

Contents

1 The Need for Adaptation in Coastal Protection: Shifting from Hard Engineering to Managed Realignment	1
1.1 The Need to Shift from Hold-the-Line to Managed Realignment	4
1.2 Compensation or Offsetting of Coastal Habitats Loss	7
1.2.1 Coastal Squeeze	8
1.3 Sustainable Flood and Erosion Risk Management.....	11
1.4 Delivery of Other Ecosystem Services	15
References	17
2 What is Managed Realignment?	19
2.1 Current Definitions.....	19
2.2 Confusing Terminology.....	21
2.3 Changes in Focus and Terminology Through Time	22
2.4 Clarifying the Terminology	24
2.5 Proposing a New Definition.....	28
References	29
3 Methods of Implementation	33
3.1 Introduction	33
3.2 Removal of Defences	35
3.3 Breach of Defences	37
3.4 Realignment of Defences	38
3.5 Controlled Tidal Restoration.....	39
3.6 Managed Retreat	41
References	43
4 Examples of Relevant Strategies and Policies	45
4.1 Geographical Background.....	45
4.2 Making Space for Water and Making Space for Nature, UK.....	47
4.3 Sigma Plan, Belgium.....	49
4.4 Room for River and Building with Nature, The Netherlands	50
4.5 Cross-Border Conflict in the Scheldt Estuary.....	51

- 4.6 Cities and Climate Change, Germany..... 53
- 4.7 Coastal Wetlands Planning, Protection and Restoration Act,
Louisiana, USA..... 55
- 4.8 Texas Open Beaches Act, USA..... 56
- 4.9 National Strategy for the Integrated Management of the
Shoreline, France..... 57
- References..... 59

- 5 Considerations on Managed Realignment in The Netherlands..... 61**
 - 5.1 Introduction..... 61
 - 5.2 Coastline Shortening, Land Reclamation and Hold-the-Line..... 63
 - 5.3 Dutch Examples of Landward Realignment of the Shoreline..... 64
 - 5.4 Conclusions..... 67
 - References..... 67

- 6 The National Trust Approach to Coastal Change and
Adaptive Management..... 69**
 - 6.1 Introduction..... 69
 - 6.2 National Trust Understanding and Planning for Coastal Change..... 70
 - 6.3 Hard Choices and Coastal Squeeze—The Advocacy Message..... 72
 - 6.4 Making Time and Space for Change..... 73
 - 6.5 Brownsea Island Shoreline Restoration Project..... 74
 - 6.5.1 Shoreline Planning, Consents and Designations..... 76
 - 6.6 Brownsea and Beyond: Looking to the Future..... 77
 - References..... 78

- 7 Managed Retreat in Maui, Hawaii..... 79**
 - 7.1 The Beach: an Economic Asset..... 79
 - 7.2 Implementation of Setback Lines..... 80
 - 7.3 Concluding Remarks..... 82
 - References..... 82

- 8 Managed Realignment in the UK: The Role of the
Environment Agency..... 83**
 - 8.1 Introduction..... 83
 - 8.2 Legal and Policy Drivers for Managed Realignment..... 84
 - 8.2.1 EU Habitats and Birds Directives..... 85
 - 8.2.2 EU Water Framework Directive (WFD)..... 85
 - 8.2.3 UK Government Policy on Flood Risk Management
and Habitat Creation..... 86
 - 8.2.4 Emerging Policy..... 86
 - 8.3 What Have We Learnt from Existing Managed Realignment
Projects?..... 88

8.3.1	Engagement and Communication	89
8.3.2	Statutory Process	90
8.3.3	Technical Expertise	91
8.3.4	Funding and Partnership	91
8.4	Conclusions	93
	References	94
9	Factors Influencing the Long-Term Sustainability of Managed Realignment	95
9.1	Introduction	95
9.2	Factors Influencing the Sustainability of Managed Realignment	99
9.2.1	Creation of Habitats Within Realignment Sites	99
9.2.2	Is There Sufficient Land to Offset the Predicted Losses of Coastal Habitats?	101
9.2.3	Stakeholder Support	101
9.2.4	Costs of Managed Realignment	102
9.2.5	Agricultural Land and Food Issues	103
9.2.6	Mitigation for Freshwater Habitat Displacement	104
9.3	Conclusions	104
	References	105
10	Current Perceptions About Managed Realignment	109
10.1	Suitability of Managed Realignment for Habitat Creation and Flood Risk Management	110
10.2	Performance of Projects	113
10.3	Current Perceptions About the Future Scope for Managed Realignment Outside the UK	115
10.4	Main Limitations	117
	References	121
11	Concluding Remarks	125
	Appendix: List of Managed Realignment Projects in Europe	129
	Index	137



<http://www.springer.com/978-94-017-9028-4>

Managed Realignment : A Viable Long-Term Coastal
Management Strategy?

Esteves, L.

2014, XXIII, 139 p. 36 illus., 35 illus. in color., Softcover

ISBN: 978-94-017-9028-4