

 Project part-financed by the European Union (European Regional Development Fund)



Introduction to the TIDE Project

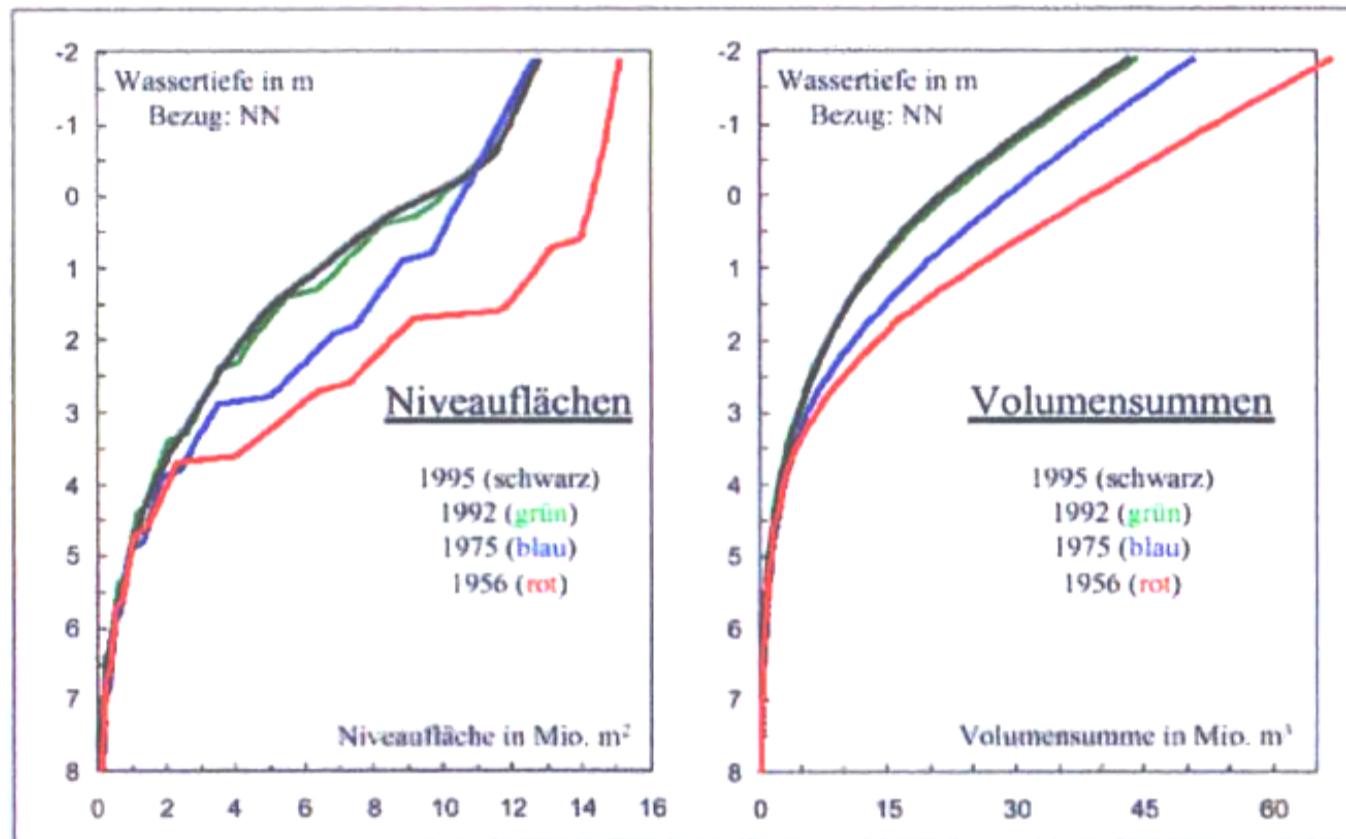
Kick-Off Conference in Antwerp

18th February 2010



Background: Morphological Changes

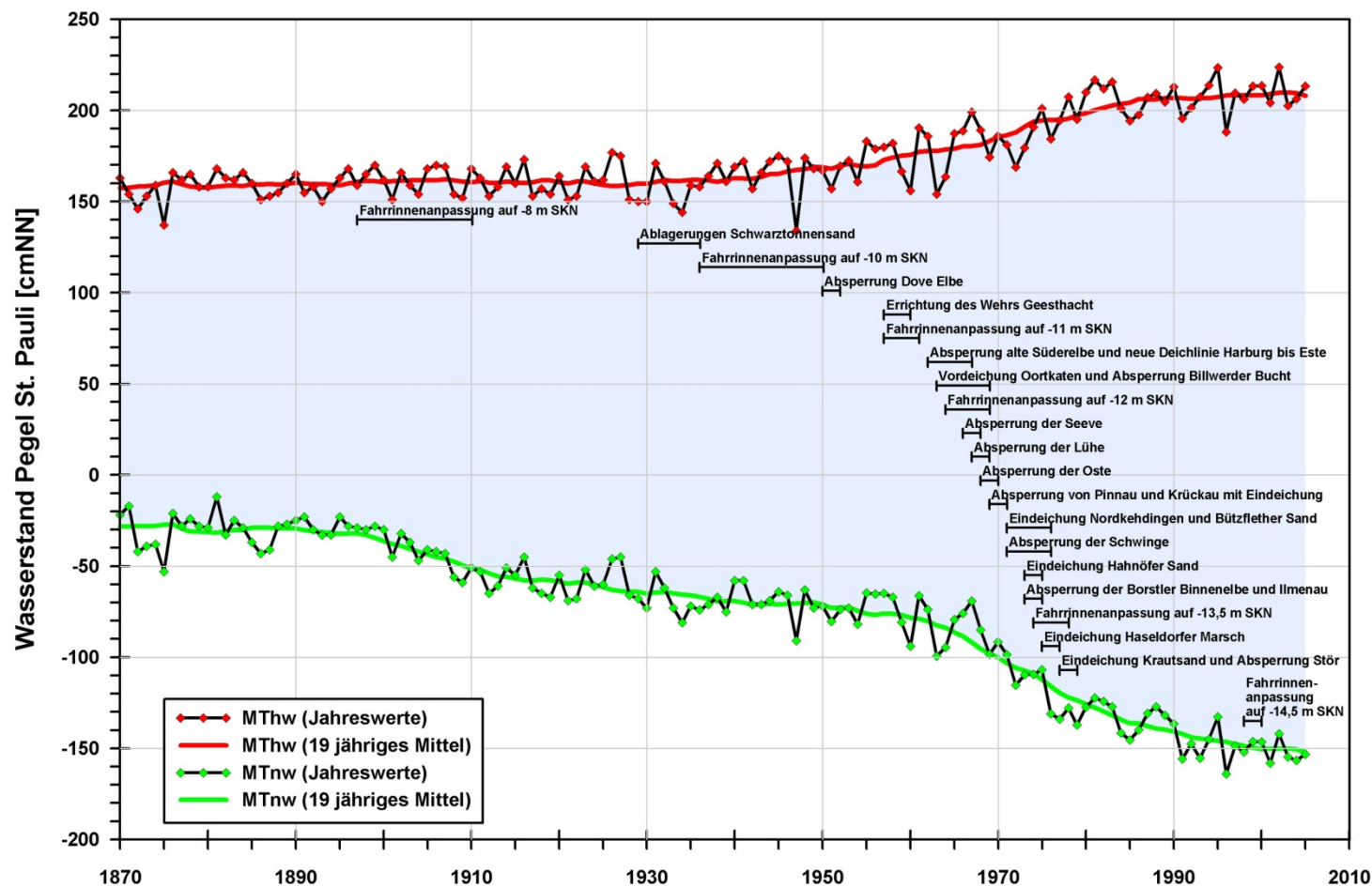
(Quelle: BAW/AK, 1999)



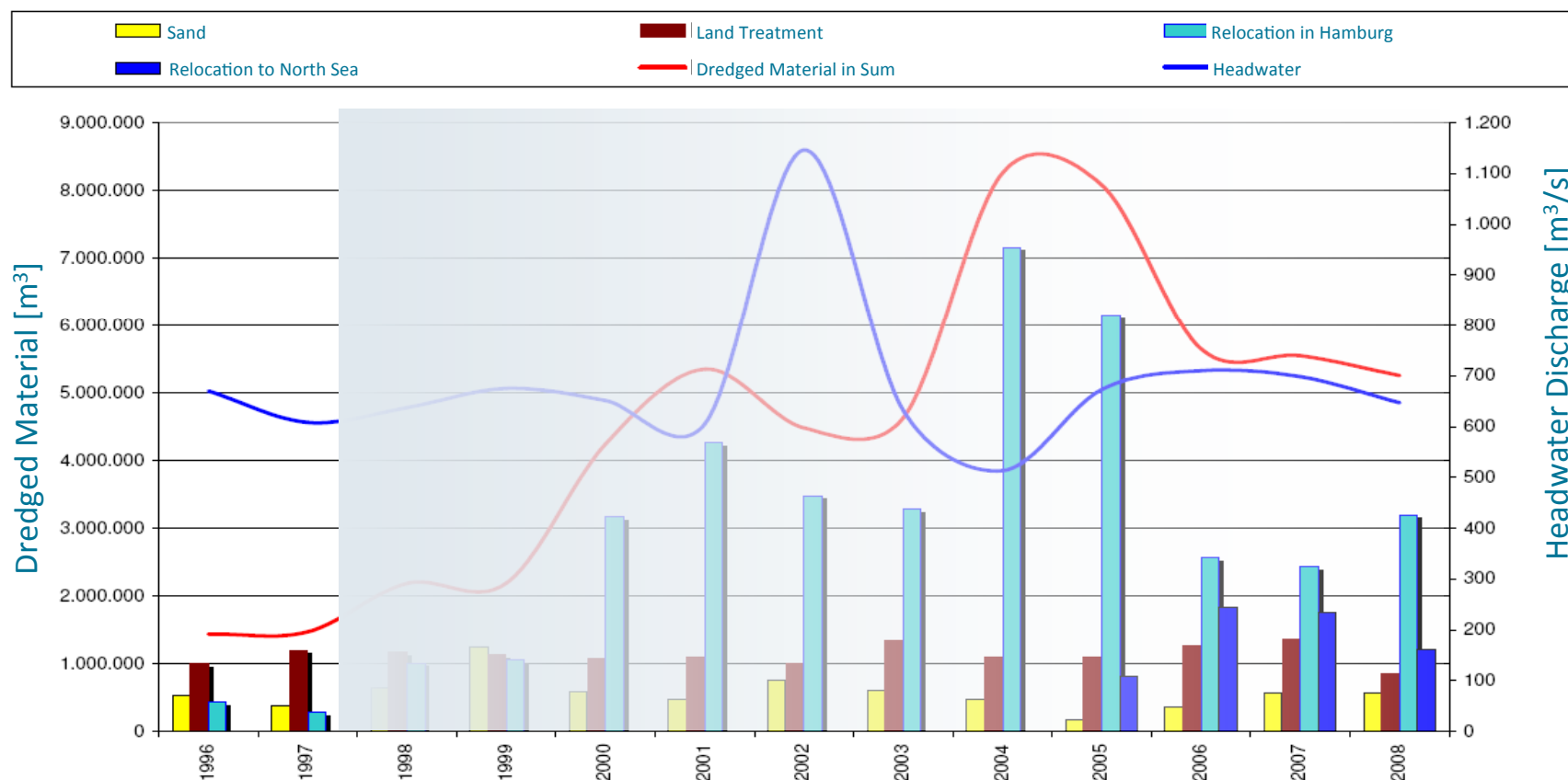
Background: Morphological Changes



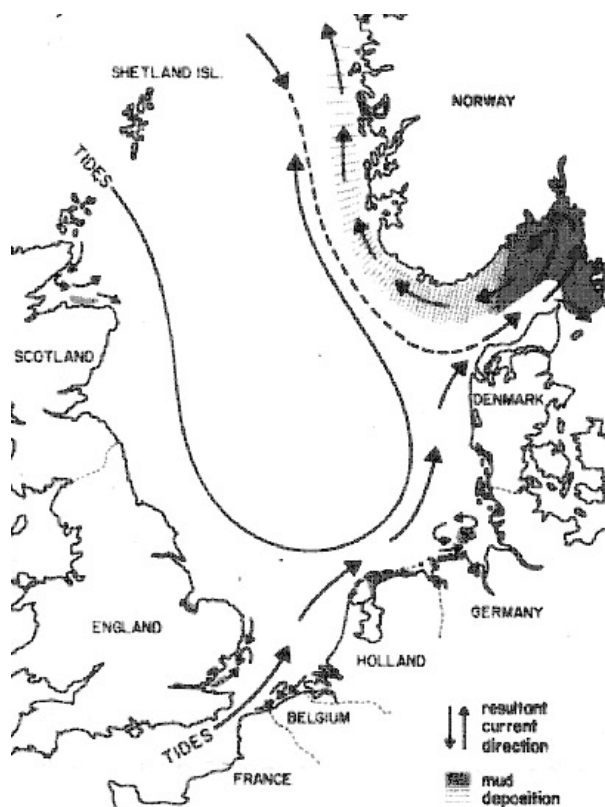
Background: Increasing Tidal Range



Background: Increasing Dredging Necessities in Hamburg

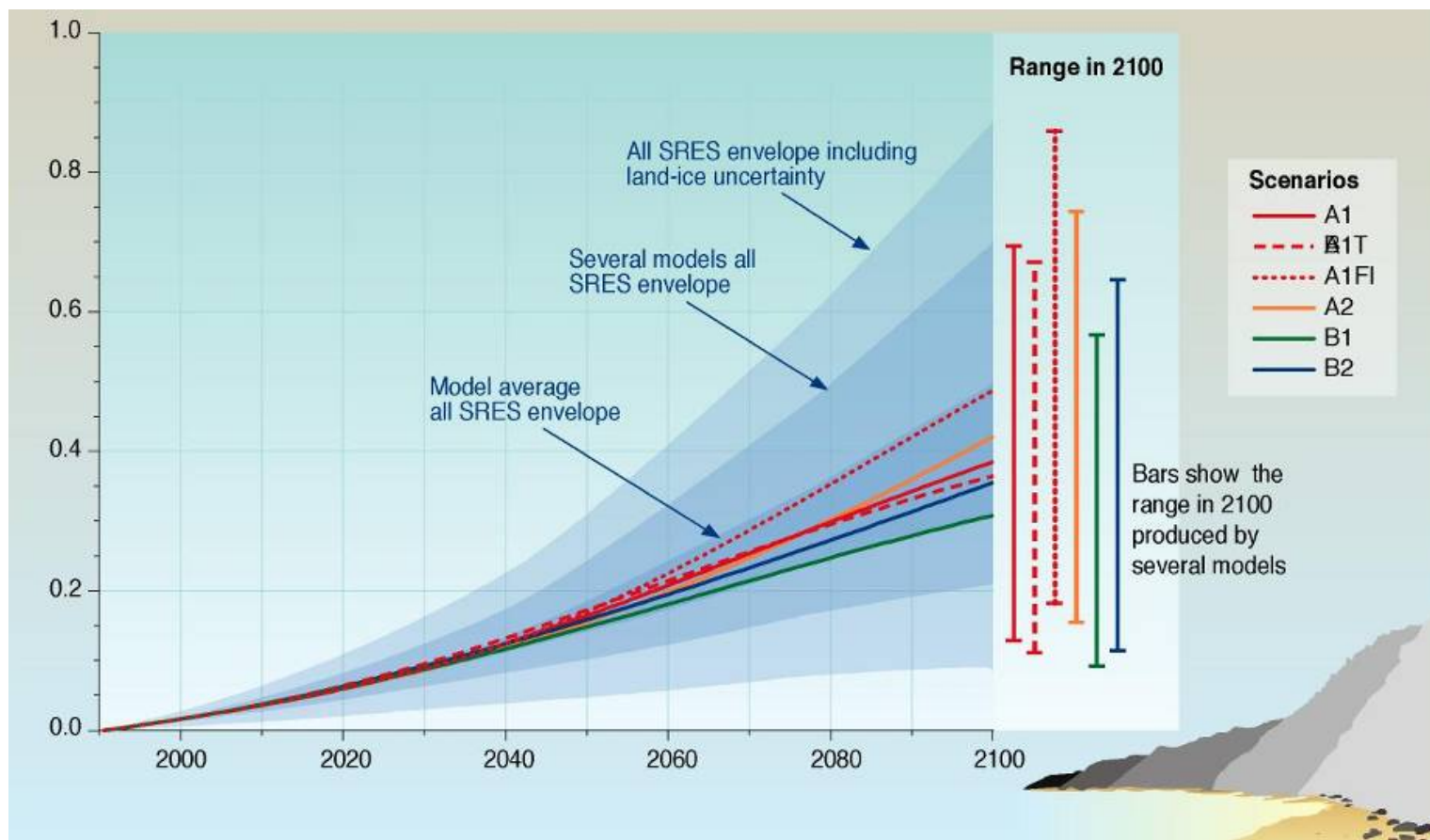


Background: Sediments and Dredging in Europe

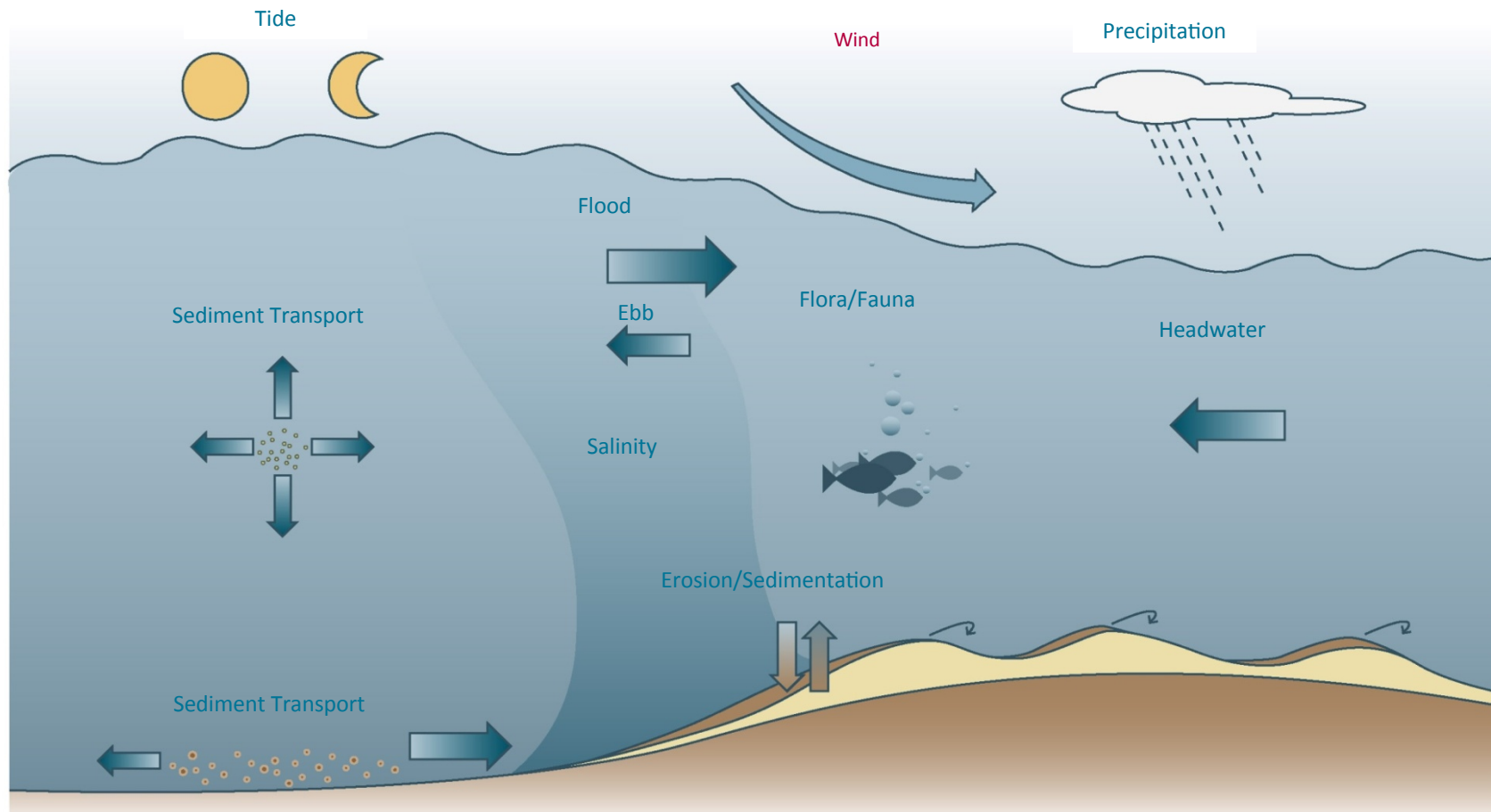


Country	Sea	Inland	Sum
Belgium / Flanders	5	9,2	14
Denmark	4,5		5
France	50	6	56
Germany	41	5	46
Ireland	0,8		1
Italy	4		4
Netherlands	19	9	28
Portugal	4		4
Spain	8,5		9
Sweden	1,38	0,1	1
UK	30	0,7	31
Sum			198

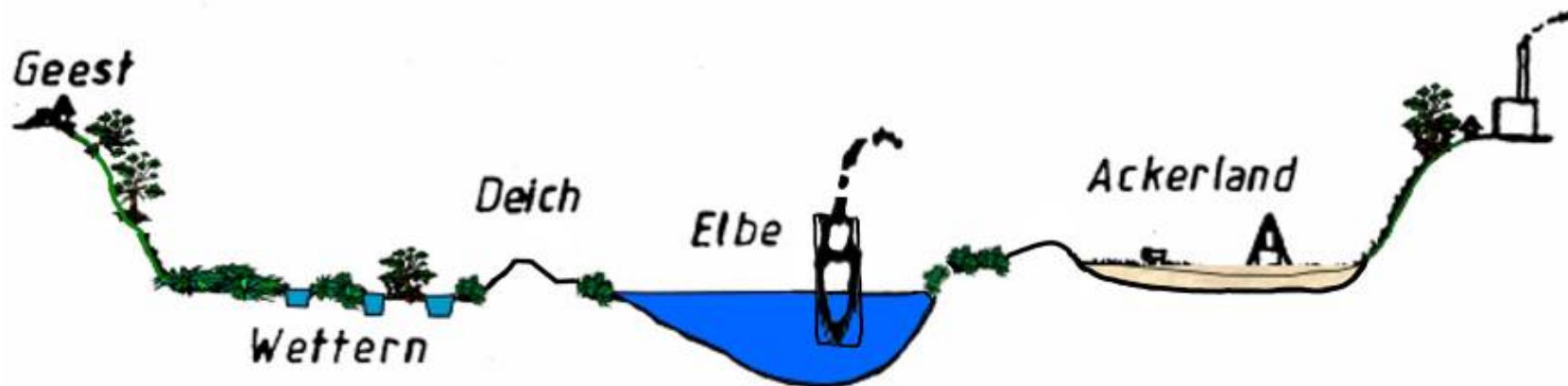
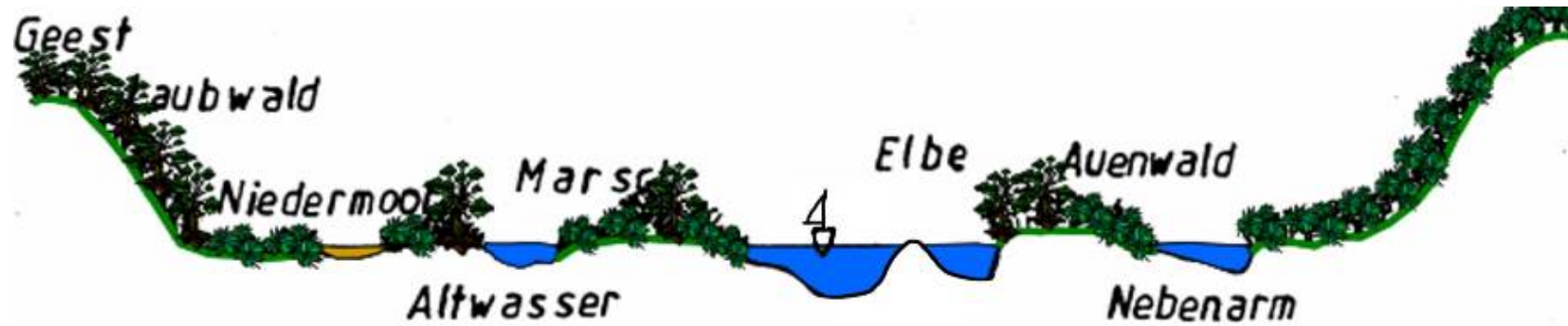
Background: Climate Change and Sea Level Rise



Background: The Estuary System



Background: Changing Landscapes



Background: Meeting Experts



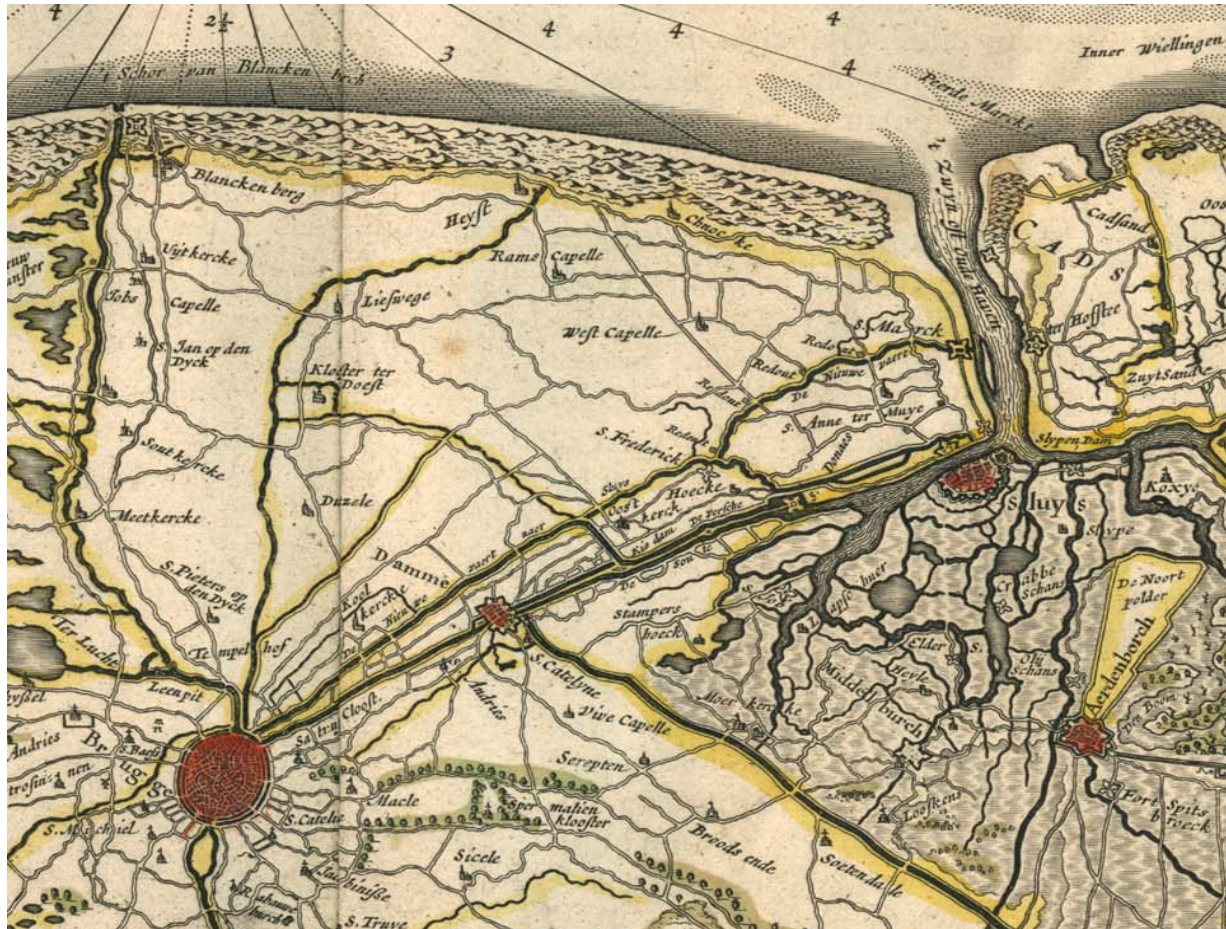
Background: Meeting with Experts from other Estuaries



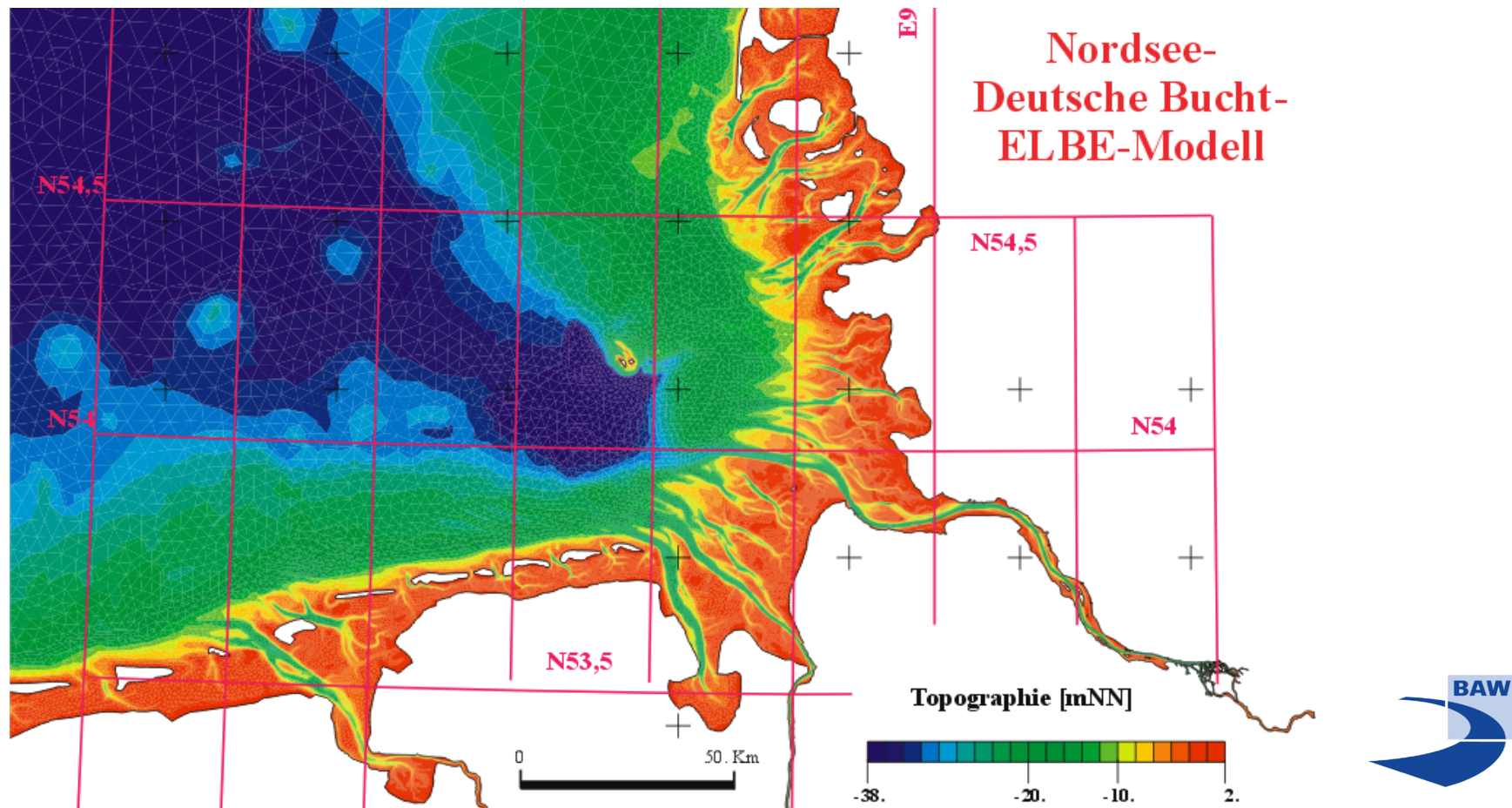
Background: Visiting De Zwin – The Future of Estuaries?



Background: Learning from History – Ex-Seaport Bruges



3D-Numerical Model





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Concept for the Tidal Elbe

3D-Model: *The System needs to be managed!*

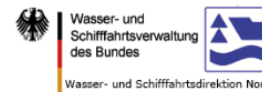


Konzept für eine nachhaltige Entwicklung der Tideelbe
als Lebensader der Metropolregion Hamburg

Ein Diskussionsbeitrag der Hamburg Port Authority und
der Wasser- und Schifffahrtsverwaltung des Bundes

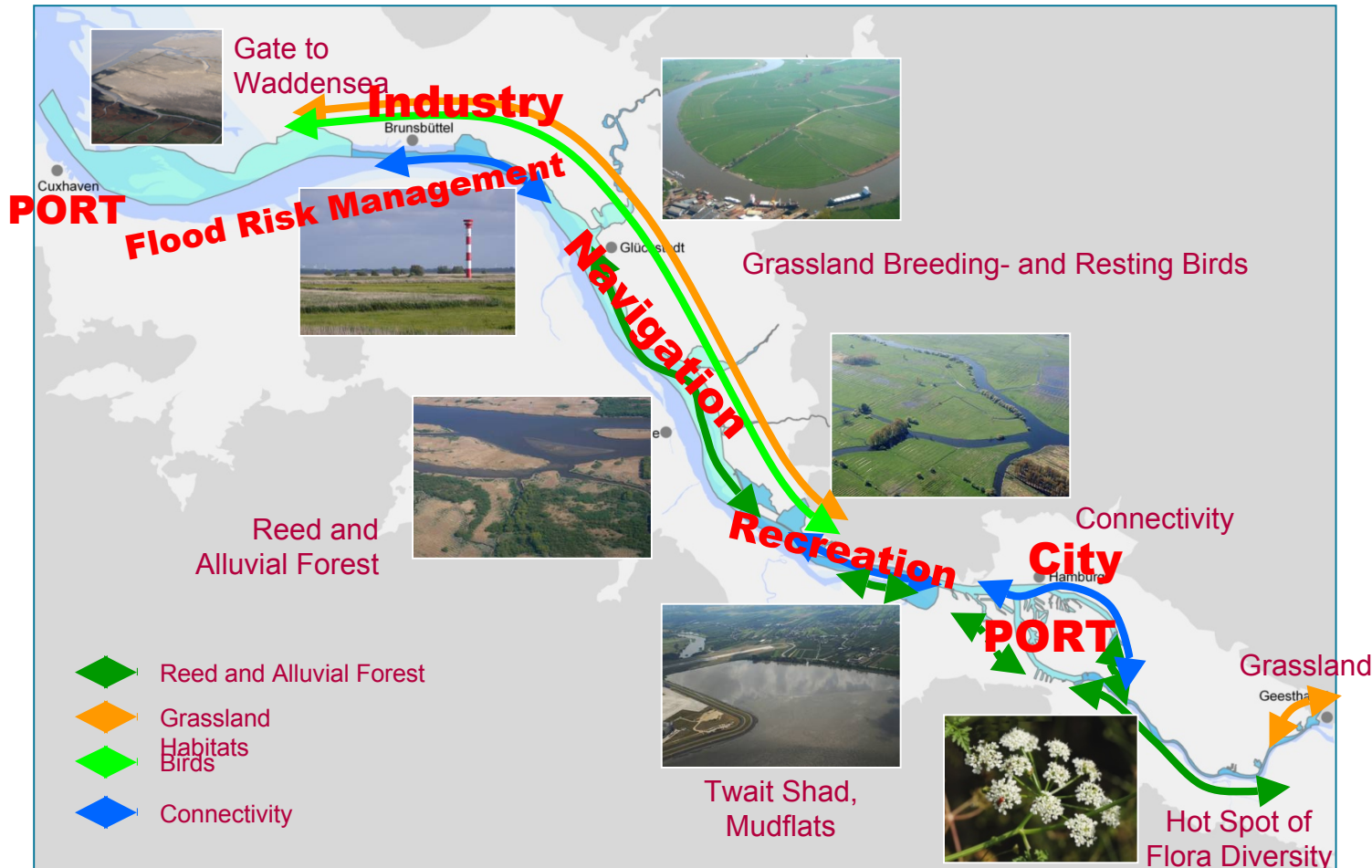


Dr.-Ing. Hans Peter Dücker
Dipl.-Ing. Heinz Glindemann



Dr.-Ing. Hans-Heinrich Witte
Dipl.-Ing. Karsten Thode

Biodiversity needs Management too!



Looking for Partners in Europe





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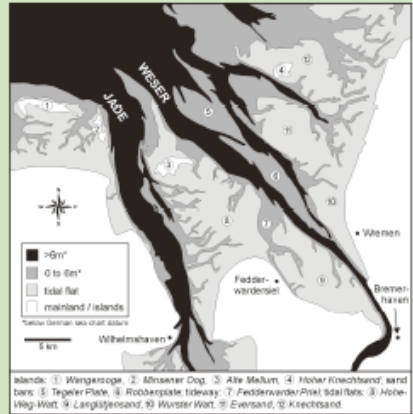

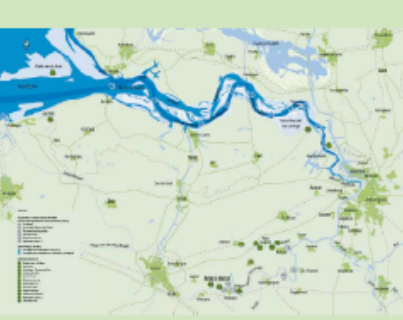
Identifying Gaps of Knowledge

- Interrelations between Morphology and Ecology
- Climate Change and Estuary Functions and Behavior
- Integrated Planning, Working with Nature
- Implementation of NATURA 2000 and WFD Requirements
- Public Awareness
-

Criteria for Partner-Estuaries

- Shipping Channels leading to Large Seaports inland
- Strong tidal Influence
- Massive Sediment Transport
- Designated NATURA 2000 Sites

TIDE Partner-Estuaries

Elbe / DE	Weser / DE	Humber / GB	Schelde / NL - BE
<p>Port of Hamburg Length: 141 km</p>	<p>Port of Bremerhaven and Bremen Length 90 km</p>	<p>Ports of Hull, Immingham, Grimsby and Goole Length: 121 km</p>	<p>Port of Antwerp Length: 160 km</p>
			



Thank You for Your Attention!