Supplementary Figures

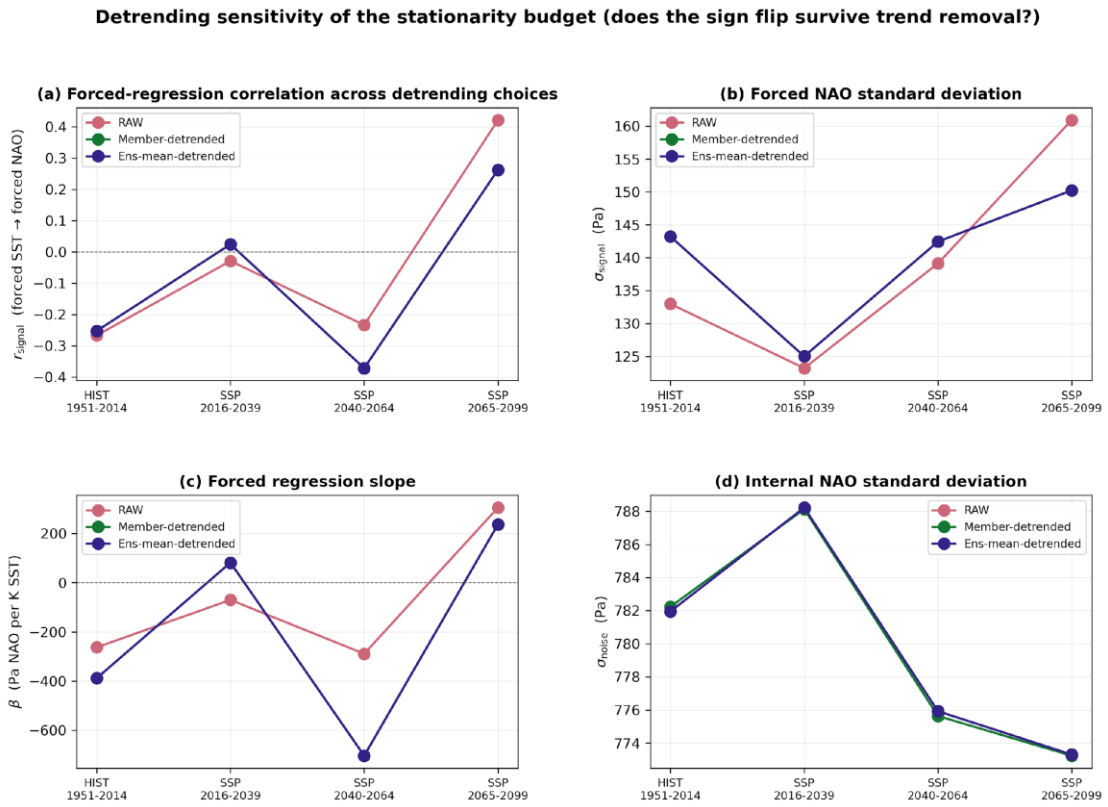
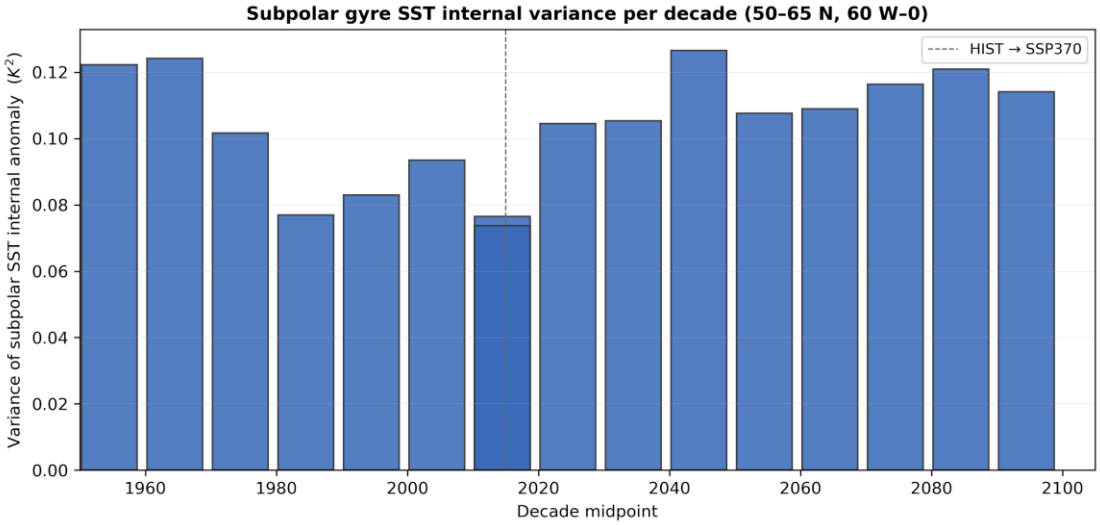


Figure S1. Robustness of the three-term stationarity budget to detrending choice. (a) Forced-regression correlation r_signal between forced SST and forced NAO across HIST 1951–2014 and three SSP3-7.0 windows (2016–2039, 2040–2064, 2065–2099), computed under three detrending protocols: RAW (pink), member-by-member detrending (green), and ensemble-mean detrending (blue). (b) Forced NAO standard deviation σ_signal (Pa). (c) Forced regression slope β (Pa NAO per K SST). (d) Internal NAO standard deviation σ_noise (Pa). The zero-crossing of r_signal (panel a) and the sign reversal of β between 2040–2064 and 2065–2099 (panel c) appear in all three protocols, demonstrating that the late-century forced-response reversal is not an artefact of trend handling. The member-detrended and ensemble-mean-detrended estimates overlap to plotting precision in all four panels; RAW differs only quantitatively while preserving the same qualitative evolution.



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842 **Figure S2**. Per-decade variance of internal SST anomaly in the subpolar gyre region (50–65°N, 60°W–0°),
843 computed across the 40-member CANARI ensemble after removal of the ensemble mean at each timestep. The
844 vertical dashed line marks the HIST → SSP3-7.0 transition (2015). Internal variance fluctuates between
845 approximately 0.07 and 0.13 K² across the full 1950–2099 record with no systematic forced trend, supporting the
846 budget's noise-stationarity assumption (σ_{noise} = 782 → 773 Pa across windows; <2 % change).