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PALESTRAS QUINTAS DO MARE

VÍTOR PAIVA (MARE UC)

22 de junho de 2017, 14:00h

LOCAL: Edificio do Patronato", 1 andar

Faculdade de Ciencias e Tecnologia, Universidade de Coimbra

Rua da Matematica, 49

A cagarra como espécie sentinela dos efeitos do clima no ambiente marinho

Driven by the climate: Cory's shearwater as a sentinel species for the effects of climate on the marine environment

The effects of environmental change on the biodiversity, structure and functioning of marine ecosystems is still poorly understood. In fact, few studies have focused on changes in the at-sea foraging tactics of pelagic seabirds in relation to environmental stochasticity. During 10 years (2005 - 2015) we directly measured the influence of climate (as driven by the North Atlantic Oscillation phenomenon) on (1) marine productivity (e.g. primary productivity), (2) fish-prey abundances (i.e. from acoustic surveys) and (3) the foraging behaviour of a top marine predator, the Cory's shearwater Calonectris borealis breeding in Berlenga Island (mainland Portugal), using biologging technologies. Climatic conditions within the Portuguese coastal system broadly became worst from 2005 to 2010 and ameliorated afterwards until 2015. Yearly kernel overlaps and habitat modelling demonstrated that with good environmental conditions and abundant fish-prey, birds showed high fidelity to shallow and coastal foraging grounds, while with bad conditions and scarcity of fish-prey, birds were more explorative and relied more on less-productive pelagic areas. Most notoriously, an extreme climatic event occurred during the winter of 2009 to 2010, which had a negative impact on the marine productivity of the surroundings of the breeding colony and decreased the abundance of pelagic prey fish. This in turn altered the spatial, feeding and trophic ecology of Cory's shearwater and decreased their reproductive success. However, the negative trend in the abundance of fish-prey (estimated from acoustic surveys and commercial fisheries landings) may be of concern because it does not seem to be only related to the climatic event of 2010. In fact, the following period of ameliorating environmental conditions (2011-2015) didn't lead to an obvious improvement on fish-prey abundances nor fishery landings, with some commercial species reaching low record-breaking stock levels (e.g. Sardina pilchardus)