

Figure 1: Map of the Amazon basin and of its 8 sub-basins: Andean basins (dark blue), Negro basin (dark green), Solimões (grey), Mamoré (light green), Lower Madeira (yellow), Lower Amazon (orange), Tapajós (red), Xingu (brown). *In situ* stations of river discharges are located using black circles (Manaus is underlined as no measurement is achieved here, but monthly discharges were reconstructed for the Negro basin by difference between discharges in Jatuarana and Manacapuru).

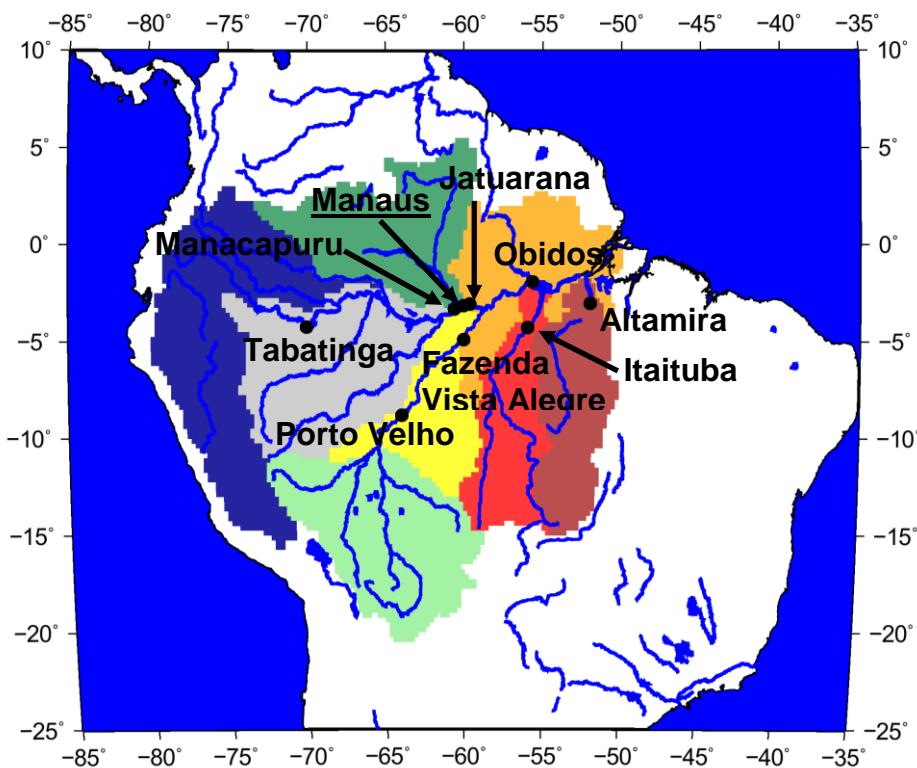


Figure 2 : Times series of a) monthly rainfall from TRMM 3B43, and b) GRACE-based TWS post-processed using a Gaussian filter of 400 km of radius and ICA approach from CSR (blue), GFZ (green), and JPL (red), and associated interannual trends from STL decomposition (dotted lines), from 2003 to 2010 over the Amazon basin.

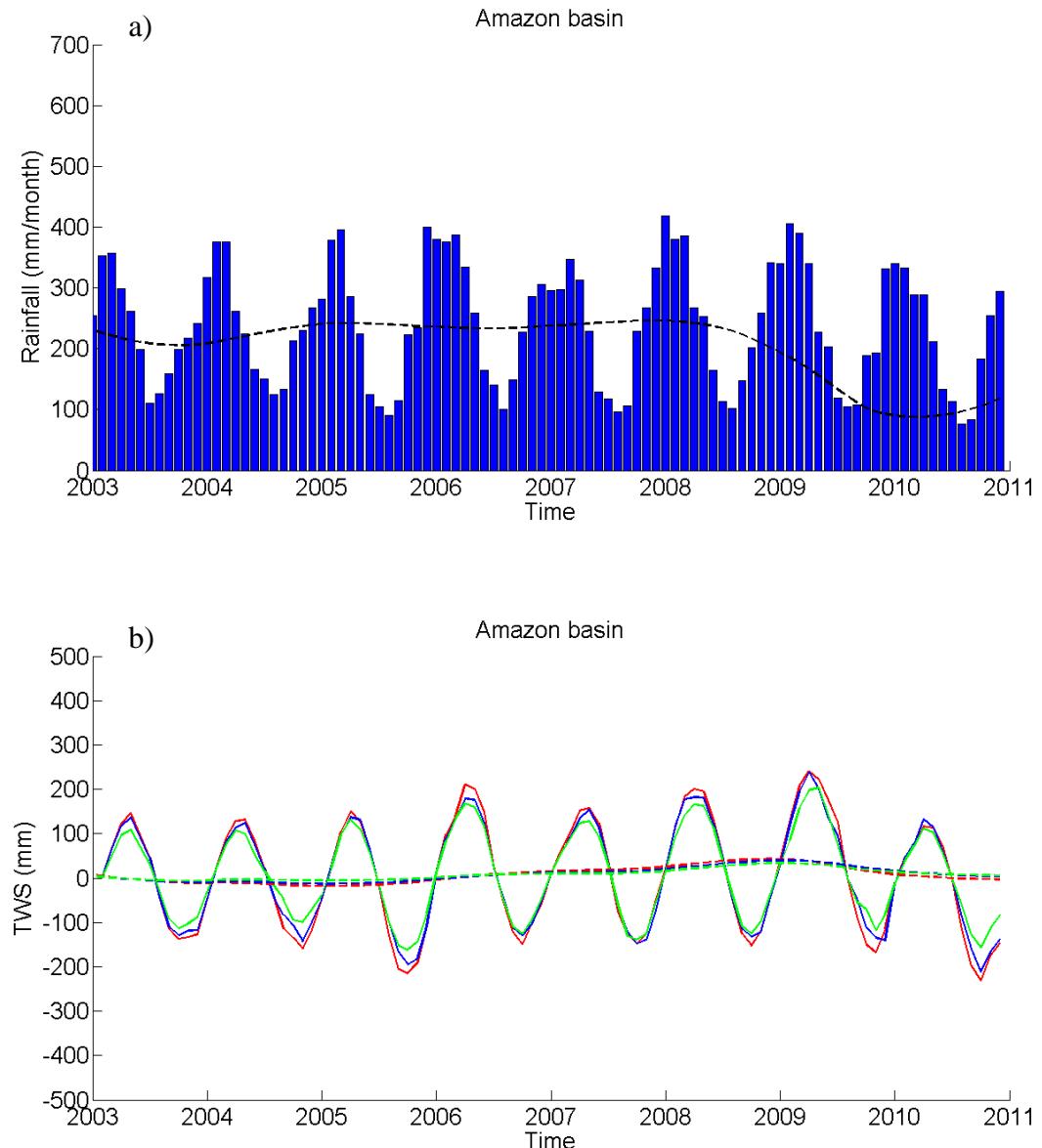


Figure 3 : Times series of monthly rainfall from TRMM 3B43 and associated interannual trends from STL decomposition (dotted lines), from 2003 to 2010 over a) Andean basins, b) Solimões, c) Mamoré, d) Lower Madeira, e) Tapajos, f) Xingu, g) Negro, and h) Lower Amazon sub-basins.

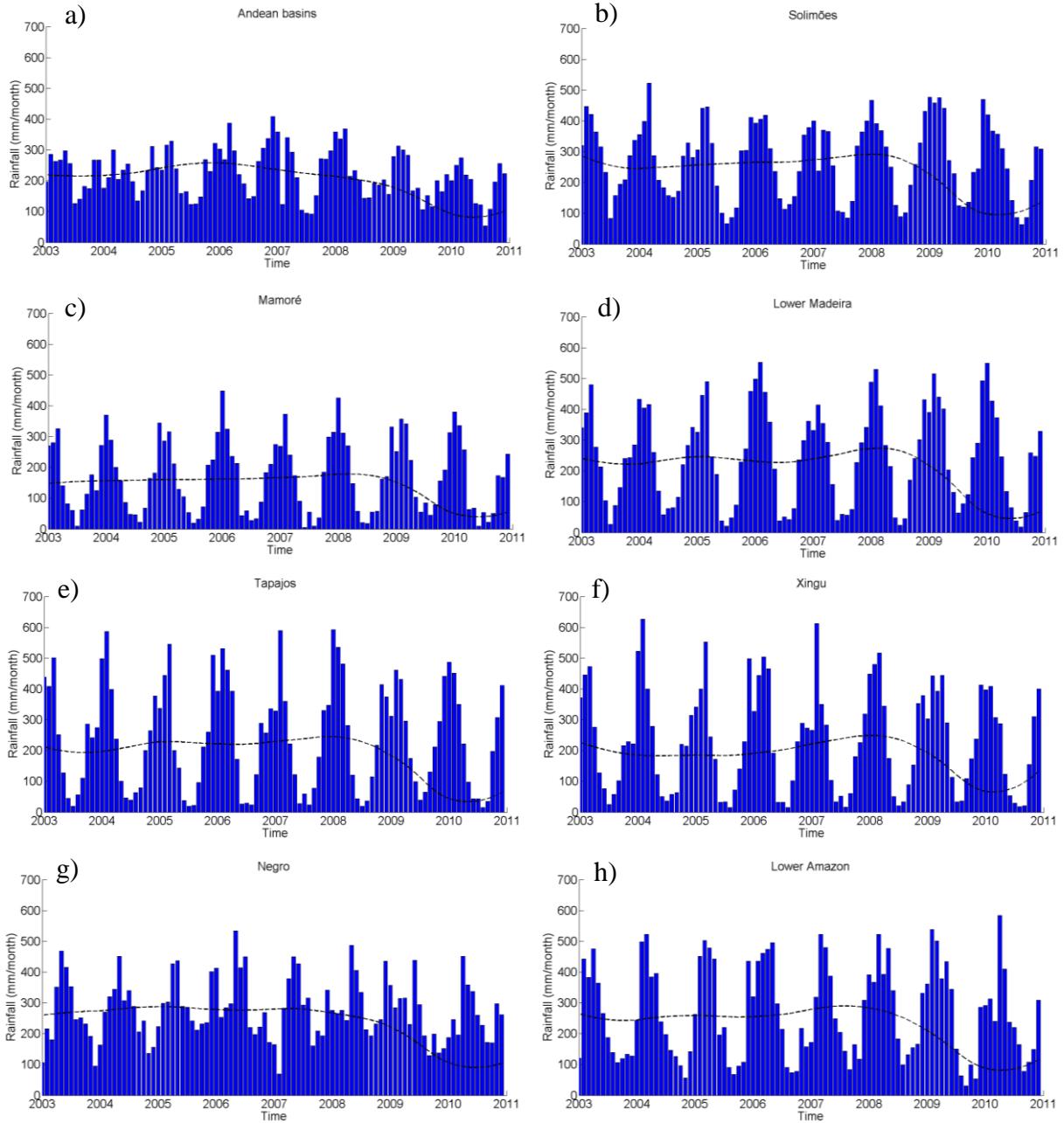


Figure 4 : Times series of monthly rainfall from GRACE-based TWS post-processed using a Gaussian filter of 400 km of radius and ICA approach from CSR (blue), GFZ (green), and JPL (red), and associated interannual trends from STL decomposition (dotted lines), from 2003 to 2010 over a) Andean basins, b) Solimões, c) Mamoré, d) Lower Madeira, e) Tapajos, f) Xingu, g) Negro, and h) Lower Amazon sub-basins.

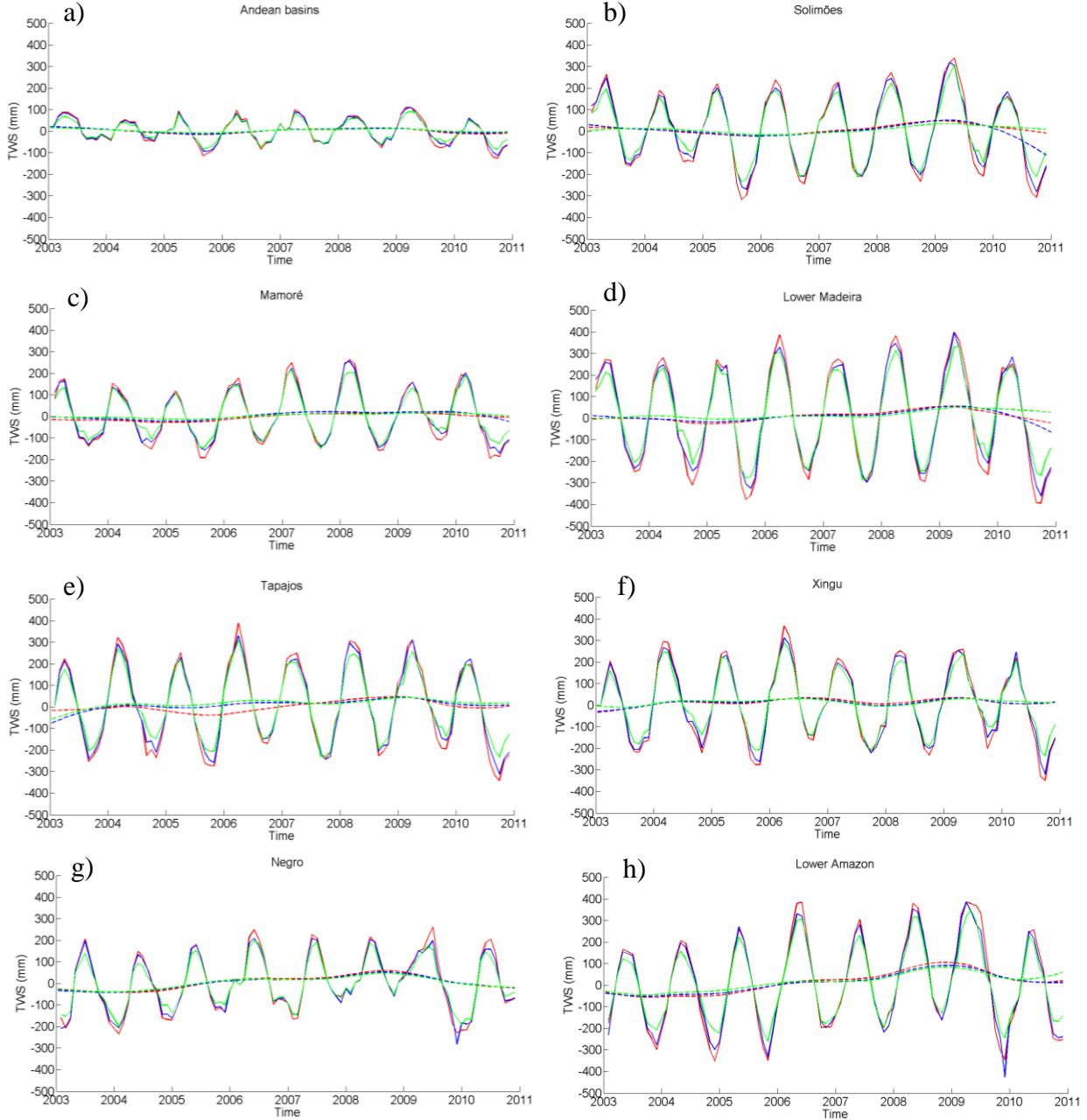


Figure 5: Time variations of the standardized rainfall anomaly index from TRMM 3B43 rainfall product between 2003 and 2010 over north Amazonia during the a) wet (FMAM) and the b) dry (JASO) seasons, and south Amazonia during the c) wet (DJFM) and the d) dry (JASO) seasons.

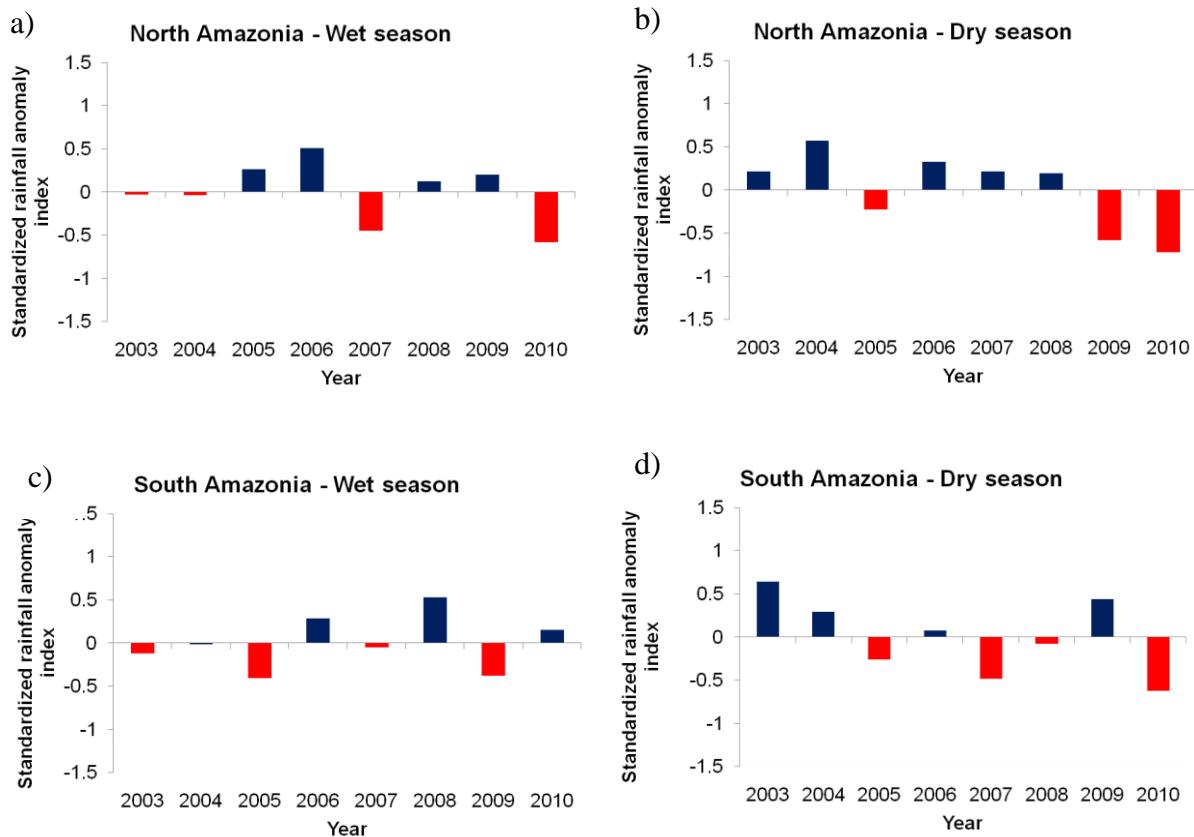


Figure 6: Time variations of the standardized TWS anomaly index from GRACE (GFZ ICA 400 km) between 2003 and 2010 over north Amazonia for a) high and b) low storages, and south Amazonia for c) high and d) low storages.

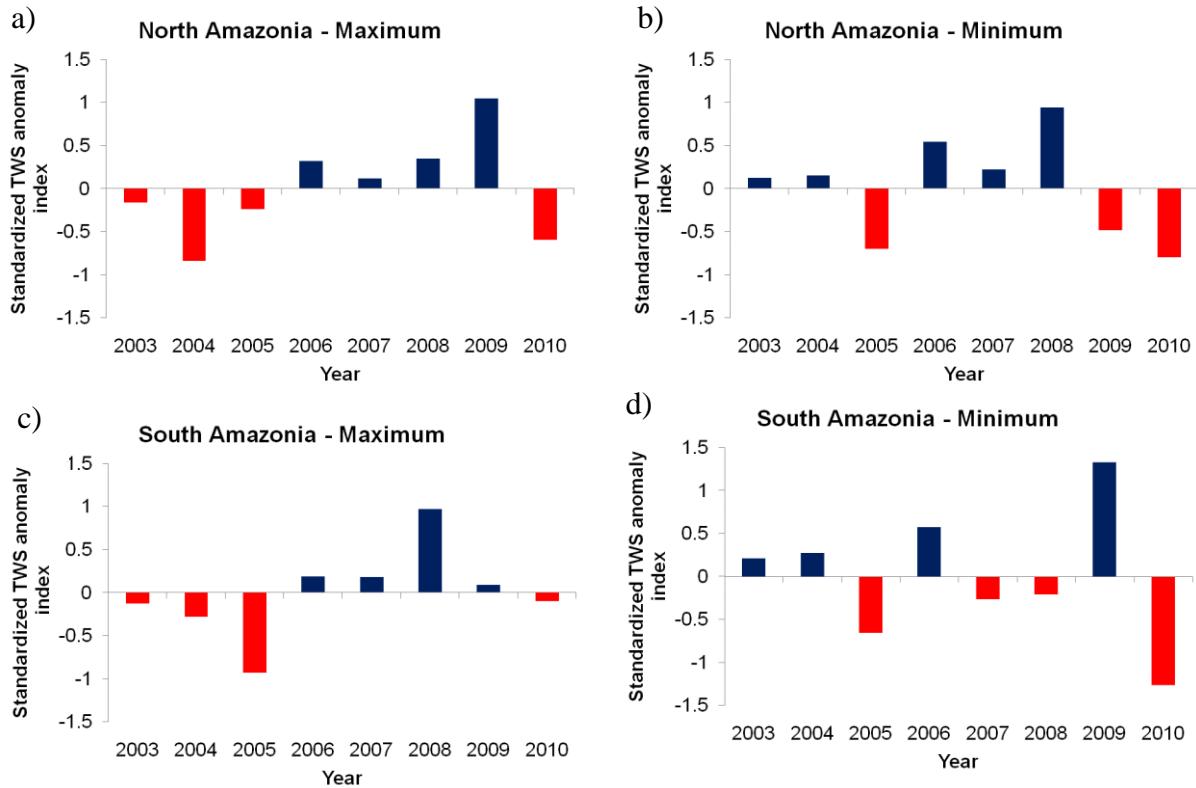


Figure 7: Scatterplots between monthly rainfall from TRMM 3B43 and GRACE-based monthly anomalies of TWS during the period 2003-2010 over a) Andean basins, b) Solimões, c) Mamoré, d) Lower Madeira, e) Tapajos, f) Xingu, g) Negro, and h) Lower Amazon sub-basins.

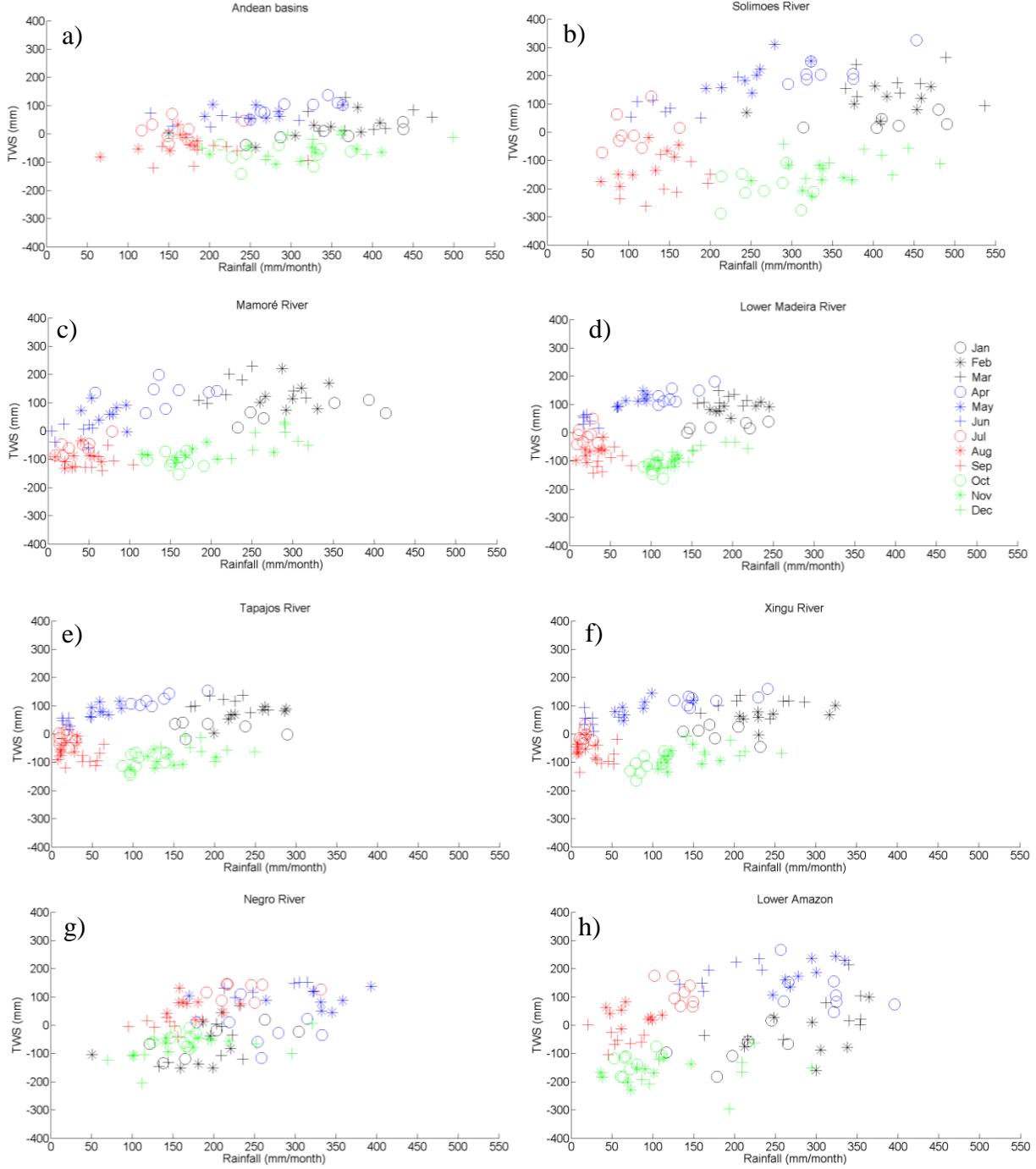


Figure 8: Time-series of interannual variations of monthly rainfall from TRMM 3B43 (grey), GRACE-based monthly anomalies of TWS (blue: CSR, green: GFZ, red: JPL), and monthly discharge (black) during the period 2003-2010 over a) Andean basins (discharge station: Tabatinga), b) Solimões, c) Mamoré, d) Lower Madeira, e) Tapajos, f) Xingu, g) Negro, and h) Lower Amazon sub-basins.

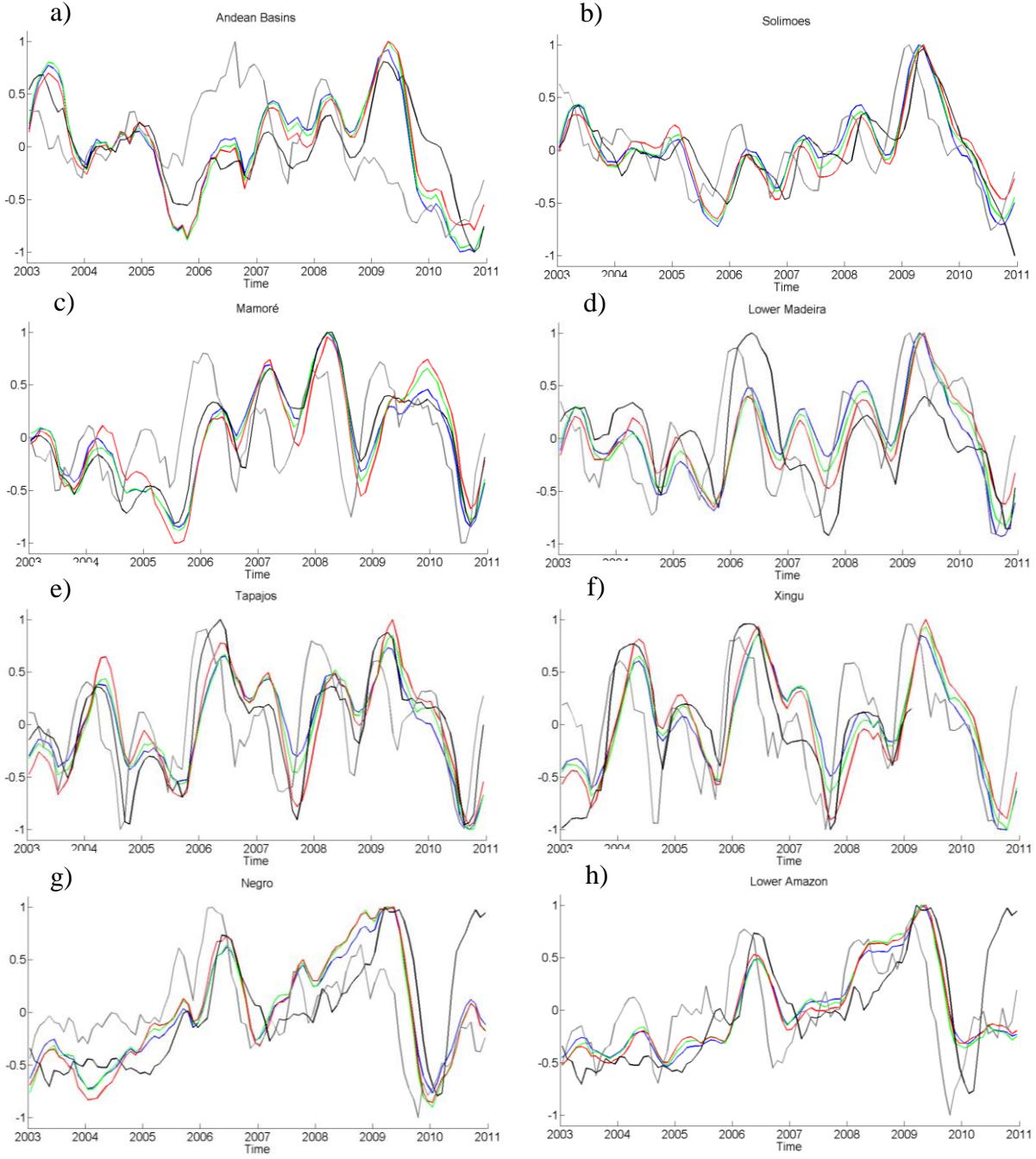


Figure 9: Standardized rainfall anomaly index from TRMM 3B43 for the wet season over the Amazon basin during the period 2003-2010.

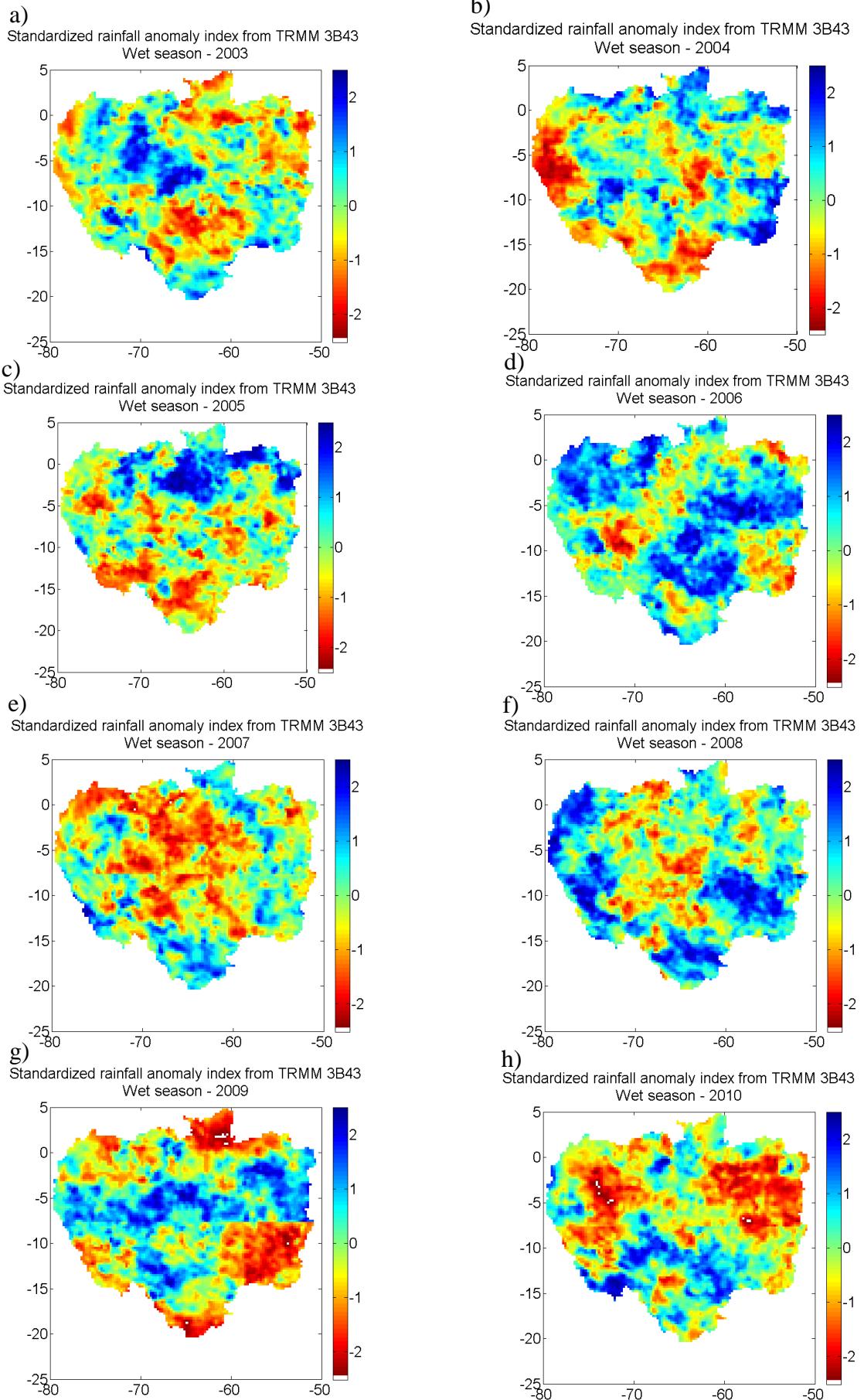


Figure 10: Standardized rainfall anomaly index from TRMM 3B43 for the dry season over the Amazon basin during the period 2003-2010.

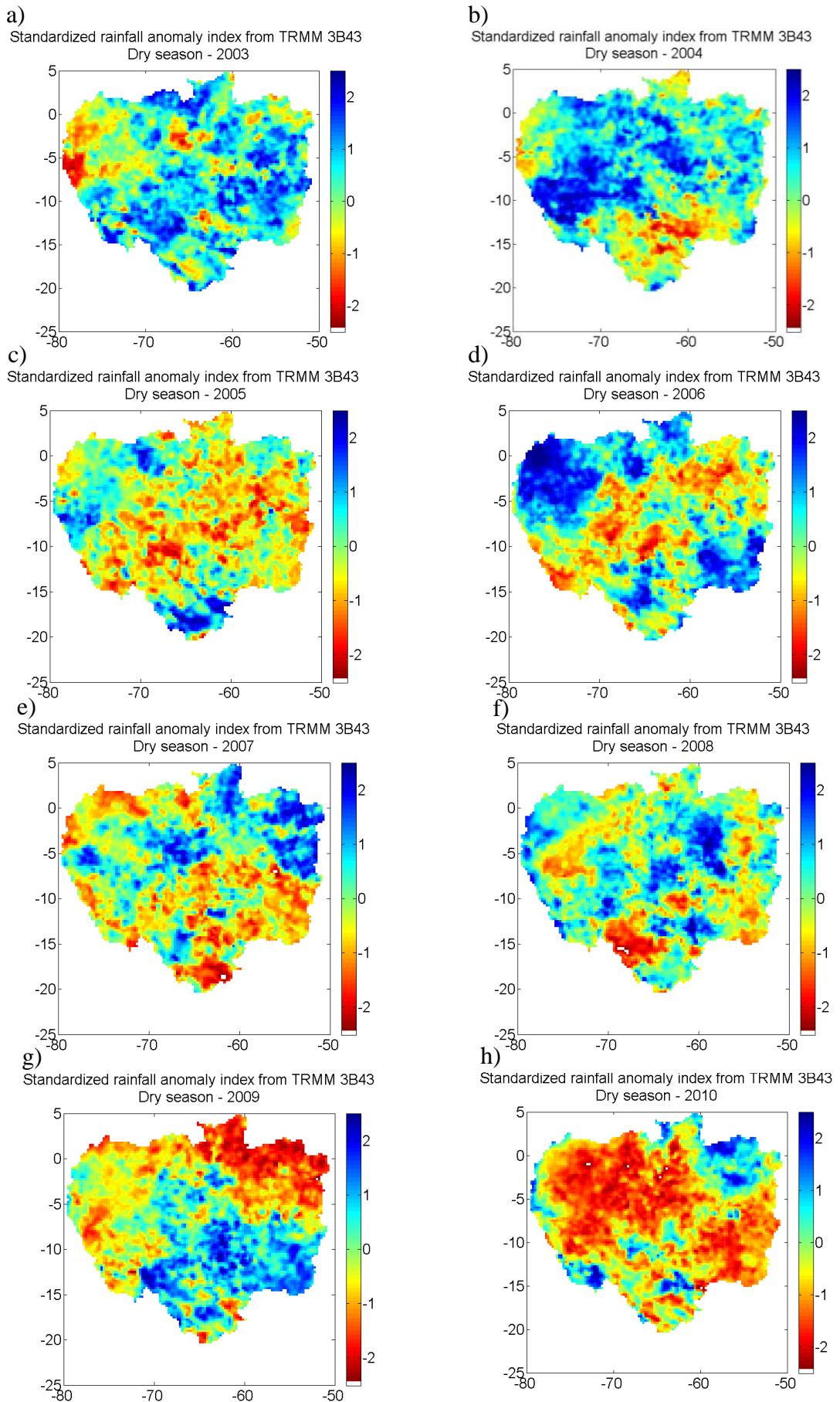


Figure 11: Standardized annual maximum of TWS from GRACE (GFZ ICA 400 km) over the period 2003-2010.

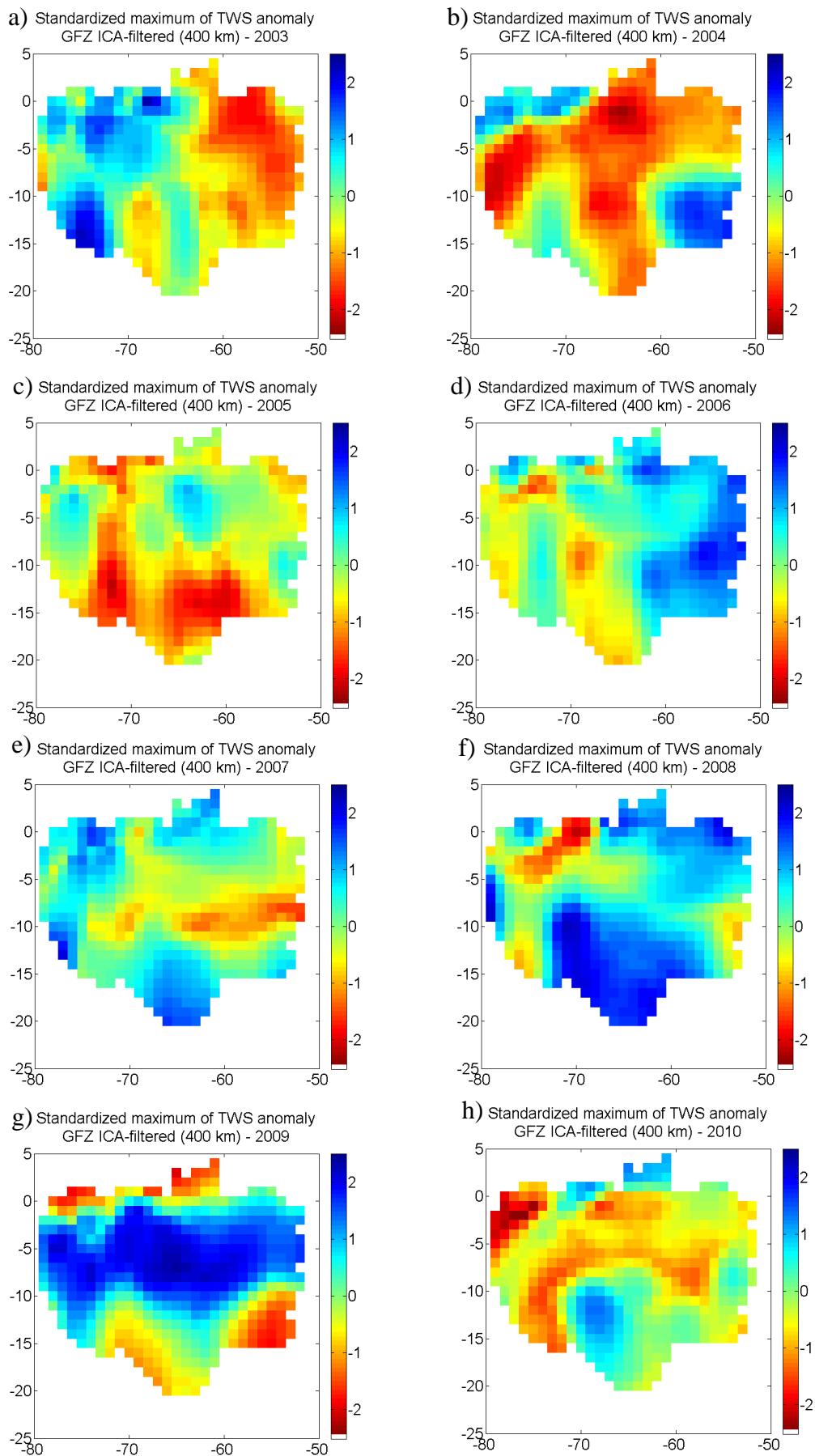


Figure 12: Standardized annual minimum of TWS from GRACE (GFZ ICA 400 km) over the period 2003-2010.

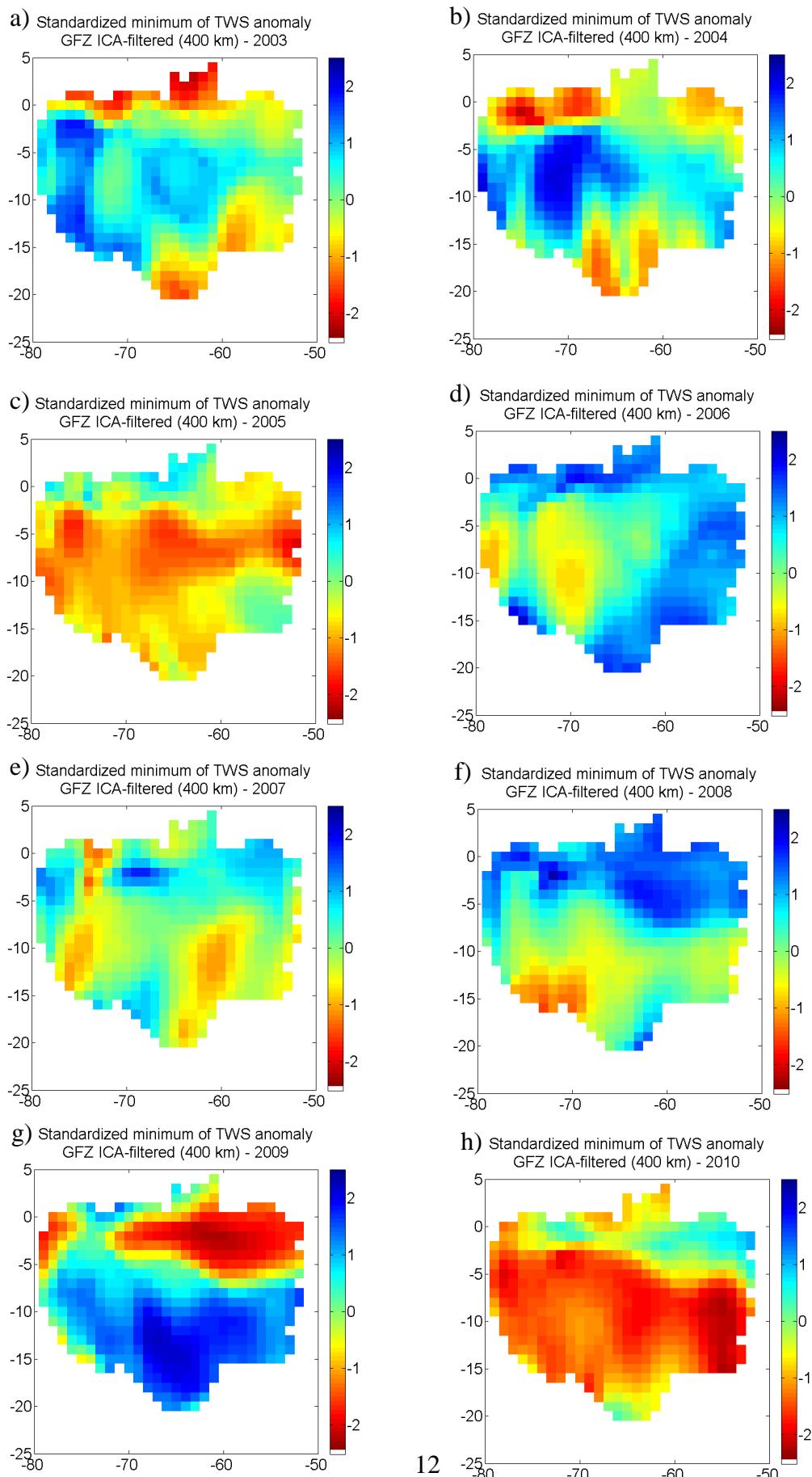


Figure 13: Standardized annual minimum of TWS from GRACE (GFZ ICA 400 km) for a) 2005, b) 2010, and Palmer Drought Severity Index for b) October 2005, d) October 2010.

