

Editorial

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Over recent years and decades there has been an increasing recognition of the importance of adapting to coastal change, in appropriate situations, rather than solely attempting to provide resistance through often large and expensive structural defence solutions (Nicholls and Lowe, 2004). This issue has particularly come to light as: (a) data and understanding have emerged from coastal monitoring programmes such as the National Framework of Strategic Regional Coastal Monitoring in England (Bradbury *et al.*, 2002; Cooper *et al.*, 2009); (b) new science has been published relating to climate change and in particular sea level rise (Jenkins *et al.*, 2009; Lowe *et al.*, 2009) and how this may impact upon existing defences (Townend and Burgess, 2004) or alter the risks from coastal erosion (Dawson *et al.*, 2009; Dickson *et al.*, 2007) or sea flooding (Hall *et al.*, 2006); and (c) new legislation and planning policy has been introduced in the UK. In particular, the Marine and Coastal Access Act 2009 (2009) has created a new marine planning system designed to bring together the conservation, social and economic needs of our marine environment, and recognises both its dynamism and its sensitivities.

Adaptation to coastal change is not appropriate as a management response in all circumstances; there are very many areas around the coastline where continued or new coastal defences are required to protect people and the built, natural and historic environments. However, adaptation is being viewed by central government in the UK and other governments across the globe as an important way of mitigating risks from coastal change in many situations and, alongside other management approaches, is actively encouraging the development and implementation of adaptation strategies, such as

- the relocation of communities or assets
- the use of innovative resilience measures for individual properties
- education and engagement activities.

Adaptation can be quite simple, for example moving a coastal public footpath landwards in line with cliff recession. It can also be extremely complex, for example relocating whole coastal communities. There is no standard approach applicable to all situations and for this reason the UK Department for Environment, Food and Rural Affairs (Defra) announced £11 million funding investment in June 2009 in a series of 15

coastal change Pathfinder projects that road-tested new and innovative approaches to planning for and managing adaptation to coastal change. Through this work, the Pathfinder programme improved understanding of how coastal communities can adapt to coastal change and what the costs and benefits of different approaches are. It also provided practical lessons and examples to be shared with other practitioners, particularly on community adaptation planning and engagement and delivery of adaptive solutions.

Building further on this topical issue, this themed edition of *Maritime Engineering* is aimed at presenting the legislative and marine planning framework which sets the context for adaptation to coastal change, together with practical experience from problems (and opportunities) associated with coastal change and practical lessons learned from existing adaptation projects.

The first paper in this themed issue (Linham and Nicholls, 2012) provides a conceptual opening context for coastal adaptation within a broader suite of management approaches and discusses the advantages and disadvantages of different adaptation technologies. It draws broadly from both national and international perspectives to describe the appropriateness of adaptation in differing social, economic and environmental conditions, including those with differing vulnerabilities to future climate change projections.

The second paper (Pontee and Parsons, 2012) then focuses in more detail on the specific situation in the UK, describing the role of adaptation within existing strategic coastal planning and funding mechanisms and illustrating potential barriers and opportunities through a series of case studies.

The two subsequent papers present practical examples of adaptation in the UK. Frew (2012) describes findings from one of the coastal change Pathfinder projects, in north Norfolk, and details how a number of different adaptation approaches were piloted, with particular focus on key lessons learned. The type of approaches tested included relocating a village hall, removing derelict coastal defences, supporting affected business and acquiring and replacing housing stock in areas susceptible to coastal change. Cooper and Dolan (2012) describe how the National Trust, as a coastal landowner, has adapted to coastal change in Tyne & Wear to realise opportunities to make best

alternative land use of a vulnerable area, and to use this initial small-scale local adaptation to initiate a broader debate about the longer-term adaptation of land use on a larger scale associated with projected future rates of erosion affecting a coastal highway.

The final paper presents findings from a further coastal change Pathfinder project and focuses on engaging with local coastal communities. Moore (2012) describes how engagement about coastal adaptation was achieved with six communities at diverse locations along the Jurassic Coast of Dorset and East Devon. He provides a series of lessons learned from the experience gained during the project, identifying those which are within and those which are beyond the control of the project team. The paper usefully concludes the themed issue with a discussion of the role of central and local government in helping communities to adapt and the role of communities in helping themselves in adapting to coastal change.

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