefano.galmarini@ec.europa.eu)

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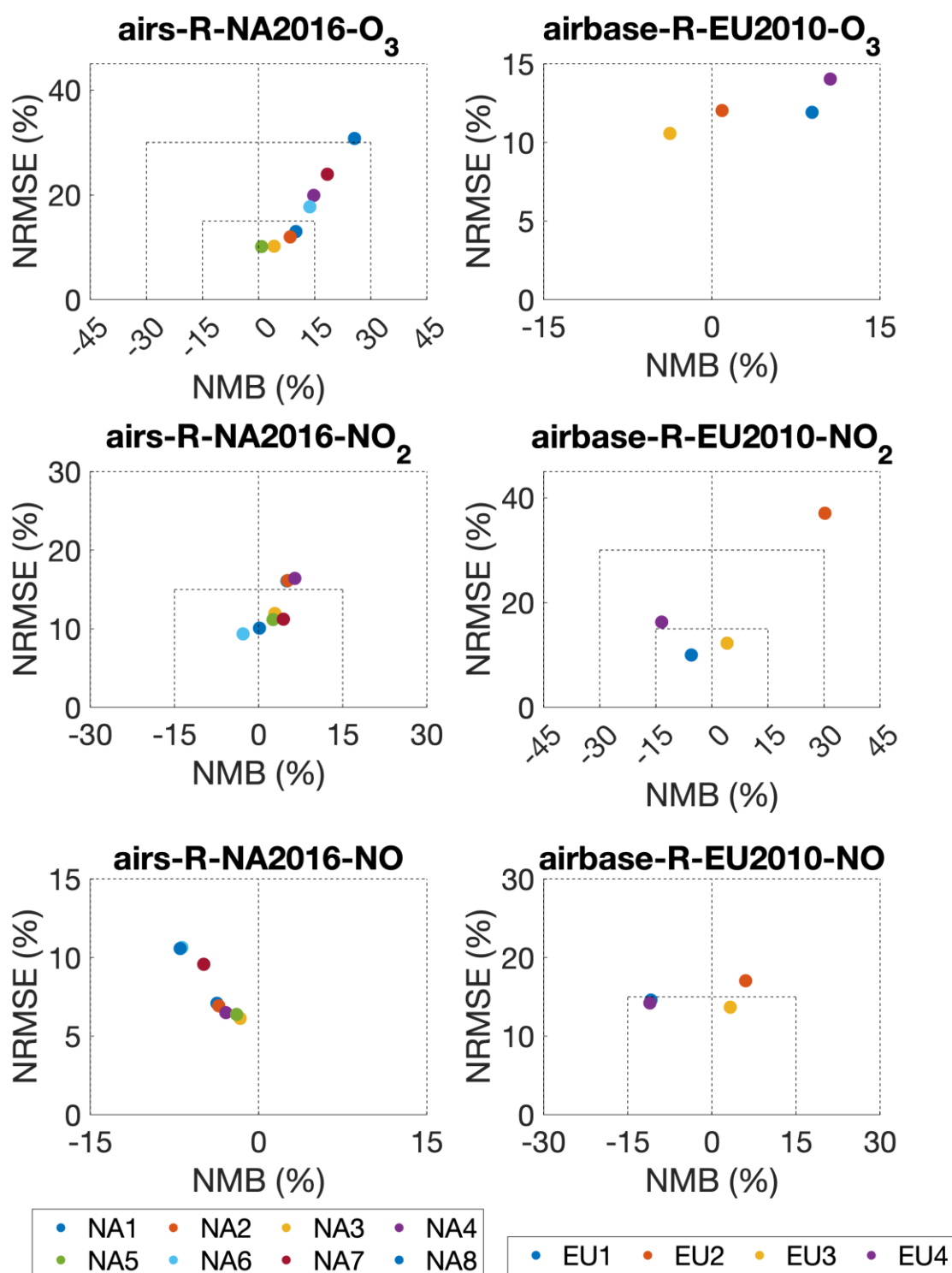


Figure S1: Soccer plot diagrams of NO, NO₂ and O₃. Left panels NA case, right panels EU case.

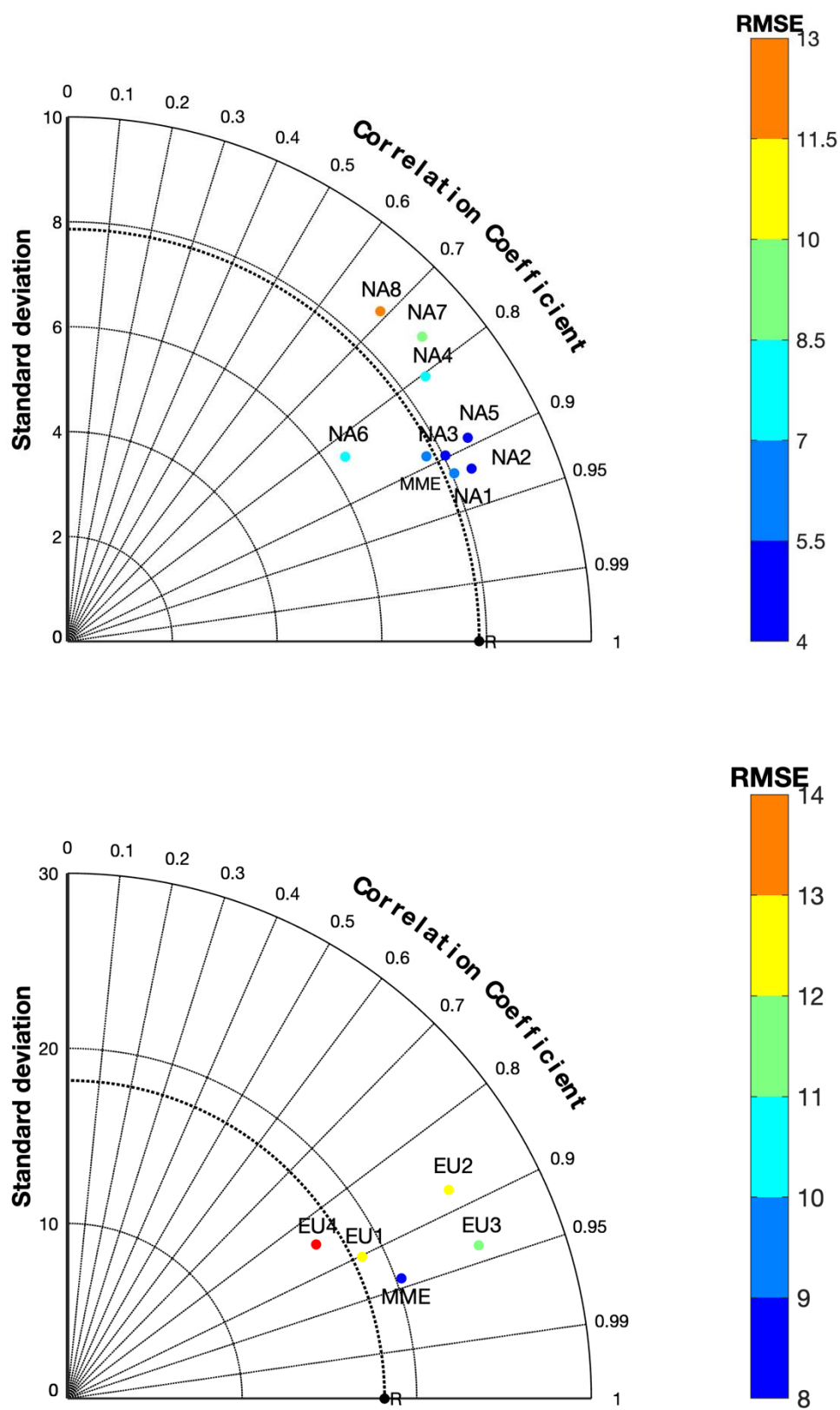


Figure S2: Taylor diagrams of Ozone simulation for 2016 in NA (top panel) and EU2010 (bottom panel).

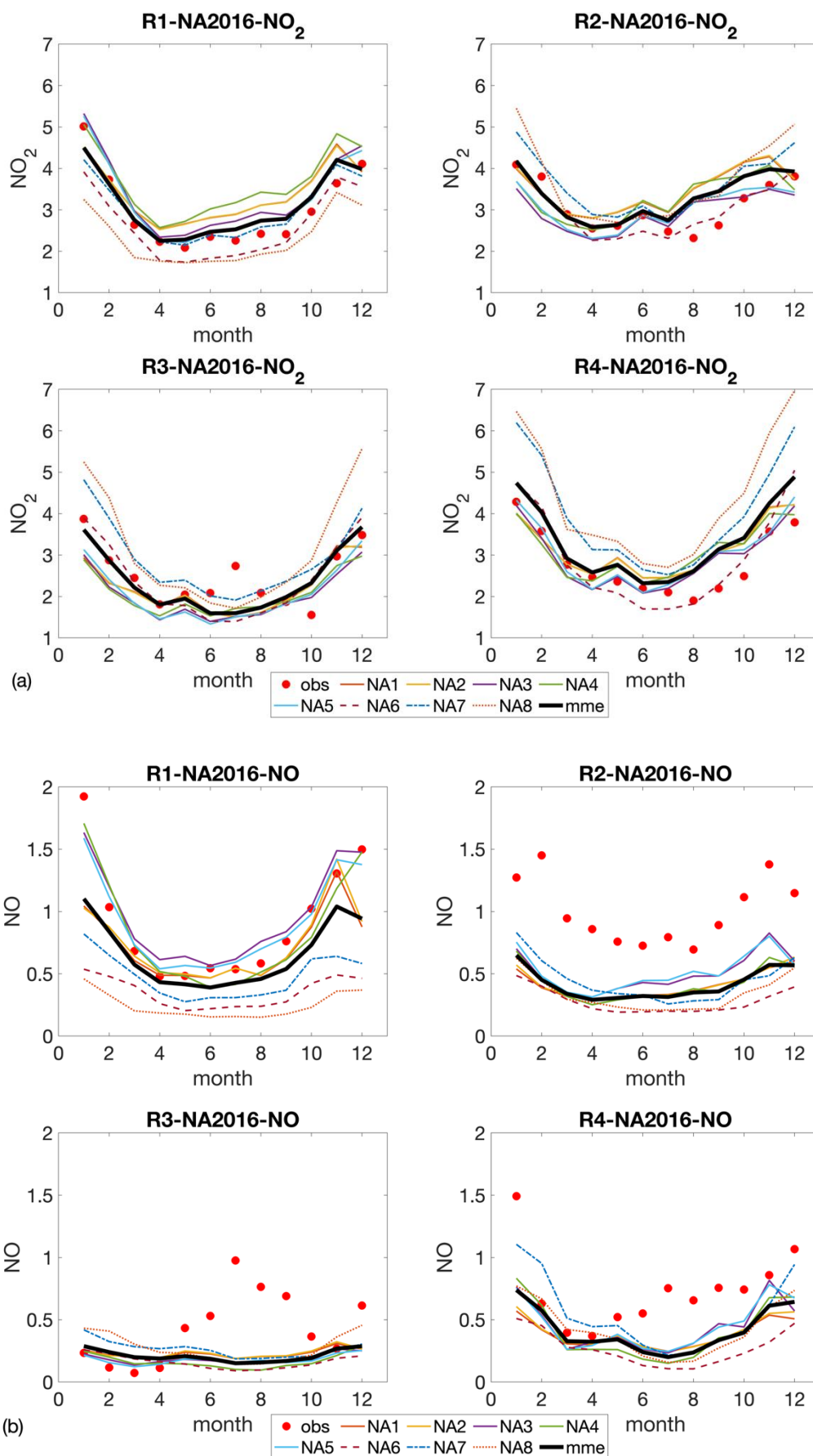


Figure S3: Subregional analysis of NO_2 and NO for the NA case.

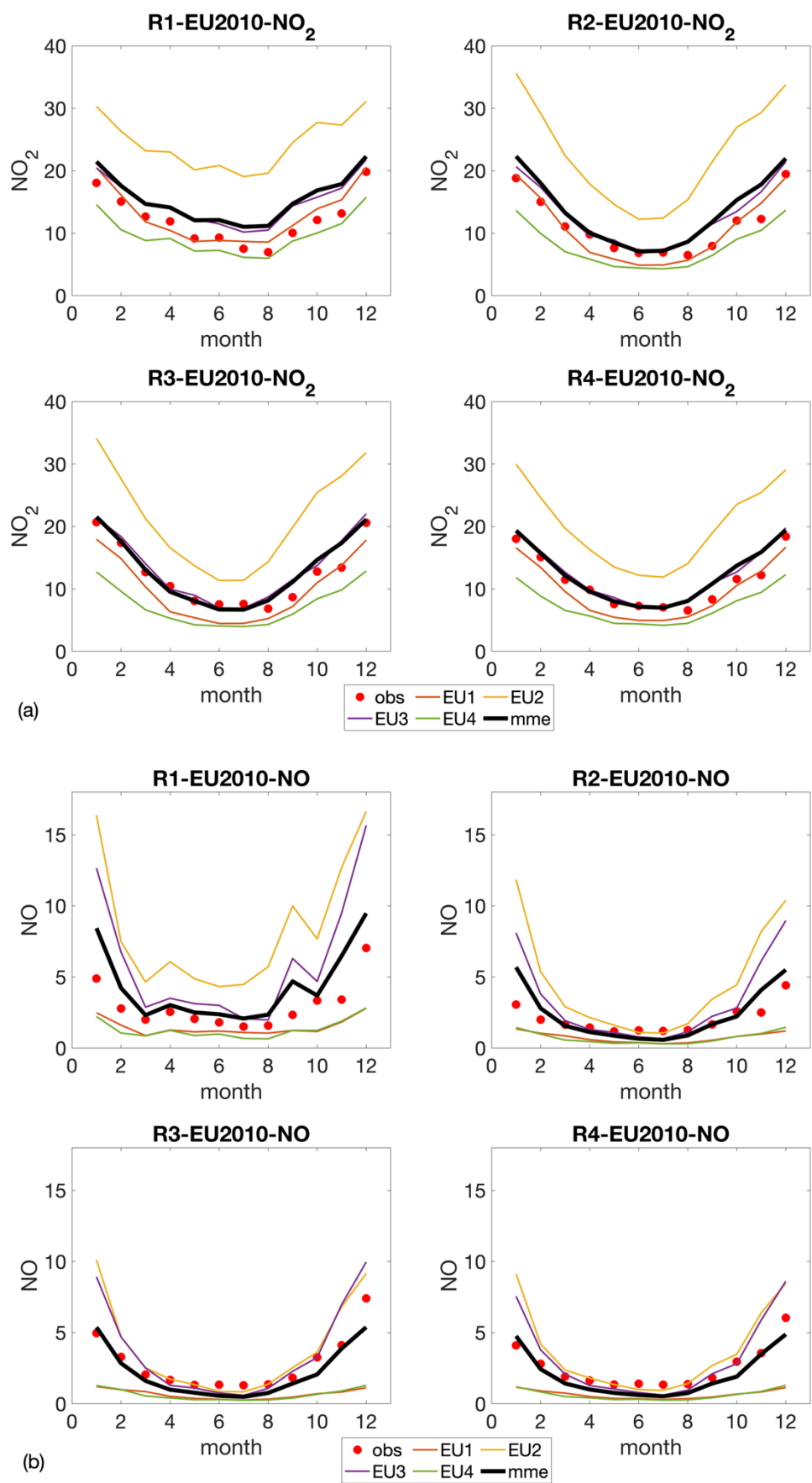
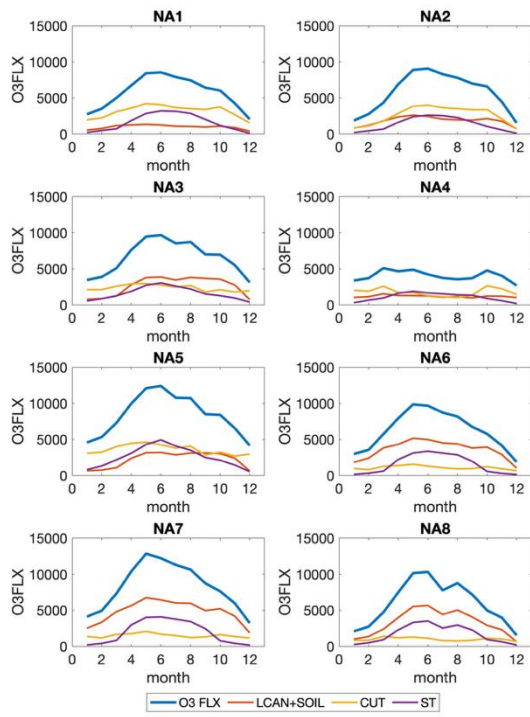
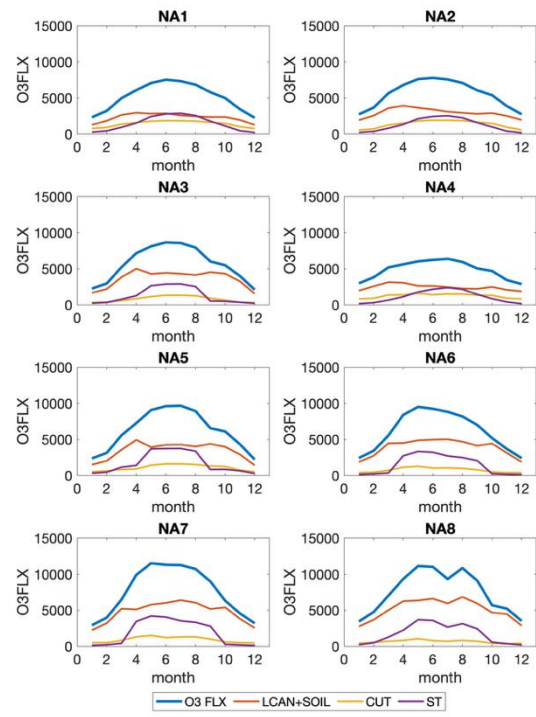


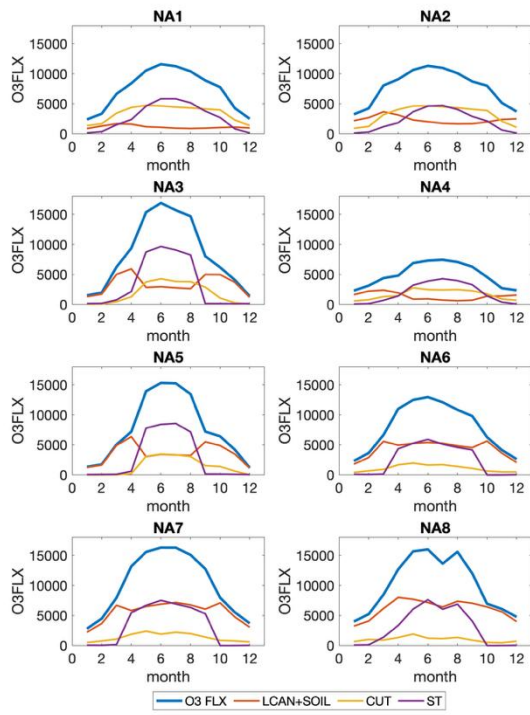
Figure S4: Subregional analysis of NO₂ and NO for the EU case



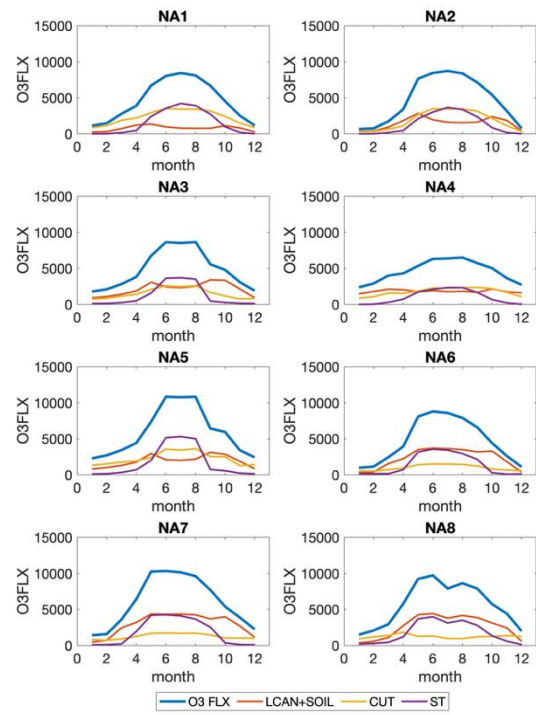
(a)



(b)



(c)



(d)

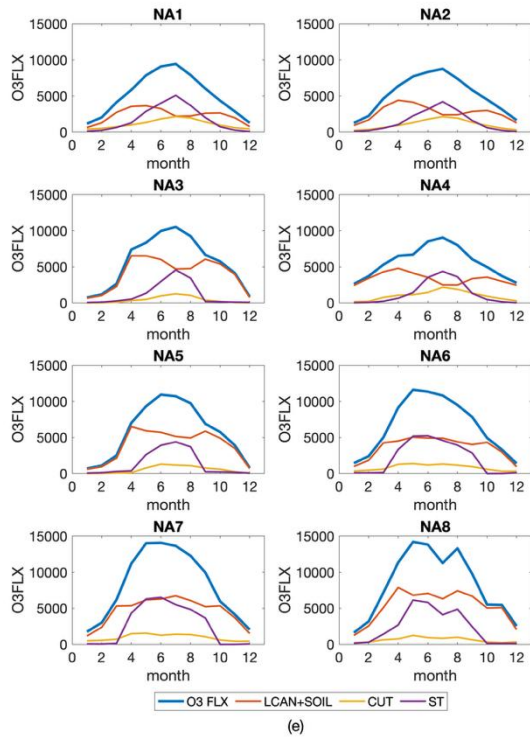


Figure S5 NA case study: Ozone dry deposition flux (O3FLX) [$\mu\text{g m}^{-2}\text{s}^{-1}$], lower canopy and soil effective fluxes combined in one factor (LCAN+SOIL), Cuticular effective flux (CUT) and Stomatal effective flux (ST) for shared grid cells covered by at least 85% of (a) needle-leaf forest, (b) O3 Receptors, (c) Deciduous Broadleaf Forest, (d) Mixed Forest, (e) Planted-Cultivated.

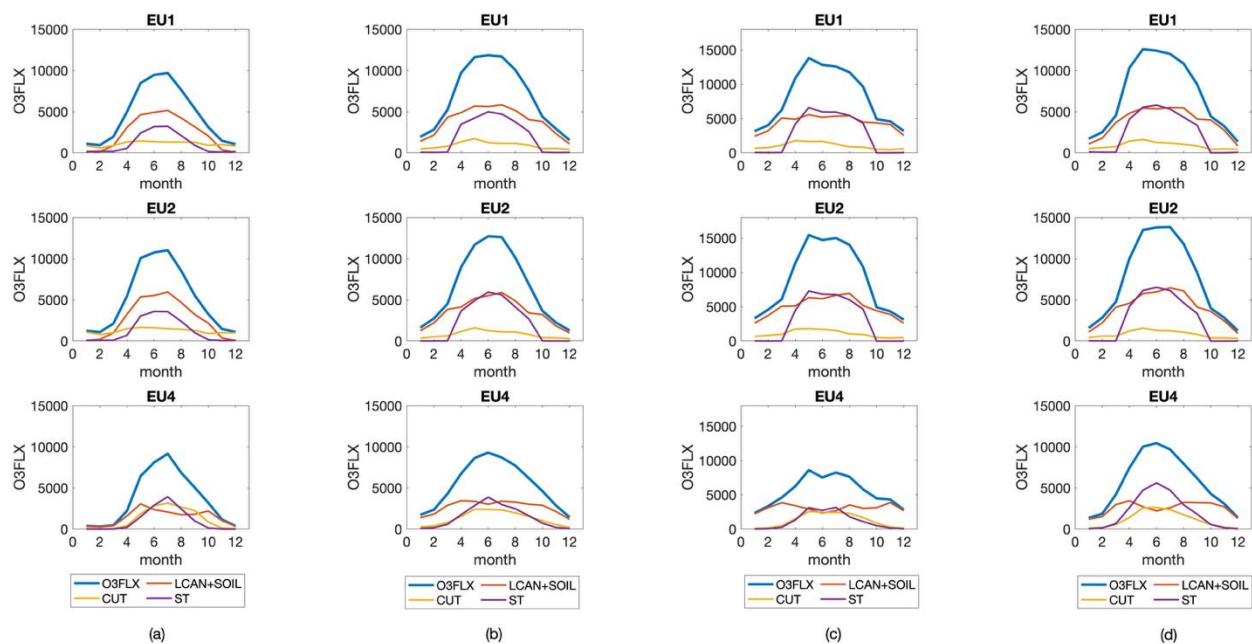


Figure S6 EU case study: Ozone dry deposition flux (O3FLX) [$\mu\text{g m}^{-2}\text{s}^{-1}$], lower canopy and soil effective fluxes combined in one factor (LCAN+SOIL), Cuticular effective flux (CUT) and Stomatal effective flux (ST) for shared grid cells covered by at least 85% of (a) needle-leaf forest, (b) O3 Receptors, (c) Deciduous Broadleaf Forest, (d) Planted-Cultivated.

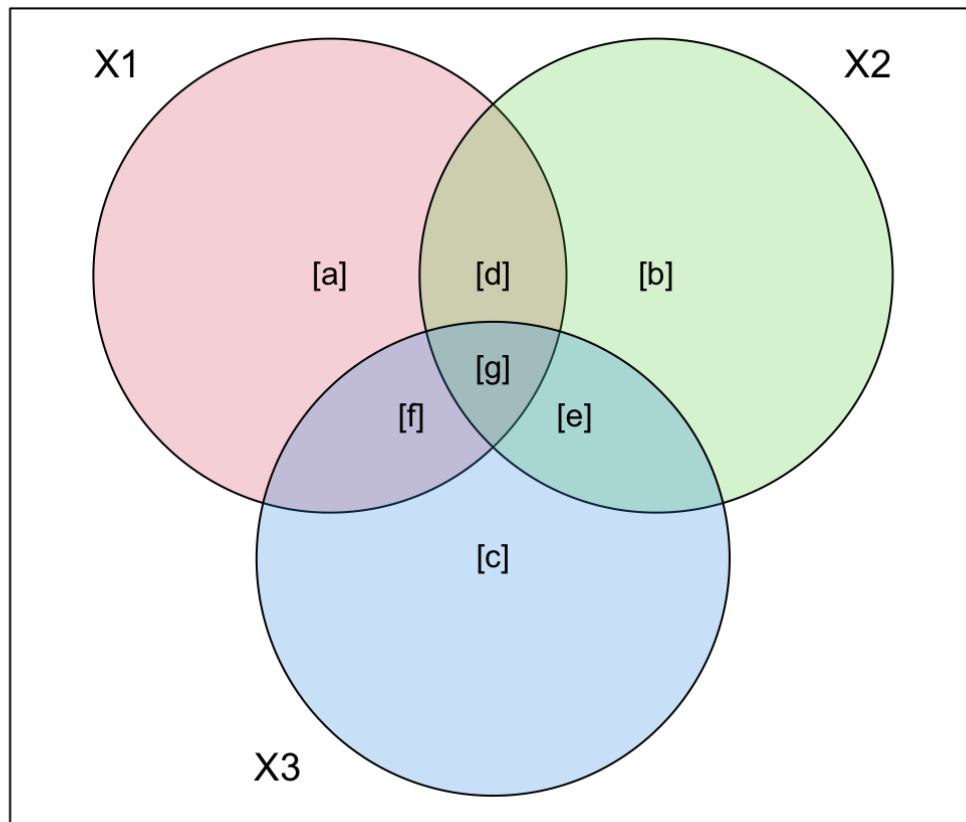


Figure S7: Dummy variables: a, b, c, d, e, f, and g) representing the variation partition of the response variable Y (e.g. O₃ deposition flux) against three predictor variables X1, X2, X3 (e.g., LCAN+SOIL, STOM, CUT) as from Section 5.1 presented here to indicate the portion of the ozone flux they entail.

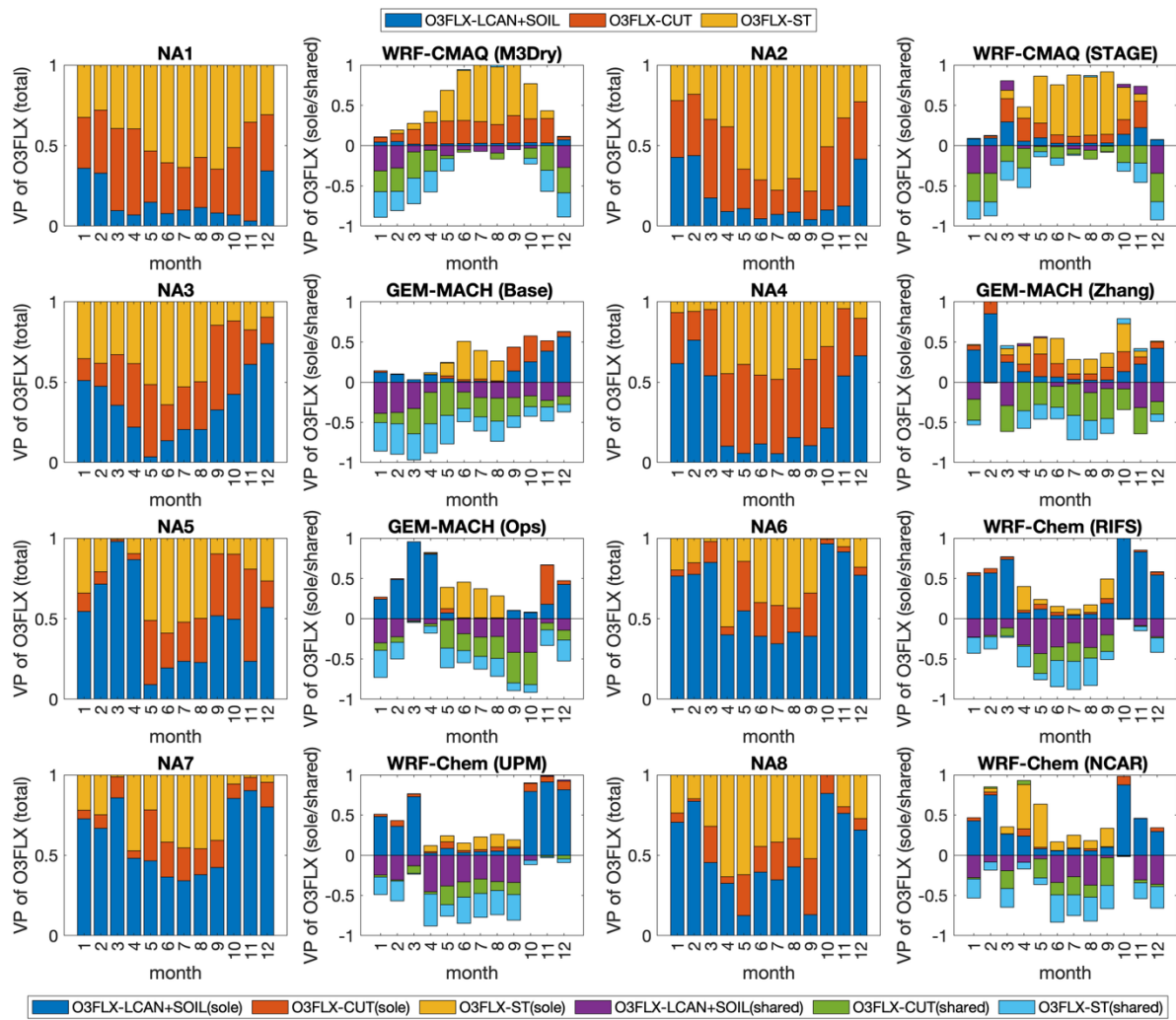


Figure S8: NA case study at 581 shared cells covered by at least 85% of Deciduous Broadleaf Forest. Panels in 1st and 3rd column: Variance Partition (VP) of ozone dry deposition flux into the individual importance (i.e. total effect) of (1) lower canopy and soil effective fluxes combined in one factor, (2) Cuticular effective flux and (3) Stomatal effective flux. Panels in 2nd and 4th column: Split of the individual importance of the effective fluxes into sole and shared contributions. The shared effects are displayed with negative numbers. For the sake of making the pictures easier to read, the explicit regional model and deposition module used are reported in the figure.

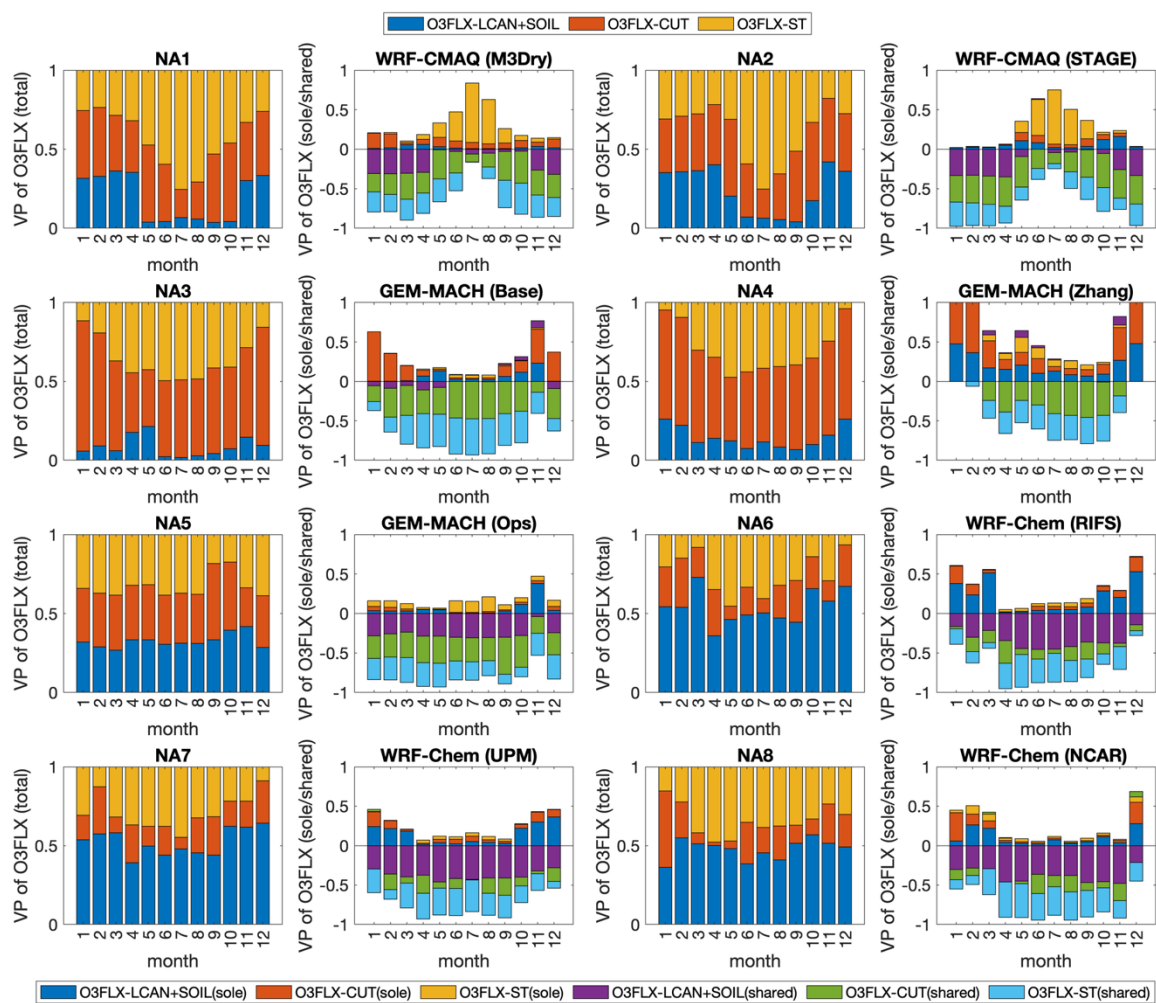


Figure S9: Same as S5 for Mixed Forest land use (705 shared cells)

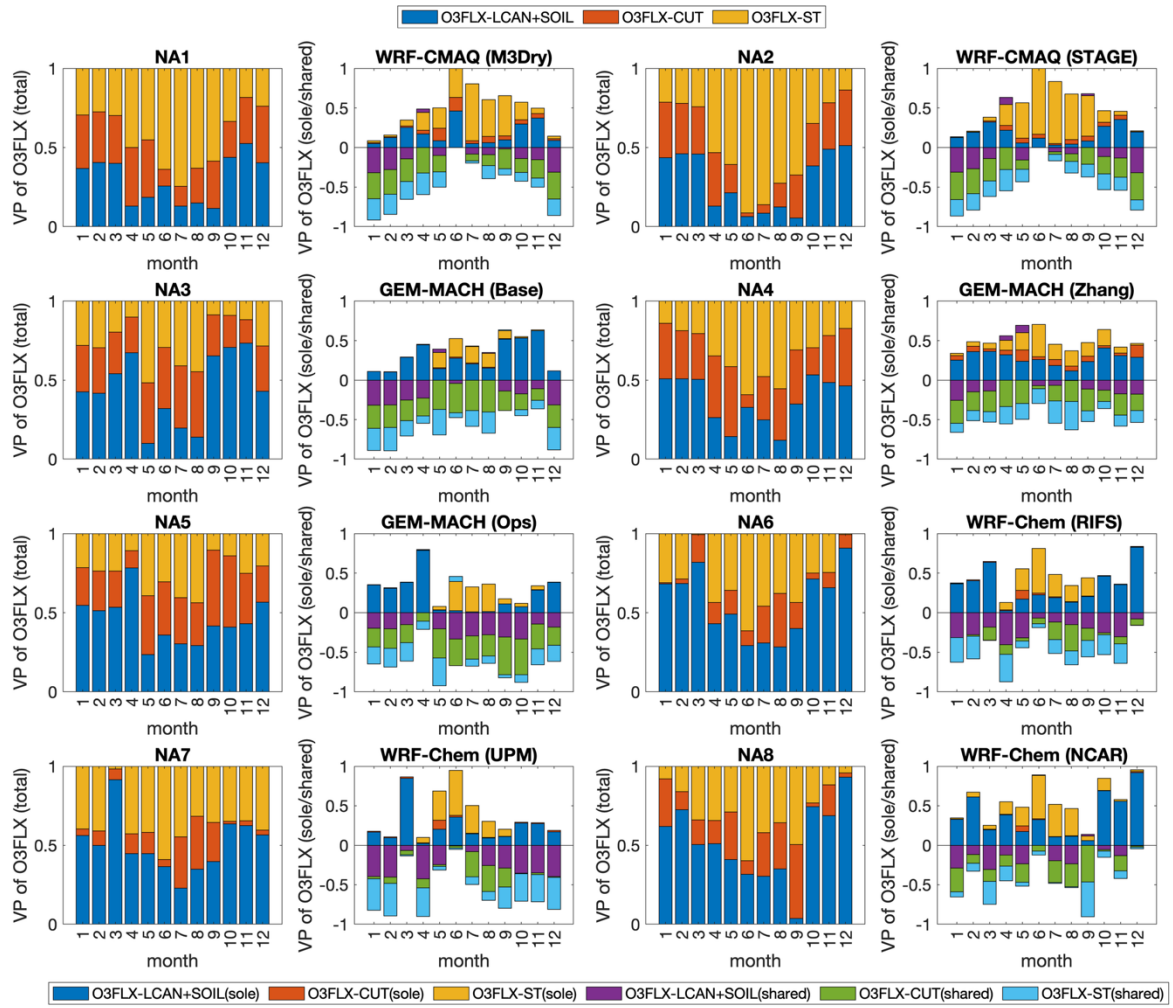
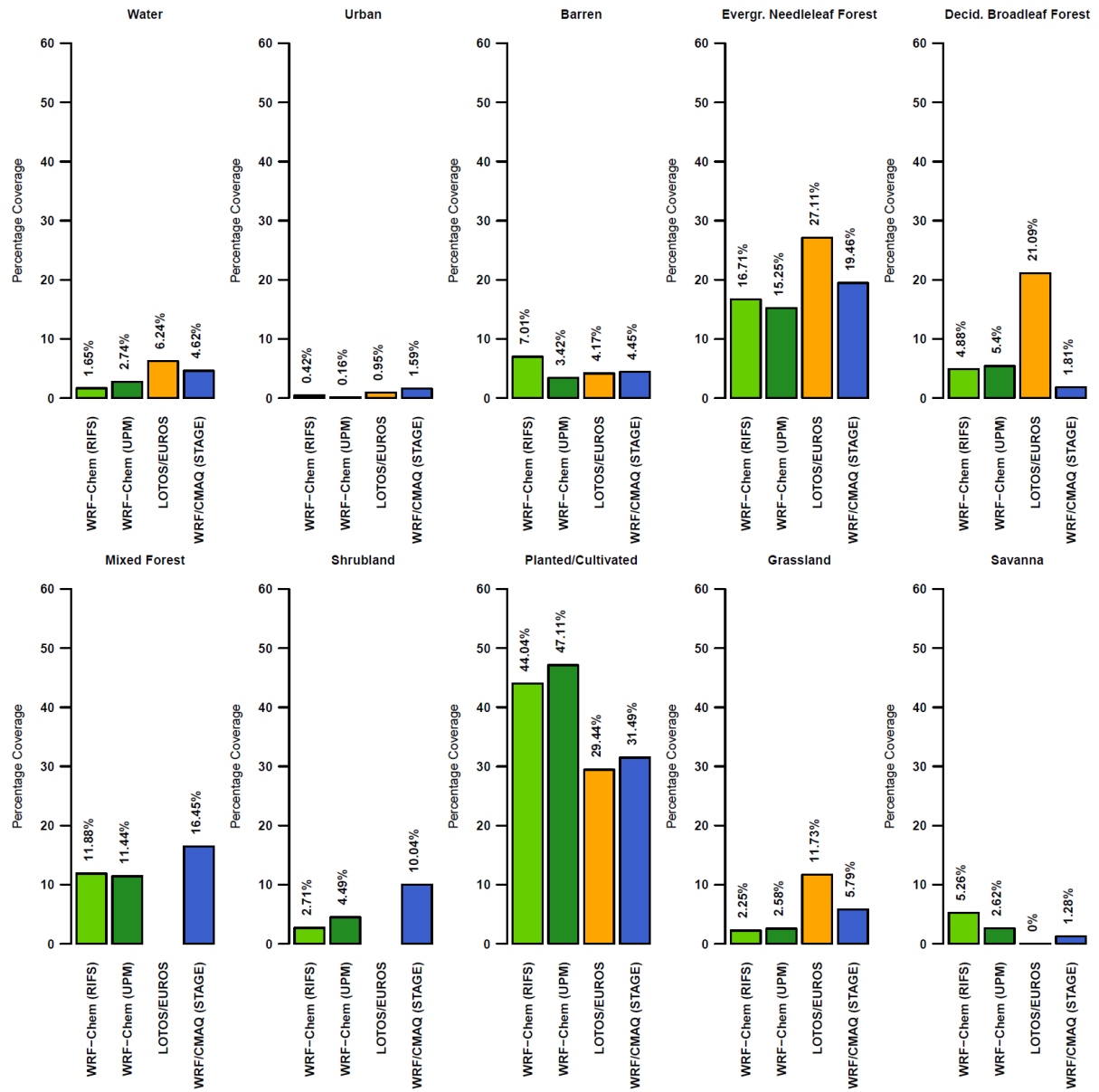
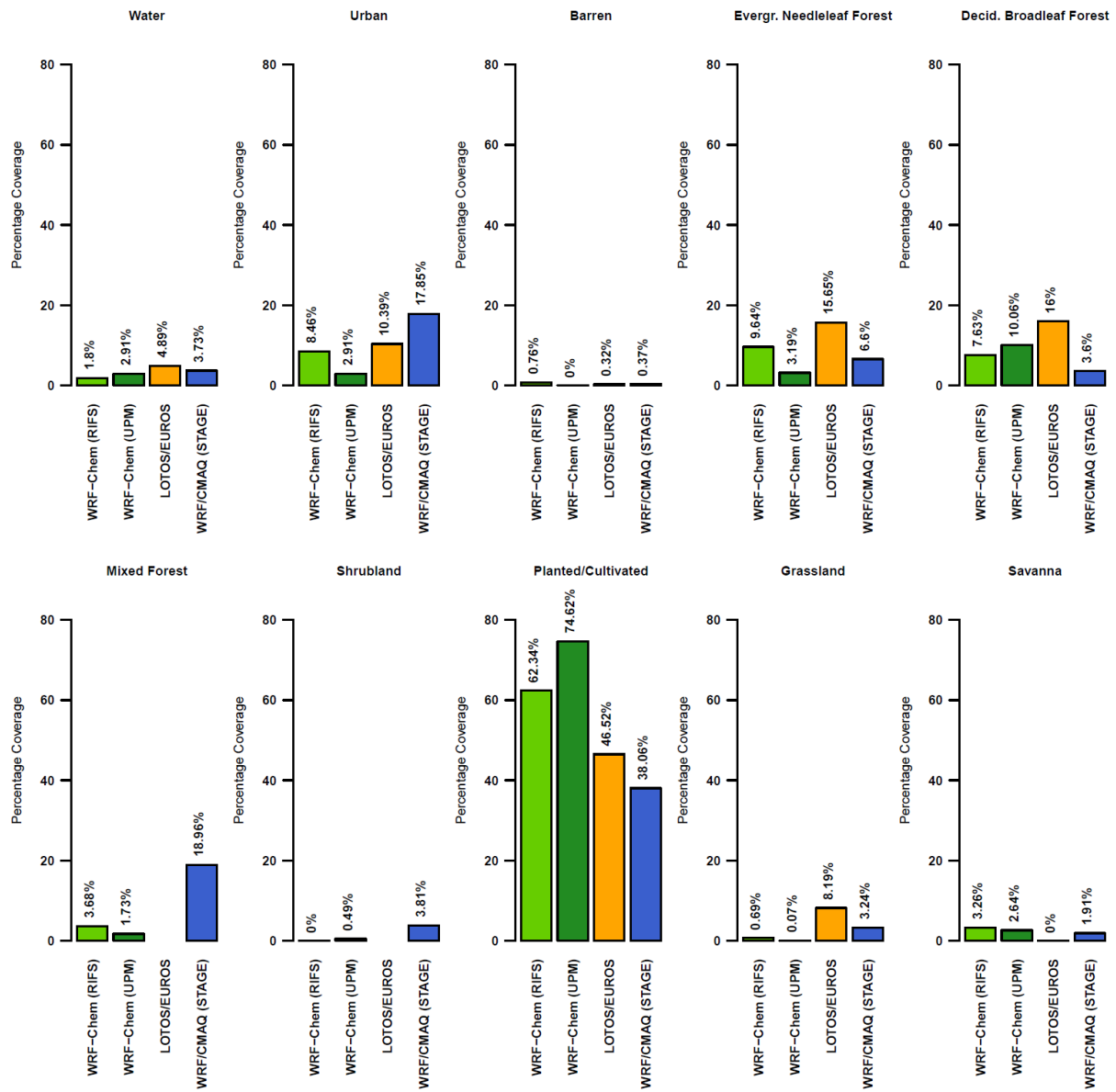


Figure S10: Same as S5 for Planted-Cultivated land use (6130 shared cells)



(a)



(b)

Figure S11 (a) Fraction of entire EU common domain (excl. grid cells dominated by water, i.e. water fraction > 0.5) covered by each LU type. (b) Fraction of all grid cells corresponding to O3 receptor locations covered by each LU type