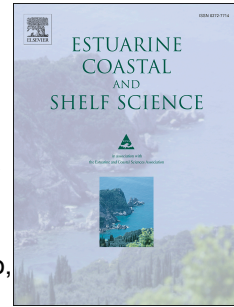


# Accepted Manuscript

Response of phytoplankton to enhanced atmospheric and riverine nutrient inputs in a coastal upwelling embayment

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1 **Response of phytoplankton to enhanced atmospheric and riverine nutrient inputs**  
2 **in a coastal upwelling embayment**

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11 **KEYWORDS:** phytoplankton, nutrients, atmospheric deposition, riverine inputs,  
12 upwelling system, NW Spain, Ria de Vigo

13  
14 **ABSTRACT**

15 Over the past decades, as a consequence of human activity, there was an increase in  
16 nutrient inputs to the ocean and they are expected to enhance even more in the future.  
17 Coastal areas, accounting for a significant proportion of marine primary productivity,  
18 are the most vulnerable zones to anthropogenic impacts. The response of phytoplankton  
19 communities to an increase in organic and inorganic nutrients levels from natural  
20 allochthonous sources was assessed in microcosm experiments conducted in a coastal  
21 system affected by intermittent upwelling events (Ría de Vigo, NW Iberia). Three  
22 nutrient addition experiments were performed in spring, summer and autumn, when

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