ID: W2608870723

TITLE: A new classification scheme of European cold-water coral habitats: Implications for ecosystem-based management of the deep sea

AUTHOR: ['Jaime S. Davies', 'Brigitte Guillaumont', 'Fernando Tempera', 'Agostina Vertino', 'Lydia Beuck', 'Steinunn H. Ólafsdóttir', 'C.J. Smith', 'Jan Helge Fosså', 'Inge M.J. van den Beld', 'Alessandra Savini', 'Anna M. Rengstorf', 'C. Bayle', 'Jean?François Bourillet', 'Sophie Arnaud?Haond', 'Anthony Grehan']

ABSTRACT:

Cold-water corals (CWC) can form complex structures which provide refuge, nursery grounds and physical support for a diversity of other living organisms. However, irrespectively from such ecological significance, CWCs are still vulnerable to human pressures such as fishing, pollution, ocean acidification and global warming Providing coherent and representative conservation of vulnerable marine ecosystems including CWCs is one of the aims of the Marine Protected Areas networks being implemented across European seas and oceans under the EC Habitats Directive, the Marine Strategy Framework Directive and the OSPAR Convention. In order to adequately represent ecosystem diversity, these initiatives require a standardised habitat classification that organises the variety of biological assemblages and provides consistent and functional criteria to map them across European Seas. One such classification system, EUNIS, enables a broad level classification of the deep sea based on abiotic and geomorphological features. More detailed lower biotope-related levels are currently under-developed, particularly with regards to deep-water habitats (>200 m depth). This paper proposes a hierarchical CWC biotope classification scheme that could be incorporated by existing classification schemes such as EUNIS. The scheme was developed within the EU FP7 project CoralFISH to capture the variability of CWC habitats identified using a wealth of seafloor imagery datasets from across the Northeast Atlantic and Mediterranean. Depending on the resolution of the imagery being interpreted, this hierarchical scheme allows data to be recorded from broad CWC biotope categories down to detailed taxonomy-based levels, thereby providing a flexible yet valuable information level for management. The CWC biotope classification scheme identifies 81 biotopes and highlights the limitations of the classification framework and guidance provided by EUNIS, the EC Habitats Directive, OSPAR and FAO; which largely underrepresent CWC habitats.

SOURCE: Deep-sea research. Part 2. Topical studies in oceanography/Deep sea research. Part II, Topical studies in oceanography

PDF URL: None

CITED BY COUNT: 44

PUBLICATION YEAR: 2017

TYPE: article

CONCEPTS: ['Habitats Directive', 'Marine Strategy Framework Directive', 'Habitat', 'Biotope', 'Environmental resource management', 'Marine protected area', 'Water Framework Directive', 'Geography', 'Environmental science', 'Ecosystem', 'Ecology', 'Biology', 'Water quality']