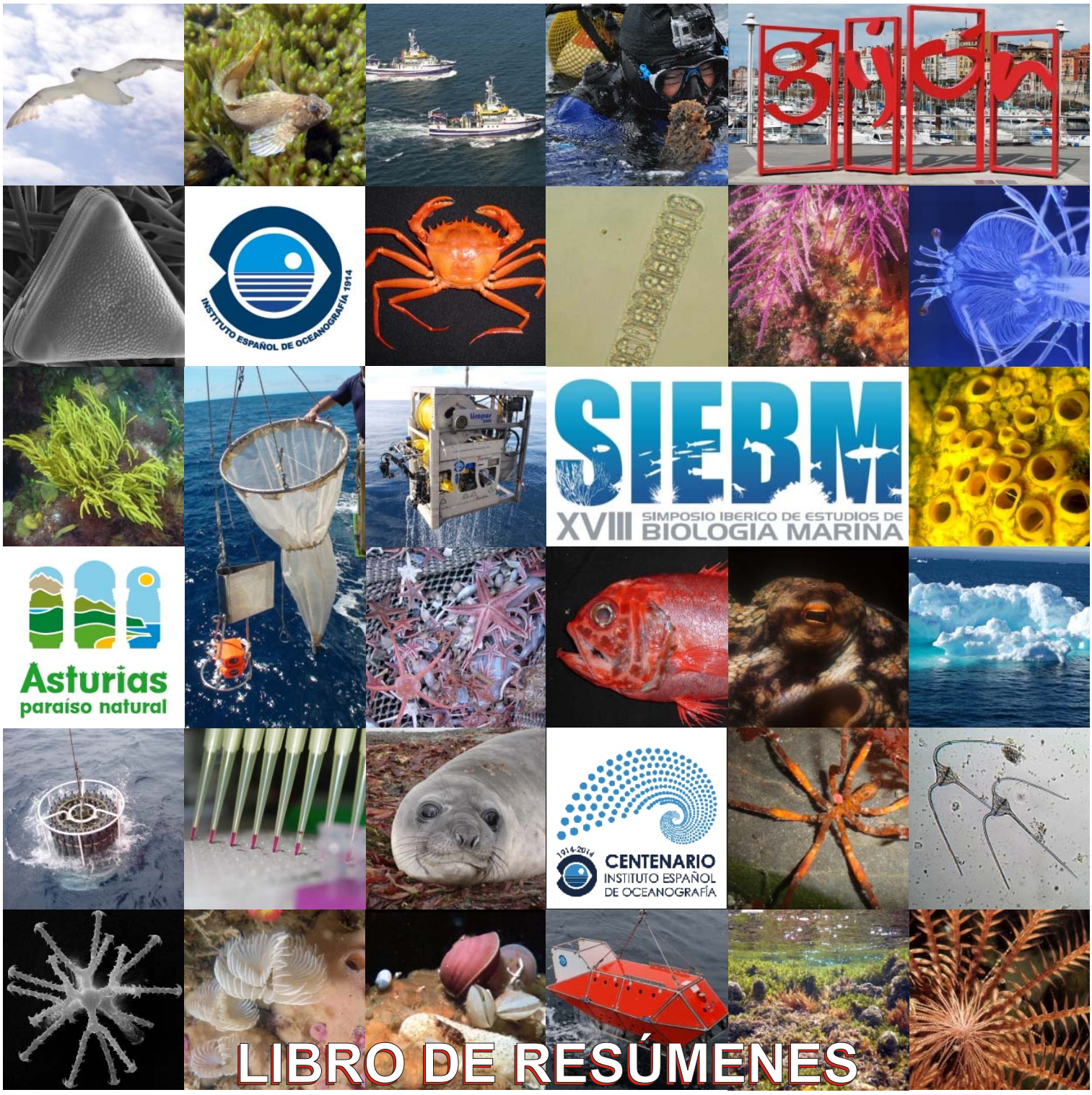
3.1 Do man-made habitats affect patterns of spatial distribution of mollusc?

E. Cacabelos [1,2], G. M. Martins [1,2], R. Sánchez [2], L. Busquier [2], R. Mosquera [2] and A.I. Neto [1,2]

[1]CIIMAR-Centro Interdisciplinar de Investigação Marinha e Ambiental, Porto, Portugal
[2]CIRN and Grupo de Biologia Marinha, Universidade dos Azores, Ponta Delgada, Azores, Portugal

The fragmentation of natural habitats, together with its loss, is considered a major threat to biodiversity. Man-made habitats, e.g., seawalls and coastal defence structures, are a common feature causing the fragmentation on the shoreline of many urbanized coastal areas and will become more widespread in response to rising and stormier seas. Fragmentation can alter functional connectivity of habitats and determine the spatial distribution of organisms, since the movement and dispersal of individuals can be interrupted. However, ecological consequences of coastal defence structures have not been extensively studied and we know little about their effects in marine systems. One of the most important factors affecting the connectivity among fragments or patches is the ability of the organisms to disperse despite potential barriers. Spatial patterns of molluscs with planktonic larvae or direct development (non-planktotrophic larvae) has been compared before, but there is a growing interest in understanding the role of the man-made habitats in determining the patterns of spatial abundances of marine organisms. This study was aimed at exploring the role of type of larval development (planktotrophic vs non-planktotrophic) on patterns of spatial variation in the abundance of rocky shore gastropods, testing the influence of habitat fragmentation (natural – beach; artificial – seawall) on observed patterns. Strongly aggregated distribution patterns are supposed to be characteristic of organisms with direct development, while the existence of planktotrophic larvae should allow a more homogeneous distribution of organisms. We tested this hypothesis by comparing the abundance of molluscs with both planktotrophic -*Tectarius striatus* (King, 1832) and *Melarhaphe neritoides* (Linnaeus, 1758)- and direct -e.g. *Omalogyra atomus* (Philippi, 1841) or *Lasaea adansoni* (Gmelin, 1791)- development in continuous between two sites either connected (the two sites are part of a continuous stretch of rocky shores, or fragmented (where the two sites are separated by a different type of habitat). We further tested if the effects of shore fragmentation differed according to whether fragmentation was natural (a beach between the two sites) or artificial (a seawall between the two sites). Two natural rocky shores of each type (continuous rocky shores, natural patches and fragments), separated from each other by kms, were sampled for replication. At the mid-intertidal level, the gastropods *Tectarius striatus* and *Melaraphe neritoides* were identified and quantified *in situ* in quadrats randomly deployed on the shore. Randomly replicates of seaweed turfs, composed mostly by articulated coralline algae, were collected in the chosen locations and target gastropods were sorted and quantified in the laboratory. We predict that organisms with planktotrophic development will be less affected by fragmentation because they have a greater ability to disperse among fragments. It will also be interesting to compare if results differ between the effects of the natural and artificial fragmentation.

Keywords: fragmentation, coastal urbanization, marine biodiversity, conservation, intertidal organisms



LIBRO DE RESÚMENES

Gijón del 2 al 5 de septiembre de 2014

XVIII SIMPOSIO IBÉRICO DE ESTUDIOS DE BIOLOGÍA MARINA
Gijón (España) 2-5 Septiembre 2014

XVIII SIMPÓSIO IBÉRICO DE ESTUDOS DE BIOLOGIA MARINHA
Gijón (Espanha) 2-5 Setembro 2014

Libro de resúmenes.

Ríos, P.; Suárez, L.A. & Cristobo, J. (Eds.) 2014. XVIII Simposio Ibérico de Estudios de Biología Marina. Libro de resúmenes. Centro Oceanográfico de Gijón. 252 pp

Edita:	Centro Oceanográfico de Gijón (Instituto Español de Oceanografía)
Depósito Legal:	AS2943-2014
Impresión:	Nortegráfico Calle Julio Verne 23 33211 Gijón Tel. 985307293 creativos@nortegrafico.es

Autores fotografías portada, contraportada y portadillas: Marcel Gil-Velasco (SEO-Birdlife) Florencio González (IEO Gijón); Lucia López (IEO Santander); Cesar Peteiro (IEO Santander); Ignacio Reguera (IEO Gijón); Ana Riesgo (Universidad Barcelona); Pilar Ríos (IEO Gijón); Francisco Sánchez (IEO Santander); Luis Angel Suarez (IEO Gijón); Xulio Valeiras (IEO Vigo); Joaquín Valencia (IEO Coruña); Jose Luis Vargas (IEO Madrid); Eva Velasco (IEO Gijón) y Javier Cristobo (IEO Gijón)

COMITÉ ORGANIZADOR / COMISSAO DE ORGANIZAÇAO

Presidente: Javier Cristobo*
Secretaria: Pilar Ríos*
Vocales:
Carmen Castro*
Laura Díaz*
Pilar Fernández*
Daniel González*
Felipe González*
Florencio González*
Teresa Granell*
Alma Hernández*
Montserrat Herrero*
Itziar Munuera*
Venicio Pita*
Fernando Piñón*
Rafael Revilla*
Luis Ángel Suárez*
Carmen Vázquez**
Rosa Vázquez*
Eva Velasco *
Joana Xavier***

*C.O. Gijón
**C.O. A Coruña
***Universidad Bergen

COMITÉ CIENTÍFICO / COMISSAO CIENTÍFICA

José Luis Acuña	Universidad Oviedo
Nuria Anadón	Universidad Oviedo
Conxita Ávila	Universidad Barcelona
Manuel Biscoito	IMAR Estação de Biologia Marinha do Funchal
Angel Borja	AZTI-Tecnalia
Javier Cristobo	IEO, C.O. Gijón
Lucía García	DG Pesca Marítima Principado de Asturias
Juan Junoy	Universidad Alcalá
Eugenia Manjón	Universidad Málaga
Santiago Parra	IEO, C.O. A Coruña
Cesar Peteiro	IEO, C.O. Santander
Ana Ramos	IEO, C.O. Vigo
Ana Riesgo	Universidad Barcelona
Pilar Ríos	IEO, C.O. Gijón
Francisco Sánchez	IEO, C.O. Santander
Alberto Serrano	IEO, C.O. Santander
Sergio Taboada	Universidad Barcelona
Joana Xavier	Universidad Bergen

INSTITUCIÓN ORGANIZADORA / INSTITUIÇAO ORGANIZADORA

PATROCINADORES

SECRETARÍA TÉCNICA

COLABORADORES

TRANSPORTISTAS OFICIALES

SIEBM
XVIII SIMPOSIO IBERICO DE ESTUDIOS DE BIOLOGIA MARINA

El Comité Organizador del XVIII Simposio Ibérico de Estudios de Biología Marina,
A Comissão organizadora do XVIII Simpósio Ibérico de Estudos de Biologia Marinha,

CERTIFICA QUE:
CERTIFICA QUE:

Que la comunicación titulada:
Que a comunicação titulada:

Do man-made habitats affect patterns of spatial distribution of mollusc?.

Cuyos autores son:
Cujos autores são:

E Cacabelos, G M Martins, R Sánchez, L Busquier, R Mosquera, A I Neto

Ha sido presentada durante las sesiones científicas del simposio celebrado en Gijón, Asturias del 2 al 5 de septiembre de 2014 que se enmarca dentro de los actos conmemorativos del Centenario del Instituto Español de Oceanografía.
Foi apresentada durante as sessões científicas do simpósio que teve lugar em Gijon, Astúrias, de 2 a 5 de setembro de 2014, no âmbito das comemorações do centenário do Instituto Espanhol de Oceanografia.

Gijón, a cinco de septiembre de dos mil catorce.
Gijon, a cinco de setembro de dois mil e quatorze.

1914-2014 CENTENARIO INSTITUTO ESPAÑOL DE OCEANOGRAFÍA

Fdo.: Dr. Javier Cristobo
Presidente comité organizador XVIII SIEBM
Director Centro Oceanográfico de Gijón