

PHYSICAL- BIOLOGICAL COUPLING AT THE CENTRAL PART OF THE BRANSFIELD STRAIT (ANTARCTICA)

P. Sangrà¹, L. Lubián², S. Hernández-León¹, E. Vázquez³, C. Gordo¹, A. Corzo⁴, A. Rodríguez-Santana¹, C. M. García⁴, S. Rodríguez-Gálvez², C. Almeida¹, S. Putzeys¹, P. Becognée¹, G.Macho³, J.Bellas³, C. Martínez-Castro³, A. Antoranz⁵, J. Cortes⁵

¹ Universidad de Las Palmas de Gran Canaria. ² Instituto de Ciencias Marinas de Andalucía (CSIC).

³ Universidade de Vigo. ⁴ Universidad de Cádiz. ⁵ SIDMAR S.L., Alicante

We present data from two interdisciplinary cruises conducted in the central part of the Bransfield Strait during 1999/2000 (CIEMAR project) and 2002/2003 (project BREDDIES project) austral summers. The physical support of the marine system is characterized by a quite rich mesoscale activity. We observed two fronts, a narrow slope front along the South Shetland Island Slope (The Bransfield Front) and a shallow, meandering hydrographic front close to the Antarctic Peninsula. The Bransfield Front has associated a baroclinic jet flowing North-Eastward (the Bransfield Current). Below the Bransfield Front we observed a narrow tongue of Circumpolar Deep Water (CDW). The hydrographic front separates a warm and relatively fresh water entering from the west (Transitonal Zonal water with Bellinghausen influence, TBW) from a cold and salty water coming from the Weddell Sea (Transitonal Zonal water with Weddell Sea influence, TWW). Between both fronts we observed an intense field of mesoscale anticyclonic eddies (radius 20-30 km, depth=150-300 m). Phytoplankton groups distribution is related to those mesoscale structure. Cryptofycean tends to accumulate at the well stratified TBW whereas Picoplankton concentration increases in mixing regions associated to both fronts. We also notice that phytoplankton accumulates in the anticyclonic eddies. Meroplankton distribution is also related with water masses and mesoscale structures. We mainly found that meroplankton concentration is greater at the slope front and TBW. Finally zooplankton distribution show greater densities at the hydrographic front.