



Flood and coastal erosion risk management policy evolution in Northern Ireland: “Incremental or leapfrogging?”

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ARTICLE INFO

Article history:

Available online 9 November 2010

ABSTRACT

Climate change poses a significant challenge for the future of Northern Ireland's coast due to impacts that include, *inter alia*, mean sea level rise of between 13 cm and 74 cm by 2050. Whilst flooding is regarded as a major hazard in the United Kingdom (UK), to date Northern Ireland's experiences of coastal flooding have been infrequent and less severe compared to those in England and Wales. Similarly, coastal erosion has historically been, and remains, only a minor concern in Northern Ireland. Partly as a result of this, Government administrative arrangements for Flood and Coastal Erosion Risk Management (FCERM) in Northern Ireland operate in the absence of any statutory provision for coastal erosion, as well as without formal or strategic shoreline management planning and any integrated flood and coastal erosion risk management policy. This paper provides a commentary on Northern Ireland's approach to FCERM, comparing this with its UK counterparts, highlighting both congruence and divergence in policy evolution and development. It is noted that the recent EU Floods Directive has been a significant catalyst and that the current institutional landscape for FCERM is in flux.

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1. Introduction

This paper presents the historic and contemporary government arrangements for coastal erosion and flood management in Northern Ireland. The paper commences by providing the coastal background and context, highlighting coastal hazards and risk in Northern Ireland. An overview of government legislation and policy is then presented, containing a discussion of the implementation and implications of these arrangements. The paper then moves on to provide a commentary on Northern Ireland's approach in comparison with its United Kingdom (UK) counterparts England and Wales, highlighting both congruence and divergence in policy evolution and development. Possible future drivers for change are then considered, followed by a short conclusion.

2. Northern Ireland coastal context

2.1. Coastal geography

The Northern Ireland coastline is over 650 km in length, and due to its high scenic value, much of the coast receives some degree of environmental protection; McLaughlin and Bann [1] state that

almost three quarters of the coast has some form of conservation designation in place. The coastline encompasses contrasting coastal habitats that are part of a dynamic and complex coastal system. From the large, enclosed sea lough of the Strangford Lough Marine Nature Reserve to the Giant's Causeway World Heritage Site, the coast, as a strategic natural resource, is a national asset in Northern Ireland. Within the literature, the coastal environments of the Northern Ireland coast have been divided between those found along the “high energy north coast where storm deposits and erosion forms dominate” and those of the “moderate to low marine and estuarine” east coast [2] (p. 10). The high-energy north coast comprises several sandy beaches juxtaposed with rocky headlands and cliffs [3]. Additionally, there are several estuaries, for example, the Bann Estuary and Lough Foyle that support scarce saltmarsh habitats [4]. The low-energy east and south-eastern coasts are noted for their softer topography, with low to moderate wave energy; this coastline features Belfast Lough, Strangford Lough, Carlingford Lough, sandy beaches along with fringing marshes [5,6]. Fig. 1 presents the location of Northern Ireland within the wider geographical context of the UK and the Republic of Ireland.

2.2. Coastal usage

The coastline of Northern Ireland, like much of the coast around the United Kingdom, is vulnerable to continued pressures being

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Source: Original

Fig. 1. Location Map.

exerted upon it from substantial commercial and recreational activity. A strong influence on the historical usage of the Northern Ireland coast has been the agricultural sector and its associated practices, which have included land reclamation and the removal of beach material [1]. Whilst the practice of sediment removal (sand and gravel) now only occurs at a limited number of sites, impacts are more severe due to the sensitivity of these locations and the larger quantities extracted via large mechanical equipment increasing beach vulnerability to, for example, coastal erosion [1,7,8].

Much of the Northern Ireland's shoreline and the adjacent land are owned privately [5]. As a result there is a notable fragmented pattern to landownership with limited consultation and

cooperation on various aspects of land management [9]. The National Trust, a Non-Governmental Organisation, has acquired stretches of coast since 1933 that currently amounts to over 200 km, representing a third of the coastline under its stewardship [10]. Other private landowners exist, for example, there are twelve Golf Clubs close to key coastal holiday resorts, such as, Portstewart, Newcastle, Portrush and Castlerock; thus making them significant landowners at the coast [7].

The Victorian era saw the establishment of several sea-side resorts in a similar fashion to other parts of the United Kingdom, with the north coast being the traditional primary tourism destination; towns and villages on the east coast also established themselves as popular resorts [9]. The construction of promenades,

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