

{rokbox title=|Map of study area. Hydrographic stations :: Figure: Authors (COB-IEO)|
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A. Herrera a, M. Gómez, T.T. Packard, **M.L. Fernández de Puelles**, 2014. [Reprint of Zooplankton biomass and electron transport system activity around the Balearic Islands \(western Mediterranean\)](#)
. Journal of Marine Systems. 138 (2014). 95–103.

Abstract: Measuring electron transport system (ETS) activity in zooplankton provides an index of respiration, theoretically, the potential respiration rate. We apply the ETS technique to estimate potential respiration and carbon demand from the zooplankton community in the upper 200 m of the water column near the Balearic Islands. The investigation was focused on two areas with different oceanographic conditions: the Balearic and Algerian subbasins. It compared the biomass, potential respiration and specific potential respiration of different size fractions (53–200, 200–500, > 500 μm) in both areas. In these regions the largest contribution to respiration was found in the larger sizes. The specific respiration (per unit biomass) was greater in smaller fractions, indicating that they have a more active metabolism. Both biomass and potential respiration increased in the Algerian subbasin and for both regions biomass and potential respiration were greater in shallow waters over the continental shelf (minor than 200 m). Using Kleiber's law as a tool to investigate the relationships between these two variables, we found that the exponential relation coefficient (b) was less than 0.75, indicating that the respiration was depressed (shifted down). In cultures and in eutrophic ocean waters (upwelling areas) b normally is greater than 0.75, consequently we intuit that the low value of b over the Balearic and Algerian subbasins indicates that the zooplankton is not well fed and that they are living under oligotrophic stress.

Keywords: Zooplankton, ETS, Respiration, Carbon demand, Biomass, Mediterranean Sea