The question of how the Western Mediterranean Deep Water (WMDW) is ventilated from the Mediterranean Sea is of key importance for the renewal of the Mediterranean sea. WMDW has to flow over the main sill of the Strait of Gibraltar (Camarinal sill). The depth of this sill, 290m, is less than the depth of the interface between WMDW and the overlying waters in the Alboran Sea, which is the westernmost basin of the Mediterranean sea adjacent to the Strait. WMDW aspiration takes place along the southern part of the Alboran sea where it is found banked against the African slope and flowing sluggishly towards the Strait at depths of about 500–600m. Fluctuations in the proportion of WMDW flowing out can be monitored in Espartel sill (west of Camarinal) using near-bottom potential temperature as a proxy. AVISO altimetry data inform about the strength and variability of the western anticyclonic gyre of Alboran sea, a gyre formed by the Atlantic inflow that occupies the western basin of this sea. The gyre has been parameterized by the geostrophic velocity (an altimetry derived product by AVISO) along its southern edge. Time series of both variables are significantly correlated the geostrophic velocity leading the temperature by two weeks, which suggests cause-effect relationship. The hypothesis of WMDW aspiration is further supported by the analysis of historical data which shows the WMDW being progressively uplifted to the west as well as by a numerical simulation.