

Managed realignment in northern Europe – a comparative study of England and Germany

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Abstract

The coastal management measure 'managed realignment' (to create intertidal habitat) has aroused increasing interest over the past decade. This doctoral research project has so far concentrated on a comparative study of England's and Germany's approaches to managed realignment, to determine similarities and differences, and make predictions on its future use. Qualitative interviews were undertaken with key experts; supported by an extensive literature review and communication with coastal practitioners. All interviewees perceived managed realignment as a positive development, although the likelihood of its increased future use was judged differently. Some 36 schemes exist. Motivation for English, and to a certain extent on Baltic Sea schemes, seems more driven by long-term, multi-causal factors than on Germany's North Sea coast, where managed realignment has to date only been motivated by habitat mitigation needs. However, there are signs that on this coast, conservation could be an important driver for its increased use in the 21st century. Thus managed realignment is now firmly on the agenda in both countries, reflecting a radical departure from the recent past. However, take-up is likely to differ notably both between and within these countries.

Keywords: Coastal defence; Managed retreat; Coastal management; Sea-level rise; Intertidal habitat.

Managed realignment in England and Germany

Managed realignment (MR) 'involves setting back the line of actively maintained defences to a new line inland of the original [preferably to rising ground] and promoting the creation of intertidal habitat between the old and new defences' (Burd, 1995) (European synonyms incl.: 'dike-realignment', 'de-polderisation'). Possible MR steps include the construction of a new sea wall and breaching/removal of the old sea wall [the use of pipes/sluice gates to control tidal flow (termed 'Regulated Tidal Exchange (RTE)) was disregarded]. Intertidal habitats fulfil important, often under-valued functions. MR can thus fulfil various purposes: improve flood defence/coastal protection, reduce flood defence/coastal protection costs, create additional accommodation space for natural change, (re)create valuable wetland habitat for conservation purposes, (re)create habitats

to mitigate for harmful development to designated sites, influence the hydrodynamics of an estuary or coast, and improve water quality (*e.g.* CIRIA, 2004).

A comparative study of England and Germany was undertaken as the first phase of a research project which aims to make an informed prediction of the future application of MR of coastal defences in the countries of the southern North Sea (incl. the Netherlands and Denmark). Qualitative interviews were undertaken with key experts; supported by an extensive literature review and communication with coastal practitioners.

It was found that some 36 MR schemes exist in the two countries [excluding some 18 RTEs totalling about 2.250ha] - these are concentrated mostly on the coasts of eastern England, and the German federal states of Lower-Saxony (LS) and Mecklenburg-Western-Pomerania (MWP) (almost 2.000ha in Germany and some 400ha in England) [some 30 references, incl.: Halcrow Group *et al.*, 2002; Bury *et al.*, 2003]. In England and on Germany's Baltic Sea coast, MR is often seen as the cheaper and sustainable coastal defence option – thus the objectives and priorities of conservation and coastal defence bodies frequently coincide and create a situation conducive to MR. In MWP in particular, various factors led to an extensive uptake of MR, such as the offering of attractive management/compensation options to landowners and consistently asking for contributions to defence costs from landowners. In England, the implications of MR in terms of loss of other habitats (*e.g.* coastal grazing marsh) remain a concern (Lee, 2001). On Germany's North Sea coast, MR would be more costly than maintaining the status quo, at least over the next few decades. Thus, MR appears unnecessary until economic and/or environmental conditions change considerably. Major MR potential exists within the summer polders in LS, however, this would mostly increase coastal defence costs and only serve conservation purposes. Furthermore, public opposition to such schemes would be fierce, as the North Sea population, which has fought a long and bitter fight against flooding/erosion, views returning land to the sea as a serious failure. As a result, the immediate future for MR on this coast, beyond compensation measures, looks limited. In order to gradually move the coastal population away from this 'protect at all costs' attitude, Schleswig Holstein and LS could possibly learn from the English experience by introducing a few genuine trial schemes whilst closely interacting with local communities and landowners – a strategy which has shown some success in England (see Myatt *et al.*, 2003). Initially, RTE rather than MR may be the favoured approach as the control this affords seems to have made the existing schemes possible.

References

- Burd F. 1995. Managed retreat: a practical guide. English Nature, Peterborough. 26p.
- Bury M.; H. Czyz, T. Fock, and B. Zander. 2003. Deichrückbau und Salzgrasland an der südlichen Ostseeküste. Schriftenreihe der FH Neubrandenburg, Reihe A, 20.
- Construction Industry Research and Information Association (CIRIA). 2004. Coastal and estuarine managed realignment – design issues. CIRIA, London. 215p.
- Lee M. 2001. Coastal defence and the Habitats Directive: predictions of habitat change in England and Wales. *The Geographical Journal* 167(1):39-56.
- Myatt L.B., M.D. Scrimshaw, and J.N. Lester. 2003. Public perceptions and attitudes towards a current managed realignment scheme: Brancaster West Marsh, North Norfolk, UK. *Journal of Coastal Research* 19(20):278-286.

Halcrow Group, Centre for Social And Economic Research on the Global Environment, and Cambridge Coastal Research Unit. 2002. Managed Realignment Review, Project Report. DEFRA, London. 324p.