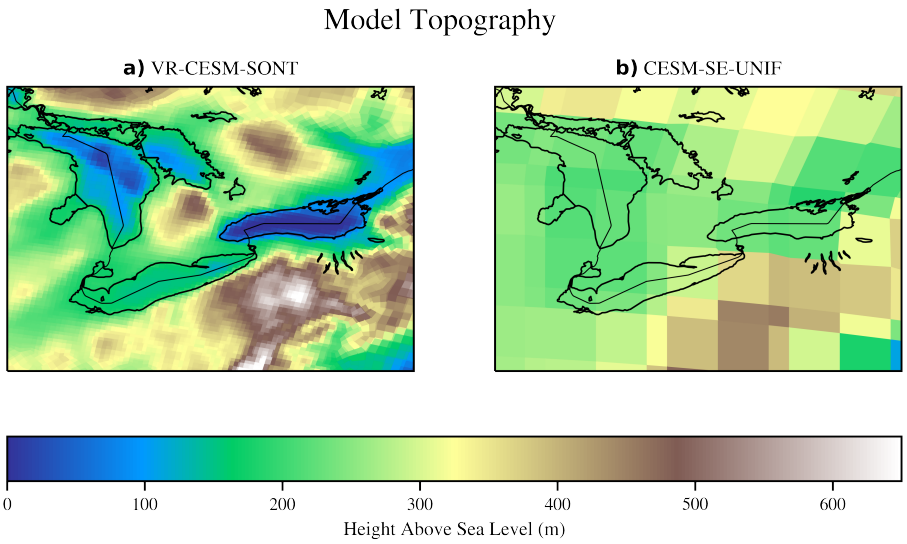
Supplemental Material for: "Resolution-Dependence of Extreme Wind Speed Projections in the Great Lakes Region"

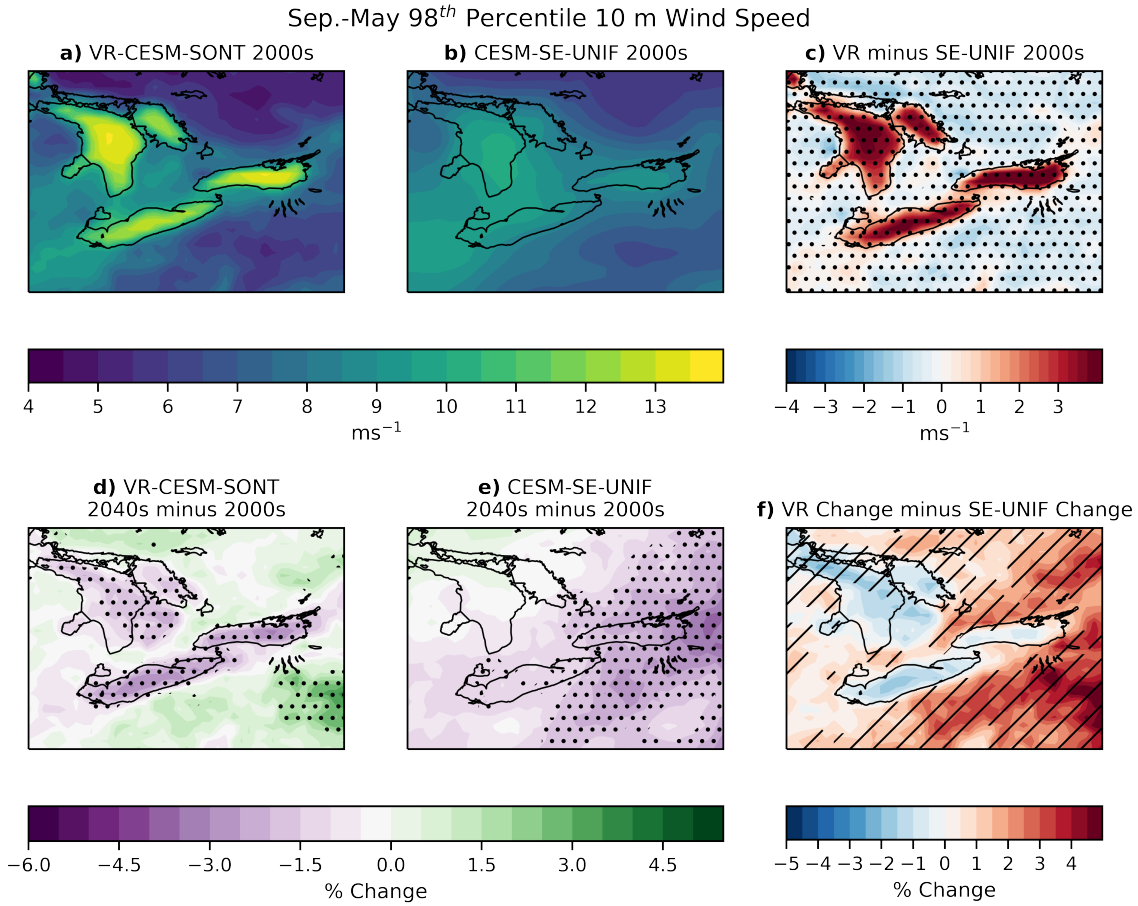
Michael Morris, Paul J. Kushner, G.W.K. Moore, Oya Mercan

Supplemental Table 1: Multiple linear regression model coefficient estimates and R^2 statistic

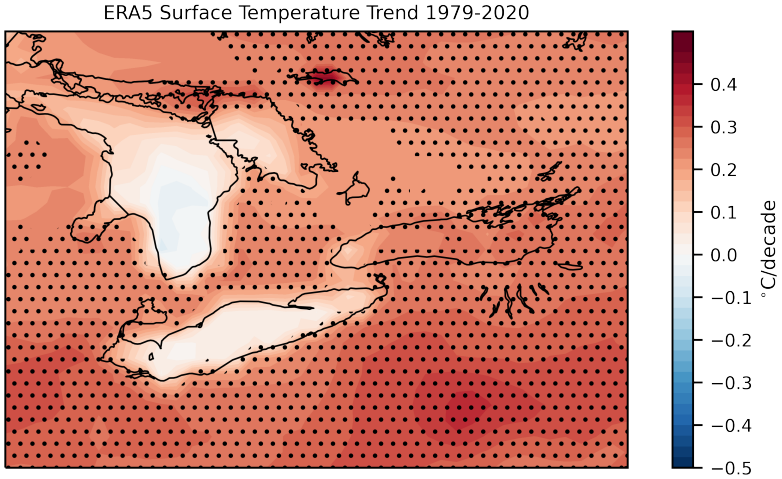
	VR-CESM-SONT	CESM-SE-UNIF
SLP	-0.049 ms^{-1} / hPa	-0.058 ms^{-1} / hPa
Static Stability	-1.00 ms^{-1} / (10^{-3} K/hPa)	-0.85 ms^{-1} / (10^{-3} K/hPa)
Intercept	53.45 ms^{-1}	62.53 ms^{-1}
R^2	0.44	0.37



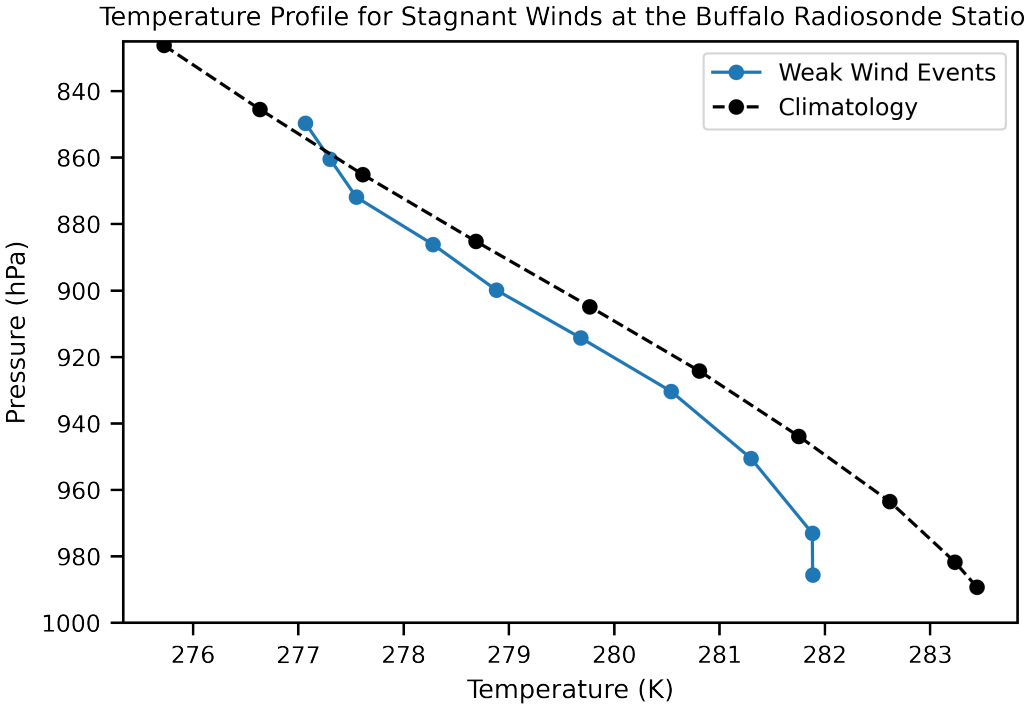
Supplemental Figure 1: Model topography for a) VR-CESM-SONT, and b) CESM-SE-UNIF.



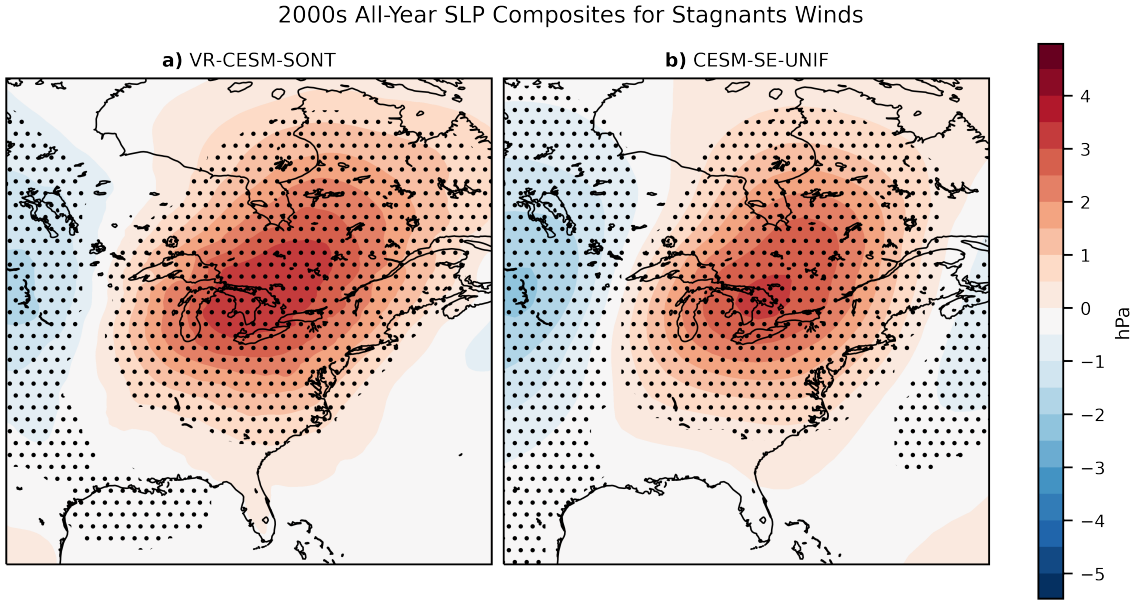
Supplemental Figure 2: As in Figure 2, but using future projection simulations with 2040s forcing.



Supplemental Figure 3: Surface temperature trends in the study region from the ERA5 reanalysis. Stippling indicates where trends are significant at the 5% level.



Supplemental Figure 4: Composite temperature profile from radiosonde observations during stagnant wind events at the Buffalo station (blue) and the climatological mean temperature profile for radiosondes launched at this station (black). This is the only station in the Wyoming Upper Air Archive that falls within the 7 km resolution region of VR-CESM-SONT.



Supplemental Figure 5: SLP anomaly composites for 2000s-period stagnant wind events in a) VR-CESM-SONT and b) CESM-SE-UNIF. Stippling indicates where anomalies deviate significantly from the climatological mean at the 5% level.