ID: W2095401211

TITLE: Pulses in the eastern margin current and warmer water off the north west European shelf linked to North Sea ecosystem changes

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ABSTRACT:

MEPS Marine Ecology Progress Series Contact the journal Facebook Twitter RSS Mailing List Subscribe to our mailing list via Mailchimp HomeLatest VolumeAbout the JournalEditorsTheme Sections MEPS 215:283-287 (2001) - doi:10.3354/meps215283 Pulses in the eastern margin current and warmer water off the north west European shelf linked to North Sea ecosystem changes Philip C. Reid1,*, N. Penny Holliday2, Tim J. Smyth3 1Sir Alister Hardy Foundation for Ocean Science, 1 Walker Terrace, The Hoe, Plymouth PL1 3BN, United Kingdom 2Southampton Oceanography Centre, European Way, Southampton SO14 3ZH, United Kingdom 3Remote Sensing Group, Plymouth Marine Laboratory, Prospect Place, Plymouth PL1 3DH, United Kingdom *E-mail: pcre@wpo.nerc.ac.uk ABSTRACT: The North Sea ecosystem has recently undergone dramatic changes, observed as altered biomass of individual species spanning a range of life forms from algae to birds, with evidence for an approximate doubling in the abundance of both phytoplankton and benthos as part of a regime shift after 1987. Remarkably, these changes, in part recorded in the Phytoplankton Colour Index of the Continuous Plankton Recorder (CPR) survey, are notable as episodic shifts occurring in 1988/89 and 1998 imposed on a gradual decadal trend. These biological events are shown to be a response to coincident changes in oceanic input and water temperature. Geostrophic transports have been calculated from a hydrographic section across the Rockall Trough, and a time series of sea-surface temperature derived from satellite observations. The 2 pulses of oceanic incursion into the North Sea in circa 1988 and 1998 coincided with strong northward advection of anomalously warm water at the edge of the continental shelf. KEY WORDS: North Sea · Regime shift · Plankton · Long-term changes · Shelf edge current · Remote sensing · SST · NAO Full text in pdf format PreviousNextExport citation RSS - Facebook - Tweet - linkedIn Cited by Published in MEPS Vol. 215. Online publication date: May 31, 2001 Print ISSN: 0171-8630; Online ISSN: 1616-1599 

SOURCE: Marine ecology. Progress series

PDF URL: https://www.int-res.com/articles/meps/215/m215p283.pdf

CITED BY COUNT: 97

PUBLICATION YEAR: 2001

TYPE: article

CONCEPTS: ['Oceanography', 'Hydrography', 'Phytoplankton', 'Marine ecosystem', 'Benthos', 'Upwelling', 'Plankton', 'Environmental science', 'Ecosystem', 'Sea surface temperature', 'Geography', 'Geology', 'Ecology', 'Benthic zone', 'Biology', 'Nutrient']